

Storage

TT
290
.G88
1963

Сундук кожевника - vk.com/kozhcraft

LEATHERCRAFT

REVISED

B 361255 DUPL

CHRIS. H. GRONEMAN

Digitized by Google

Original from
UNIVERSITY OF MICHIGAN









Leathercraft



Creative Leathercraft Gives Pleasure to All

LEATHERCRAFT

iskysoft

By Chris H. ^{Harold}Groneman

Head, Department of Industrial
Education, Agricultural and
Mechanical College of Texas

Chas. A. Bennett Co., Inc.

Peoria, Illinois

Storage JJ

~~Undergraduate~~
~~Library~~

TT
290
.G88
1963

✧ iSkysoft

Copyright 1958, 1963

CHRIS H. GRONEMAN

No part of this work may be reproduced by even the simplest duplication processes without permission from the publishers.

Library of Congr. Cat. No. 58-5509

Printed in the United States of America.

Third Printing—36VH 34

86-398809

Transfer
to UGL

MAR 27 1978

PREFACE

Leatherwork is one of the world's oldest, best-loved, and most satisfying handcrafts. It plays an important role in satisfying both utilitarian and decorative uses in the everyday life of people. In this book special attention is devoted to many of the essential details of leathercraft needed by the beginning student or home craftsman if he wishes to produce attractive pieces of work. The most widely accepted processes are presented in their natural sequence and in an easy-to-follow procedure, with each important detail clearly illustrated.

This modern up-to-date, how-to-do-it book includes outline and relief tooling of lightweight leathers, and carving and stamping of heavier ones. These decorative processes are in addition to other fundamentals.

It presents one of the most complete treatments with respect to the different types of popular edge lacings. Edge lacing serves to protect and decorate the edge.

The major sections include basic information relative to types of leathers and supplies, essential tools and equipment, and a list of suggested projects. Also presented are units on hand tooling and leather carving; braiding, thonging, and plaiting for making Boy

Scout accessories; general useful information regarding the history and early uses of leather; geographical sources; how leather is made; industrial uses of leather; shoe manufacture; and some suggested projects, with photographs, working drawings, and designs.

Acknowledgment is gratefully extended to my wife, Virginia, for her criticism and assistance; Mrs. Eleanor Nance for her rendition of process illustrations; J. C. Glidewell for the wonderful photography; Gordon DeMarias for his assistance in planning and posing for the many photographs; and Judy Watson, who appears in the Frontispiece with Gordon DeMarrias.

The following companies were most helpful in granting permission to use numerous photographic and informational materials: Craftool Company, Los Angeles, California; D. Van Nostrand Company of Princeton, N. J., for permission to use designs from a design packet by the author; Ohio Leather Company, Girard, Ohio; Tanner's Council of America, New York City; Texas Tanning and Manufacturing Company, Yoakum, Texas; Vista Craft Products, Vista, California; Holick Boot Shop, College Station, Texas; Wilson Sporting Goods, Chicago, Illinois; and United Shoe Machinery Corp., Boston, Massachusetts.

CHRIS H. GRONEMAN

CONTENTS

Unit 1. Kinds of leather	8	Unit 11. Embossing	29
Tooling and carving leathers, 8. Non-tooling leathers, 9. Lining leathers, 9. Lace, 10. How to buy leathers, 10.		Embossing by raising, 29. Embossing with the wheel; 30.	
Unit 2. Suggested Projects	10	Unit 12. Carving and tooling	30
Tooling and carving projects, 10. Boy and girl scout projects, 11.		Including complete design development for a billfold.	
Unit 3. Tools and equipment	11	Unit 13. Skiving and trimming edges	36
Tools, 13. Portable tool cabinet, 18.		Skiving, 37. Dressing edges, 37.	
Unit 4. Planning the project	19	Unit 14. Edge creasing	37
Planning a project, 20. Tracing a design, 20.		Unit 15. Temporary assembly of parts	38
Unit 5. Marking and laying out	20	Unit 16. Sewing	40
Marking and laying out, 20. Using templates for layout, 21.		Hand sewing, 41. Machine sewing, 41.	
Unit 6. Cutting Leather	21	Unit 17. Punching edge holes and slits	41
Cutting lightweight leather, 21. Cutting heavy leather, 22.		Punching thong slits, 42. Punching holes with the single tube hand punch, 43.	
Unit 7. Preparing for tooling and carving	24	Unit 18. Splicing edge lace	44
Preparing lightweight leather for tooling, 24. Preparing heavyweight leather for carving, 24.		Unit 19. Whip stitch edge lacing	44
Unit 8. Transferring the design	25	Single whip stitch, 44. Double whip stitch, 45. Cross whip stitch, 45.	
Tracing a design, 25. Transferring designs from templates and stencils, 26.		Unit 20. Venetian or Florentine lacing	45
Unit 9. Surface tooling and modeling	26	Unit 21. Single and double Cordovan or buttonhole edge lacing	46
Outline tooling, 27. Flat modeling, 27		Single Cordovan or single buttonhole stitch, 46. Double Cordovan or double buttonhole stitch, 47.	
Unit 10. Stippling and stamping design	28	Unit 22. Punching holes	49
Stippling, 28. Stamping, 29.		Unit 23. Setting eyelets	51

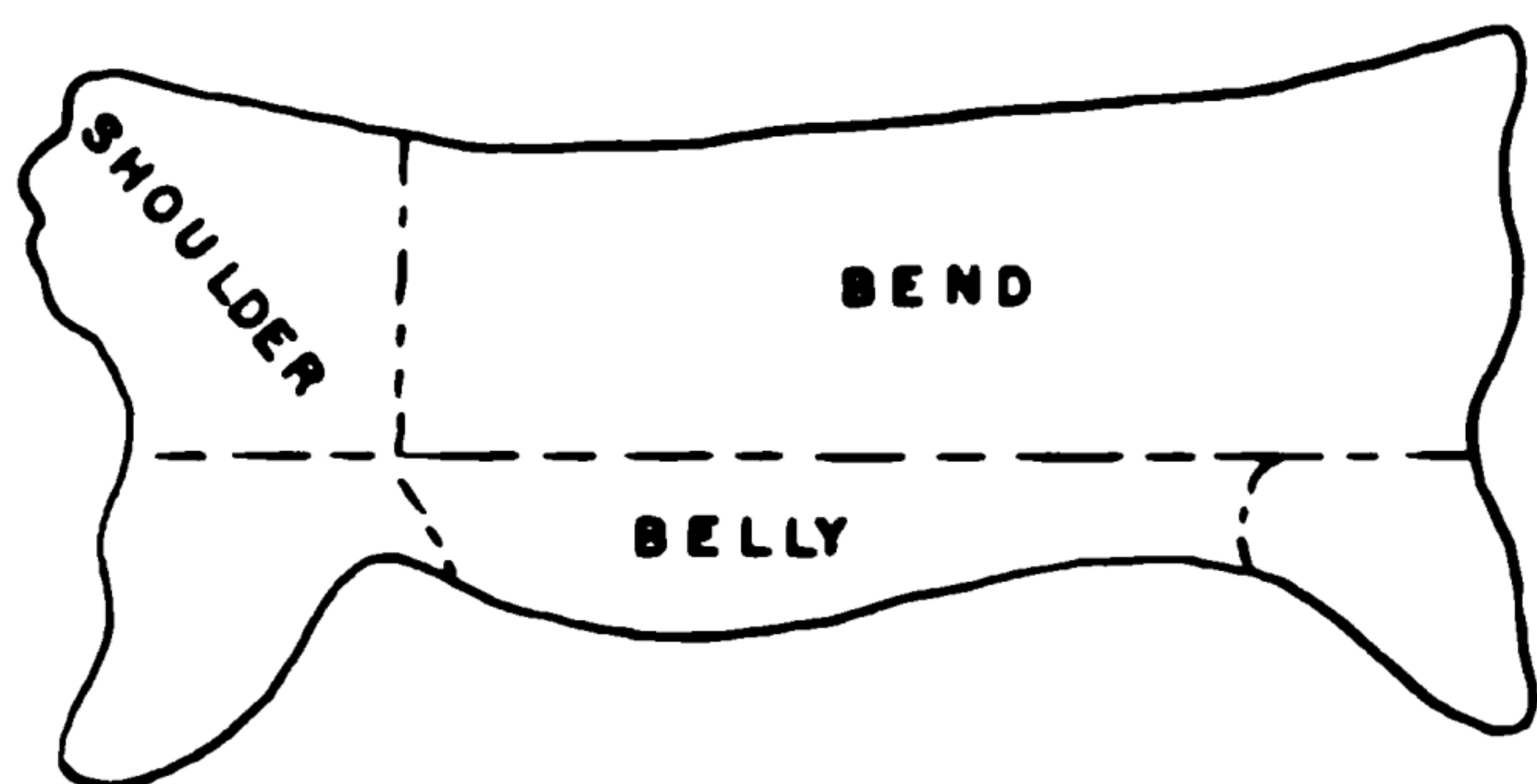
Unit 24. Setting snap fasteners	52	Unit 35. History and early uses of leather	72
Unit 25. Setting rivets	53	Unit 36. Making leather	73
Unit 26. Making a three-hole fastener	54	Unit 37. Leather terminology	79
Unit 27. Stretching, Forming, and Making Folds in Leather	55	Unit 38. Leather in Industry	82
Stretching lightweight leather, 55. Forming heavy leather, 55. Making a fold, 56.		Unit 39. The Manufacture of Shoes	85
Unit 28. Cleaning and finishing leather		57	Historical development, 86. Modern shoe industry, 87. Making a shoe, 88.
Surface coloring, 57. Finishing edges, 57. Antique finishing, 58. Waxing and polishing, 59.		Leathercraft plans	93
Unit 29. Maintaining and sharpening tools	59	1. Comb Case, 93. 2. Key Case with Binding Post, 94. 3. Key Ring Holder, 96. 4. Key Case with Key Plate, 97. 5. Coin Purse, 99. 6. Wristband Coin Purse, 101. 7. Zipper Coin Purse Key Case, 103. 8. Calling Card Holder, 104. 9. Cigarette Case, 106. 10. Leaf Design Ladies' Belt, 109. 11. Western Style Necktie, 111. 12. Wristlet, 111. 13. Billfolds, 113. 14. Men's Belts, 116. 15. Letter Holder, 118. 16. Book Ends, 120. 17. Photograph Album and Scrapbook, 122. 18. Carved Notebook, 129. 19. Zipper Notebook, 131. 20. Ladies' Zipper Handbag, 135. 21. Ladies' Handbag, 138. 22. Ladies' Shoulder Strap Bag, 141. 23. Camera Case, 143. 24. Gadget Bag, 145. 25. Knife Sheath, 148. 26. Ax Sheath, 150. 27. Holster, 151. 28. Compact Brief Case, 153. Ideas for Advanced Leather Projects, 154. Monogram Styles, 155. Helpful Sources for Additional Information, 156.	
Unit 30. Braiding a four-plait, diamond design round thong	61	Pointing an awl, 59. Sharpening knives, 59. Dressing punch tubes, 60. Refacing a mallet head, 61. General care of tools, 61.	
Unit 31. Making or forming a sliding knot	64	Making the thong strips, 61. Braiding the four-plait, diamond design round thong, 62. Forming the crown and turkshead, 63.	
Unit 32. Fashioning a neckerchief slide	65	Index	
Unit 33. Making a braided belt	67	157	
Unit 34. Making a novelty link belt	71		

Unit 1 KINDS OF LEATHER

Pelts of animals are classified by name and by condition. The names of pelts are (1) hides, (2) skins, and (3) kips. *Hides* come from larger animals such as steers, cows, horses, and walrus; *skins* are secured from smaller animals such as calves, sheep, goats, and kangaroos; and *kips* are pelts of under-sized animals. The condition of the pelt is termed (1) *green*, when it comes directly from the animal; (2) *green-salted*, when salt has been rubbed on the flesh side; (3) *dry-salted*, after salt has been rubbed in and dried; and (4) *dried*, after the fresh pelt has been stretched on a board and dried. Unit 38 on "Making Leather" gives additional information which will be of interest.

The weight of leather is designated by ounces. One ounce is approximately equivalent to $\frac{1}{64}$ inch in thickness; hence 3 ounce calfskin is $\frac{3}{64}$ inches thick, and 8 ounce cowhide is $\frac{1}{8}$ inch thick.

Some of the leathers described here are non-tooling; however, tooling and carving leather must be vegetable tanned and top grain, which designates superior quality. The descriptions given briefly include uses, textures, weights, and size ranges. Fig. 1 shows some common divisions of a hide or skin.



1. Common Sections of a Hide or Skin

Tooling and carving leathers

Calfskin (a), Fig. 2, has the finest

grain of all tooling leather, and is ideal for surface tooling and carving. It is offered in a variety of colors, in addition to its natural tone. Weight of calfskin varies from 2 to 4 ounces per square foot, and the skins are available in sizes from 10 to 16 square feet.

Steerhide (c), Fig. 2, is a slightly heavier leather than calfskin but is ideal for leather projects because it has a crinkle grain and pliable texture which makes a good appearance with a tooled design, or when left in its natural or multi-colored effects. The weight varies from 3 to 5 ounces per square foot, and the hide has from 20 to 30 square feet.

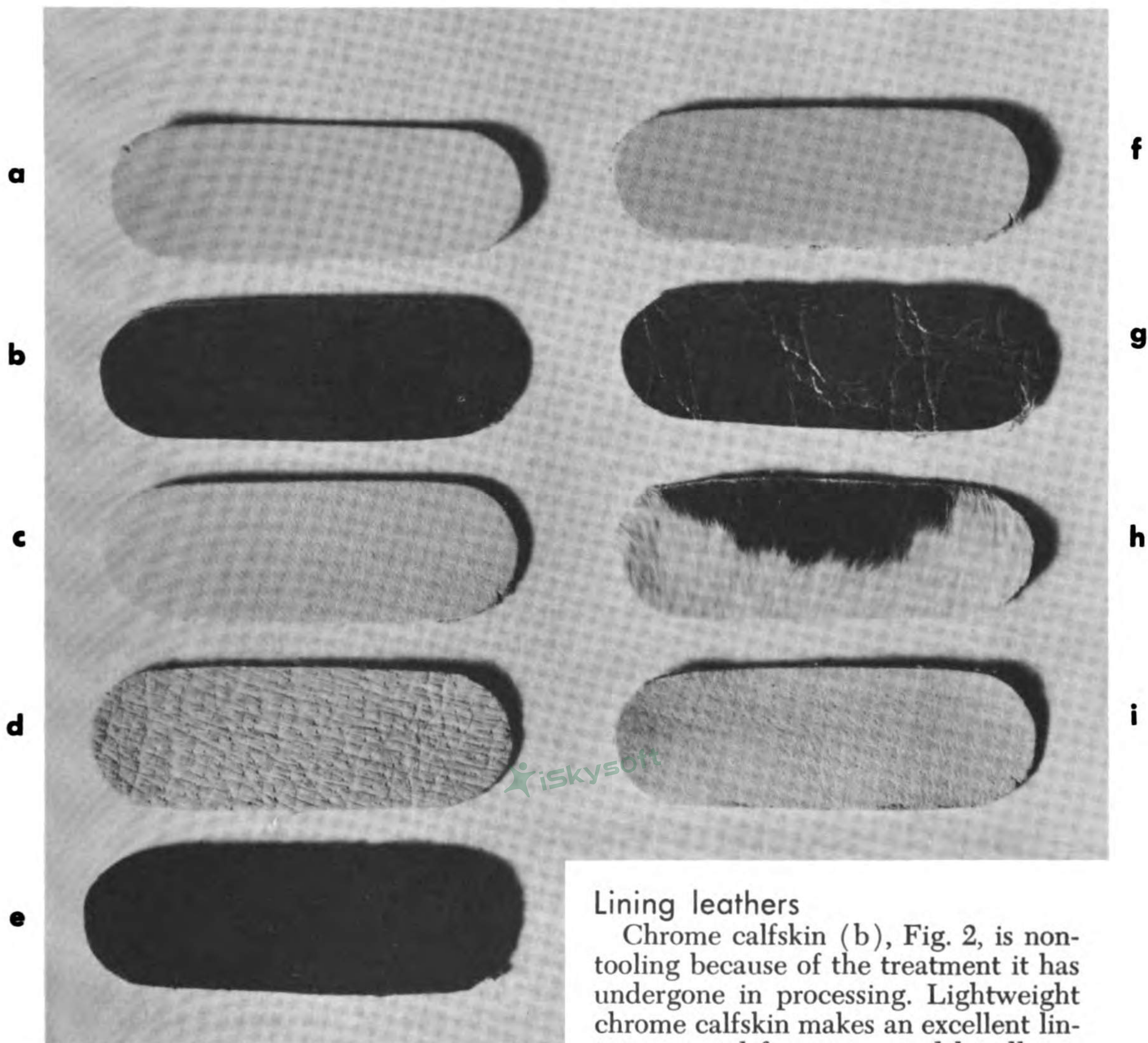
Sheepskin (not pictured) is an inexpensive tooling leather. It is reasonably durable and tools without difficulty. The weight varies from 3 to 5 ounces in a skin usually measuring 7 to 14 square feet.

Pigskin (d), Fig. 2, is toolable, but the interesting texture makes it a most desirable material in its natural grain and color. It is ideal for any of the smaller projects, since it is not too expensive. The weight varies considerably in thickness, and the skins range from 8 to 15 square feet.

Cowhide (strap leather) (f), Fig. 2, is easily carved, tooled, or stamped. It is the most suitable heavy leather for making belts, ladies' underarm bags, and brief cases. It has a soft, smooth grain and is natural in color. The weight varies from 3 to 10 ounces, with the 7 to 10 ounce most ideal for carving. Hides usually measure from 16 to 22 square feet.

Non-tooling leathers

Alligator (g), Fig. 2, is a non-tooling leather which is very attractive because of the natural surface markings. Genuine alligator is available in a variety of



2. Types of Leather for Craft Work

brown and mahogany shades, but is rather expensive. A calfskin imitation is obtainable which has a surface decoration embossed by the manufacturing process. Genuine alligator skins vary in width from 6 to 15 inches, being available in many lengths. Alligator-grain calfskin ranges from 8 to 14 square feet.

Unborn calf (h), Fig. 2, is calfskin with short hair still on. The skins make ideal small projects. Sizes of the skins vary from 6 to 9 square feet.

Lining leathers

Chrome calfskin (b), Fig. 2, is non-tooling because of the treatment it has undergone in processing. Lightweight chrome calfskin makes an excellent lining material for purses and handbags. It is available in several colors, with the skins varying from 8 to 14 square feet in size.

Suede (e), Fig. 2, is a non-tooling lamb or sheepskin which is ideal for lining because of its finish. The term "suede" designates a type of soft, velvet-like finish. Suede sheepskin is obtainable in a variety of colors. Skins range from 5 to 8 square feet in size.

Sheep skiver (i), Fig. 2, is a thin, split-off part of sheepskin. It comes in a variety of colors, is inexpensive, very thin, and therefore should be rubber cemented when used as a lining. Its size ranges from 7 to 14 square feet.

Lace

Most craftsmen prefer to use commercially made goat and calf lace in widths of $\frac{3}{32}$ or $\frac{1}{8}$ inch. These can be purchased in numerous colors, with the edges skived and dressed to make a very clean, finished appearance for the edges of projects. Lace may also be used for braiding and thonging. Beginners occasionally like to use the less expensive plastic edge lace, which is obtainable in many colors also, but is not as durable.

Venetian edge lace may be purchased ready-cut in $\frac{1}{4}$ to $\frac{3}{8}$ inch widths, or it can be cut from skiver lining stock.

How to buy leather

Full hides or *skins* are most economical when purchasing large quantities of leather.

Halfskins, *halfhides*, or *quarterhides* are available at a slightly higher cost.

Square foot or *square inch* measures

are used in buying small pieces for one or two projects. The cost is almost prohibitive, however, when ordering in large quantities.

Scrap leather or *remnants* are preferred by some beginners, or for making small projects. Scraps are usually sold in 1 to 5-lb. lots.

Leathercraft kits have ready-cut pieces, lace, designs, instructional material, and accessories for the particular project in the kit. Many persons desire this method of compact, economical purchase for a specific project, but it should be pointed out that often such kits are discouraging because detailed instructions for beginners are not complete, the kits do not contain tools or enough information on how to use tools. Often a person will buy a kit far too elaborate for his knowledge about leatherworking and degree of proficiency, and in the process of fabrication will lose his interest in this fascinating craft.



Unit 2 SUGGESTED PROJECTS

Leather projects are many and varied. Some are very simple; others require more skill. The following lists present a small selection of worthwhile projects from which the beginner or the expert may select those which interest him most and suit his particular desires and activities.

The processes described and illustrated in this book are ample to guide the leathercrafter in the making of practically all the projects here listed. This first group may be made from 2, 3, or 4 ounce tooling calfskin or mottled steerhide, or the heavier weight 8 to 10 ounce strap and cowhide material. The 2 and 3 ounce leathers lend themselves most successfully for tooling, stippling, and embossing. The 4, 8, or 10 ounce leathers are most suitable for stamping and carving. Cowhide is particularly adaptable for photograph

albums, notebooks, underarm bags, gadget bags, and camera cases. The beginner or novice will soon determine for himself the most suitable leather stock to use for the various items he wishes to make.

Tooling and Carving Projects

automobile drivers' license cases
billfolds
book covers
bookmarks
brief cases
bridge-set cases
camera cases
cigarette cases
coin purses
comb cases
desk sets
gadget bags
gloves
handbags
hand purses
handkerchief cases

key containers
letter holders
match-box covers
memorandum cases
moccasins
music cases
notebook covers
pencil-and-pen cases
photograph albums
photograph folders
pictures
playing-card cases

sandals
scrapbooks
stamp books
suspenders
table runners
telephone-nook cases
tobacco pouches
toilet-set cases
underarm bags
wall hangings
whisk-broom holders
wrist-watch straps

Boy and Girl Scout Projects

archery equipment
ax sheaths
belts
billfolds
comb cases
canteen cases
dog collars and leads
first-aid cases
hatbands
holsters
hunting-license cases
identification-card cases
key cases

knife sheaths
lanyards
match cases
moccasins
neckerchief slides
photograph albums
pictures
quirts
sandals
stamp books
watch fobs
wrist supports
wrist-watch straps



Unit 3 TOOLS AND EQUIPMENT

Tools for leatherwork are relatively inexpensive when compared with the cost of tools for other types of shop and laboratory work, or equipment for the home craftsman, or when compared with the value of the product made. It will be noted from the illustrations and descriptions that a number of the tools are common with other craft activities; hence they will already be available in the school or home workshop.

Some of the tools can be made, while others can be substituted. A few of these are so indicated in their descriptions. The descriptive information presented in this unit on each tool is general, but is adequate to guide the craftsman in purchasing or making it. Many stamping tools can be designed and made from 16 to 20 penny nails. The designs illustrated in Fig. 19 can be duplicated on the heads of nails by

using any one or more of the following tools: machine and jeweler's files, a fine cutting grinding wheel, and drill bits.

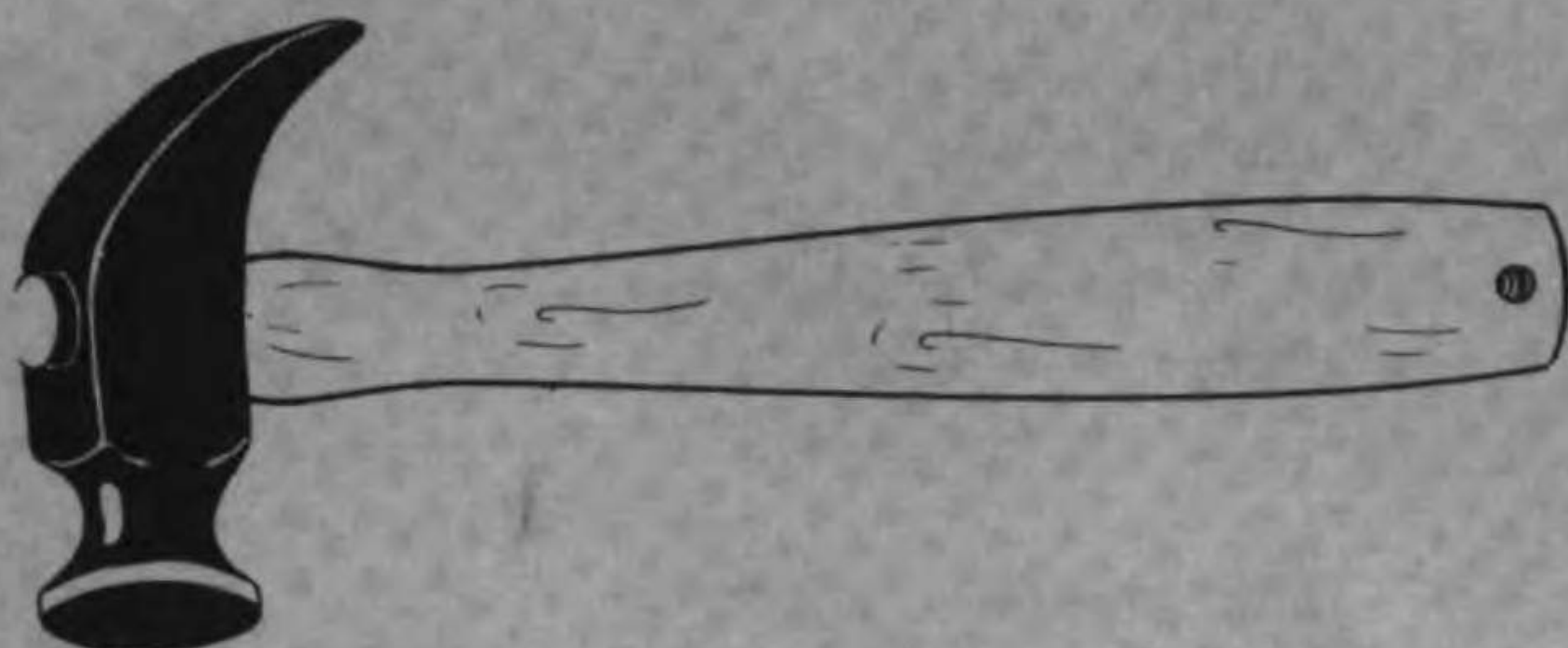
One item not shown which might be considered a tool is a piece of close-grained hardwood measuring at least $\frac{3}{4}$ x 6 x 10 inches. When available, a slab of marble is preferable to wood for some processes, particularly tooling and carving, because it will not dent.

Tools should be taken care of and stored so that the cutting edges will be protected. Some craftsmen prefer to keep them in specially prepared bags or holders of flannel or cloth; others like to mount them in small, portable carrying cases or cabinets. Fig. 41 provides a working drawing of such a portable tool cabinet. Also see 42 and 43.

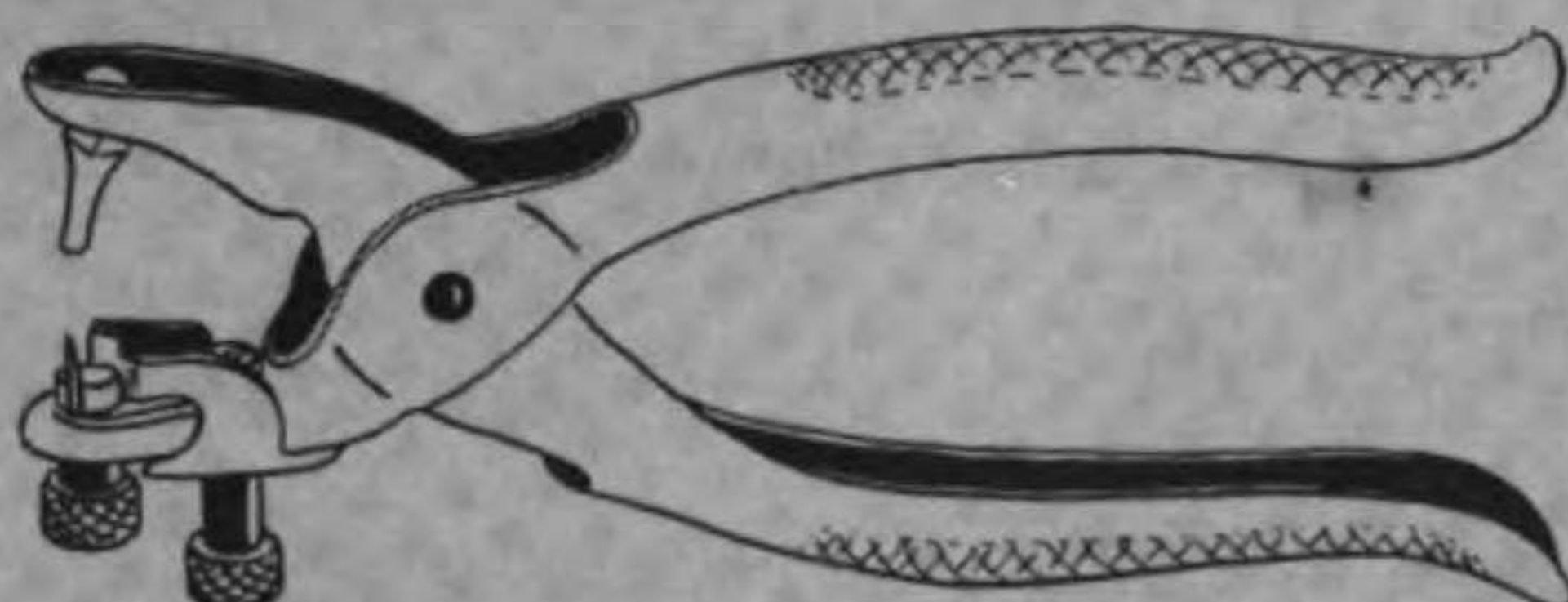
The tools in this unit are arranged alphabetically by the names most commonly applied to them.



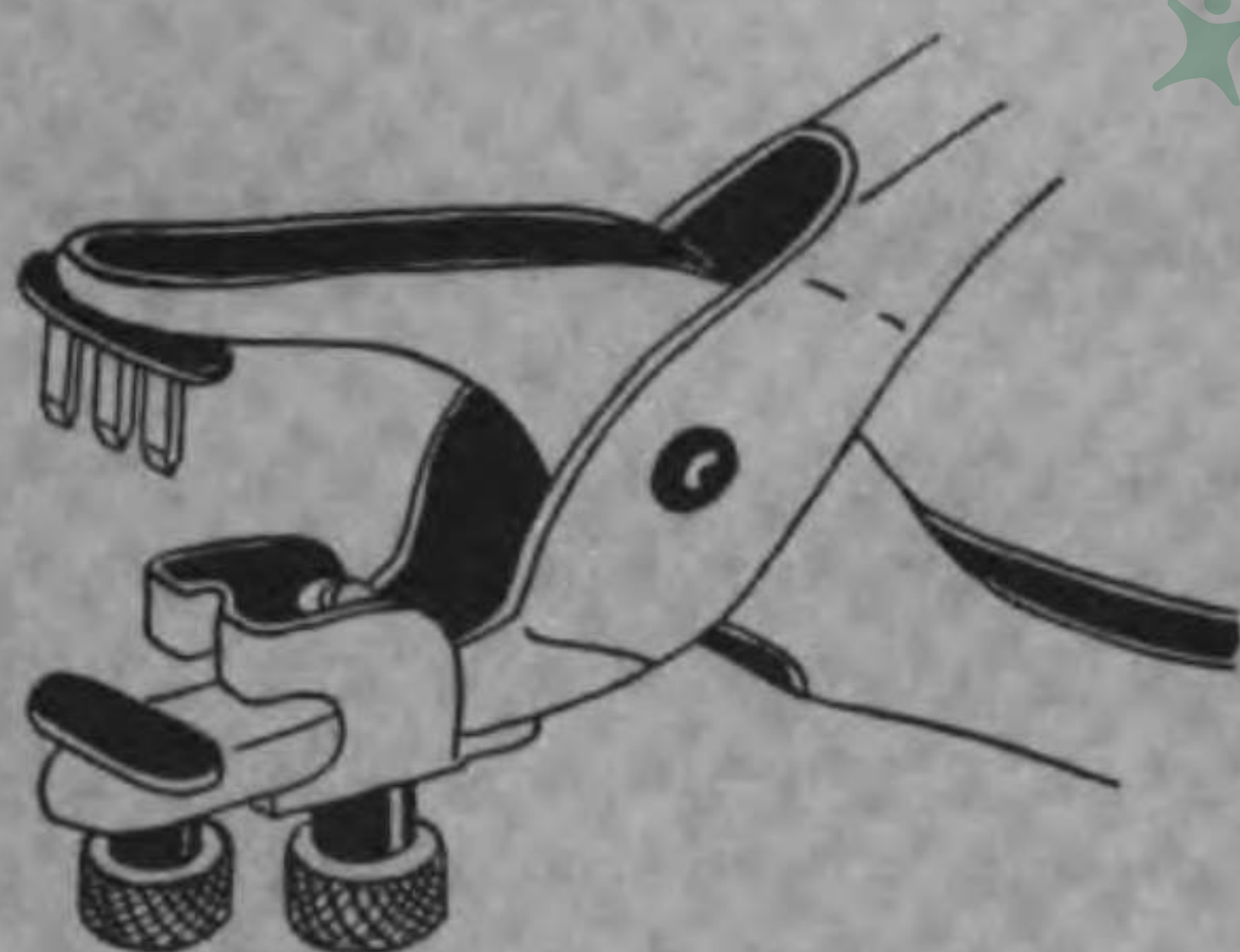
3. Bevel Point Knife



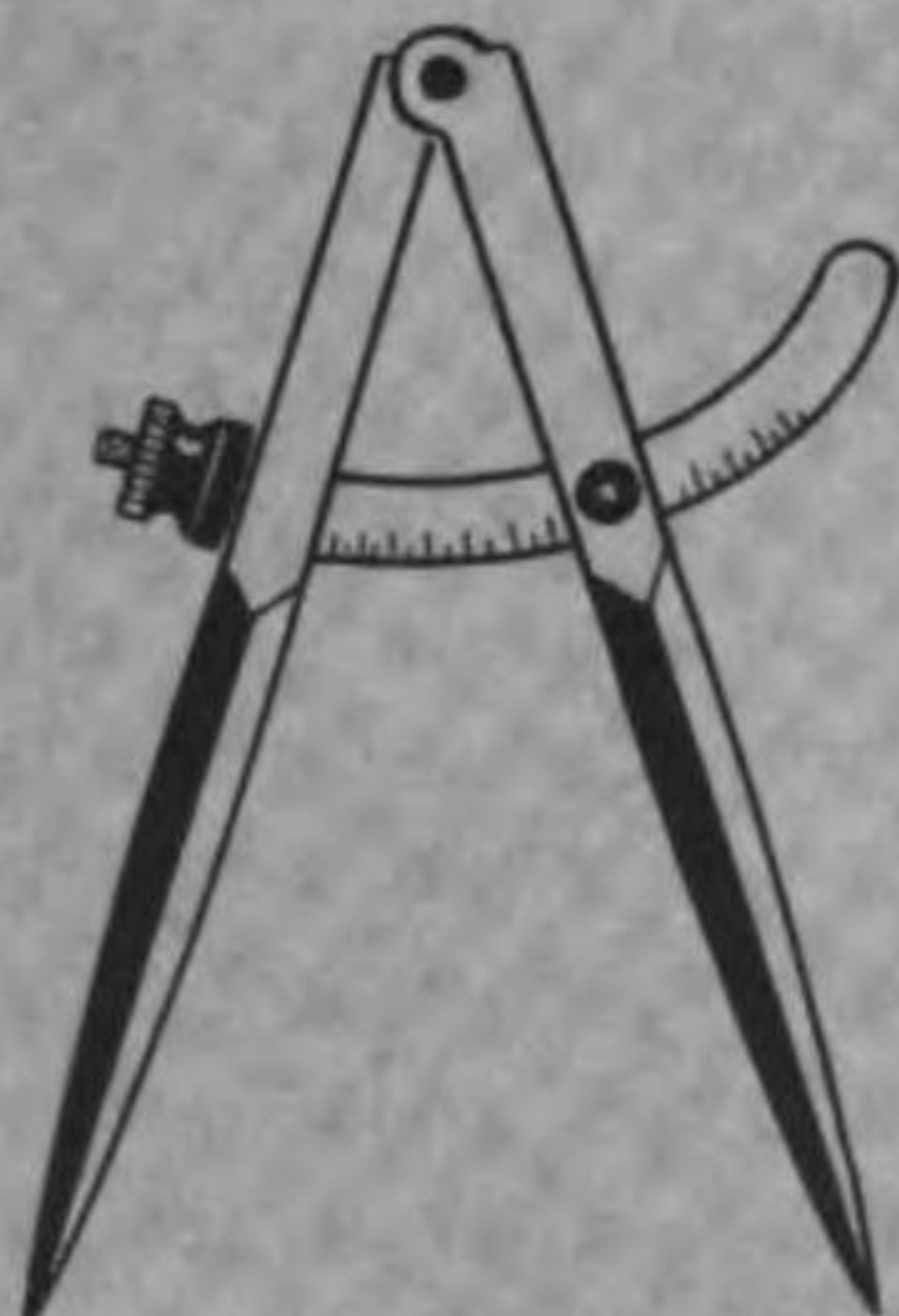
4. Cobbler's Hammer



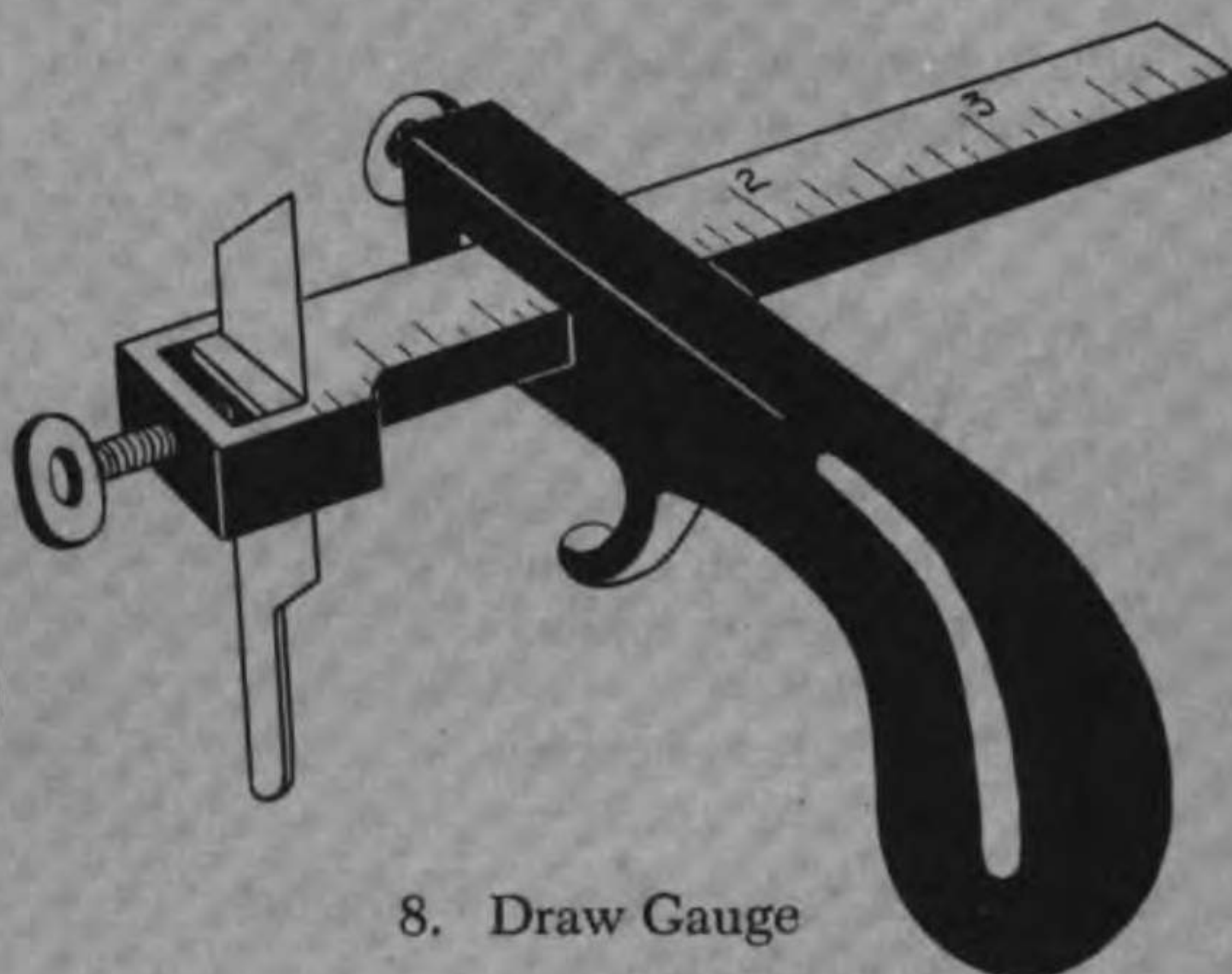
5. Combination Punch



6. Slitting Attachment on Combination Punch



7. Dividers



8. Draw Gauge



9. Edge Creaser



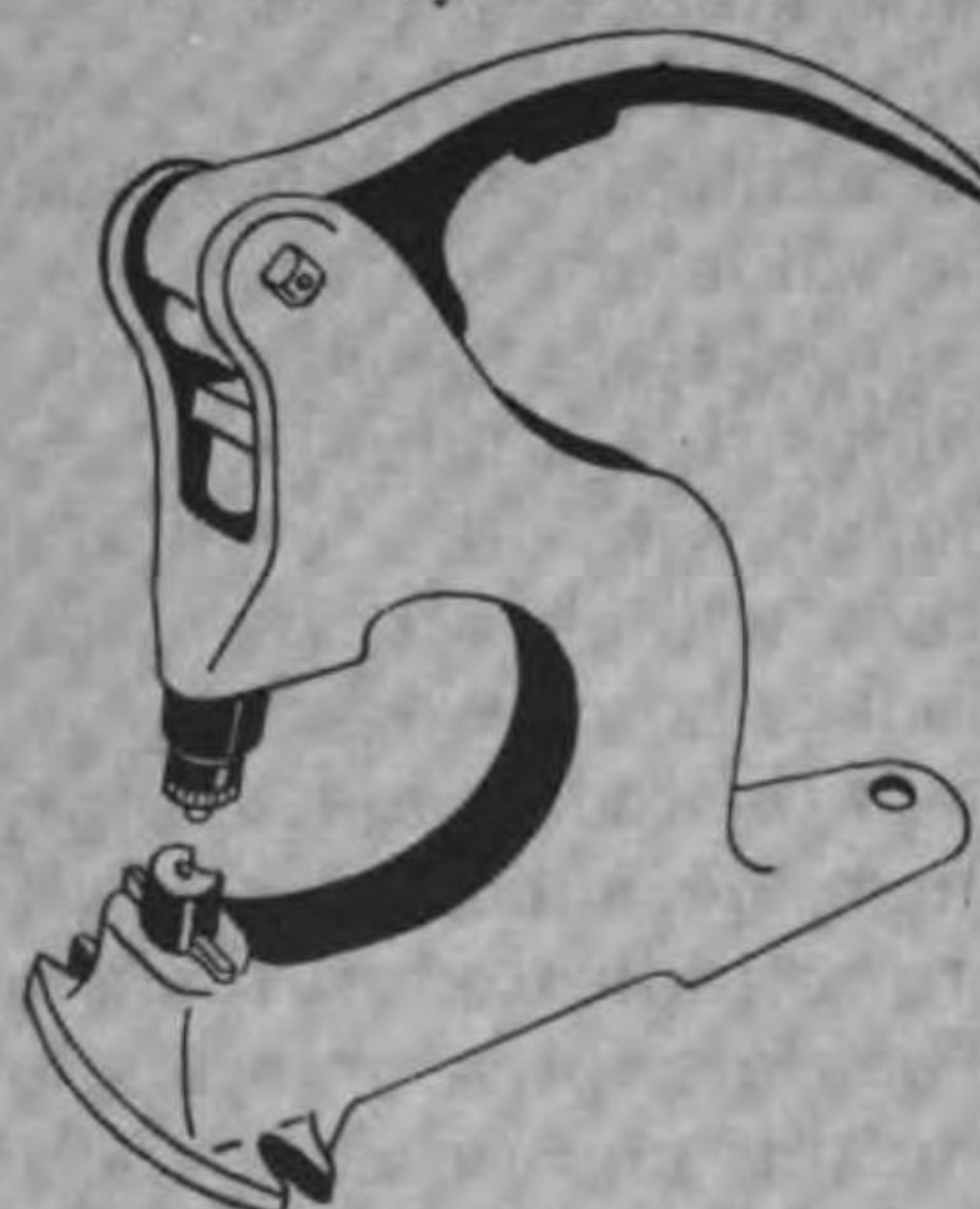
10. Edger



11. Embossing Wheel and Carriage



12. Eyelet Setter

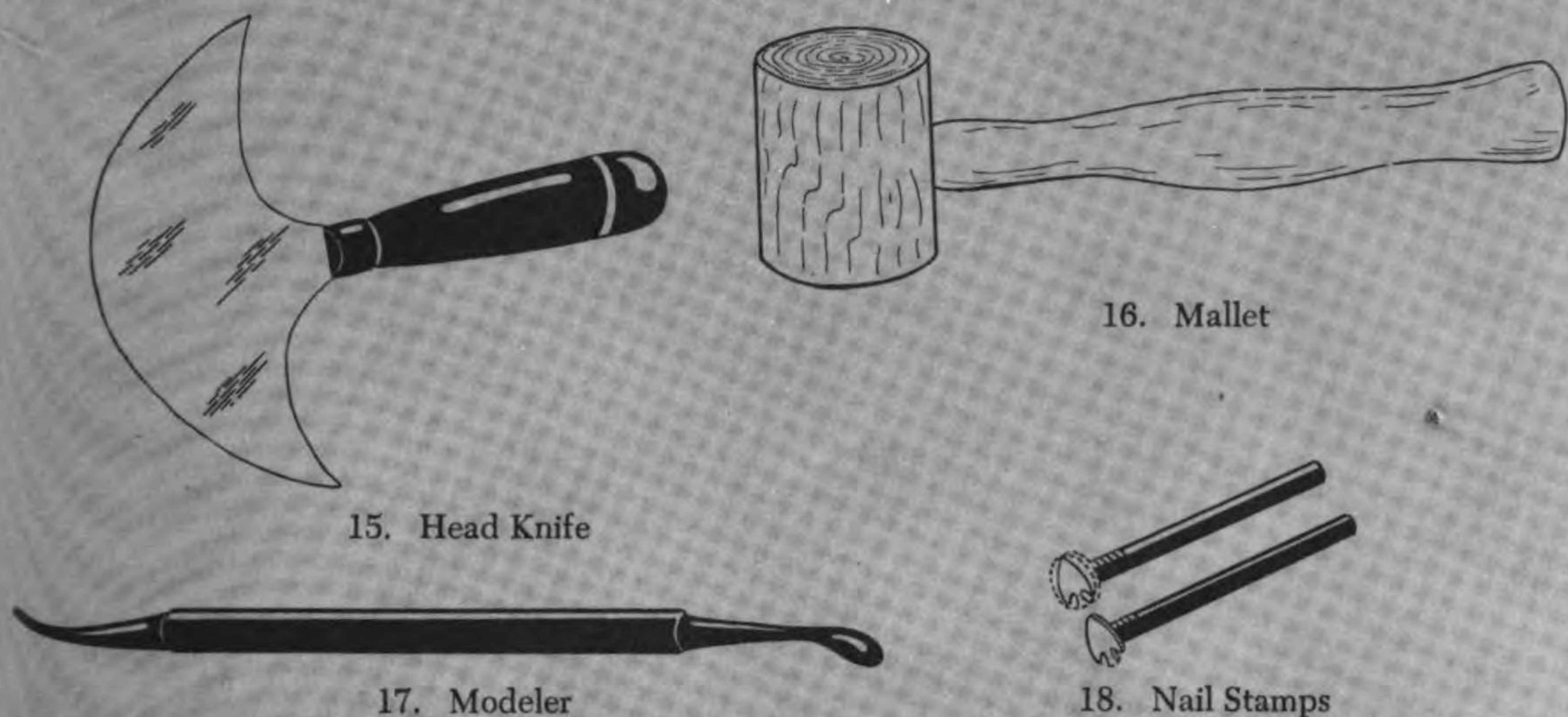


13. Hand Lever Eyelet Setter



14. Fid

iskysoft



Tools

Bevel point knife, Fig. 3, is used for cutting leather, skiving edges, and splicing lace. A kitchen paring knife, reground and sharpened to a similar shape, will do acceptable work.

Cobbler's hammer, Fig. 4, is serviceable for giving heavier blows than with a mallet. A claw or ball peen hammer will also do a satisfactory job.

Combination punch, Fig. 5, is an excellent tool for punching or slitting holes needed for edge lacing, belt buckles, snap attachments, and for setting eyelets. This multi-purpose tool comes complete with attachments for all these uses. It also has depth and spacer attachments. It is used most for edge lacing. Fig. 6 shows the slitting attachment in place.

Dividers, Fig. 7, are used for laying out circles and arcs, and for locating and laying out edge lacing holes and slits. Those used in wood and metal-working will suffice.

Draw gauge, Fig. 8, is used for cutting the heavier weight leather where parallel cuts are to be made. It is adjustable. The blade can be removed and sharpened in a manner similar to the bevel point knife. See Unit 29.

Edge creaser, Fig. 9, produces a creased finishing line near and parallel to the edges of belts, and the edges of other leather parts which are not laced. The No. 3 or No. 4 is most suitable.

Edger, Fig. 10, is used for rounding off edges of heavier weight leather. It is obtainable in several sizes, with No. 1 the most suitable for ordinary work.

Embossing wheel and carriage, Fig. 11, is for imprinting designs on borders. Interchangeable embossing wheels of various designs are available.

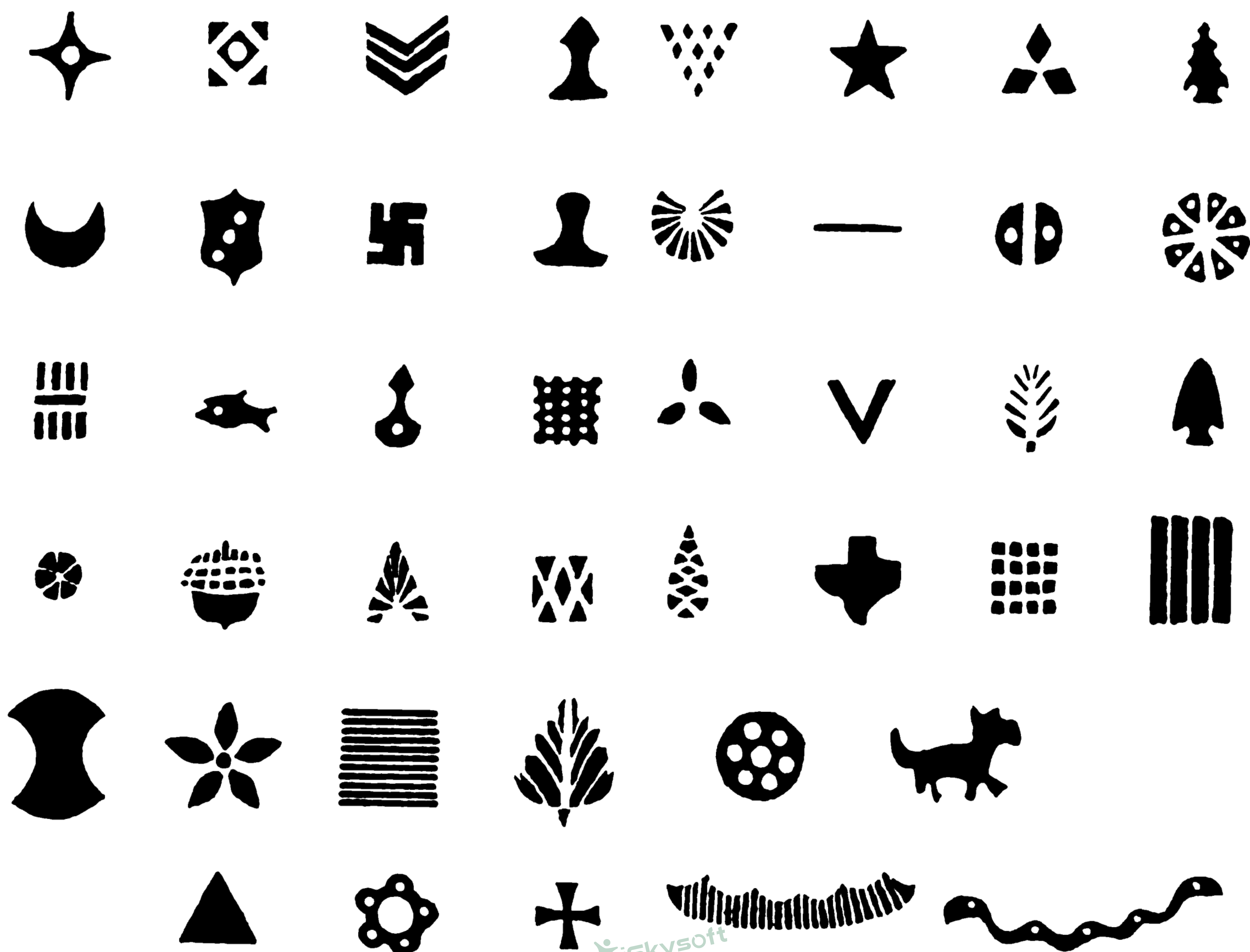
Eyelet setter, Fig. 12, is used to set eyelets for fastening key plates to leather linings, or for fastening leather parts by means of eyelets.

Another type eyelet setter, Fig. 13, may be used if available. This piece of equipment has interchangeable dies so it may be used for setting snap buttons or hooks in leather.

Eyelet setting attachments may also be used on the combination punch. See Fig. 5.

Fid, Fig. 14, may be used for enlarging holes, or to make holes for hand sewing. This tool is not a necessity but is convenient to have. An ice pick is an acceptable substitute.

Head knife, Fig. 15, is used for cutting leather, or for skiving.



19. Designs for Homemade Nail Stamps—
Full Size

Mallet, Fig. 16, is employed for striking saddle and nail stamps, eyelet setting, and for fastening snap buttons. A rawhide or fiber head is preferred to the wooden type; however, all will give satisfactory service.

Modeler, Fig. 17, has a pointed end which is used for tracing designs, doing outline tooling, or stippling. The larger or flattened spoon end is used for flat modeling.

Nail stamps, Fig. 18, are excellent stamping tools to produce various impressions in the background, or for making the designs themselves. These can be made from 16 and 20 penny nails. Figure 18 shows the manner in which a design can be originated from a nail head. Figure 19 shows prints from additional homemade designs fashioned on nail heads. The two right ones on the bottom row were formed

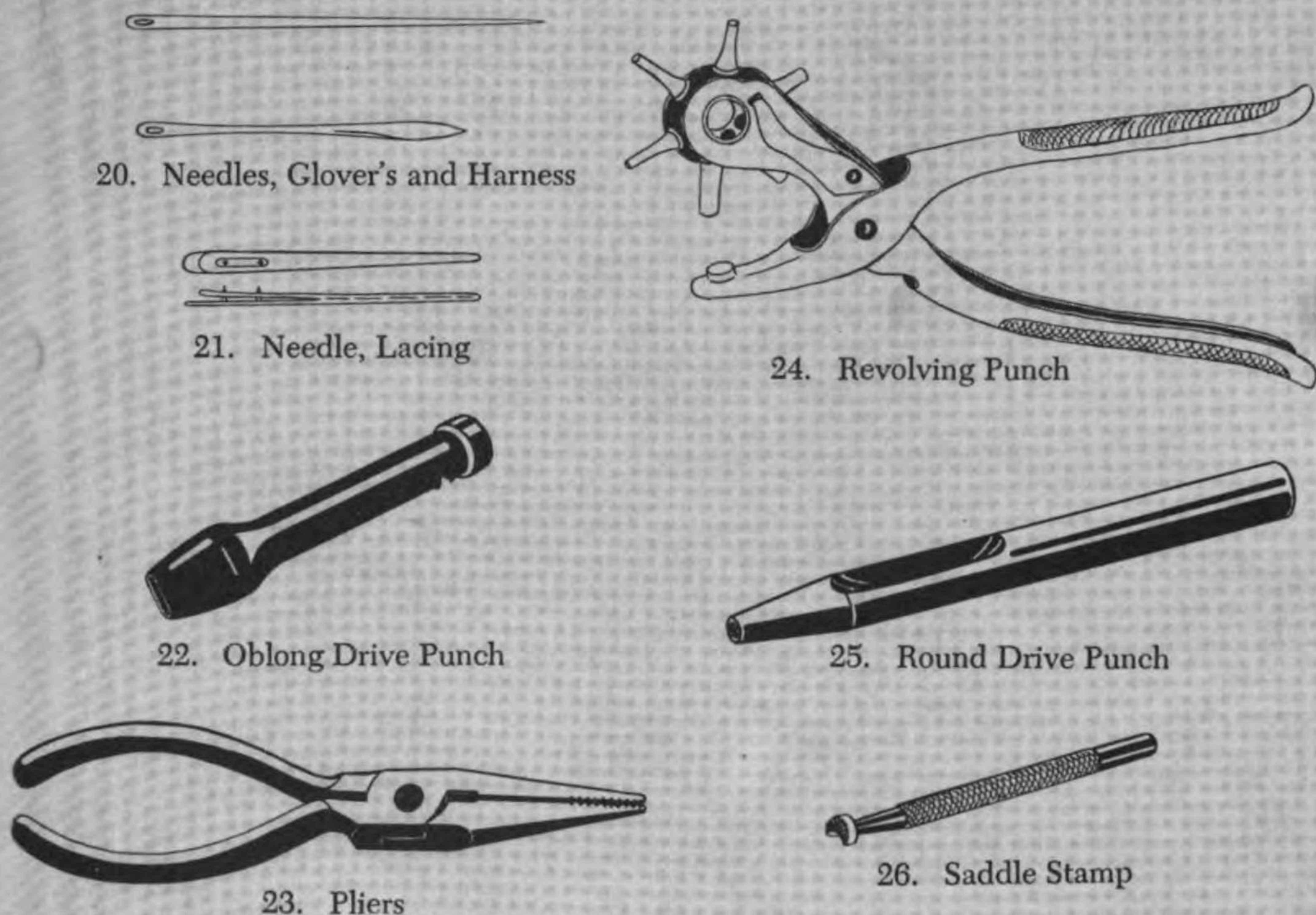
by cutting off the head, bending the nail, and filing the design on the bent part. Naturally the points of the nails must be cut off also.

Needles: glover's and harness, Fig. 20, have special uses in leatherwork. The glover's needle is used in sewing lightweight leather, is available in several sizes, and has a flat, spread point. The harness needle is used in hand sewing, is obtainable in several sizes, and has a blunt point.

Needle: lacing, Fig. 21, is a special-made needle used expressly in lacing through thong slits. It has two prongs to keep the lace from turning or slipping.

Oblong punch, Fig. 22, makes an oblong hole in leather for attaching buckles on belts and shoulder straps on bags.

Pliers, Fig. 23, of the long nose type



are ideal for arranging ends of lace between layers of leather when terminating the stitch.

Revolving punch, Fig. 24, is indispensable for punching round holes. The revolving head has six tubes of different sizes.

Round drive punch, Fig. 25, can be bought in several sizes, and is used for punching holes where the revolving punch cannot be used.

Saddle stamps, Figs. 26 and 28, are used to make designs on leather. There are many design impressions which can be made with the numerous tools available. Figure 27 indicates twelve of the more common tool impressions on leather, together with the number reference of "Craftool" stamps. Saddle stamping tools are generally used in conjunction with carved designs. The beginner does not need to have access to the number of stamps suggested here, but will find that there are small kits available which contain stamps to make the upper six impressions seen in Fig. 27.

Figure 28 shows a plastic holder which is in common use for stamping tools and swivel cutter.

Scratch awl, Fig. 29, is a satisfactory tool for laying out leather to be cut. It may also be used for enlarging holes, piercing leather, and for tightening lace. An ice pick makes a satisfactory substitute.

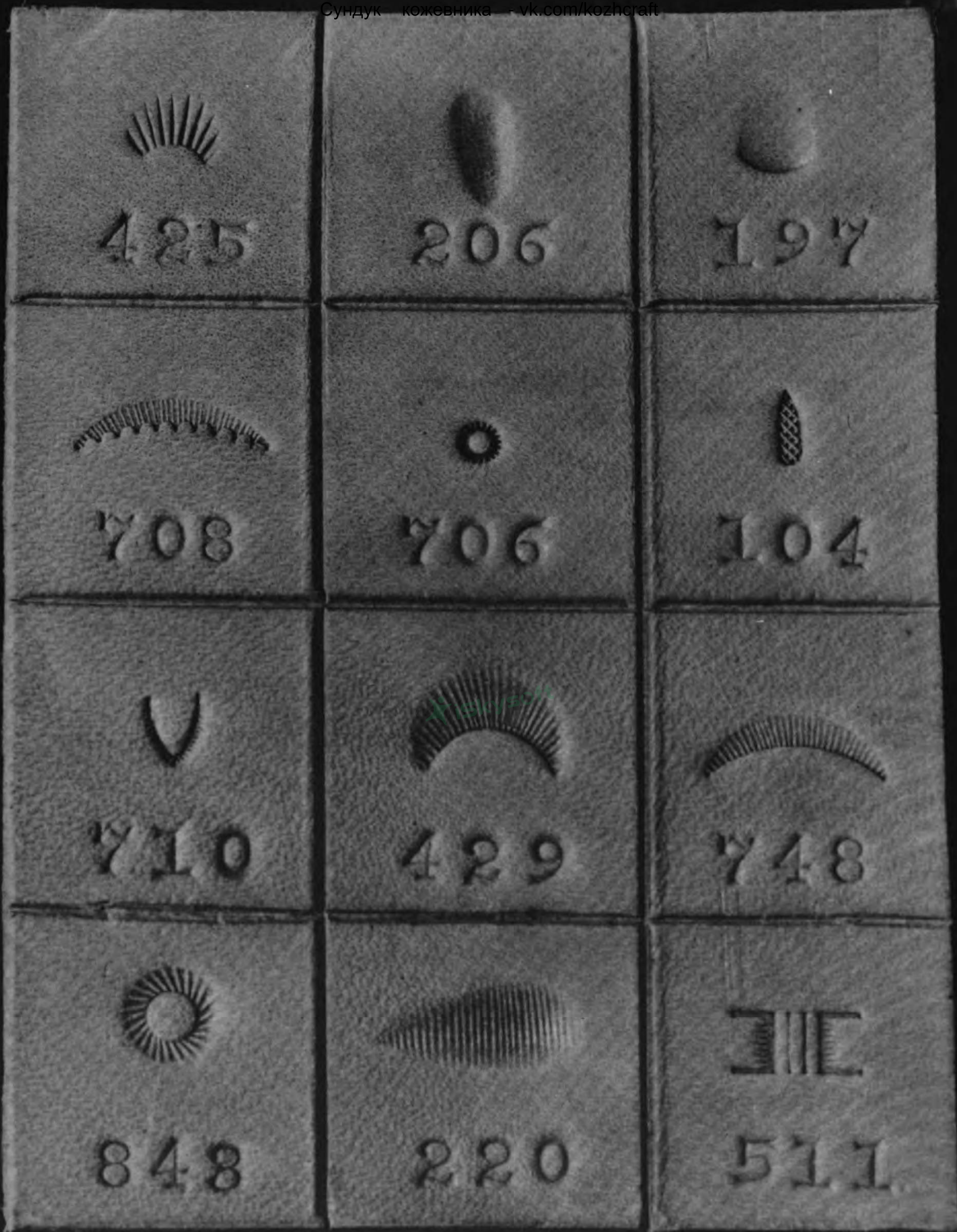
Shears, Fig. 30, has a specially designed, serrated blade which prevents leather from slipping when cutting it. An ordinary, heavy-duty household scissors will also cut lightweight leather.

Skife, Fig. 31, is a specially made, patented knife for skiving edges. It uses a Schick Injector razor blade.

Skiving knife, Fig. 32, has the specific purpose of thinning edges of leather to remove bulk preparatory to lacing.

Square, Fig. 33, is a common tool used for measuring, layout, and as a straightedge for cutting leather.

Space marker, Fig. 34, has several sizes of space marking wheels which



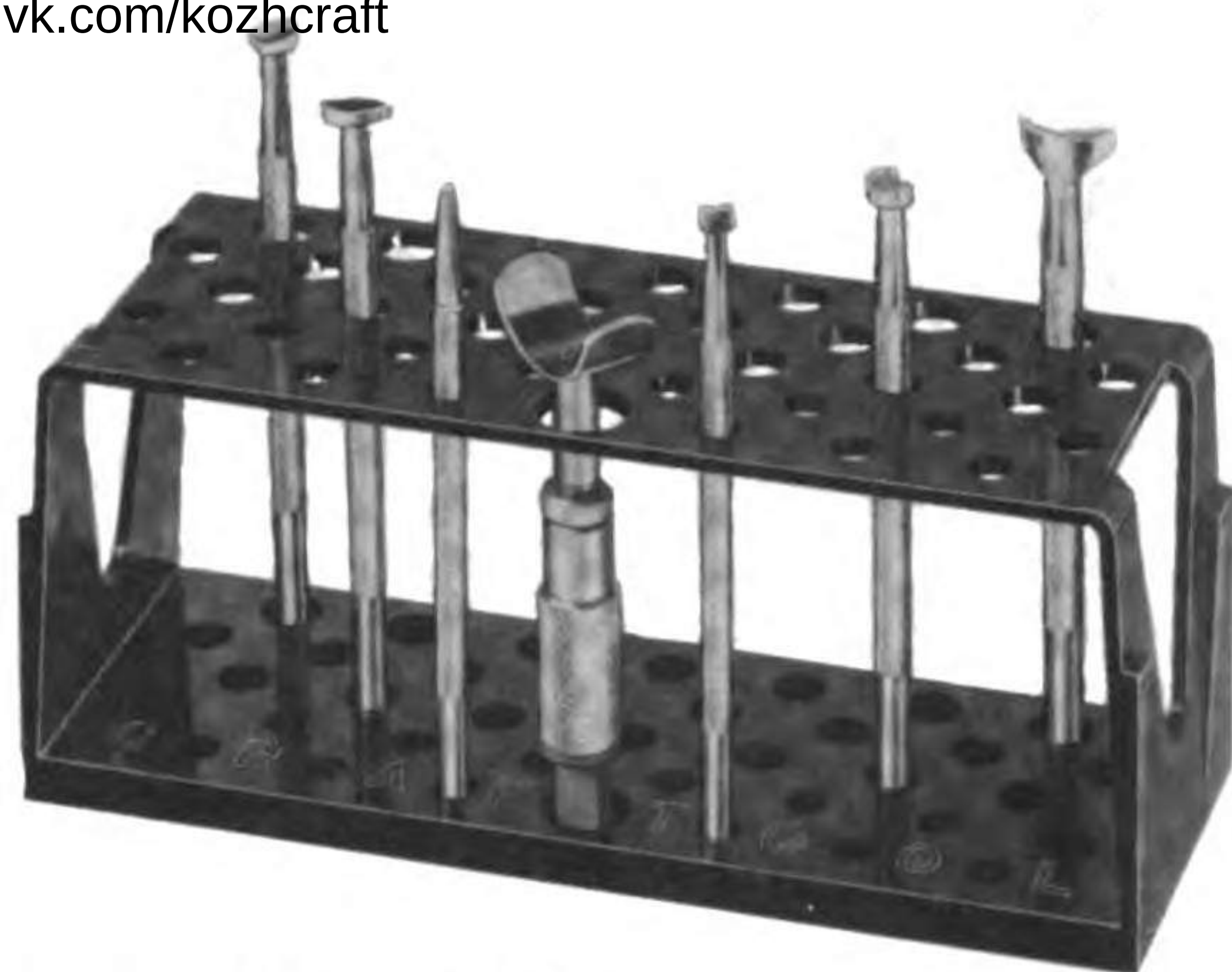
27. Impressions Made by Twelve Commonly-Used Saddle Stamps

are interchangeable for marking locations of holes for hand-stitching or for edge lace slits.

Snap button fastener, Fig. 35, is a specially built tool for fastening snap buttons. The one illustrated here is for fastening bird cage snaps; however, the tool used for setting Segma snap buttons is similar.

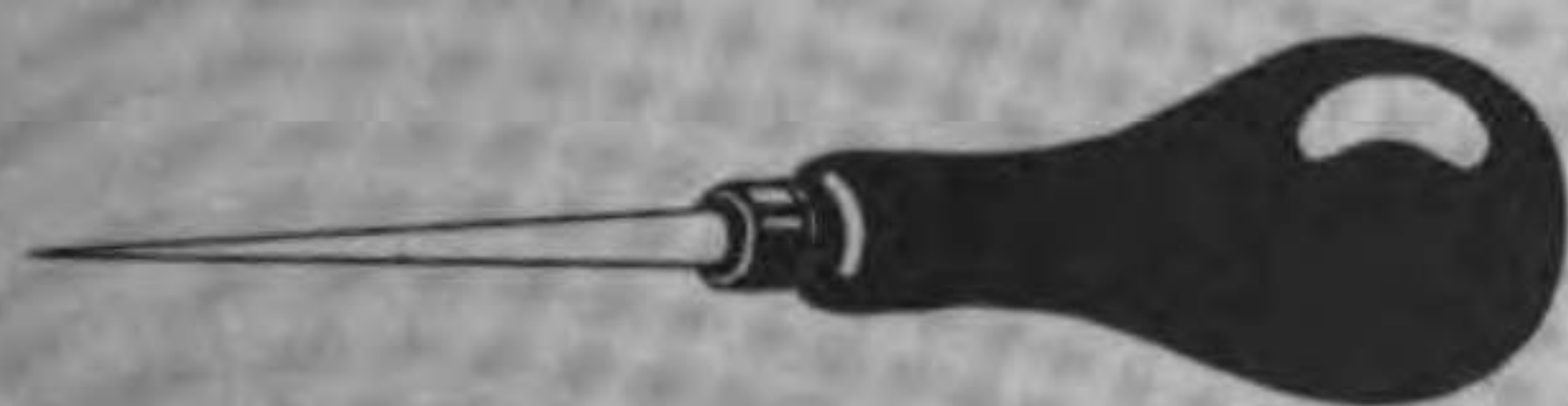
Stippler, Fig. 36, is a multi-pointed tool used to stipple designs and backgrounds.

Swivel knife, Fig. 37, cuts or sepa-



COURTESY CRAFTOOL COMPANY

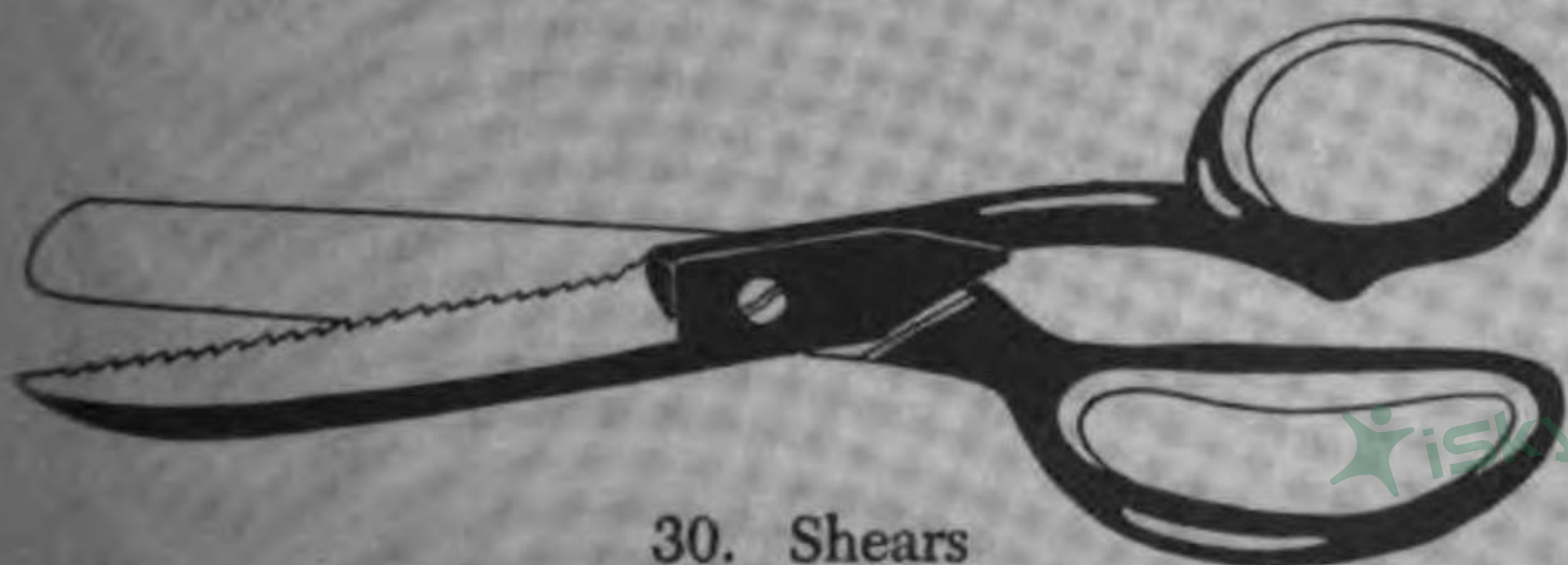
28. Saddle Stamp Plastic Tool Holder



29. Scratch Awl



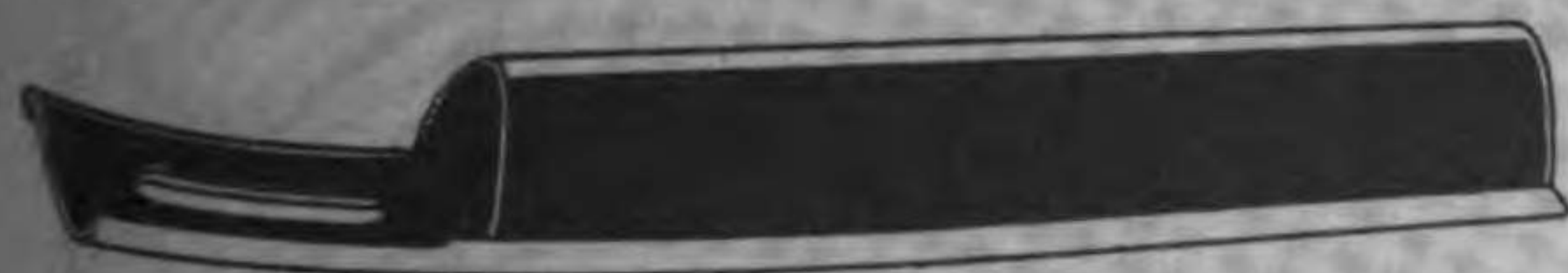
35. Snap Button Fastener



30. Shears



36. Stippler



31. Skife



37. Swivel Knife



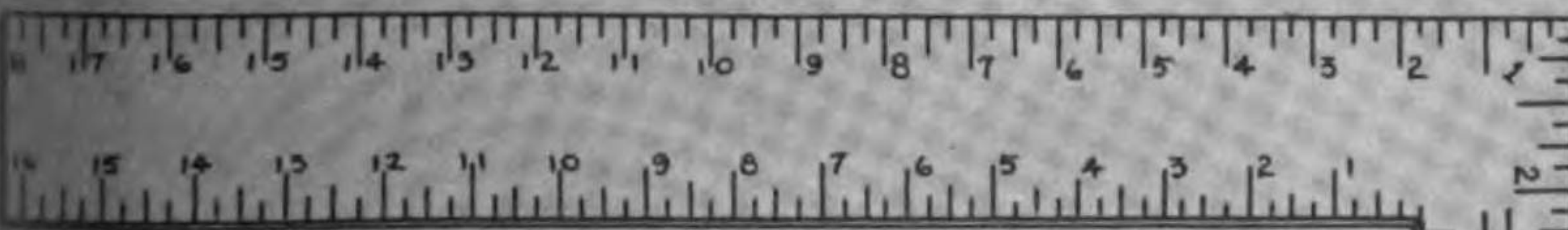
32. Skiving Knife



38. Thonging Chisel, One-Prong



39. Swivel Knife Pro-Gauge Attachment



33. Square



34. Space Marker



40. Thonging Chisel, Four-Prong

rates cowhide or strap leather for carving.

Thonging chisel, one-prong, Fig. 38, for making single slits for lacing, is especially useful in making slits around corners. It is available in $\frac{3}{32}$ and $\frac{1}{8}$ inch widths, depending upon the width of edge lace used.

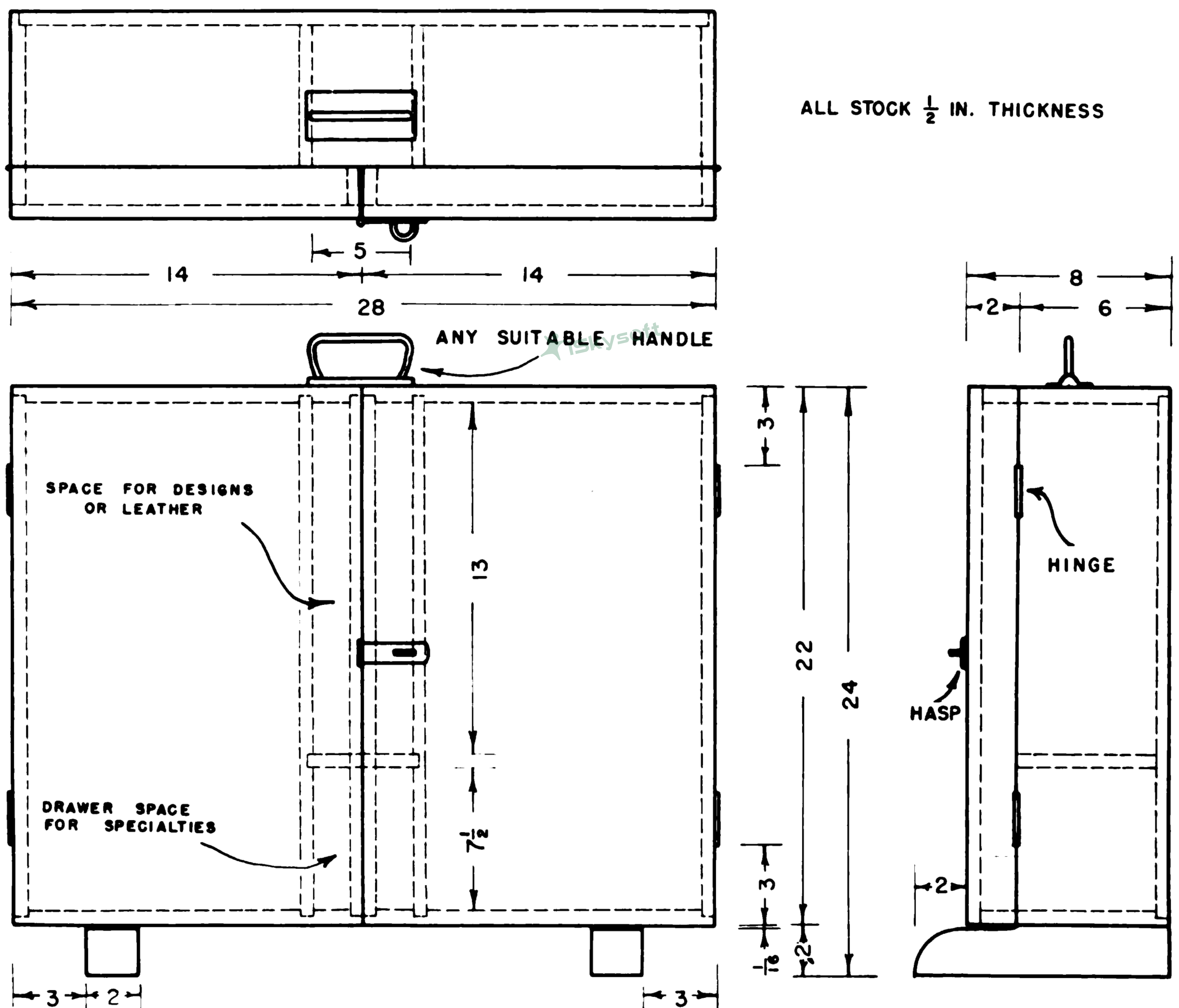
Swivel knife pro-gauge attachment, Fig. 39, is used in conjunction with the swivel knife in making parallel cuts to an edge. This is illustrated in Fig. 79.

Thonging chisel, four-prong, Fig. 40, makes equally spaced slits for edge lac-

ing. It can be obtained in sizes of $\frac{3}{32}$ or $\frac{1}{8}$ inch for either width lace.

Portable tool cabinet

This cabinet, Figs. 41, 42, and 43, is most useful. The working drawing in Fig. 41 provides the measurements for making such a compact, portable wooden storage cabinet for leather tools and accessories. The center compartment provides space for keeping design patterns rolled up, and has small drawers for storing snap buttons, eyelets, and other small supplies.



41. Working Drawing for a Portable Tool Cabinet



43. Portable Tool Cabinet Open, Showing One Method of Storing Tools

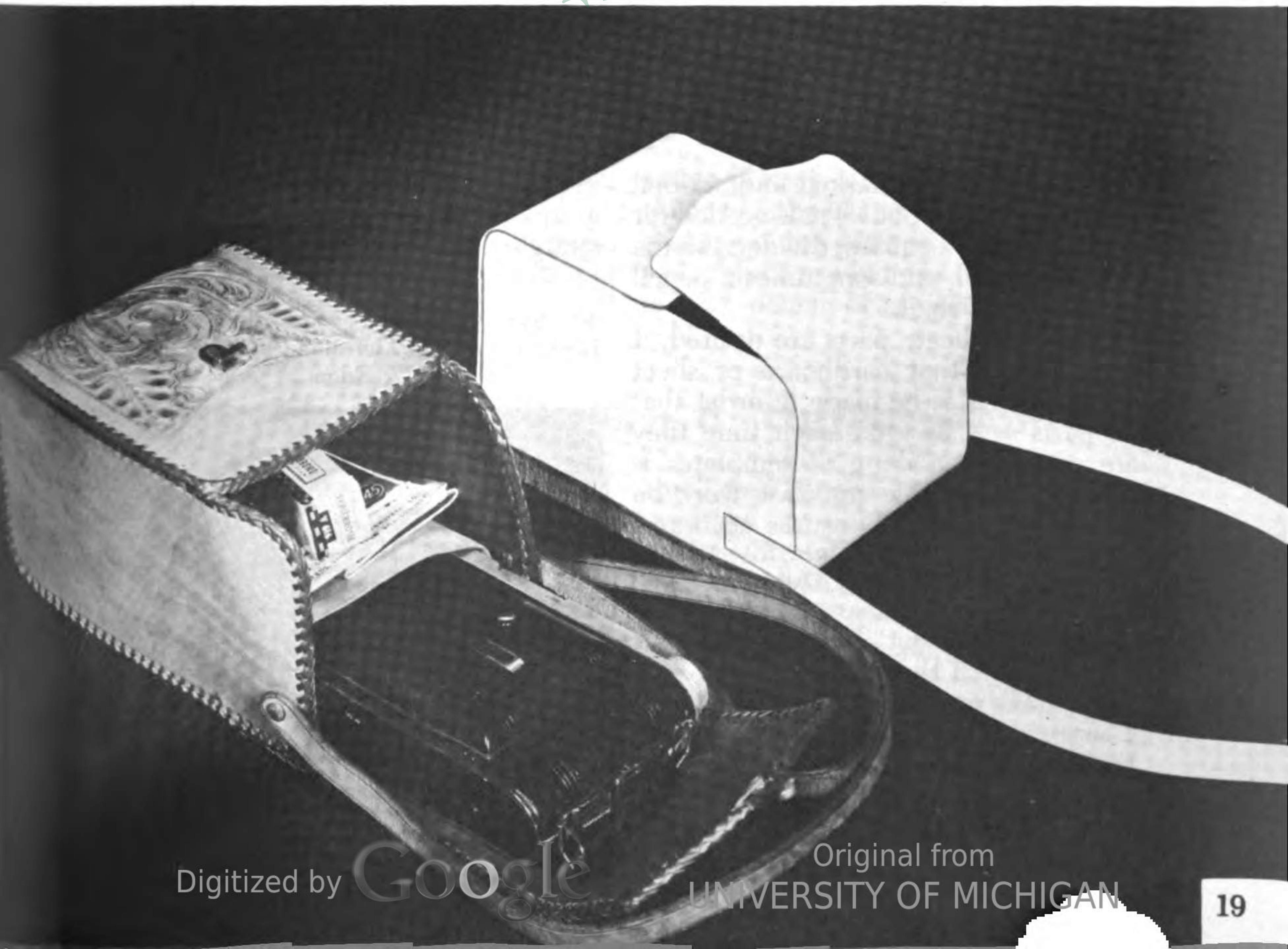
42. Portable Tool Cabinet Closed

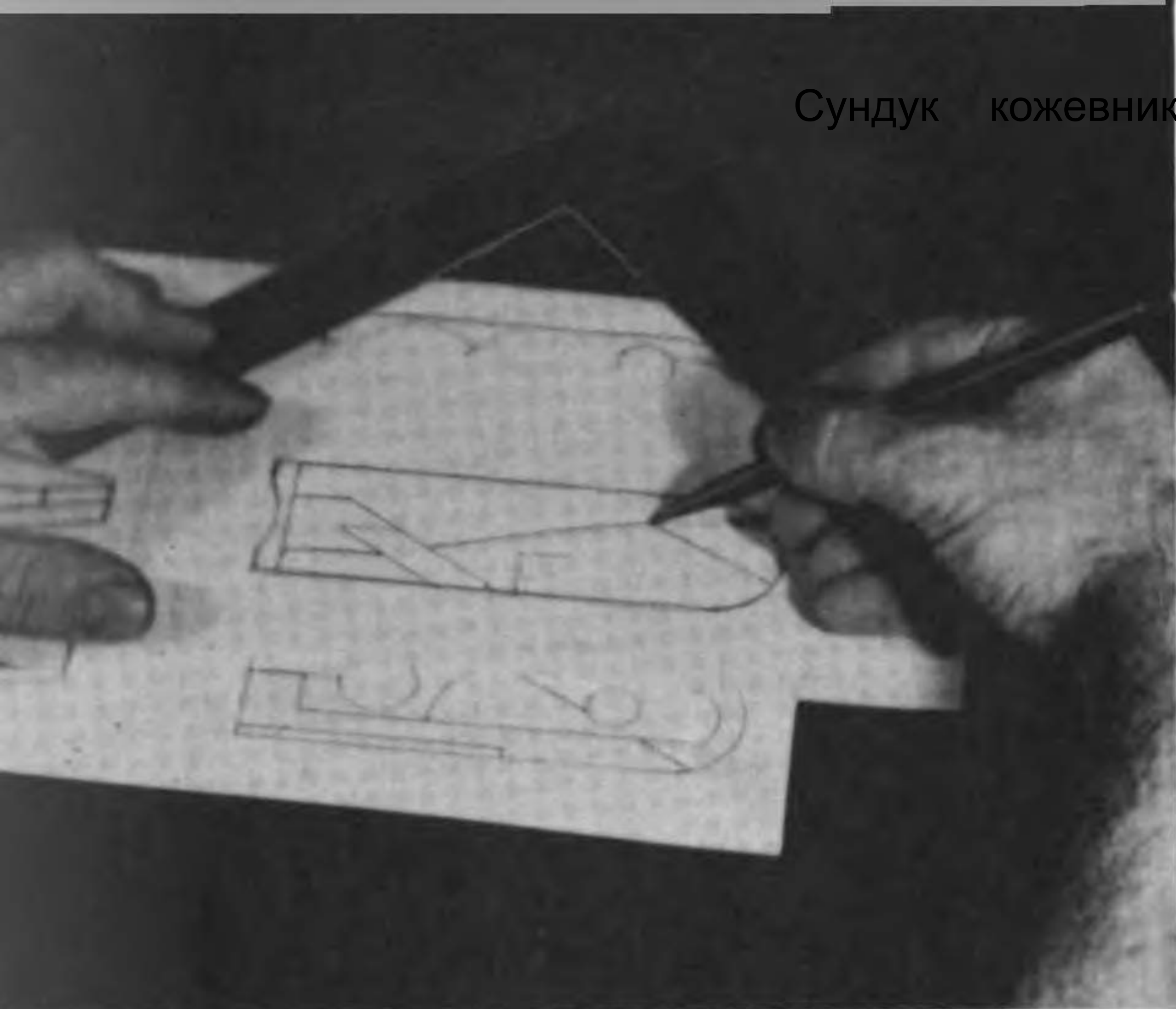
Unit 4 PLANNING THE PROJECT

Design can be learned in leathercraft just as easily as in any other creative activity. Leather articles are generally made to be serviceable as well as ornamental. It would be very difficult to

elaborate on all the fine principles of design in this short section; hence it seems more desirable to present ideas and suggestions throughout the entire book with the thought that adaptations

44. An Assembled Cardboard Template Alongside a Completed Camera Case





45. Tracing a Design on Paper from a Pattern

will, of necessity, be made to suit one's individual taste, as well as to fit some desired plan.

It is suggested that the beginner experiment with the thinner weight craft leathers before progressing to heavier strap or cowhide.

The large majority of craft workers and enthusiasts prefer to use or modify a well-planned design, and even the

measurements suggested, if they fit their needs.

Planning a project

1. Decide on an object for which a leather case or covering is to be made.

2. Cut out the full size pattern of all parts as you see they should be made.

3. Fasten all parts together in their respective positions, Fig. 44. The cardboard camera case, right side of Fig. 44, was temporarily tacked with sewing thread to determine if all parts would fit.

4. Disassemble the cardboard pattern in order that you may have a full sized template for cutting out the leather.

Tracing a design

1. Determine on the design which suits you and fits the project selected.

2. Trace the design onto the tracing paper as shown in Fig. 45. Make certain the tracing paper does not slip.

3. Check all lines to see that none have been omitted.

Unit 5 MARKING AND LAYING OUT

Leather can be marked and scribed very much like wood. Tools needed for laying out are a square, dividers, scribe or scratch awl, and sometimes a pencil or a piece of chalk.

When duplicate parts are desired, it is suggested that cardboard or sheet metal templates be made in order that all parts will be alike each time they are cut. The making of templates is especially desirable for class work on popular projects. It insures accuracy.

Marking and laying out

1. With a rule, measure the piece or pieces to be cut out and mark the exact dimensions on the leather.

2. Mark or draw straight lines with a scribe, scratch awl, pencil, or chalk, Fig. 46. A scratch awl, properly used,

makes a good marking instrument. Use a square or straightedge to obtain a straight line.

46. Straight Lines May Be Scribed on Leather with an Awl along a Straight Steel Edge

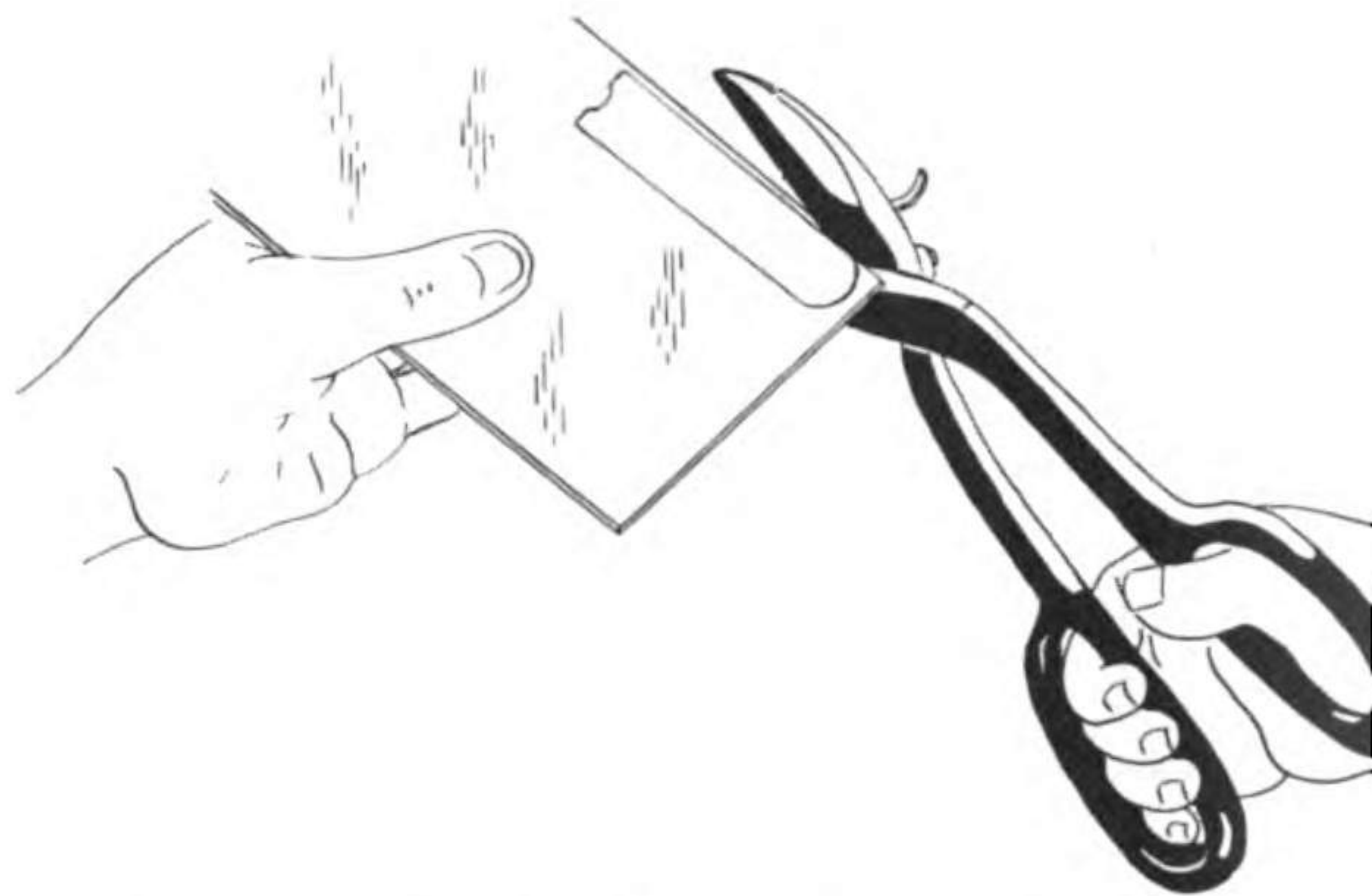




47. A Radius May Be Inscribed on Leather with a Dividers. Note the Center Is Placed on a Piece of Heavy Cardboard or Piece of Scrap Leather to Avoid Injury to the Leather

3. Mark all radii as shown in Fig. 47. Note that a piece of cardboard or scrap leather is used under the leg at the center, to prevent marring the surface of the leather.

4. Check all measurements to make certain they are in accordance with the desired sizes.



48. Cutting a Sheetmetal Template with a Tin Snips

Using templates for layout

1. Make templates from cardboard or 28 gauge galvanized sheet iron, which make permanent patterns. After cutting the metal with sheetmetal shears, Fig. 48, dress the edges lightly with a flat mill file and emery cloth. This will remove burrs or sharp edges which might injure the leather or the craftsman.

2. Arrange the templates on the leather so as to avoid waste and to obtain the desired uniformity of grain texture, Fig. 49. If several pieces or templates are necessary to make up a single project, you may wish to fasten them together as shown in Fig. 50 so that none can get lost.

3. Mark around the template with an awl, pencil, or a piece of chalk.

Unit 6 CUTTING LEATHER

The first prerequisite for cutting leather is to have sharp tools. If any of the cutting tools need sharpening, see Unit 29.

The lighter weight craft leathers of the 3 and 4 ounce thicknesses can be cut with a pair of heavy duty dress-maker shears, or a pair of leather shears having a serrated blade.

Leather used for carving, such as

the 7 to 10 ounce cowhide, is most accurately cut with a knife or draw gauge. Straight edges of less than 4 inches in width may be cut very true with the draw gauge. Make irregular cuts with a sharp pointed knife.

Cutting lightweight leather

1. Lay out and mark the pattern of the parts to be cut.



49. All Sheetmetal and Cardboard Templates Should Be Placed on Leather to Avoid Waste and to Obtain Maximum Leather Texture Effects

2. Cut the leather on the marked lines as shown in Figs. 51 and 52.

3. Straight cuts may also be made with a sharp pointed knife along the edge of a straightedge, Fig. 53. Place the leather on hard rubber or on a white pine or basswood board, in order

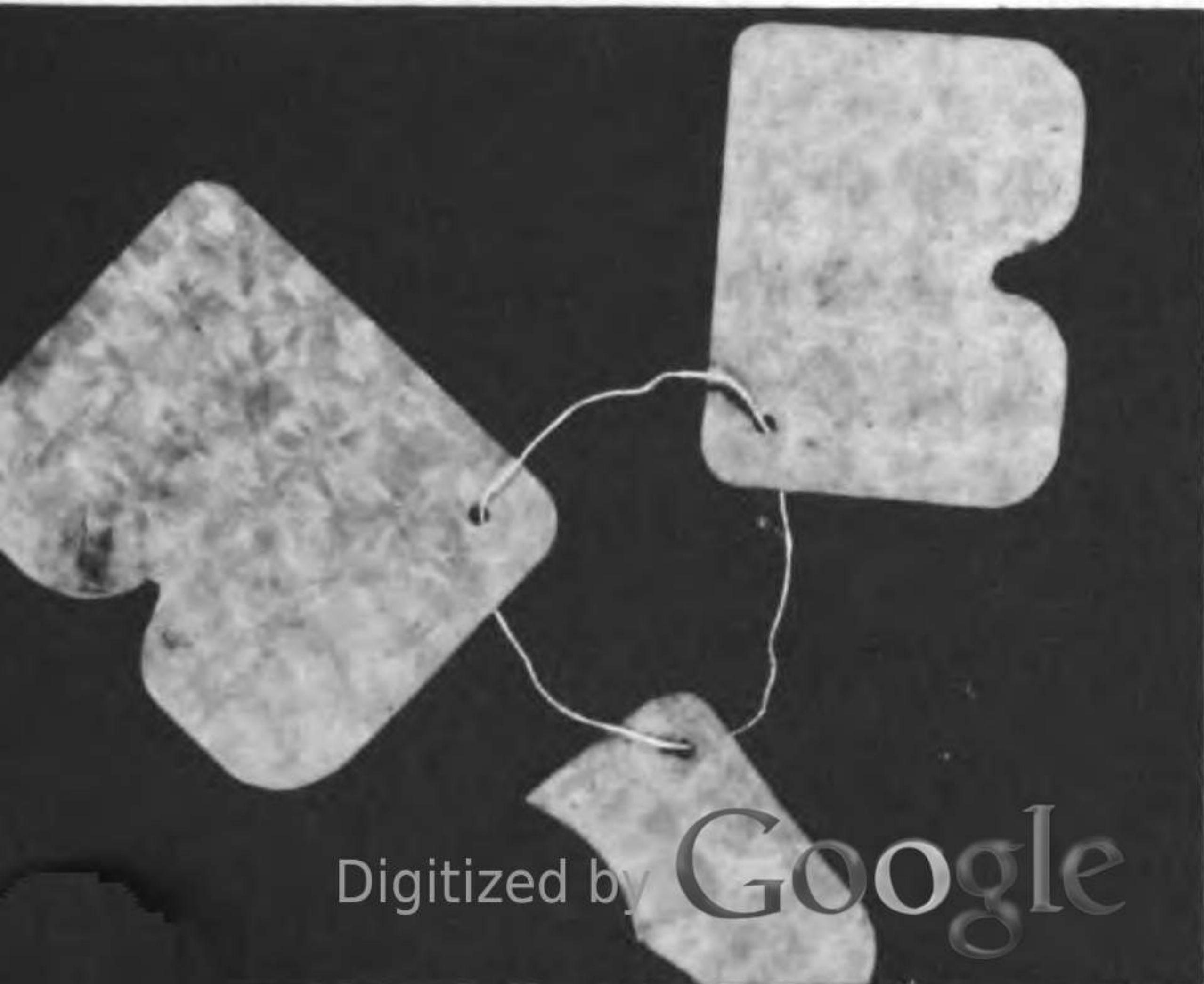
that the point of the knife will not be inclined to follow any grain in the wood.

4. Internal cuts shown in Fig. 54 may also be made with a sharp pointed knife along a straightedge.

5. Some leatherworkers prefer to cut lightweight leather on a regular paper cutter, as shown in Fig. 55. This insures 90 degree cuts from the ruled edge.

Cutting heavy leather

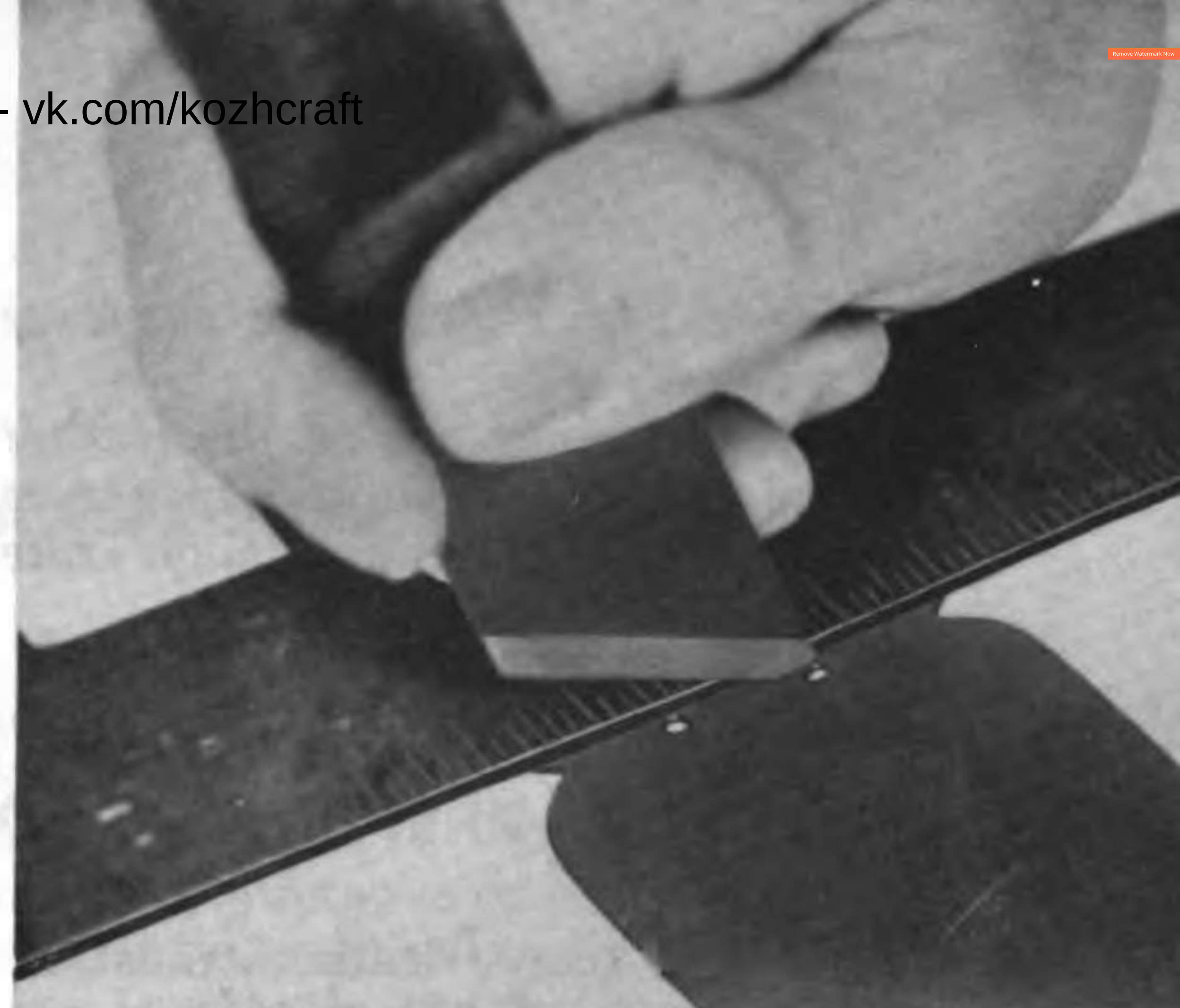
1. Set the gauge for the width of the leather piece to be cut. This measure-



50. Where Several Templates Are Necessary for a Single Project, They May Be Fastened Together to Keep the Parts from Getting Lost



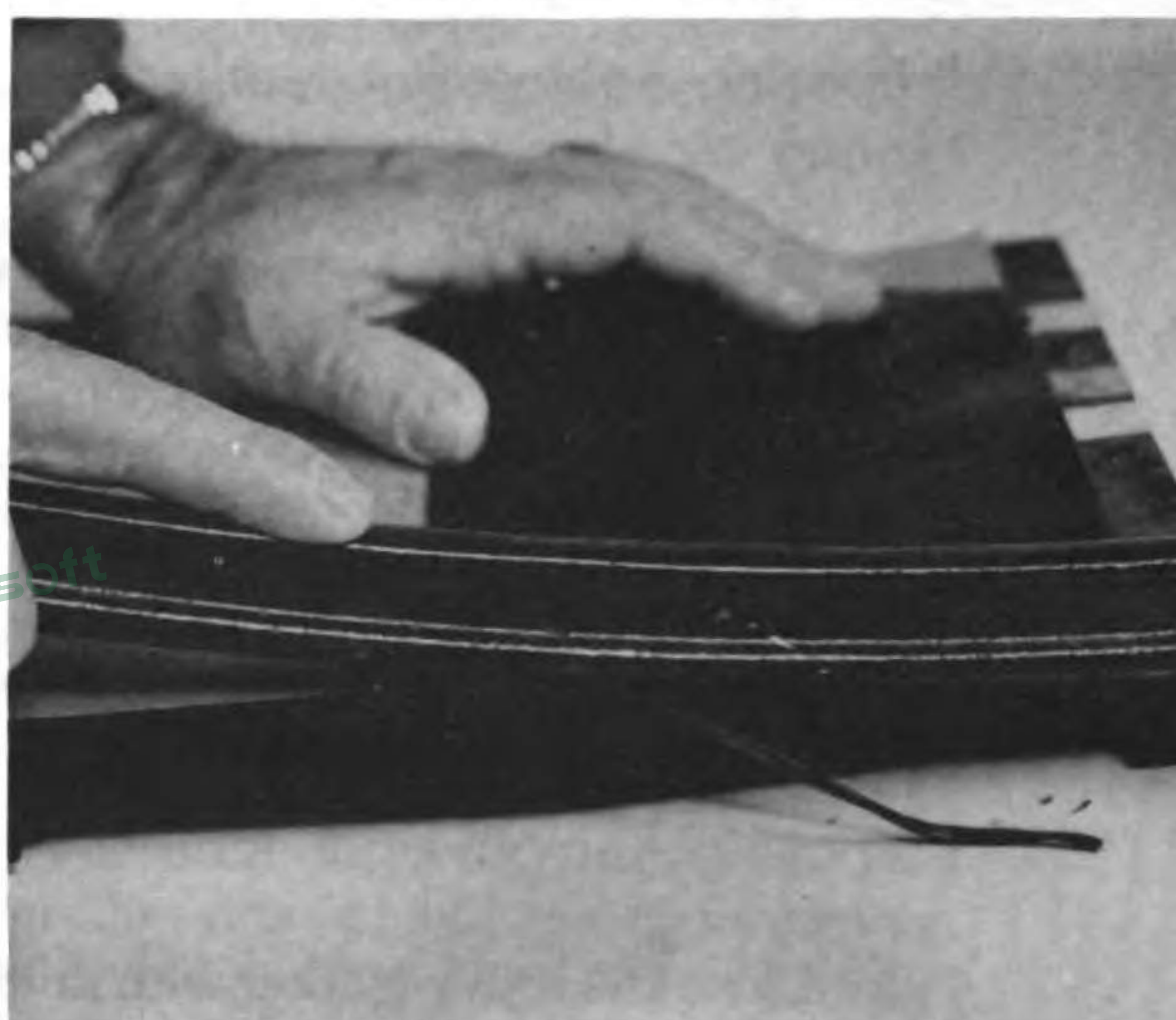
51. Cutting Light Weight Leather with a Serrated Edge Leather Scissors



54. Internal Straight Cuts May also Be Made with a Sharp Pointed Knife



52. Light Weight Leather May also Be Cut with a Regular Dressmaker's Scissors



55. Some Craftsmen Prefer to Cut Leather on a Paper Cutter

53. Cut Heavier Leather with a Sharp Pointed Knife along Steel Straight Edge



56. Straight Cuts on Heavy Leather Can Be Made Accurately with a Draw Gauge



ment should be checked for accuracy with a rule.

2. Make a short cut on the leather with a sharp pointed knife. This serves for the blade of the draw gauge knife

to start in.

3. Insert the cutting blade of the draw gauge into the slit just completed and pull the draw gauge toward you until the length has been cut, Fig. 56.

Unit 7 PREPARING FOR TOOLING AND CARVING

Light and heavy leathers must be properly prepared before tooling and carving can be done effectively. The procedures are different for each, and are described separately.

Preparing lightweight leather for tooling

1. With a damp sponge, moisten the back or reverse (flesh) side of the leather to be tooled, Fig. 57. The moistening should be light, not allowing the leather to become saturated, with only a minimum coming through on the face or tooling side.

2. The leather is now ready for tooling as outlined in Unit 9, or for light carving as described in Unit 12.

Preparing heavyweight leather for carving

1. Clean the heavy leather with mild soap and water to remove dirt or sand from the pores.

2. Submerge the leather piece to be carved in water and allow it to remain from $\frac{1}{2}$ to $1\frac{1}{2}$ minutes, Fig. 58. Some scrap pieces of the same weight leather should be tried out to learn the length of time needed for proper moistening.

Some craftsmen prefer to wrap the soaked leather in paper overnight in order to make it very soft and pliable. This is called "casing." A little experience will determine which is the best procedure, because it varies with grades and thicknesses of leathers.

3. Remove the leather from the water and place it with the rough or flesh side down on a hard surface, such as a piece of marble or hardwood.

4. Do not try to transfer the design until some of the natural color begins to return to the surface. Leather is difficult to work when it is soggy wet.

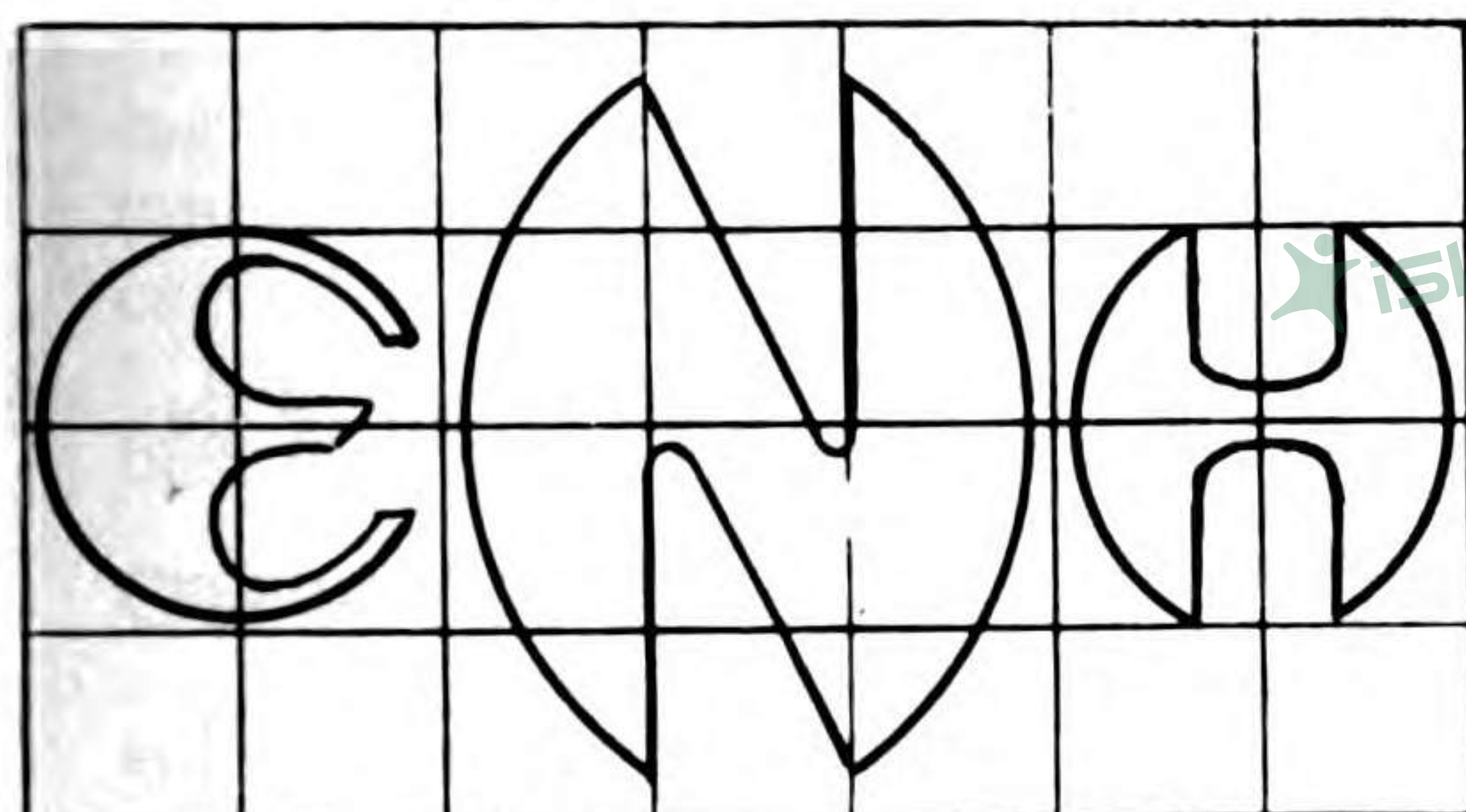
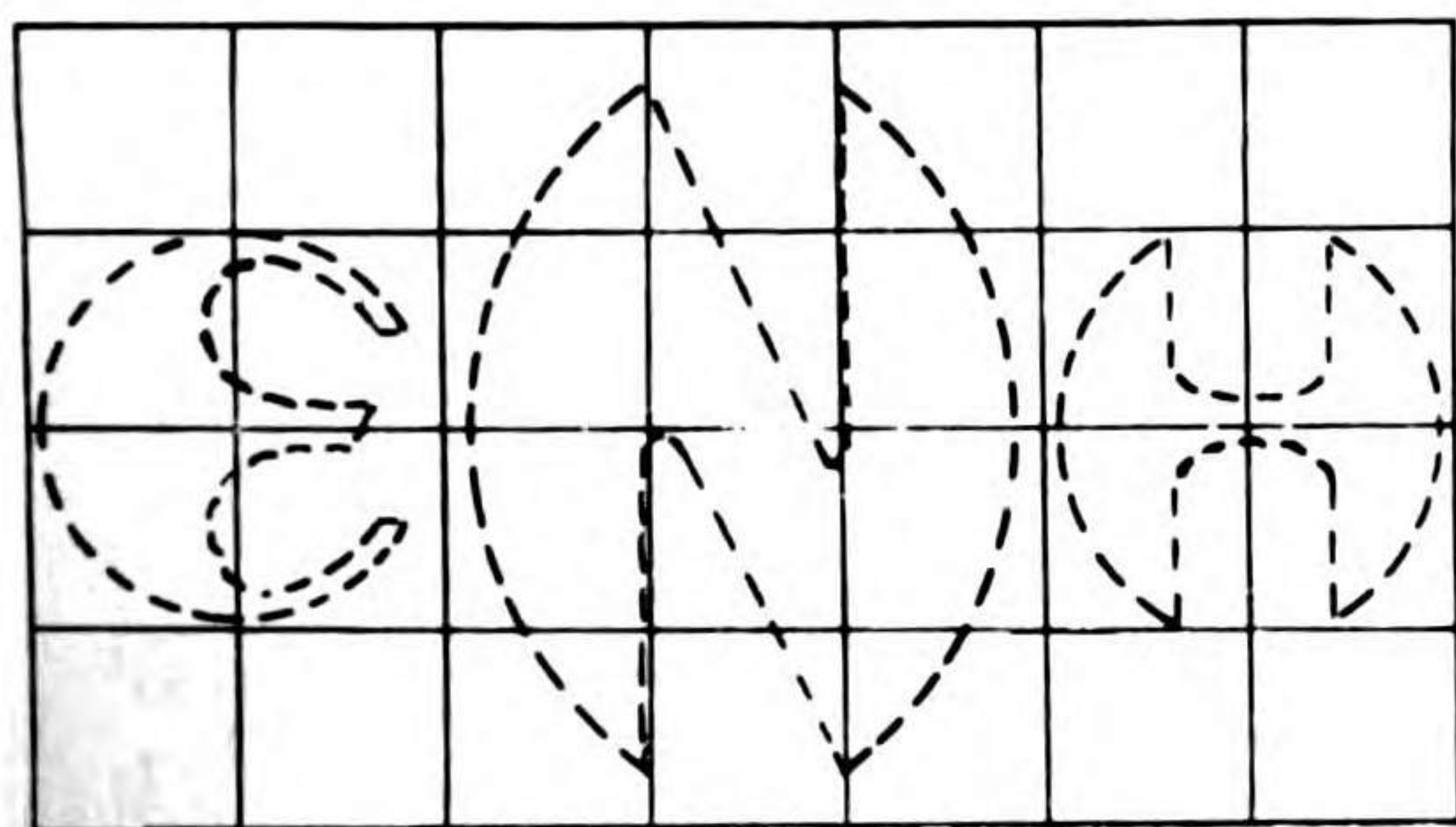
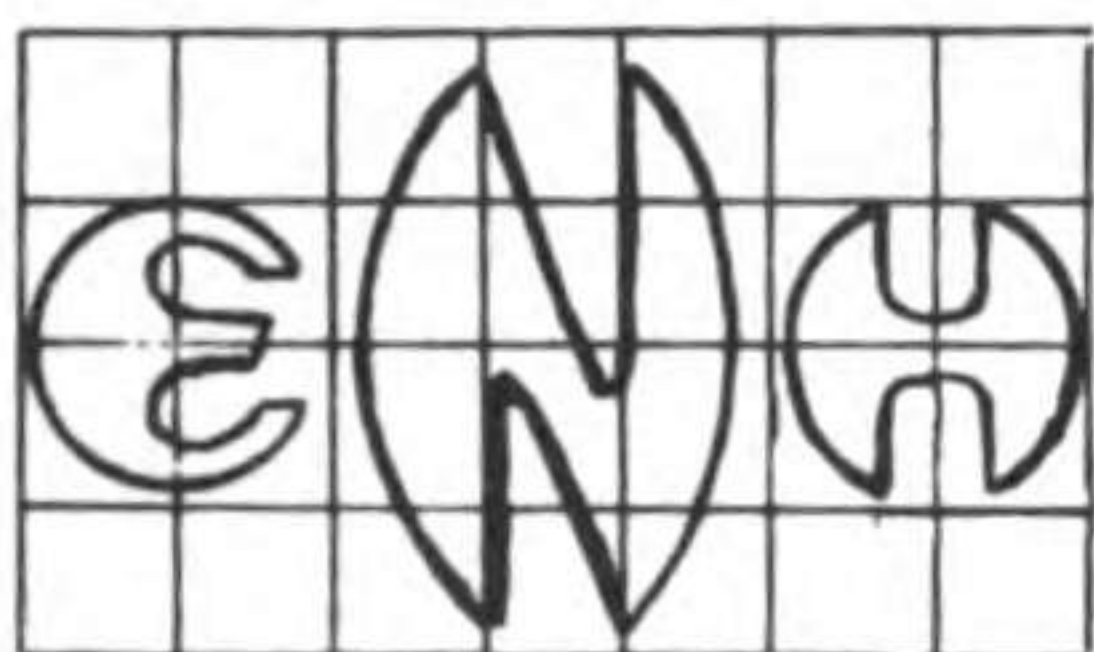


57. Moistening the Rough or Flesh Side of Light Weight Leather before Transferring the Design and Tooling

58. Submerging Heavy Leather in Water Prior to Transferring the Design and Carving



Unit 8 TRANSFERRING THE DESIGN



59. A Leather Design Can Be Enlarged by the Graph Method

60. Transferring a Design from a Paper Pattern to Moistened Leather. This Design Will Be Used Throughout the Carving Unit, Hence the Learner Can Follow the Step-by-Step Detail Easily. Note the Design Is Held in Place with Small Pieces of Masking Tape



Transferring the design to leather must be done accurately with the first impression, because, after the lines have been traced, they are almost impossible to remove or alter. Great care should be exercised to see that the design is suitable, fits the project, and is properly aligned, before making the imprint.

The experienced craftsman frequently omits the transferring of a pattern from a design template or stencil, but instead is able to design directly with the tracing tool or the swivel cutter. This, however, is not recommended for the beginner.

Commercial designs of almost any motif desired come prepared on paper. These are available in packets, and are distributed through leathercraft supply companies. A more recent innovation is the development and use of transfer stencils. They are a bit more expensive but are lasting and easy to use. They have the design raised in lines on the side which comes in contact with the leather, and make a design imprint when pressed or tapped on the prepared leather. Carbon paper should never be used in transferring designs.

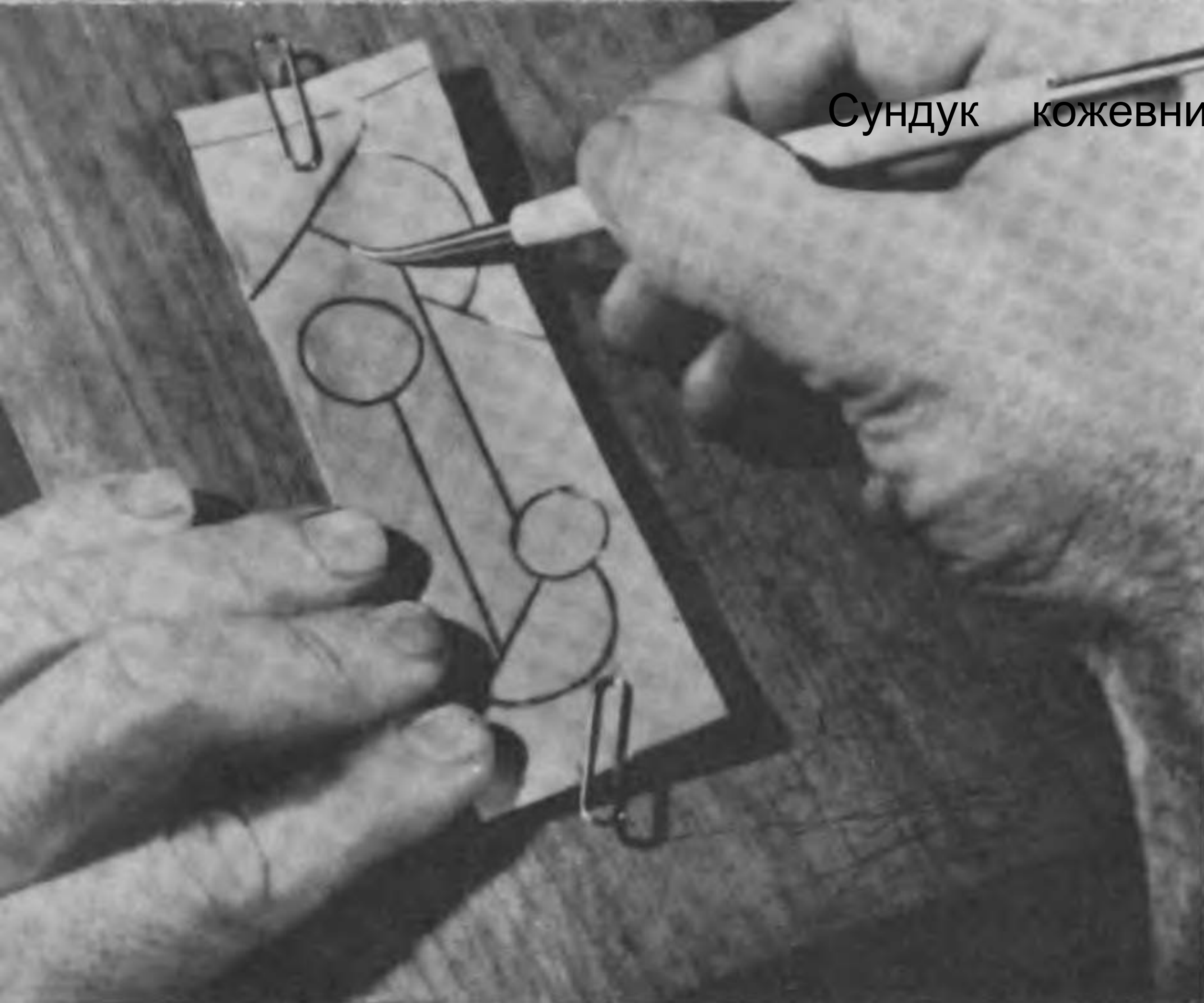
Tracing a design

1. Select the design most suitable for your particular project, and plan its location on the surface. In the event a full size design is not available, you might enlarge it to full size by the graph method as illustrated in Fig. 59.

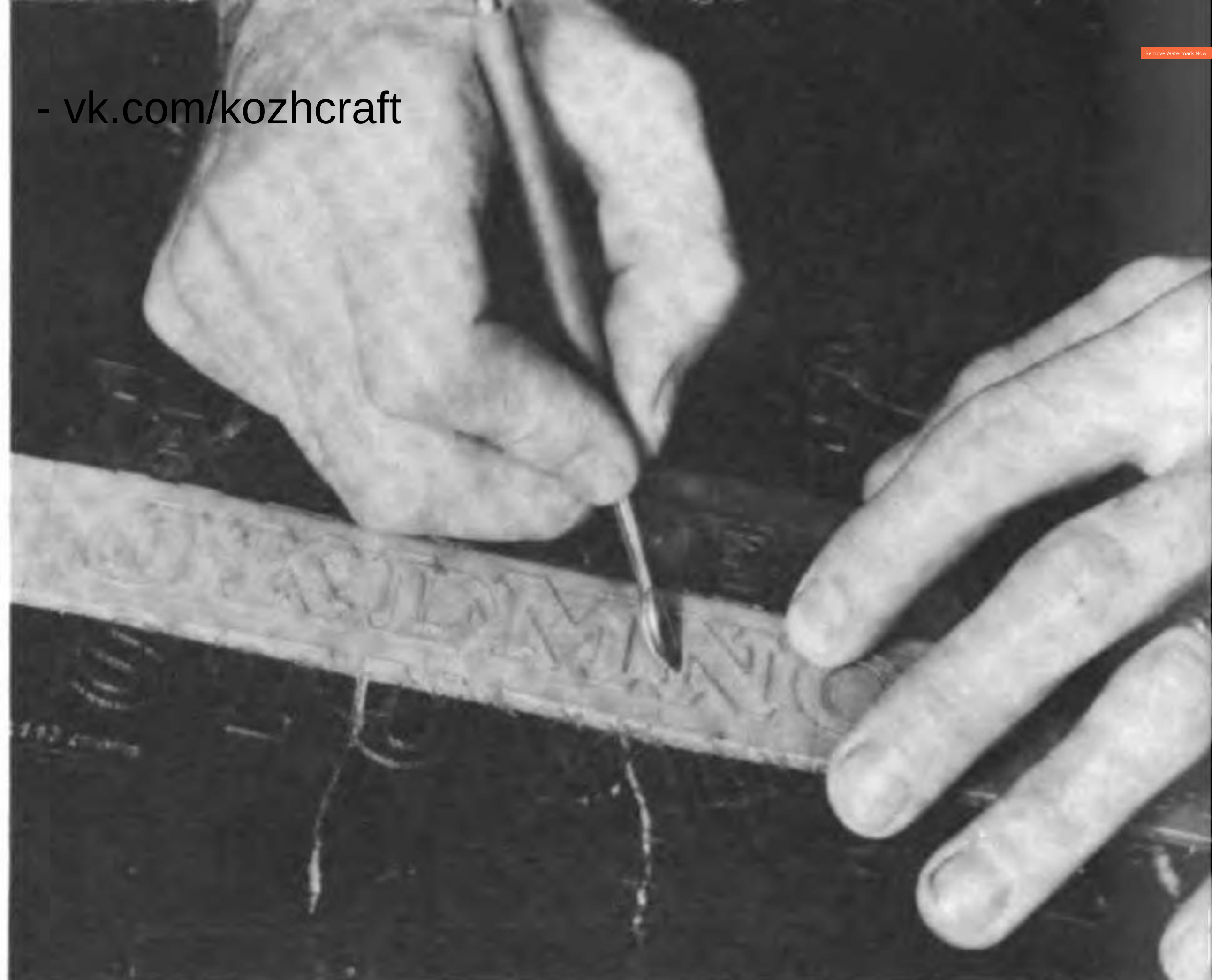
2. Prepare the leather as outlined in Unit 7.

3. Place the tracing on the top or grain side of the leather.

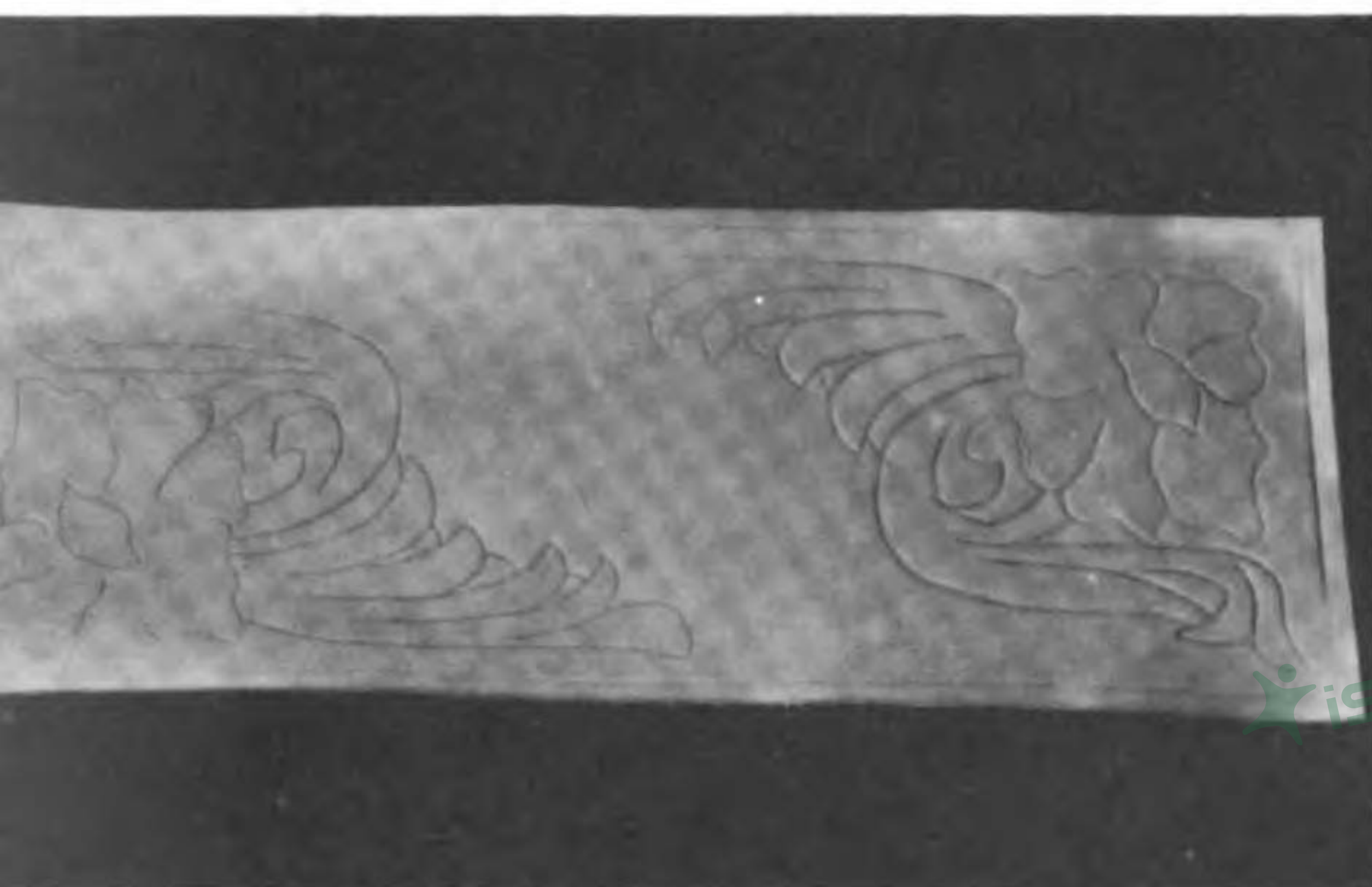
4. Fasten the design in place with masking tape, as shown in Fig. 60, or hold it to the leather with paper clips, Fig. 61. The leather should be on a



61. A Design Sheet May Be Held in Place with Paper Clips while Transferring the Design to Leather



63. Transferring a Letter on to a Belt Strap with the Use of the Plastic Stencil



62. Imprint Made from Transferring the Design on to the Leather. Note the moist effect of the Leather.

hard surface such as a close grained piece of hardwood, or a slab of marble.

5. Trace the design on to the leather with a tracer modeling tool, Figs. 60 and 61. Make a firm impression the first time so that an over-marking will not be necessary. The tracing of straight lines can be achieved best by the use of a modeling tool against a wood or steel straightedge.

6. After completing all tracing, remove the paper design sheet and check to compare the imprint on the leather with the design lines, Fig. 62.

7. Sometimes it is necessary to press the pattern lines deeper into the leather after the paper design sheet has been removed. Do this only if the imprint is not definite.

Transferring designs from templates and stencils

1. Select the suitable design or letter stencil.

2. Prepare the leather for transferring the design. Unit 7.

3. Place the design in its proper location on the leather. Make certain that the raised outline of the pattern on the plastic stencil is in contact with the leather, Fig. 63.

4. Press the letter or design firmly with the spoon end of the tracer modeling tool, Fig. 63, or tap the stencil lightly to produce a definite impression in the leather surface.

5. Remove the stencil and check the imprint to see that all lines are distinct.

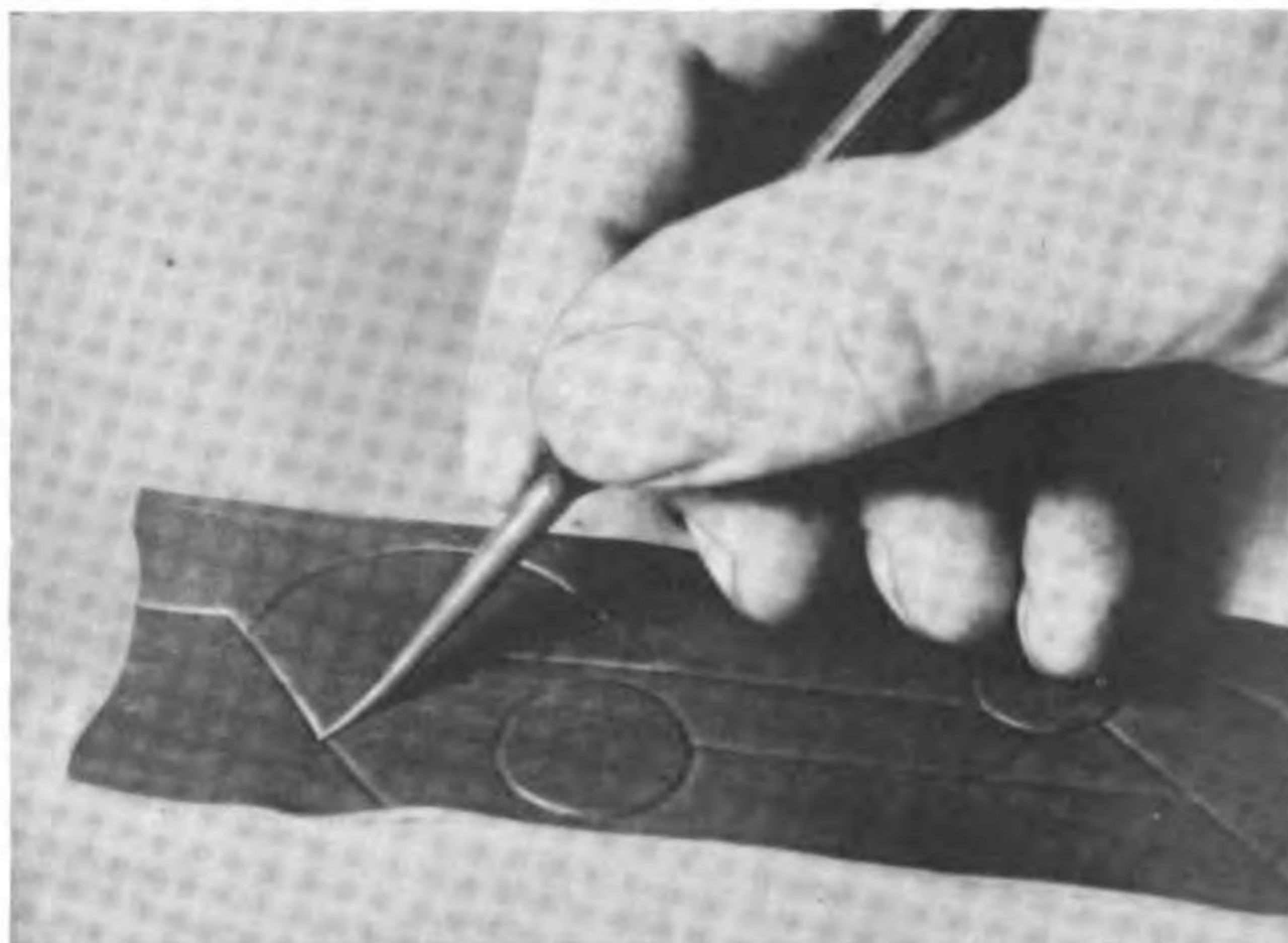
Unit 9 SURFACE TOOLING AND MODELING

Some leather textures do not require ornamentation, due to their natural coloring and grain. Pig and alligator

skins are examples of natural interesting markings. Calfskin, steerhide, sheepskin, and cowhide are fine leath-



64. Pig and Alligator Skins Do Not Require Ornamentation, Due to Their Natural Coloring and Grain



65. Pressing the Design Lines Firmly into the Leather to Produce Outline Tooling

ers that respond well to attractive surface enrichment, which also adds a personal touch to the project.

Keep in mind that vegetable tanned leathers lend themselves most suitably to tooling and carving, due to the treatment they have undergone in processing at the tanneries, while chrome tanned leathers are never tooled or carved.

Lightweight 3 to 4 ounce leathers are best for tooling and modeling.

Outline tooling

1. Select and transfer the design. See Units 4 and 8.

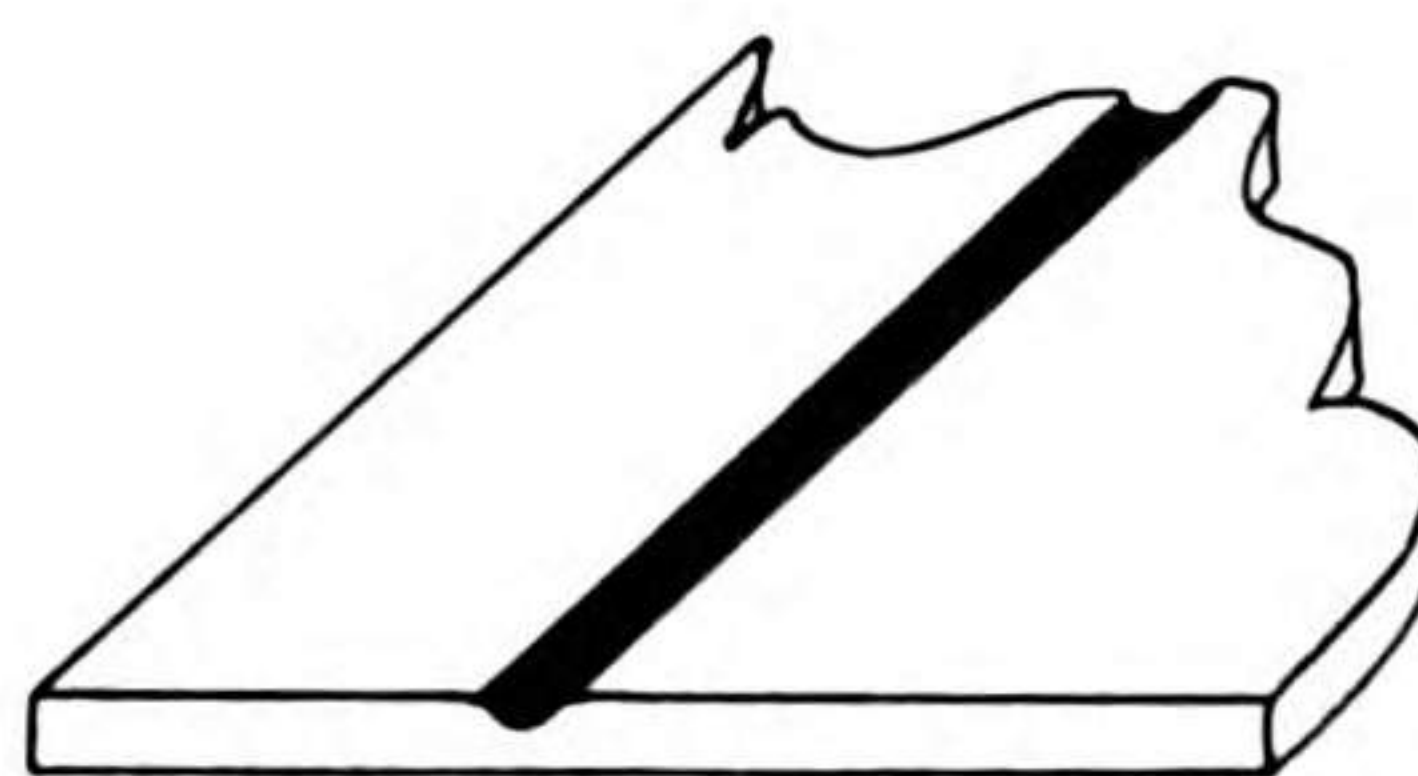
2. Check the design to make certain that it has been completely transferred and that no lines are missing. See Fig. 62.

3. Press the design lines deeper into the moist leather with the tracer end of the modeling tool, Fig. 65. The leather should be on a slab of marble or on a hardwood board.

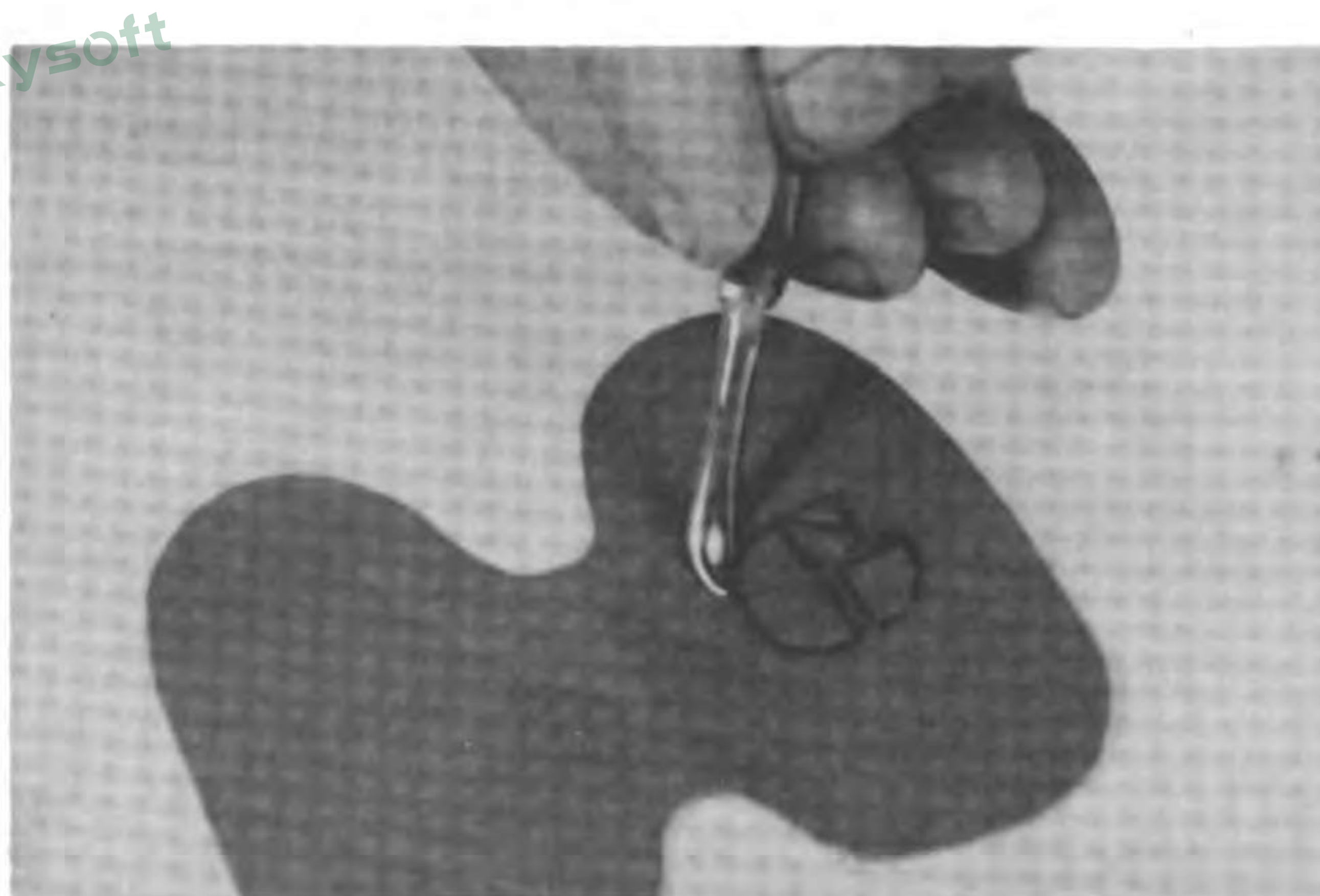
4. Continue pressing the design deeper until the lines are visible when viewed from the flesh (under) side. Fig. 66 illustrates the detail of the imprint made in outline tooling. The lines will show up dark. Add moisture on the flesh side if the leather dries too rapidly.

Flat modeling

Flat modeling, sometimes referred to



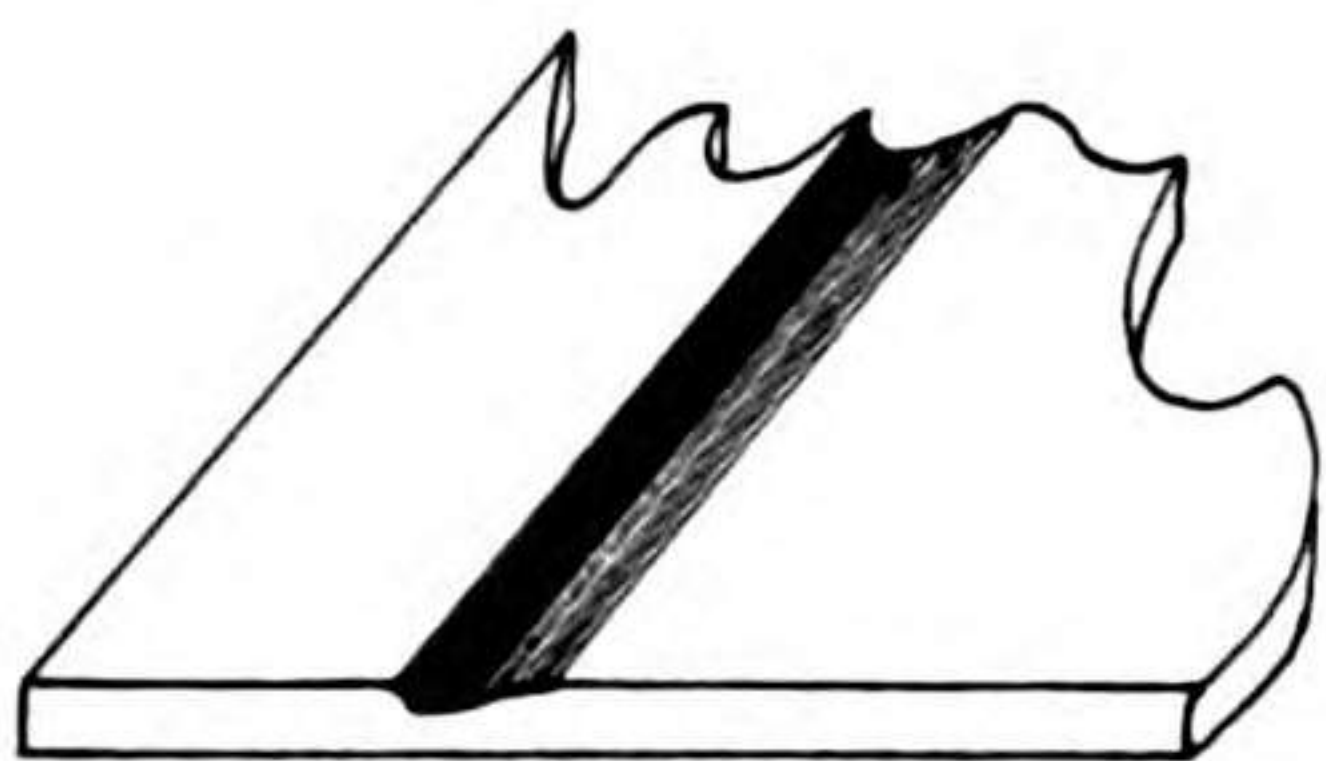
66. Detail of the Imprint Made in Outline Tooling



67. A Bold Relief Effect Can Be Obtained by Beveling the Background with the Spoon End of the Modeling Tool

as "relief tooling," is a further refinement and continuation of outline tooling to give emphasis and make the design stand out in bold relief.

5. Press or bevel the background around the design or monogram with the spoon end of the modeling tool or a deerfoot modeler, Fig. 67. Figure 68



68. Detail of Imprint to Show Beveled Effect

shows the detail of the imprint in a bold relief.

6. Continue pressing the background around the modeling lines until a darkened effect is produced on the tooled design lines. It may be necessary to go over the lines again with the tracer end of the modeling tool to emphasize the design.

Unit 10 STIPPLING AND STAMPING DESIGN

Designs may be achieved or accentuated through the processes of stippling and stamping. Stippling is generally employed to recess a background, or to bring out a design. Stamping is most used on the heavier leathers, such as belts.

Stippling with the multi-pointed stippling tool produces a rather uniform impression; however, it can also be done with the tracer point of the

modeling tool.

Effects obtained through stamping are dependent upon the variety of stamping tools and the ingenuity of the craftsman. Stamping tools may be purchased in a wide variety of designs, or they may be made by filing the heads of nails as explained in Unit 3.

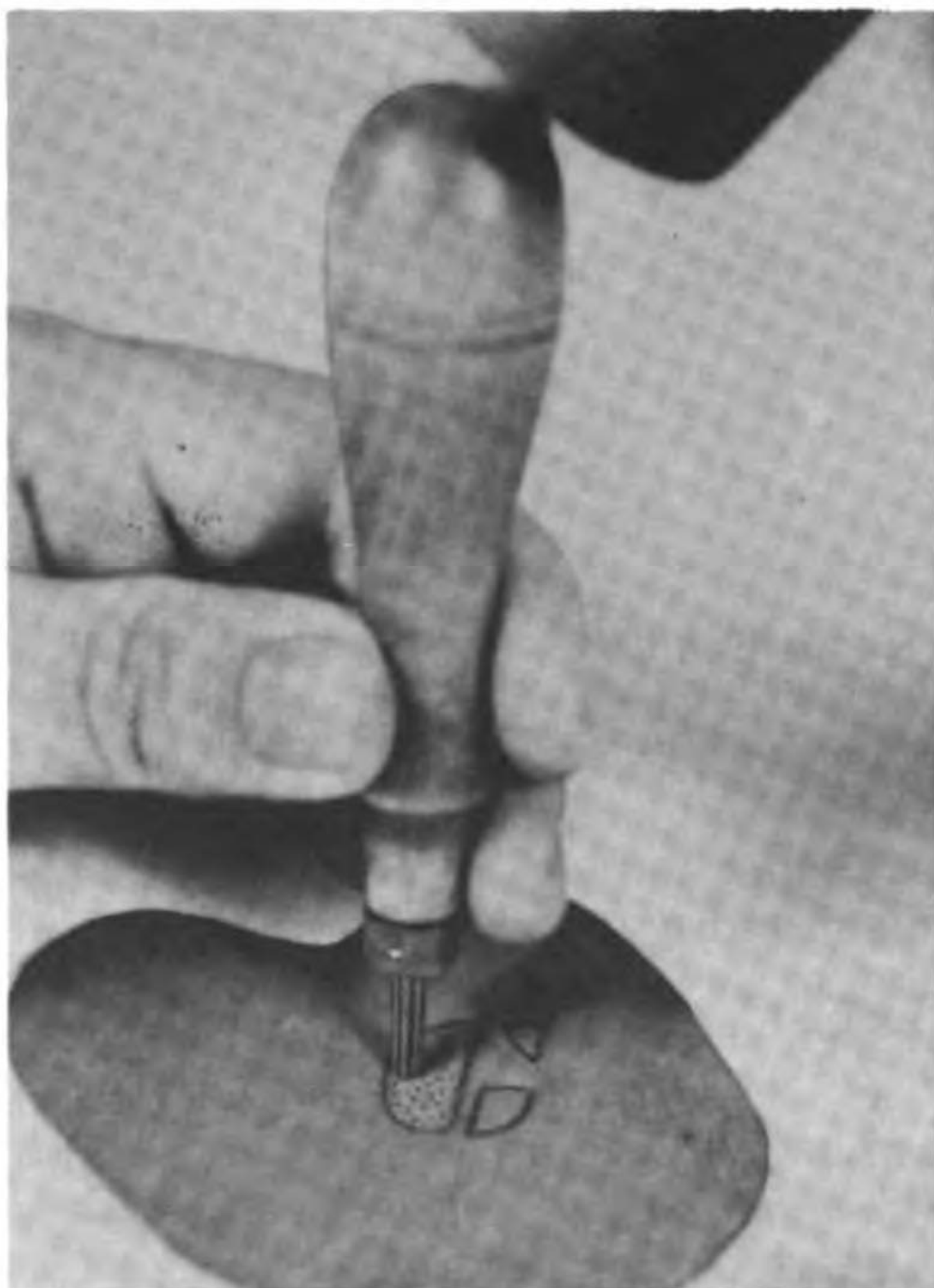
Stippling

1. Prepare the leather as for tooling. Unit 7.

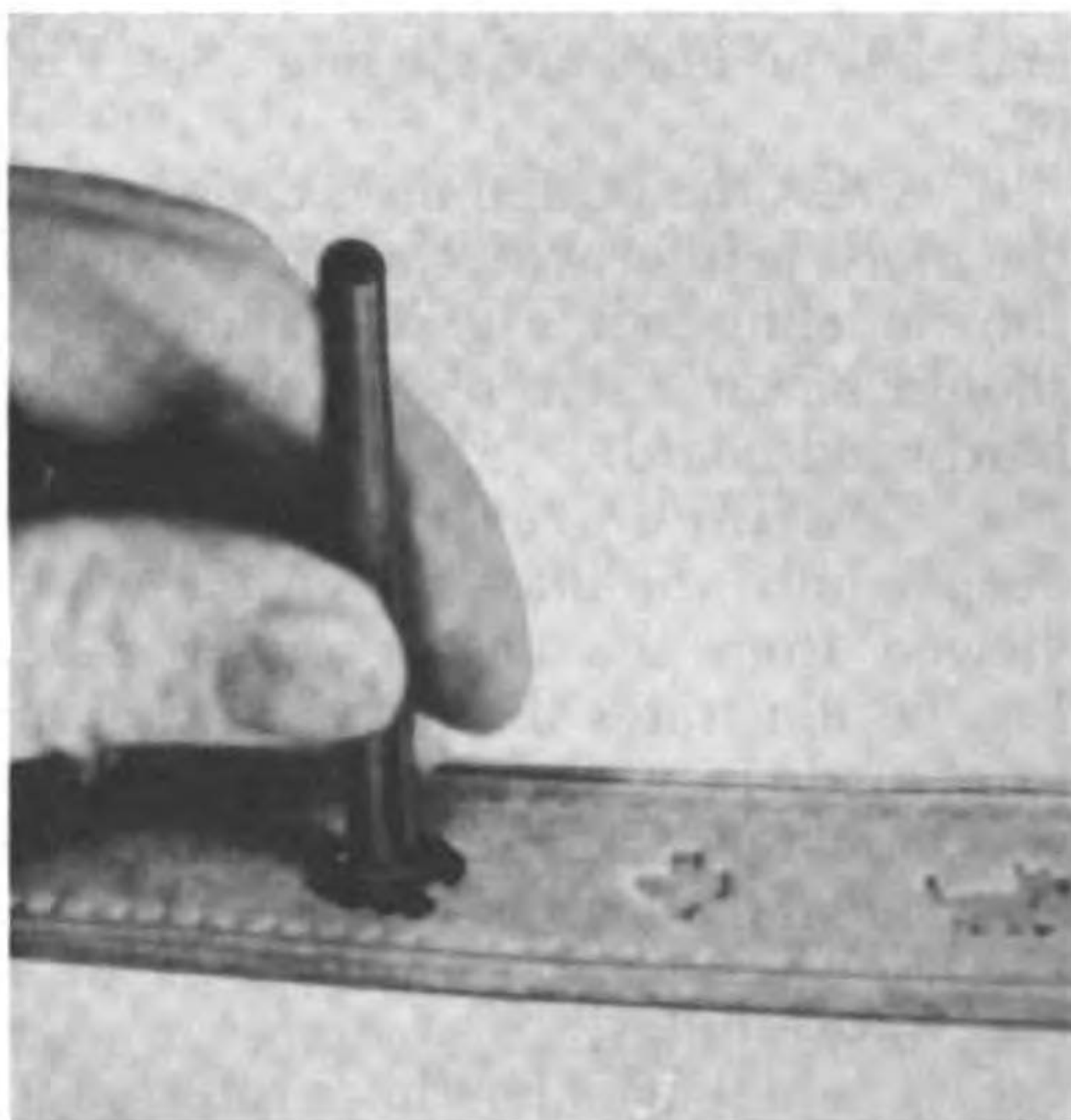
2. Transfer the design. Unit 8.

3. Tap the stippler as shown in Fig. 69 to obtain the best results. A portion of a design can be made to stand out or the background may be depressed by this procedure.

69. Stippling a Monogram to Accentuate the Design



70. Stamping a Design on a Belt



Stamping

1. Prepare the leather the same as for carving. Unit 7.
2. Plan the design desired from the stamping tools available. Unit 3.
3. When the natural color of the leather begins to return to the surface, stamp the design according to plan. It

is desirable to practice on a piece of scrap leather first. Always hold the stamping tool *vertically* while tapping it with a fiber or wooden mallet, Fig. 70.

4. Continue until the entire design has been completed. When necessary, add moisture to the surface.

Embossing can produce two distinctly different decorative effects: first, it may be used to raise a portion of a design through hand tooling processes; and second, decorative effects can be obtained by using interchangeable embossing wheels and carriage. These interchangeable wheels have many pleasing designs and all fit the same carriage or handle. Embossing by raising is suitable for light or craft leathers, whereas embossing with the wheel and carriage is most often used on heavy or strap leather. This latter method is particularly adapted to borders.

Embossing by raising

1. Moisten and prepare the leather for tooling. Unit 7.
2. Select and transfer the design

which lends itself to surface raising. Unit 8.

3. Tool the design by either outline tooling or relief or flat modeling. Unit 9.

4. Stipple or produce background effects if desired, as described in Unit 10.

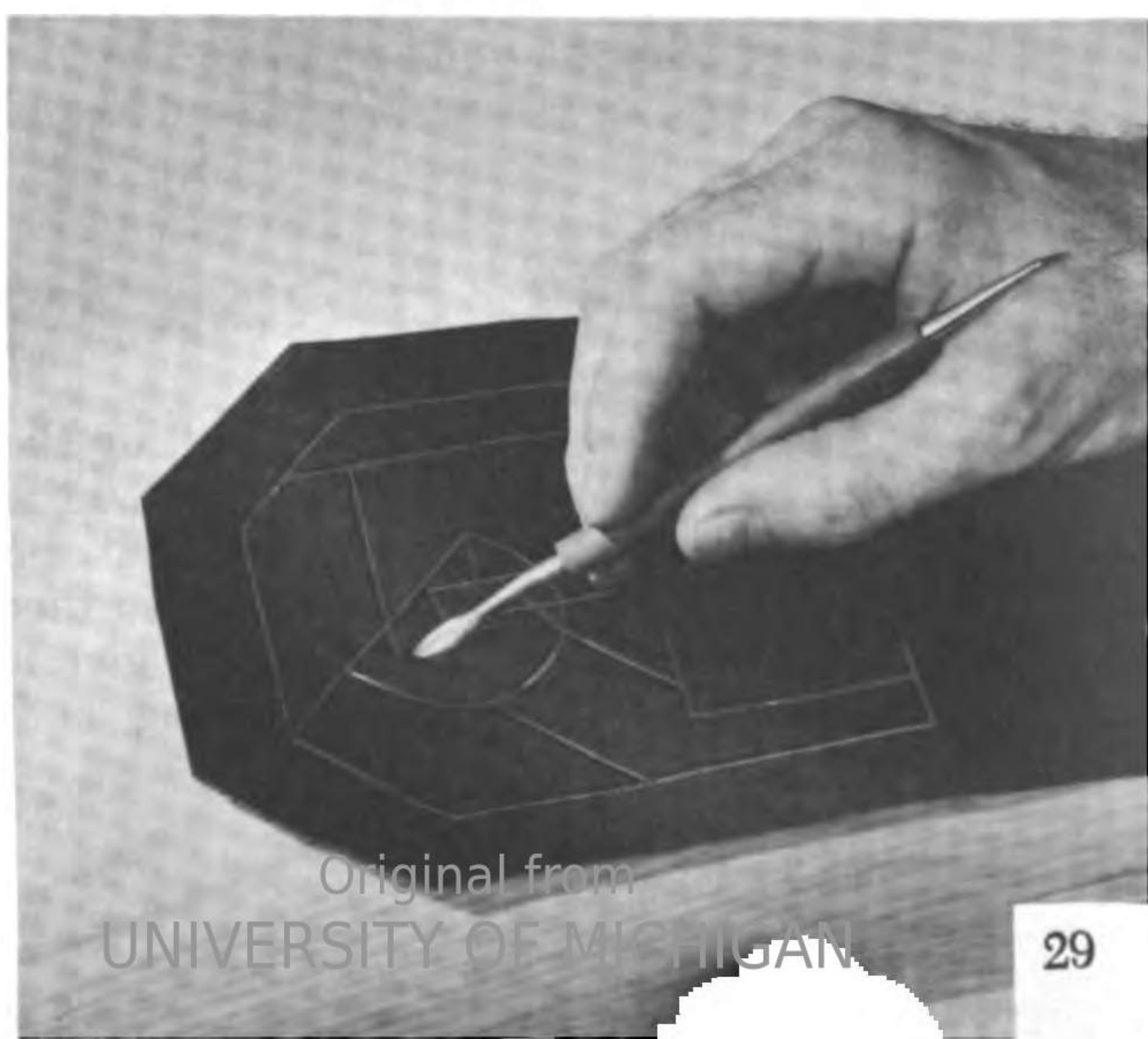
5. Place the leather with the flesh side up, so that the portion to be raised fits into the hollow part of the hand. Press the design to be raised with the spoon end of the modeling tool until the raised portion stretches, Fig. 71. This may require repeated pressing with additional moisture added if the leather becomes dry.

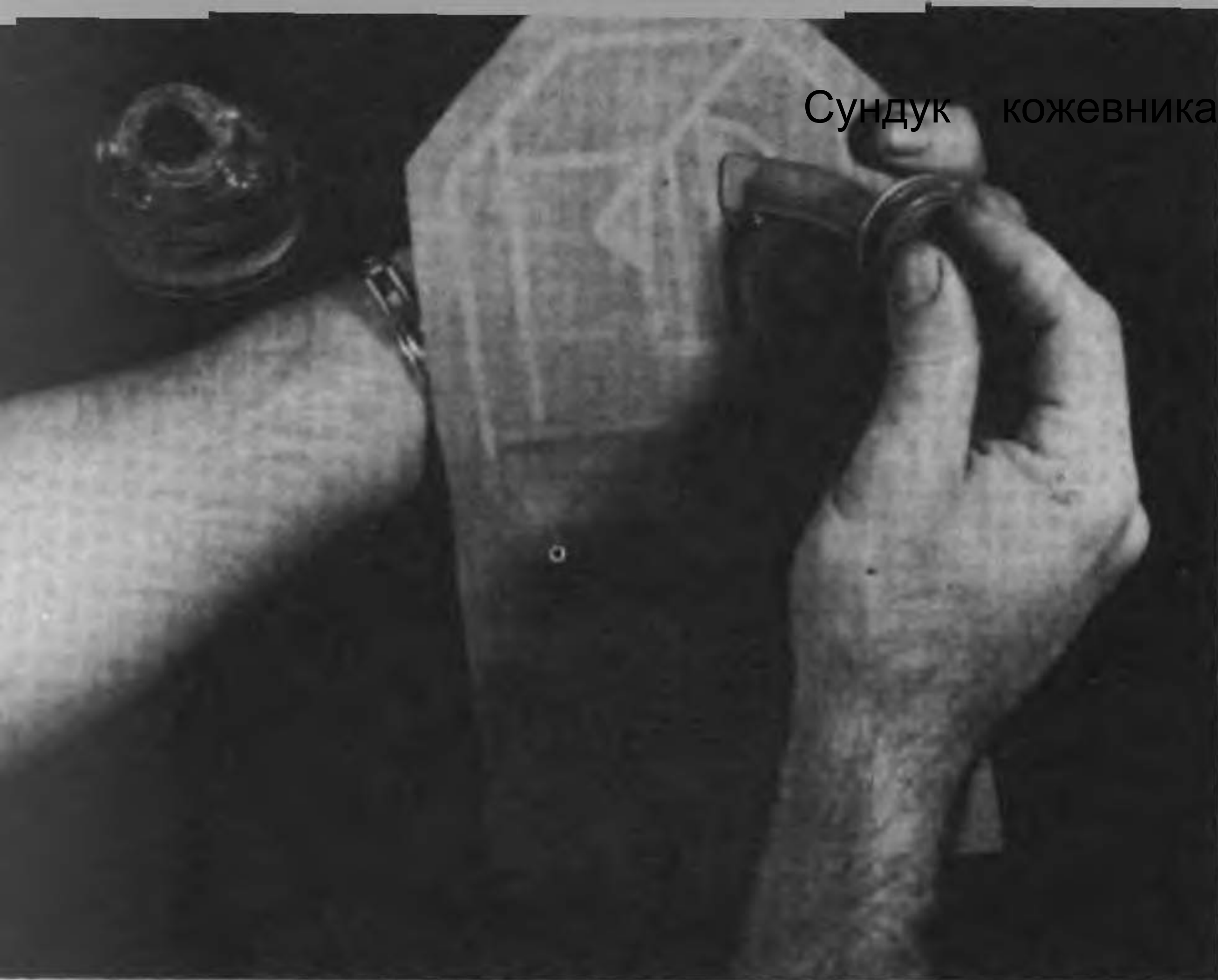
6. Place the flesh side down on a hard-surface board or marble slab, and bevel the background around the raised portion of the design, Fig. 72. This and

71. A Raised Effect Can Be Obtained by Pressing the Leather into the Hollow Part of the Hand with the Spoon End of the Modeling Tool



72. The Relief Effect Can Be Emphasized by Beveling the Background of the Raised Portion





73. Rubber Cement Is Applied to the Back Side of the Raised Portion of the Design



74. The Embossed Effect Is Made Sturdy by Filling in from the Back Side

the preceding step may require repeated processing to obtain the desired results.

7. After the leather has dried thoroughly, apply rubber cement on the flesh side in the area which has been raised, Fig. 73.

8. Fill in the back of the embossed area of the design with cotton or kapok mixed with flour and water, Fig. 74.

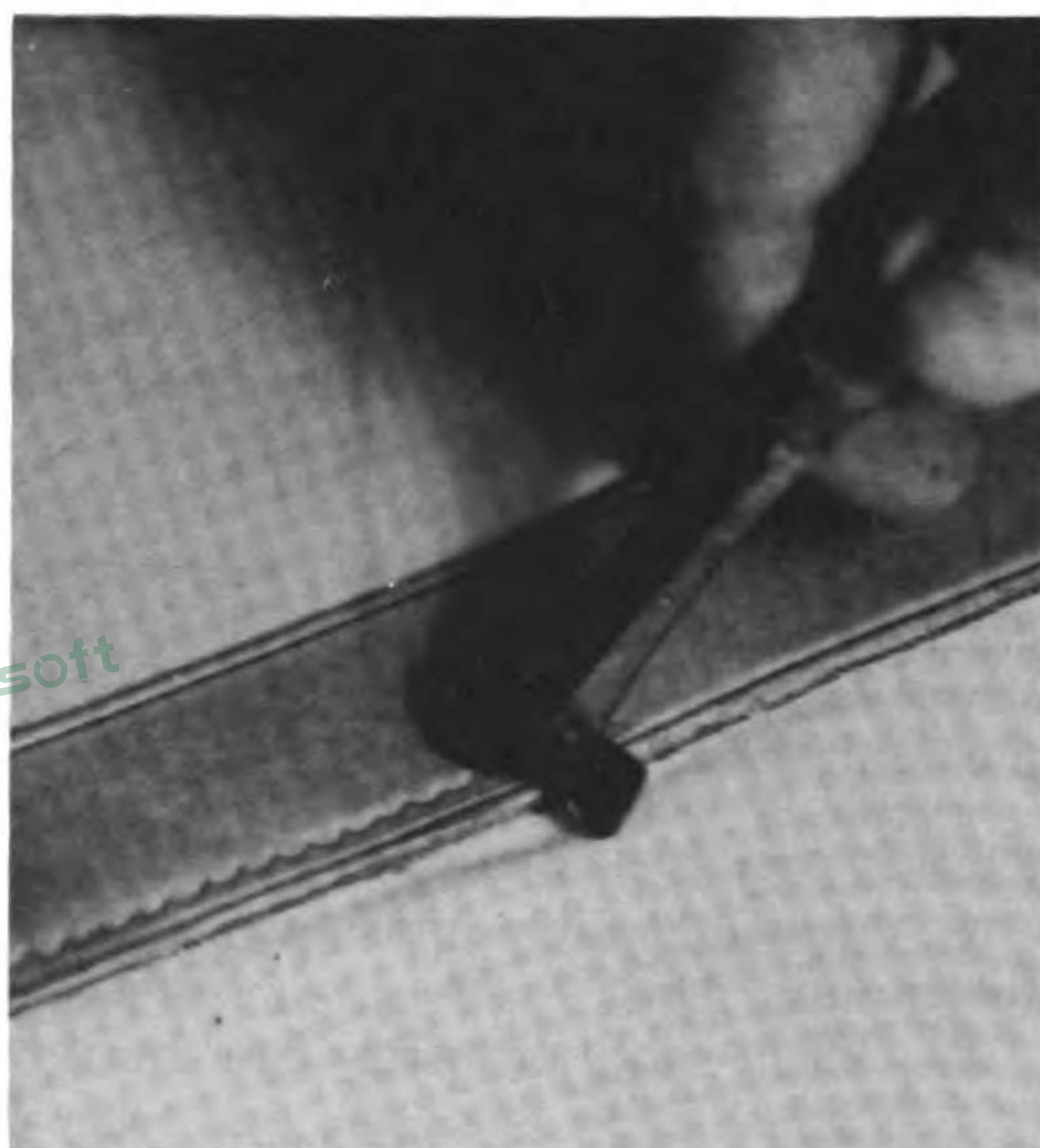
9. It may be desirable once more to place the leather flesh side down on a hard surface and repeat the tooling as shown in Fig. 72.

Embossing with the wheel

1. Prepare the leather the same as for tooling or carving. Unit 7.

2. Lay out and plan the areas to be embossed.

3. Place the embossing wheel where desired and push or pull the carriage with a firm, even pressure, Fig. 75. *This design must be done properly the first time* because it cannot be repeated and



75. Embossing the Border of a Belt with the Embossing Wheel and Carriage

keep the original impression. When making straight lines, use steel or wooden straightedge as a guide.

Unit 12 CARVING AND TOOLING

Carving is the process of cutting the design into the leather in order that the background may be recessed and the design portion accentuated by further carving, tooling, or stamping to give it outstanding character. Carving cuts

are made approximately halfway into the thickness of the leather, but there is no leather removed. It is generally done on heavy strap leather; however, the more experienced craftsman can also carve and ornament 3 and 4 ounce



76. Carving or Cutting the Outline of the Design with a Swivel Cutter

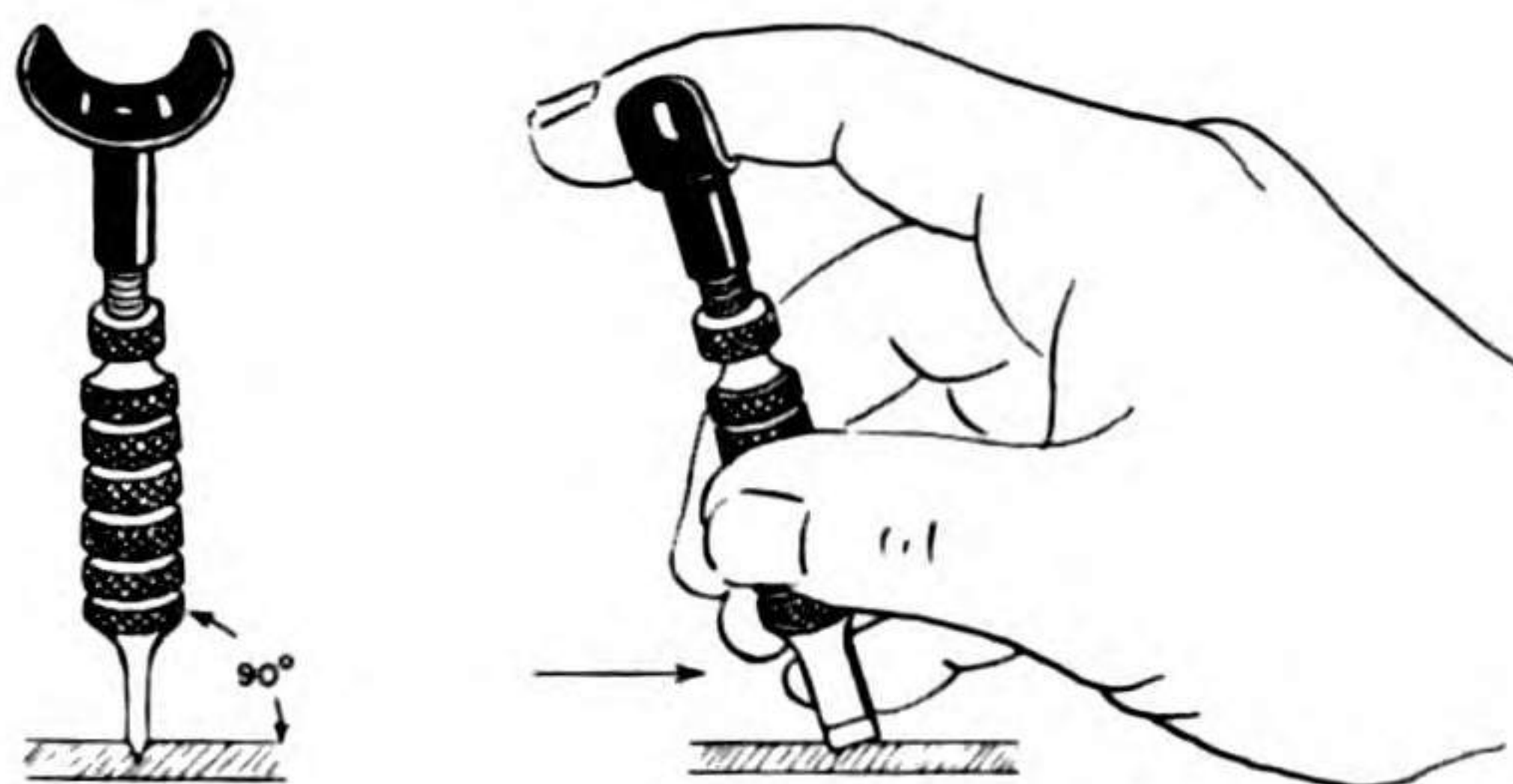
craft leathers, particularly in making billfolds.

The piece used for demonstrating the carving and tooling processes in this unit is $3\frac{1}{2}$ ounce tooling calfskin material used for making a wallet or billfold $3\frac{3}{8} \times 9$ inches.

It must be remembered there are different ways of preparing craft leather and cowhide for carving, as explained in Unit 7. For all general purposes, the lighter craft leathers may be sponge dampened on the flesh (under) side, as well as on the surface, whereas the heavier cowhide or strap leather should be soaked in a vat and then be allowed to stand until the natural color begins to return to the surface, after which an occasional sponge dampening is given the surface for easy cutting.

The kinds of leather most used for carving are natural tooling calf, veal, kip, steer, cowhide, sheep, and pig, all vegetable tanned.

Tools used for carving and stamping are the swivel cutter, a variety of saddle stamping tools, and a rawhide or wooden mallet. These have been described and illustrated in Unit 3. It is important to understand the position for holding a swivel cutter while making cuts. The novice should always practice making cuts on scrap pieces of leather which have been moistened to the same degree as the piece on which the design is being cut. *Cuts should never cross each other.*



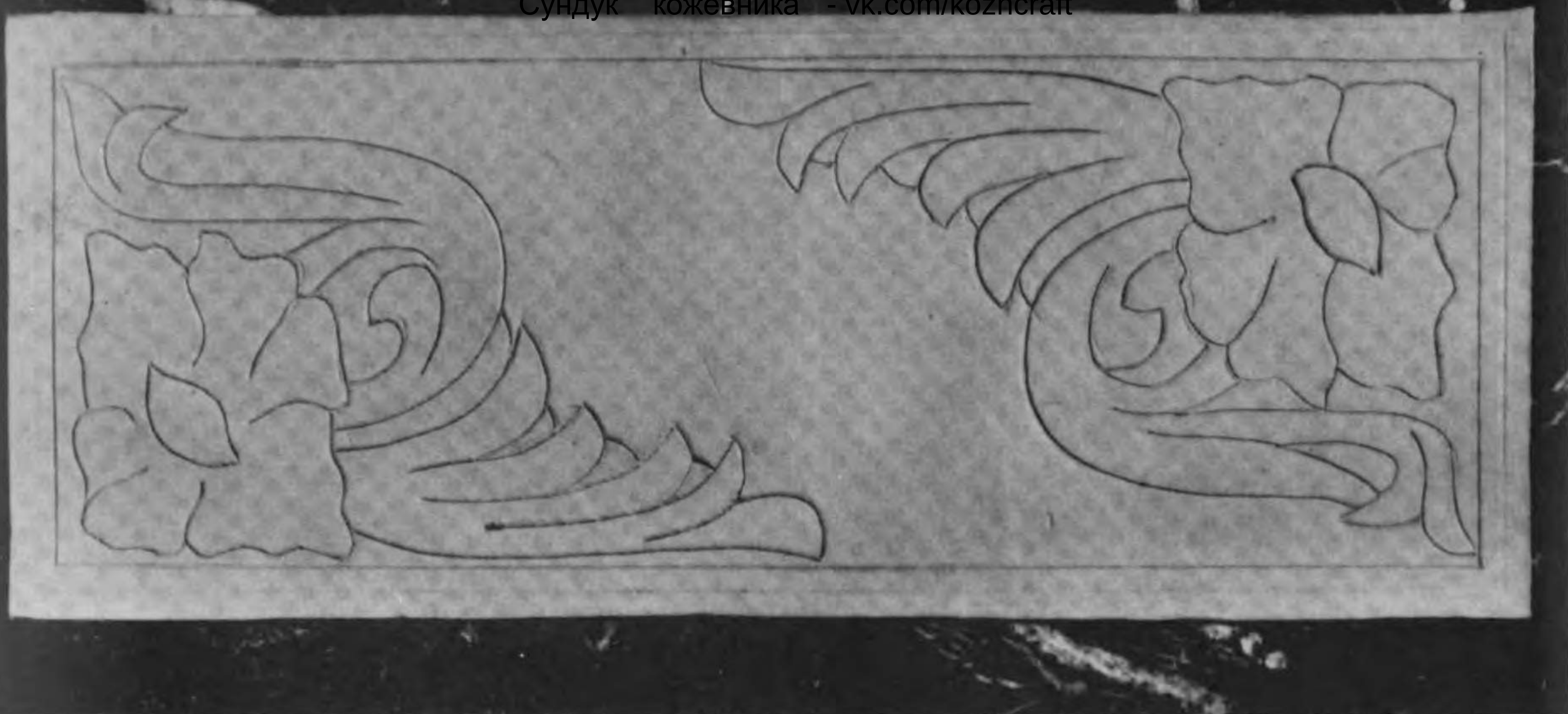
77. Angles for Holding the Swivel Cutter while Carving

Study Fig. 77 for the correct angle in holding the swivel cutter to note that the first or index finger is held in the yoke and applies the downward pressure. The thumb, second, and third fingers are positioned on the barrel to control the cutter, whereas the little finger rests on the leather to add support and give better control of the tool. See Fig. 77.

Stamping tools are held vertically with one hand, while even taps are given the tool with a rawhide mallet held in the other. The stamping process is done with uniform blows to achieve an even textured effect. Figure 91 shows a completed carved and stamped billfold rendered by one who has practiced leathercraft only a short time. Companies which manufacture or sell stamping tools often have pamphlets or photographs regarding carved leather articles. These pictures are generally complete with stamping tool numbers which are used to obtain the desired decorative effects in the carving and tooling.

Carving

1. Decide on the project to be made and select an appropriate design.
2. Prepare the leather for carving and tooling in accordance with the information given at the beginning of this unit, and by studying Unit 7.
3. Lay the moistened leather flesh side down on a hard surface, such as a hardwood board or a marble slab.
4. Position the design template or pattern on the leather and fasten in position with masking tape or with paper clips. See Figs. 60 and 61. Figure 60



78. Finished Outline Carving on Light Weight Leather for a Billfold

is the design used throughout this unit; therefore the carving and stamping instructions should be easier to follow.

5. *Trace* the design to the leather as shown in Fig. 60. Use the pointed end of the modeling tool, holding it as you would a pencil.

6. Remove the design sheet and check all lines to make certain that none has been omitted. The transferred

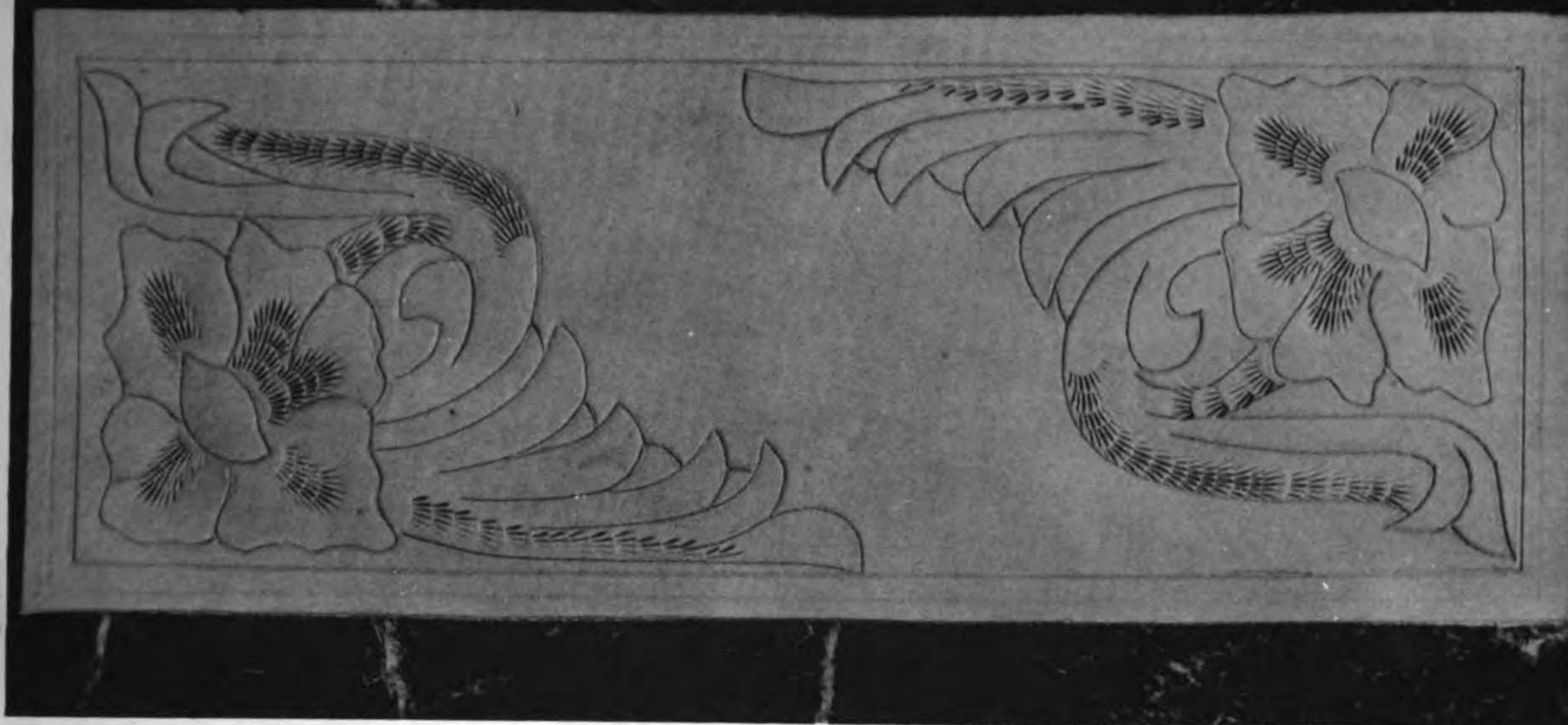
pattern on the leather should be similar to Fig. 62. Note that some of the moisture still shows on the surface side.

7. *Carve or cut* the lines which have been traced into the leather, Fig. 76. Note the angle of cutting in Fig. 77. Cut the border line first; then cut the flowers, stems, leaves, and other decoration halfway through the leather. If the blade has a tendency to drag, either

79. Pro-Gauge Attached to the Swivel Cutter for Making Uniform Parallel Cuts

80. Camouflage Impressions Being Stamped on the Design





81. Results of Camouflage Stamping

it needs to be honed or the leather needs to be moistened on the surface. *Always cut with the knife pulling toward you.*

8. Check the cutting or carving results to make certain that all pattern or design cuts have been made. Figure 78 shows the results of outline carving.

9. Cuts which are parallel to a border can be made more uniformly by adding the pro-gauge attachment to the swivel cutter, as shown in Fig. 79.



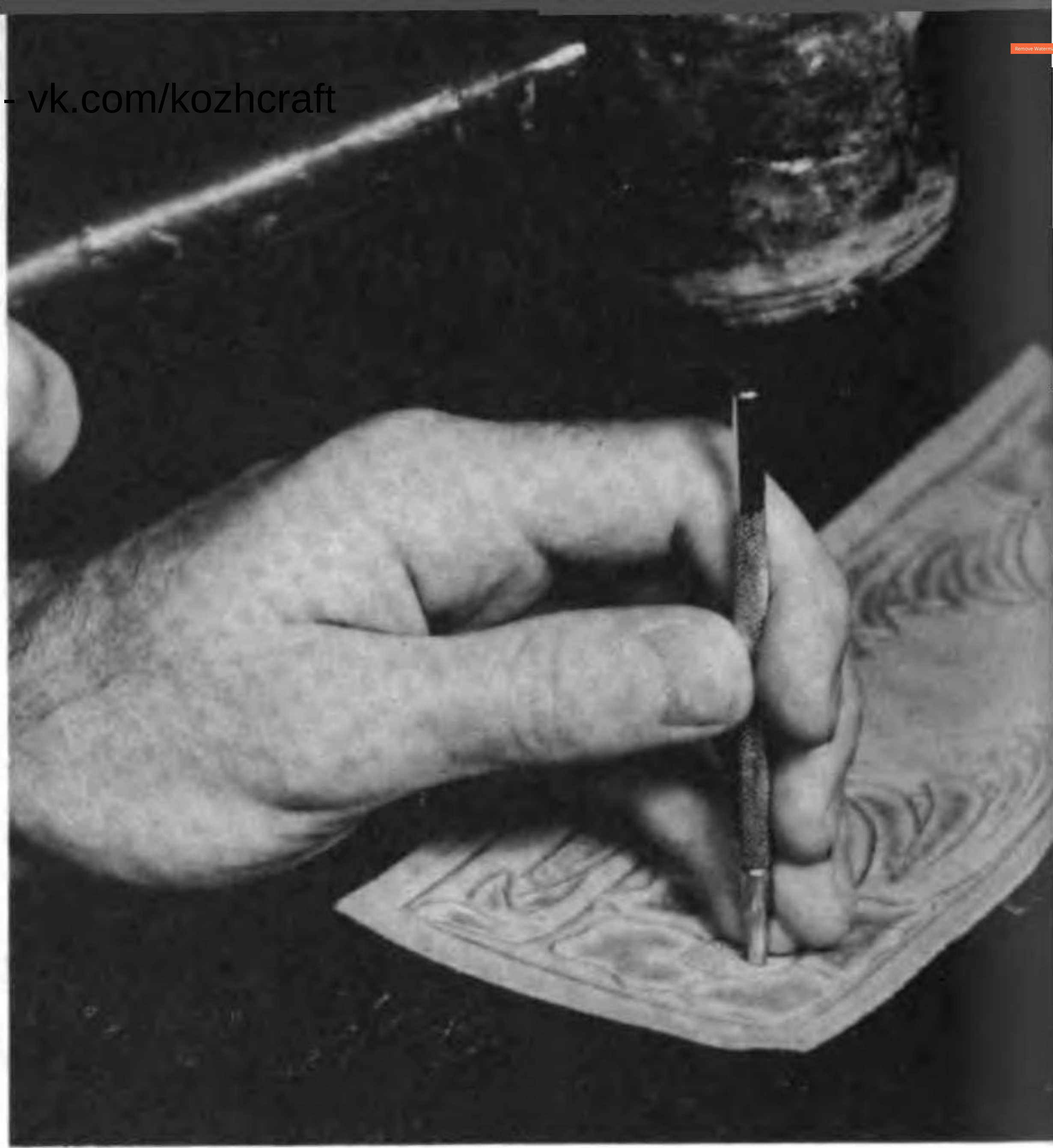
82. Shading to Produce Contrasting Shadows and Texture

83. Shading Completed on Petals and Leaves. Note the Realistic Appearance Due to Darkened Color





84. Beveling Produces a Depth Dimension



86. Seeding the Center of a Flower

10. *Camouflage* the stems and petals by stamping as shown in Fig. 80. This brings character to the floral parts, as shown in Fig. 81.

11. *Shading* is the process of adding shadow and texture to the design by stamping the leather to produce a hollowed appearance, Fig. 82. The moisture in the leather will be brought to the surface, thereby causing the shaded areas to turn a rich, brown color on natural leather, which dries this way. Strike the stamp sharply with the mallet

and move the tool toward you to produce the desired effect. Study Fig. 82 for the procedure in shading, and Fig. 83 for the final effects.

12. *Bevel* all swivel cuts on one side, thereby giving the beveled side of the design the appearance of receding. See Fig. 84. This process pushes the less prominent parts of the design into the background. Pull the tool toward you as each strike is made, Fig. 84. Figure 85 shows the effects of beveling.

13. *Seeding* is stamping the center

85. Billfold Cover Completely Beveled





87. Seeding Brings Life-Like Detail to a Flower

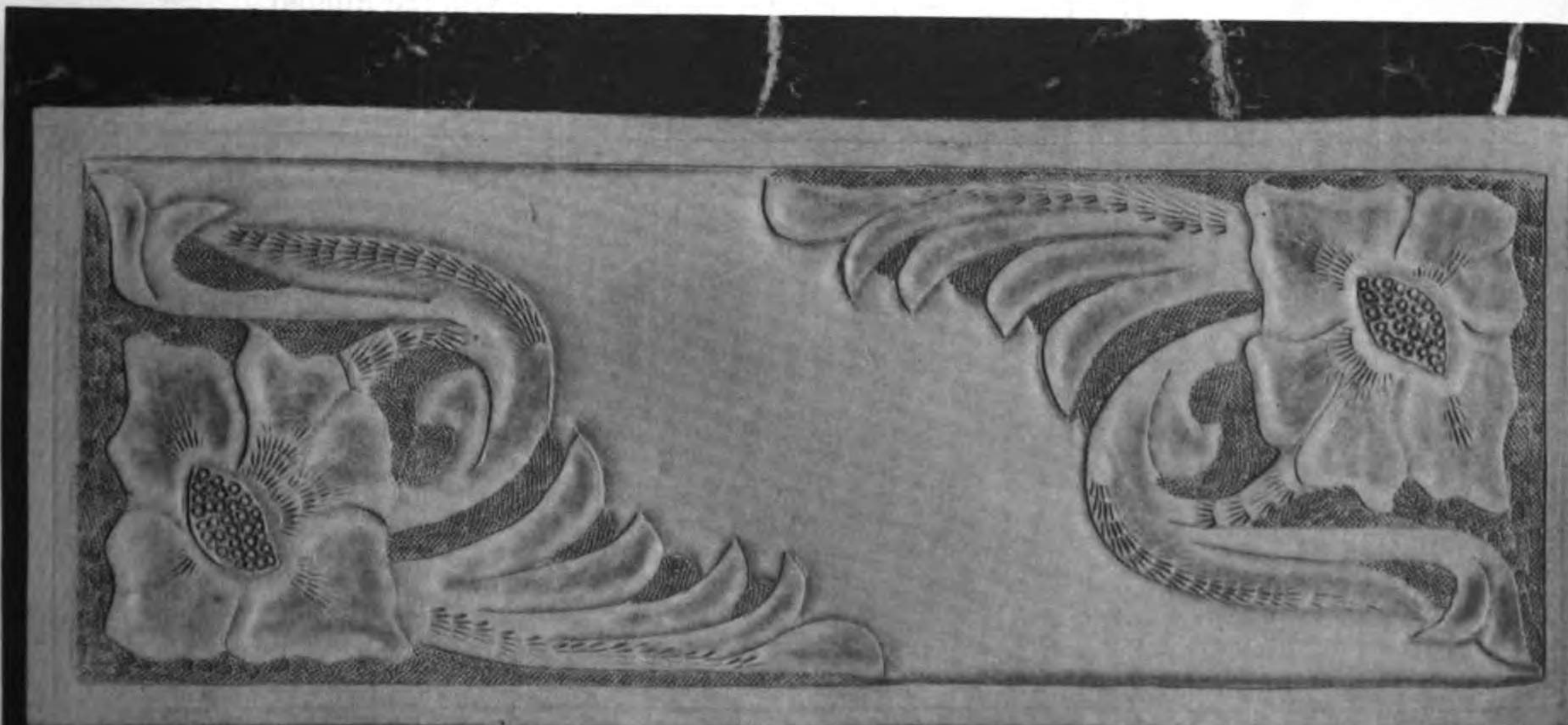
part of the flower, Fig. 86. The seeding tool produces small, circular marks which should not overlap, but barely touch one another. Figure 87 shows the effects achieved through use of the seeding tool.

14. *Backgrounding* is the effect of recessing the background of the design to make sharp contrast with the raised portion, Fig. 88. There are several types of background tools; however, all pro-



88. Stamping the Background to Give Greater Contrast in the Design

89. The Background Has Been Completed to Accentuate the Design





90. Making Fine Decorative Cuts in Flower Petals

duce the same effect. The background area should be smooth, level, and of

uniform depth for the swivel cut, which is approximately half the thickness of the leather. The moisture content of the leather should be almost dry so that it will stay as driven. Figure 89 shows how backgrounding will accentuate the design.

15. It is possible that other effects may be desired from stamping tools and, if so, these additional stampings should be done before the final decorative cuts are made with the swivel cutter.

16. *Decorative cuts* add accent and detail to the petals and leaves of the design, Fig. 90. The swivel cutter is used for this purpose, and here again you should practice on a scrap piece of leather of similar weight to produce the desired effect. Figure 91 pictures the carved design which has been completed on the billfold.

Unit 13 SKIVING AND TRIMMING EDGES

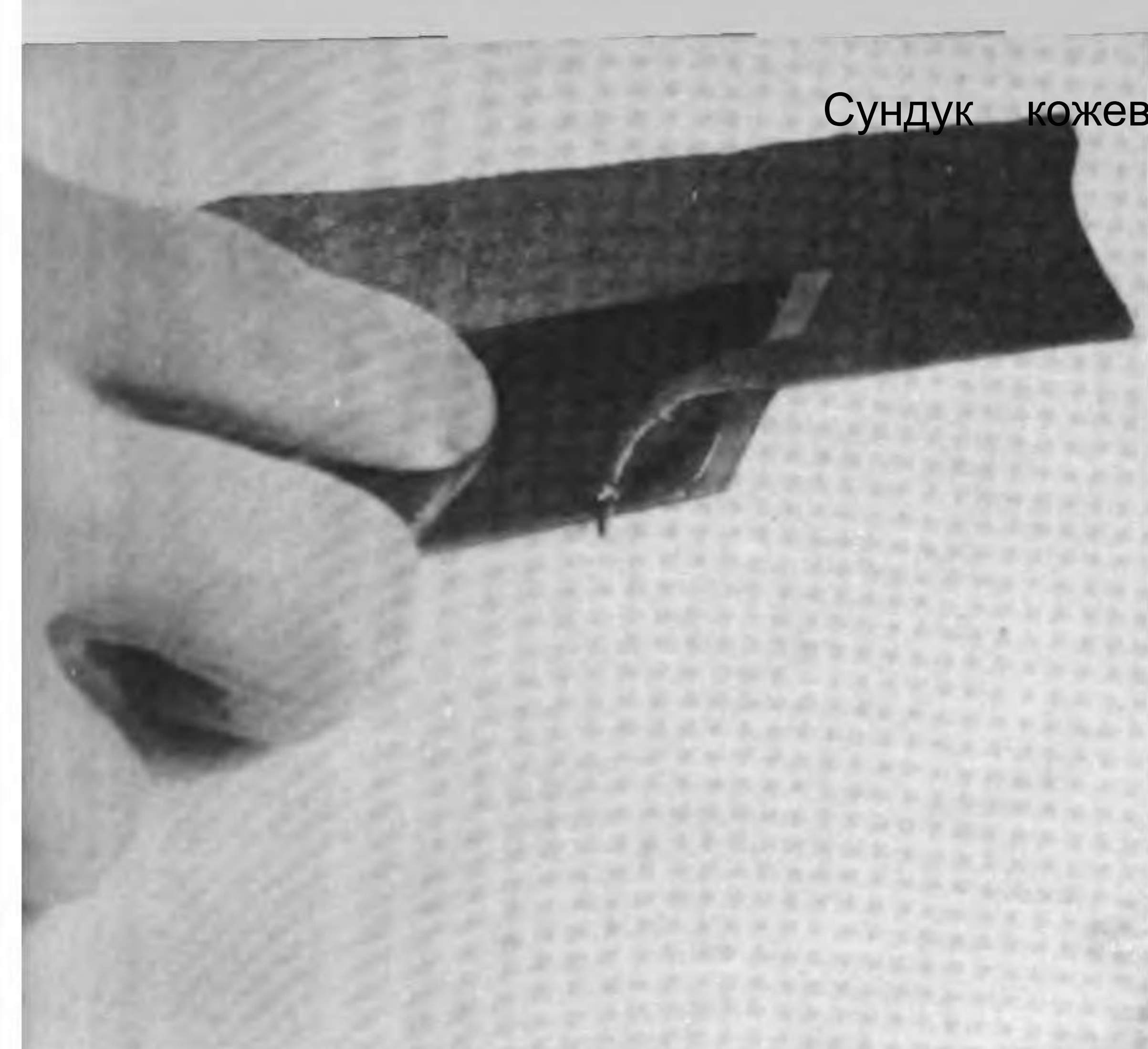
Leather parts, prior to assembly, are usually skived along the edges so that the edge bulkiness will be reduced. Skiving reduces thickness of leather by trimming or shaving from the flesh or reverse side with a skiving knife or "Skife," as shown in this unit. There

are several tools which work satisfactorily, as used in illustrations.

Edges of cowhide, particularly belts, should be dressed with an edging tool to give them a rounded and pleasing finished effect.

91. The Carved Design Has Been Completed on the Billfold





92. Skiving an Edge with a Skiving Knife



93. Skiving the Edge of a Comb Case with a Skife

Skiving

1. Check to make certain that the tool or tools used for skiving are sharp. If they need sharpening or honing, refer to Unit 29.

2. Place the leather on a flat piece of hardwood or marble slab with the flesh side up.

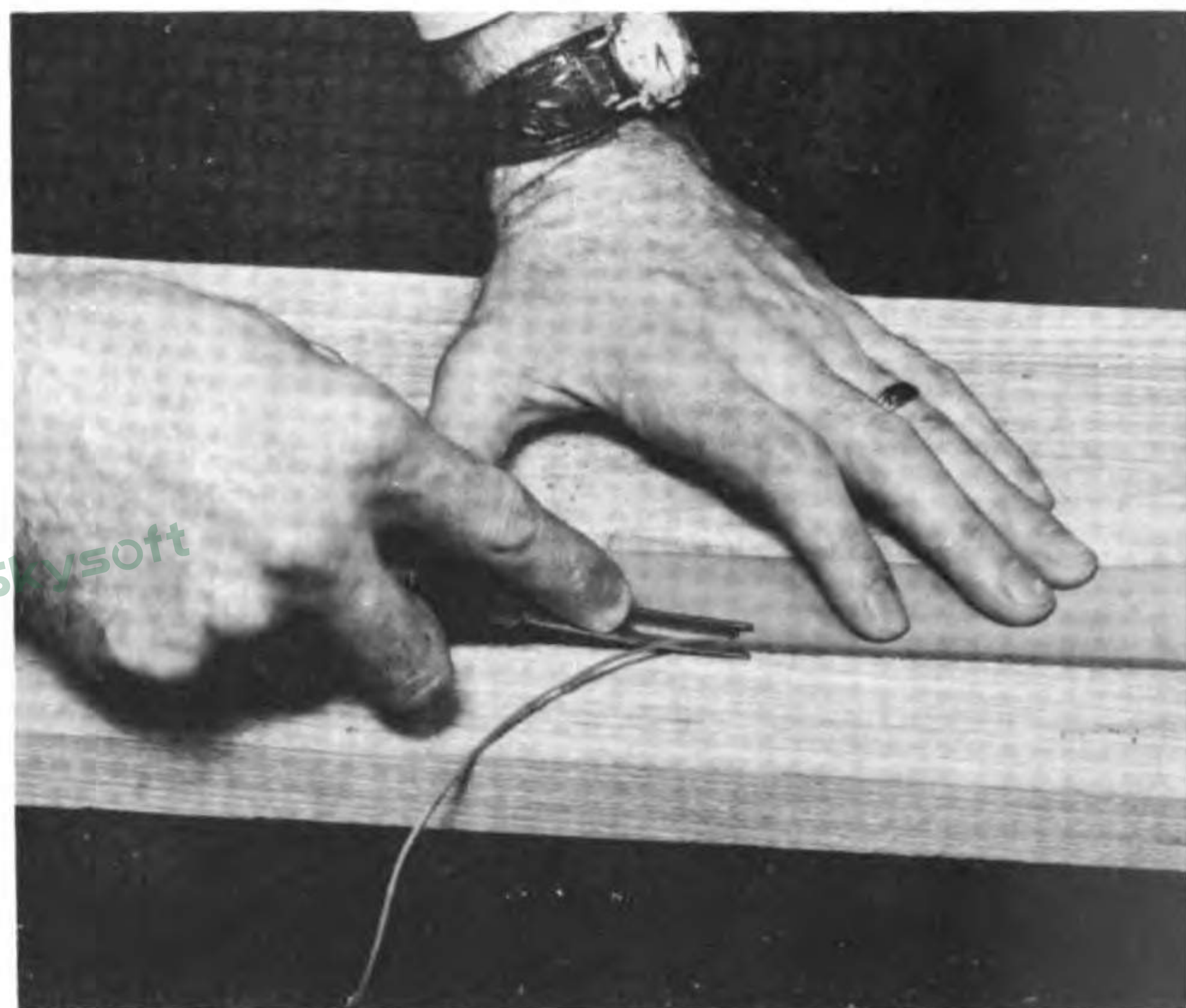
3. Make a slicing cut which extends approximately $\frac{1}{2}$ inch in from the edge, and push forward with a knife, Fig. 92, reducing the edge thickness to about half the original bulk. Practice skiving on a piece of scrap leather several times because it is quite easy to ruin a piece of leather with an improper cut or a dull tool.

4. Another excellent manner of skiving is with the patented "Skife." This is a skiving knife which will thin the edges uniformly, Fig. 93. In this process, pull the Skife toward you.

Dressing edges

1. Make certain the edge dressing tool is sharp.

2. Place the heavy leather or cowhide on a flat, hard surface with the



94. Rounding the Edge of a Belt Blank with an Edge Dressing Tool

flesh side down.

3. Dress the edges as shown in Fig. 94. Edge-dressing tools are available in a number of sizes for making different degrees of cuts.

Unit 14 EDGE CREASING

Parts of leather articles which are not laced should be treated with an edge creaser, which produces a finished effect, as may be noticed in Figs. 95 and

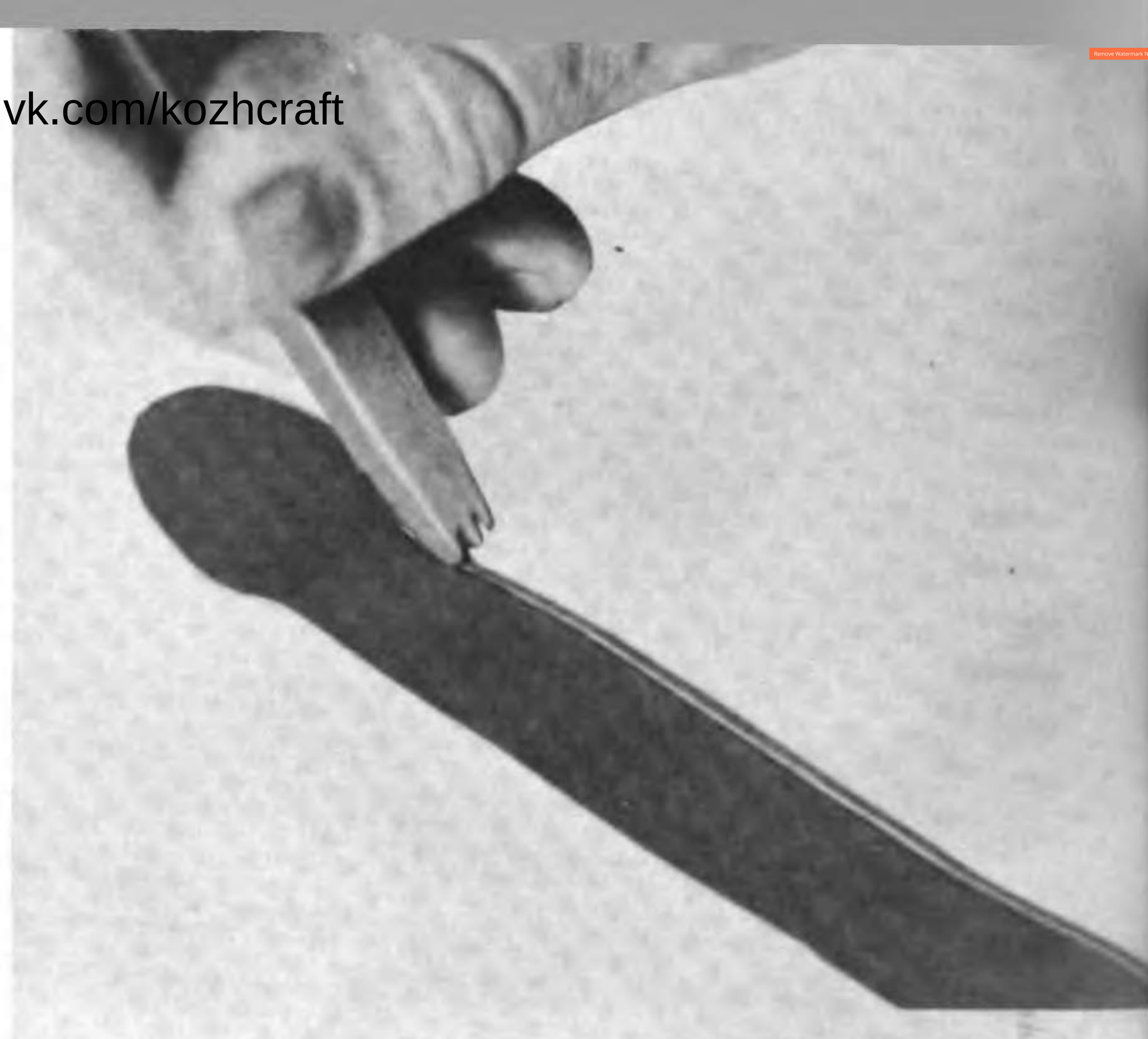
96. Edge creasers are available in several sizes in metal or wood. They make a creased line parallel to the edge of the leather, and you should use the one



95. Creasing the Edge of a Belt with a Metal Edge Creaser

most suitable for your design and size of project. It is not a difficult operation, but care should be exercised to make a firm, uniform crease the first time.

Heavy leather should first have the edge trimmed or dressed, as explained in Unit 13, to give a more rounded effect, but light craft leather need not be



96. Creasing the Edge of Light Weight Leather with a Wooden Edge Creaser to Produce a Finished Effect

edge trimmed.

Edge creasing

1. Prepare the leather as for tooling, carving, and stamping. Unit 7.

2. Place the leather on a flat, hard surface with the flesh side down.

3. Bevel or trim the edges of heavy leather with an edging tool. Unit 13.

4. Push the edge creaser along the edge of the leather with a firm grip, thus producing a deep crease line parallel to the edge, Figs. 95 and 96. Push the creaser back and forth until the desired depth of imprint is obtained.

Unit 15 TEMPORARY ASSEMBLY OF PARTS

Most leather projects are made up of several parts which must be assembled

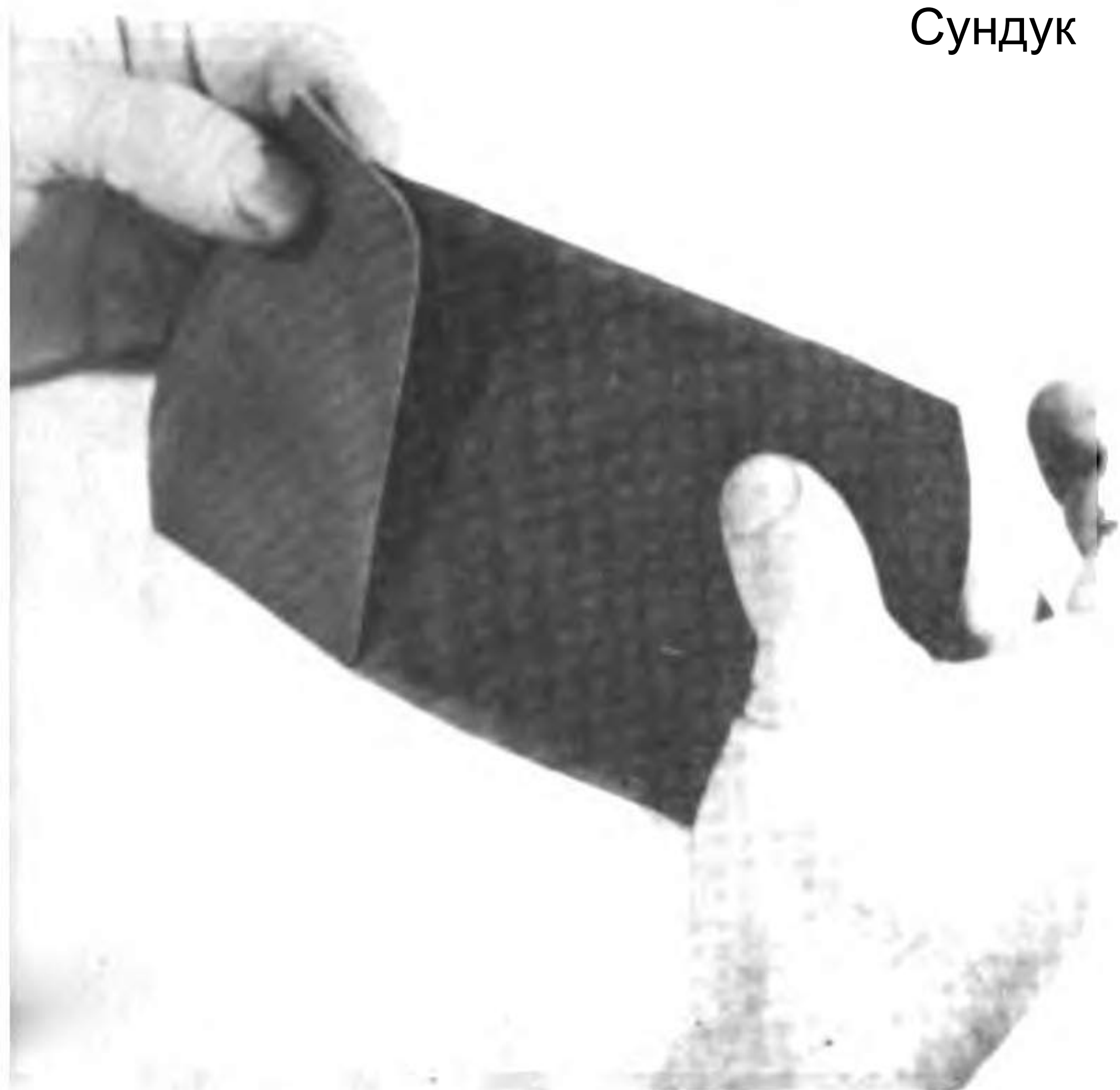
and held together by edge lacing, sewing, or riveting. The purpose of ce-

97. Applying Rubber Cement to Skived Edges for Temporary Fastening

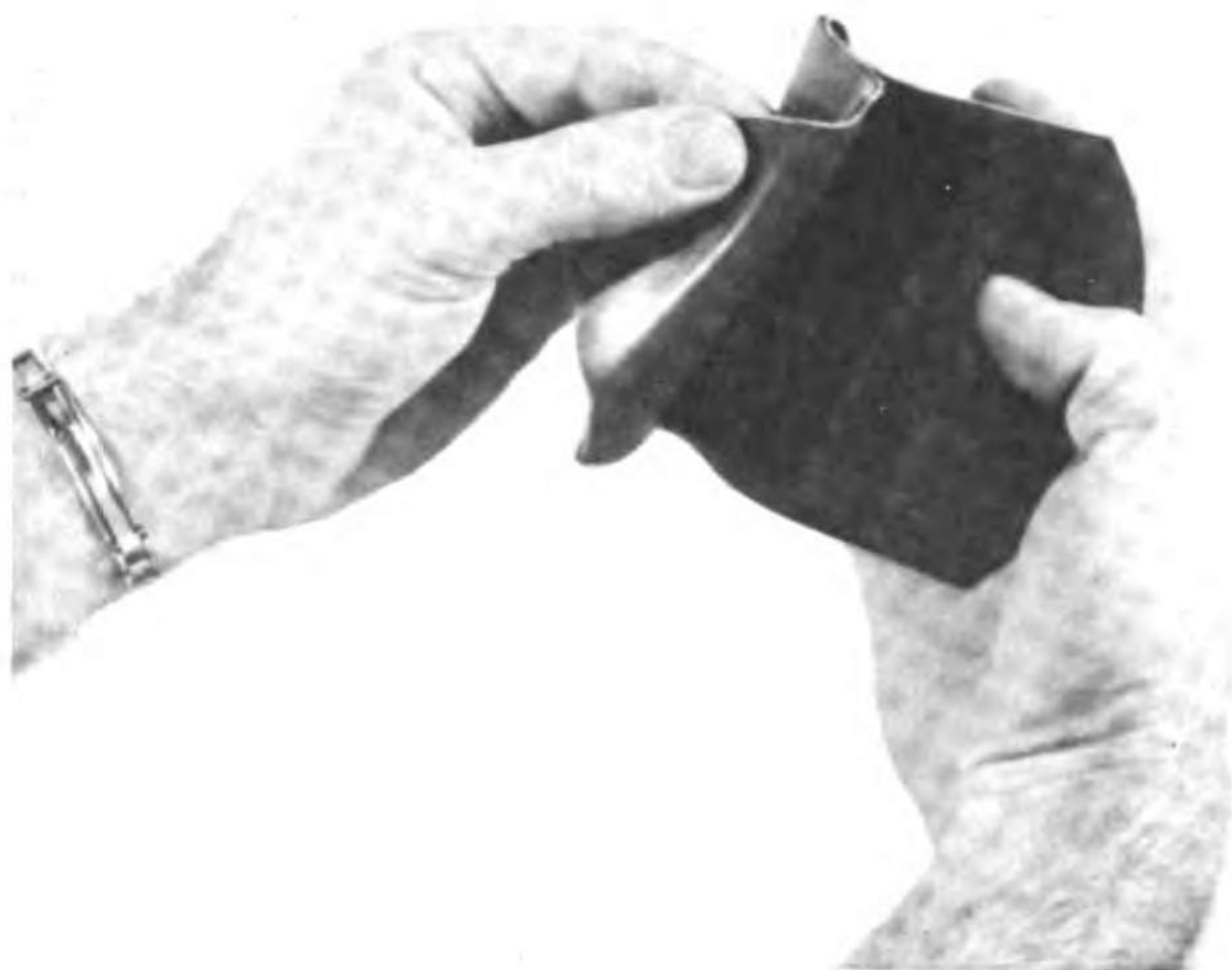


98. Pressing Cemented Edges Together of Duplicate Parts

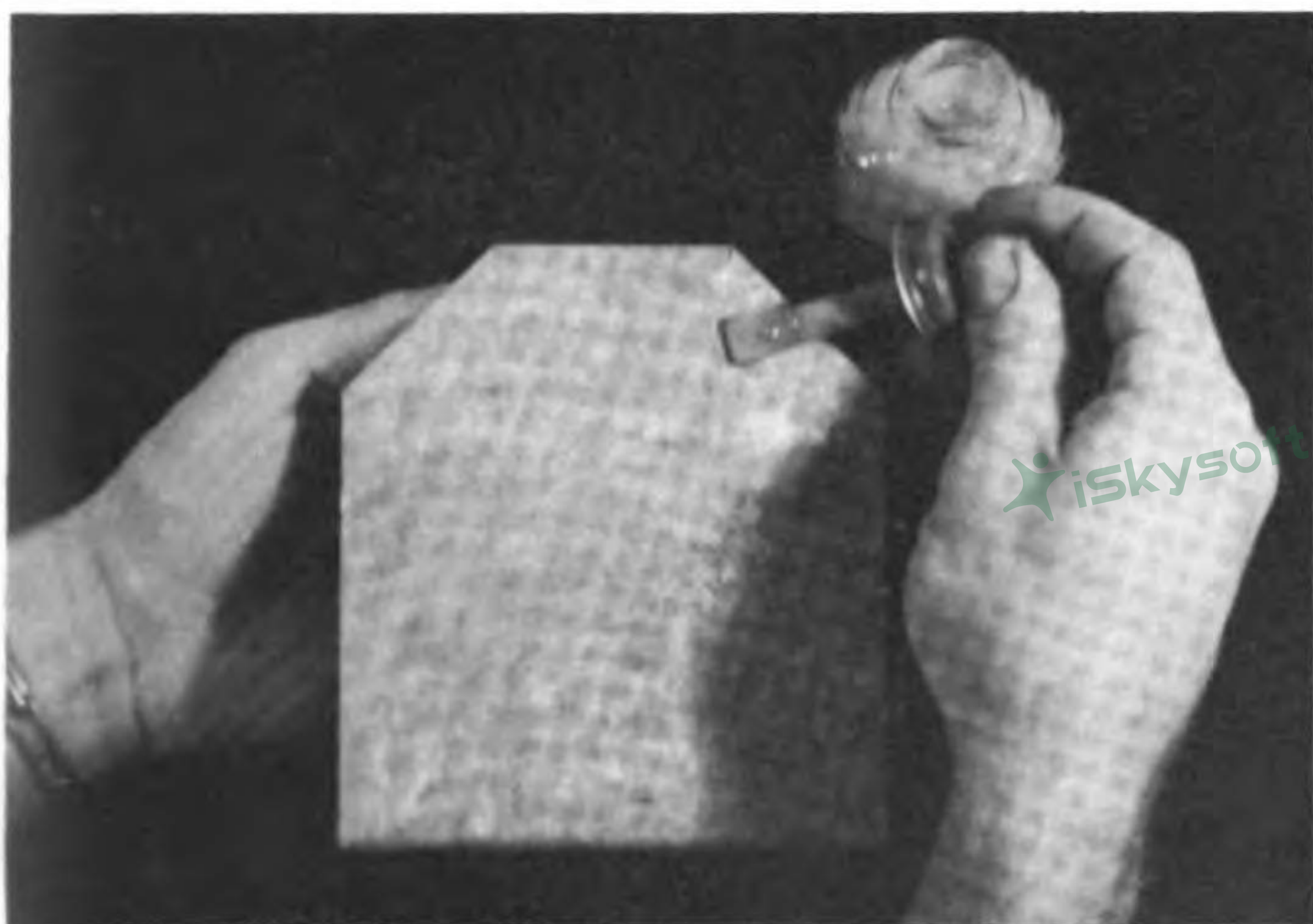




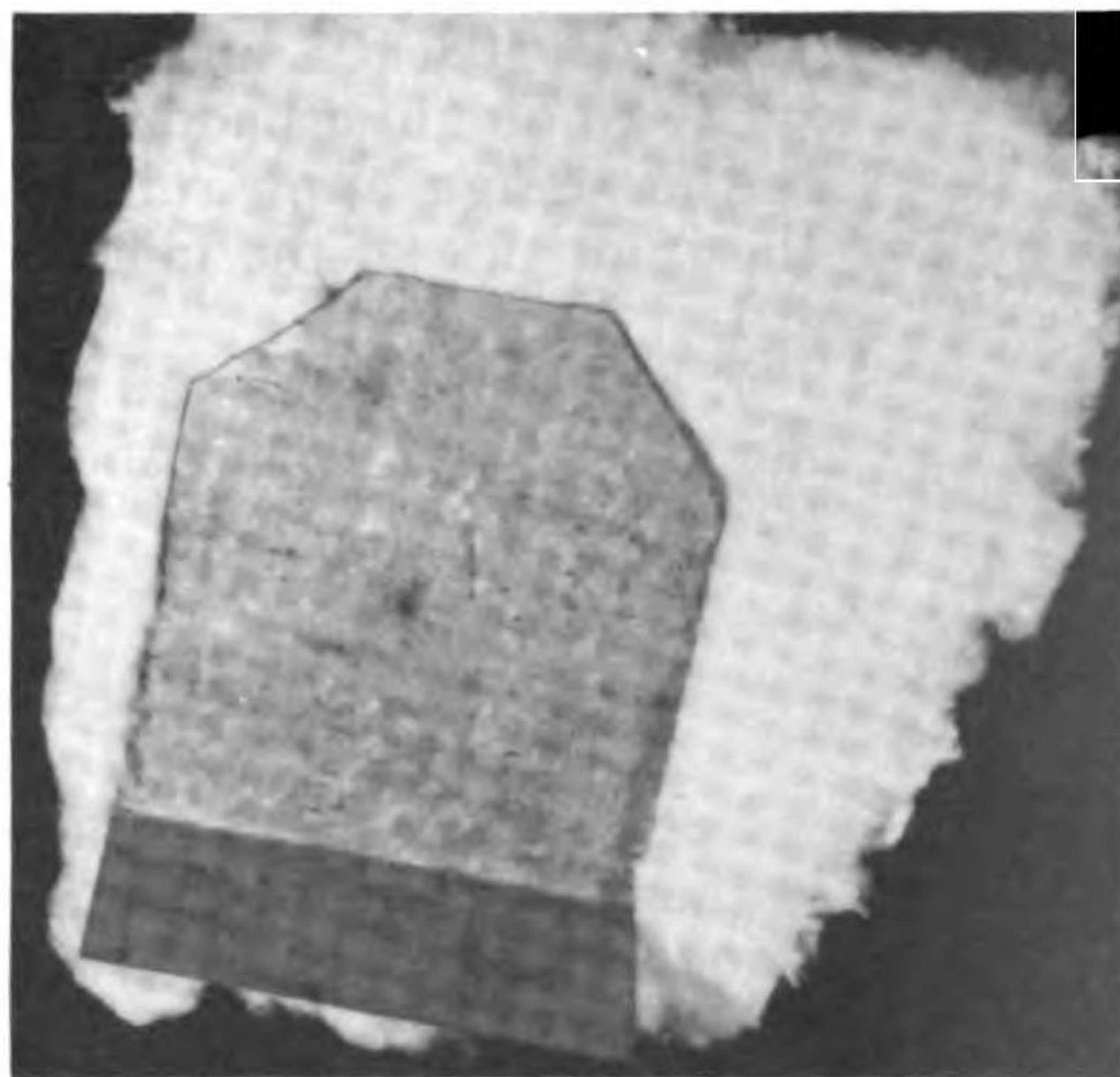
99. In Temporary Fastening of a Coin Purse, the First Pocket Should Be Put in Place and Pressed Together



100. The Coin Purse Pocket Should next Be Folded and then Pressed in Position. The Purse Is now Ready for Edges to Be Punched for Lacing



101. Apply Rubber Cement to the Front Side of a Metal Form



102. Laying the Cemented Side of the Metal Form on Thin Cotton Batting

menting is to assemble all parts on a temporary basis to see if they go together properly, and also to be held while the final fastening is done.

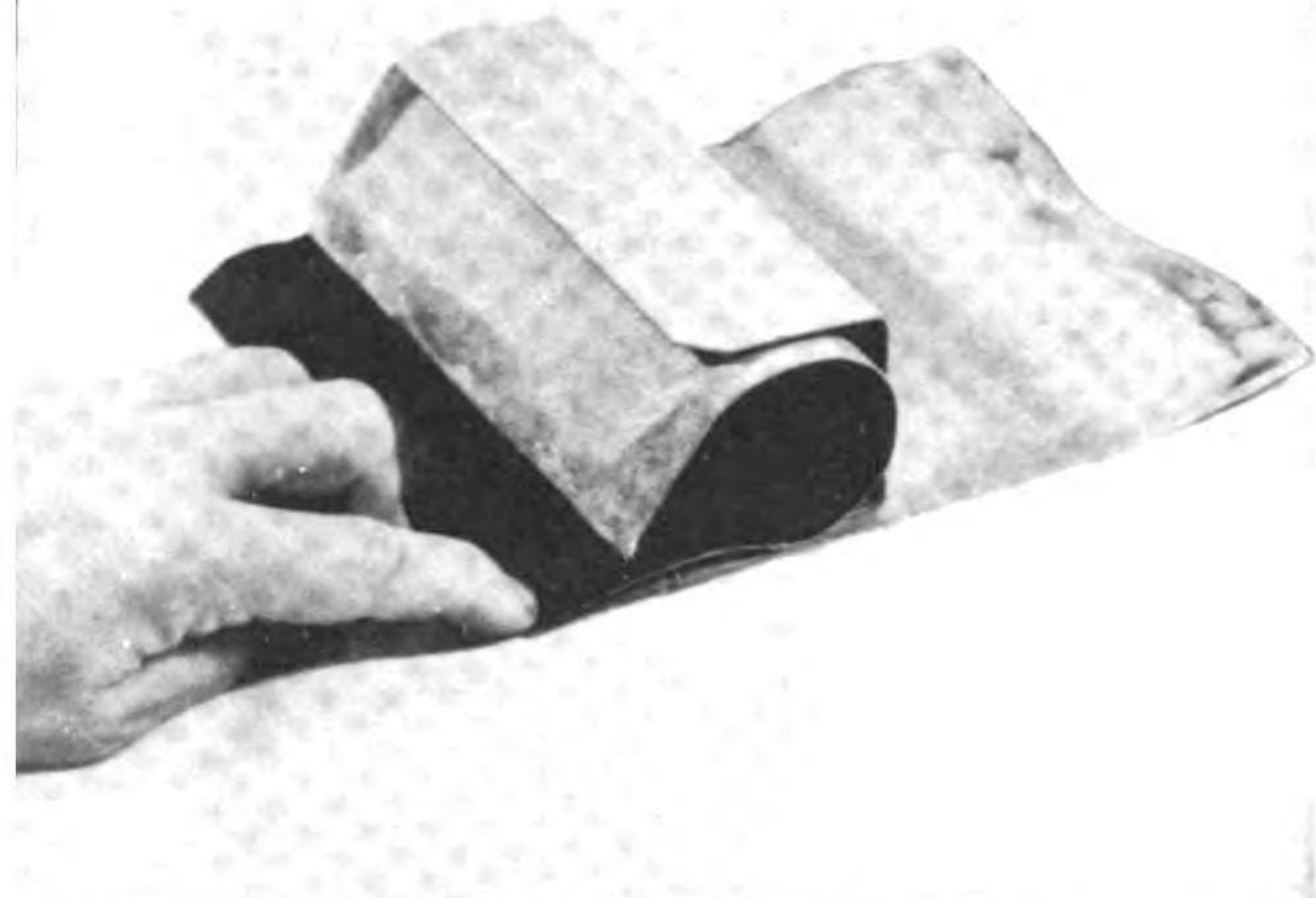
Rubber cement is used because the parts will hold rather firmly for some period of time, or they may be pulled apart for further adjustment.

1. Check all parts to make certain that the necessary tooling, stippling, stamping, embossing, or carving has been completed. See Units 9, 10, 11, and 12.

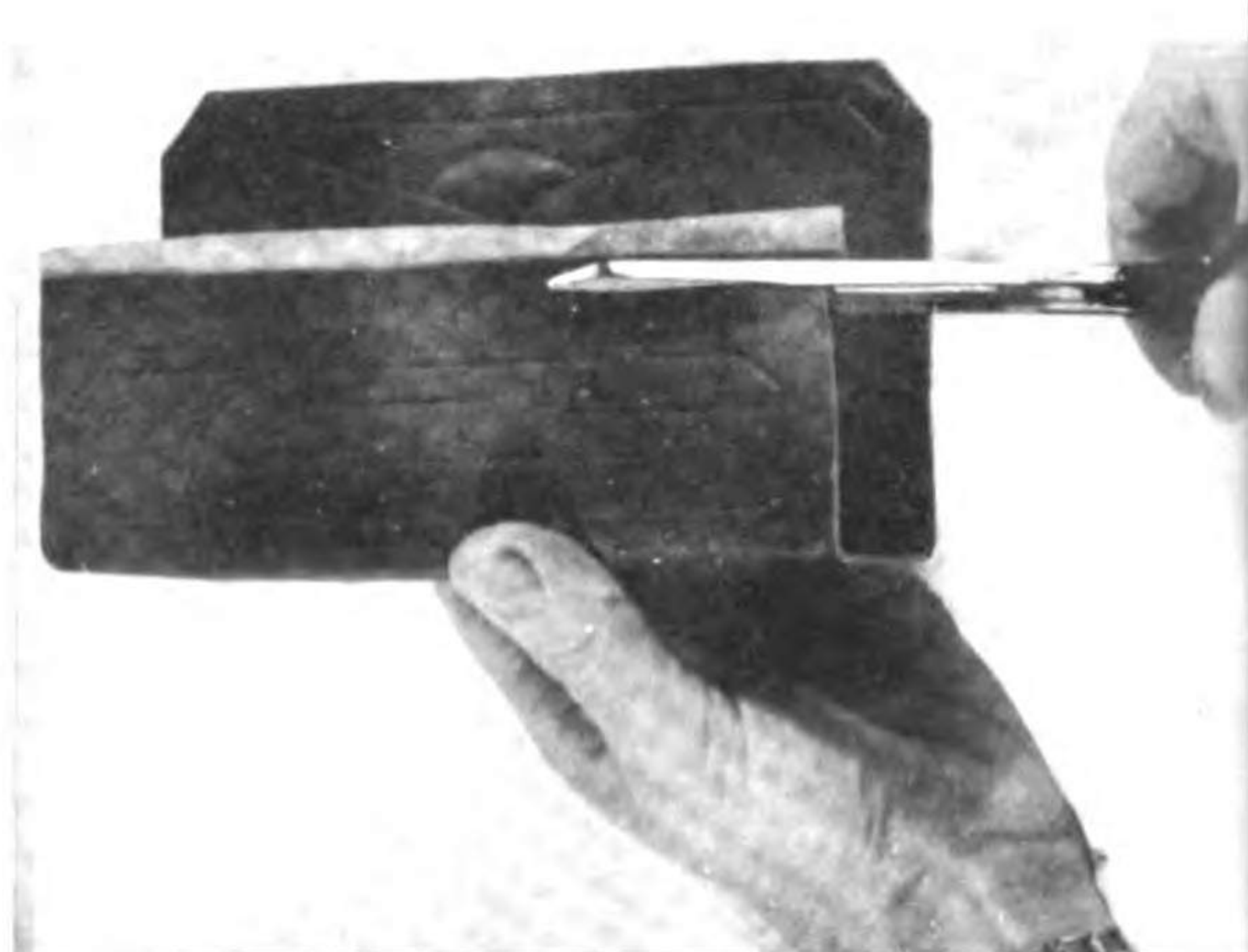
2. Skive the edges to be cemented to about half the thickness of the leather. See Unit 13. Skive only those edges which are to be cemented, and not the open ends.

3. Apply rubber cement along the inside (flesh side) of the skived edges of the pieces to be fastened. Do not cement the edges which are to remain open, Fig. 97.

4. Press the pieces together firmly, Figs. 98, 99, and 100. If they do not fit, they may be pulled apart, altered, and re-cemented.



103. Beginning the Temporary Assembly of Leather Parts Around the Metal Form



104. Cutting away Surplus Leather After the Leather Has Been Temporarily Fastened around the Metal Form

5. Temporary assembly of leather parts over a metal form is shown in Figs. 101, 102, 103, and 104.

6. To obtain a padded effect of the leather design, apply rubber cement on the front side of the metal forms, Fig. 101.

7. Place the cemented portion of the metal form on a thin sheet of cotton batting, Fig. 102.

8. Trim off the excess cotton batting with a scissors.

9. The leather pieces can be temporarily assembled around a metal form as shown in Fig. 103. The form is part of the finished letter holder.

10. Excess leather beyond the amount required for edge lacing can be trimmed with a scissors, Fig. 104.

Unit 16 SEWING

Occasionally it is necessary to fasten leather pieces together by hand or machine sewing. Hand sewing requires some time and patience, but is not difficult when doing only simple type stitching.

The light or craft leathers may be sewn quite readily on the average type

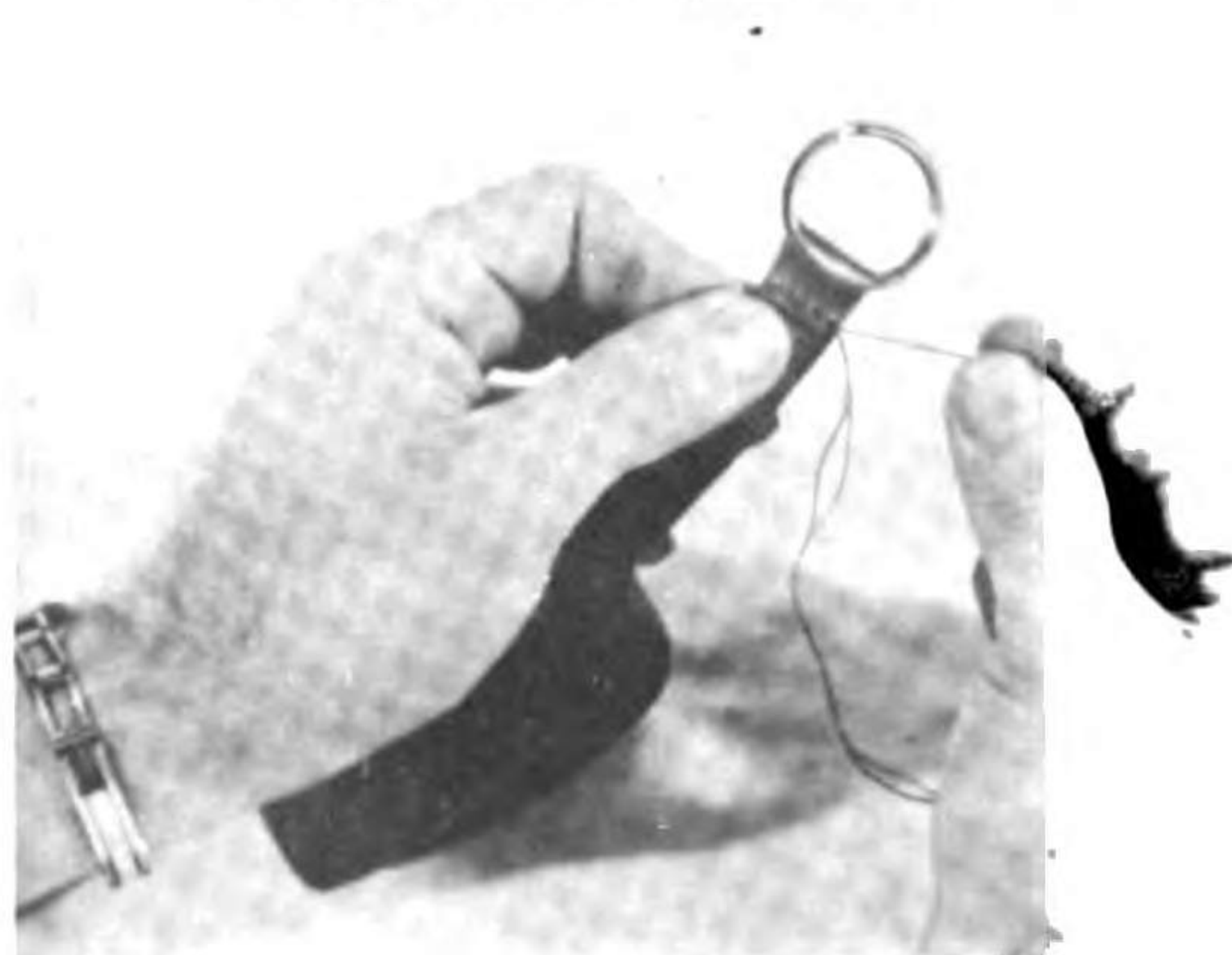
sewing machine in the home. Sewing zippers to leather and inserting pockets on linings for bags can be done very quickly on the home sewing machine.

Heavy or cowhide leather can be sewn together with the use of a lock-stitch sewing awl. This particular tool has complete instructions on its use

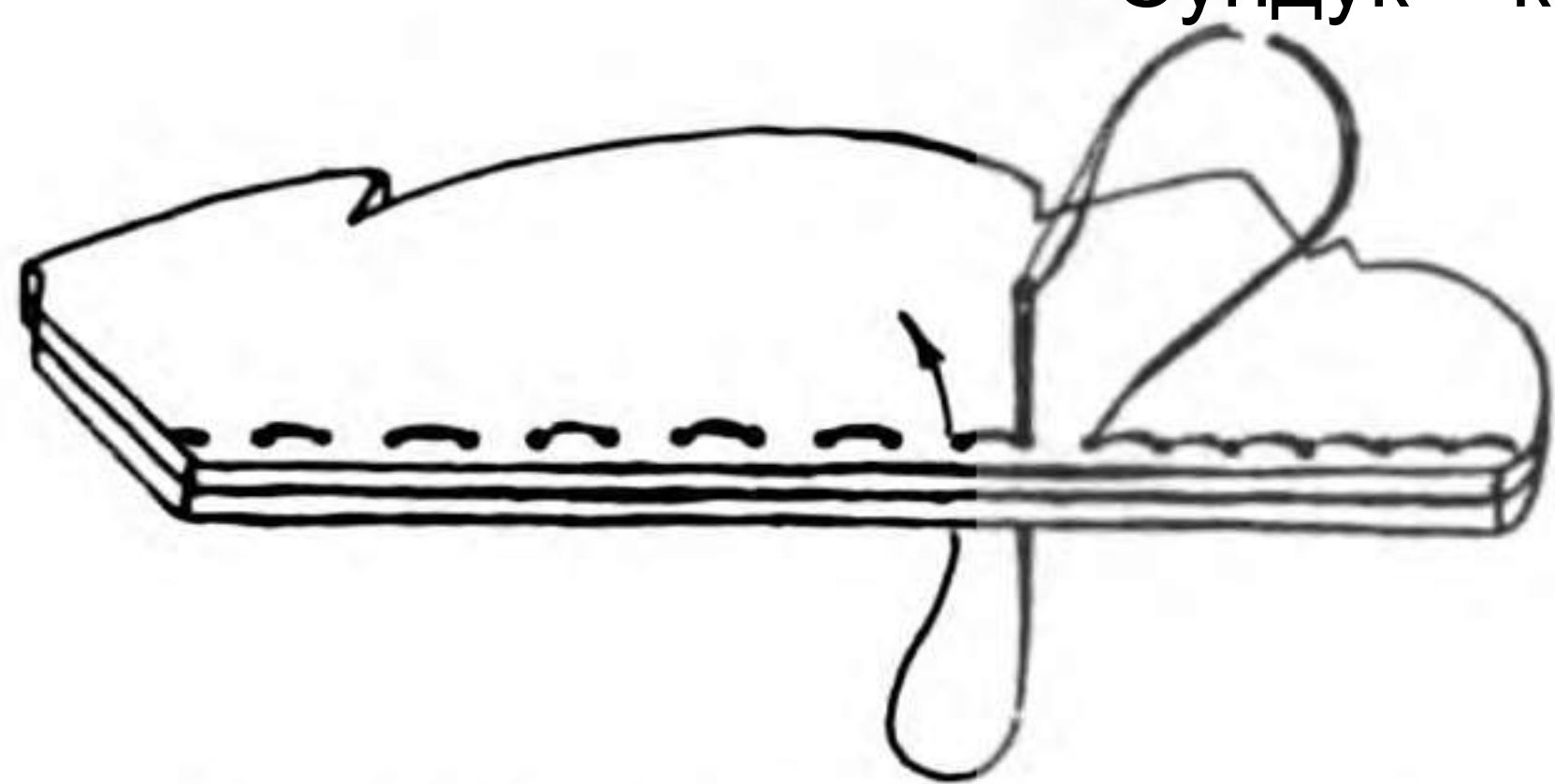
105. Punching Small Holes for Hand Sewing with a Fid



106. Completing the Cobbler's Stitch and Ready to Tie a Square Knot



Original from
UNIVERSITY OF MICHIGAN



107. The Cobbler's Stitch Is a Simple One for Hand Sewing

which come with it, hence no detail of its operation is given here.

Special type flax thread should be used in hand sewing, and it is suggested that you obtain a small amount of it from your local shoe repairman. He can also advise you on the best type to use for your particular job. Needles for sewing leather are described in Unit 3. Nylon thread is desirable for machine sewing.

Hand sewing

1. Cement the parts together in a manner similar to that described in Unit 15. This prevents the pieces from slipping while you punch the holes and do the sewing. Zippers fastened to lining should also be cemented.

2. Locations for punching holes for hand sewing can be made by measuring with rule, or by using the spacer which is described in Unit 3, and as illustrated in Fig. 111.

3. Place the leather on a wood surface and punch light holes with a sharp pointed fid or awl, Fig. 105.

4. Thread the needle and sew the pieces together, preferably with the cobbler's stitch as shown in Figs. 106 and 107.

5. When finished secure the sewing with a square knot.

Machine sewing

1. Cement and fasten the edges together as described in Unit 15. This prevents the pieces from slipping while



108. Sewing Leather on the Sewing Machine Is Very Similar to Sewing Cloth, with only Minor Suitable Adjustments Necessary

you punch holes and do the sewing. Zippers fastened to the lining should also be cemented in place.

2. Thread the machine and the bobbin with the weight nylon thread recommended by the local sewing machine company, getting their advice also as to the proper number of needle to use. A No. 10 needle is considered by many to be heavy enough for sewing on light leather.

3. Adjust the tension on the machine to take care of this heavier sewing. Approximately 10 stitches per inch is satisfactory for light leather.

4. Start sewing as you would for sewing cloth, Fig. 108. If the feed dog marks the leather as it pushes it along, insert a piece of paper between the leather and the bed of the machine. The paper can be pulled out after sewing because it will be so perforated that it will pull off easily.

5. When the sewing is completed, allow about 3 inches of thread in order that it may be secured with a square knot on the underneath side.

Unit 17 PUNCHING EDGE HOLES AND SLITS

Methods of punching edges for lacing vary with individual preference, and with thickness of leather. Thong

slits are satisfactory for the light or craft leathers, but generally are not suitable for heavy leather such as cow-



109. Marking Lightly the Gauge Line for Punching Thong Slits

hide. Some craftsmen prefer thong slits over punching holes because the leather presses around the edge lacing and does not leave a gap. Procedures given here for punching holes are for one and four prong chisels, a single tube belt punch, and depth and spacing gauges.

The following guide provides essential information for slitting or punching holes for edge lacing.

SIZE AND SPACING GUIDE

Width of lace	Size of hole punch	Size of slit punch	Number of holes per inch	Distance from the edge of the leather
$\frac{3}{32}$ "	#00 $\frac{5}{64}$ "	$\frac{3}{32}$ "	6	$\frac{1}{8}$ "
$\frac{1}{8}$ "	# 0 $\frac{5}{64}$ "	$\frac{1}{8}$ "	6	$\frac{5}{32}$ "
$\frac{1}{4}$ "	# 0 $\frac{3}{32}$ "	$\frac{1}{8}$ "	5	$\frac{3}{16}$ "
$\frac{3}{8}$ "	# 0 $\frac{3}{32}$ "		4	$\frac{1}{4}$ "

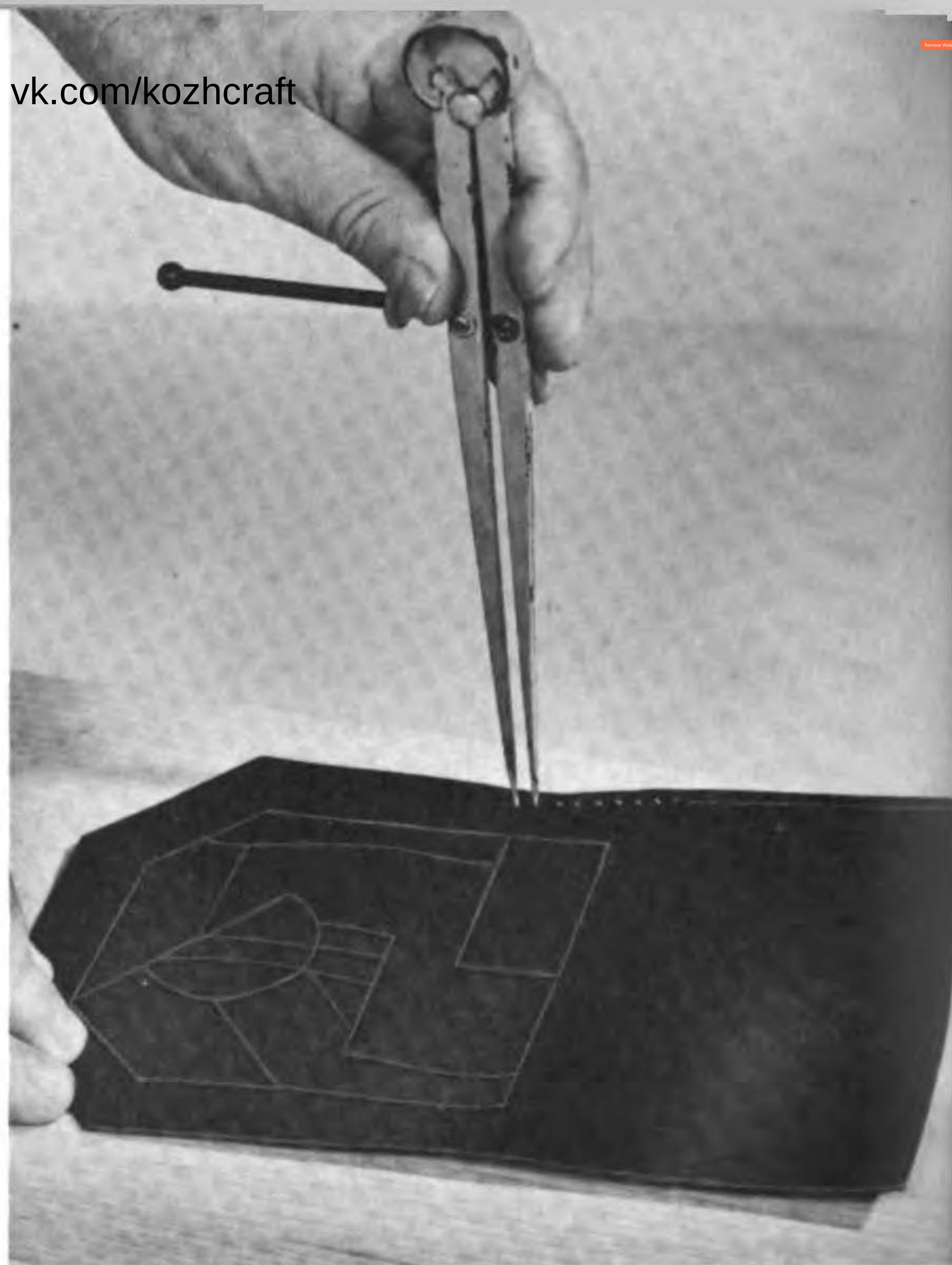
Punching thong slits

1. Skive the edges and cement together the pieces which are to be edge laced. See Units 13 and 15.

2. If possible, round all corners slightly. This permits easier and more even distribution of the lace around the corners.

3. Place the piece of leather on a flat board with the tooled or carved side up. See Fig. 109.

4. Mark the edges lightly with a dividers or with a patent leather compass, Fig. 109. This line should not be less than $\frac{1}{8}$ inch from the edge on light leather, to not more than $\frac{1}{4}$ inch on heavy leather, such as cowhide.



110. Marking Spaces along the Edge for Punching Single Thong Slits

5. In using a one prong chisel, space locations must first be obtained by stepping off on the edge line with a dividers, as shown in Fig. 110. These space divisions can be obtained from the guide given in the early part of this unit. Another method of laying off the spaces is to use the spacing wheel as illustrated in Fig. 111. Note that a straightedge is used for maintaining a straight line.

6. Place the one prong chisel vertically on the space marking and tap gently with a mallet, using only sufficient force to drive the chisel through the leather, Fig. 112. Continue until all of the slits have been punched.

7. The slitting process can be expedited by the use of a three or four prong thonging chisel as indicated in Fig. 113. You can start with the first hole and proceed until almost completing the slitting sequence. The last few holes should be done with a one prong chisel in order to space the slits evenly. The one prong slitter is also used in going around corners and curves.



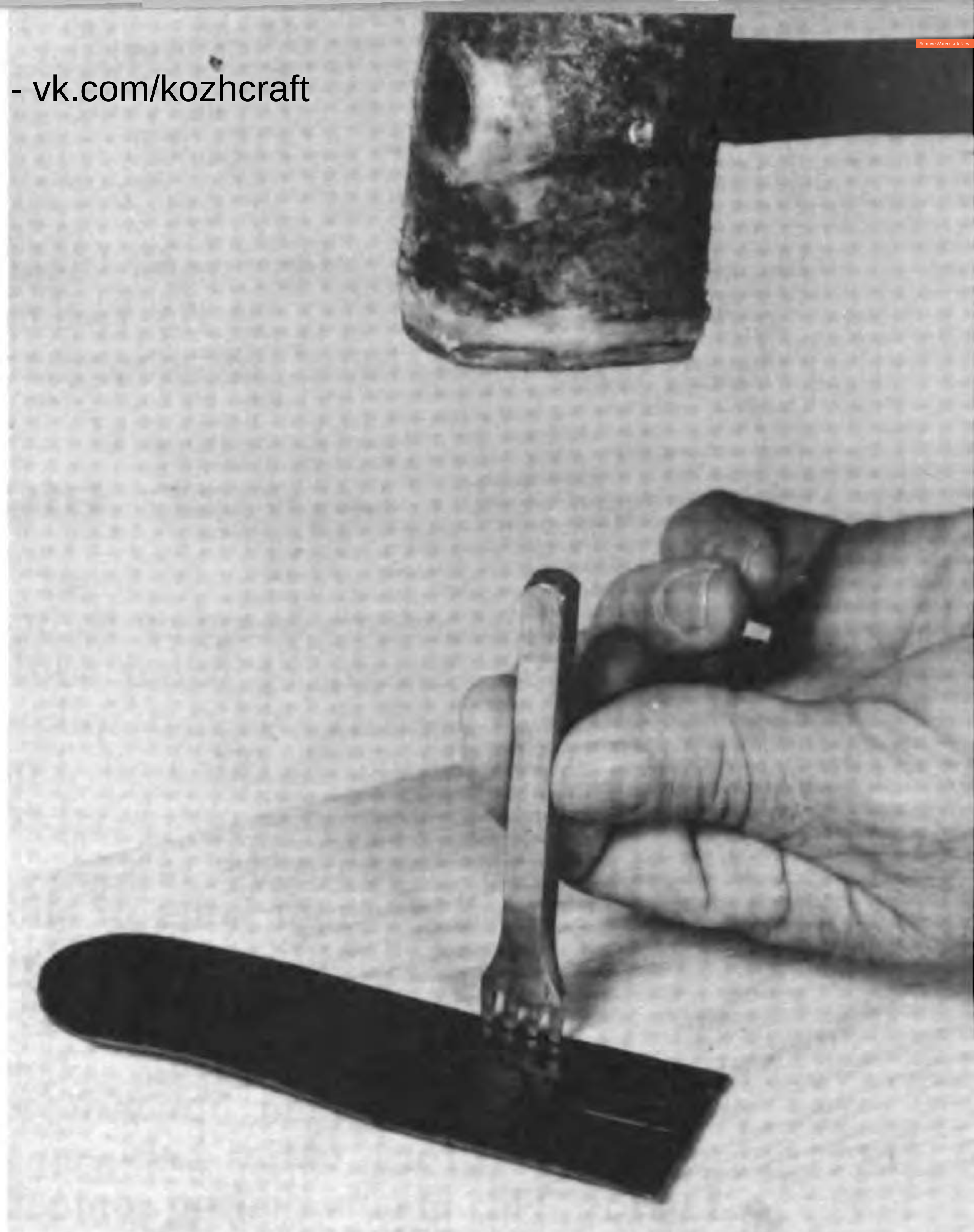
111. Using a Spacer Wheel to Locate Points for Making Single Thong Slits



112. Driving a One Prong Chisel to Make Thong Slits

Punching holes with the single tube hand punch

1. Skive and cement the edges to be punched.
2. Set the depth gauge and spacer as desired.
3. Punch the first hole in a corner



113. Driving a Four Prong Thonging Chisel to Make Edge Lacing Slits



114. Making Edge Holes with Single Tube Punch. Note Depth and Spacer Gauges

with the leather against the depth gauge.

4. Insert the spacer gauge in the first hole and, with the leather against the depth gauge, punch the second hole, Fig. 114.

5. Continue this process until you are two or three holes away from the

next corner. Punch the corner hole, and space back by sight for the two or three holes remaining to complete

punching the holes on one side. Continue punching the remainder of the edge.

Unit 18 SPLICING EDGE LACE

When it is necessary to splice lacing because it has broken, or when additional length is needed, you may follow the instructions given in this unit. For smaller projects, you will not need to splice unless the lace breaks.

Lace will pull through holes or slits easier with less possibility of breaking if both sides of it are treated with beeswax.

The most convenient maximum length of lace to use varies between 2 to 3 yards. This means that on some of the larger projects you will need to splice several times.

Splicing

1. Place the ends of the lace to be spliced on a flat wood or marble sur-

face.

2. Skive the ends to be glued a distance of $\frac{1}{2}$ to $\frac{3}{4}$ inch on the *flesh* side on one piece and on the *grain* side of the other, Fig. 115.



115. Ends of Edge Lacing Skived and Ready to Be Cemented

3. Apply rubber cement to the skived ends; allow them to get tacky; then press them firmly together.

4. Let the splice dry thoroughly before continuing the lacing.

Unit 19 WHIP STITCH EDGE LACING

Edge lacing can be made simple, yet attractive, through several variations of the whip stitch. The more common ones described in detail here are the single, double, and cross whip stitches. The latter two can be made rather ornamental by using two colors of edge lacing.

The lacing material for the whip stitches is generally $\frac{3}{32}$ to $\frac{1}{8}$ inches wide. The length of lace for each type is indicated in an introductory statement for each process series.

You will find lacing made easier if you will use a special needle, such as is described in Unit 3. See Fig. 117.

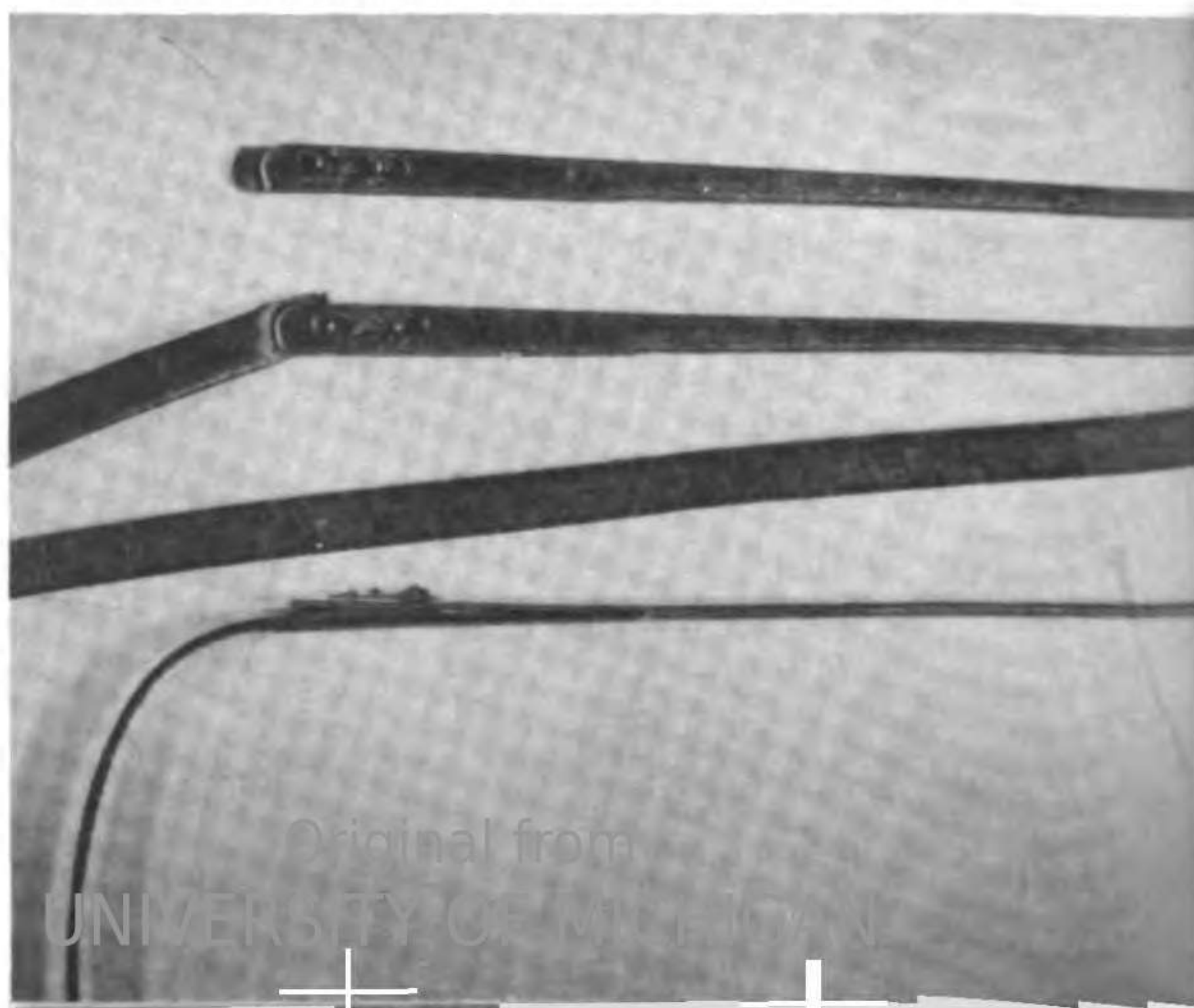
Single whip stitch, Fig. 116

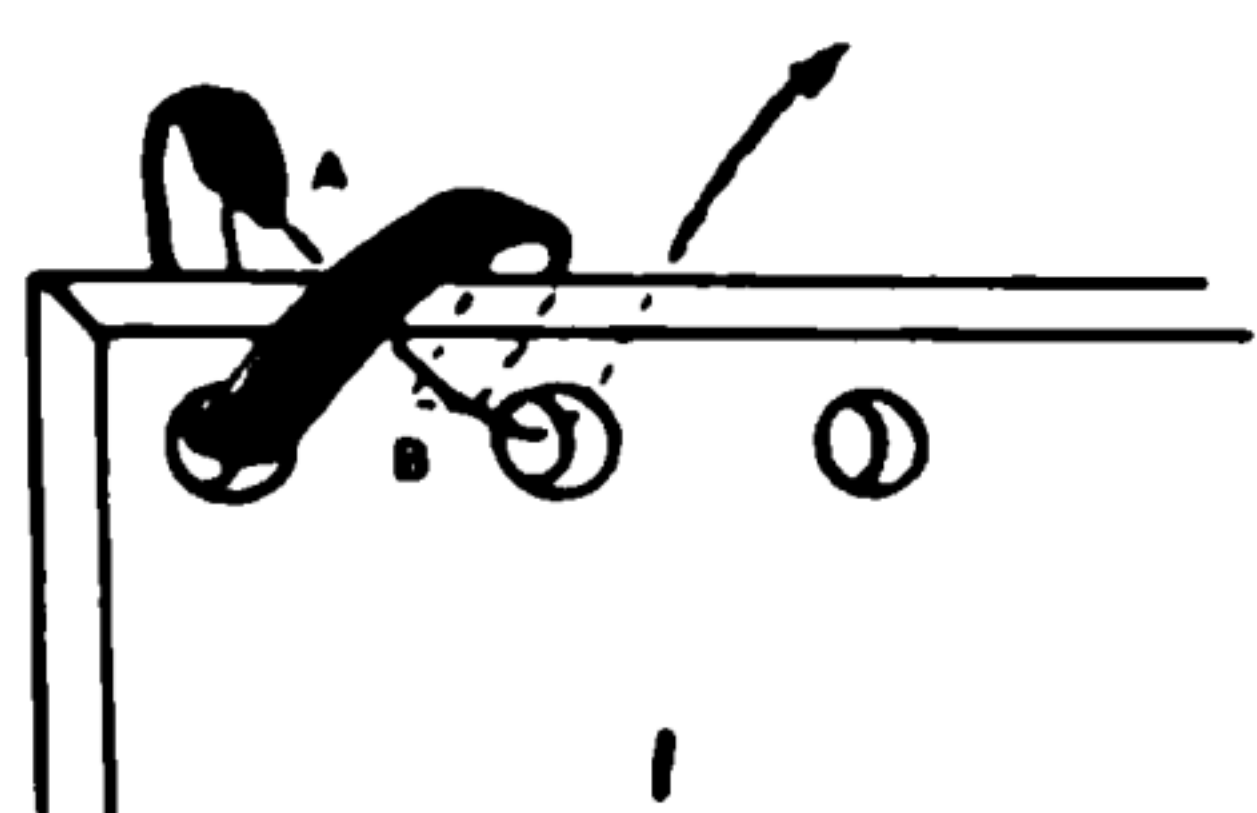
The length of lace required is approximately three times the distance to be laced.



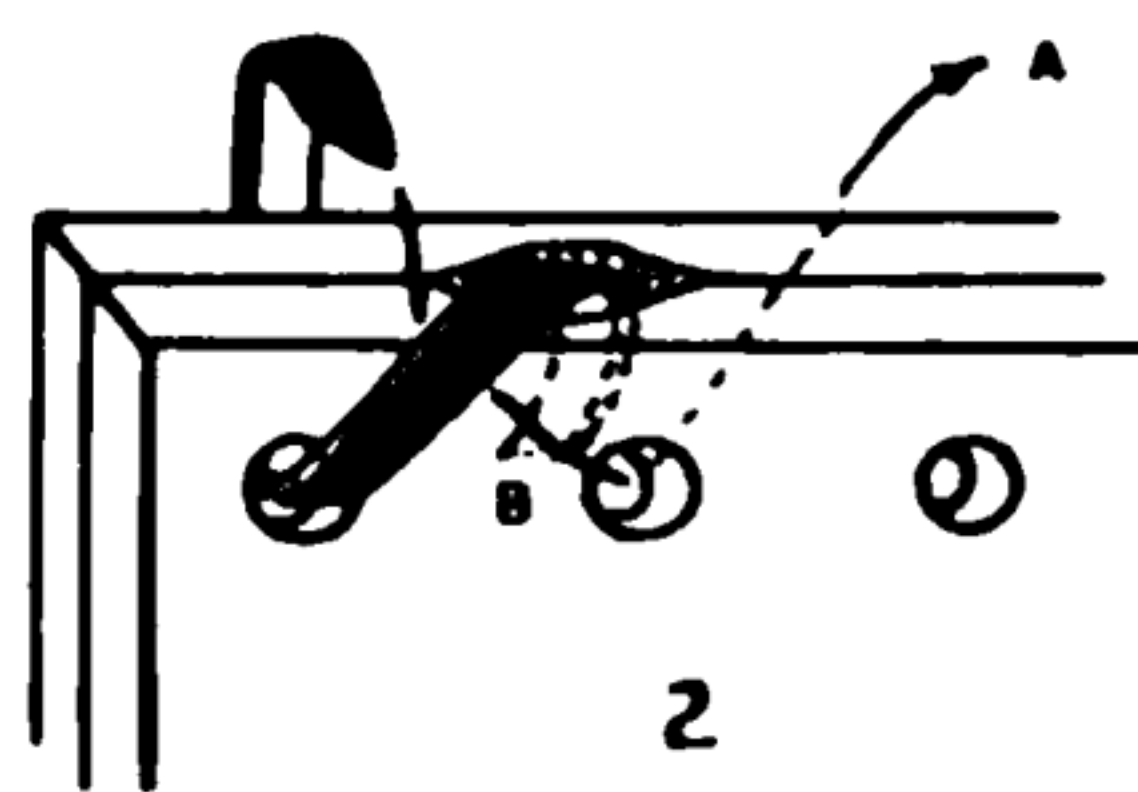
116. Pattern of the Single Whip Stitch

117. The Lacing Needle Makes Edge Lacing Easier. Top Shows the Lacing Needle. Directly Under It and Below Are Two Views of Edge Lacing Being Held in the Needle





118. Beginning the Single Whip Stitch



119. Pattern of the Double Whip Stitch



120. Pattern of the Cross Whip Stitch

1. Punch holes or cut thong slits as desired. Unit 17.

2. If desired, thread lace in the special lacing needle, pictured in Fig. 117.

3. Hold the article with the front facing you. Slip working end A of the lace through the first hole, with the flesh side up, and pull the length of lace through, leaving a $\frac{3}{4}$ inch tail B which is laid over the back for single thickness leather, Fig. 118-1, or tucked between the leather if two or more thicknesses are being edge laced as shown in Fig. 118-2.

4. Bring end A of the lace over the edge (or edges) and insert it through the second hole from the front side. Pull it firm, and continue until the lacing has been completed as shown in Fig. 116. You will find it desirable and easier to follow instructions if you always lace from left to right.

5. Finish the whip stitch as it was started, either by bringing the lace back under itself, or by tucking it between the two pieces of leather.

Double whip stitch, Fig. 119

The length of lace required for the double whip stitch is approximately six times the distance to be laced.

1. Punch holes or cut thong slits as desired. Unit 17.

2. Begin this stitch just like the

single whip stitch, Fig. 118.

3. Proceed in the same manner as for the single whip stitch, except that you go through each hole or slit twice. This stitch will completely cover the edge, Fig. 119.

4. A novelty effect can be achieved in the double whip stitch by using two colors of edge lace. When doing so, make the single whip stitch with one color for the entire distance; then begin at the same starting hole and do the single whip stitch again with the second color lace.

5. Finish the lacing as explained for the single whip stitch.

Cross whip stitch, Fig. 120

The length of lace required for the cross whip stitch is approximately six times the distance to be laced.

1. Punch holes or cut thong slits as desired. Unit 17.

2. Begin this stitch just like the single whip stitch, Fig. 118.

3. Whip stitch the entire distance to be laced; however, *skip* every other hole. See Fig. 120. When you reach the last hole, reverse your direction of lacing and lace back to the beginning through the holes which you skipped the first time.

4. End the lacing procedure in the same manner as for the single whip stitch.

Unit 20 VENETIAN OR FLORENTINE LACING

This particular type of edge lacing is easy to do and covers the edge completely. Lacing can be purchased in either $\frac{1}{4}$ or $\frac{3}{8}$ inch width. You can also cut it from a piece of kidskin or skiver

with a scissors in a spiral pattern.

You will probably prefer to lace this type of edge covering without using a needle, but the lace should be trimmed to a sharp point.

It is advisable to punch holes in the edge of the article because the lace is very difficult to pull through slits.

Venetian or Florentine lacing, Fig. 121

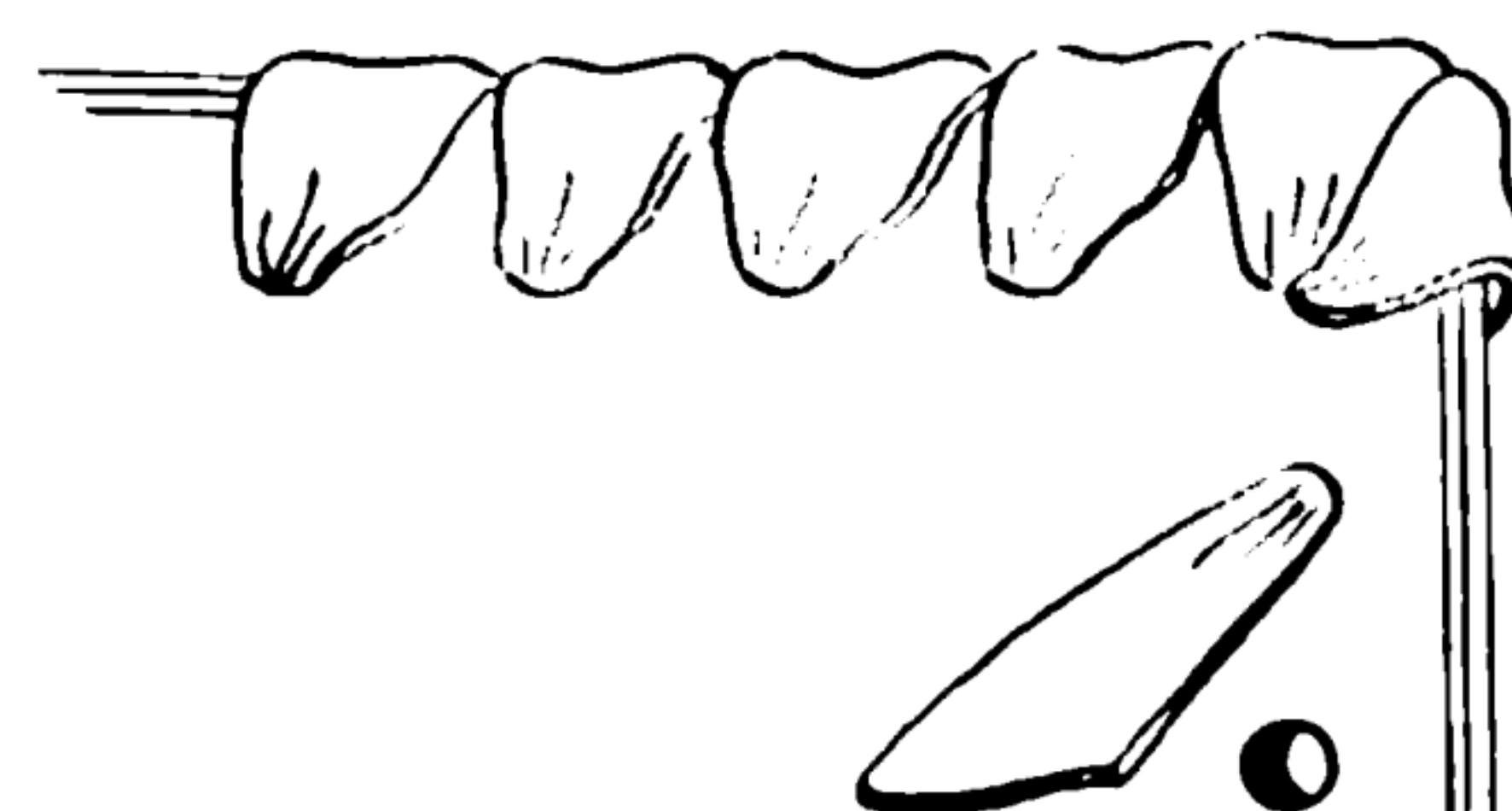
The length of lace required for the Venetian or Florentine lacing is approximately three times the distance to be laced.

1. Venetian edge lacing is a layover stitch which is exactly like the single whip stitch described in Unit 19. The edge lacing will look like Fig. 121.

2. Lace through the corner holes twice in order to have the edges hidden, Fig. 122, and continue lacing as



121. Pattern of Venetian Edge Lacing



122. Venetian Edge Lacing Should Go Through the Corner Hole Twice

described for the single whip stitch, Unit 19.

Unit 21 SINGLE AND DOUBLE CORDOVAN OR BUTTONHOLE EDGE LACING

Lacing edges of leather with either the single or double Cordovan or buttonhole stitch becomes a fascinating part of the project. The most suitable kinds of lacing materials for either type are calf and goatskin in $\frac{3}{32}$ and $\frac{1}{8}$ inch widths.

The length of lace is given in an introductory statement for each process series. You will find lacing made easier if you will use a special lacing needle such as described in Units 3 and 19.

The lacing should be pulled uniformly to produce an even edge; and, after the lacing has been completed, tap or roll it with a mallet to give the edge a flat, finished appearance.

Single Cordovan or single buttonhole stitch, Fig. 123

The length of lace required for the

123. Pattern of Single Cordovan Edge Lacing

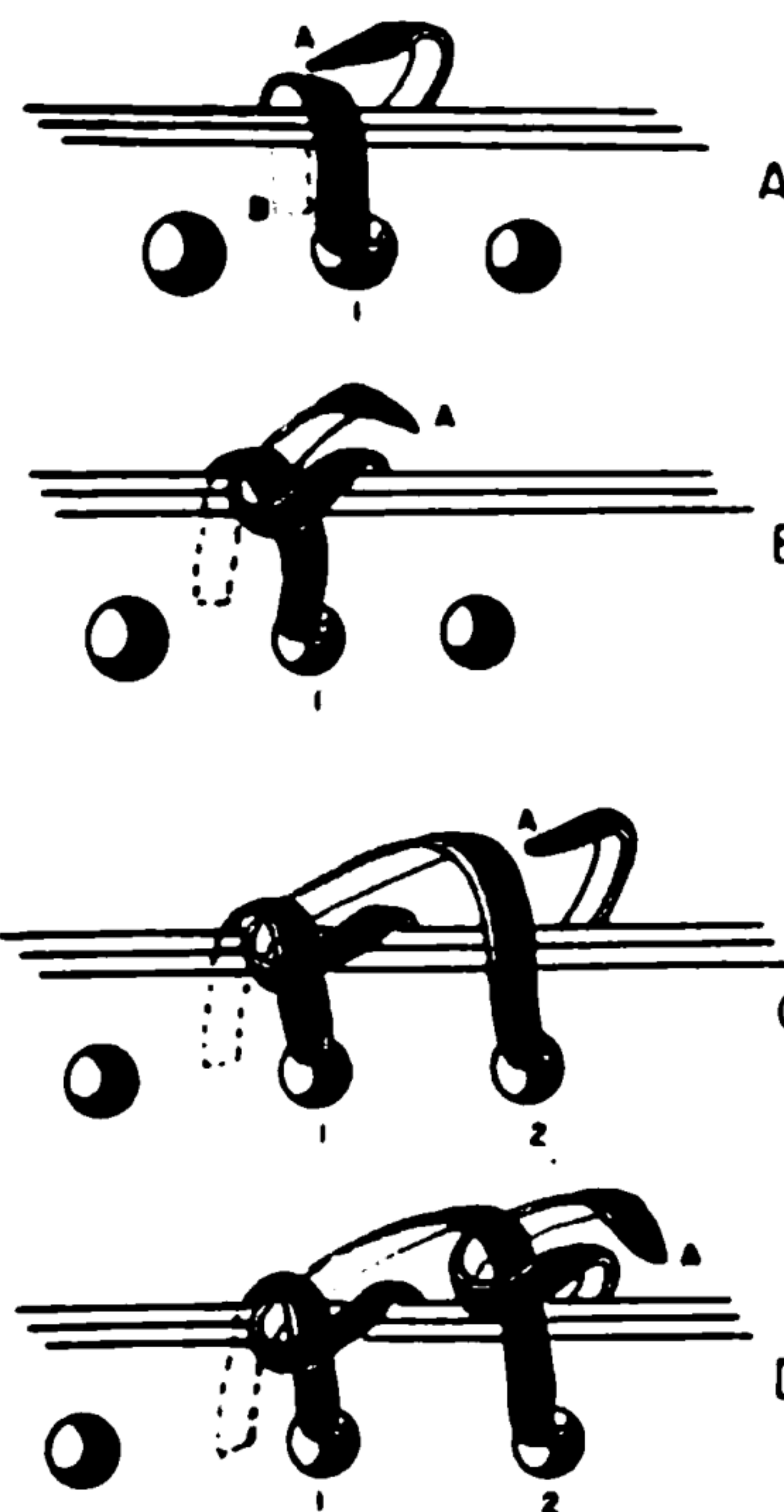


single Cordovan or single buttonhole stitch varies between five and six times the distance to be laced, depending on how tight the lace is to be pulled.

1. Punch holes or cut thong slits as preferred. Unit 17.

2. Insert end A of the edge lace, flesh side up, through hole 1 from the

124. Steps in Beginning the Single Cordovan Edge Lacing. For Clarity the Lacing on the Edge Is Purposely Shown Loose





125. Rounding a Corner with the Single Cordovan Edge Lacing

front and pull it until approximately a $1\frac{1}{4}$ inch tail, B, is left on the front. Pull tail B over the top around the back and hold in place with the other hand, Fig. 124-A.

3. Pull end A over the lace and insert it through from the left front of the loop, Fig. 124-B.

4. Pull the lace firm while still holding end B.

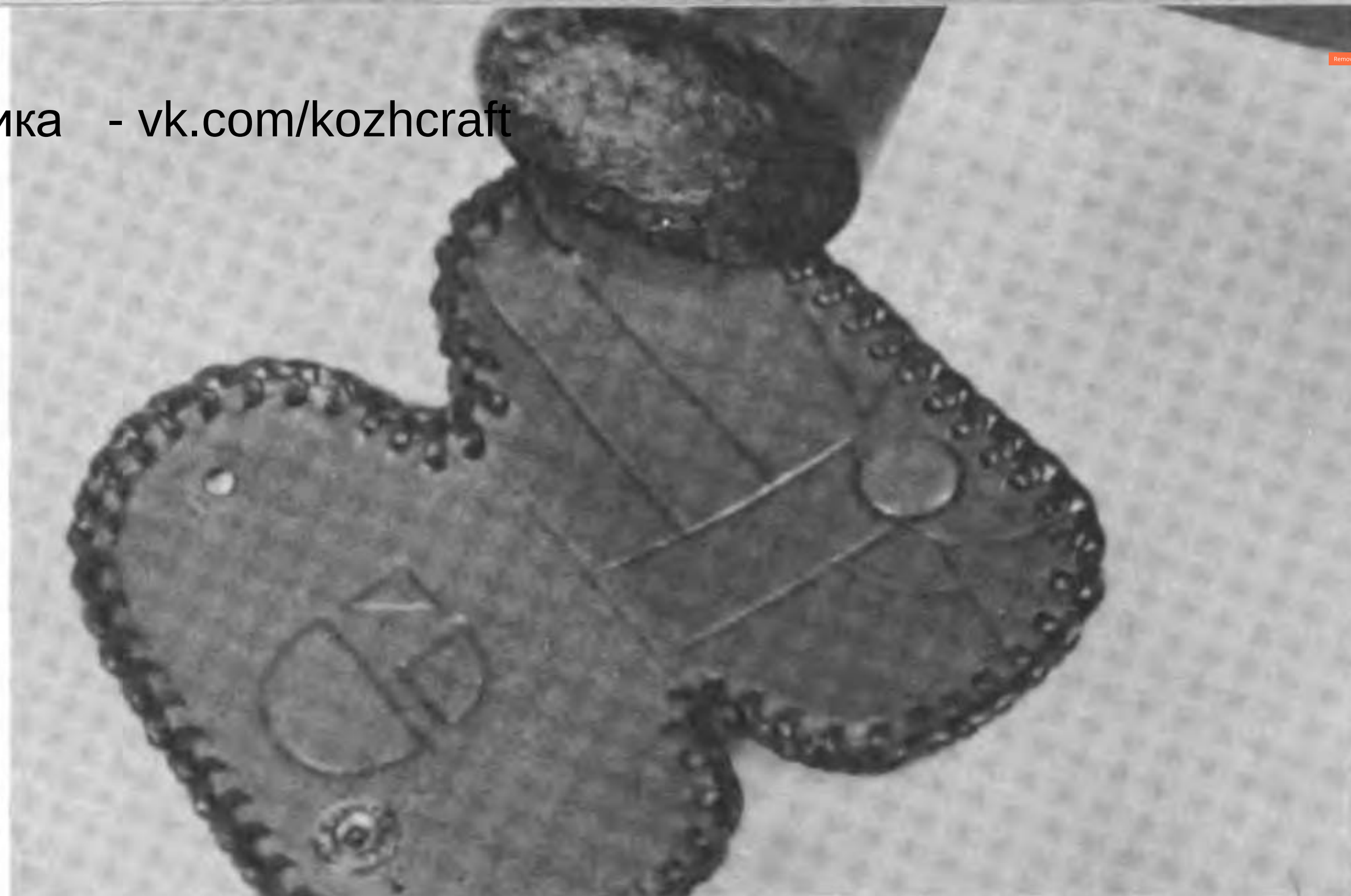
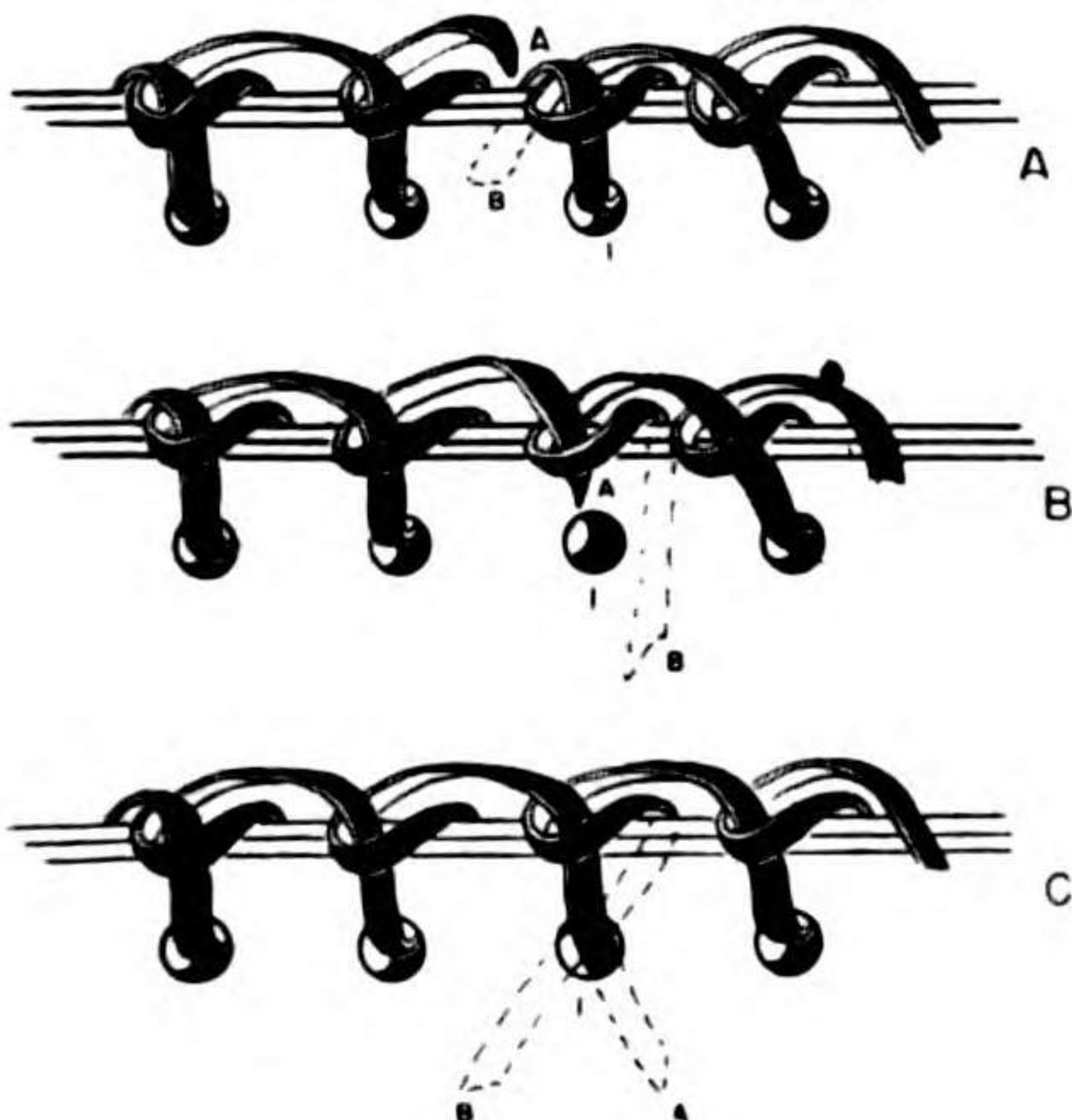
5. Bring end A over the top and insert it from the front through hole 2 (or slit), Fig. 124-C.

6. Bring end A over the top of the lace and through the loop from the front left, Fig. 124-D. Adjust it firmly.

7. Continue lacing until you get to the corner. Make a double stitch through the corner hole to round it more fully, Fig. 125. Sometimes in order to cover the edge it may be desirable to go through the second hole twice, then proceed on the second edge.

8. Continue lacing until the hole

126. Steps in Ending or Splicing the Single Cordovan Edge Lacing



127. Roll or Tap the Edge of the Lacing To Give It a Flat, Finished Appearance

next to the starting one is reached, Fig. 126-A.

Ending the single Cordovan edge lacing

9. Begin the splice or dead-end the stitch by pulling tail end B out of the loop and hole 1 and inserting end A through the loop, Fig. 126-B.

10. From inside the leather project pull end B through one thickness of leather so that it will be on the inside between the two pieces of leather, Fig. 126-C. Adjust the stitch so that it will have the same tension as the rest of the edge lace.

11. Ends A and B should be cut to about $\frac{3}{4}$ inch length and rubber cemented between the two thicknesses of leather, when possible, Fig. 126-C. This completes the splice.

12. Roll or tap the lace or stitch lightly to make it uniform, Fig. 127.

Double Cordovan or double buttonhole stitch, Fig. 128

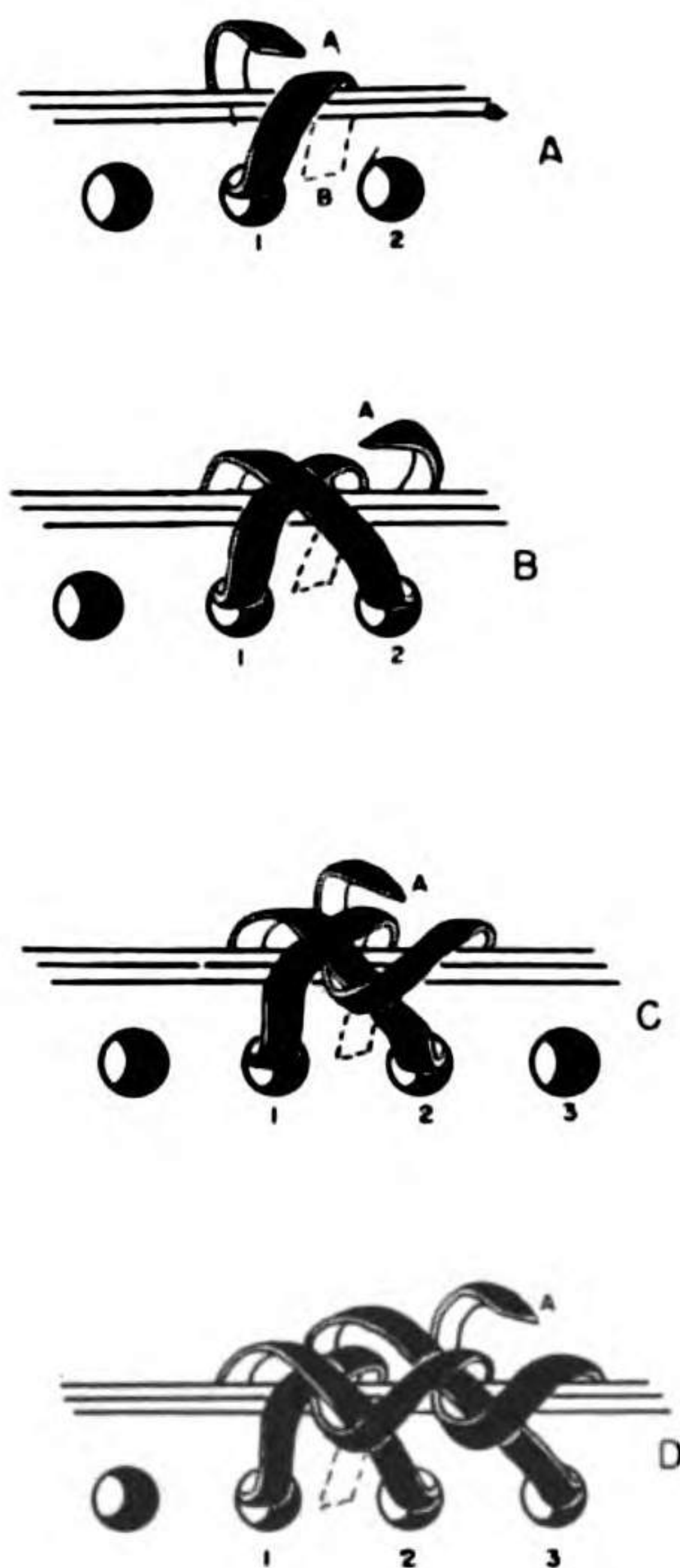
The length of lace required for the double Cordovan or double buttonhole stitch is approximately seven times the distance to be laced.

1. Punch holes or cut thong slits as preferred. Unit 17.

2. Insert end A of the edge lace with the flesh side up, through hole 1 from

128. Pattern of the Double Cordovan Edge Lacing





129. Steps in Beginning the Double Cordovan Edge Lacing. For Clarity the Lacing on the Edge is Purposely Shown Loose

the front, and pull it until approximately $1\frac{1}{4}$ inches of tail B remains on the front. Pull tail end B over the top and around the back and hold in place with the other hand, Fig. 129-A.

3. Pull end A over end B and insert it from the front through hole 2, Fig. 129-B.

4. Pull end A over the top and to the front side, and then under both layers of lace, Fig. 129-C. Pull the lace firm to start a smooth edge of lacing.

5. Insert end A from the front in hole 3 in the same manner as pictured in Fig. 129-D.

6. Bring end A over the top and to the front side, then under the two layers of lace between holes 2 and 3, Fig. 129-D. Continue this procedure until the edge has been laced to a corner.

7. Make a double stitch through the corner hole to round it more fully, Fig. 130.



130. Rounding a Corner with the Double Cordovan Edge Lacing. Notice on the Left How the Lacing Needle Is Used. On the Right Side Is the Completed Corner

8. Continue lacing until you reach hole 0 next to starting hole 1, Fig. 131-A.

Ending the double Cordovan edge lacing

9. Begin the splice or dead end the stitch by pulling tail end B loose from the starting stitch so that it extends from the front of hole 1, Fig. 131-A and B.

10. Pull end B from the back completely out of hole 1, Fig. 131-C.

11. Pull end B out of the loop and let it extend from the front of hole 2. Make sure the loop holds its position, Fig. 131-D.

12. Insert end A from the front, through hole 1, Fig. 131-E.

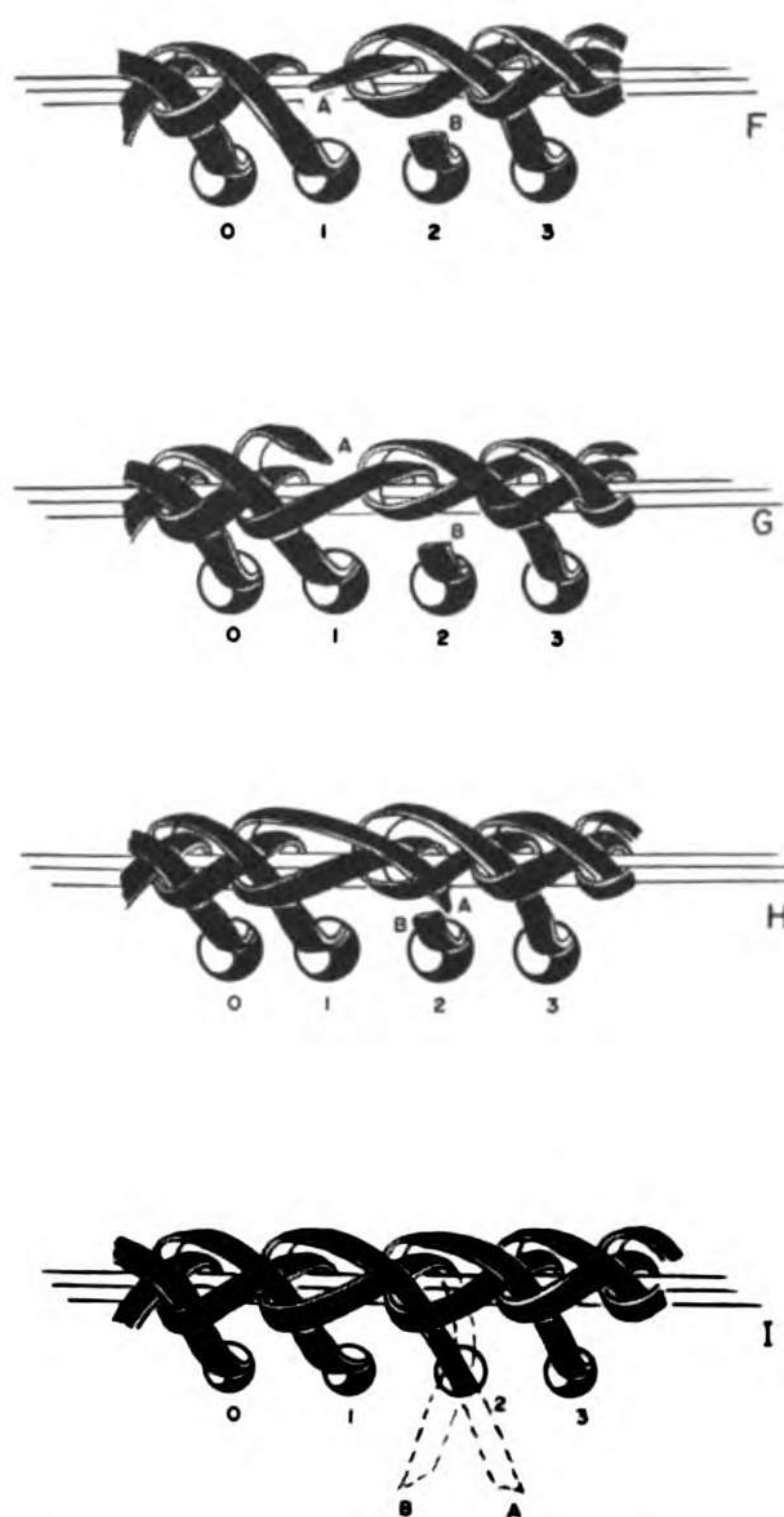
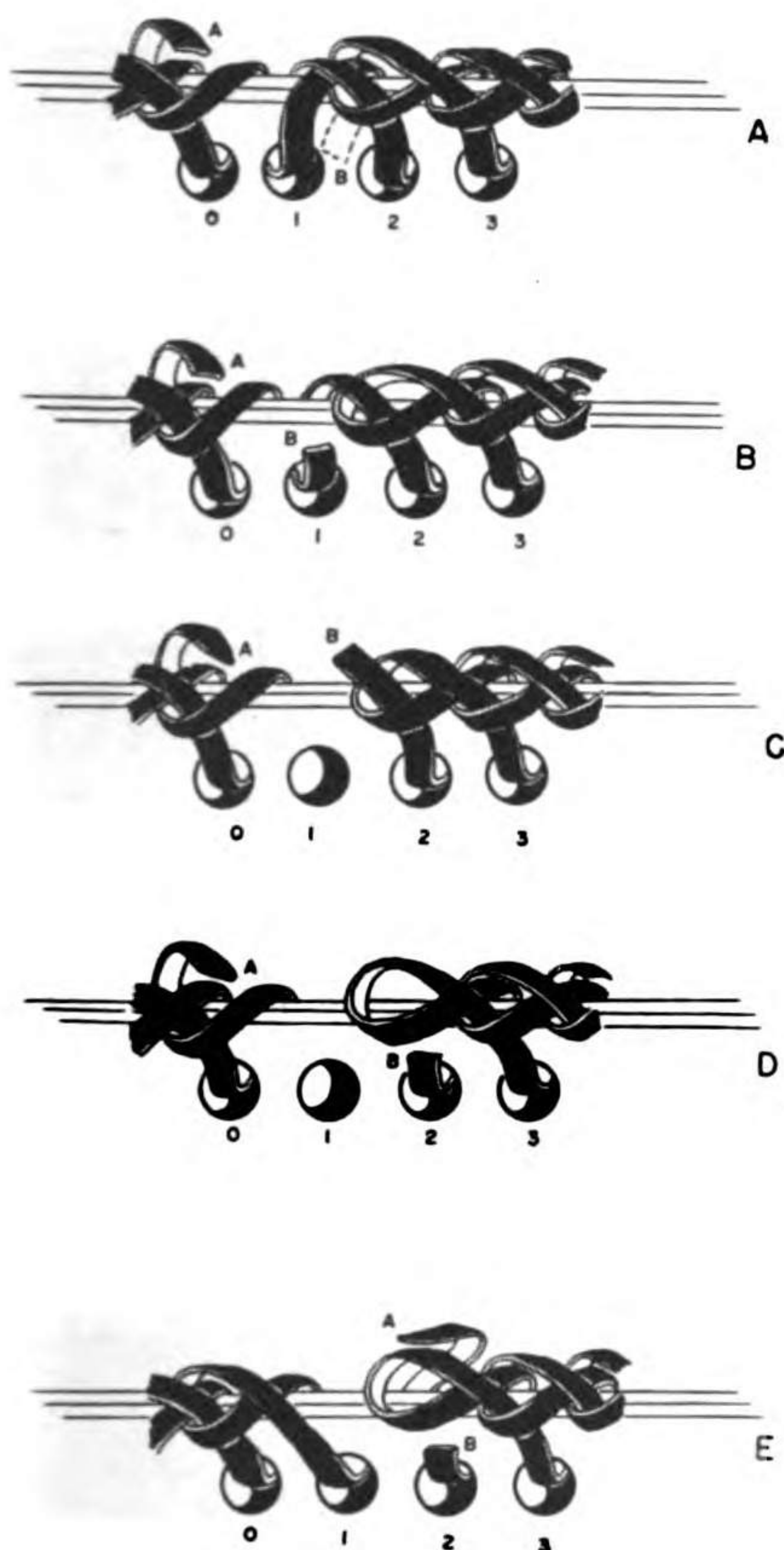
13. Insert end A up through the loop from the back, Fig. 131-F.

14. Insert end A under the double thickness of lace between holes 0 and 1, Fig. 131-G.

15. Insert end A over itself and through the loop over hole 2, Fig. 131-H.

16. Pull the final stitch snug so that it looks like the others.

17. From inside the leather article, pull end B through one thickness of leather so that it will be on the inside; also pull end A through one thickness so it will be on the inside between the two pieces, Fig. 131-I. Adjust the stitch so that it will have the same tension as the rest of the edge lace.



131. Steps in Ending or Splicing the Double Cordovan Edge Lacing

18. Ends A and B should be cut to about $\frac{3}{4}$ inch length and rubber cemented between the two thicknesses of leather when possible, Fig. 131-I.

This completes the splice.

19. Roll or tap the edge stitch lightly to make it uniform. See Fig. 127.

Unit 22 PUNCHING HOLES

Holes must be punched in leather to hold eyelets, snap buttons, rivets, edge lacing, bag attachments, belt buckles and fastenings, and for other purposes. Punching holes for edge lacing has been described and illustrated in Unit 17.

The purpose of this unit is to show the uses of the various types of punches. Check the following guide to obtain the correct number of punch for punching the desired size hole. The most common tool for punching holes is the **six-tube**, revolving type hand punch.

PUNCH NUMBERS AND HOLE SIZES

Punch No. 00..... $\frac{3}{64}$ "	Punch No. 4..... $\frac{1}{8}$ "
Punch No. 0..... $\frac{1}{16}$ "	Punch No. 5..... $\frac{9}{64}$ "
Punch No. 1..... $\frac{5}{64}$ "	Punch No. 6..... $\frac{5}{32}$ "
Punch No. 2..... $\frac{3}{32}$ "	Punch No. 7..... $\frac{3}{16}$ "
Punch No. 3..... $\frac{7}{64}$ "	Punch No. 8..... $\frac{1}{4}$ "

Punching holes

1. Lay out and determine the exact location of the hole to be punched. Mark with an awl.

2. Align the proper size tube of the revolving punch with the anvil, and center it over the mark, Fig. 132.



132. Punching a Hole with a Revolving Tube Hand Punch



134. Punching a Hole with an Awl



133. Punching a Hole with a Hollow Drive Punch



135. Punching an Oblong Hole for a Belt Buckle

3. Punch the hole with the revolving tube punch, Fig. 132.

4. A drive type punch of the proper size may also be used as shown in Fig. 133. The leather should be placed over a piece of hardwood and the punch driven firmly with a rawhide or wooden mallet.

5. A hole can be driven in a piece of leather with an awl and a mallet as shown in Fig. 134. The difficulty

with this procedure is that the leather has not been cut away, but merely pushed aside. Punching a hole in this manner is more suitable for hand sewing.

6. Oblong holes for fastening belt buckles and bag straps can be punched with an oblong punch of the required size, as illustrated in Fig. 135. The leather should be placed on a hardwood, rubber, or composition material surface.



136. An Eyelet in Place Ready to Be Fastened or Secured with a Hand Eyelet Setter



137. Setting an Eyelet with a Hand Lever Eyelet Setter

Unit 23 SETTING EYELETS

Eyelets are used in leatherwork for fastening metal key plates to key case liners, and occasionally for reinforcing belt holes. The most common size eyelet is the No. 1.

Setting eyelets

1. Lay out and punch the proper size hole for the eyelet. See Unit 22 for instructions on methods of punching holes. Punch a hole first in a piece of scrap leather to make certain you have the correct size.

2. Place the eyelet on a hard surface. See Fig. 136.

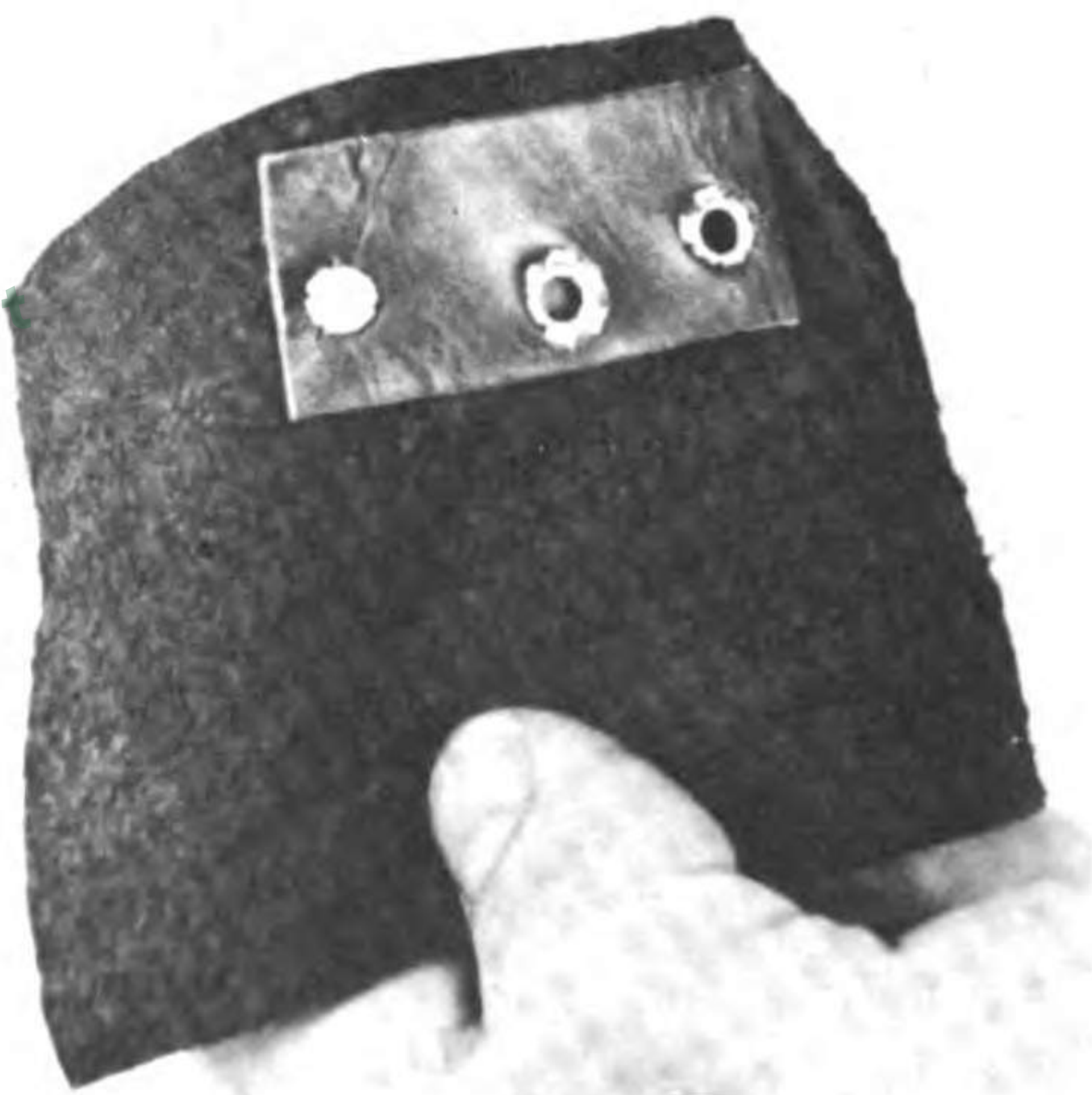
3. Place the leather and the metal key plate holder as shown in Fig. 136.

4. Hold the eyelet setter over the eyelet in a vertical position and strike the setter with a mallet. Refer to Fig. 136.

5. An alternate method of setting the eyelet is with the hand lever eyelet or rivet setter, Fig. 137.

6. An eyelet may also be set by using one of the attachments on the combination punch which is described in Unit 3.

iskysoft



138. The Reinforcing Piece Adds Strength in Setting a Metal Key Plate to Thin Lining Material

7. If the lining leather is thin, add a piece of reinforcing scrap leather as shown in Fig. 138. This will be hidden because the lining will be edge laced to a hand tooled or carved key case cover.

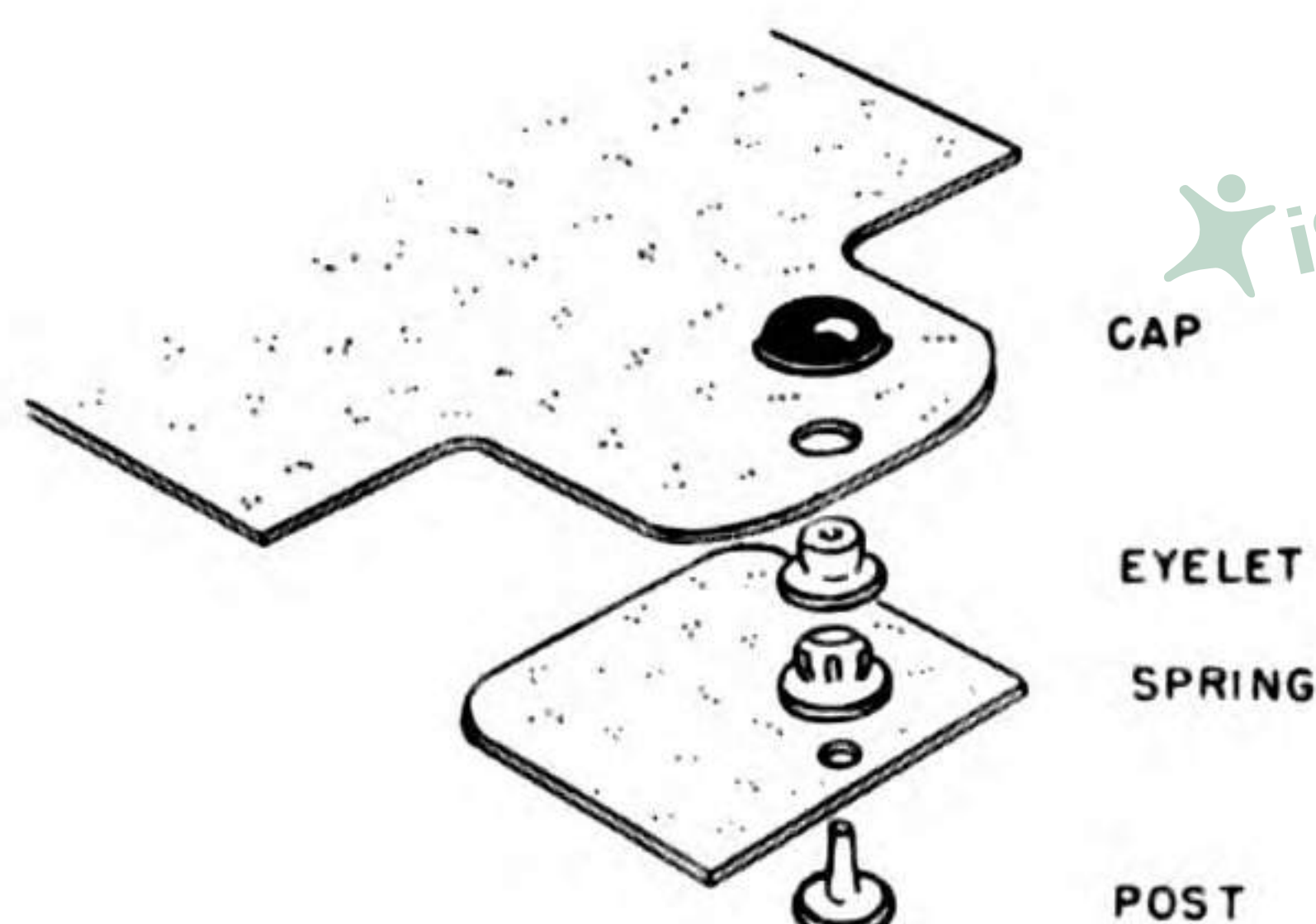
Unit 24 SETTING SNAP FASTENERS

Snap button fasteners are a necessity in leathercraft. They are used in holding down the flap of a coin purse, key case, cigarette case, or other articles which are to be snap fastened with an inexpensive button. The two types generally used are the *birdcage* snap button and the *Segma* snap button.

The general procedure for setting both types of snap fasteners is essentially the same, except that the Segma must use a special snap tool for each size snap button. Figure 139 illustrates the relative position of each part of the birdcage snap button.

Fastening snap buttons

1. Select the four parts of the birdcage snap button, Fig. 139.



139. Names of Parts of the Birdcage Snap Button and Their Relative Position Prior to Assembly

2. Locate and punch a hole for the eyelet. Make certain you have the correct size hole and test it in a scrap piece of leather.

3. Lay the anvil of the snap button fastener on a solid base; place an eyelet over the anvil; push the leather down over the eyelet with the face side up; and then put the cap over the eyelet. Refer to Fig. 139 for proper positioning.

4. Lay the concave part of the snap button assembly on top of the button and strike it with a mallet to set the cap and eyelet, Fig. 140.

5. Locate the hole for the post either by measuring or by aligning the snap button where it will fit when completed, and then press the cap firmly. This will leave an impression to locate the post hole.

6. Punch the proper size hole for the post.

7. Lay the snap button tool on a solid base; place the post over the small anvil; press the leather over the post; and set the spring on the post. Refer to Fig. 139 for the relative position of these parts.

8. Place the hole of the snap button hammer over the spring and strike it lightly with a mallet, Fig. 141.

9. Test the snap button to see if it

140. Setting the Cap on the Eyelet with a Snap Button Tool

141. Setting the Spring on the Post with the Other End of the Snap Button Tool



works properly. If it is too loose, tap the spring lightly. If the cap will not fit over the spring easily, press the spring lightly with a pair of pliers. Test the snap button again and adjust it until it works properly.

Unit 25 SETTING RIVETS

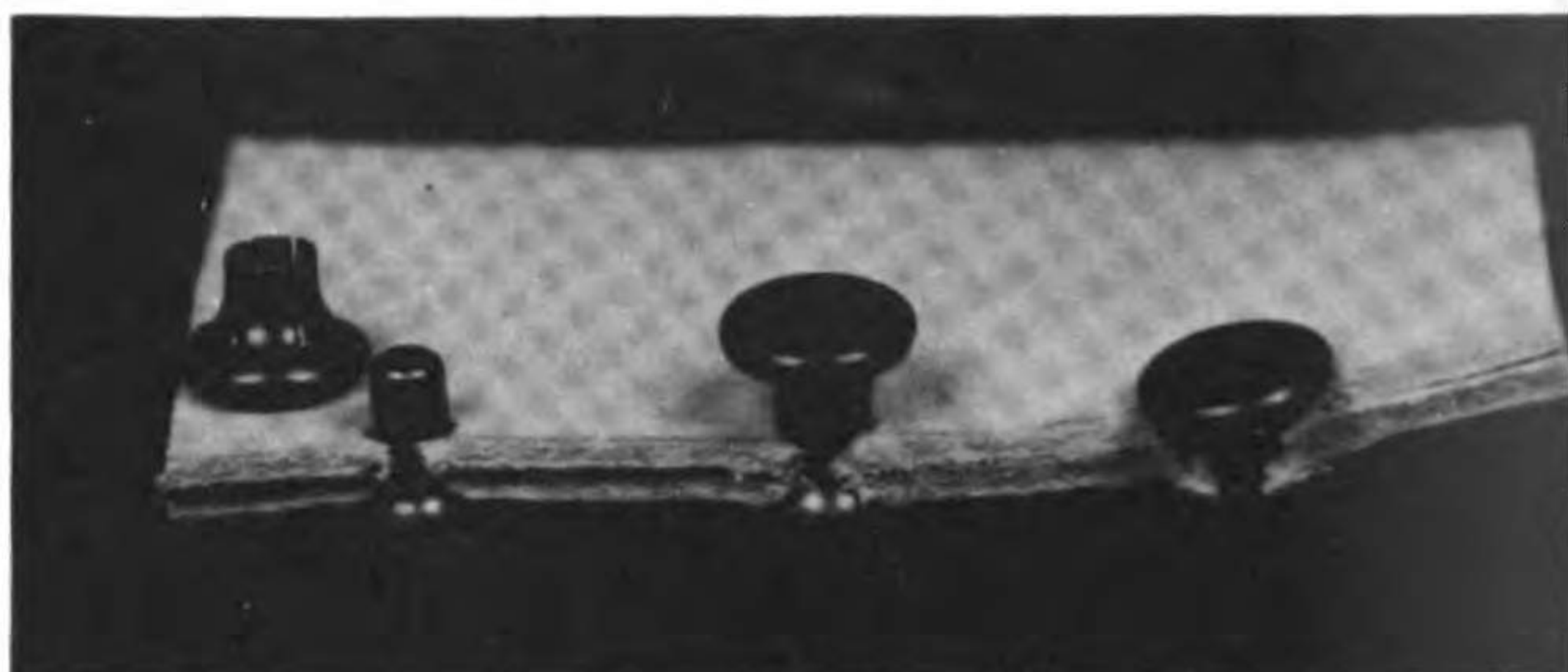
Some leather parts such as bag handles and straps often must be fastened permanently, and with a minimum of time and effort. Notebook ring plates are also fastened into position with rivets to keep them intact. Many craftsmen have more recently used rapid rivets, which are available in different lengths and diameters. Sometimes it is desirable to use split rivets, as for fastening the ring plate in a notebook.



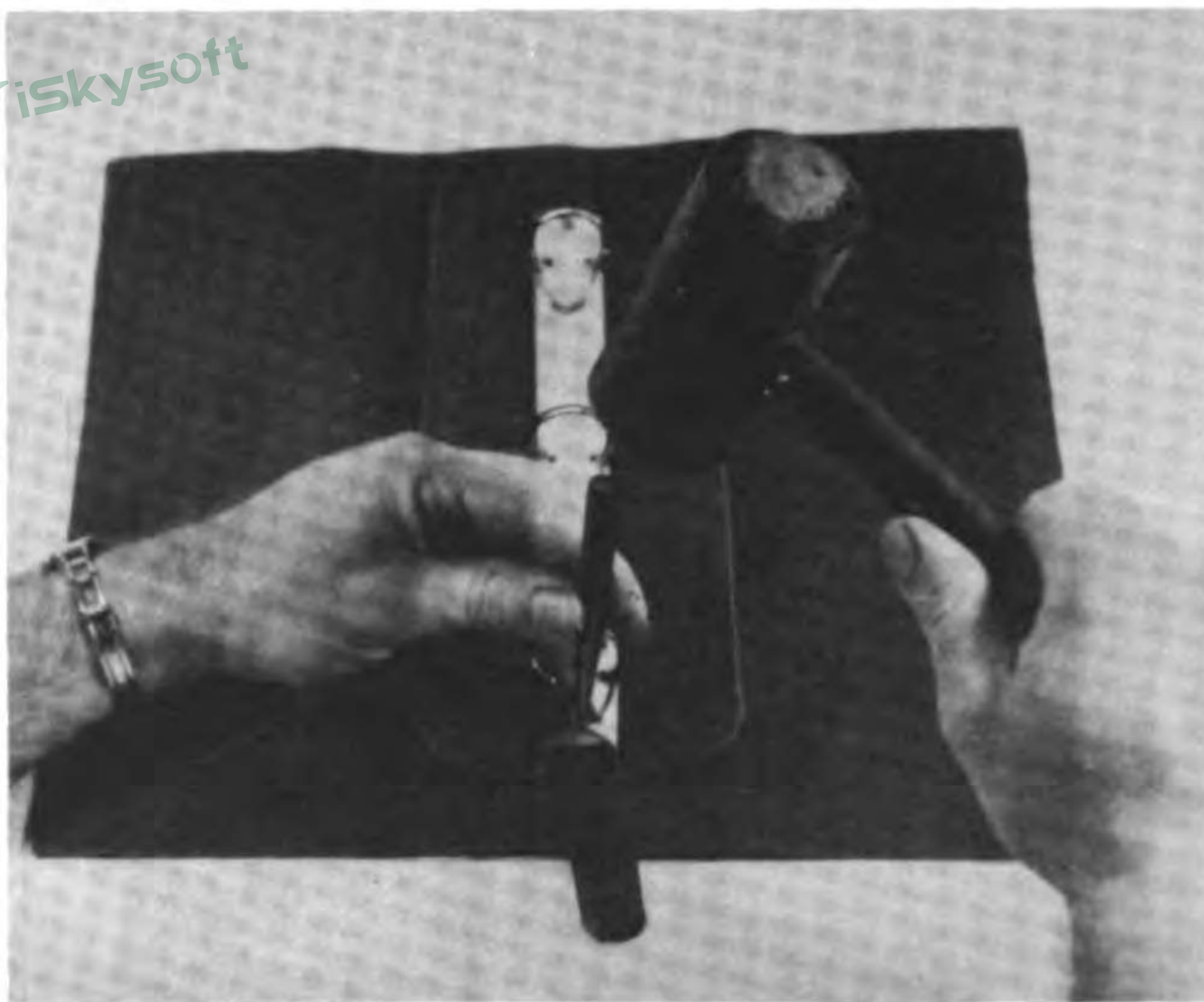
142. Setting a Rapid Rivet Cap on the Post

Riveting

1. Locate and punch a hole the correct size for the rivet post.
2. Insert the post through the two or more thicknesses of leather to be riveted, Figs. 142 and 143.
3. Position the rivet and leather pieces on a piece of marble or a hard-wood board. See Fig. 142.
4. Place the cap on the post, Figs. 142 and 143.
5. Set the rivet with a hammer or mallet until the closure is completed, Fig. 143. Also refer to Fig. 142.
6. When fastening a notebook ring plate, use split rivets of sufficient length and set them with a center punch as pictured in Fig. 144.



143. Detail of Fastening Rapid Rivets. At the Left Is the Post Inserted with the Cap Lying Nearby. Center Shows the Cap which Has Been Placed on the Post. Right, the Cap Has Been Driven until Closure Is Completed.



144. Securing a Ring Plate on a Notebook Liner with Split Rivets

Unit 26 MAKING A THREE-HOLE FASTENER

The fastener described here is suitable for securing the buckle end of a

belt, shoulder straps on a bag, and where a leather fastening is desired instead of rivets. This particular fastening can be done with edge lace, and is relatively easy to complete if the instructions given below are followed. The illustrations show the three hole fastener applied to a belt.

Making the fastening

1. Fasten the leather parts together temporarily with rubber cement. Refer to Unit 15.

2. Locate and punch three holes. See Fig. 145. Also refer to Unit 22 for punching holes.

3. Insert the lace from the face side of the leather through holes 2 and 3, Fig. 145-A.

4. Put end A down through hole 1, and bring it up through hole 2, Fig. 145-B.

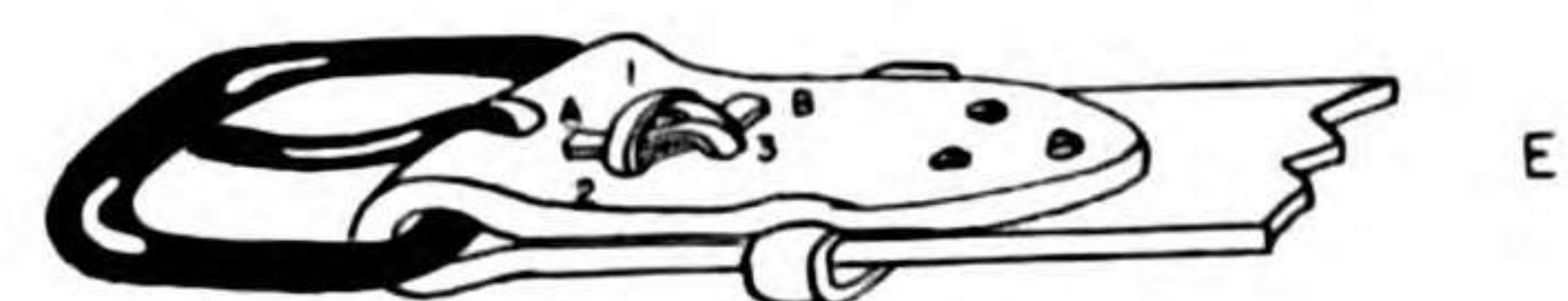
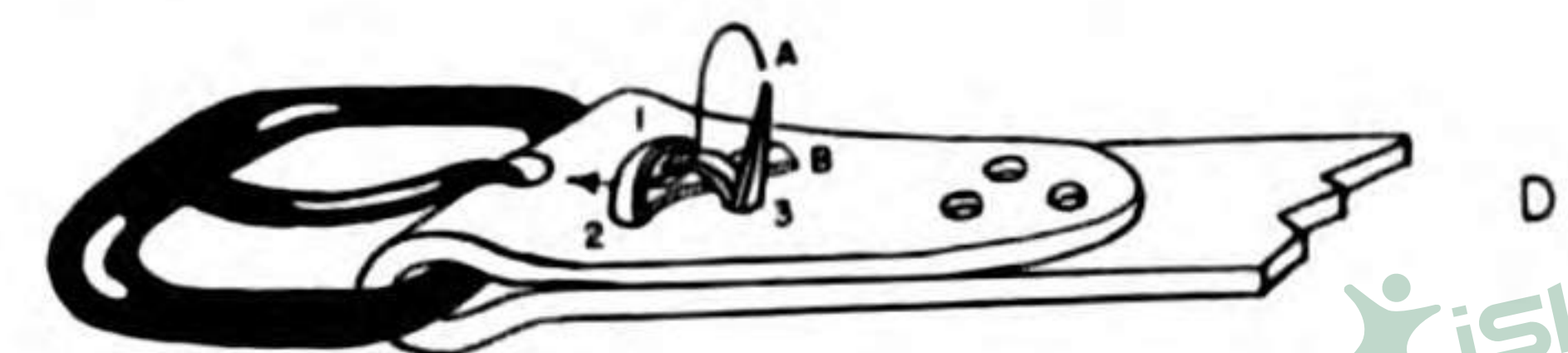
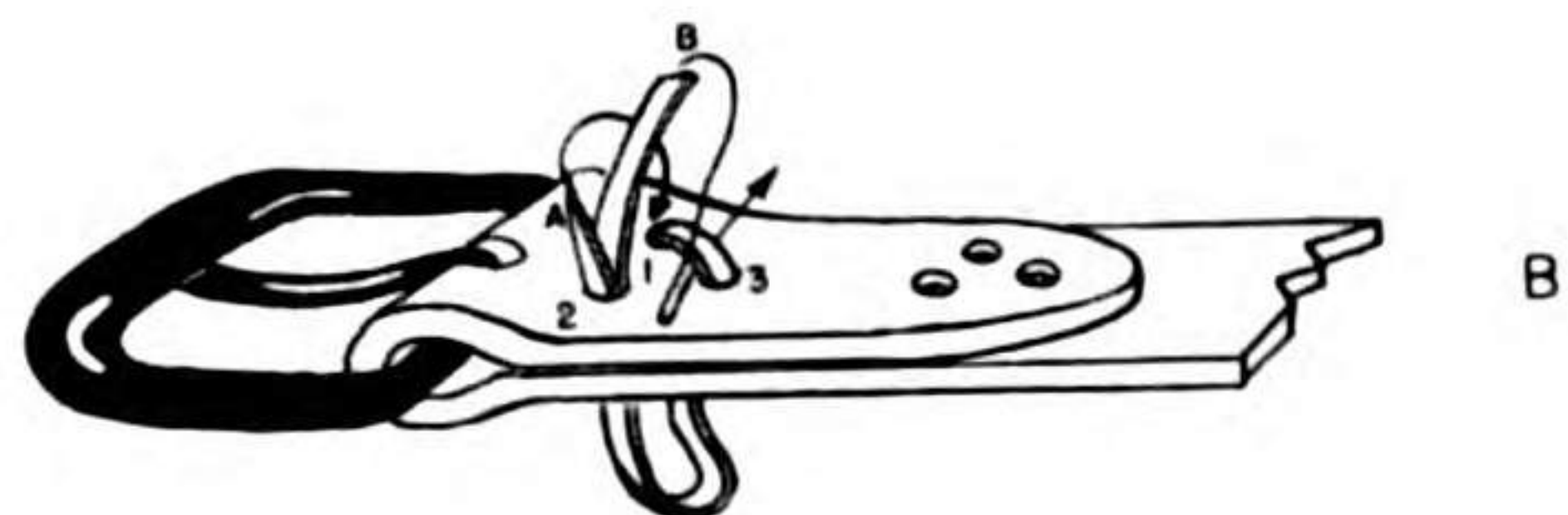
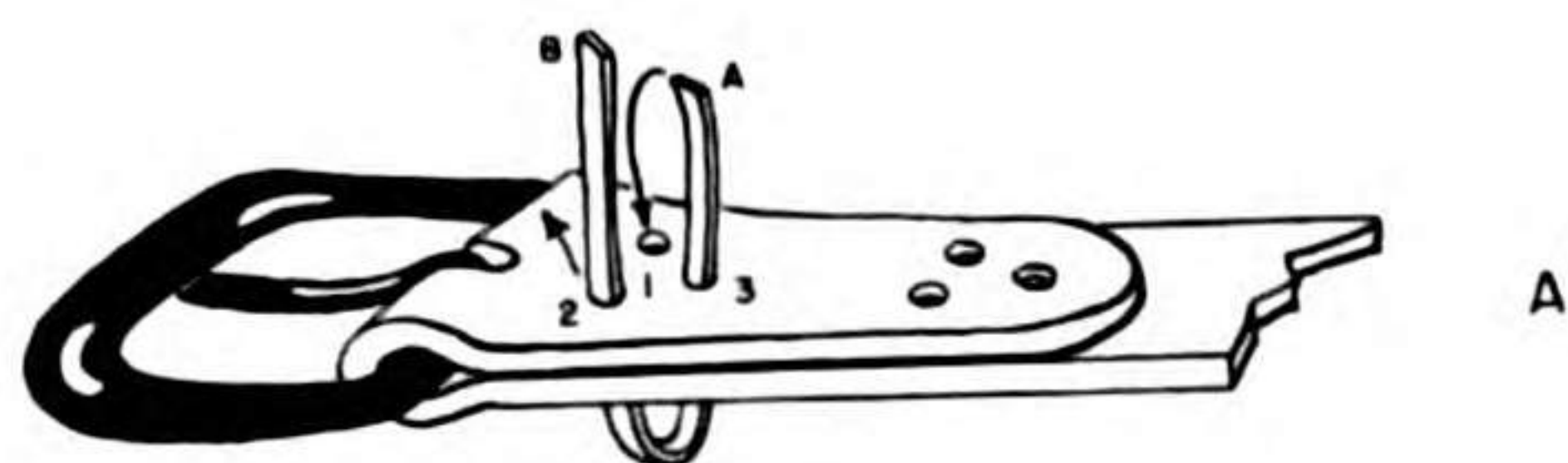
5. Push end B under the lace between holes 1 and 3, Figs. 145-B and 145-C.

6. Insert end A down through hole 1 again, Fig. 145-C.

7. Bring end A up through hole 3, Fig. 145-D.

8. Push end A underneath the lace between holes 1 and 2, Fig. 145-E. Also see Fig. 146.

9. Cut off surplus lace. The front side of the fastening should resemble Figs. 145-F and 147.



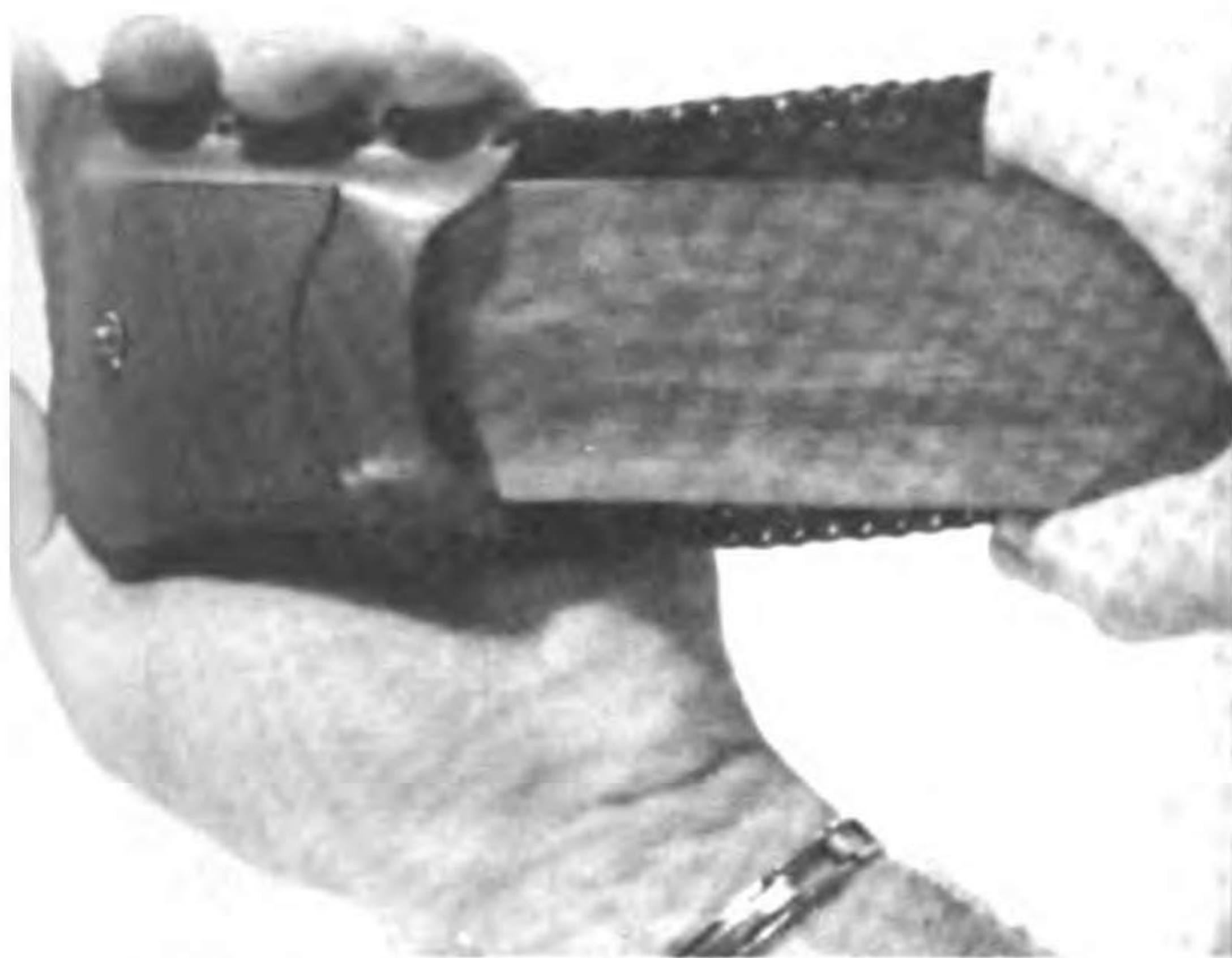
145. Detail of Three Hole Fastener

146. Back Side of Three Hole Fastener Before Surplus Lace Is Cut Off

147. Front View of Three Hole Fastener



Unit 27 STRETCHING, FORMING, AND MAKING FOLDS IN LEATHER



148. Stretching Light Weight Leather
for a Cigarette Case

Lightweight or craft leather frequently needs to be stretched in making certain articles such as cigarette cases. Glove makers also find it necessary to stretch doe, kid, and suede leathers for their projects, and, since this procedure is unique for the making of gloves, it is therefore described in Unit 35.

Heavier cowhide leather also needs to be stretched; however, this is a more difficult procedure than stretching light or craft leather, and is actually classified as "forming." This process is involved only when you are designing a case where a portion must protrude, such as for the lens projection of a camera case.

Heavy or cowhide leather, when used for making ladies' bags and notebooks, is sometimes difficult to fold unless a V cut is made where the fold is to occur.

Stretching lightweight leather

1. Complete the article, such as the cigarette case, so that the edges

are firmly fastened by edge lacing or other means. See Fig. 148.

2. Make a wood form slightly larger than the object which is to fit into the case. In the cigarette case make the wooden form a bit larger than the cigarette package. Round the edges of the block slightly so that the leather will not be damaged or cut.

3. Moisten the inside of the pocket of the leather article slightly and push the wooden block into the case to stretch it, Fig. 148.

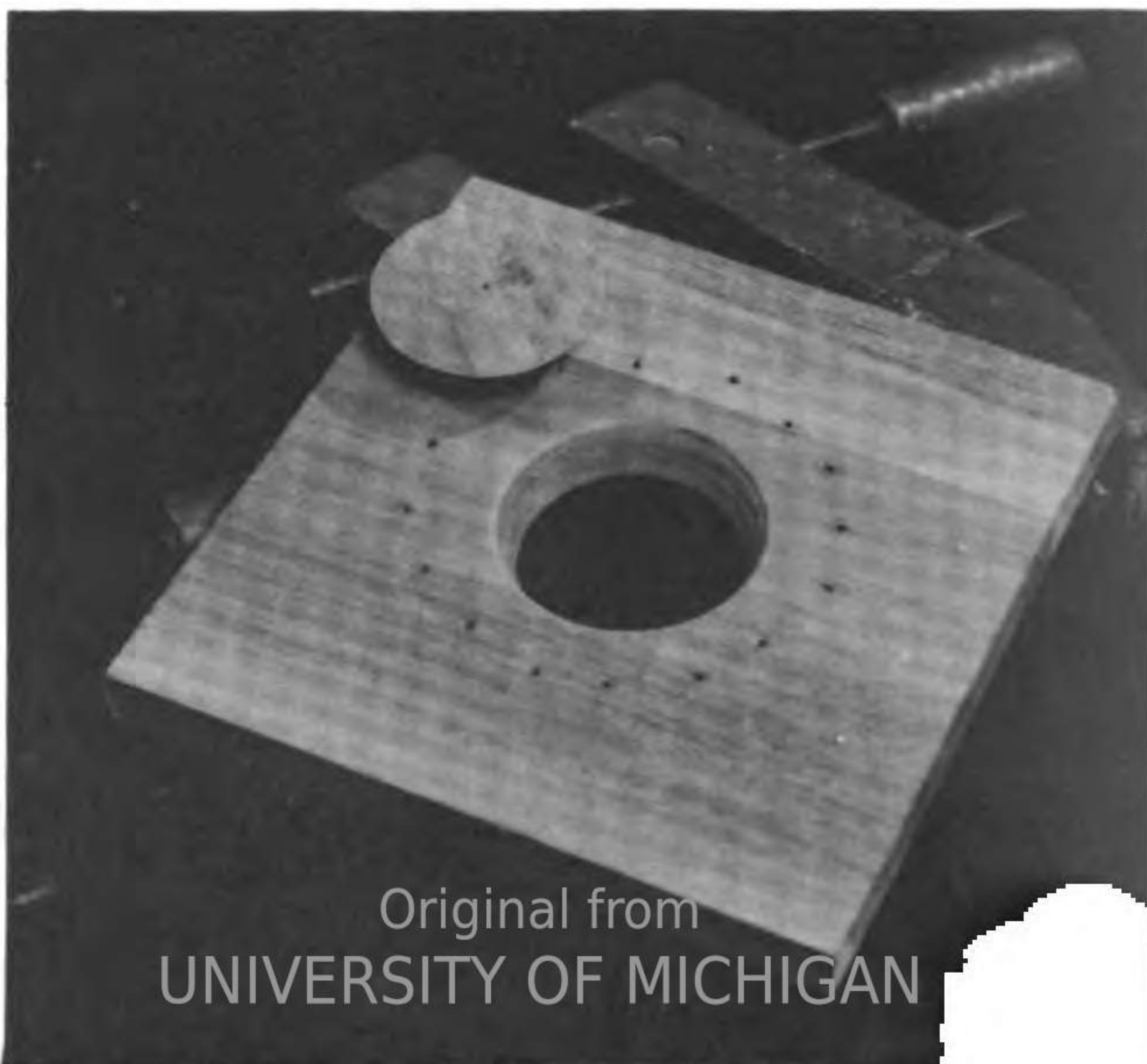
4. Repeat this step several times until the case has been stretched considerably.

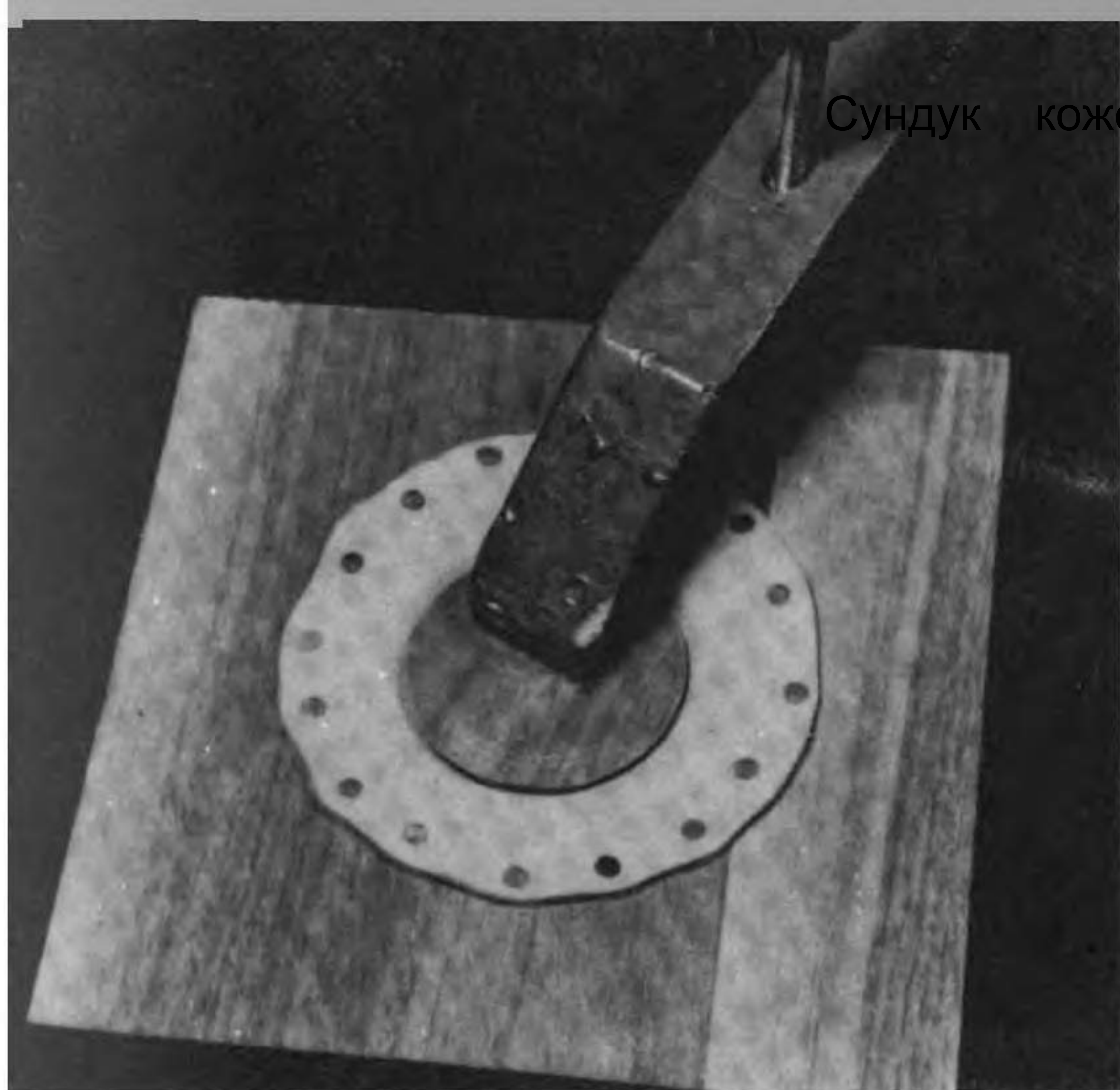
5. It is a good plan next to make a block the exact size of a package of cigarettes; insert it into the formed case while it is still damp and snap the cover, allowing the leather to dry thoroughly.

Forming heavy leather

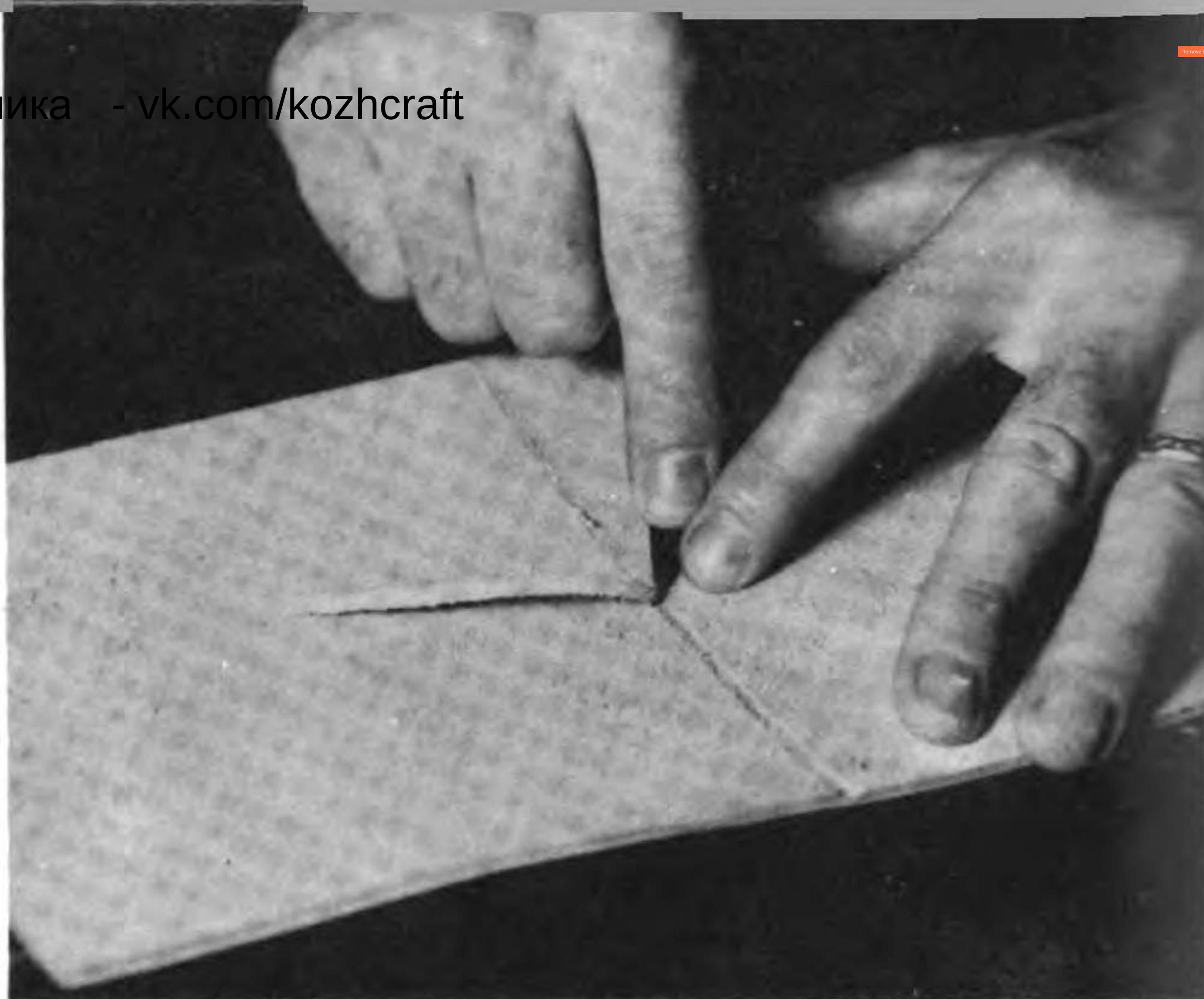
1. Make a wooden form the depth and size you want the leather to be formed. See Fig. 149. Make the wooden form from wood easy to shape. Thoroughly sand all edges to make a smooth impression on the leather.

149. The Wooden Die for Forming
Heavy Leather

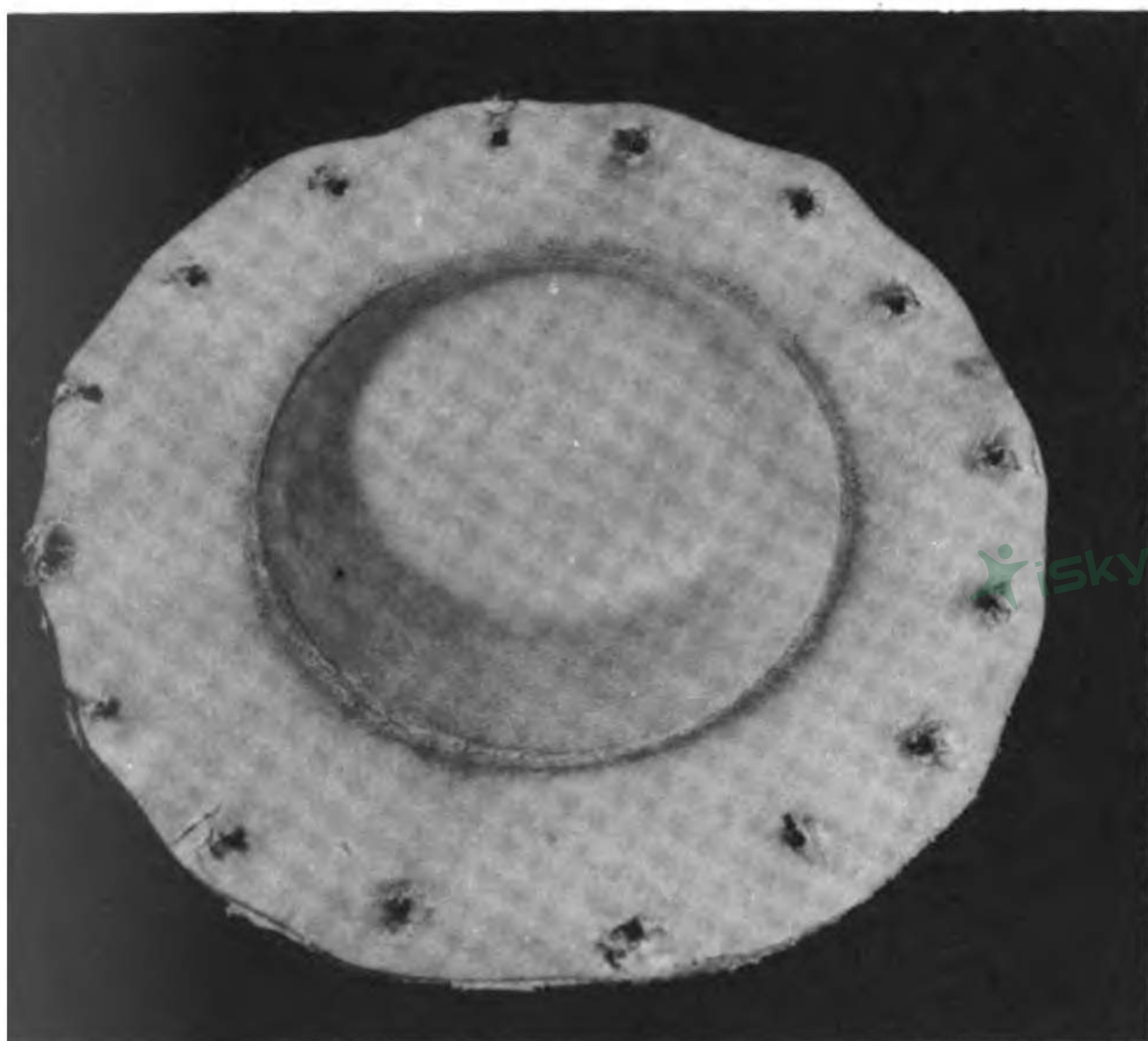




150. Stretching Heavy Leather in the Wooden Form



152. Making a V Cut in Cowhide to Make a Fold



151. Formed Leather Removed from the Die. Flange Will Need to Be Trimmed to the Desired Size

2. Make the male part of the wooden die (form) small enough to allow for the thickness of the leather, Fig. 149.

3. Cut the leather to be formed at least $\frac{3}{4}$ inch larger than the final size needs to be.

4. Dampen the cowhide. See Unit 7.

5. Fasten the cowhide on the larger wooden forming die with tacks.

6. Place the male die in position and stretch the leather to fit the wooden



153. Detail of V Cut Showing Depth

form, Fig. 150. Use a wood screw hand clamp or a C clamp to exert the needed pressure. Pressure may also be applied by using a wood or metalworker's bench vise.

7. Allow the leather to dry in the forming die.

8. Remove the formed leather from the die, Fig. 151.

9. Trim the flange to the correct width to fit the project.

Making a fold

1. Mark the place where the cowhide is to be folded on the inside (flesh side). This may be done with an awl or a pencil.

2. Mark over $\frac{1}{8}$ inch in each direction from the fold line. These are to be the cutting lines.

3. Cut the leather along the two outside lines to form a V groove to a depth of approximately half the thickness of the leather, Figs. 152 and 153. The knife for this purpose must be very sharp. Cut with great care and accuracy so that the fold line will be well defined, but not cut through to the outside.

4. Wet the leather along the fold and bend to the desired angle. It may have to be bent several times so that it will stay in the position planned.

Unit 28 CLEANING AND FINISHING LEATHER

After all work has been completed in making a leather article, clean it thoroughly to remove soil and finger marks. This can be done satisfactorily with an oxalic acid water solution, which is described below.

Some craftsmen desire great contrasts in their final finishes; therefore the backgrounds are dyed or colored. Edges of belts and other exposed edges are generally dressed with a suitable dye and burnished to give a hard, finished appearance.

Antique finishing of leather objects is popular, and affords the craftsman an opportunity to give a slightly two-toned effect, due to the contrast of the darkened, recessed areas as compared with the highlights of the raised portions of the design.

Novelty effects can be obtained by the use of lace of different colors from that of the article itself.

Finishing and coloring of leather are as much an art as is the proper finishing of wood and metal projects; *hence only elementary procedures are given here.* Detailed manuals and books on this subject alone are available through craft supply and book publishing companies. Refer to the bibliography in the back of this book.

154. Applying Leather Dye to the Background of the Design with a Small Pointed Brush



Cleaning leather

1. Complete all process steps in making the article before cleaning it.

2. Clean the leather with a solution of oxalic acid water applied lightly with a cloth swab. Mix the solution by adding 1 teaspoonful of oxalic acid crystals in 1 pint of water. Allow to dissolve. Stir frequently. Oxalic acid crystals can be obtained from your local druggist. The cleaning process will remove dirt, finger marks, and hand oil.

3. Allow the cleaned surfaces to dry thoroughly before proceeding with finishing.

Surface coloring

1. Test the dye color of your choice first on a piece of scrap leather the same texture as that used in the article, to see if it is the right shade.

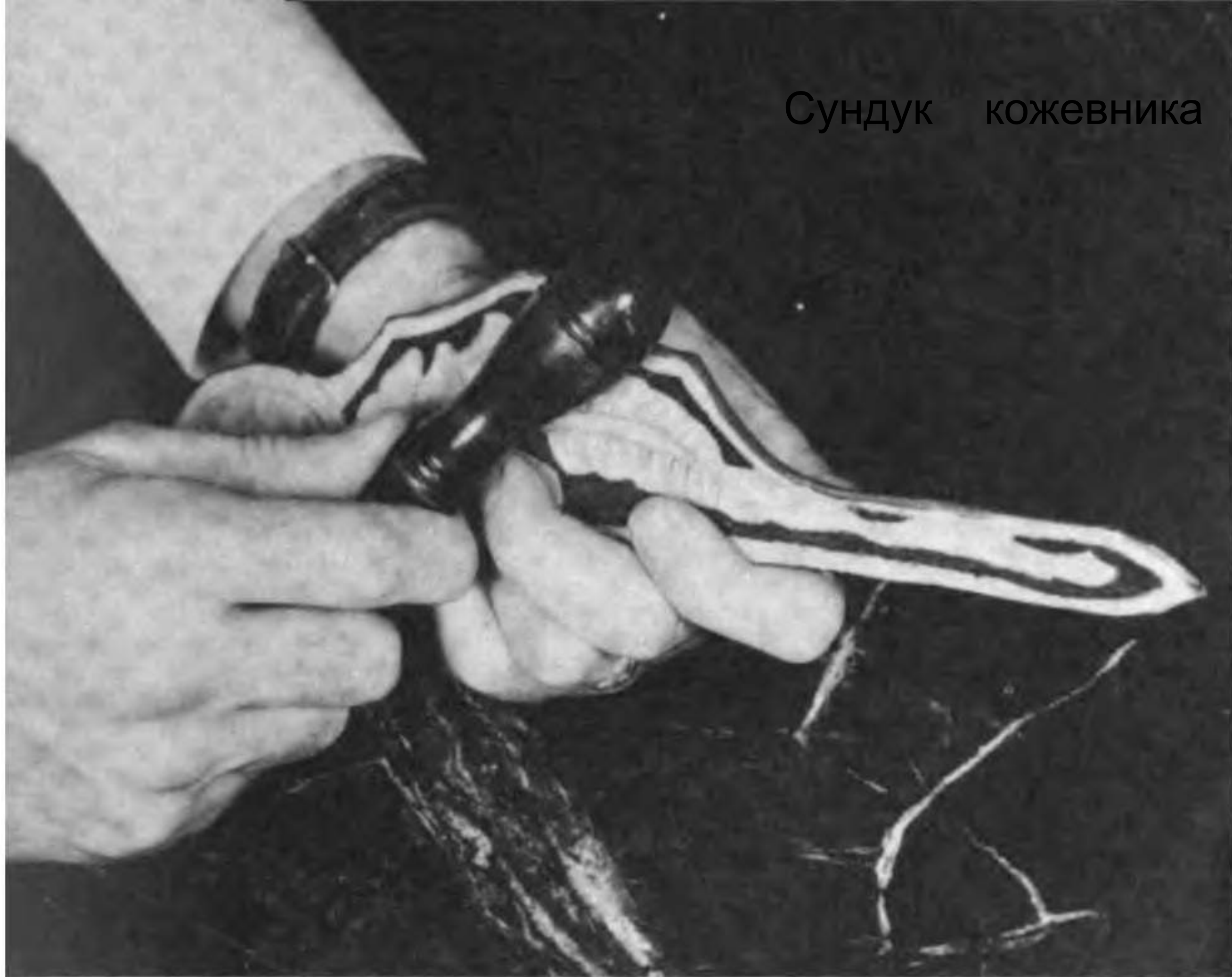
2. Apply the dye to the background or design as preferred, with a small pointed sable or camel's hair paintbrush, Fig. 154. You may use a commercial dye, or any of the many colors of India inks. Clean the brushes after using India ink with water, or, if the brush is to be gotten perfectly clean to dispose of all coloring agent, use methyl hydrate solution.

Finishing edges

1. Apply the desired color edge dye

155. Applying Leather Dye to an Edge





156. Burnishing the Cowhide Edge to Give a Smooth Lasting Finish

on the edge with a swab, which is usually attached to the cork of the container, Fig. 155.

2. Burnish the edges with a dowel rod or the wooden handle of one of your tools, Fig. 156. This gives a bright, clean finished appearance.

Antique finishing

1. First, test your finish for color on a similar piece of scrap leather. Then apply the antique finish cream or paste with a soft brush or a piece of cloth, working it well into the tooled and carved area, Fig. 157.

2. Remove the excess paste or cream from the leather surface with a clean cloth, Fig. 158. Wipe the leather surface evenly so that it will not be streaked. An interesting two-toned effect can be achieved by rubbing the leather briskly so that the raised portions of the design will be wiped heavier than the recessed areas.

157. Applying Antique Finish



158. Removing Excess Antique Paste or Cream from the Leather Surface



159. Applying a Coat of Clear Leather Lacquer Protects the Finish

3. Allow the finish to dry thoroughly before applying lacquer or wax as a final step.

160. Saddle Soap or Wax Will Produce a Clear Lasting Finish



Finishing with lacquer

1. Apply a coat of clear leather lacquer with a cloth or with a piece of sheepskin wool, Fig. 159. Apply the finish quickly and evenly to obtain a uniform effect. Hold the article, if convenient, or lay it on a flat surface for this process. Use only commercial lacquer finish made expressly for the finishing of leather.

Waxing and polishing

1. Apply a protective coating of saddle soap or paste wax with a cloth pad, Fig. 160.

2. Polish the waxed surface with a clean cloth or hand sheepskin buffer,



161. A Waxed Surface May Be Polished with a Hand Sheepskin Buffer

Fig. 161. This will produce a lasting, highly attractive luster finish.

Unit 29 MAINTAINING AND SHARPENING TOOLS

Leather tools, like those for any other craft, must be kept in excellent working condition at all times, with cutting edges sharp. Dull tools are dangerous as well as inefficient, and are responsible for the majority of hand tool accidents.

Maintaining sharp edges on cutting tools generally does not require grinding, but usually necessitates whetting on a clean oilstone. For flat-sided cutting tools, an unusually sharp edge may be obtained by stropping on an oily leather strap.

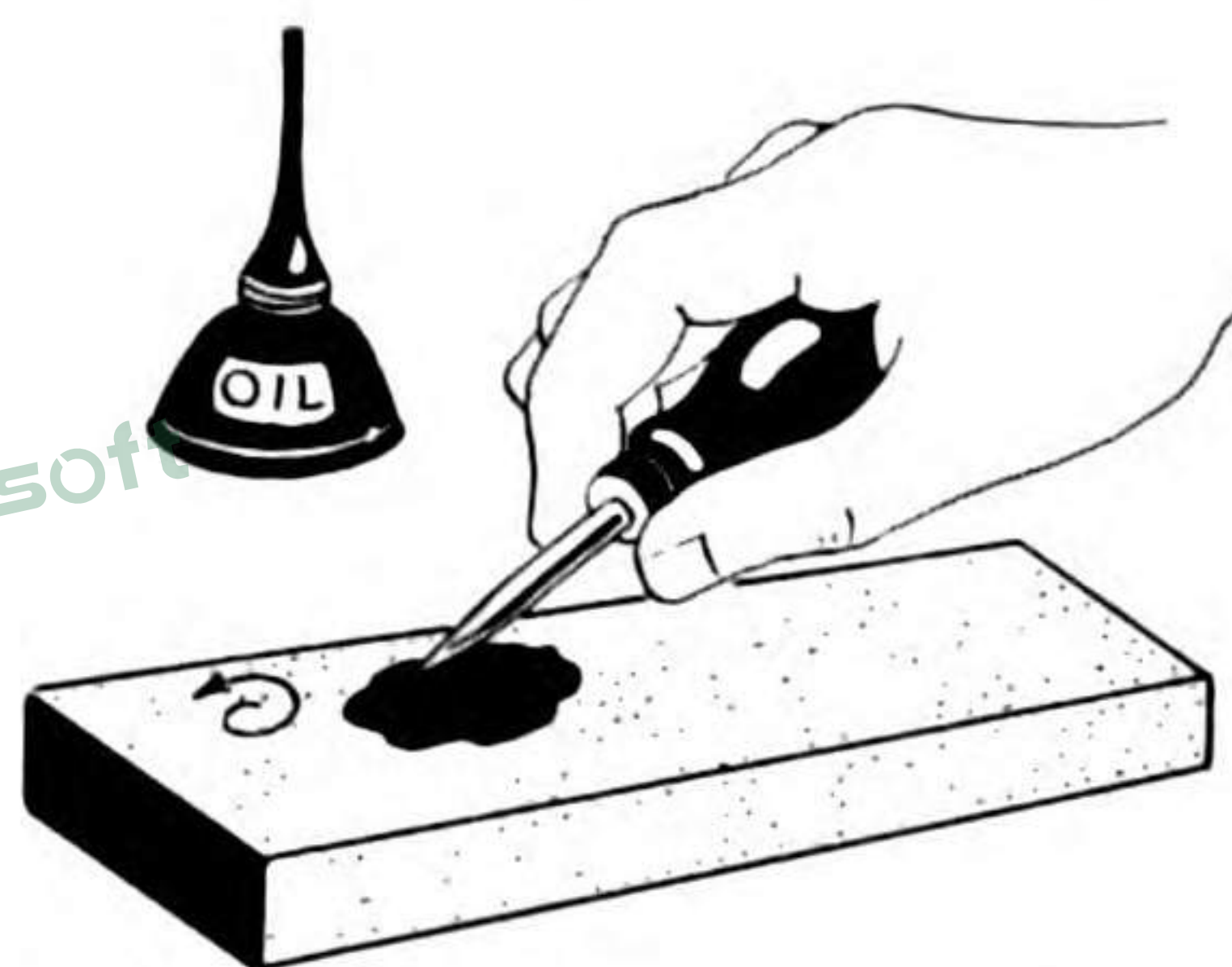
Sharpening of the tools most frequently used will be described briefly in this unit. In addition to sharpening, instructions are provided for refacing a wood or fiber mallet.

Pointing an awl

Sharpen the awl by working the point on the surface of an oilstone at the angle in which it is ground. Revolve the tool in the hand as you work it in a circular motion over the oily surface of the stone, Fig. 162.

Sharpening knives

The sharp, pointed cutting knife,



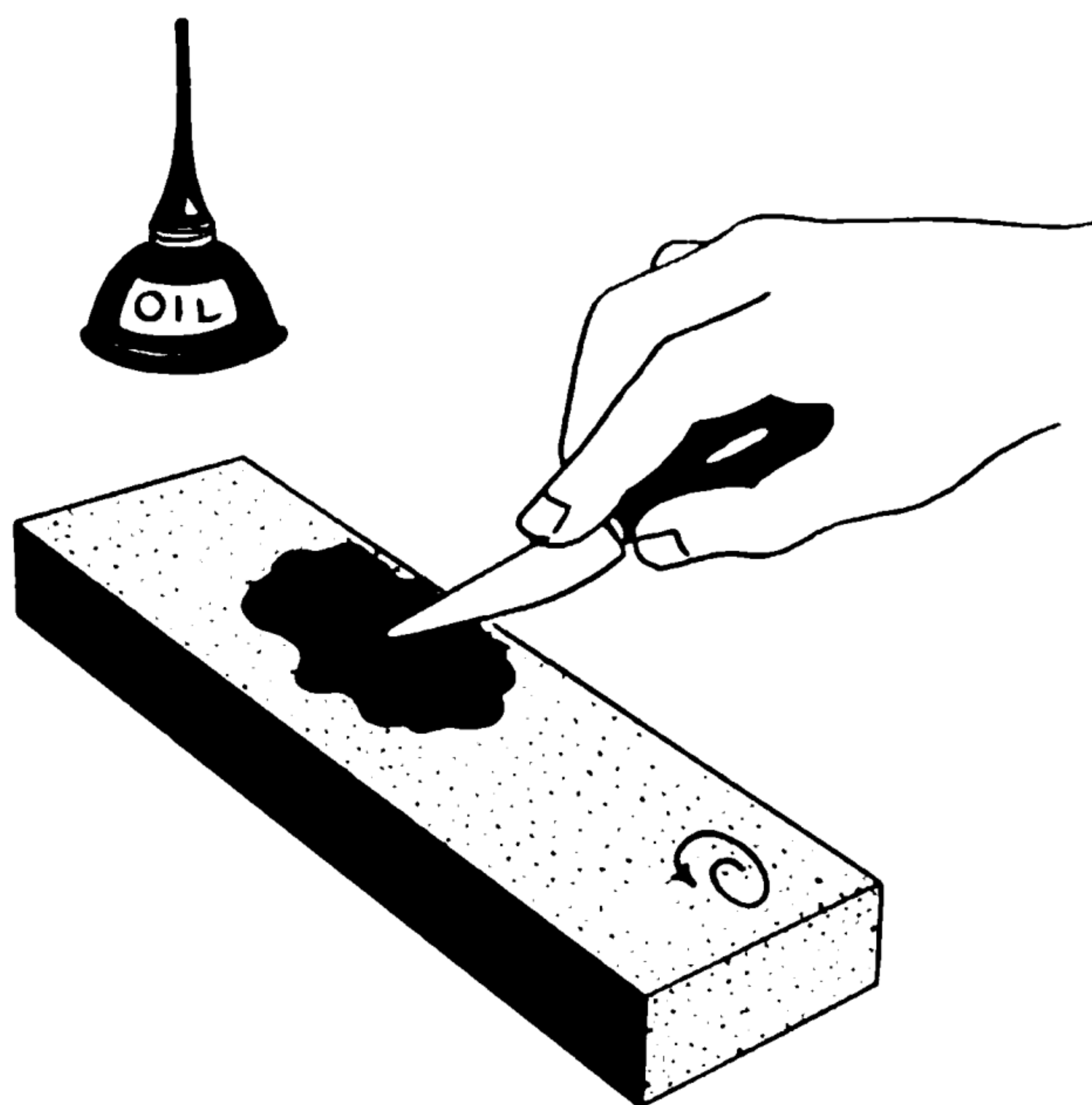
162. Pointing an Awl

skiving knife, and head knife are all honed on the oilstone in a similar manner, Figs. 163 and 164. It should be noted that the head knife needs to be sharpened on both edges. Hold the knife on the surface of the oilstone at the angle at which it was ground, and work it with a circular motion.

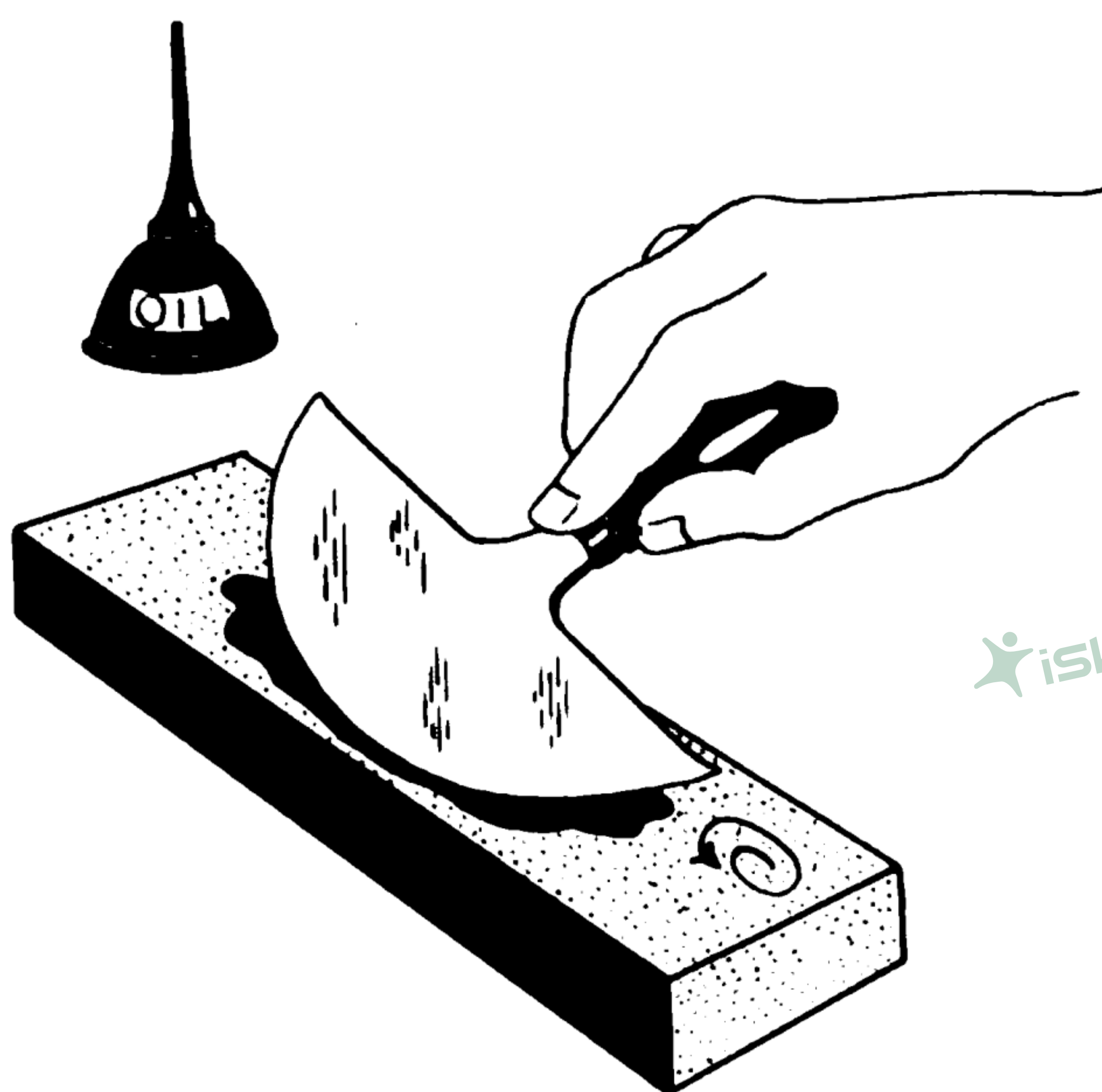
Sharpening the swivel knife

Hold the swivel knife at the angle in which it was sharpened originally, and work in a circular direction on the oily surface of an oilstone, Fig. 165. This tool must be sharpened on both edges.

Since the blade of the swivel must be smooth as well as sharp, give it a



163. Whetting the Cutting Edge of a Sharp Pointed Knife or Skiving Knife

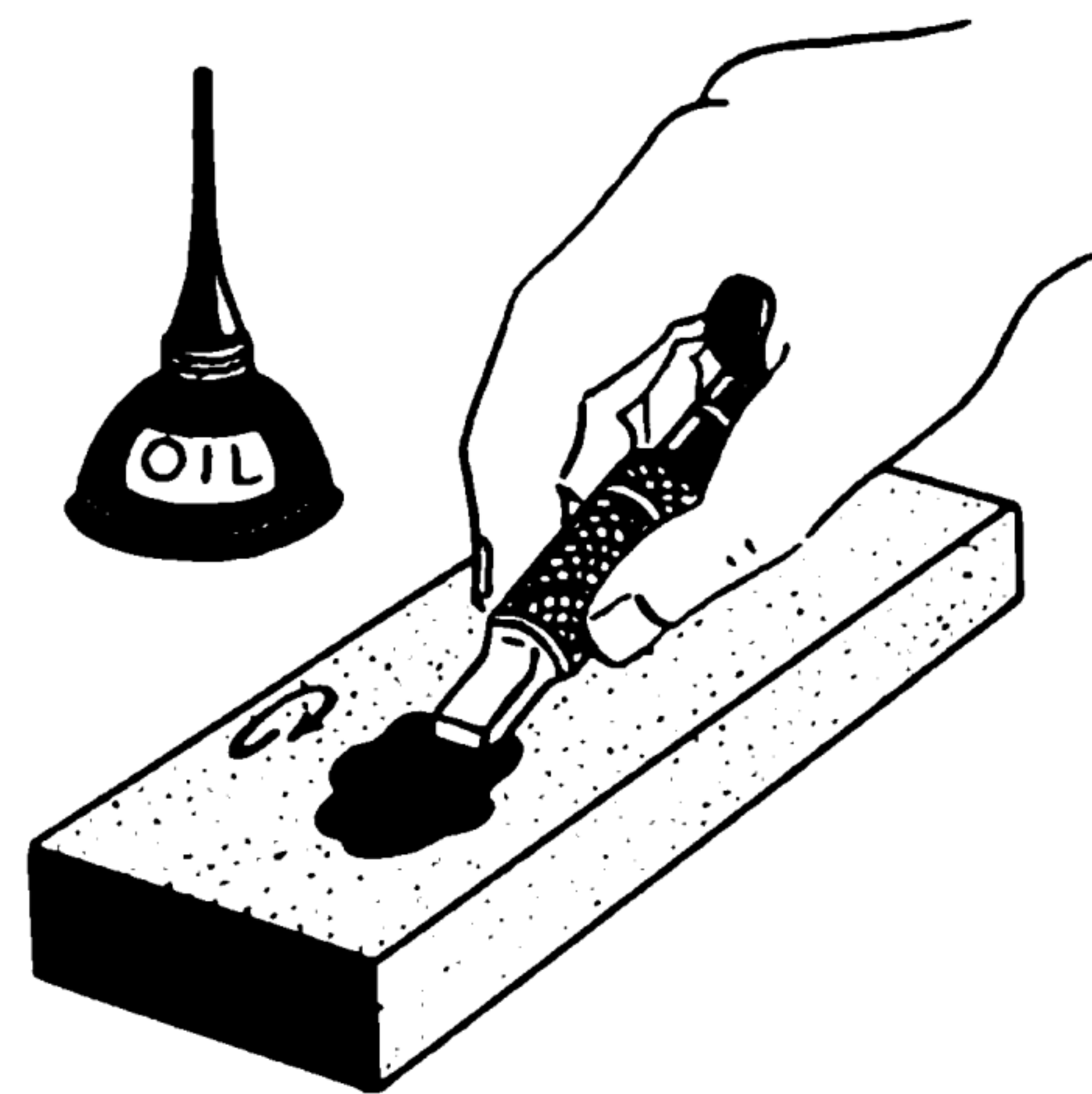


164. Whetting the Edges of the Head Knife

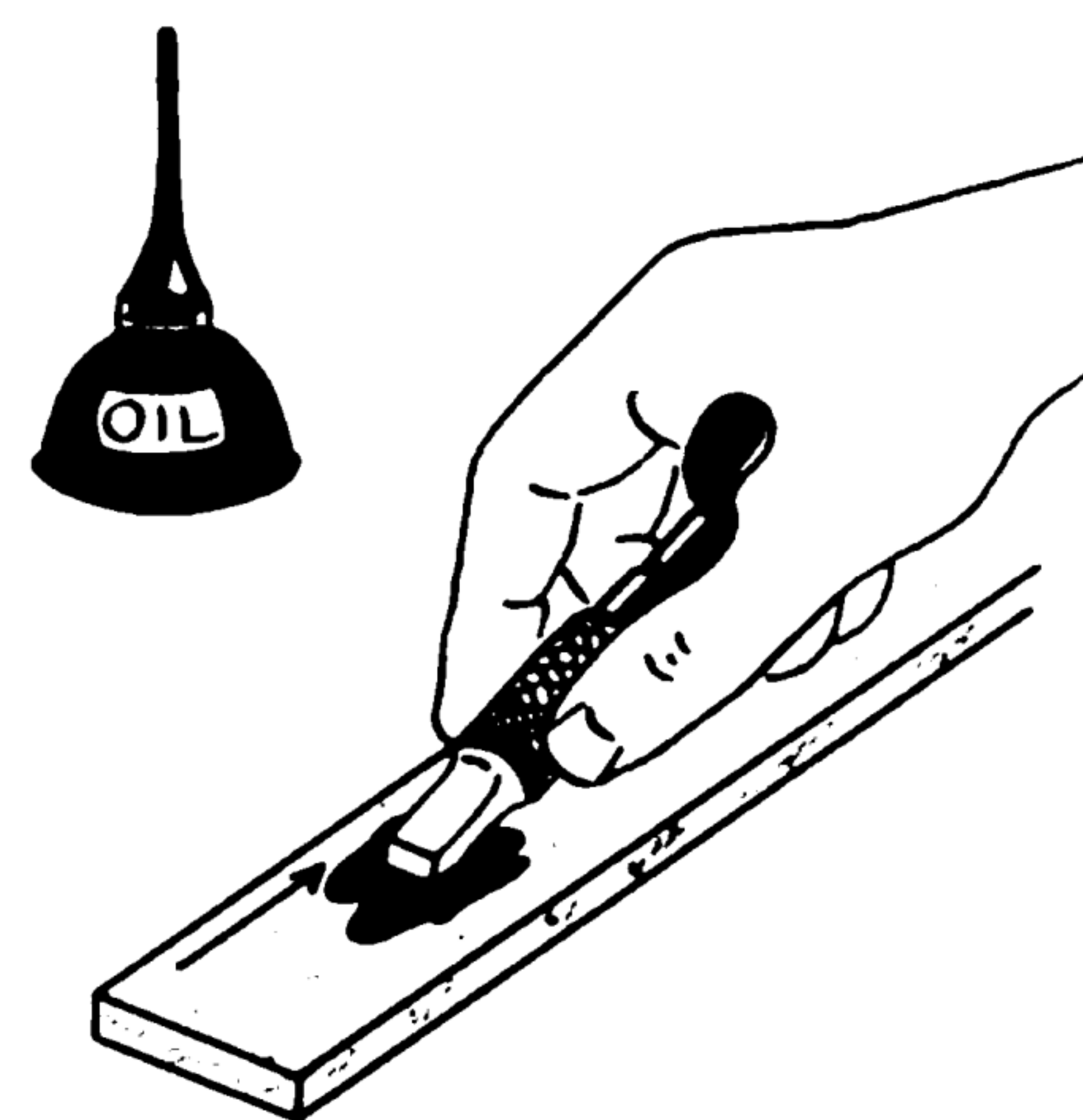
final dressing on an oily surfaced piece of leather, Fig. 166. Pull it in one direction only on the leather surface, and lift the blade between strokes so that the leather will not be cut. Be sure to wipe off the oil before starting to cut a design in leather.

Dressing punch tubes

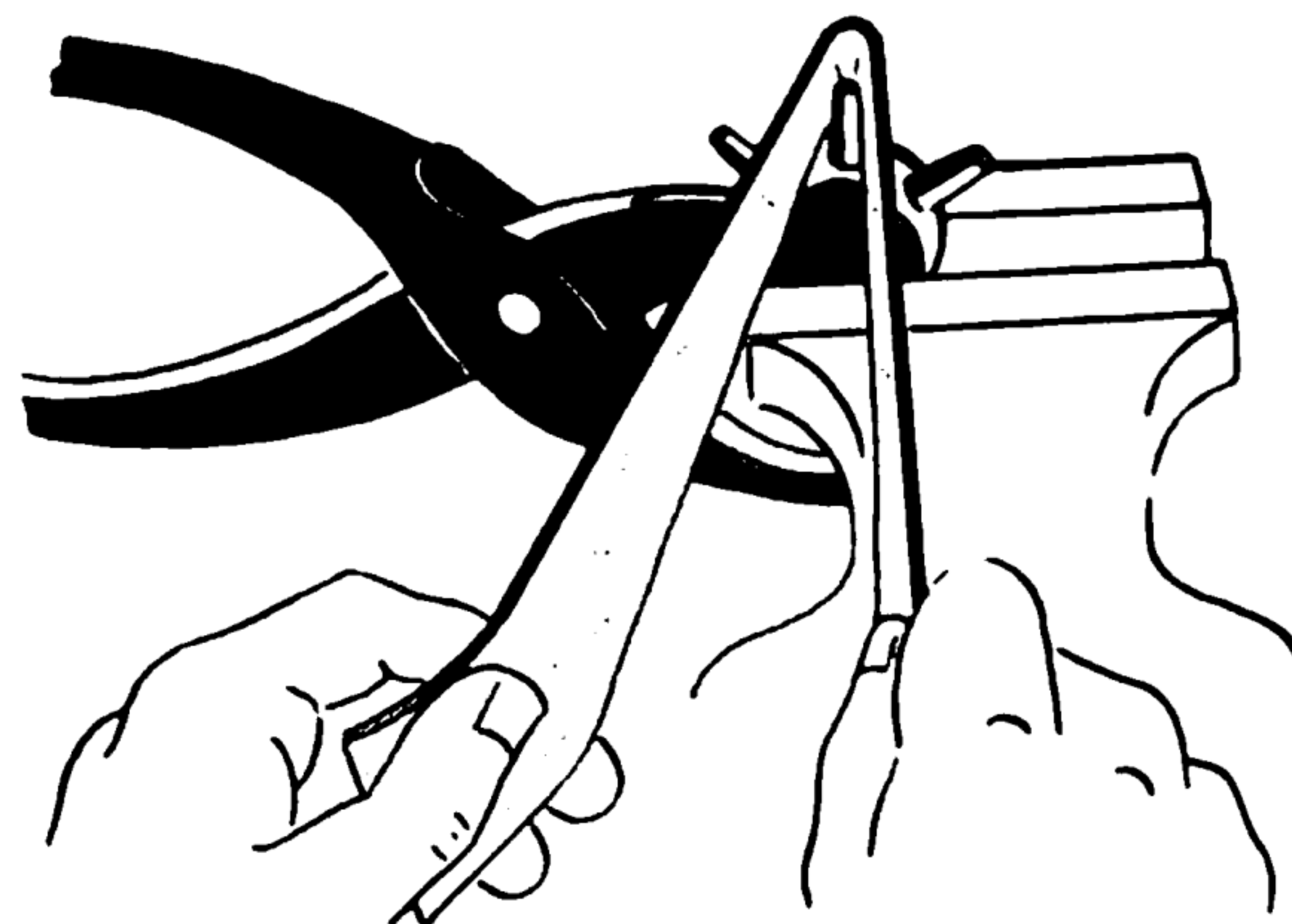
Sharpen the tubes of a revolving punch or the tube of a combination punch as illustrated in Fig. 167. Hold the punch in a vise with the jaws protected with wood, and pull a narrow strip of medium grade emery cloth back and forth as you move it around the tube.



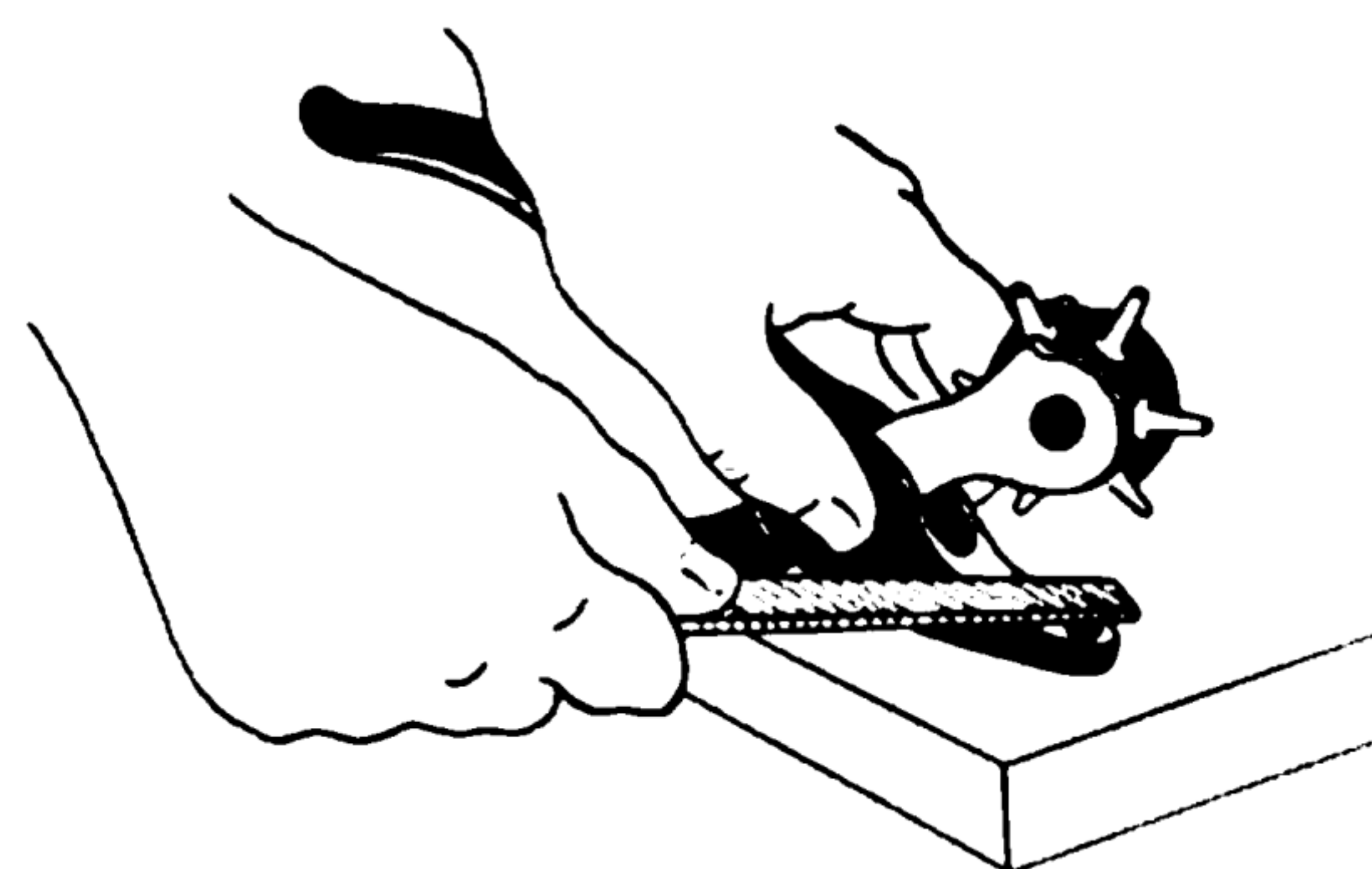
165. Whetting a Swivel Knife



166. Stropping a Swivel Knife on Leather



167. Sharpening a Tube of a Punch



168. Filing the Anvil of a Punch

Dress the anvil of the punch periodically with a fine flat mill file so that

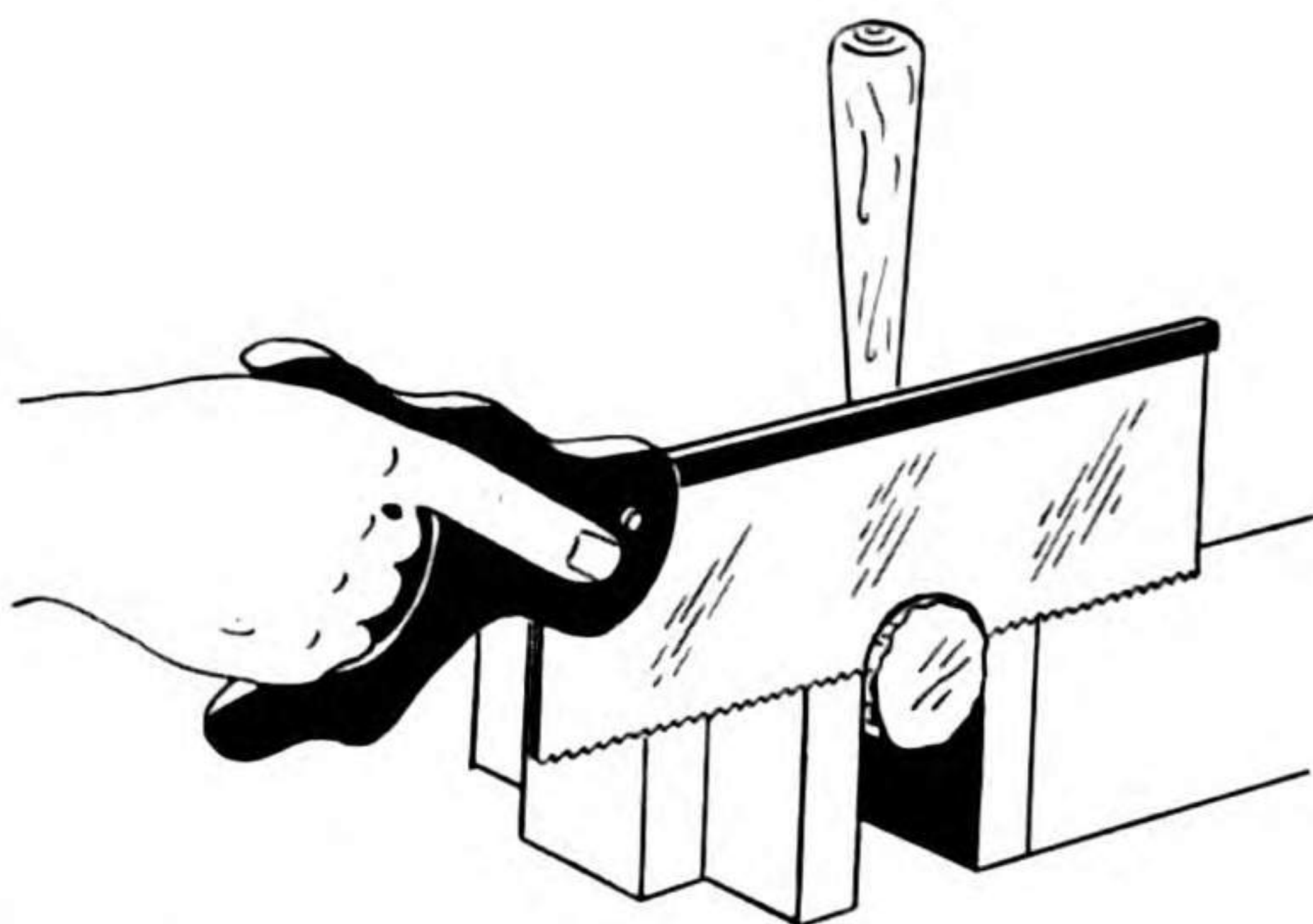
cuts in leather will be made cleanly, Fig. 168.

Refacing a mallet head

Hold the wood or fiber mallet in a vise and cut away the damaged or dented surface as shown in Fig. 169. Dress the trimmed face with sandpaper before re-using the mallet.

General care of tools

Some tools have plated metal parts, which gives ample protection from rust; but it is suggested that metal surfaces of unplated tools be wiped with an oily cloth when they are not used continuously. This is particularly true in humid coastal regions.



169. Reconditioning the Face of a Mallet Head

Additional tool care and storage are explained in detail in Unit 3.

Unit 30 BRAIDING A FOUR-PLAIT, DIAMOND DESIGN ROUND THONG

The craft of thong work requires accuracy, patience, and perseverance. Each thong must be plaited accurately or the design will be irregular. The specific pattern described in this unit is made much easier if two contrasting colors of leather are used.

Thong which you may cut, or edge lace will produce interesting results. Thong stock may be used for making a Boy Scout hat band, shown in the center of Fig. 170; a zipper pull, Fig. 175; a dog leash; or for any number of other similar items having practical as well as decorative uses.

Thong strips can be made as shown in Figs. 171 and 172 from contrasting color 6 inch diameter calfskin disks. Also $\frac{1}{8}$ inch goat, calf, or plastic lace of varying colors may be used. In the event disks are cut to make the thong you want, make a saw kerf or cut part way through a block of wood and insert a razor blade in the edge to make a satisfactory thong cutter or jig. See Fig. 172.

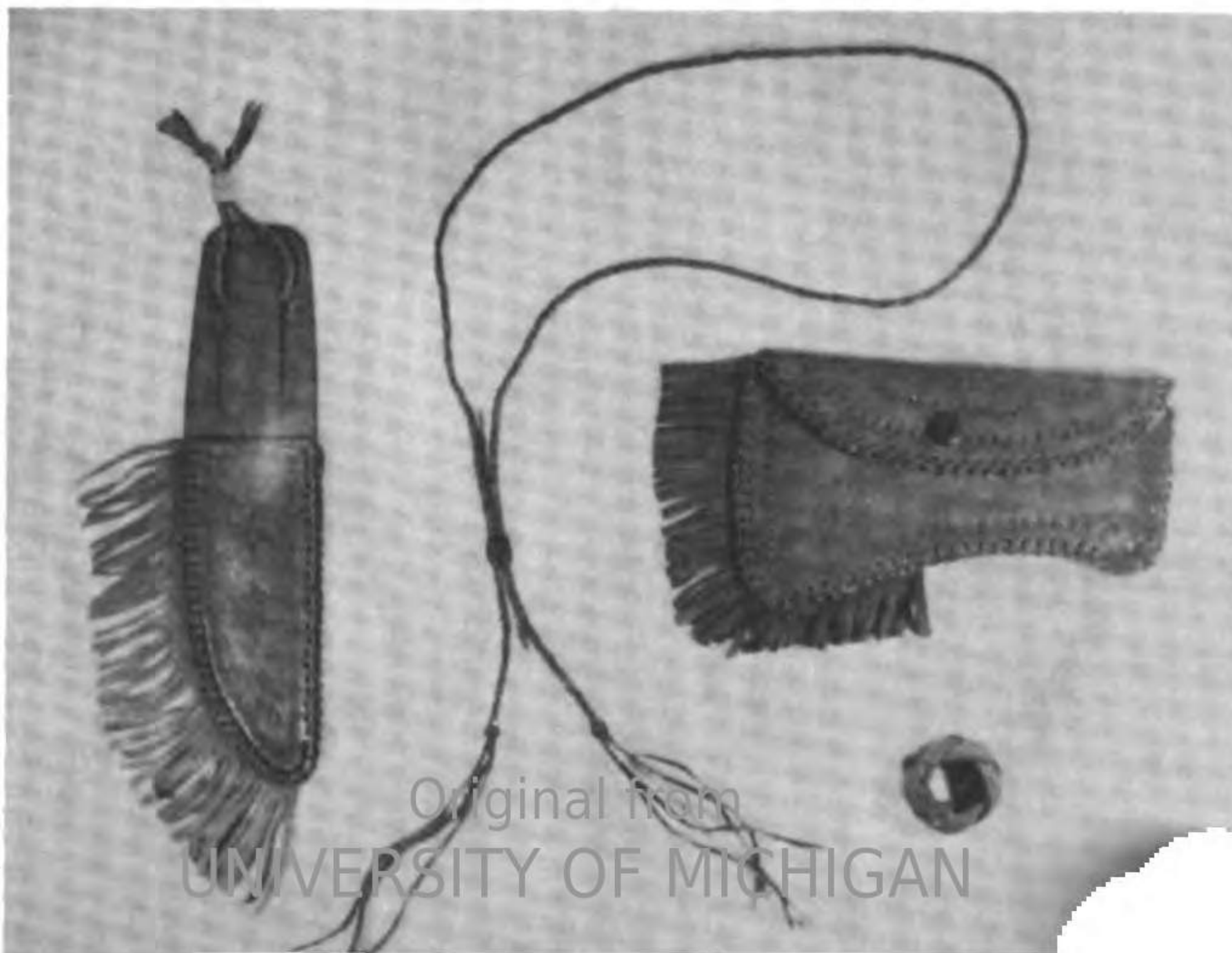
If you want to make a zipper pull or a similar object, you will need to

learn how to make the thong (unless you use edge lace); to braid the four-plait diamond-design thong; and to form the crown and turkshead, which terminates the thong, Fig. 175. If you desire to make a hat band or waist band, you will need to learn to make the sliding knot described and illustrated in Unit 31.

Making the thong strips

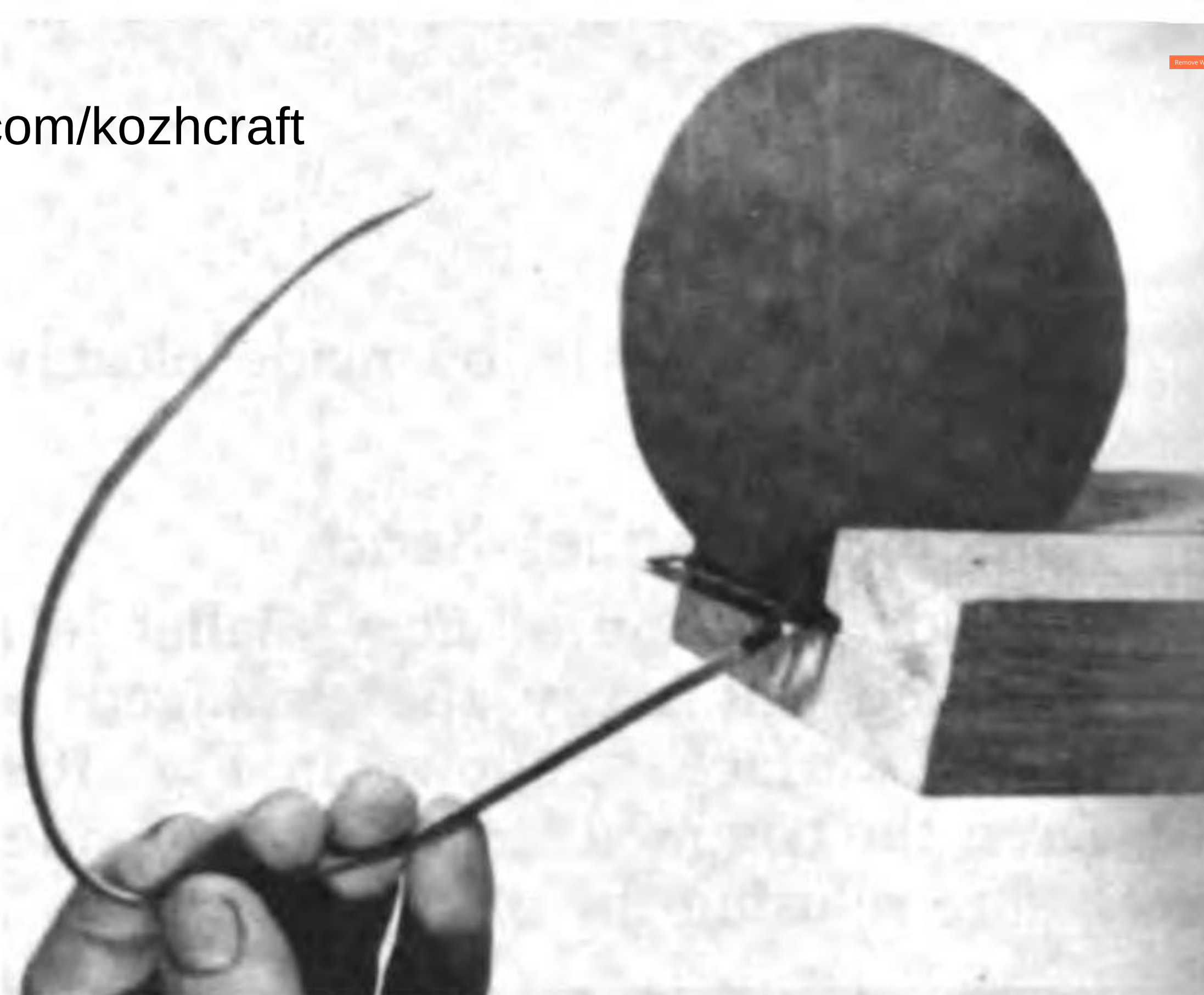
1. Decide on the project you wish

170. A Four-Plait Diamond-Design Round Thong Made into a Hat Band or an Adjustable Belt Is One of Several Boy Scout Projects





171. Cutting the Leader Strip on a Disk of Tooling Calf for Making Thong



172. Cutting Thong

to make so that you will know the approximate length of the two thong strips. Each must be over three times the finished length to allow for braiding and terminating. They are plaited double.

2. Cut two disks 6 inches in diameter from contrasting colors of calfskin. See Fig. 171.

3. Cut a short strip along the circumference of each disk, Fig. 171. This strip is used as a leader. It will vary according to the desired width, with $\frac{1}{8}$ inch suggested as satisfactory.

4. Adjust a razor blade in the thong cutter for the desired width. See Fig. 172.

5. Place the disk in the slot of the wood block with the leader inserted under the cutting edge of the razor blade, Fig. 172.

6. Pull the leader gently with one

hand while holding the thong cutter with the other, Fig. 172. The leather disk will revolve by itself as a continuous thong strip is pulled.

7. Continue the thong cutting until the disk gets too small to work with. Occasionally you may need to trim the circumference of the disk slightly to make it round again if an uneven pull has developed.

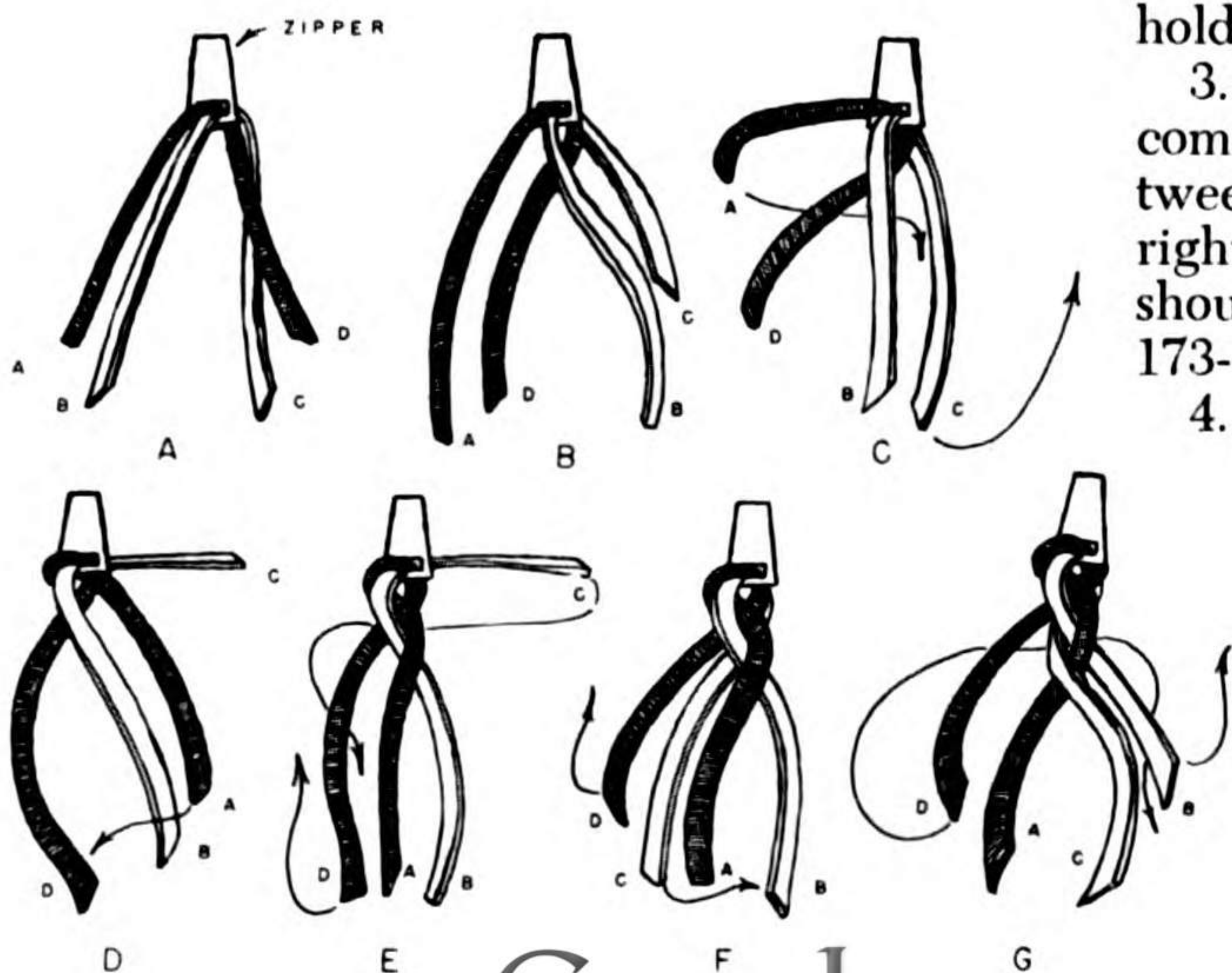
Braiding the four-plait, diamond design round thong

1. Decide on the project you wish to make so you will know the approximate length of the two thong strips. Refer to Step 1 under "Making the thong strips." In Fig. 173 the thong is being plaited on a zipper.

2. Insert the two thong strips AD and BC of contrasting colors, either through the zipper attachment, ring of a swivel, or around a nail which has been driven into a block of wood to hold the thong strips, Fig. 173-A.

3. Adjust the strips so that AD will come to the left, with D falling between ends B and C. Bring BC to the right. The unfinished or flesh sides should fall against each other, Fig. 173-B.

4. Pass A around the back in a right



173. Detail in Braiding Four-Plait, Diamond-Design Round Thong

(clockwise) direction, and bring it up between B and C, Figs. 173-C and 173-D.

5. Place end A over B and around D, so that the flesh sides will come together as in Figs. 173-D and 173-E.

6. Pass end C around the back in a clockwise direction, and up between A and D, Fig. 173-E.

7. Bring C over A and up against B with the flesh sides together, Figs. 173-F and 173-G. This *completes the first cycle*.

8. Pass D, which is on the far left, in a right (clockwise) direction, around the back and up between B and C, Fig. 173-G. This *begins the second cycle*.

9. Bring D over C and against A with the flesh sides together.

10. Pass B around the back and in a left (counterclockwise) direction, and up between A and D.

11. Bring B over D and against C, with the flesh sides together. This completes the second cycle by using all four ends for the plaiting procedure. It will be noticed that a diamond weave is being formed, and, at the completion of each cycle, the ends of similar color thong or lace come together. Keep the pattern compact by pushing the braiding close to the top as it is being formed.

12. Continue the plaiting process until a sufficient length of thong has been made for the zipper pull, hat band,

waist band, or other items, allowing a surplus for forming the crown and turkshead and for tying. The zipper pull will need only a turkshead on one end, while bands will need a turkshead on each end.

Forming the crown and turkshead, Fig. 174

This terminates the plaiting.

1. Hold the plaiting with the 4 loose strips pointing upward so that the similarly colored ends A and D fall apart opposite each other, and ends B and C do likewise, Fig. 174-A. The flesh sides should be up.

2. Loop end A over next to D, Figs. 174-A and 174-B.

3. Loop end B over A so that it falls next to C, Fig. 174-B.

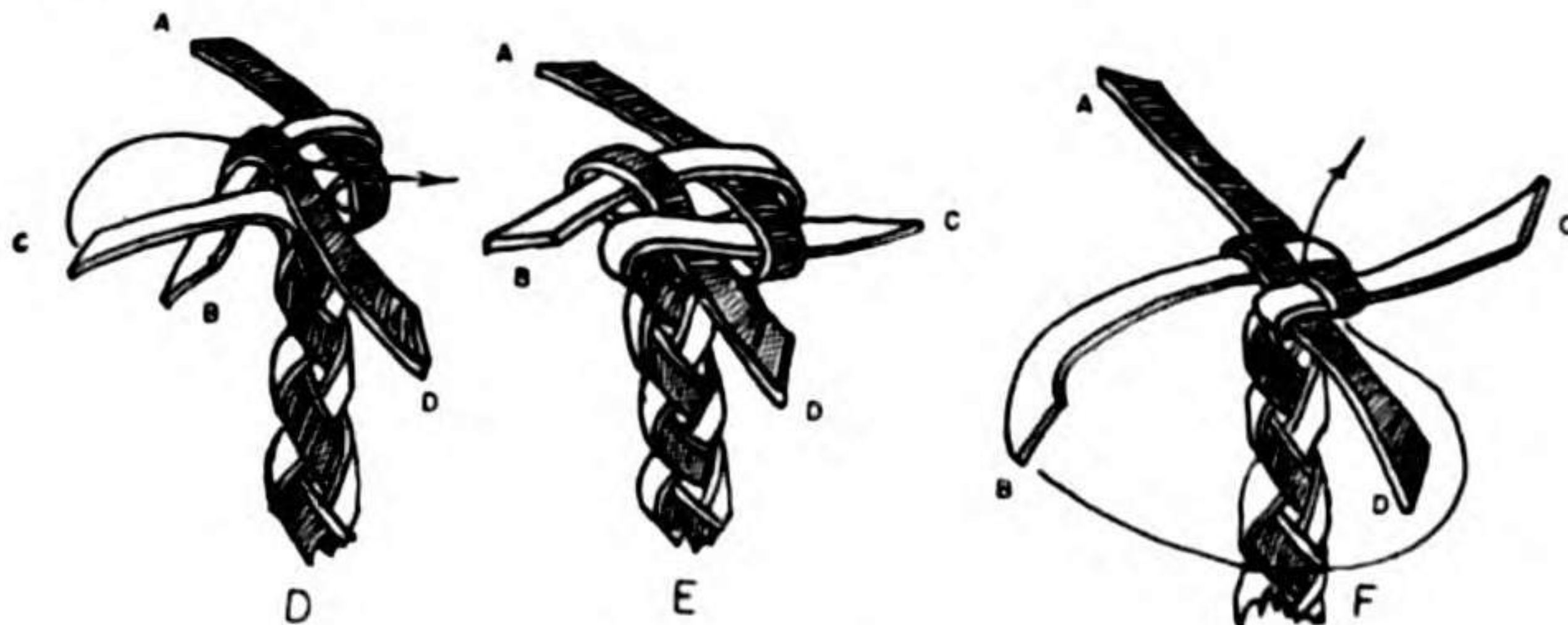
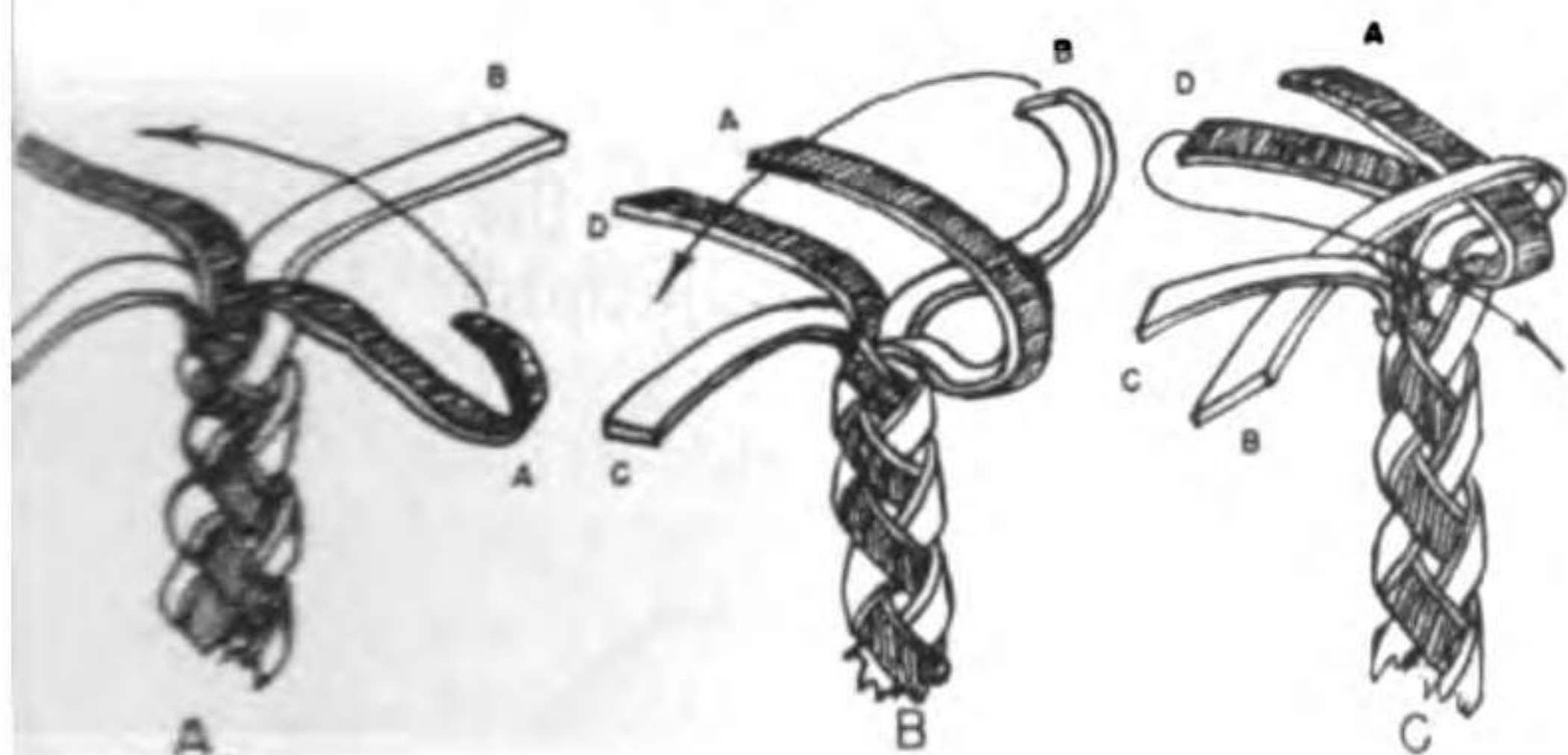
4. Loop end D over B so that it is opposite A, Figs. 174-C and 174-D.

5. Loop end C over D and through the loop formed by A, Figs. 174-D and 174-E.

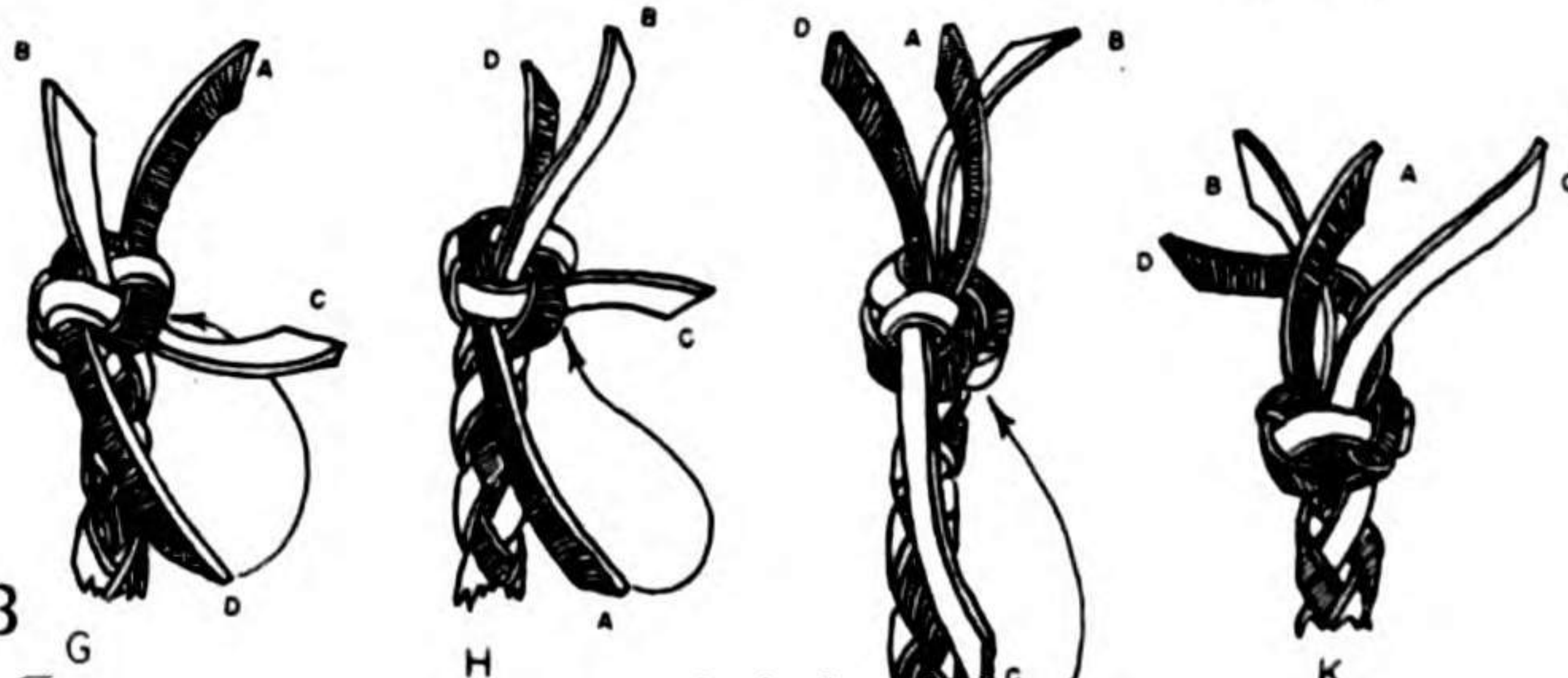
6. Pull all 4 strips compactly, but not too tightly, to form the crown, Figs. 174-E and 174-F.

7. Open the crown sufficiently with the pointed end of a tracer modeler so that end B may be swung under D and come up through the center opening of the crown, Figs. 174-F and 174-G.

8. Swing D under C and up through the center of the crown, Figs. 174-G and 174-H.



174. Detail of Forming Crown and Turkshead.





175. Rolling Completed Thong for Smoothness

9. Swing A under B and up through the center of the crown, Fig. 174-H.

10. Swing C under A and up through the center of the crown, Fig. 174-J. This process roughly forms the turks-

head, Fig. 174-K.

11. Adjust the strips in the turkshead so that the flesh side will be out, and pull the knot firm which has just been formed, Fig. 174-K. This finishes the turkshead.

12. Trim the 4 ends about 1 inch or 1½ inches in length beyond the turkshead.

13. If the opposite end of the plaited thong is to be made into a crown and turkshead, cut the strands from the nail, ravel the ends for 4 or 5 inches, and repeat the above series of steps.

14. Roll the plaited thong under a rolling block to smooth out any unevenness and to equalize the tension on the strands, Fig. 175.

Unit 31 MAKING OR FORMING A SLIDING KNOT

The sliding knot is to be made only if a hat band, dress band, or belt is desired upon completing the braiding of a four-plait, diamond-design round thong, which was described and illustrated in Unit 30. Material needed is $\frac{3}{32}$ or $\frac{1}{8}$ inch width edge lace.

Forming the sliding knot, Fig. 176

1. Hold the thongs of the belt doubled, and place the lace over the doubled thong with the short end B of the lace to the left, Fig. 177-A. This is the beginning of spiral 1-Right, to be called hereafter: 1-R.

2. Bring end A up and over B and around the back of the belt, Figs. 177-A and 177-B. This forms spiral 1-Left, to be called hereafter: 1-L.

3. Bring A up and over B again, and around the back, parallel to that done in Step 2, Figs. 177-B and 177-C. This forms spiral 2-L. Sufficient space must be left between the two spirals for a third one to be done later.

4. Bring end A up over spirals 1-L and 2-L. Insert it under spiral 1-R, thus forming spiral 2-R, Figs. 177-C and 177-D.

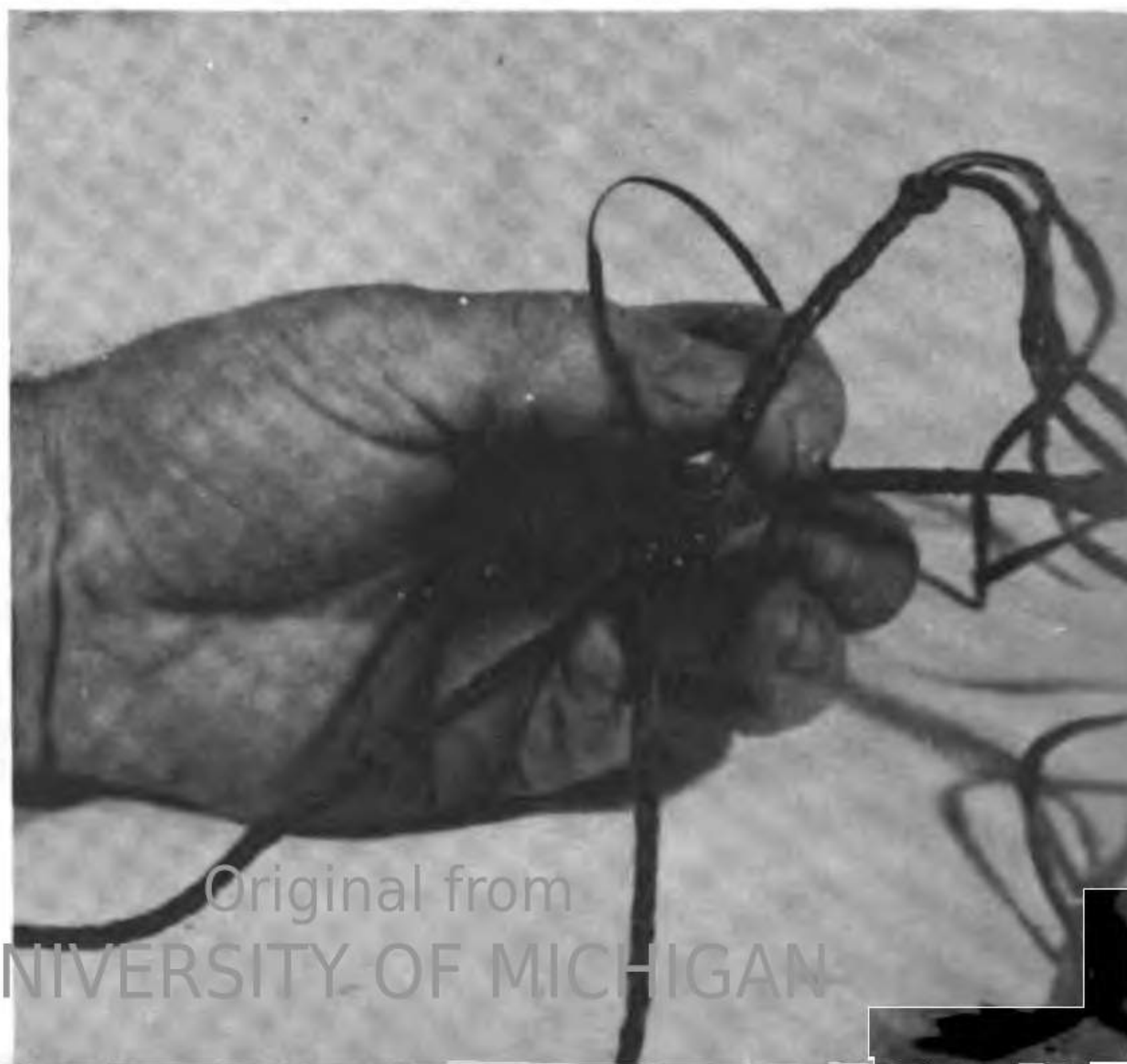
5. Bring A around the back and up between spirals 1-L and 2-L; over spiral 2-R and under spiral 1-R, Figs. 177-D and 177-E.

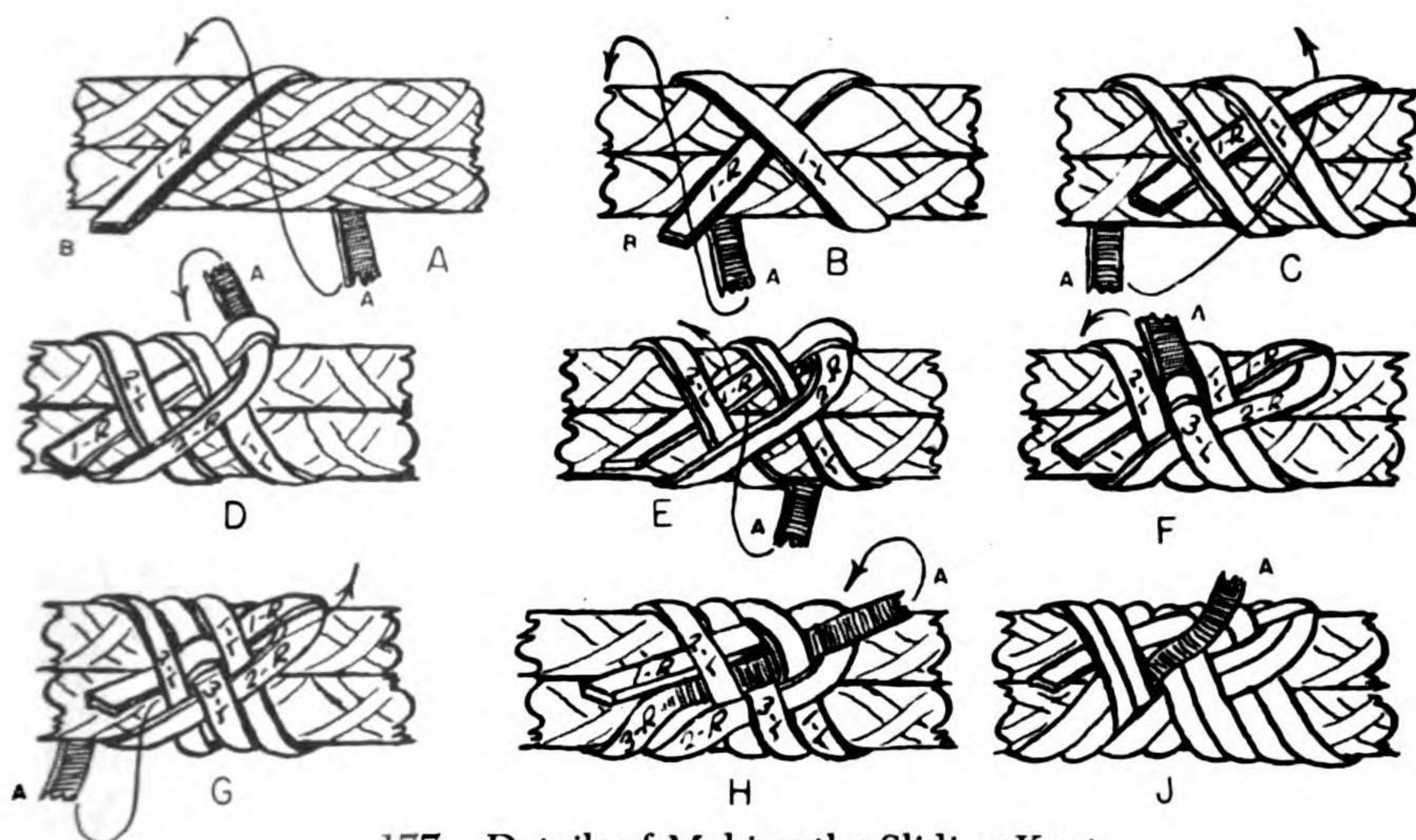
6. Bring end A around the back to start spiral 3-R, Fig. 177-F. This completes the first cycle.

7. This step begins the second cycle. Follow steps 1 through 6, using the identical procedures. Figures 177-G, 177-H, and 177-J picture the start of the cycle which parallels the first.

8. End the sliding knot by cutting off the surplus lace.

176. The Sliding Knot Makes the Four-Plait Round Thong Adjustable





177. Details of Making the Sliding Knot

9. This completes the sliding knot, and it can now be pushed back and forth over the two thicknesses of plaiting to form the adjustment for length.

Unit 32 FASHIONING A NECKERCHIEF SLIDE

This 3 strand, 5-spiral neckerchief slide has an important place in Boy Scout equipment. It is also ideal for novelty napkin rings. The long piece of leather for making this project is cut from cowhide with a draw gauge. The leather should be dampened before using; then, after the slide has been fashioned on the piece of wood dowel or broom handle and has dried thoroughly, it will hold its shape. Figure 178 pictures the slide.

Forming a neckerchief slide

1. With the draw gauge, mark and cut a cowhide strip $\frac{3}{16}$ inches wide by 36 inches long.

2. Submerge the leather strip in water for a few minutes; then remove and allow to dry for at least 15 minutes. This is necessary so the leather will be more pliable and the slide will hold its shape after it has dried thoroughly and been removed from the forming dowel.

3. Cut a $\frac{3}{4}$ inch diameter wood dowel 8 inches long, or use a short

length of broom handle to serve as a form.

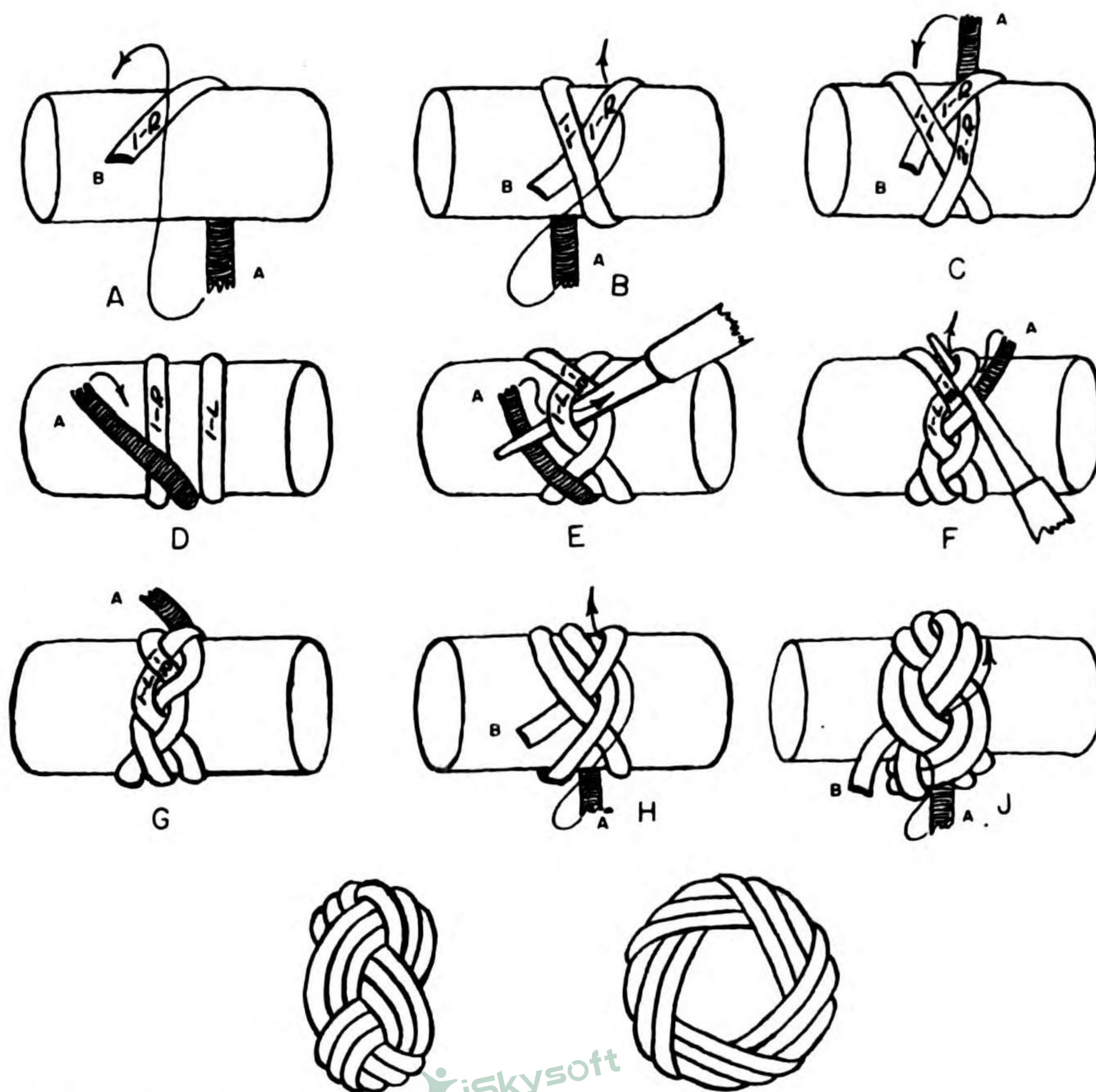
4. Place the damp strip of leather over the dowel, forming a right spiral, called 1-R, with the short end B on the front, left, Fig. 179-A.

5. Bring end A up over the front, and to the left over B, to form a left spiral, called 1-L, Figs. 179-A and 179-B.

6. Bring end A over spiral 1-L; under spiral 1-R, Figs. 179-B and 179-C.

178. Neckerchief Slide





179. Details in Making the Neckerchief Slide

7. Turn the dowel around so that the back is now facing you, Fig. 179-D.

8. Crisscross 1-R over 1-L, and force an opening for A, Fig. 179-E.

9. Insert end A into the opening just made, Fig. 179-E.

10. Force an opening with the pointed end of a modeling tool, or with an awl, under 1-L, just above where it crosses with 1-R, Fig. 179-F.

11. Insert end A into the opening just made, Fig. 179-G. This completes the first cycle.

12. Turn the dowel back again to its original position, Fig. 179-H.

13. Start the second cycle by working parallel to 2-R, as shown in Fig. 179-C. Continue by repeating Steps 1 through 11. Figure 180 shows the beginning of the third cycle.

14. Start the third cycle in the same manner as explained in Step 13.

15. Cut off surplus ends of A and B when the third cycle has been completed. Tuck the ends inside the slide.

16. Allow the slide to dry thoroughly; then pull it off the dowel.

17. Clean the leather and apply a wax or lacquer finish. Unit 28.

180. Beginning the Third Cycle of the Neckerchief Slide



Unit 33 MAKING A BRAIDED BELT

Making belts is always interesting to boys and girls. Fig. 181 pictures six types of link, braided, and stamped belts. This unit is concerned with the making of belt No. 3 in Fig. 181.

Braiding a five- or eight-strand belt is a fascinating activity which challenges one's ingenuity and alertness. The procedure for braiding either five or eight strands is virtually the same. The detailed drawing, Fig. 182, shows the belt laid off for five strands; however, if its width is increased to $1\frac{1}{2}$ inches, with the other parts being proportionate, it can be made into an eight-strand belt for which the following steps are given. Figures 183 and 184 show the designs for both.

Plaiting eight strands

1. Mark and cut cowhide for the belt strap. See Fig. 182 for the drawing, and Unit 6 for cutting leather. Use 8 to 10 ounce strap leather.

2. Measure and mark the strap into

eight equal parts for stripping.

3. Strip or cut the strap into eight equal parts with the draw gauge. See Fig. 182. Cut all but the last 7 inches, which is to serve as the tongue of the belt.

4. Nail or fasten securely the solid end or the tongue of the belt to some convenient working surface. Be sure the nail hole falls where a hole is to be punched later in the tongue. A vertical surface permits easier handling of the strands.

5. Number in your mind the strands from right to left.

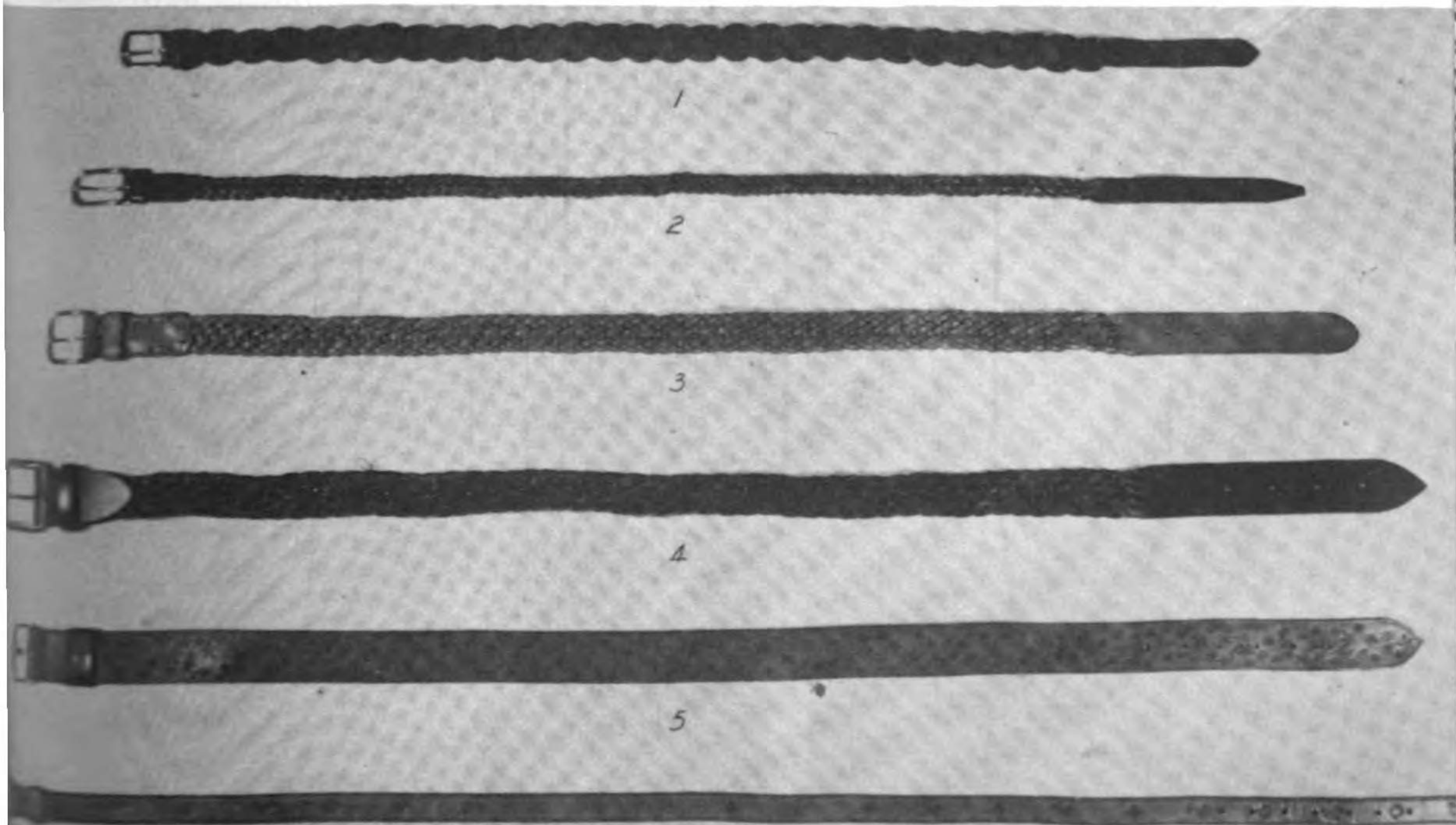
6. Pass strand 1 over strand 2, under 3, over 4, under 5, over 6, under 7, and over 8. See Fig. 185.

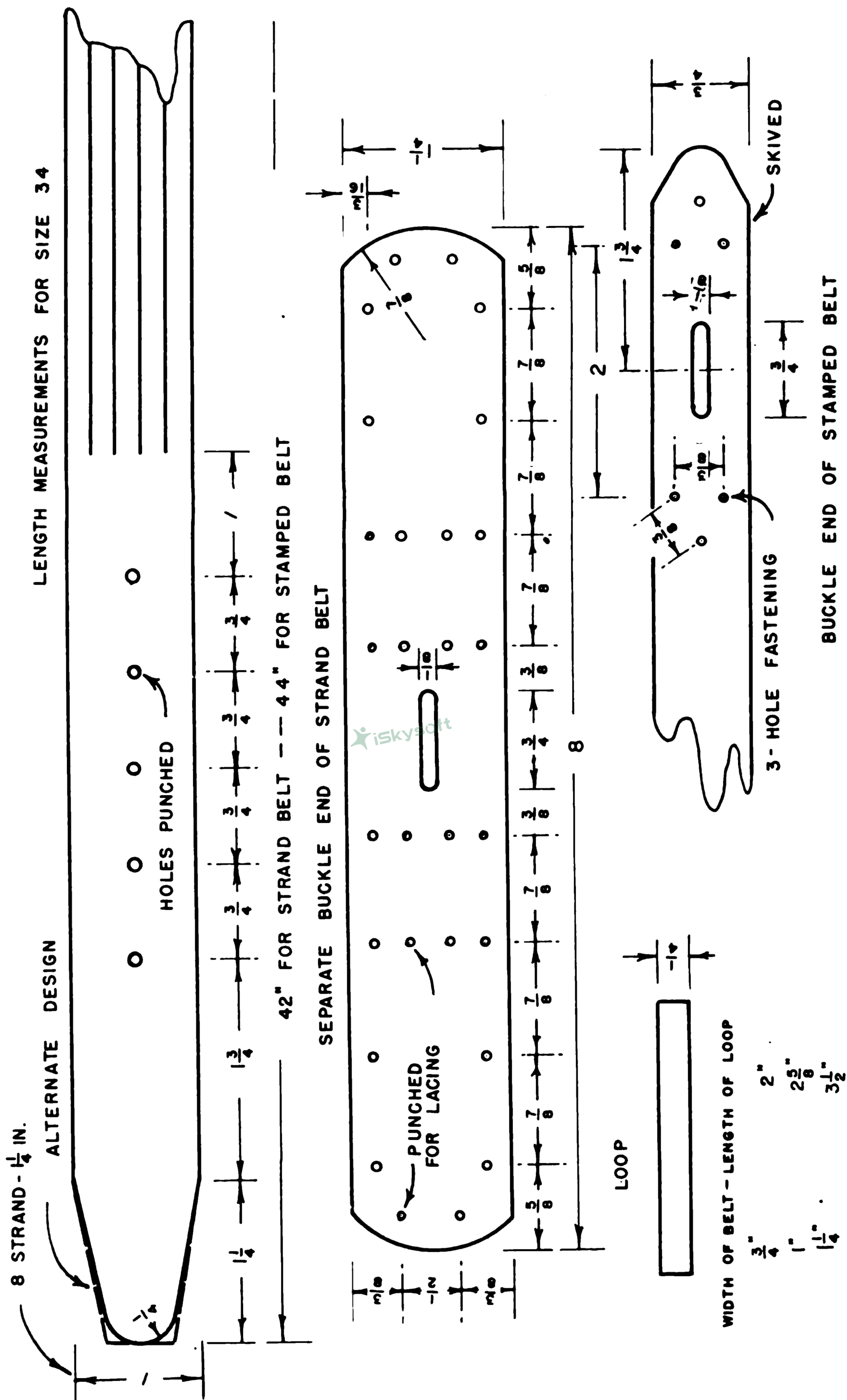
7. Pass strand 2 over 3, under 4, over 5, under 6, over 7, and under 8, Fig. 186.

8. Now, pass strand 1 under 2, and pull it back into line parallel to strand 8, Fig. 186.

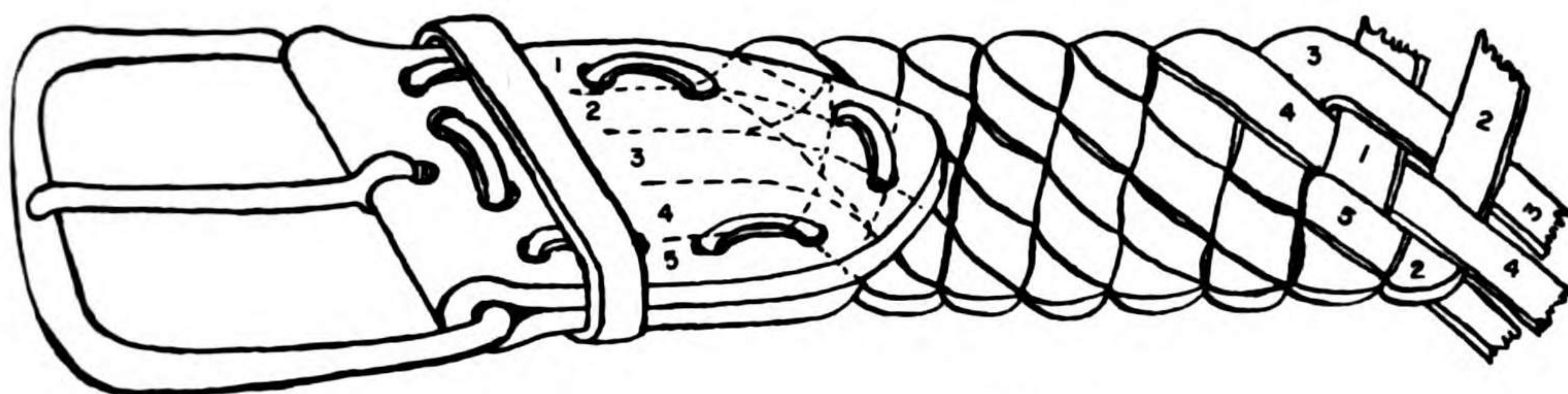
9. Pass strand 3 over 4, under 5,

181. A Selection of Link, Braided and Stamped Belts

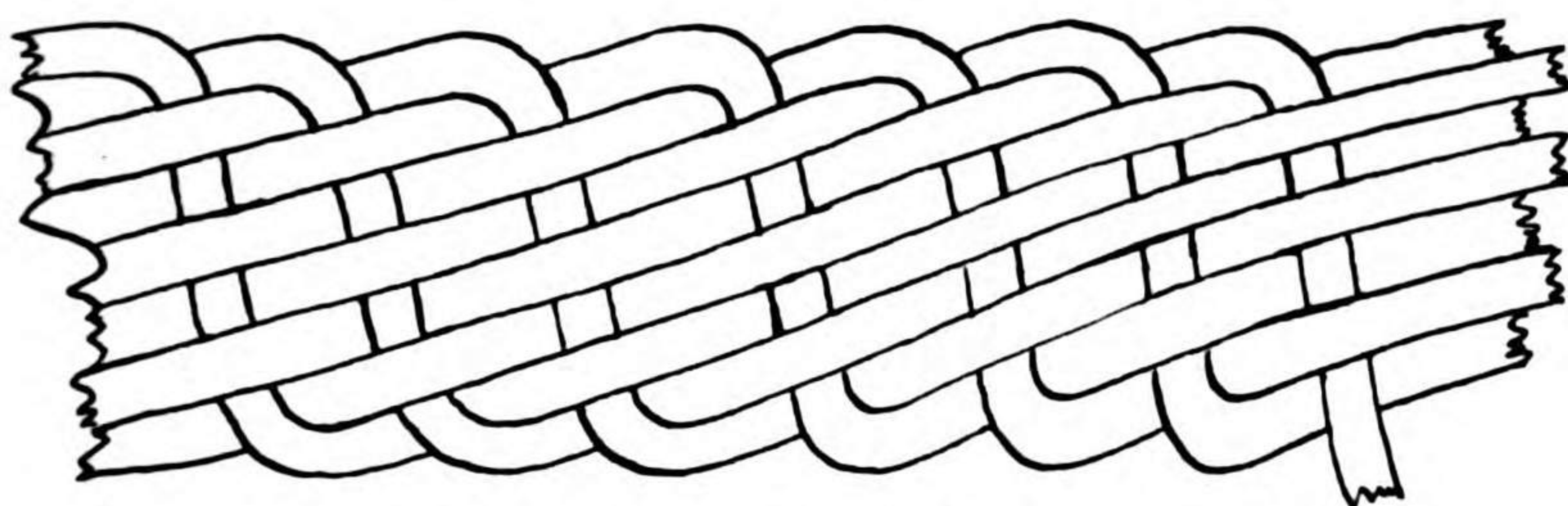




182. Details of a Plaited Belt



183. Design for a Five-Strand Belt



184. Design for an Eight-Strand Belt

over 6, under 7, over 8, and under 1, Fig. 187.

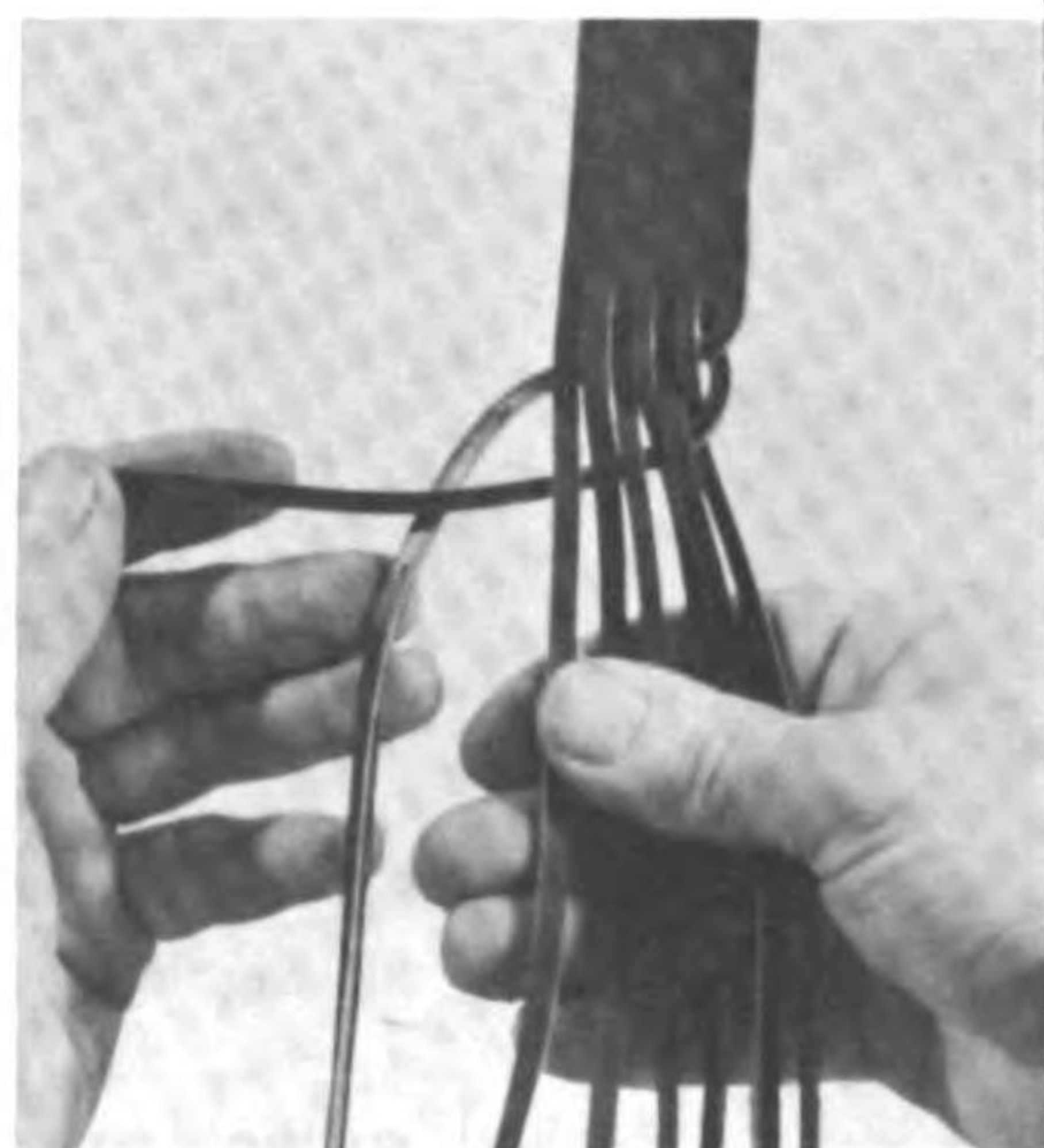
10. Now, pass strand 2 under 3, and pull it back into line next to strand 1, parallel with it. See Fig. 187.

11. Continue this series of operations until the belt has been completely braided, Fig. 188, and then tie the ends of the strands together to keep them from raveling.

12. Find the length of the belt by circling the waist with the braided portion, thereby leaving the tongue as an additional 7 inches for buckle adjustment. Trim to length.

13. Skive $1\frac{1}{2}$ inches from the un-

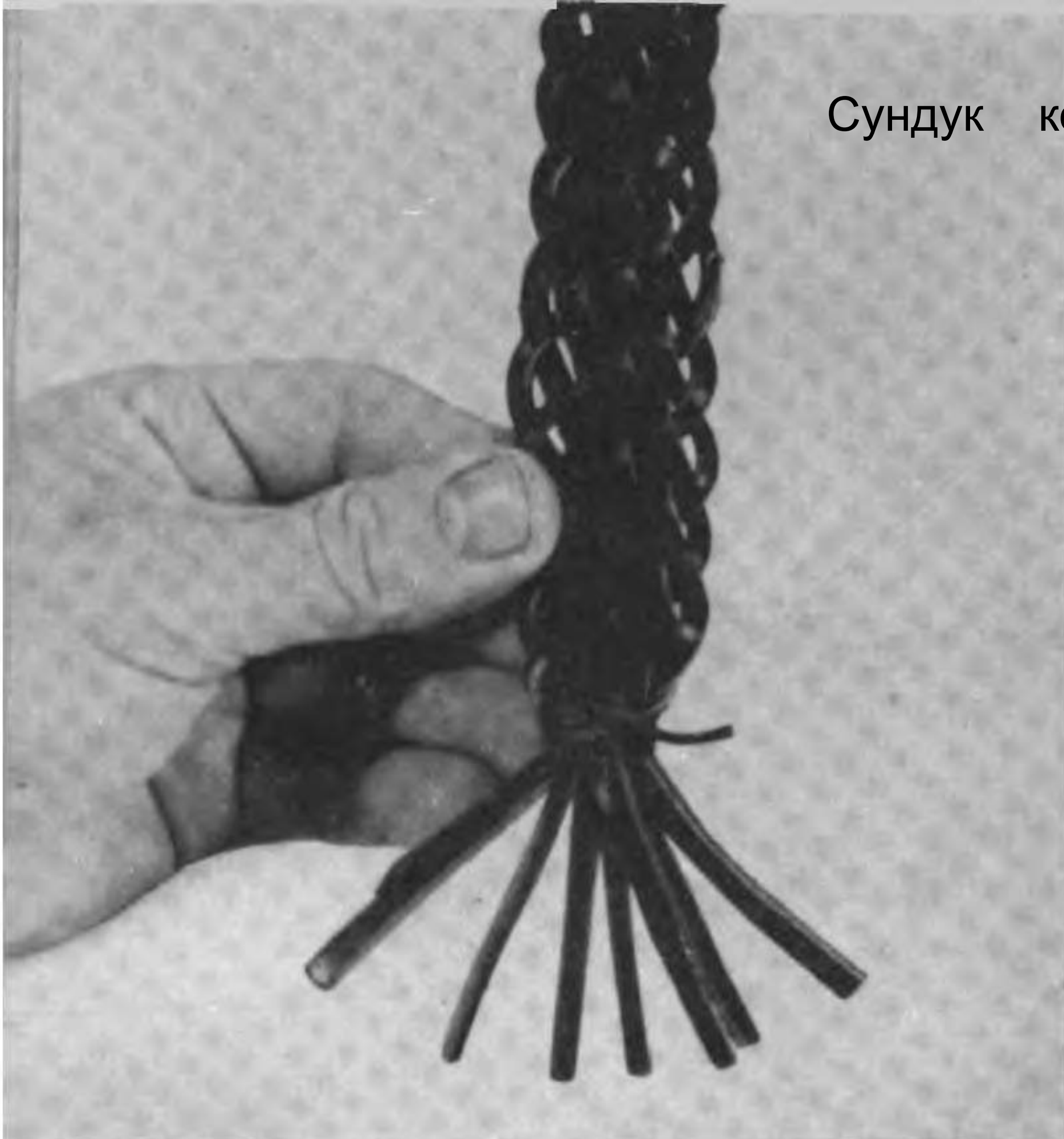
186.
Braiding the
Second Strand



185. Braiding the First Strand

187. Braiding the Third Strand

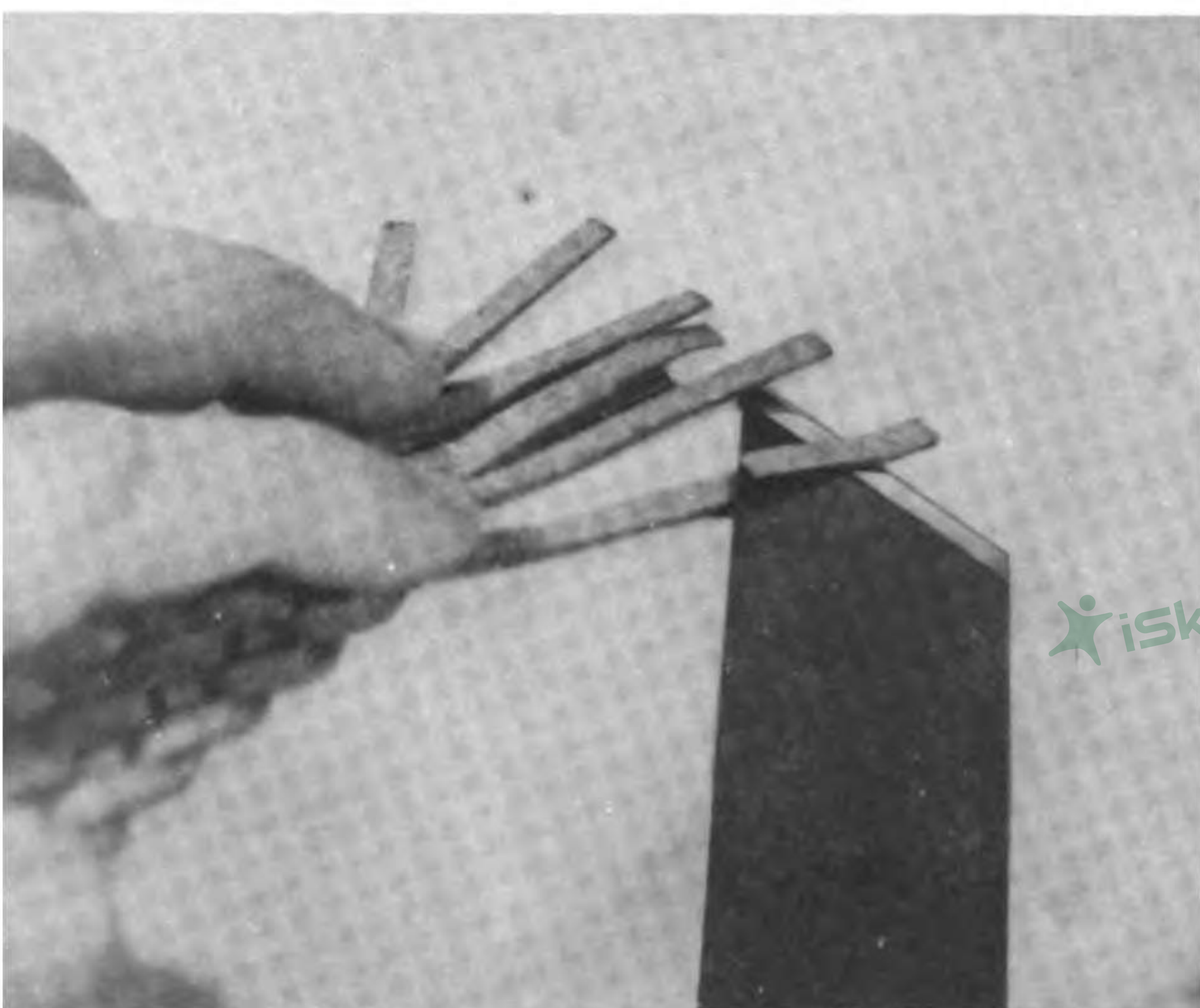




188. Ends of the Strands Tied



190. Cementing the Strands on the Buckle Strap



189. Skiving the Ends of the Strands



191. Punching Holes for Buckle and Fastening

finished surfaces of the ends of the strands to remove bulkiness for final assembly to the buckle end, Fig. 189. See Unit 13 for skiving procedure.

14. Cut out the parts for the buckle end of the belt. See Fig. 182. If these parts are to fit the eight-strand belt which has just been plaited, the width must be increased to $1\frac{1}{2}$ inches.

15. Locate and cut out the slot for the buckle with an oblong punch. See Figs. 182 and 190.

16. Crease the edges of the belt loop. Unit 14.

17. Skive the ends of the loop and fasten them together with an eyelet,

a rivet, or by sewing. See Fig. 190. The size of the buckle loop is determined by pressing it around the triple thickness of the belt.

18. Apply rubber cement to both surfaces of the skived strands and to the unfinished surfaces of the buckle end of the strap.

19. Insert the buckle and slip the loop on the buckle end.

20. Pull the strands closely together and press them in their proper place on the buckle strap, Fig. 190.

21. Press the buckle strap over the cemented ends of the braided section. Figure 191 shows the buckle end pressed in place.

23. Lace the buckle section to the braided belt, Fig. 192. The lacing procedure consists of an in-and-out stitch through the holes, Fig. 192. The lacing is terminated by tucking the ends between the two layers of leather.

192. Lacing the Buckle End to the Braided Section

26. Clean and apply the finish. Unit
28.

A novelty link belt appeals to everyone, and is easily made by utilizing scrap materials. A unique effect can be produced if various types of leathers, as well as different colors, are used for the links. The details of the link belt are included in Fig. 193 for the

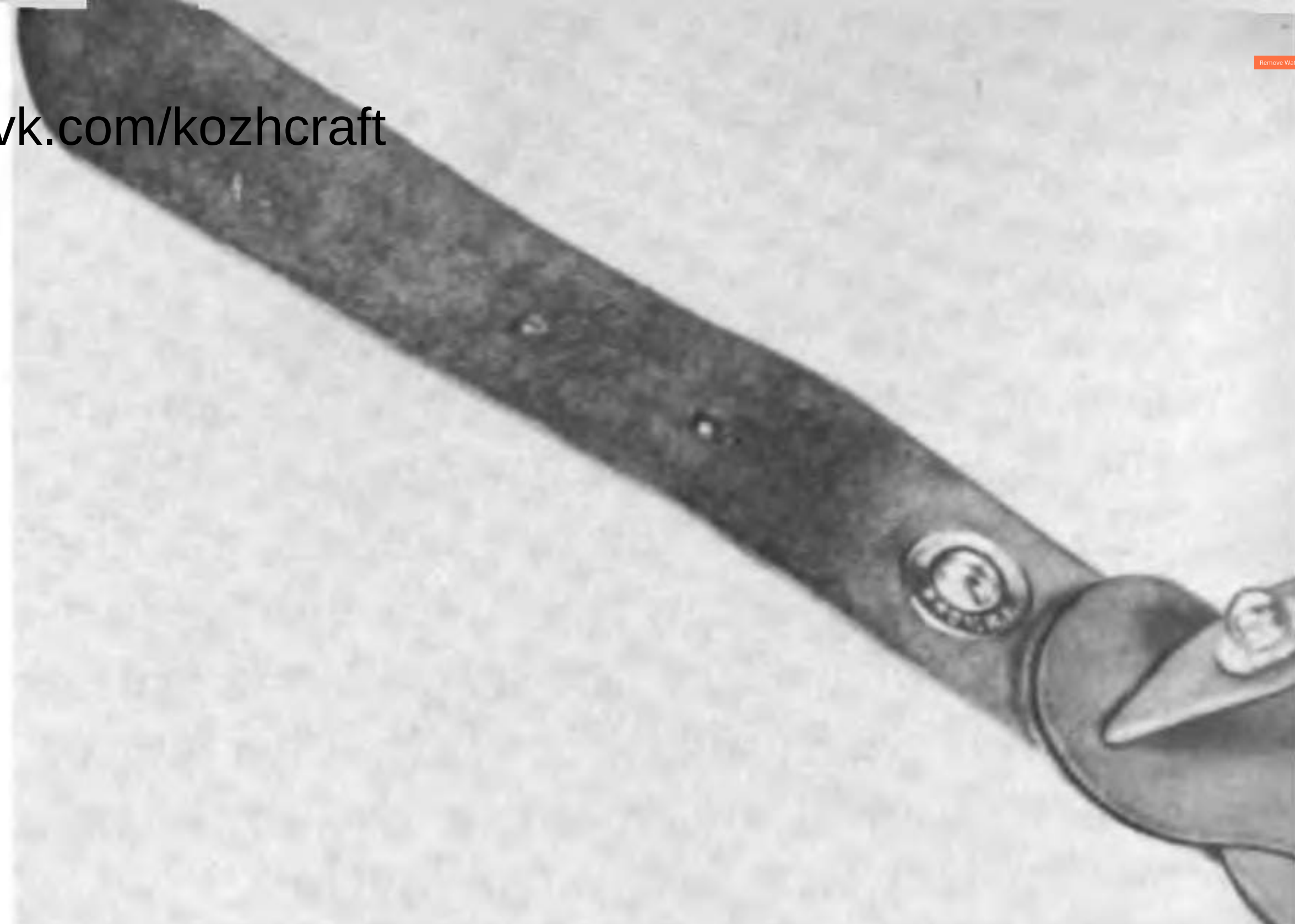
Making the link belt

2. Secure sufficient material, either

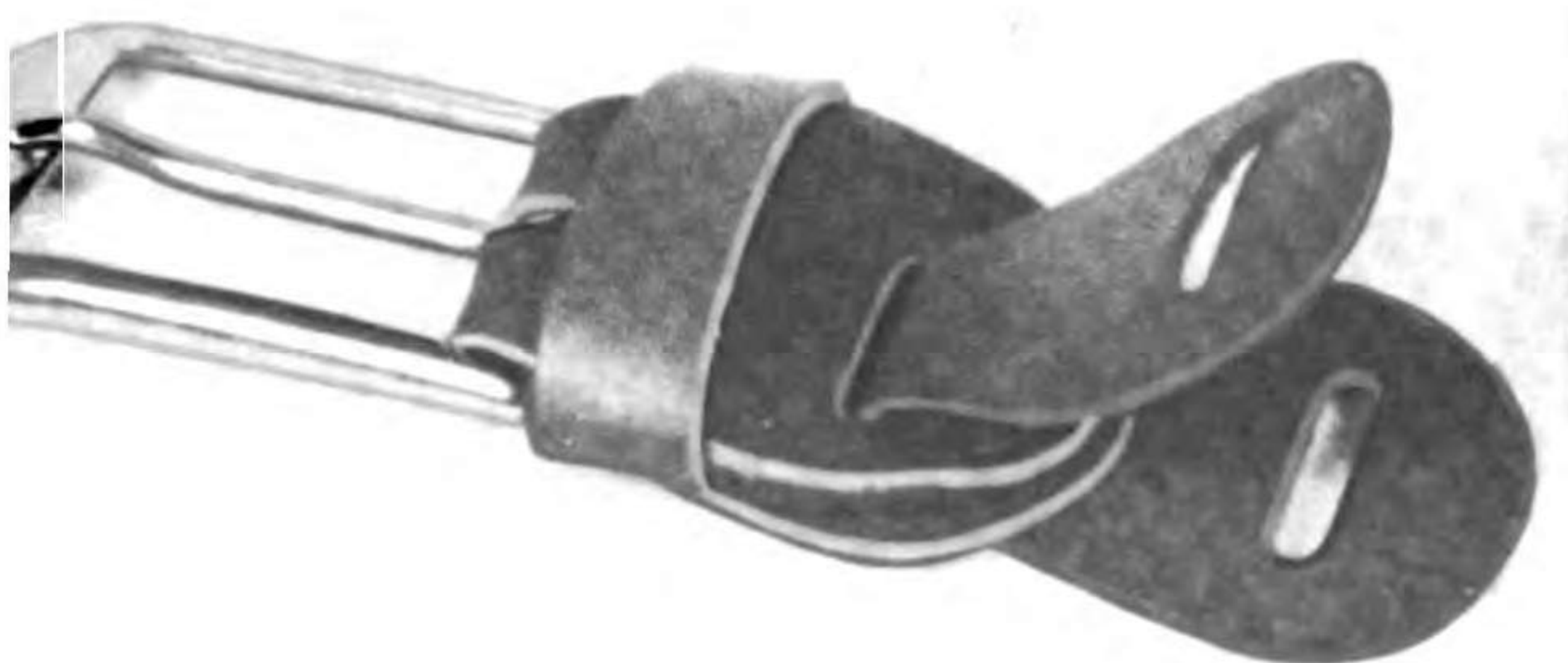
[illegible]



194. Utilizing Scrap Leather for Belt Links



196. Assembling the Tongue End to the Link Belt



195. Inserting the Buckle into the Buckle Link

scraps or larger pieces, for making the links, Fig. 194.

3. Place the templates on the leather and mark around them with a sharp pencil or awl.

4. Cut the leather on the marked lines with a scissors. See Fig 194.

5. Mark and punch holes to form the slots in the links, Figs. 194 and 195.

6. Mark location for the snap button assembly on the belt tongue. Measurements are in the drawing, Fig. 193.

7. Punch holes and assemble the snap button. See Fig. 196.

8. Color the edges with the proper color dye or with India ink.

9. Insert the buckle into the buckle link, Fig. 195.

10. Skive the ends of the belt loop and fasten together, Fig. 190. The size of the loop is determined by pressing it around a triple thickness of the belt tongue.

11. Slip the belt loop through the buckle link, so that it is on the front side, next to the buckle. See Fig. 195.

12. Insert the belt link through the slot of the buckle link, Fig. 195.

13. Continue the linking procedure until all of the links have been connected, and the desired length has been obtained.

14. Insert the snap button end of the tongue through the slots of the last link, and snap shut, Fig. 196.

15. Apply the desired finish. Unit 28.

Unit 35 HISTORY AND EARLY USES OF LEATHER

When primitive man learned to tie a hard piece of skin around his feet to protect them from stones and thorns, he increased his hunting speed; leather clothing allowed him to survive weather better; when he learned to put water in skin bags, he increased his traveling range and freed himself from the necessity of returning to

rivers and springs for longer periods of time; and when he learned to hide behind a tough piece of skin, he became a better warrior, more often victorious. Thus one sees the early advantages in the utilization of skins and hides for protection and clothing.

As the knowledge of leather usage increased, tribes made tents, beds,

carpets, armor, harness, and shoes out of it. It was also employed for bow strings, shields, fastenings for arrowheads on shafts, and ornamentation. Later, canoelike boats were built, and drums of leather were used as means of communication.

Articles of leather thirty-three centuries old have been found in Egypt, where it was classed with gold and ivory in value. The Egyptians, during Biblical times, used leather for sandals, but, since these were very rare and expensive, only the Pharaohs wore them.

The beginnings of recorded history were found on skin rolls which existed in 1500 B.C., and through the centuries manuscripts written on such parchment have been preserved.

Romans in the time of Caesar made wide use of leather, since their methods of tanning were developed to a relatively high degree. They made common use of leather sandals, and, as indication of high rank, a shoe called the "calceus" was worn. The Roman Senator of this period wore the high, black calceus laced down the front, while the noble-blooded patrician wore red shoes. Roman soldiers wore leather caps as part of their regular equipment.

Marco Polo, the famous world traveler from Venice, returned from China during the thirteenth century and reported that the great Mongol war lord, Kublai Khan, lived in leather tents lined with ermine fur. The Chin-

ese of this period also used flexible tanned leather, highly colored and decorated, for bed coverings and dress.

Clothing worn during the fourteenth and fifteenth centuries consisted chiefly of leather doublets and hose, and shoes in fanciful shapes. It was in this period also that bookmaking became a highly developed art, and books were bound with handsomely tooled leather covers. During this time the guilds, forerunners of modern trade unions, were formed. These professional groups exerted a powerful influence on the leather industry. They controlled apprentice training because the masters, who were the craftsmen, selected the boys to be trained in this skill.

Leather played an increasingly important part in the life of early Colonial settlers of America. It was used for leather stockings, knee breeches, jackets, and coats. It was also used for square-toed shoes, saddles, upholstery for chairs, and to take the place of springs in the early coaches.

In modern times, manufacturers often use exotic designs in their products which are made possible by the use of such leathers as those obtained from snakes, lizards, sharks, and alligators in the making of shoes, luggage, belts, and handbags. There is a mark of distinction about a genuine leather article that gives utmost satisfaction. It not only wears well, it also retains the appearance of quality to assure pride.

Unit 36 MAKING LEATHER

The two general types of treatment that skins and hides undergo before they become leather are (1) curing or dressing and (2) tanning. Curing or dressing hides and skins is the lengthy preliminary process in which the skins

are prepared for tanning by the removal of all flesh, hair, and foreign particles that cause the skin to decay before tanning can take place. Curing preserves them until they can be tanned.

Tanning is the process by which the cured hides and skins are converted into durable and lasting leather through the medium of either vegetable or mineral agents, often referred to as vegetable and chrome tanning processes. Whichever method is used involves the same preliminary steps in curing or dressing.

Early method of preparing and tanning

The early history of leather making in America falls into two classifications: (1) that method of tanning practiced by the early Indians and (2) that method followed by the early settlers. The leather made by the Indians was known as buckskin, the superior method for that being the one used by the Crow Indians. The women of the tribe did the work of dressing the skins, Fig. 211. This drawing shows them washing the skins in a stream to remove the flesh and other particles from

the hides, then rubbing off the softened impurities.

Dressing the skins usually required several processes. The skins were first piled, wetted, and left for the period of time necessary for decomposition to set in and loosen the hair. (The Crow method was superior to this in that the hides were immersed in a solution of lye water made from ashes of their campfires). The flesh and hair sides of the skins were next scraped to remove all foreign matter. They were then hung in a tightly closed teepee in which a smudge fire smoked and cured the skins. Leather made by this method withstood wetting, and after it dried, returned to its original soft, pliable condition.

The early settlers in America followed a method of tanning which had been practiced in Europe for centuries: that of tanning by means of oak bark. In the preliminary steps of dressing the skins, they were soaked in lime and water, and then the hair scraped off.

197. Indian Women Washing Skins to Remove Flesh and Other Undesirable Matter

COURTESY TANNER'S COUNCIL OF AMERICA



They were next laid in crude boxes or vats and sprinkled with ground oak bark until the vat was filled with alternate layers. They soaked for approximately six months.

When it was found that tannin was the ingredient in the oak bark that acted as the tanning agent, other sources of this vegetable product, such as hemlock leaves, nut galls, certain oriental trees, and sumac bark, widened the geographical field of tanning, since localities that did not have oak trees could still furnish the raw material, tannin.

Preparation for tanning

Whether leather is to be tanned by the use of vegetable agents or chrome salt, the preparatory stages in dressing hides and skins are similar. Modern methods of dressing and curing involve intricate machinery and high productive efficiency.

When hides and skins are first removed from the animals in the packing plant, they are cured by placing them in a brine solution or laid in a cellar covered with salt for thirty days. After they are received in a tannery, they are immediately trimmed, washed, and often cut into sides. The hides or skins are then treated with a solution of lime to loosen the hair and to open the pores of the skins so they will absorb more quickly the tanning acid or agent that converts them into leather.

Fig. 198 shows hides and skins in

199. The Sharp, Spiral Knives of a Fleshing Machine Cut Away Excess Fat and Flesh

COURTESY TEX TAN TANNERY



COURTESY OHIO LEATHER COMPANY

198. Soaking Hides to Remove Dirt, Flesh, and other Foreign Matter

soak pits where the chemical softens them in their dried condition and makes it easier to remove foreign particles. After the soaking, they are treated with chemical in preparation for going into tanning vats.

The hair is next removed by machines, and the flesh side is cleaned and scraped with a fleshing machine, Fig. 199. This machine has revolving knives that cut away undesirable foreign matter such as fat and surplus flesh.

Skins and hides must be further treated by a pickling process which produces a softened condition so that they may be tanned properly, Fig. 200. These steps complete the essential cleaning and dressing prior to actual tanning.

Vegetable tanning

Vegetable tanned leathers are most suitable for use by the leathercrafter who wishes to tool and stamp ornamentation on his work. This type

200. Skins Removed from Pickle Paddles Have Lost Their Rubbery Condition and Now Appear Soft

COURTESY OHIO LEATHER COMPANY



Original from
UNIVERSITY OF MICHIGAN

Digitized by Google



COURTESY TEX TAN TANNERY

201. Hides and Skins Stay in Tanning Vats Sixty to Ninety Days



COURTESY OHIO LEATHER COMPANY

204. Skins and Hides Being Removed from the Chrome Tanning Drums



COURTESY TEX TAN TANNERY

202. The Leather Press Removes Excess Moisture from the Hide after Tanning



COURTESY OHIO LEATHER COMPANY

205. The Flesh Side of the Skin Is Being Smoothed So that the Entire Skin Is Brought to a Uniform Thickness in the Shaving Machine

leather is also used for making shoe soles.

Tannin, the agent used in this process, is extracted by a method known as leaching (similar to brewing coffee), from certain barks, nuts, and leaves.

203. Skins and Hides Being Put into Mechanical Drums to Be Treated with Oil and Greases

COURTESY TEX TAN TANNERY

206. Skins and Hides Must Be Tacked on Frames So They Will Not Wrinkle in the Oiling and Coloring Process

COURTESY OHIO LEATHER COMPANY





COURTESY OHIO LEATHER COMPANY

207. Staking Machines Are Used to Stretch and Soften Leather



COURTESY OHIO LEATHER COMPANY

208. Producing a Glazed Finish by Means of Friction from a Glass Cylinder with Machine Pressure

It is diluted to the desired strength in hot water, and the hides and skins are placed in tanning vats which contain the tannin solution. The principal tanning materials are generally obtained from oak, chestnut, quebracho, cutch, wattle, and hemlock.

The hides and skins are rotated through a series of vats, starting with a weak solution, increasing the strength of the solution each time, Fig. 201. This process requires from 60 to 90 days, depending on the type of leather and the weight of the hide.

The leather must then be taken from the vat so that the excess moisture can be removed from the hide through rollers, as shown in Fig. 202. It is then dried in preparation for receiving oil which returns flexibility and life to it. This process is done by placing the leather in a drum, where it is treated with oil and greases until the right amount is restored, Fig. 203. Skins and hides are now ready for the finishing process.

Chrome tanning

Chrome tanned leather is usually used in shoe uppers, gloves, and garments. It is a speedy process by which the dressed skins can be converted into leather in a day's time.

Chrome is derived from the metal, chromium, converted by heat and chemical action into bichromate of soda; and the crystals thus formed, when treated with sulphuric acid and

glucose, make a green solution or liquor which is used in chrome tanning.

The dressed skins and hides are put into tanning drums which contain the chrome solution, Fig. 204. They emerge from these drums with a light bluish color which must be removed by the application of baking soda.

The process of shaving is the next step. This smooths the flesh side of the skin so that it comes out uniform in thickness, Fig. 205. The skins or hides are inserted between spiral cutting knives. For those that are too thick, the stock is split so that an upper side, called the "grain," and the reverse side, called the "flesh-split," result.

In the event that the leather is to be colored, it must now be sent to the dyeing department. The coloring process and the subsequent oiling cause the stock to emerge very wrinkled, and the skins are tacked on frames to dry smooth, Fig. 206.

The skins are next treated on staking machines, Fig. 207, to break the dried crust and to mellow the leather preparatory to finishing.

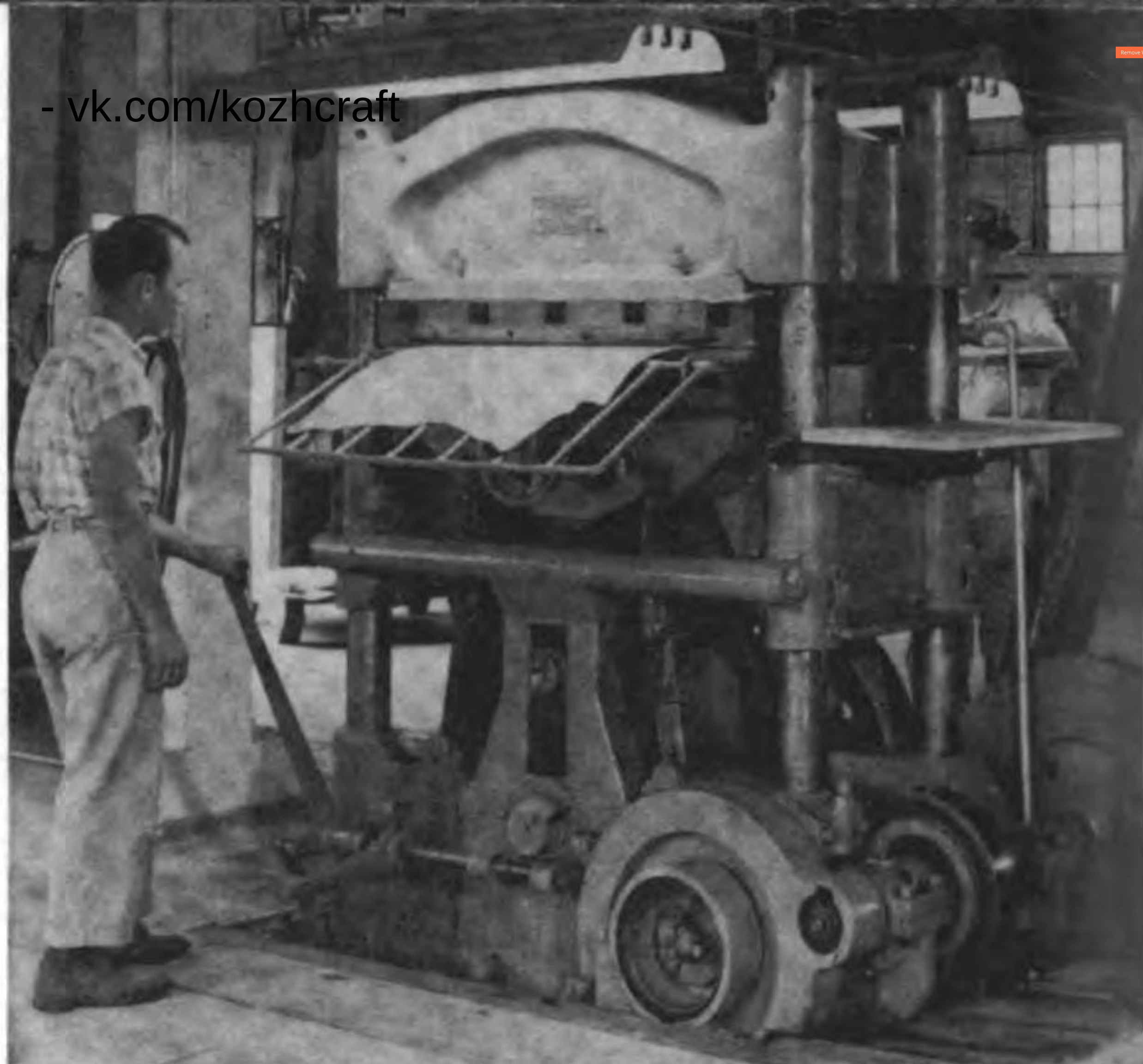
Finishing of leathers

Various textures in leather are obtained by glazing, Fig. 208; buffing, Fig. 209; graining, Fig. 210; and embossing, Fig. 211. A glazed finish is produced from the friction which re-



COURTESY OHIO LEATHER COMPANY

209. Producing a Suede Finish by Buffing the Leather on an Oscillating Buffing Machine



COURTESY TEX TAN TANNERY

211. Simulated Grains Such as Alligator and Seal Are Engraved on Leather in This Heavy Press

sults when a glass cylinder rubs over the leather to produce a highly polished, glazed surface.

A buffed finish is the type found on suede leather, and is produced by buffing wheels which raise a fine nap, similar to velvet.

A grained finish is usually achieved by hand working the leather grain-to-grain forward and backward, crossing

and recrossing until the desired effect is produced.

Embossing is applying a finish by heat and pressure. Simulated grains of alligator and seal are put on by the use of engraved plates in a heavy press.

Fancy effects or the natural color and texture are obtained or preserved by final spray finishing, Fig. 212.

210. Hand Rubbing Leather against Leather to Produce Fancy Grained Effect

COURTESY TEX TAN TANNERY



212. The Final Color and Finish Are Applied with a Spray Gun

COURTESY TEX TAN TANNERY



Unit 37 LEATHER TERMINOLOGY

The making of leather is probably the oldest manufacturing industry of mankind; older than history itself. For untold centuries man has been using the skins of other animals to protect his own, to adorn himself, to encase his possessions or transport them from place to place, yet few people can distinguish leather made from the skin of one particular animal from that of another, and little is known of the service which may be expected from leather made from the skins of various animals.

Some years ago the Tanners' Council of America felt the need for an official compilation of names, classifications, terms, and other words in common use in the leather and allied industries, and to that end sought the cooperation of manufacturers and sellers of leather products in order that an official dictionary of leather terminology might be prepared. The value of that dictionary is unquestioned and has been quoted in decisions of the Customs and Circuit Courts.

The Council recognizes that, without such an official listing, improper designations will be used, and tend to jeopardize the confidence of buyers in leather and its products. Many leathers are known commercially or popularly by names of hides or skins of which they are not actually made. Some of the names may have originated in an attempt to describe the article and most of them today are kept alive by trade custom. Names of some skins (like chamois) have come to mean a finish as much as a kind of leather. It has even become necessary to insert the word "genuine" before some kinds of leather (like buckskin) to distinguish them from their imitators.

Alligator grained leather. This term is used to distinguish the embossed

alligator grain which is put on various types of leather, such as calf, sheep, or side upper, from the genuine reptilian leather. Terms such as "alligator calf" are not permitted by the Federal Trade Commission.

Belly. That part of the hide from the underside of the animal, usually less valuable than other portions.

Belt leathers. The term used to distinguish leather going into waist belts from "leather belting" employed for transmission of power in machinery. Belt leather is usually considered a subclass of fancy leather. It is made of various materials, of which cattlehide is the most common for men's belts. Sheep and goat skins are also used for women's belts. Often it is specially treated on the flesh side to obviate lining.

Buckskin. A general term applied to leather from deer and elk skins, used for shoes and gloves and to some extent for clothing. Leather finished from the split or underside of deerskin must be described as "split buckskin." Only the outer cut of skin from which the surface grain has been removed may be correctly defined as "genuine buckskin."

Cabretta leather. This refers to Brazilian sheepskin, although it is also applied to all hair sheep. These skins are used largely for glove and shoe leathers.

Calfskin. Leather made from the skins of the young cattle.

Capeskin or leather. This term is commonly applied to all glove and garment leather made from sheepskins, with the natural grain retained. It should be correctly confined to leather from South African hair sheep. Genuine capeskin from South Africa is a light, flexible, fine grain, durable leather, generally superior to wool sheepskins

of the same or other districts. When used to designate other than the South African capeskins, it should be qualified as "domestic capeskin," "Spanish capeskin," etc. It should never be applied to skiver.

Cattle hide leathers. These leathers are made from the hides of cows, steers, bulls, and kipskins; sometime calfskins are included.

Cordovan leather. The name originally came from the city of Cordoba, Spain, which was noted for its fine leather manufacture during the Arab civilization. It is now generally applied to leather made from the shell of horse butts, used for shoe uppers and puttees. It is distinguished for its non-porosity and long wearing qualities.

Cowhide leather. This term specifically applies to leather made from hides of cows, although it is sometimes loosely used to designate any leather tanned from the hides of animals of the bovine species.

Deerskin. See "Buckskin."

Doeskin. This is a trade name applied to white sheep and lambskins, generally fleshers, tanned by the formaldehyde and alum process, giving a soft finished, supple leather produced in a variety of shades but commonly in white. It is suitable for making gloves.

Embossed leathers. These are finished by stamping designs on hides or skins with etched, engraved, or electrotyped plates or rollers. They are used extensively on fancy pocketbook leather, upholstery and bag leathers, splits, and also on shoe uppers. These designs may be an imitation of the natural or conventionalized grain of skins of different animals as well as artificial.

Fancy leather. This is a term used to describe leathers, made from hides and skins of all kinds, which gain commercial importance and value primarily because of grain or distinctive or unusual finish, whether natural or the result of processing. Such processing may be graining, printing, embossing,

ornamenting (including finishing in gold, silver, aluminum, or like effects), or may be any other operation affecting or enhancing the value of the leather through the production of a grain or distinctive or unusual finish thereon.

Full grain, full top grain. This term is applied to the outer surface or grain portion of a hide from which nothing has been removed but the hair.

Glazed finish. Produced by polishing grain surface under heavy pressure by a roller of agate, glass, or steel. Infrequently made by a varnish or shellac coating.

Glove leather. The term covering two rather distinct classes: (1) leather going into utilitarian or work gloves and made of a variety of hides and skins, of which the most important are horsehide, cattle hide, calfskin, sheepskin, and pigskin; and (2) the leather going into dress gloves, including those for street, riding, driving, and sports wear. The latter is tanned predominantly from sheep and lambskins, and to a lesser degree from deer, pig, goat, kid, and Mocha skins.

Grain. A term to indicate the outer or hairside of a hide or skin in cases where it is split into two or more thicknesses, or to unsplit skins which are finished on the grain side.

Harness leather. A self-explanatory term sometimes so defined as to include collar and saddlery leathers. Harness leather, including the related items mentioned, is practically all made of cattle hides, vegetable tanned, except for a considerable item of pigskin used for making saddle seats.

Hide. When used to describe tanned leather, it refers to a pelt from one of the larger animals (cattle, horses, etc.) in its entirety, containing the whole superficial area of the covering of the animal from which it is taken.

Horsehide. This term designates leather made from the hide of either a horse or colt.

Imitation leather. Materials so made and finished as to resemble leather. Included are coated fabrics, rubber and rubber compositions, and plastic materials. The term connoting genuine leather cannot be used in trade names, as for example, "plastic calf" or "leath-erette."

Kangaroo. This leather is made from the hide of the Australian kangaroo and wallaby, usually chrome-tanned with a glazed finish. It resembles glazed kid in appearance, but the grain is much finer than most glazed kid. It is stronger, weight for weight, than any other leather.

Kid. In general trade and popular usage, this has come to refer to shoe upper leather tanned from either goat or kidskins, and to glove leather tanned from goat and lambskins.

Kip or kidskin. This is the skin from an animal of the bovine species in size between a calf and a matured cow, weighing in green-salted condition from 16 to 25 pounds. This term includes skins from calves which have grown larger in size than that usually slaughtered for veal, and from certain breeds of undersized cattle which may have reached maturity. The term is also used to designate a pack of thirty finished chamois skins.

Lace leather. A form of rawhide leather (from cattle hides) for lacing together sections of power transmission belts; sometimes prepared also with an alum and oil, chrome, or combination tannage.

Leather. Leather is the hide or skin of an animal, or any portion of such skin, when tanned, tawed, or otherwise dressed for use (Funk & Wagnalls dictionary).

Lining leather. Any leather used for making shoe linings which includes sheep, lamb, kid, goat, cattle, calf, kip, and splits.

Oak-Tanned leather. Leather tanned from the bark of the oak tree, although the term is often applied to leather

tanned with oak extract in combination with other types of tanning materials.

Peccary. Peccary is a pig leather obtained from a species of wild boar, native to Mexico, other Central American countries, Brazil, and the Argentine. The leather is fine grained and capable of being shaved down to lightweight, making it highly desirable for ladies, fine dress and sport gloves. It is generally chrome tanned, is washable and very durable.

Pig. Pigskin leather as used for glove making is obtained from the skins of carpinchos and peccaries, and is chrome tanned. Its principal characteristics are that it is tough, durable, and suitable for dress, driving, and sports gloves. A small quantity of this leather is treated with formaldehyde for white dress gloves. The skin often shows scars and scratches received during the life of these wild animals. Domestic pigskin is a tight-fibred skin suitable only for work gloves.

Rawhide. This is the usual American name, which has spread largely to other English-speaking countries, for cattle hide which has been dehaired and limed, often stuffed with oil or grease, and has sometimes undergone other preparatory processes, but has not been tanned. Rawhide is used principally for mechanical purposes, such as belt lacings and pins, pinions, trunk binding, and luggage.

Shoe leather. This term is self-explanatory, and includes a large variety of leathers: (1) sole leather, made from cattle hides and to a small extent, horsehides and buffalo hides, which covers both the superior grade used for outer soles of shoes and the lighter grades and heads, shoulders, and bellies used for heels, insoles, toecaps, and counters; (2) upper leather, made principally from calfskins, goatskins, cattle hides, horsehides, and other classes of animal skins going into shoe uppers; and (3) miscellaneous shoe leathers, including welting, lining

stock, tongue stock, and facing stock.

Side or side-upper leather. The term for describing a kind of shoe-upper leather consisting of the grain or hair side of cattle hides finished in a variety of grains or colors. The name originated from the practice of slitting a hide along the backbone into two halves or "sides."

Side. The half of a whole hide, cut longitudinally along the midline with offal (head, belly, and shoulder) attached.

Skin. The pelt from the smaller animals (sheep, calf, goat). When applied to finished leather, it indicates the whole skin.

Skiver. A term used to designate the grain split of a sheepskin, used for a greater variety of purposes which include sweatbands for hats, bag linings, bookbinding, pocketbooks, and fancy leather goods.

Slunk. The skin of an unborn or prematurely born calf, classified as hairless or hair-on.

Steerhide. Leather made from the hides of steers, usually a heavy leather for soles, belting, etc., although the term is sometimes used to cover any cattle hide leather, especially in the fancy leather goods trade. The term

has been used also to designate an embossed grain with a two-tone finish used for personal leather goods.

Suede finish. A finish produced by running the surface of leather on a carborundum or emery wheel to separate the fibres in order to give leather a nap. The grain of leather may be suede-finish, but the process is most often applied to the flesh surface. The term "suede" is usually applied to chrome or alum-tanned leather, while "ooze" is applied to vegetable-tanned suede. The term "suede" when used alone refers to leather only. The term denotes a finish, not a type of leather.

Split. A term used to describe the portion of a hide or skin, other than the grain or hair side, split into two or more thicknesses. Under rulings of the Federal Trade Commission, a split must be so marked and cannot be called "genuine leather" or "genuine cowhide." In upholstery leather, top or grain cuts go into the higher grades, and the splits into the cheaper.

Vegetable tannage. A generic term to cover the process of making leather by the use of tannins obtained from barks, woods, or other parts of plants and trees, as distinguished from "mineral tannage."

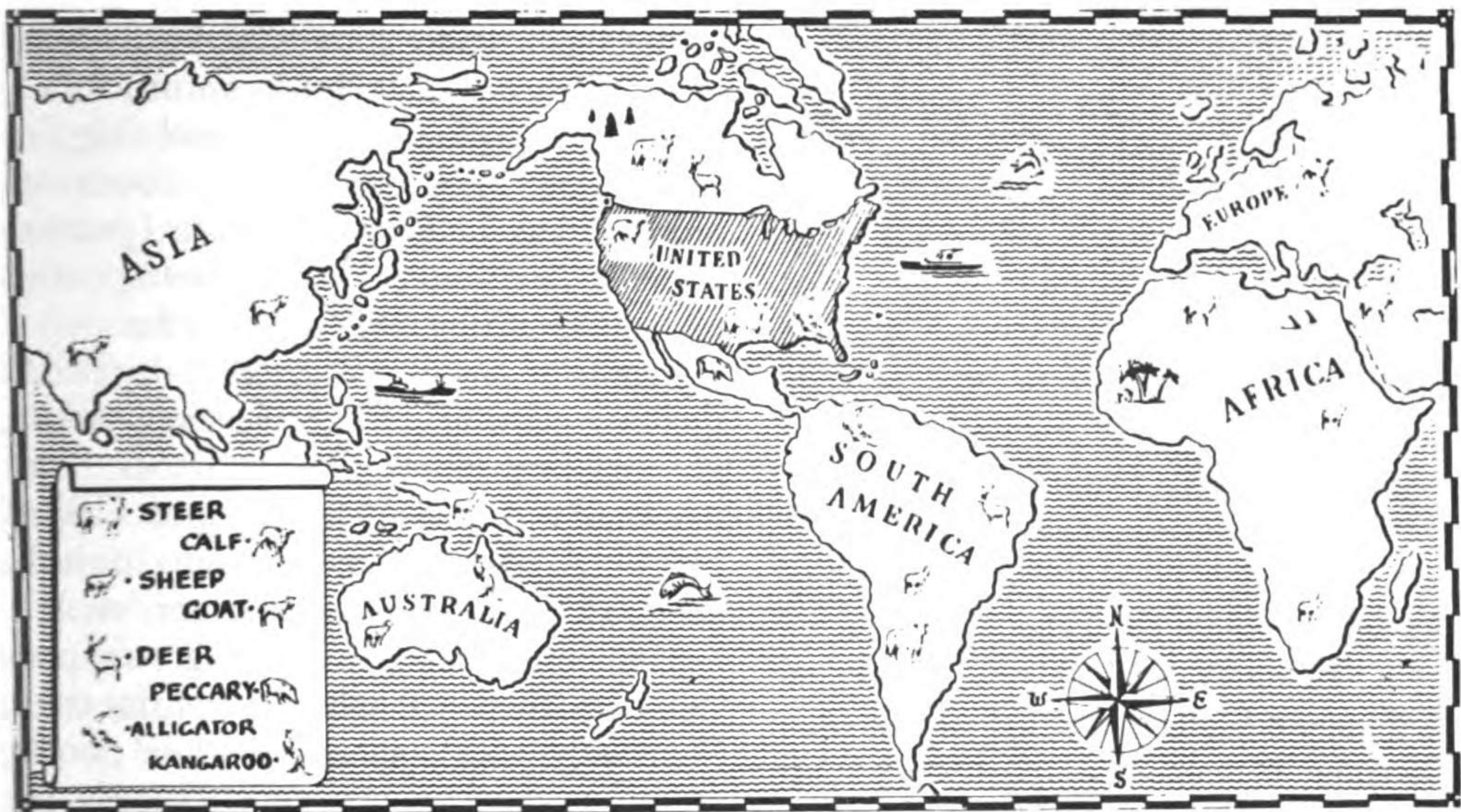
UNIT 38 LEATHER IN INDUSTRY

America is the largest producer and consumer of leather in the modern industrial world. Approximately 125 million hides and skins are processed in American tanneries each year. The leather and leather-products industries employ more than 350 thousand people, and produce finished leather articles valued at more than \$4 billion yearly.

About 578 establishments tan and finish leather, 50 of which are in Texas, to show how the industry is moving south. These firms employ 37,130 em-

ployees, and have a total payroll nationally of about \$165.5 million. Value of products shipped by the industry totals approximately \$743.1 million.

United States leather imports in 1960 were valued at around \$39 million, purchased from 43 countries. The chief types of leathers imported were cattle, sheep and lamb, calf and kip, and goat and kid. The main sources were the United Kingdom, Canada, Argentina, West Germany, Spain, France, Yugoslavia, India, and Mexico. (Fig. 24).



214. Americans Use Hides and Skins from all over the World

Leathers of United States origin were exported to 82 countries in 1960. They were valued at approximately \$31 million. The chief types were those mentioned above; they were sent to such countries as the Union of South Africa, Republic of the Philippines, Switzerland, Canada, West Germany, The Netherlands, Belgium, France, and Sweden.

An overall picture of Texas, a typical state, shows that in leather industry establishments, including footwear, purses, saddles, and small leather goods, approximately 2,000 workers were paid \$6 million per year. The 50 leather establishments produce leather goods valued at nearly \$80 million annually. Nationally and internationally known Texas leather boots and saddles are an important special phase of this state's industrial picture (Fig. 215).

American tanners have established a research laboratory at the University of Cincinnati. Experimental work is done in the entire field of leather processing, and in the development of new

domestic sources of tanning. Out of these explorations come new discoveries. Chemistry, physics, and bacteriology have been applied to make leather a leader among American and world industries.

215. A Texas Manufactured Boot





216. Beautiful, Durable Leather Upholstery in Fine Automobiles. Also Note the Suede Leather Jacket and Gloves

Uses of leather in industry

The Tanner's Council of America lists a very complete outline of the uses of leather in industry, part of which are discussed here. The *cattle group* includes steer, cow, and bull hides. It produces leather for shoe and slipper outsoles, insoles, uppers, linings, counters, welts, and heels. Traveling bags, suitcases, briefcases, and luggage straps

217. Sporting Goods Equipment Includes Many Items Made From Leather

COURTESY WILSON SPORTING GOODS



are made from leathers in this group. Other uses are for gloves and garments (Fig. 216); upholstery for automobiles, furniture, airplanes, buses, and decorative uses, including wall covering. Small items include handbags, purses, wallets, billfolds, waist belts, and many other personal accessories.

Sporting goods (Fig. 217) includes dozens of items like leather balls, gloves, protective shields, laces, and personal equipment for all sports. Special items from the cattle group include scabbards, holsters, and razor straps.

Calfskins from the cattle group produce leather for shoe manufacture, handbags and personal leather goods, gloves and garments, sweat bands for hats, rawhide and parchment, helmets and gas masks, bookbindings, and handcrafts.

The *sheep and lamb group* and the *goat and kid group* produce leather for many of the items mentioned above, plus chamois, moutons and shearlings (skins with wool left on), textile rollers, piano actions, and meters.

The *equine group*, made up of horse, colt, ass, mule, and zebra hides, provides leather for shoe manufacture and for aviators' clothing, puttees, and baseball mitts.

The *pig and hog group* is comprised of pig, hog, boar, peccary, and carpincho (a Brazilian rodent). Leather for gloves, fancy luggage and leather goods, shoe uppers, insoles, counters, saddlery, and harness is obtained from these animals.

The *deer group* includes deer, reindeer, antelope, gazelle, elk, and caribou. These skins produce leather for shoe uppers, gloves, clothing, fancy leather goods, piano actions, moccasins, and mukluks.

Leather from exotic or relatively little-known animals is used for industrial purposes also. These include

kangaroo, wallaby, aquatic animals, buffalo, ostrich, lizard, snake, elephant, camel, llama, alpaca, and yak.

Industrial machinery and processes use leather for important functions. Apron leather is used in textile machinery, as is carding leather. This is a special type of side leather used on the cards. Comber leather is used on combing machines. Picker straps, processed usually from hard rawhides or buffalo hides, make up essential parts of textile industry machinery.

Rawhide is a general term for untanned, but treated, cattlehide. It is used principally for mechanical purposes. From it are made belt lacings, pins, loom pickers, gaskets, pinions, gears, and trunk binding and luggage.

Other interesting uses of leather in industry include hydraulic leathers which make valves and piston pack-

ings; meter leather that makes measuring bags for gas meters, specially tanned to make it airtight; and piano parts made from selected skivers, full-grain sheepskins, or deerskins. Collar leather is used to cover horse collars; drumhide leather is parchment or rawhide which covers percussion musical instruments; and belting leathers are used for leather belts which transmit power in machinery. They are made from the butts of high-grade cattlehides. Lace leather is a form of rawhide used for lacing together sections of power transmission belts.

The importance of leather in world industry and life cannot be overemphasized. It ranges from luxury items made for personal use from exotic leather, such as the gazelle, to the tough, hard parts obtained from the buffalo, and used for machinery.

UNIT 39 THE MANUFACTURE OF SHOES

An average person walks the equivalent of twice around the world in the course of a lifetime. If all the shoes made in the United States in one year's time were lined up heel-to-toe, they would form a band that would go around the world more than seven times.

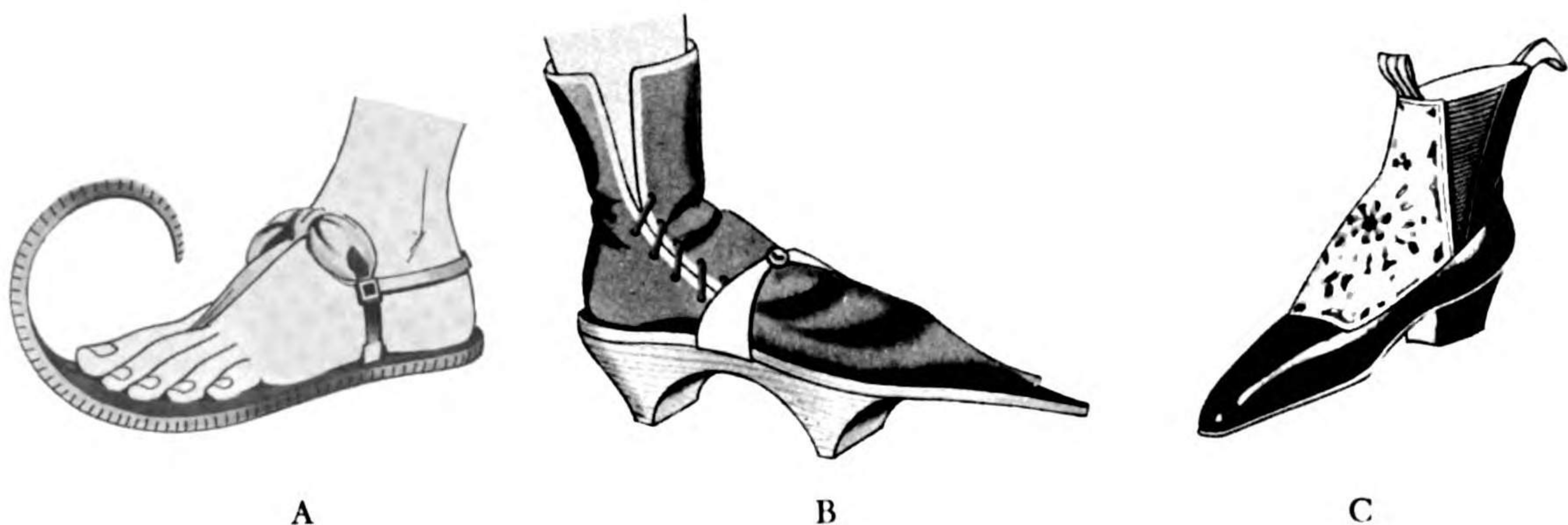
A person weighing 150 pounds takes a step about 3 feet in length. In one mile of walking, each foot and shoe takes a pounding amounting to 66 tons of weight. The average person walks about 5 miles a day. So your shoes will carry a daily load of 330 tons. In a week it amounts to 2,300 tons; and in a month, 10,000 tons. These statistics give a startling picture of the importance of shoes in our lives.

American shoe factories make more than 600 million pairs of shoes each

year. In addition to this, 20 million more pairs are imported. There are about 1,000 shoe manufacturing firms in the United States. They employ about 236,000 men and women, and have a total payroll of over \$700 million per year. By their skill, these workers add over \$1 billion a year to the value of the materials which make up the shoes.

Fifty years ago the average employee worked 12 hours to earn the price of a pair of shoes; 25 years ago he worked 5½ hours for a pair; today he works only 3 hours for a more comfortable, better-fitting, better-looking pair of shoes!

To fit every foot, American shoes are made in more than 300 sizes and widths on over 10,000 different "last" shapes and styles. They are sold in over



218.

COURTESY UNITED SHOE MACHINERY CORPORATION

A. Pharaoh's sandal, Egypt, 1,200 B.C. Long-peaked toe denoted a king, prince, or priest.
B. Leather estivau and wood patten, French,

15th Century. Patten heralded later men's shoe heel.
C. Man's "gored" shoe, 1850. Expansible elasticized cloth panel (gore) made the shoe easier to draw on.

22,000 shoe stores in America. In your lifetime you will wear out about 245 pairs of shoes.

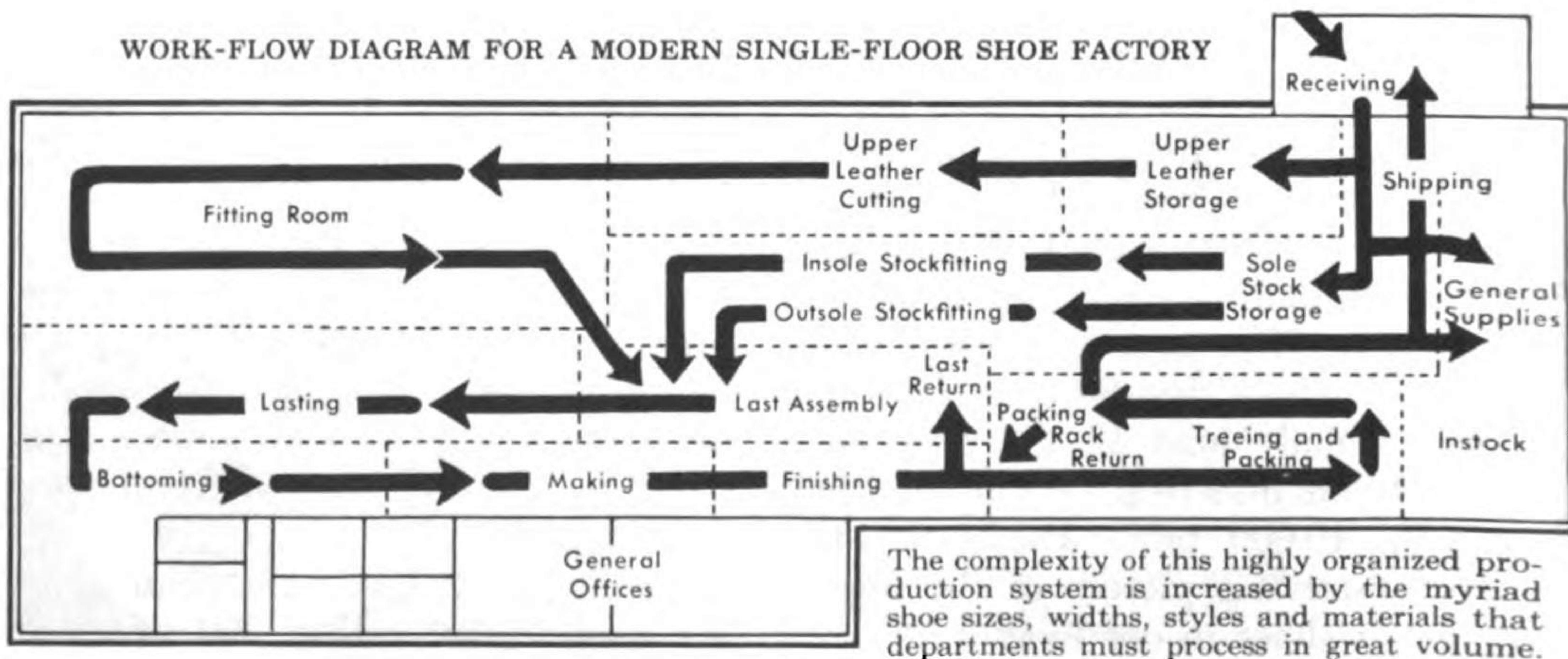
Historical development

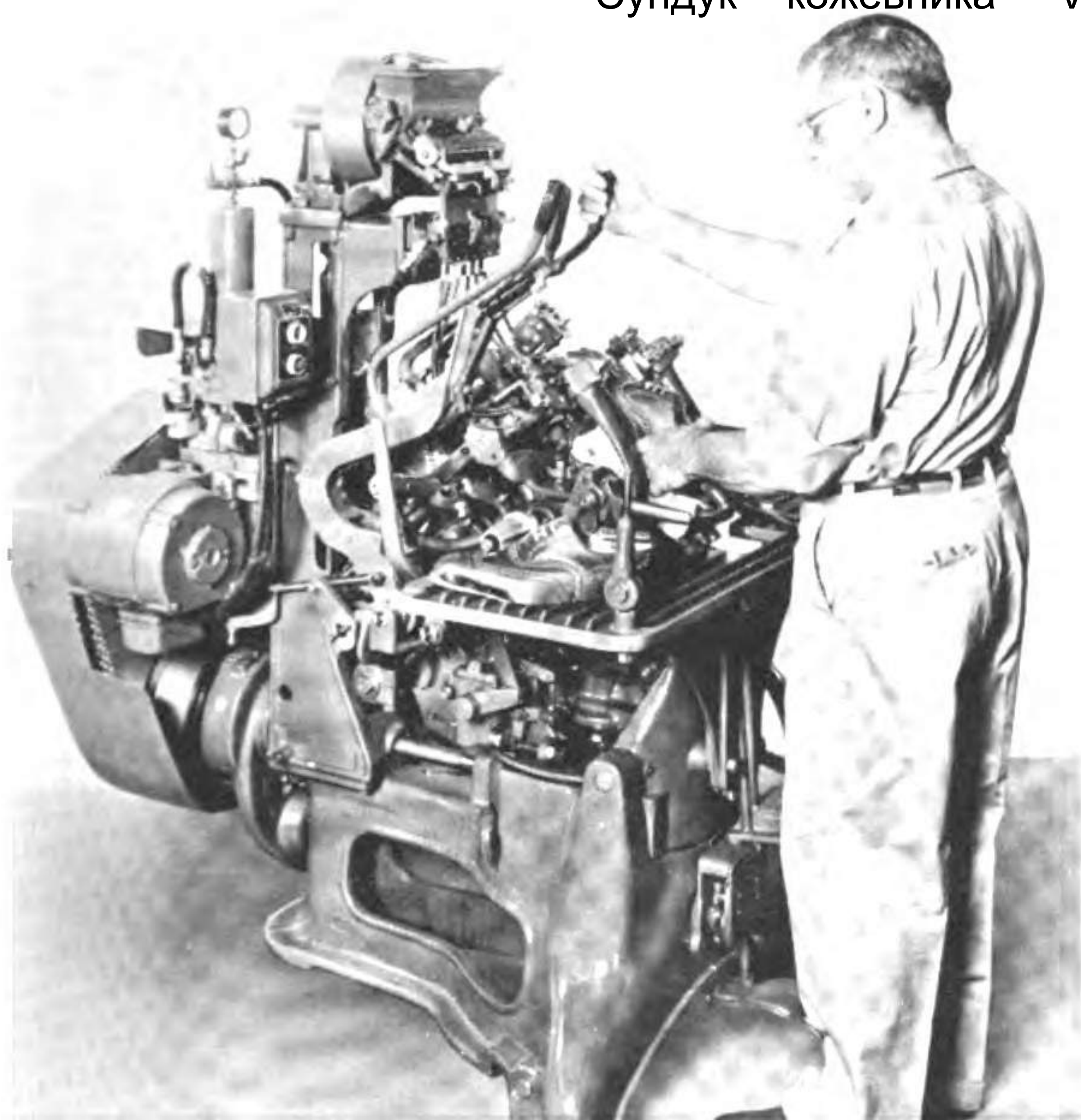
Shoemaking is one of the world's oldest industries. The oldest shoe ever found dates back about 4,000 years,

but shoes were worn many centuries before then. It was unearthed in some ancient Egyptian ruins. Fig. 218 A-B-C above, shows an Egyptian Pharaoh's sandal worn about 1,200 B.C.; a leather Estivau and wood patten, worn in the 15th Century in France; and a man's gored shoe of around 1850.

Work-flow Diagram for a Modern Single-Floor Shoe Factory

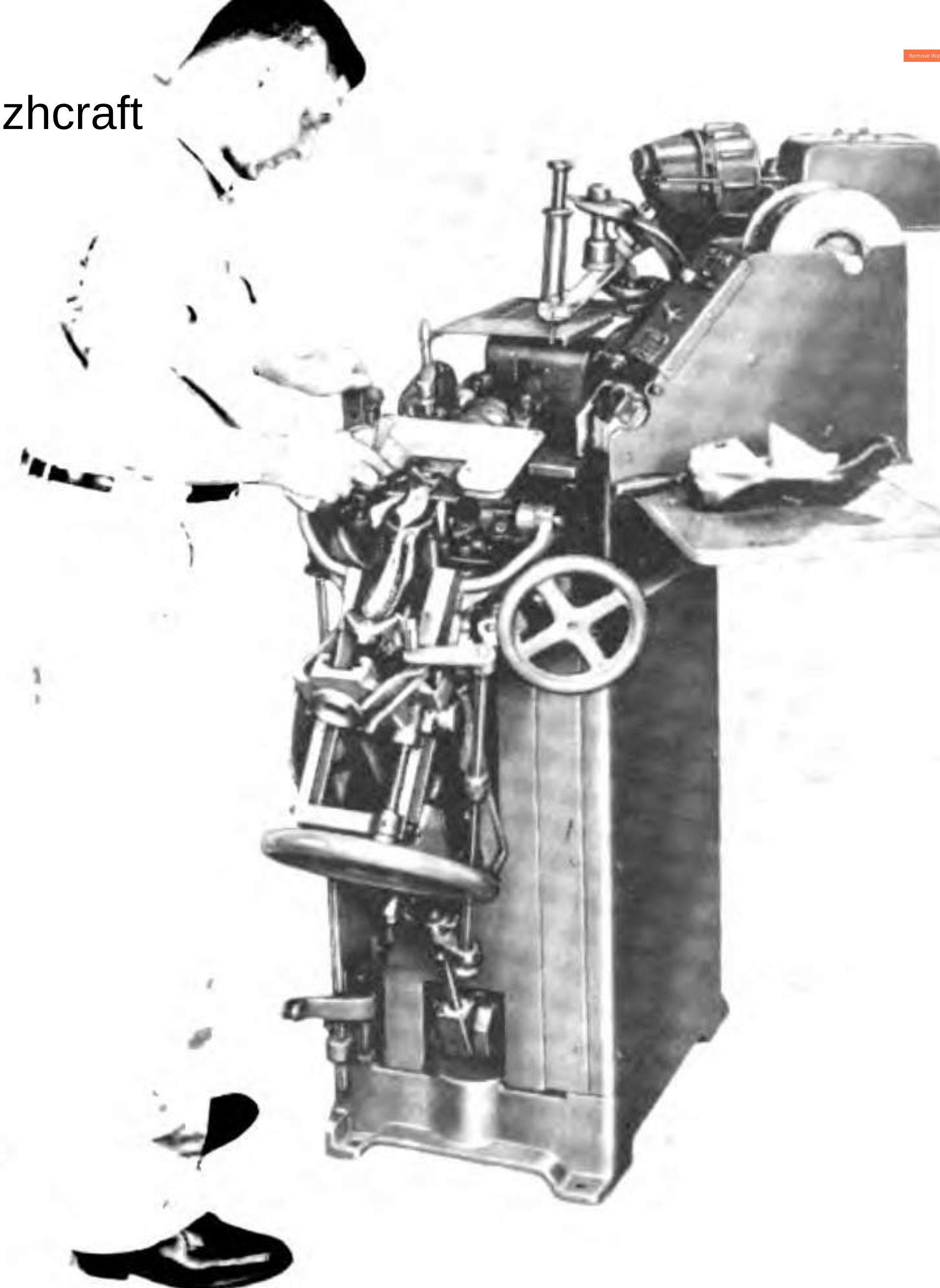
COURTESY UNITED SHOE MACHINERY CORPORATION





COURTESY UNITED SHOE MACHINERY CORPORATION

219. Pulling Over Machine. This Machine Pulls the Leather Around the Last, Tacking it Temporarily



220. Power Toe Lasting Machine. This Air-powered Machine Uses Either Cement or Tacks to Conform the Upper Materials to the Last

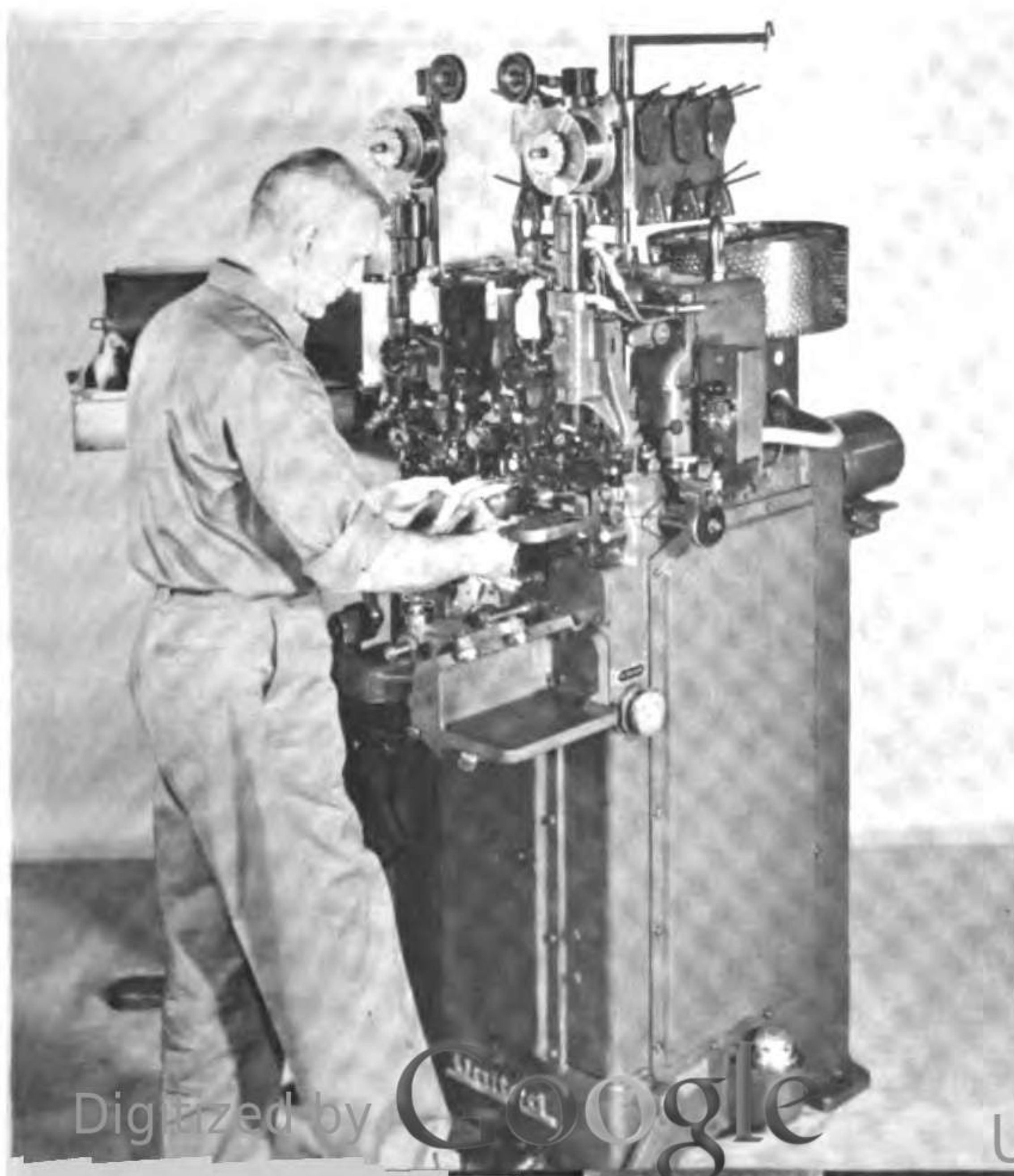
Modern shoe industry

The shoe manufacturing industry, like other industries, has developed systematic and efficient production techniques. Modern factories are de-

signed to produce shoes at the lowest possible price by the conservation of time and motion, and in the routing of the processes. Page 86 shows a work-flow diagram for a modern single-floor

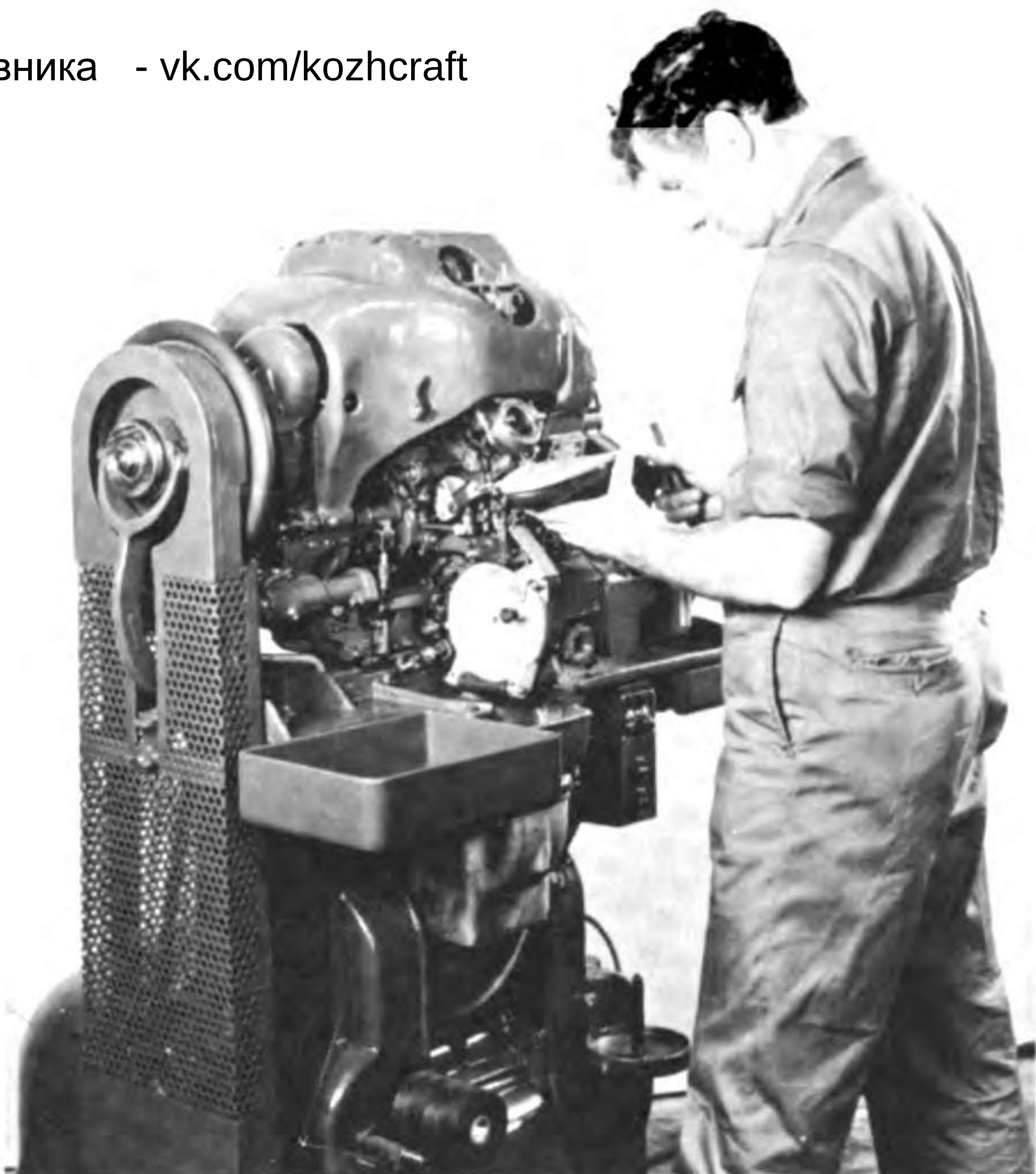
221. Automatic Welt Toe Lasting Machine. The Toe of the Upper is Wiped up and Over the Last, and a Nylon Filament Anchors the Upper Materials Against the Insole Rib

222. Cement Sole and Breast Flap Attaching Machine. The Heel Breast Flap is Done with Hydraulic Pressure at the Same Time the Sole Is Attached





223. Sole Stitching Machine. This Machine Lockstitches Outsoles, Platforms, Midsoles, and Taps



224. Outsole Stitching Machine. In 9 Seconds, This Machine Lockstitches the Outsole to the Welt.

shoe factory. Illustrations 219 through 224 show machines and processes for some of the steps in making a shoe.

Making a shoe

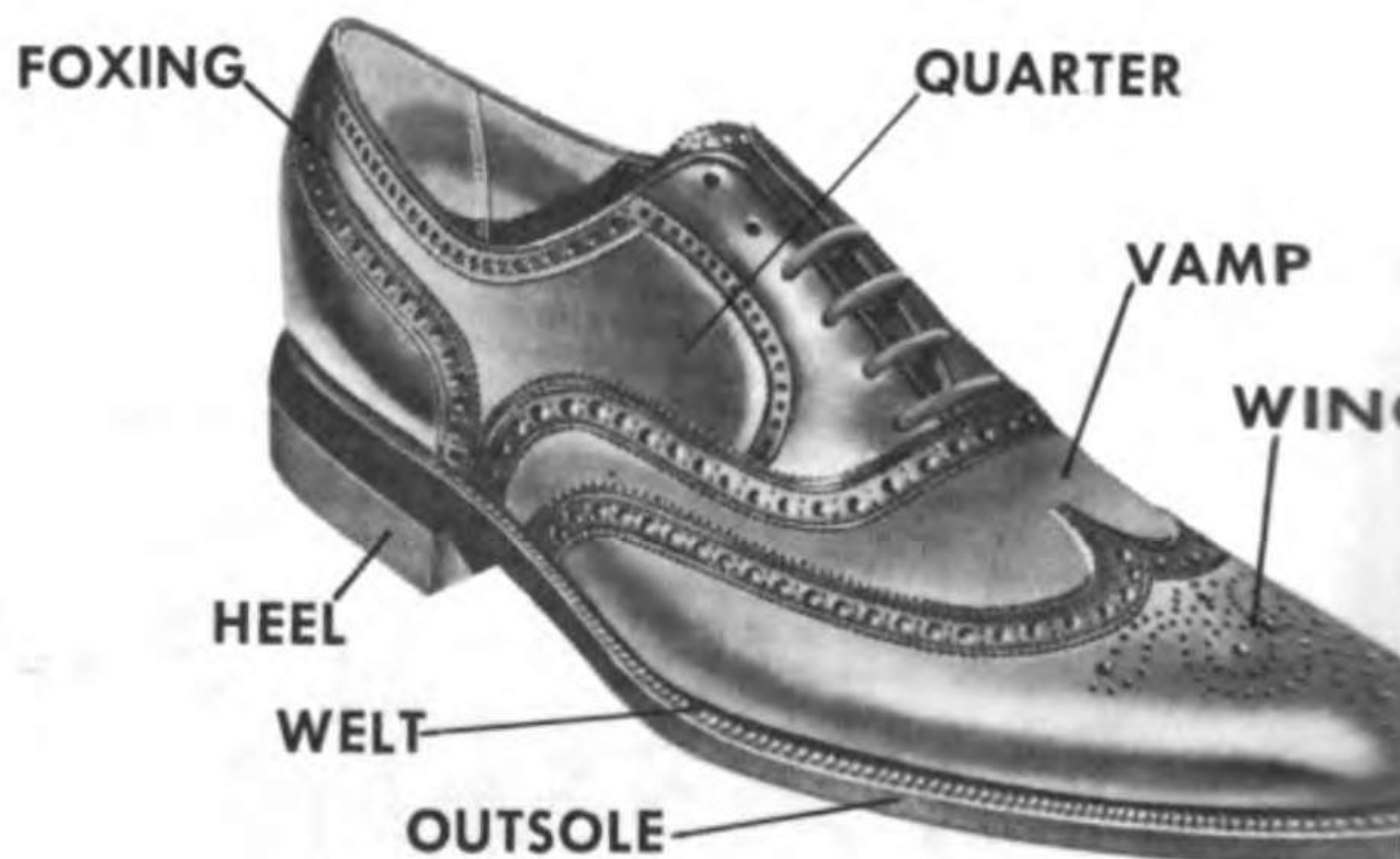
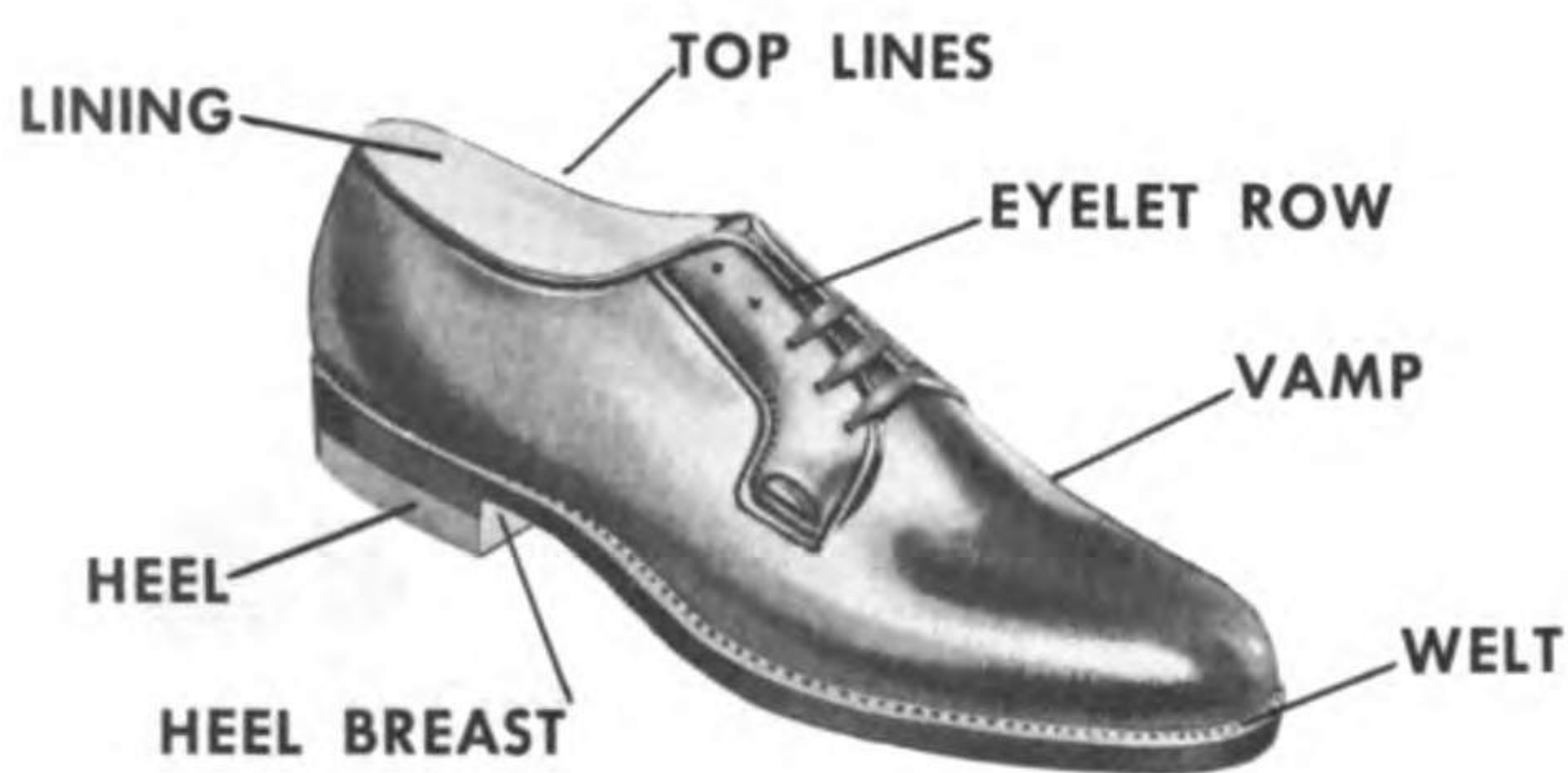
Making a shoe begins in the *designing room*. Style and manufacturing

COURTESY UNITED SHOE MACHINERY CORPORATION

225. Principal Parts of a Shoe

Goodyear Welt Shoe, Blucher Pattern

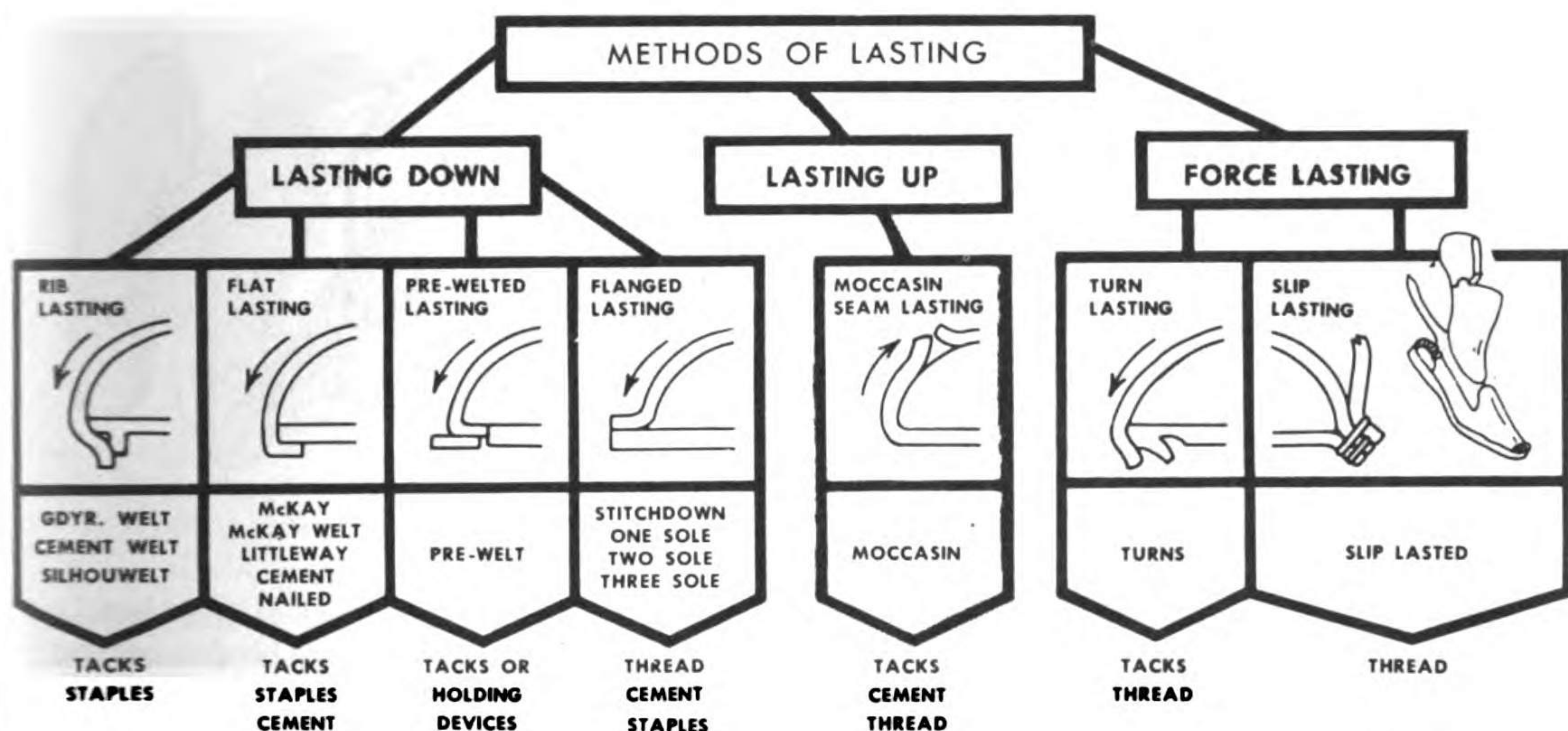
Goodyear Welt Shoe, Bal Pattern



Cement Shoe, Classic Pump Pattern

Slip Lasted Shoe, Sling Back Pattern





COURTESY UNITED SHOE MACHINERY CORPORATION

procedures are carefully thought through. Fig. 225 shows the principal parts of four common types of shoes. The three basic methods of shoe assembly are (1) cemented, (2) nailed, and (3) sewed. Fig. 226 (A through J) shows and describes the construction steps of a Goodyear Welt shoe.

Work begins in the *cutting room*. The material for the upper is cut out by machine dies or by hand. As many as eleven different parts of the shoe may have to be lined; these are cut out at the same time. They are "match-marked" with the uppers and sorted into pairs, then stamped for size and style.

In the *fitting room* the several parts of the upper and the lining are progressively put together. They may be stitched, skived, folded and finished, or cemented and folded. In the *stock fitting room* the box toe, innersole, and counter to support the heel are collected. The box toe helps the shoe retain the original contour of the last. The last determines the shape and the fit of the shoe. The inner sole is the "keel" of the shoe. On it, both the

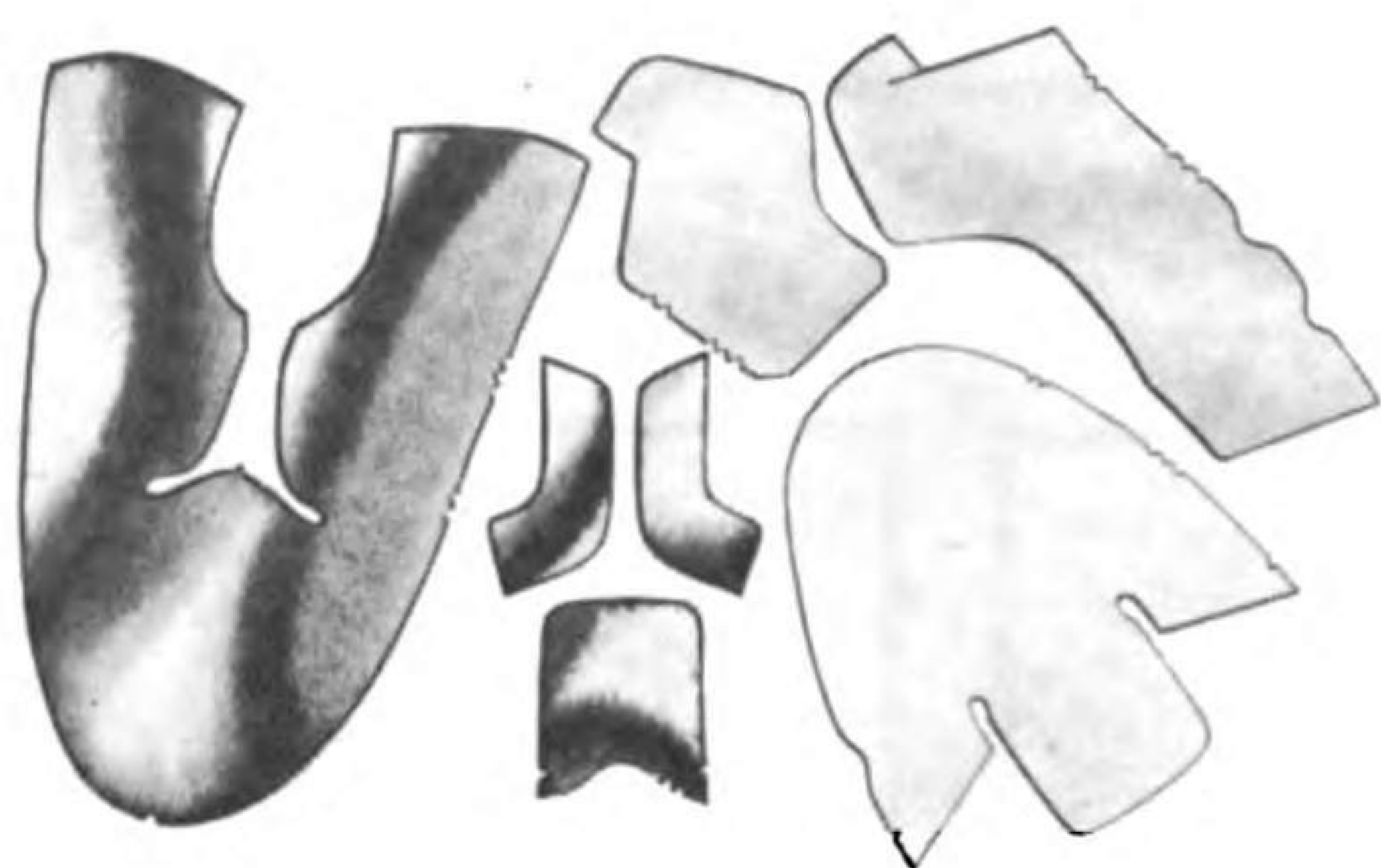
upper and the sole are attached by stitching, cement, staples, or nails.

The parts of the shoe that have been collected in the stock fitting room now join the upper in the "*last*" assembly room. The insole is attached to the wooden last, and, together with the stitched upper and any other parts needed, such as the shank and the heel, goes to the *lasting room*.

The shank is the bridge from the ball of the foot to the heel. It prevents twisting and locks the shoe straight from toe to heel. The structure of the shoe begins to take form in the lasting room. The upper is finally assembled with counters and box toe. It is softened and stretched over the last. The sides are pulled down and attached to the innersole. The toe is shaped and anchored. The heel is lasted (moulded to the shape of the last), and is tacked to retain contour.

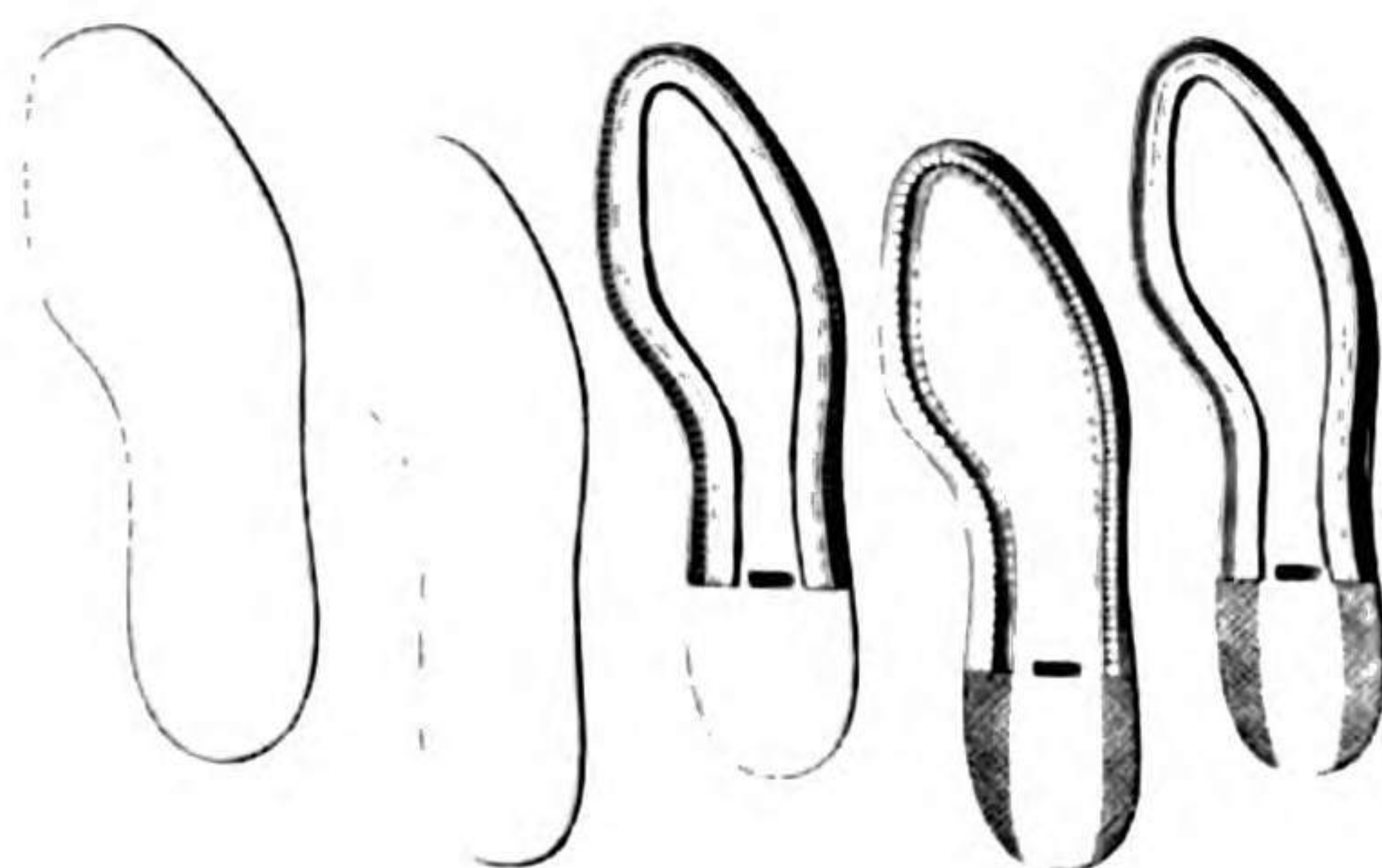
After lasting comes *bottoming*. This is the means by which the outsole is permanently attached to the rest of the shoe. The difference between one method of shoemaking and another is basically the way in which the outer

Fig. 226



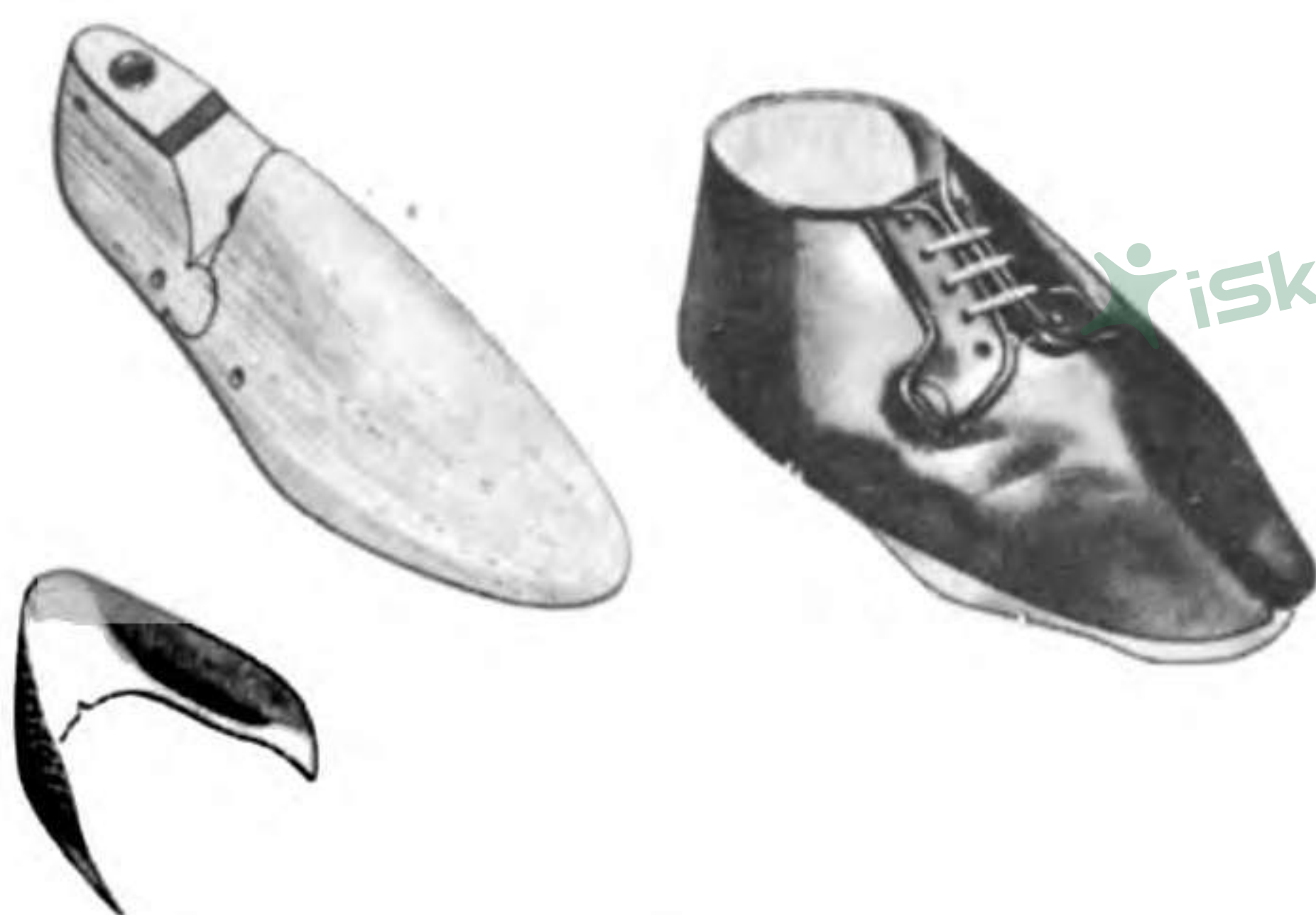
A

The parts of a man's Goodyear Welt "one piece vamp" shoe upper. The leather quarters and vamp are cut as a unit (left). Beside it are the tongue and eyelet row reinforcing pieces and the vamp lining (lower right). The larger section of the two-part quarter lining (upper right) extends around the heel.



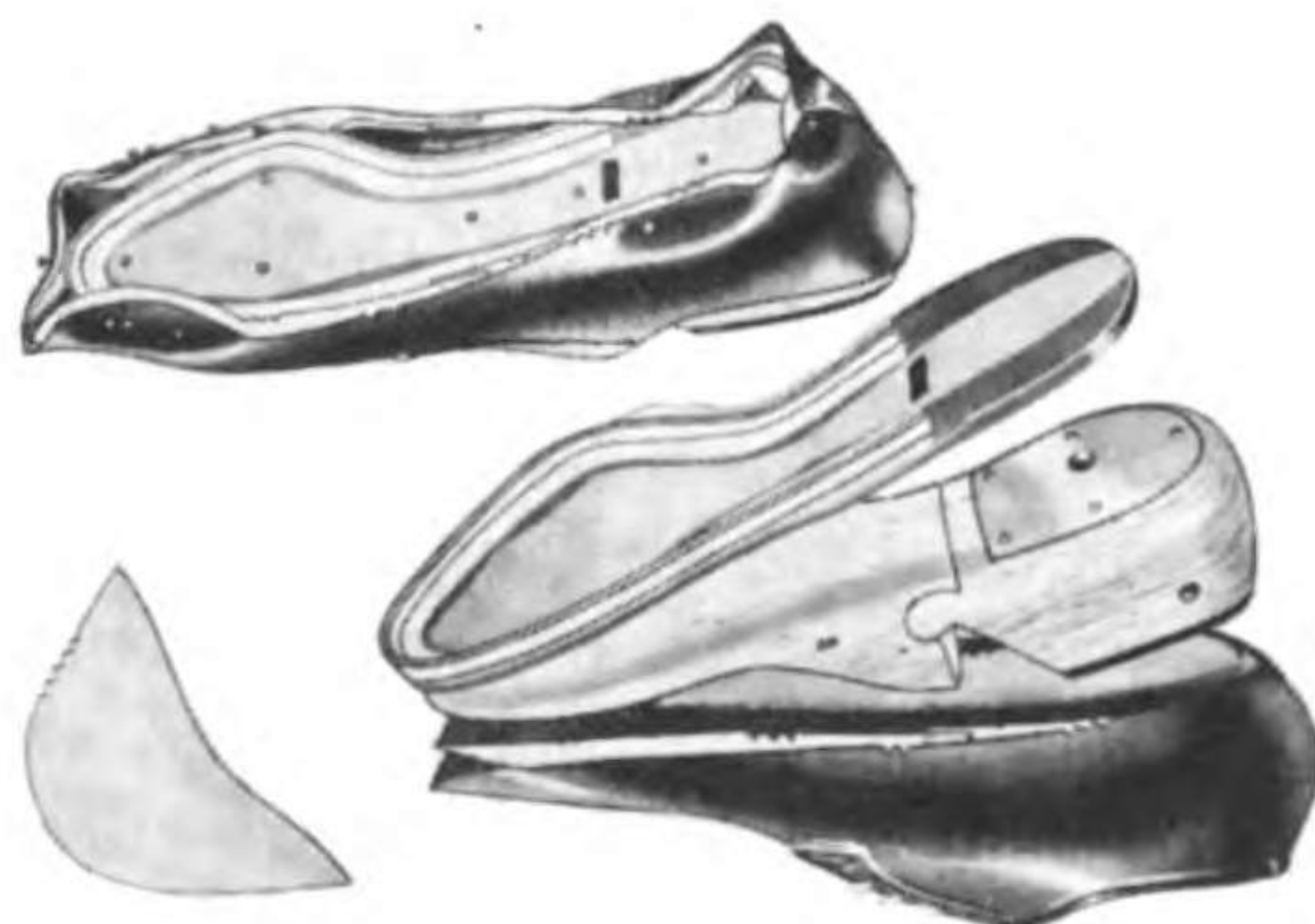
C

The leather insole blank (a) is rounded to size (b). The insole rib, can be formed by attaching an adhesive-coated canvas and fibre strip to a cemented insole. Another type of rib is made by cutting and raising two parallel leaves from the insole itself (d) and cementing them together (e).



B

The upper parts are assembled (right), the heel reinforced with a stiff counter (lower left) and the eyelet row pieces are eyeleted and laced together temporarily with threads. At left is the wooden last on which the entire shoe will be made.



D

The ribbed insole is tacked temporarily to the last bottom and the upper, and a reinforcing box toe (upper right) is assembled on the last. The upper is formed to the last with a "pulling over" operation and temporarily fastened to the insole and last.

226. Steps in the Construction of a Goodyear Welt Shoe

COURTESY UNITED SHOE MACHINERY CORPORATION

sole is attached. The shank is put into position, and welting is done at this stage.

About 50 yards of thread are used to sew an average pair of men's shoes.

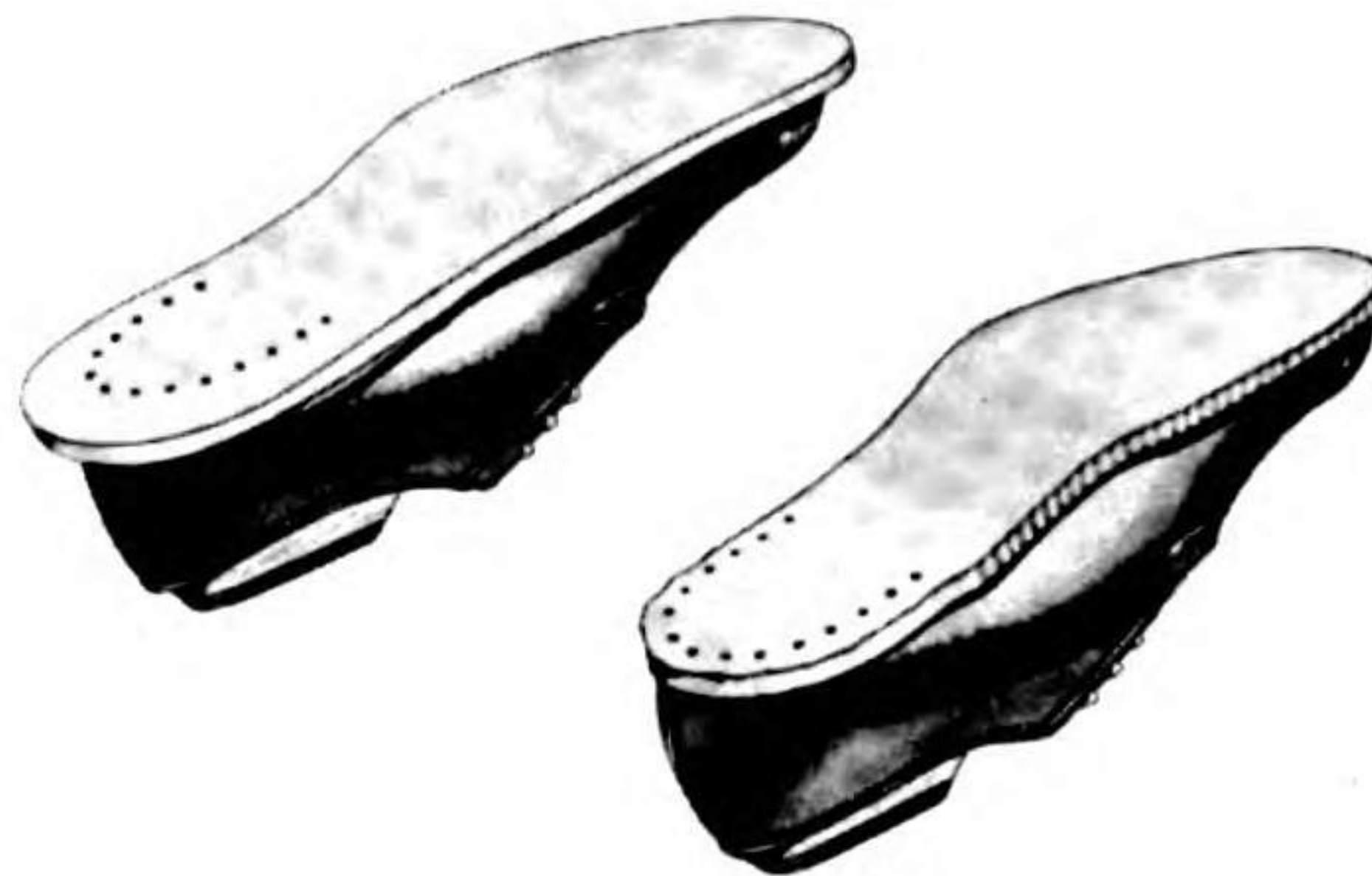
Each seam requires a different thickness or type, and a different stitch at another speed: 800 stitches a minute for outer soles; 4,000 a minute for uppers.

Fig. 226 continued



E

The sides of the upper and linings are permanently lasted to the upstanding insole rib (left). The toe is lasted (center), "wiped" free of wrinkles, and held tightly against the insole rib by a filament. The heel seat is lasted and tacked (center) and the toe stapled to the insole rib (right).



G

Cement is applied to the welt, insole rib, and shoe bottom. The previously cemented outsole is positioned on the shoe bottom and attached to it by hydraulic or mechanical pressure, and the heel seat fastened with fibre pegs or nails (left). The outsole is trimmed or "rough rounded" to shape.



F

The welt—a grooved leather strip—is chain-stitched to the upper and the insole rib to form the "inseam" (left). The inseam is trimmed and the welt ends beveled to blend smoothly to the heel area (center). A reinforcing steel shank is attached to the insole, and a compound filler added to level the shoe bottom (right).

In the *making room*, the heel is attached, trimmed, scoured, stained, and burnished. In the *finishing room*, the bottom sole is stained and finished. The upper is cleaned, polished, and often prepared for spraying to preserve its finish.



H

The outsole is stitched permanently to the welt with a Goodyear lockstitch seam, the "outseam." The outseam is made up of two separate waxed threads, one drawn up through the outsole (left), the other through the welt (right), and locked tightly around each other.

Thousands of styles of shoes, made from hundreds of varieties of leathers, give a person a wide choice to suit personal preference. Shoes are made in more than 300 sizes and widths, for all ages.



I

The surplus outsole at the heel is trimmed away, and the leather heel base is nailed to the heel seat (left). The rubber heel is positioned on the heel base, and both securely nailed. The rubber heel and base are often attached in a single nailing. The outsole edge is given a final trimming and its contour smoothed to match the heel and heel base.



J

The heel and shoe bottom are buffed with fine sandpaper and finished; the temporary lacing threads are removed and the last pulled. The heels and sole edges are also inked and burnished. The upper is cleaned, finished, and polished. After inspection, the completed shoe is ready to be packed and shipped.

iskysoft

Leathercraft Plans

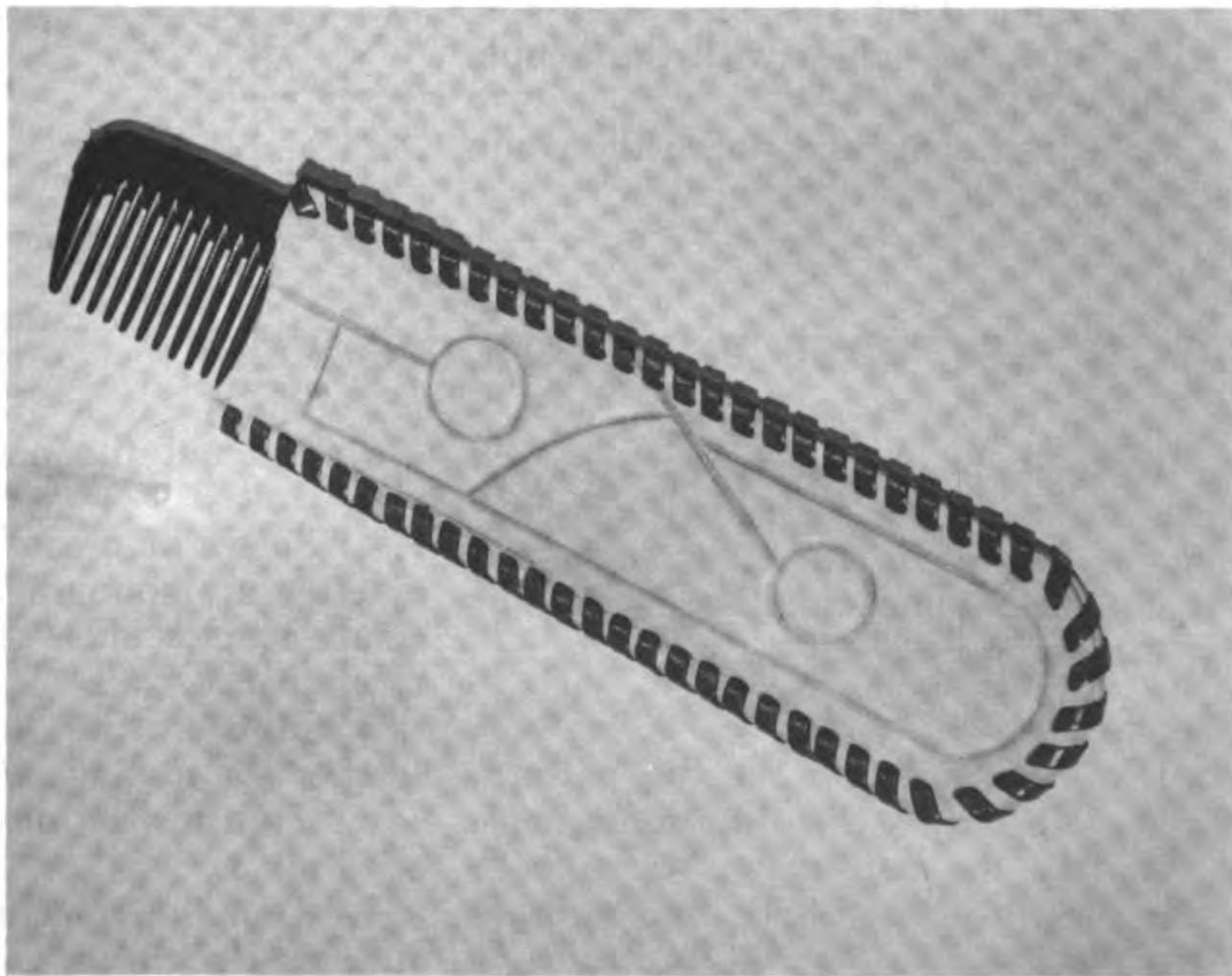
1 COMB CASE

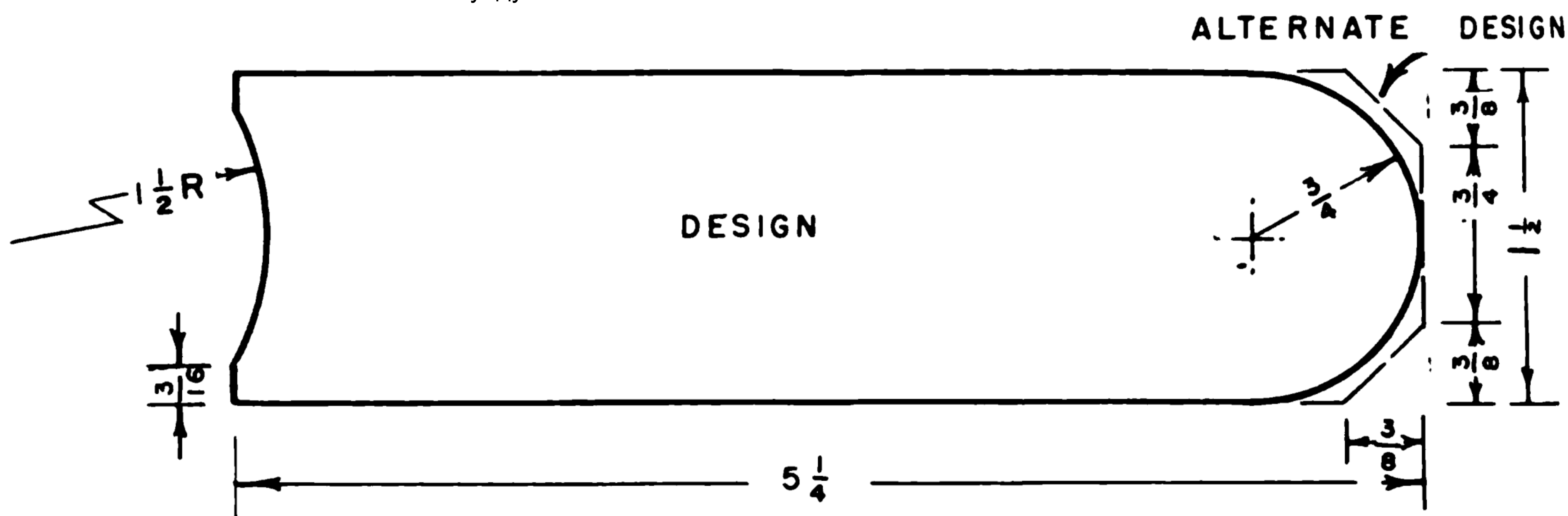
The novice may wish to begin leatherwork with a comb case, Fig. 227, because of its usefulness, simplicity, and the many basic processes involved in making it. Two to three ounce tooling calfskin or mottled steerhide is ideal.

Procedure

1. Draw and cut out the pattern. Unit 4. See Fig. 228 for dimensions.
2. Place the pattern on the smooth side of the leather, and mark around it. Unit 5.

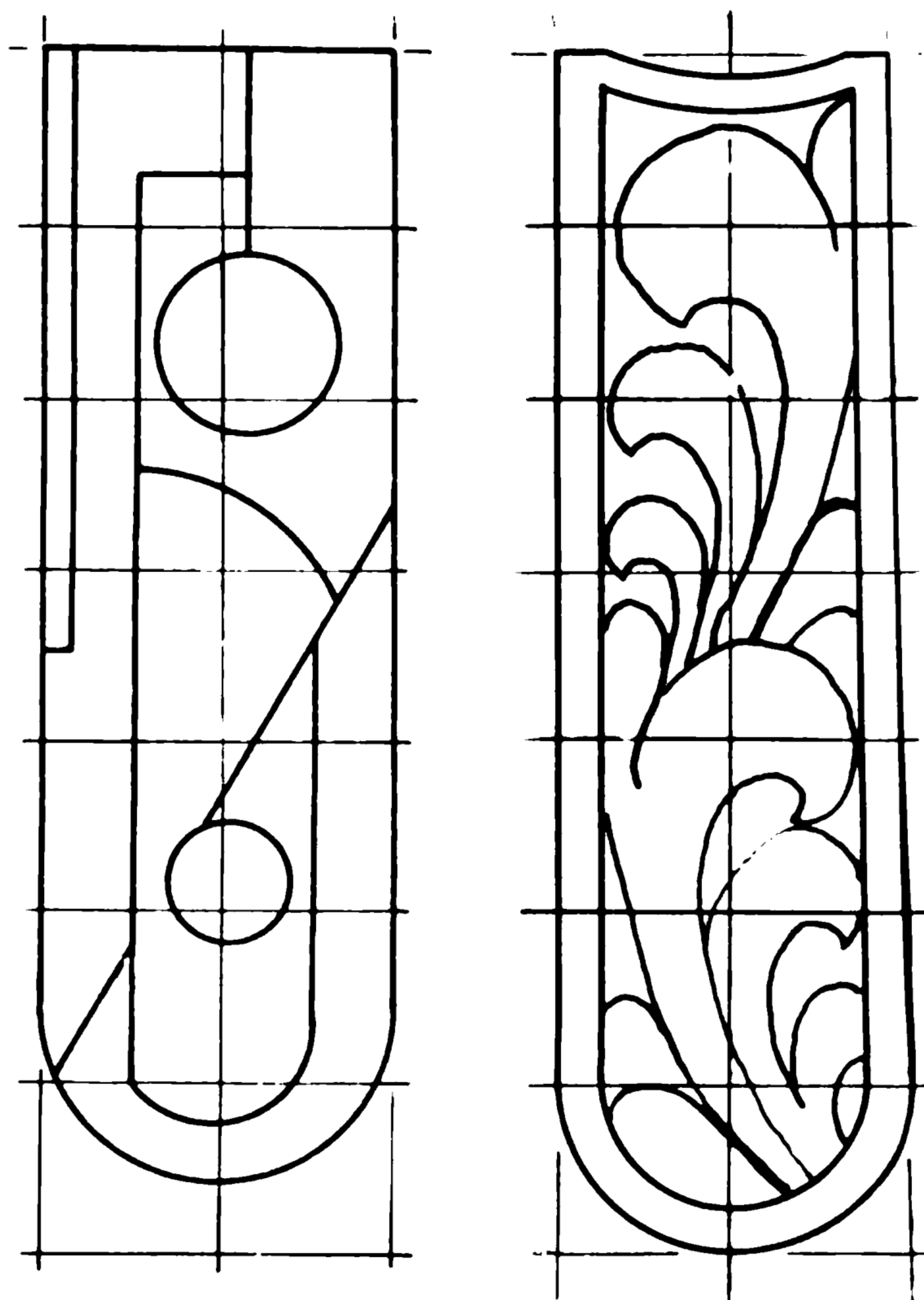
227. Comb Case





228. Layout for Comb Case

3. Cut out the parts. Unit 6.
4. Select or create an appropriate design, Fig. 229.
5. Prepare the leather for tooling. Unit 7.
6. Transfer the design to the leather pieces. Unit 8.
7. Tool and model the surface design. Unit 9.
8. Skive the edges of the reverse (flesh) side of both pieces to decrease the thickness of the edges approximately one-half. Unit 13.
9. Apply rubber cement along the skived edges and press the pieces together firmly. Unit 15.
10. Dye the edges of the case to match the leather. Unit 28.
11. Punch the holes or make slits for edge lacing. Unit 17.
12. Lace the edges with the simple whip stitch. Unit 19.
13. Clean, wax, and polish the comb case. Unit 28.



229. Designs for Comb Case

2 KEY CASE WITH BINDING POST

This is an inexpensive article because the cover can be made of scrap material; see Fig. 230. It is suggested that 2 to 3 ounce tooling calfskin or steerhide be used.

Procedure

1. Draw and cut out the pattern. Unit 4. See Fig. 231 for dimensions.
2. Lay the pattern on the smooth side of the leather and mark around it. Unit 5.

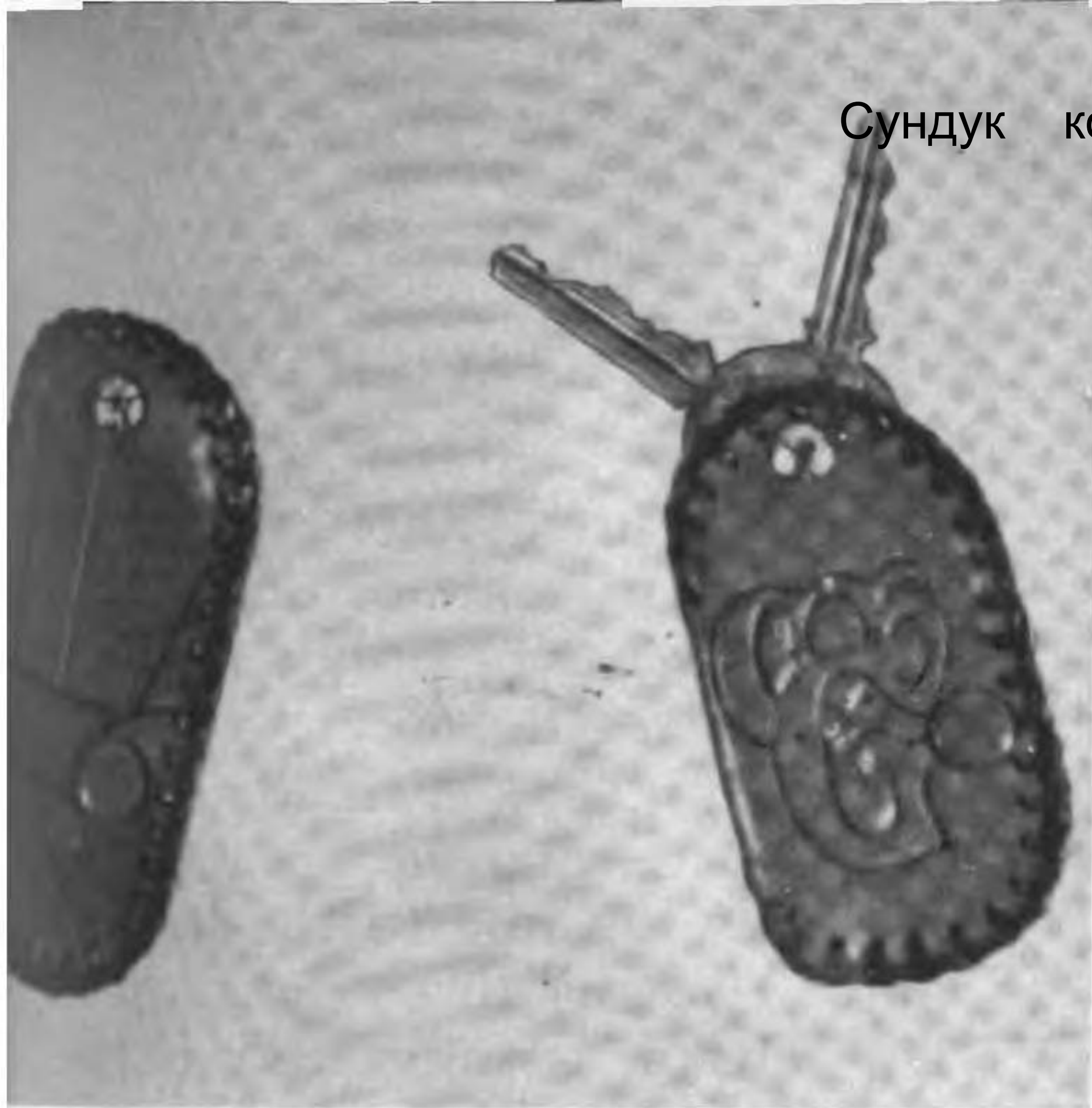
3. Cut out the pieces with a scissors. Unit 6.

4. Select or create a design. Often a letter or monogram will suffice for small articles such as this one. Also refer to Fig. 232.

5. Moisten the flesh side of the leather for tooling. Unit 7.

6. Transfer the design to the leather. Unit 8.

7. Tool the selected design on the surface. Unit 9.



230. Key Case with Binding Post

8. Punch the holes, or make slits for edge lacing. Unit 17.

9. Lace the edges with any of the whip stitches, Unit 19, or the single buttonhole stitch, Unit 21.

10. Mark the location and punch the holes for the snap button assembly.

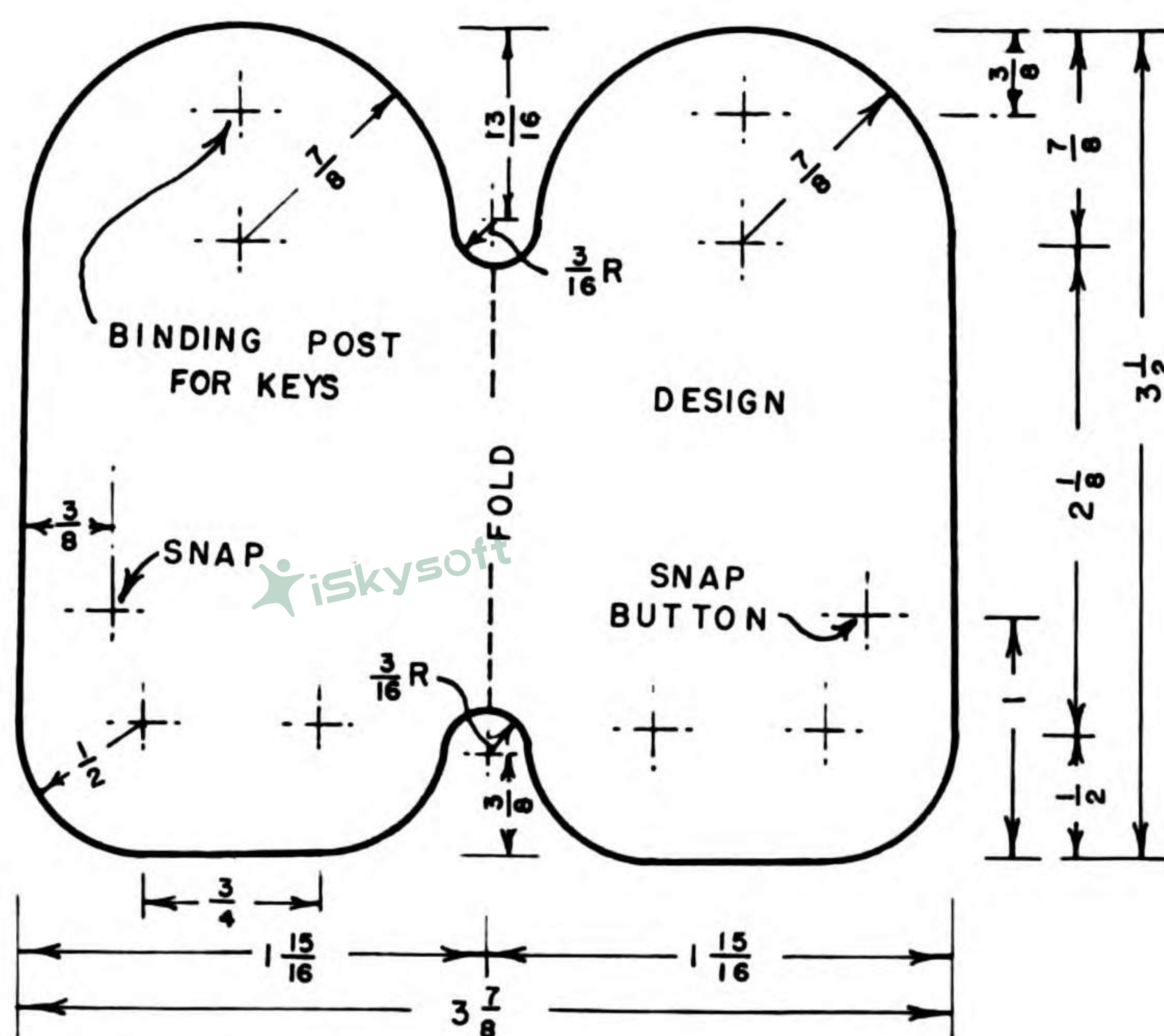
Unit 24.

11. Mark the location and punch the holes for the binding post. Unit 22.

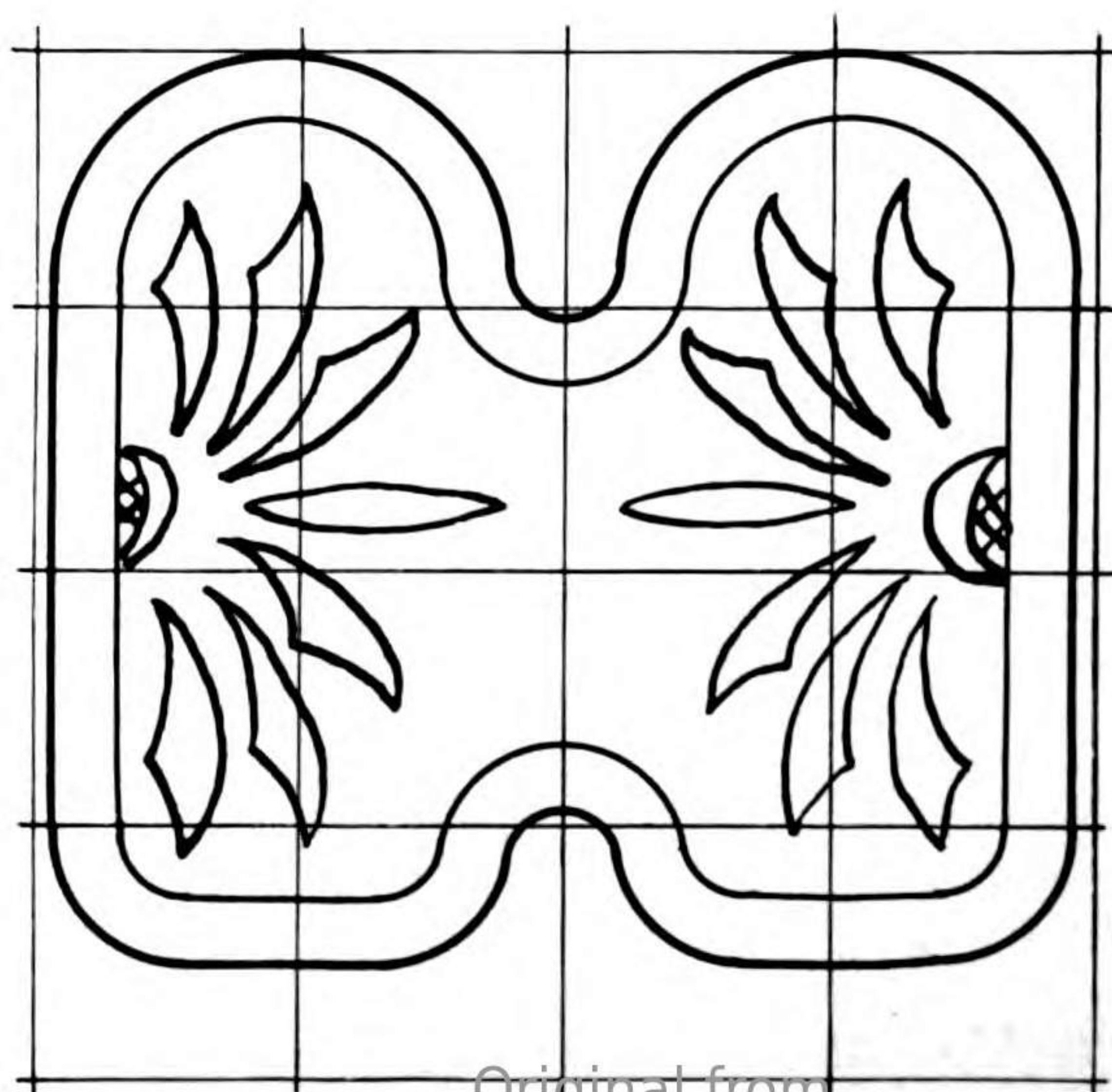
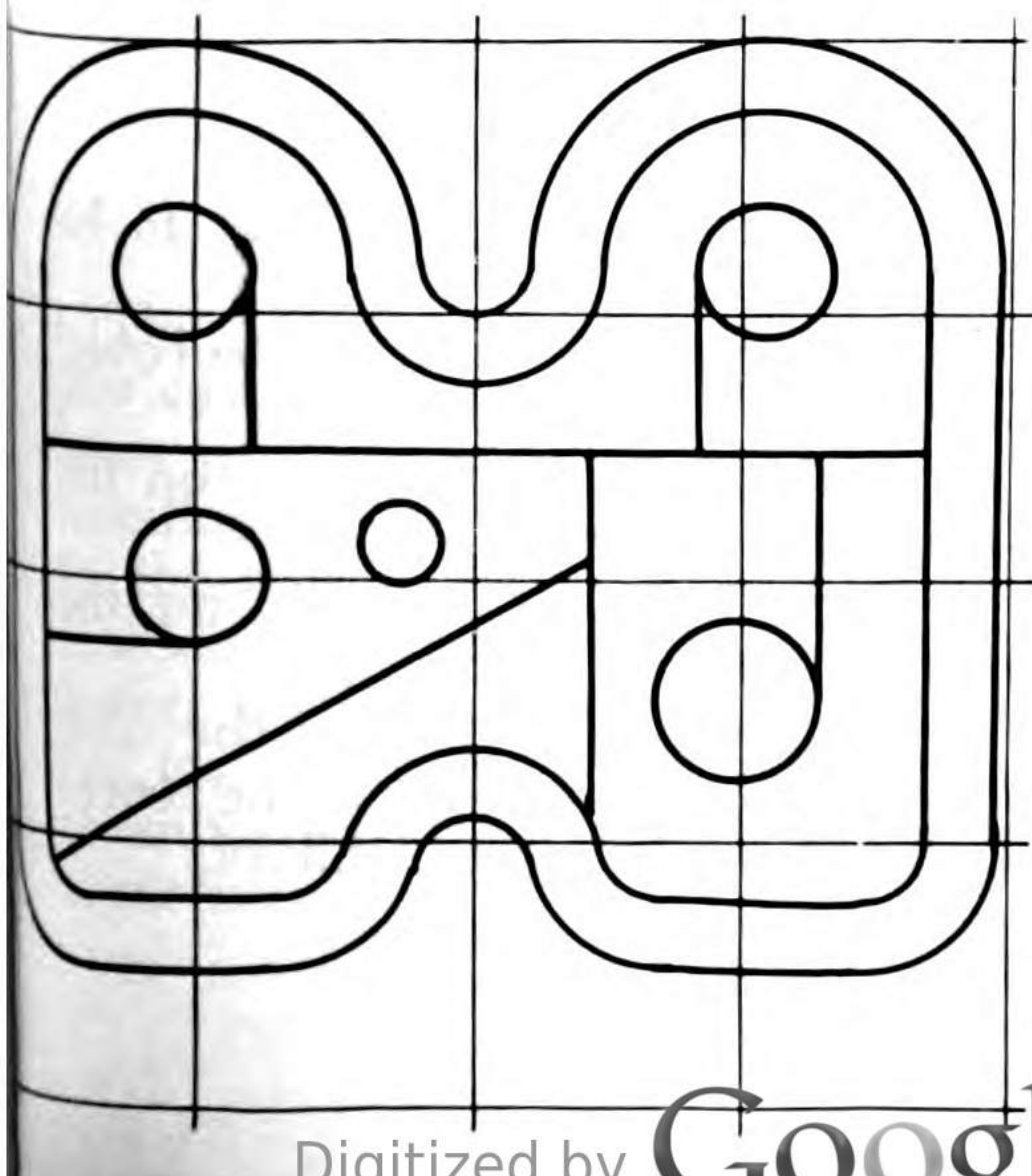
12. Insert the post and screw the cap on.

13. Clean, wax, and polish the key case. Unit 28.

231. Layout for Key Case with Binding Post



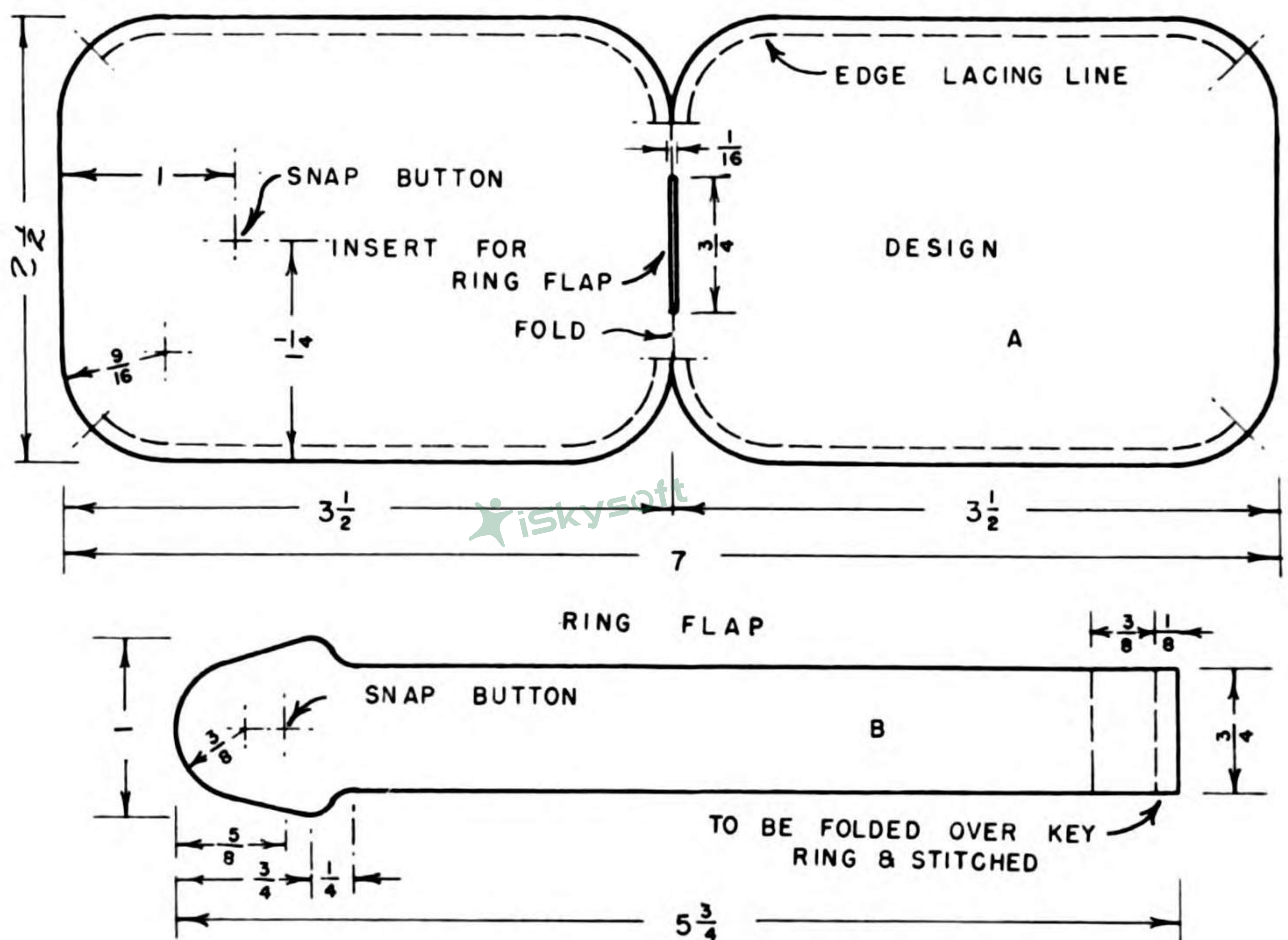
232. Designs for Key Case with Binding Post



3 KEY RING HOLDER

The feature of this key holder is that it uses an ordinary key ring which can be pulled into the case when the keys are not needed, Fig. 233. A small amount of hand sewing is entailed in fastening the ring to the leather pull. Two and three ounce tooling calfskin is suggested as the material.

233. Key Ring Holder



234. Layout for Key Ring Holder

Procedure

1. Draw and cut out the patterns. See Fig. 234 for dimensions.

2. Place the patterns on the smooth side of the leather and mark around them. Unit 5.

3. Cut out the two pieces of leather. Unit 6.

4. Select or create a design. See Fig. 235.

5. Moisten the reverse (flesh) side

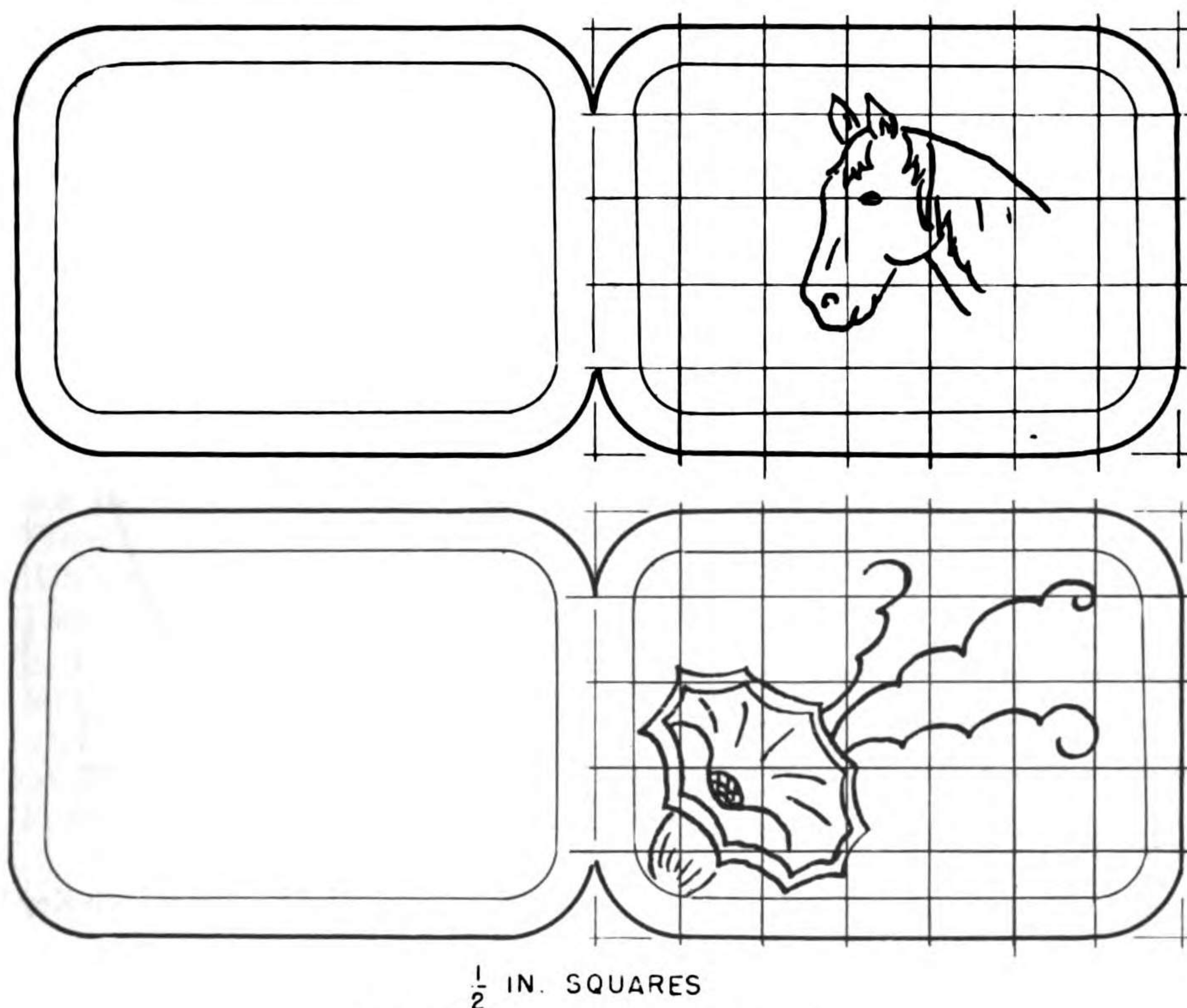
of the cover portion which is to be tooled. Unit 7.

6. Transfer the design to the cover. Unit 8.

7. Tool the selected design on the cover. Unit 9.

8. Mark and cut the slit on the cover for the ring flap. Unit 6.

9. Crease the edges on the ring flap and on the edges of the cover which will not be laced. Unit 14.



$\frac{1}{2}$ IN. SQUARES

235. Designs for Key Ring Holder

10. Slip the ring flap into the slit of the cover.

11. Place the key ring on the flap between the dotted lines, as indicated in Fig. 234, and sew the ring into place. Unit 16.

12. Skive the inside edges of the cover which are to be laced. Unit 13.

13. Apply rubber cement on the skived edges and press them firmly

together. Unit 15.

14. Color the edges. Unit 28.

15. Punch holes or make slits for edge lacing. Unit 17.

16. Lace the edges. Units 19 or 21.

17. Mark, punch the hole, and assemble the snap button. Unit 24.

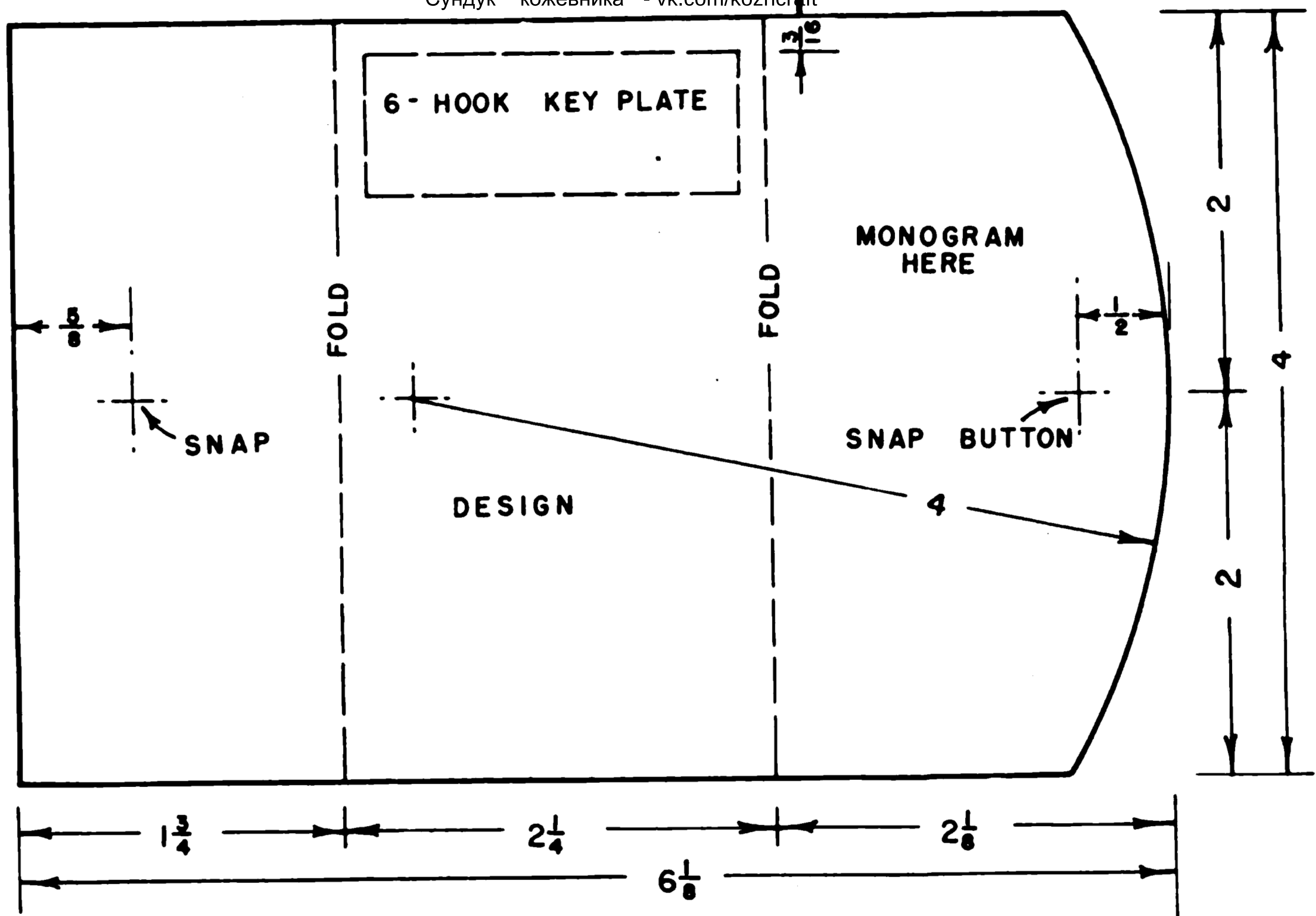
18. Clean the leather and apply a suitable finish. Unit 28.

4 KEY CASE WITH KEY PLATE

236. Key Case with Key Plate

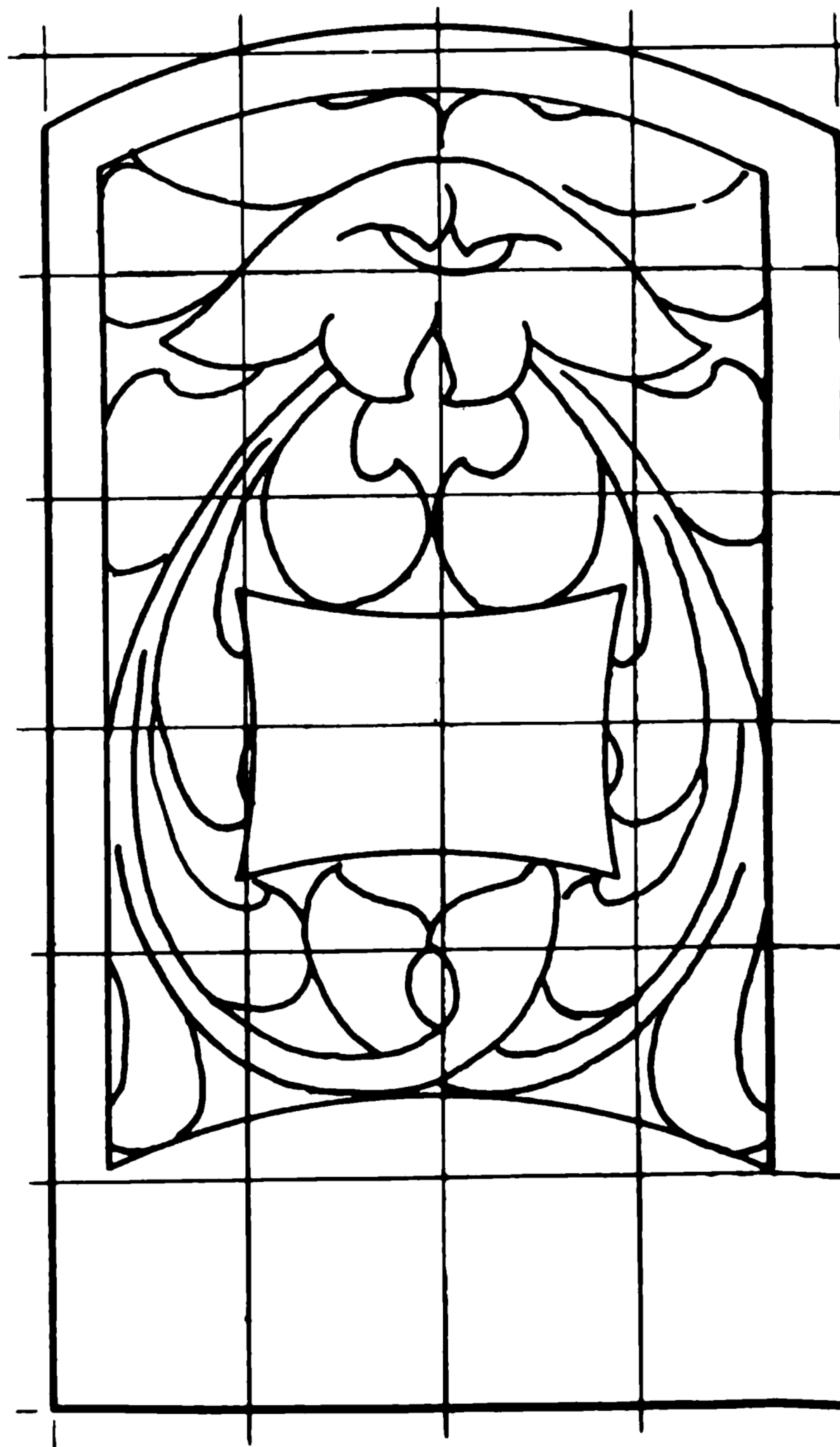
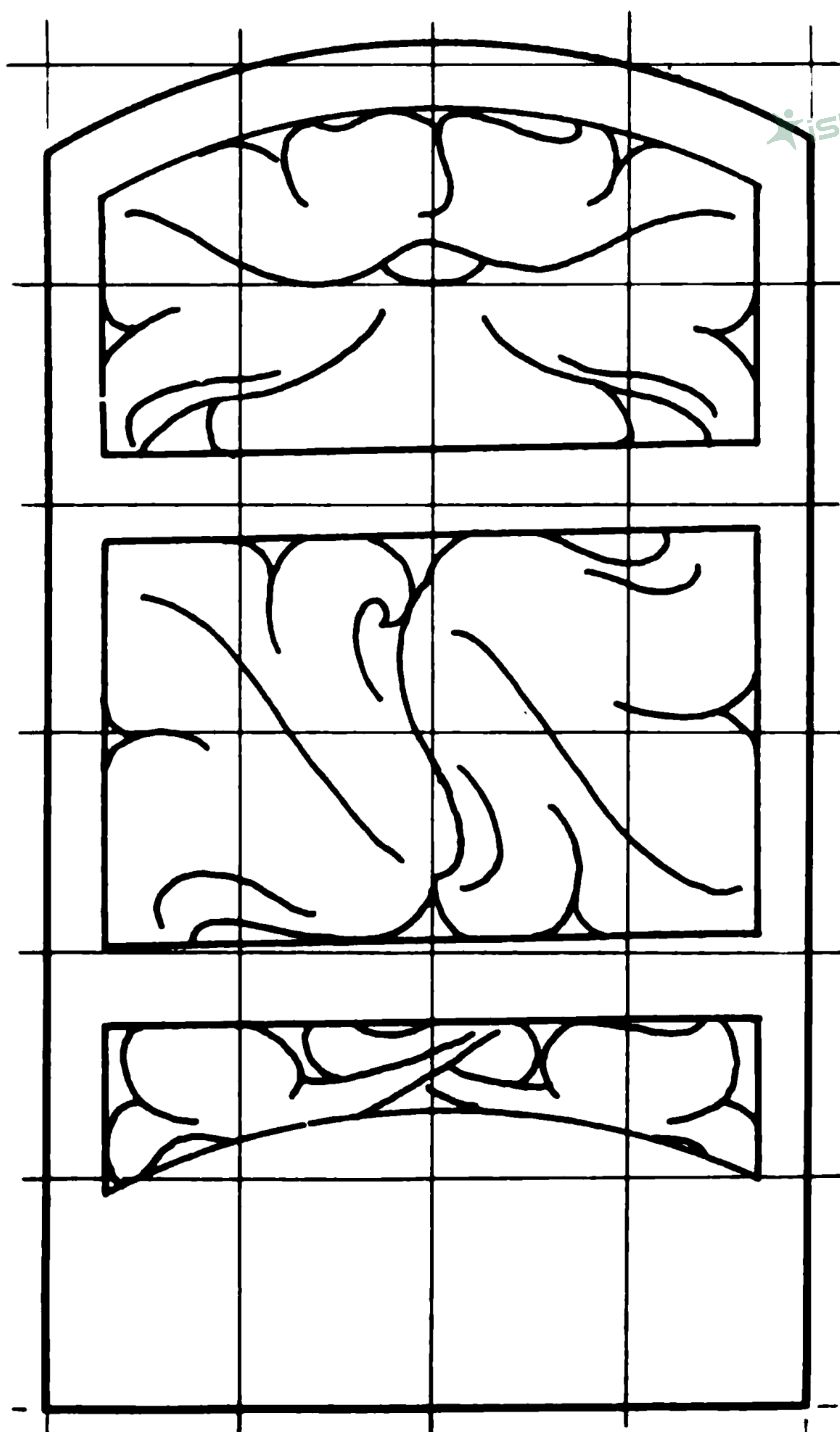
This slightly more advanced type of key case requires the additional processes of fastening the key plate and installing lining material, Fig. 236. Two to three ounce tooling calfskin or mottled steerhide is excellent for the cover, while using thin skiver material for the lining. Mottled steerhide or embossed design leather is also very attractive.





237. Layout for Key Case with Key Plate

238. Designs for Key Case with Key Plate



Procedure for Key Case

1. Draw and cut out the pattern. See Fig. 237 for dimensions.

2. Place the pattern on the smooth side of the cover leather and mark around it. Unit 5. Do the same for the lining.

3. Cut out the cover and lining pieces with the scissors. Unit 6.

4. Select or create a design. See Fig. 238.

5. Moisten the reverse side of the cover for tooling. Unit 7.

6. Transfer the design to the cover piece. Unit 8.

7. Tool the selected design on the surface. Unit 9.

8. Mark the location for the key plate and eyelets on the lining. See the drawing, Fig. 237.

9. Punch holes in the lining for eye-

lets. Unit 22. A scrap piece of leather should be used for reinforcing the eyelets. Unit 23.

10. Insert the eyelets through the key plate, lining, and reinforcing piece, and fasten them securely with the eyelet setter. Unit 23.

11. Apply rubber cement to the inner edges of both the cover and lining material and press these cemented pieces together firmly. Unit 15.

12. Dye the edges. Unit 28.

13. Punch holes or make slits for edge lacing. Unit 17.

14. Lace the edges with the single or double buttonhole stitch. Unit 21.

15. Mark, punch holes, and assemble the snap button. Unit 24.

16. Clean the leather and apply a suitable finish. Unit 28.

5 COIN PURSE

This coin purse is easy to make and sufficiently well designed to be ornamental as well as useful. See Fig. 239. It is an ideal article for girls because it appeals to the creative side of their character as well as being presentable as a gift. Tooling calfskin of 2 or 3 ounce weight is excellent for the cover as well as the pocket.

Procedure

1. Draw and cut out the patterns. See Fig. 241 for measurements.

2. Place the pattern pieces on the smooth side of the leather and mark around them. Unit 5.

3. Cut out the pieces with the scissors. Unit 6.

4. Select or create a design. See Fig. 240.

5. Prepare the leather for tooling. Unit 7.

6. Transfer the design to the cover. Unit 8.

7. Tool the selected design on the cover. Unit 9.

8. Skive the inside edges of both pieces which are to be folded together. Unit 13.

9. Apply rubber cement along the skived edges and press all parts together firmly. Unit 15.

10. Color the edges. Unit 28.

11. Punch holes or make slits for lacing. Unit 17.

12. Lace the edges. Units 19 and 21.

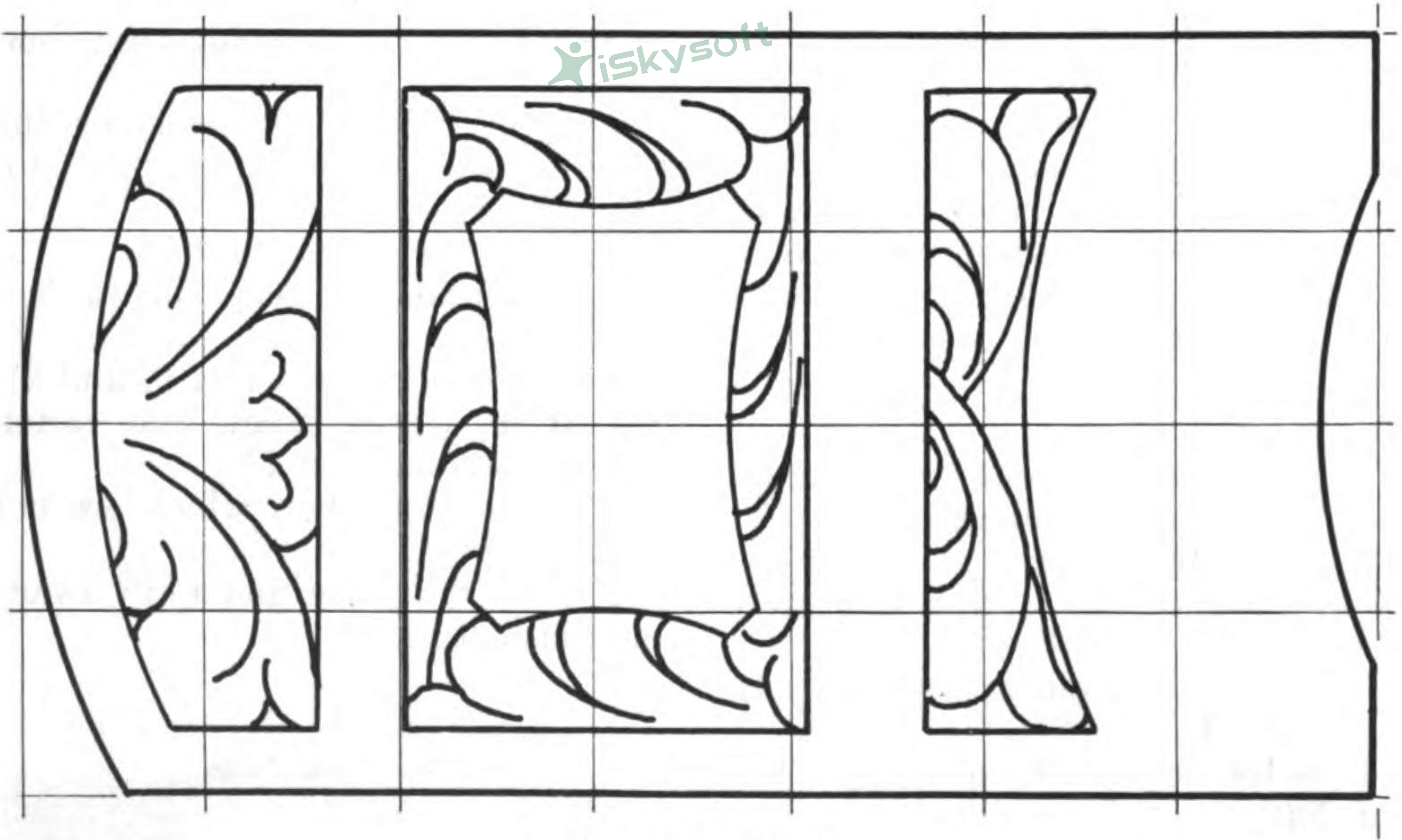
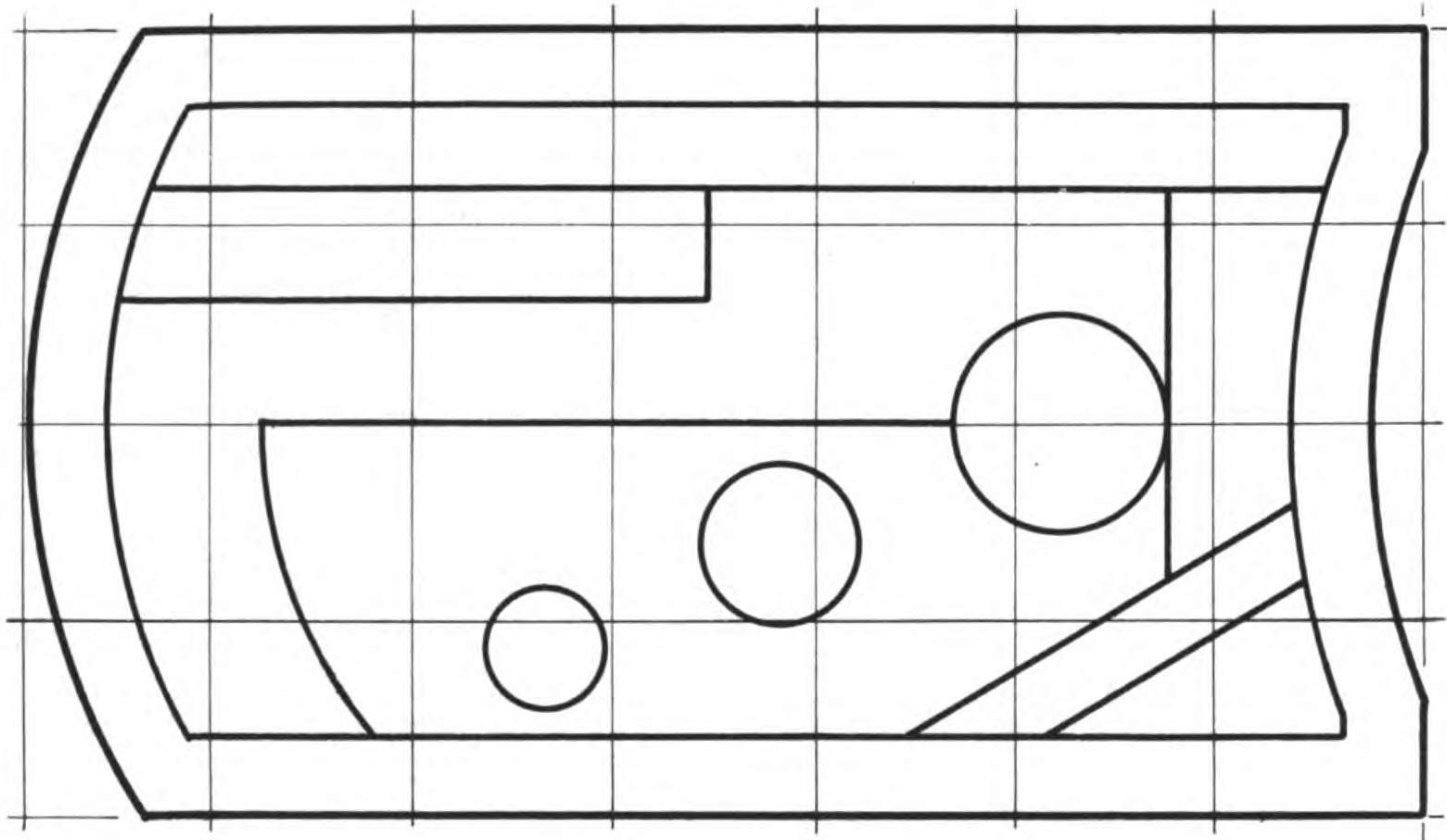
13. Mark, punch holes, and fasten the snap button. Unit 24.

14. Crease the edges which are not laced or folded. Unit 14.

15. Clean the purse, and apply a suitable finish. Unit 28.

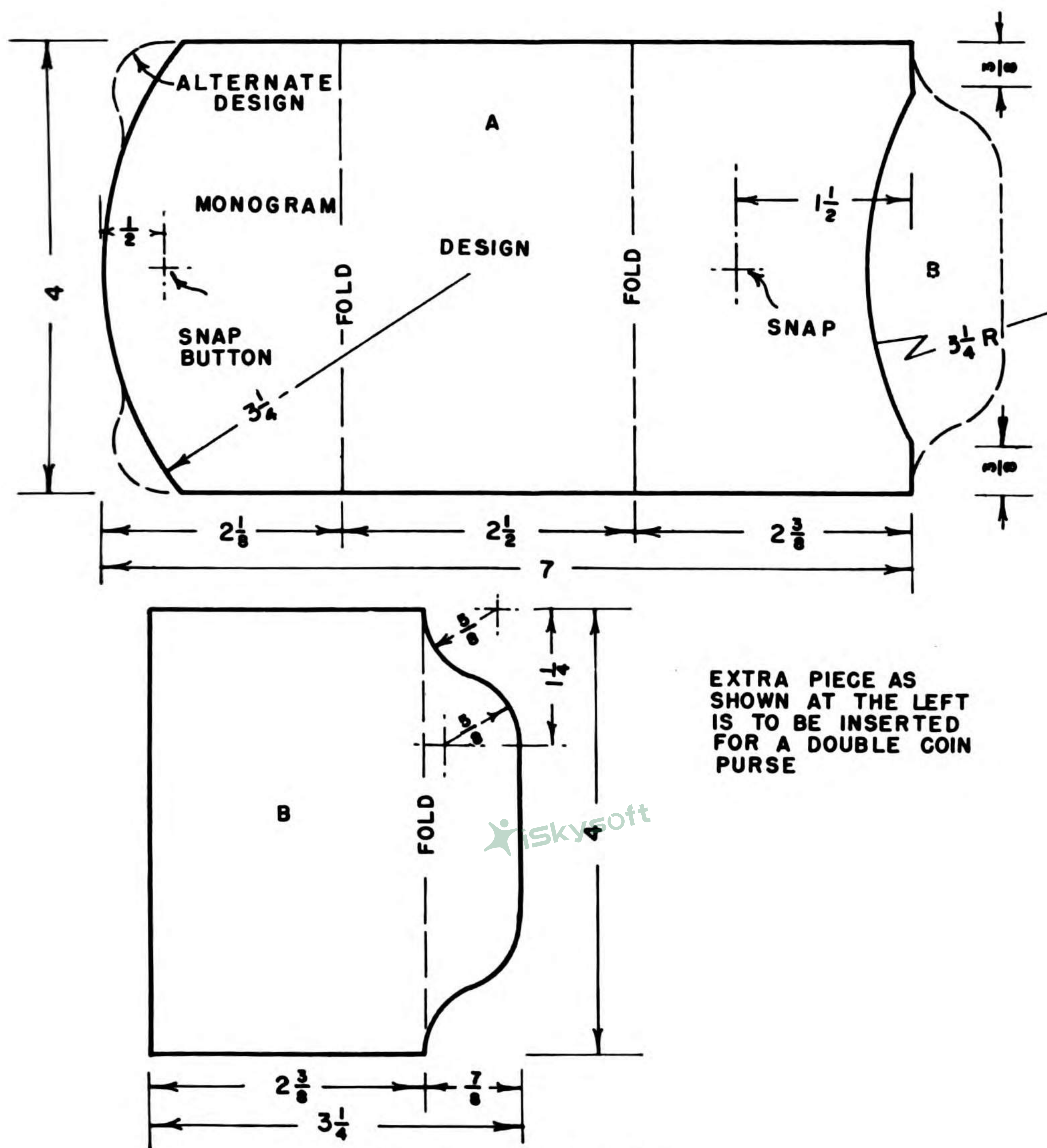
239. Coin Purse





1 IN. SQUARES

240. Designs for Coin Purse



241. Layout for Coin Purse

6 WRISTBAND COIN PURSE

This coin purse, Fig. 242, is definitely a girl's type of project involving a number of the basic processes. Designs may be tooled or stamped on the purse or wristband to suit the individuality of the craftsman.

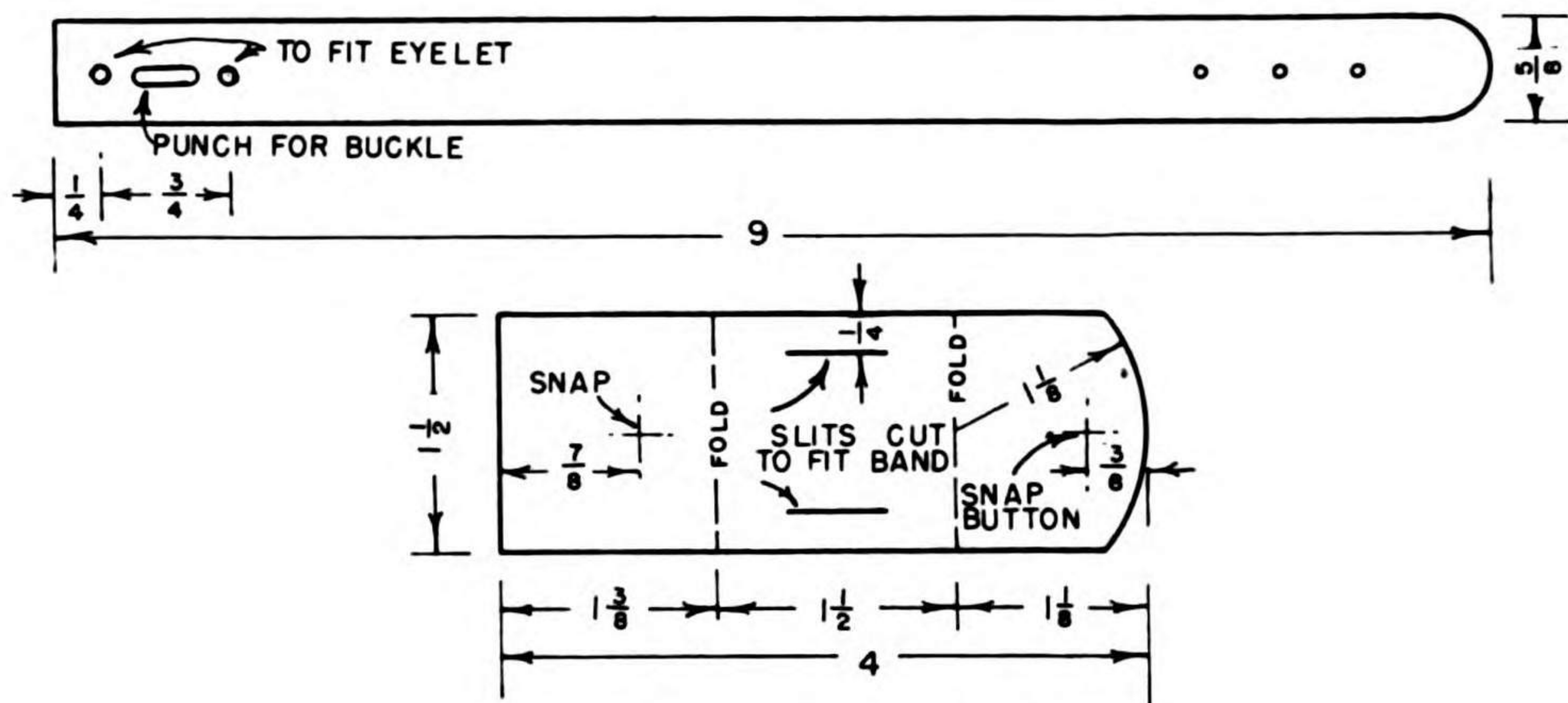
2 or 3 ounce tooling calfskin or mottled steerhide. Unit 5. Refer to Fig. 243 for dimensions.

242. Wristband Coin Purse

Procedure

1. Lay out and mark the pieces on





243. Layout for Wristband Coin Purse

2. Cut out the pieces with the scissors. Unit 6.

3. If desired, create a design, transfer it, tool or stamp. Units 7, 8, 9 and 10.

4. Mark and cut the slits. Unit 6.

5. Skive the inside purse edges which are to be cemented together. Unit 13.

6. Apply rubber cement along the

skived edges; fold the purse, and press the edges firmly together. Unit 15.

7. Color the edges of the purse and the band. Unit 28.

8. Punch holes or slits for edge lacing. Unit 17.

9. Lace the edges of the purse. Unit 19.

10. Mark, punch, and assemble the snap button. Unit 24.

244. Zipper Coin-Purse Key-Case

245. Zipper Coin-Purse Key-Case, Open



11. Make the loop and fasten the buckle on the band with an eyelet. Unit 23.

12. Crease the edges of the wristband. Unit 14.

13. Punch the holes for buckle adjustment to fit the wrist. Unit 22.

14. Clean the leather and apply a suitable finish. Unit 28.

7 ZIPPER COIN-PURSE KEY CASE

The combination coin-purse key case, Fig. 244, serves the dual purpose of an interesting plan involving a few of the more advanced processes. Material for this project might be 2 or 3 ounce tooling calfskin for surface tooling, or you might wish to experiment with the same weight alligator-grain skin, which cannot be tooled but offers an interesting texture.

Procedure

1. Draw and cut out the patterns for A, B, C, and D. See Fig. 247 for dimensions.

2. Place the patterns on the finished side of the leather and mark around them. Unit 5.

3. Cut out all pieces of leather. Unit 6. Note that piece B is lining for the cover, and may be cut from thin skiver lining material.

4. Select or create a design, if one is needed. See Fig. 246.

5. Moisten the reverse (flesh) side

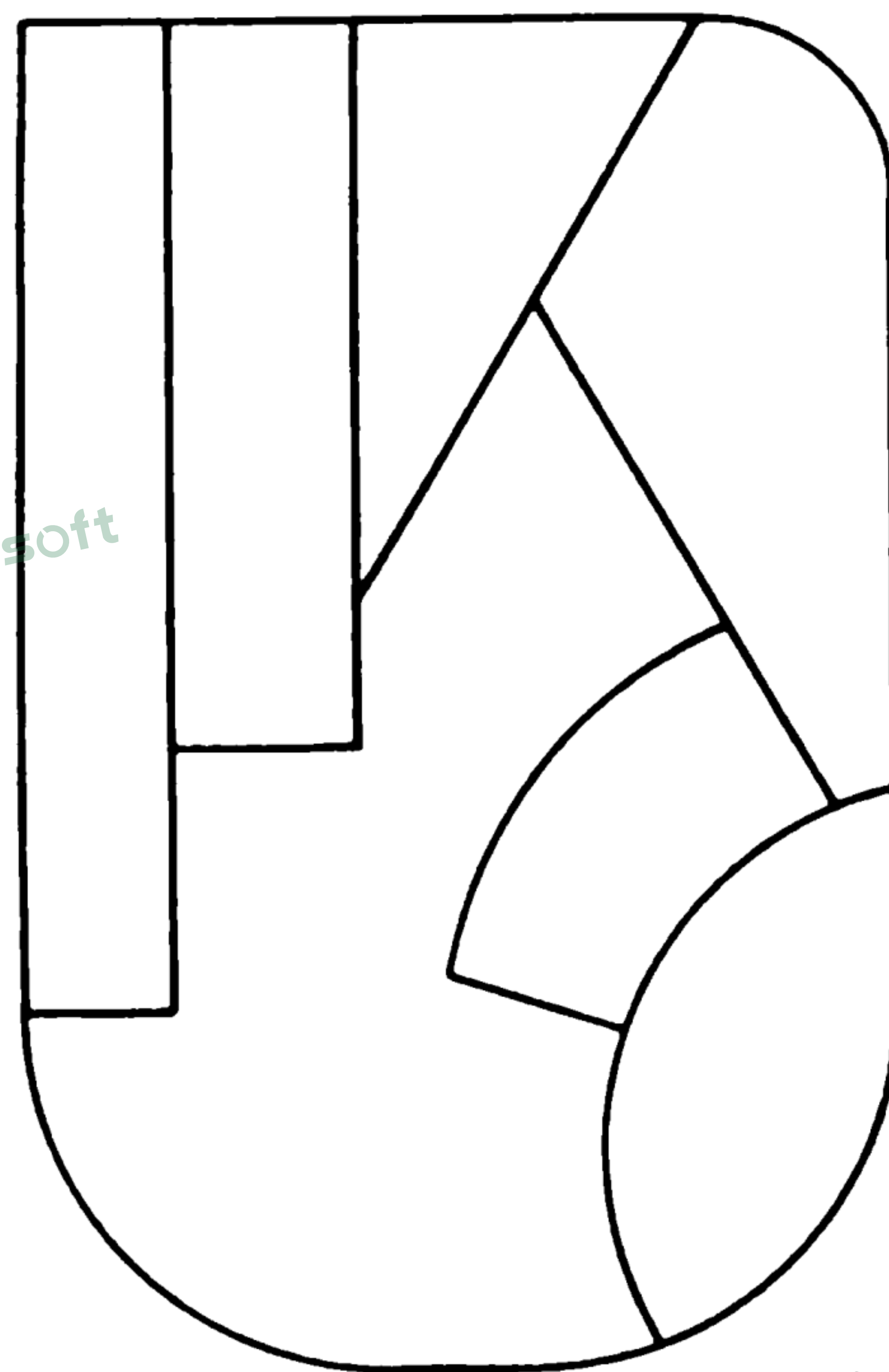
of the cover if it is to be tooled. Unit 7.

6. Transfer the design to the cover. Unit 8.

7. Tool the selected design on the cover. Unit 9.

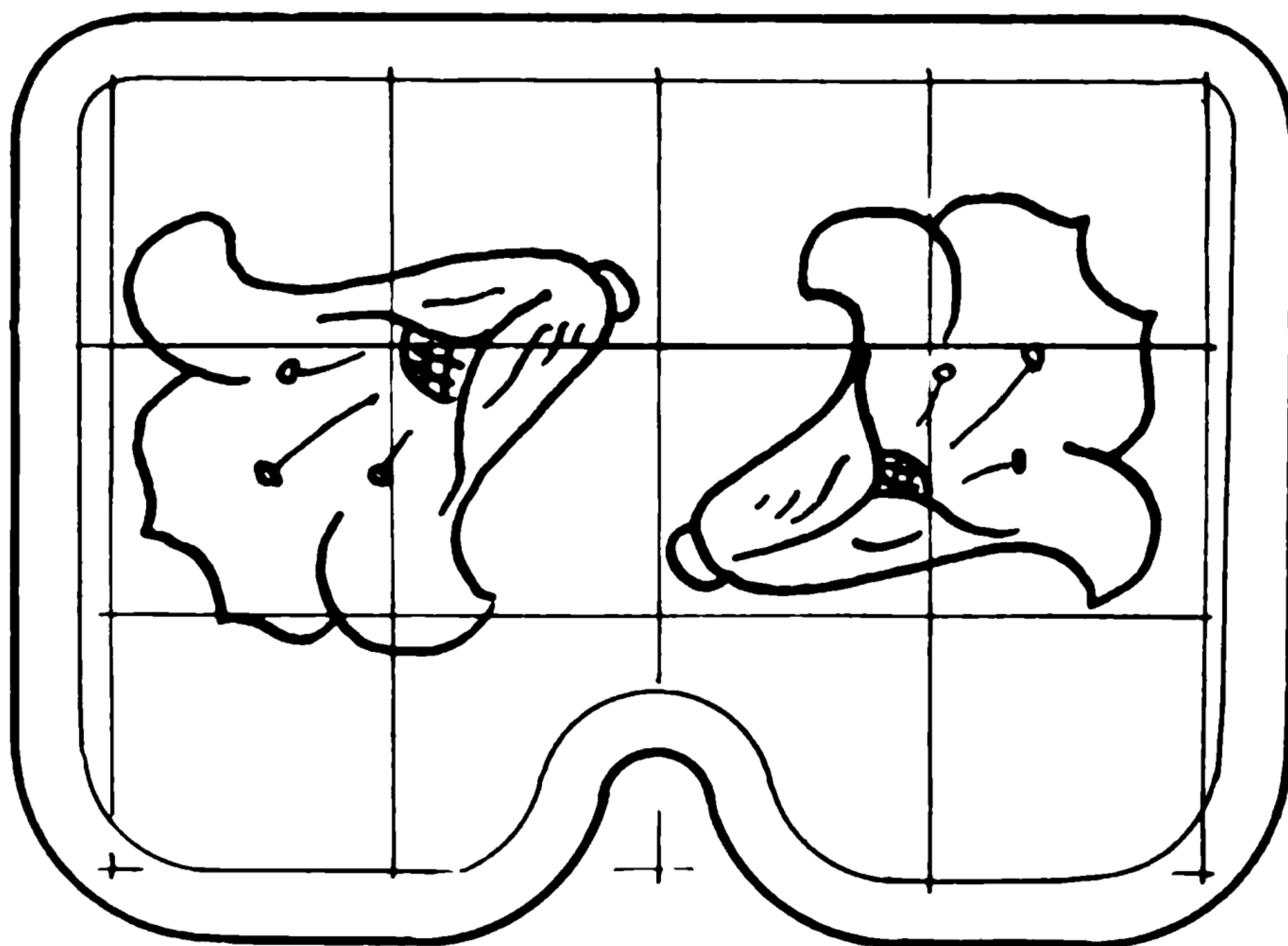
8. Skive the inside edges of pocket D. See Unit 13.

9. Apply rubber cement on the skived edges of pocket D, and on the

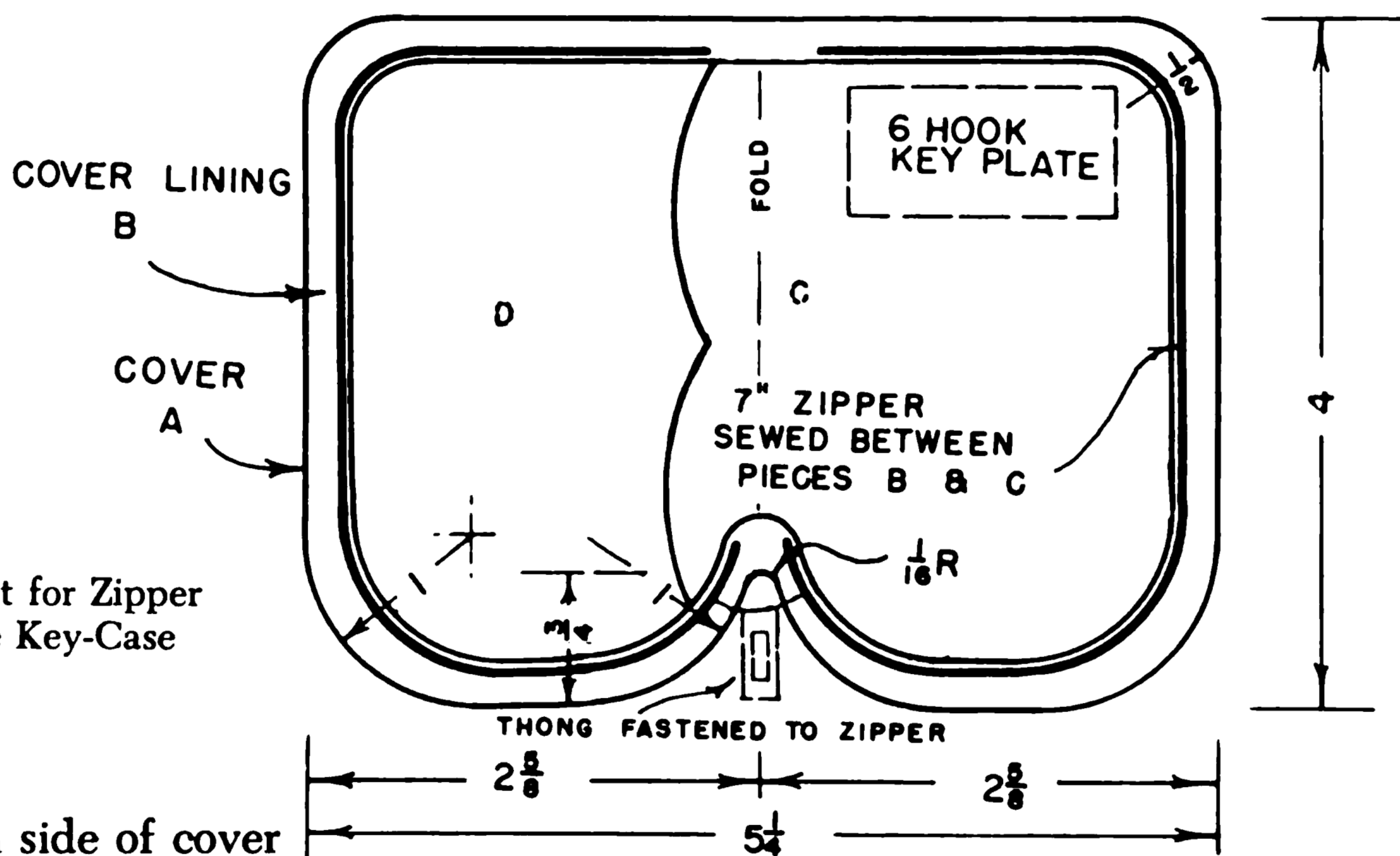


1 IN. SQUARES

246. Designs for Zipper Coin-Purse Key-Case



247. Layout for Zipper Coin-Purse Key-Case



edges of the flesh side of cover c. Press them together firmly. Unit. 15.

10. Apply rubber cement on the edges of the rough side of purse cover c, and to the face side of the 7 inch cloth zipper. Unit 15.

11. Assemble the zipper to cover c by pressing the cemented edges firmly. See working drawing, Fig. 247, for the location of the zipper.

12. Lay purse cover c on lining b to locate that portion to be cemented, and apply a narrow strip of rubber cement on the back edges of cover c, and on the marked portion of lining b.

13. Press purse cover c firmly to lining b.

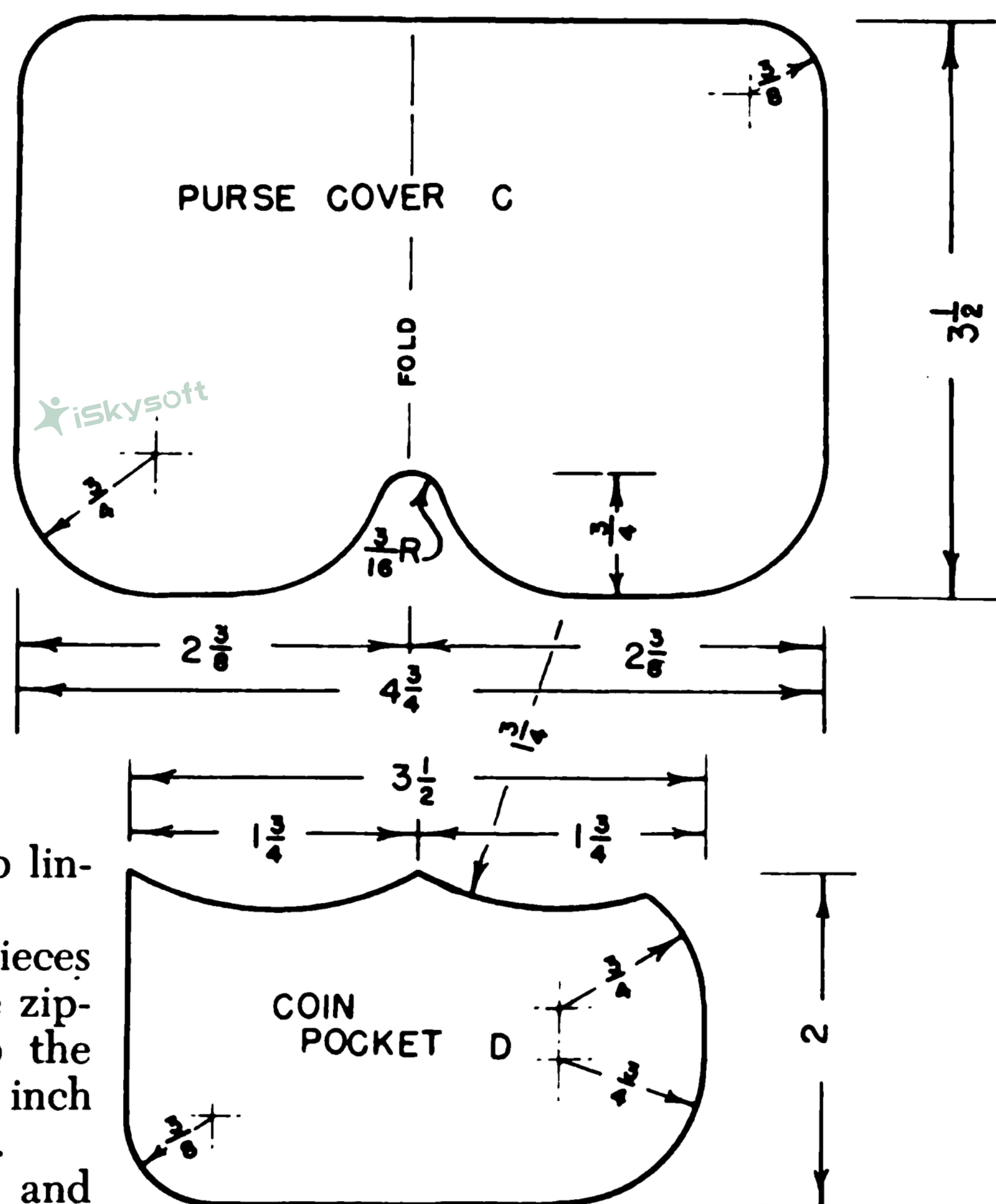
14. Sew with a machine the pieces which have been cemented to the zipper. Unit 16. It is best to keep the line of sewing approximately $\frac{1}{8}$ inch from the outer edge of the purse.

15. Mark the location, punch, and fasten the key plate in position. Unit 23.

16. Apply rubber cement along the inside edges of lining b, and on the edges of the rough side of the cover, and press them together firmly.

17. Color the edges. Unit 28.

18. Punch holes or make slits for



edge lacing. Unit 17.

19. Lace the edges. Unit 21.

20. Optional: Make the thong on the zipper end for convenient opening and closing. Unit 30.

21. Clean the leather and apply a suitable finish. Unit 28.

8 CALLING CARD HOLDER

11. Round all corners slightly.
12. Punch holes or slits for edge lacing. Unit 17.
13. Lace the edges with the single or double Cordovan stitch. Unit 21.
14. Clean and apply a suitable finish. Unit 28.

248. Calling Card Holder

A convenient item is the calling card holder, Fig. 248. Two to three ounce material is suitable for tooling, while four ounce calfskin is excellent for carving. This one can be tooled or carved.

Procedure

1. Lay out and cut the templates, or lay out directly on the smooth side of the leather, Figs. 250A and 250B. Please note that a piece of skiver lining should be included as the lining for the cover. Unit 5.

2. Cut the leather parts. Unit 6.

3. Select or create a design. See Fig. 250.

4. Prepare the leather for tooling or carving. Unit 7.

5. Transfer the design to the cover. Unit 8.

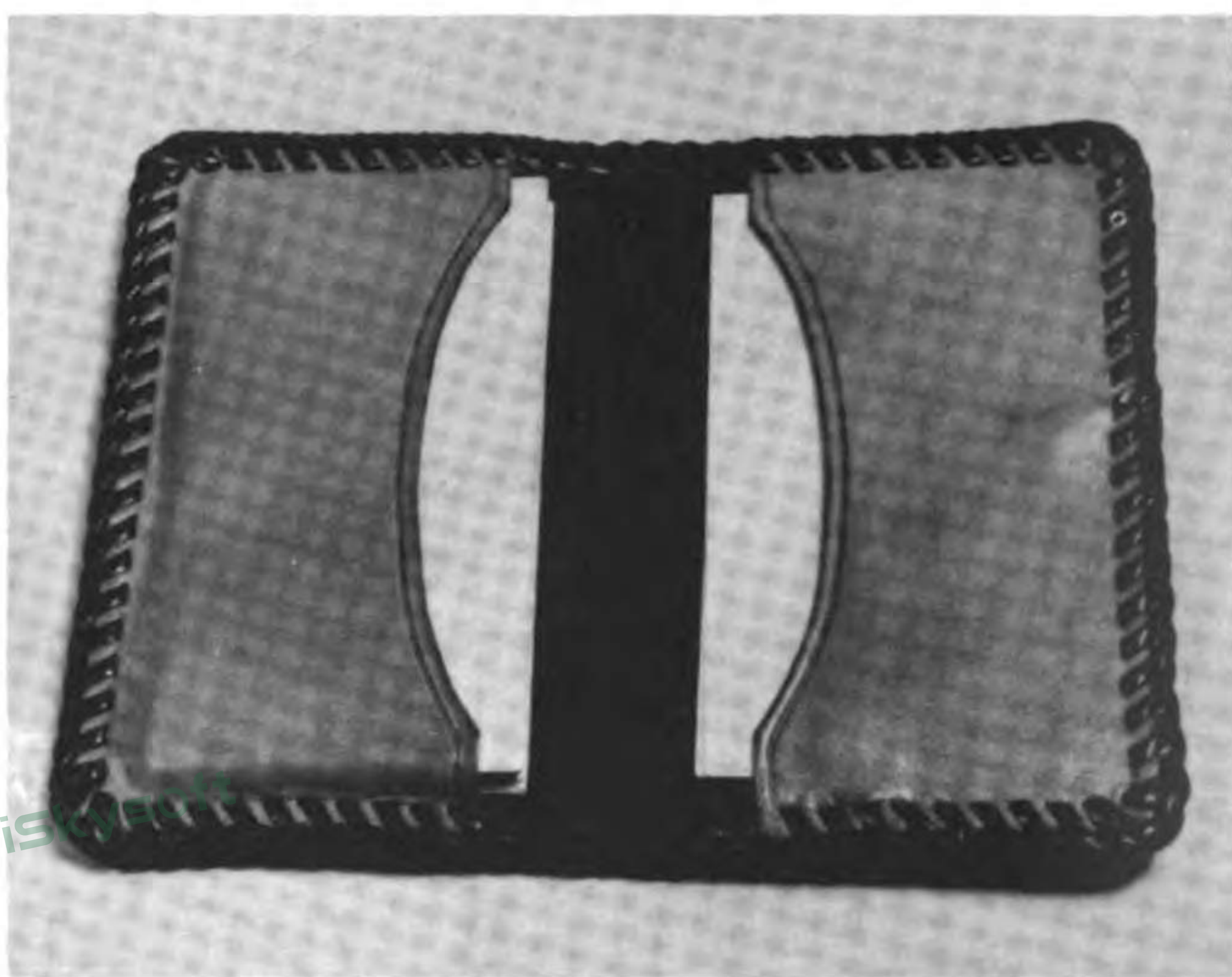
6. Tool, stipple, or carve the selected design on the cover. Units 9 through 12.

7. Crease the edges of the pockets. Unit 14.

8. Skive the edges of the pockets which are to be laced, and the edges of the cover. Unit 13.

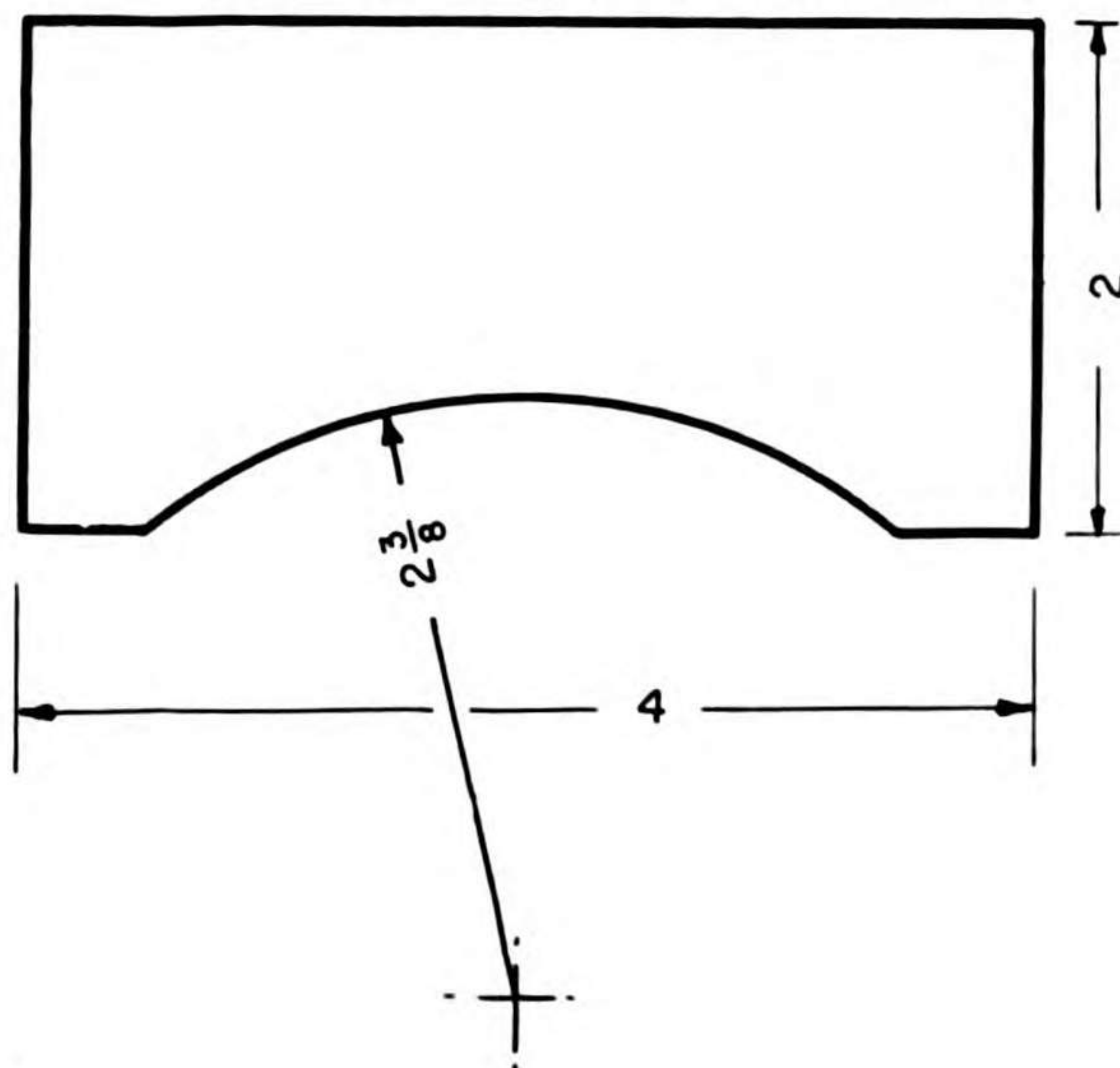
9. Apply rubber cement to the skived edges of the cover and to the unfinished surface of the lining, and press the lining to the cover. Unit 15.

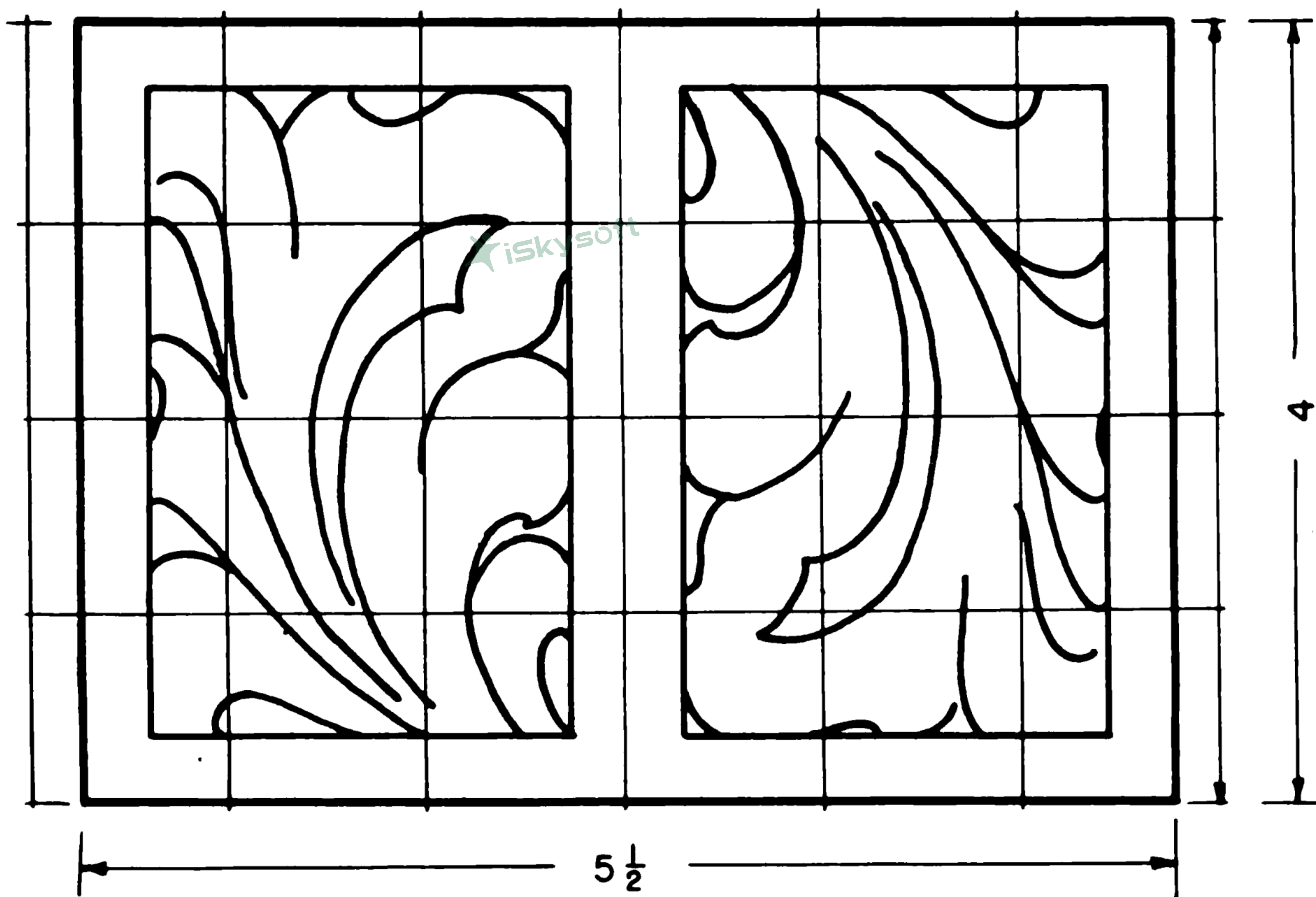
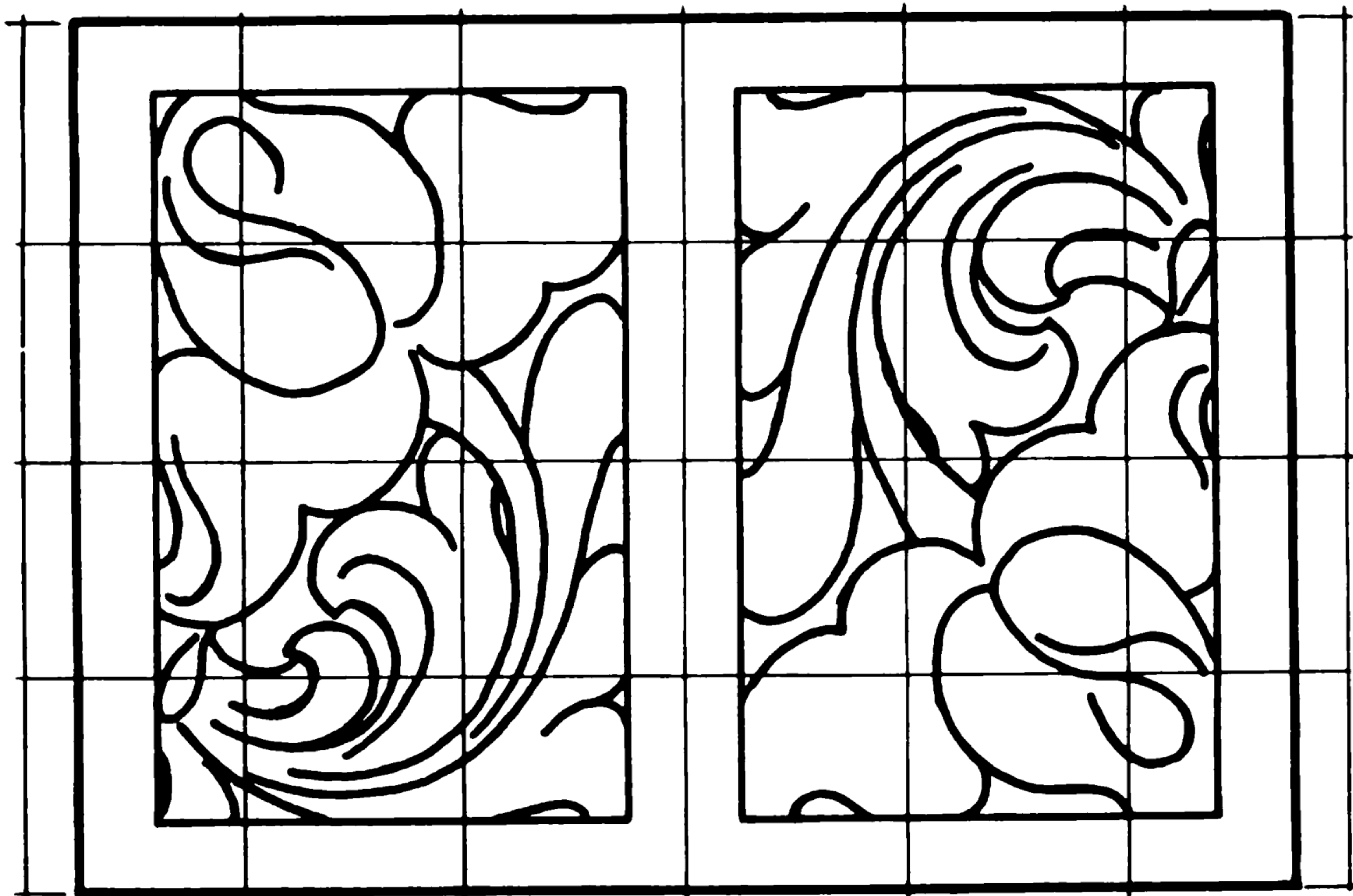
10. Apply rubber cement to the face edges of the lining where the pockets will fit, and to the skived edges of the pockets; then press the pockets to the lining. Unit 15.



249. Calling Card Holder, Open

250A. Layout for Calling Card Holder Pocket





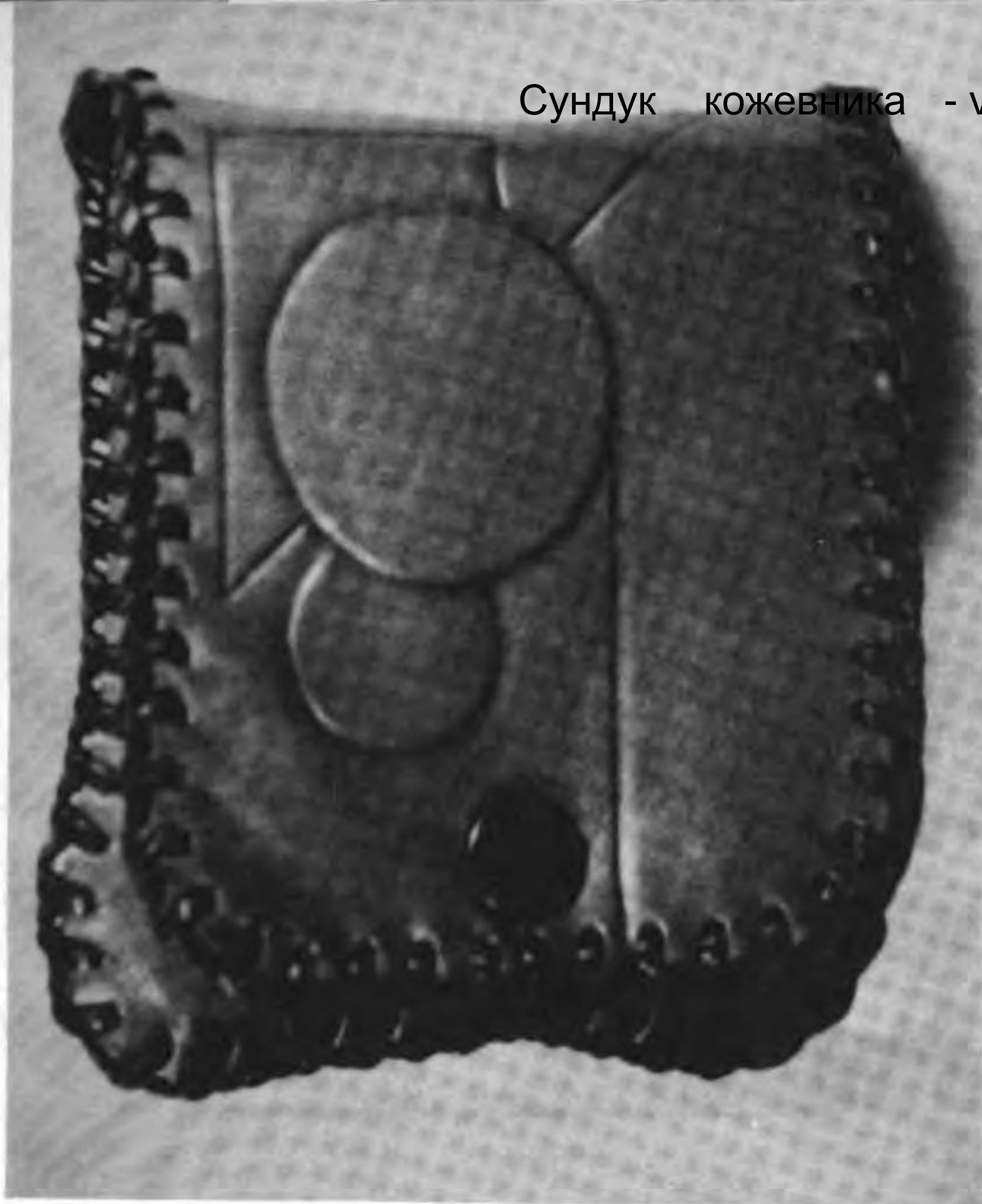
250B. Layout and Designs for Calling Card Holder

1 IN. SQUARES

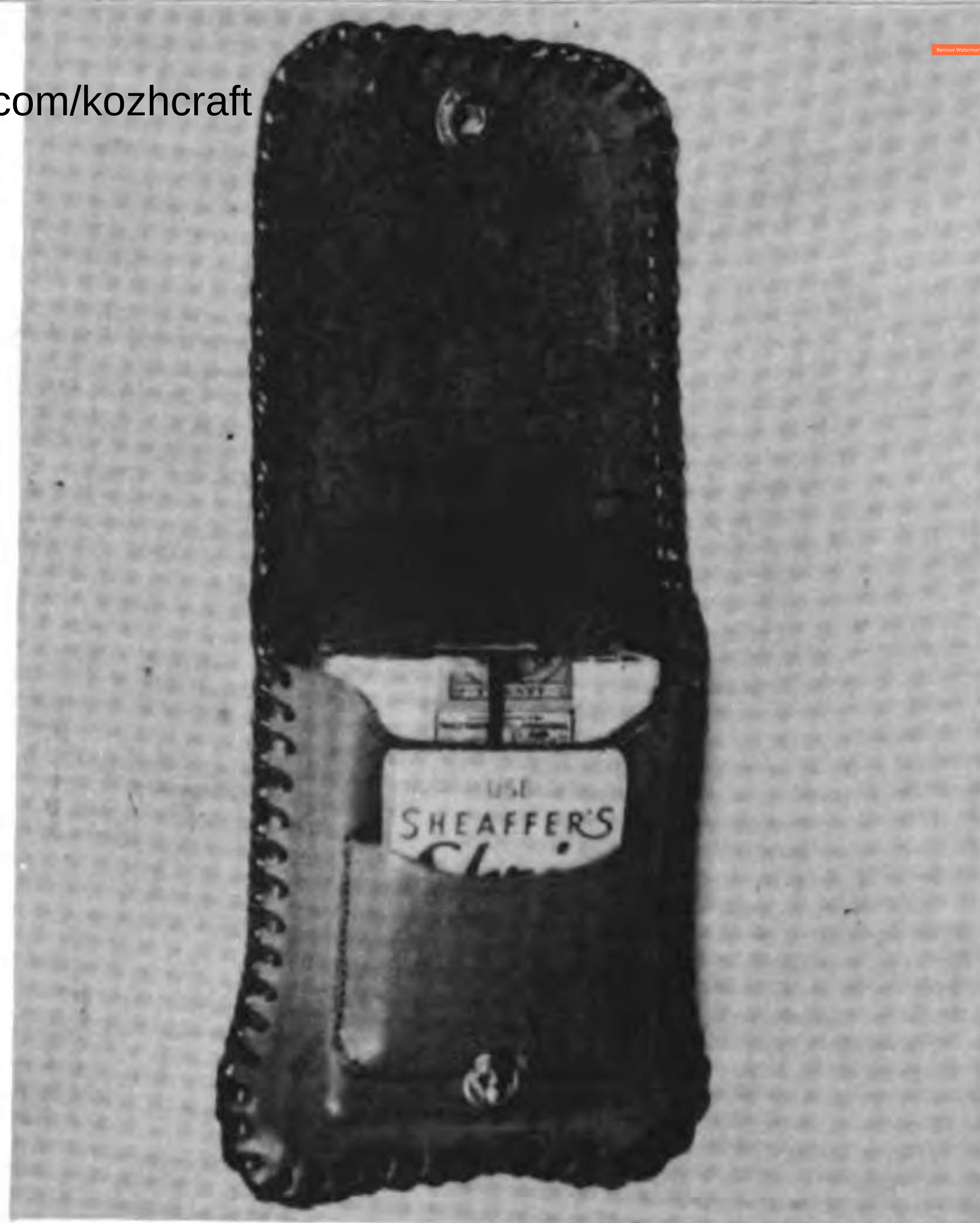
9 CIGARETTE CASE

This is one of the many types of cigarette cases that may be made. The one shown in Fig. 251 has proved popular because it holds both cigarettes and matches and when buttoned, the flap will stay secure. The process

of stretching the case to assure proper fit for the pack should not be overlooked. Once stretched, the case will keep its form permanently. Tooling calfskin or mottled steerhide of the 2 or 3 ounce weight is suggested.

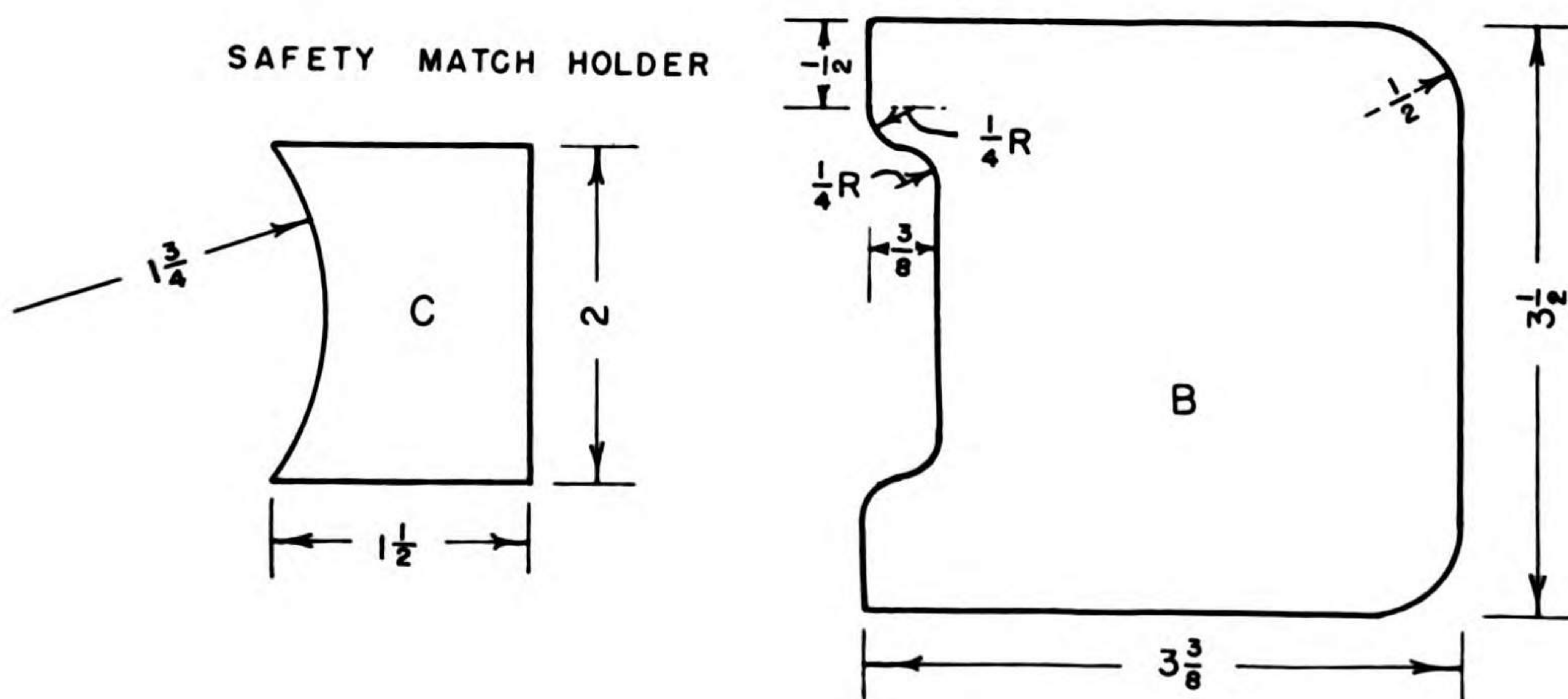
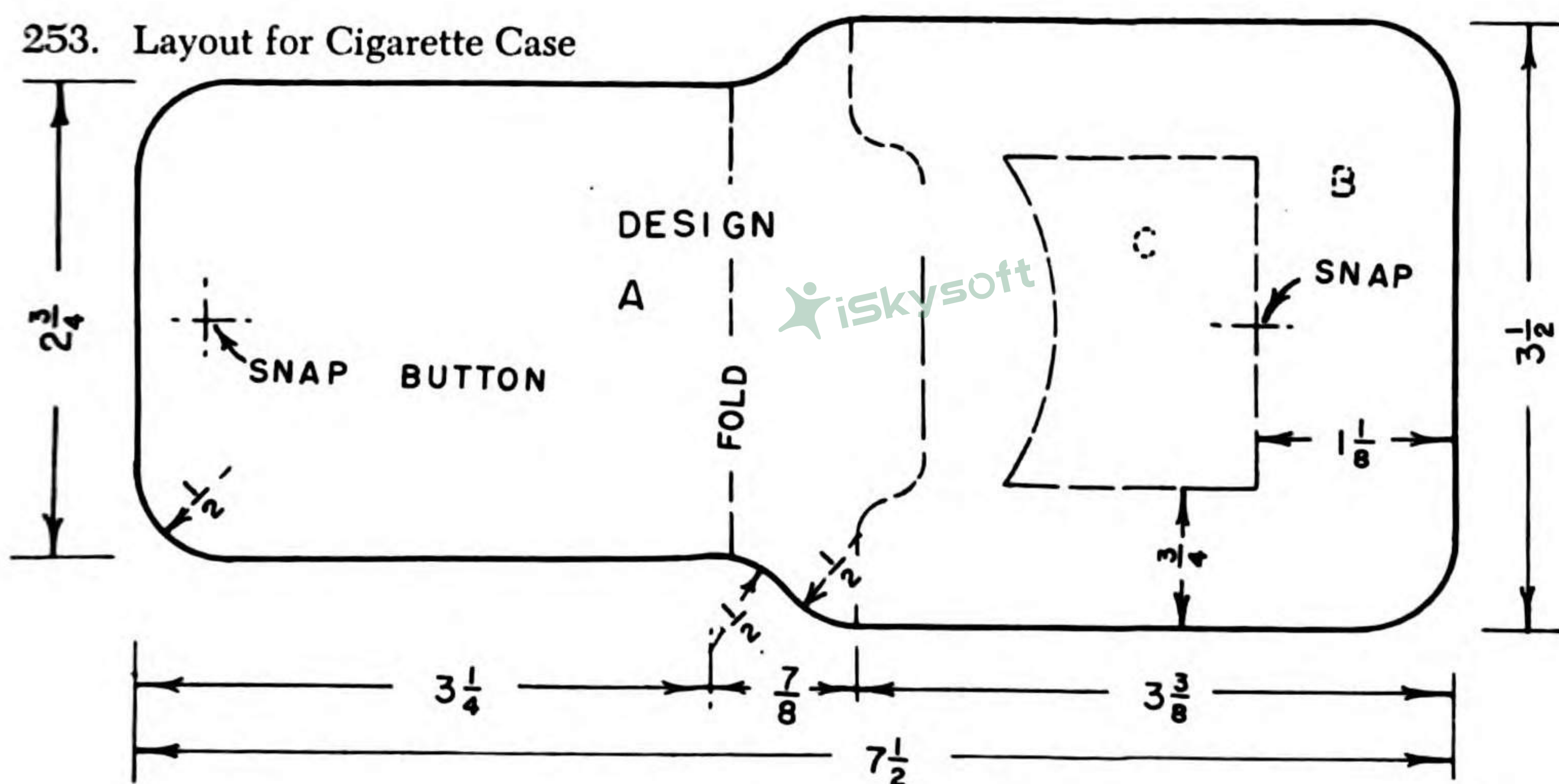


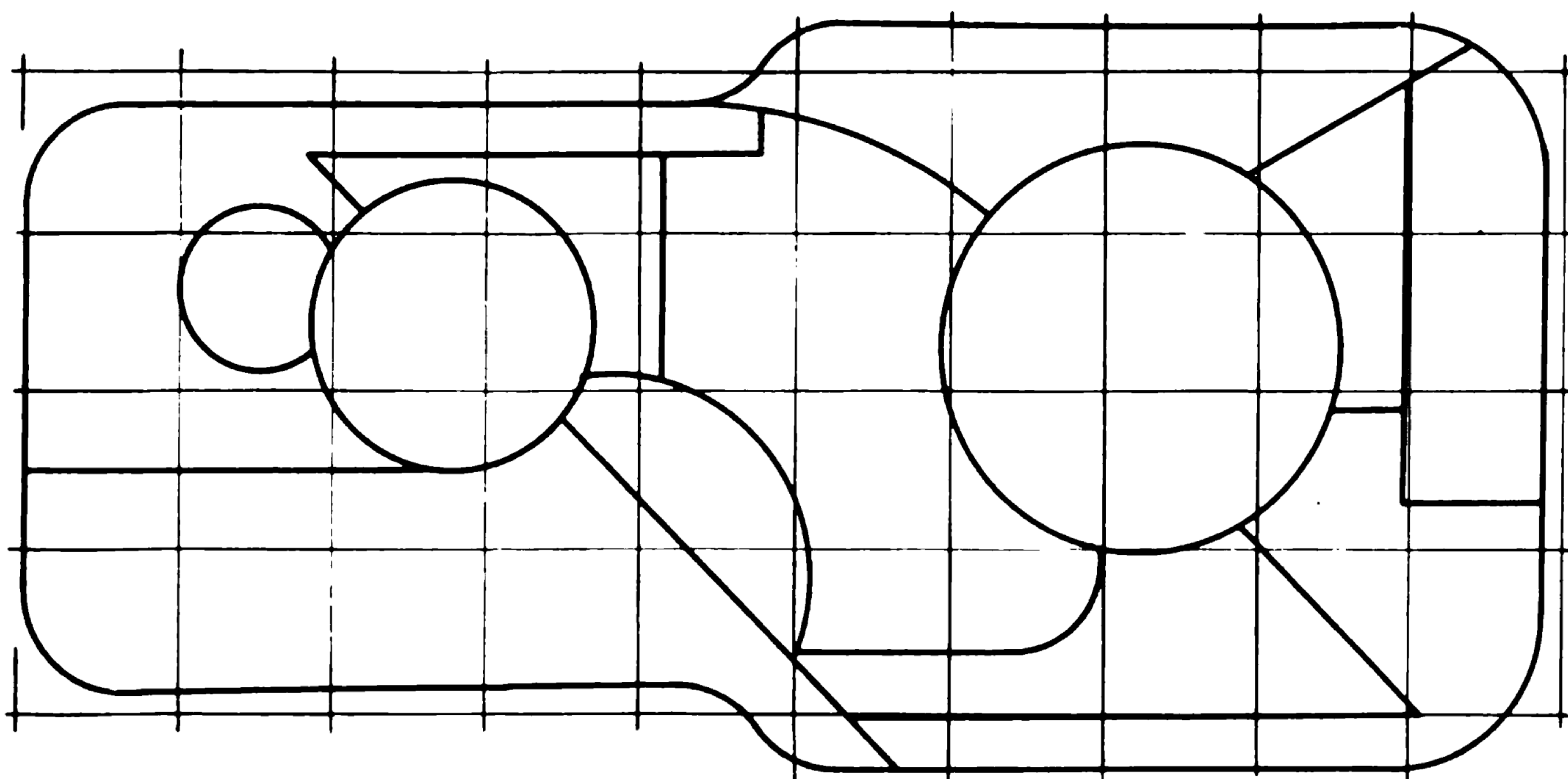
251. Cigarette Case



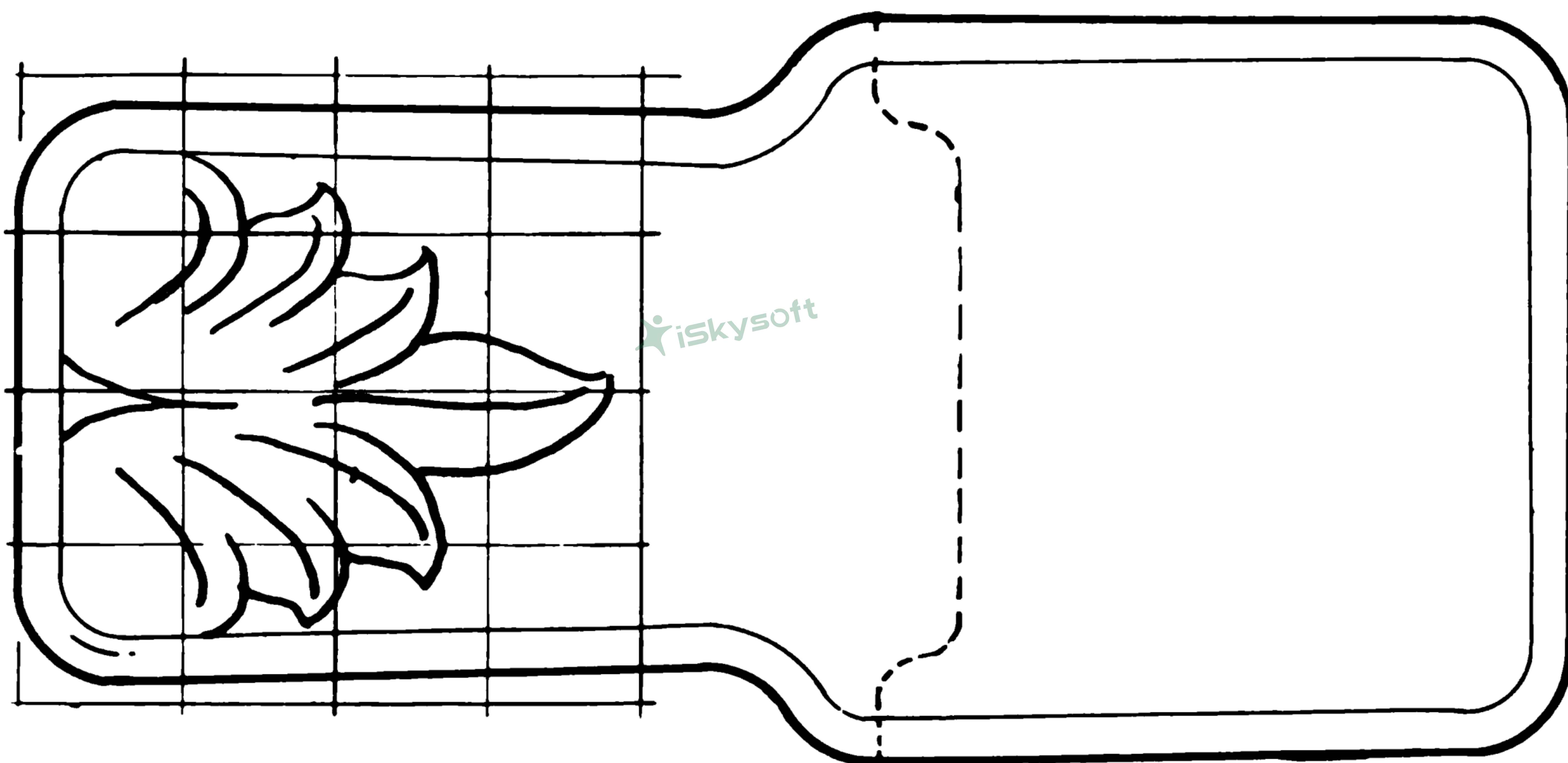
252. Cigarette Case, Open

253. Layout for Cigarette Case





$\frac{3}{4}$ IN. SQUARES



254. Designs for Cigarette Case

Procedure

1. Draw and cut out the patterns. See Fig. 253 for dimensions. It will be necessary to alter some of the dimensions for the new larger "Kingsize" packets.
2. Place the patterns on the finished side of the leather and mark around them. Unit 5.
3. Cut out the leather pieces. Unit 6.
4. Select or create a design. See Fig. 254.
5. Moisten the reverse (flesh) side of the cover. Unit 7.
6. Transfer the design to the cover. Unit 8.
7. Tool the selected design on the cover. Unit 9.
8. Skive the inside edges of piece c. Unit 13.
9. Color the edges of piece c. Unit 28.
10. Apply rubber cement on the skived edges of piece c, and on the face side of piece b where c is to be located.
11. Press match holder c firmly to piece b. Unit 15.

12. Sew c to piece B. Unit 16.
13. Skive the inside edges of pieces A and B where they are to be fastened. Unit 13.
14. Apply rubber cement on the skived edges and press B firmly to cover A to form the pocket. Unit 15.
15. Color the edges. Unit 28.
16. Punch holes or make slits for edge lacing. Unit 17.
17. Lace the edges. Unit 21.

18. Moisten the inside of the large pocket slightly, and stretch the case with a wooden block a little larger than the cigarette pack. Edges of the block should be rounded. Unit 27.

19. After the case has dried thoroughly, mark, punch, and assemble the snap button. Unit 24.

20. Clean the leather and apply a suitable finish. Unit 28.

10 LEAF DESIGN LADIES' BELT

The leaf design ladies' belt, Fig. 225, is a relatively inexpensive and simple dress accessory that offers much in design, color, and usefulness. Interest can be heightened by cutting each leaf pattern from a different color and type of leather. Four ounce weight calfskin or steerhide is the most suitable so that each leaf will remain firm and sturdy.

Procedure

1. Draw and cut out the patterns. Unit 4. See Fig. 256 for dimensions.

2. Place the pattern on the smooth side of the leather and mark around it. Unit 5.

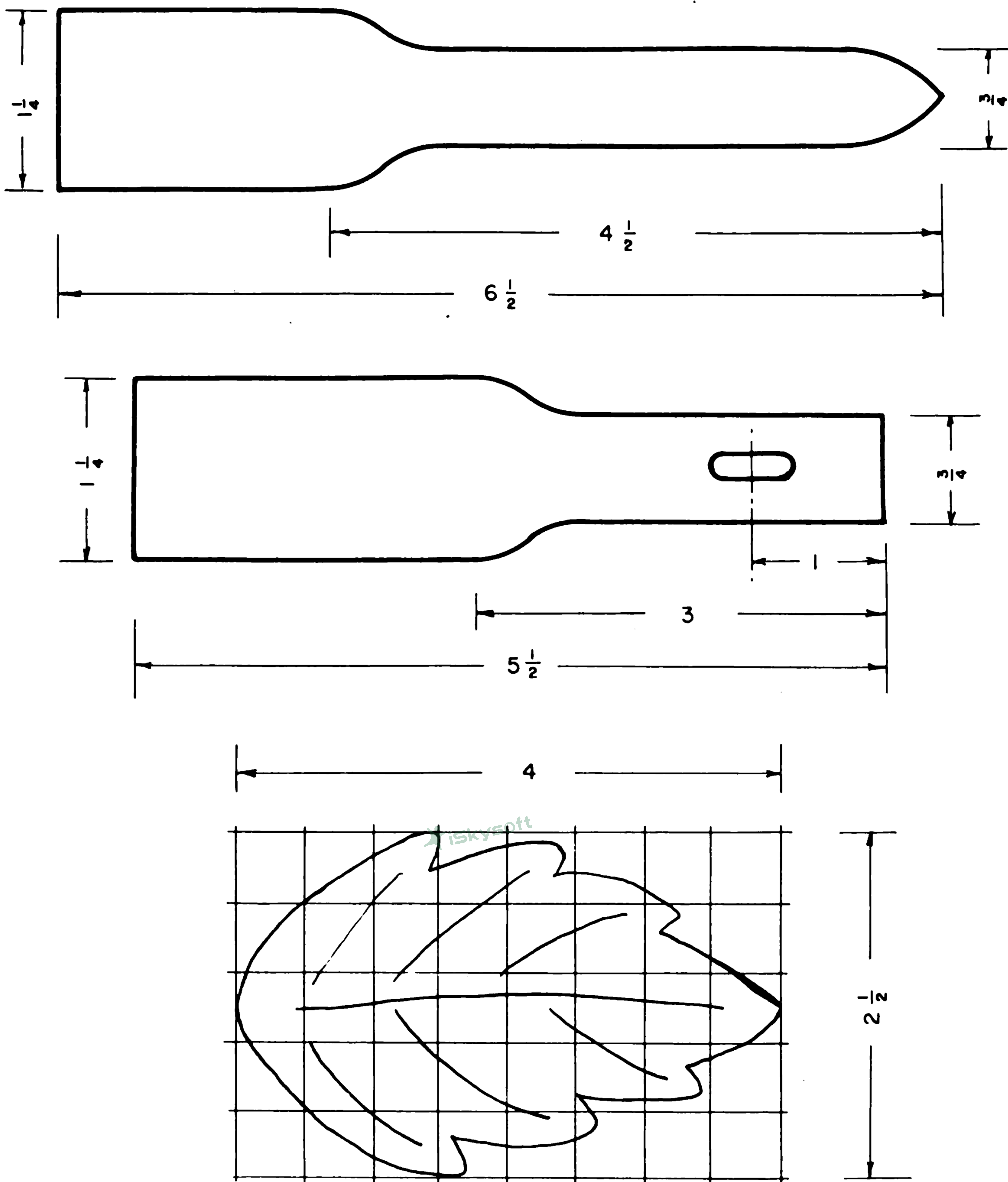
3. Cut out the parts. Unit 6.

4. Prepare the leather for tooling. Unit 7.

5. Tool the leaf vein lines firmly

255. Leaf Design Ladies' Belt





$\frac{1}{2}$ IN. SQUARES
256. Layout and Design for Leaf Design
Ladies' Belt

into the leaf pieces. Unit 9. Refer to Fig. 256.

6. Crease the edges of the buckle and the tongue pieces. Unit 14.

7. Punch holes and fasten the buckle in place with an eyelet. Unit 23.

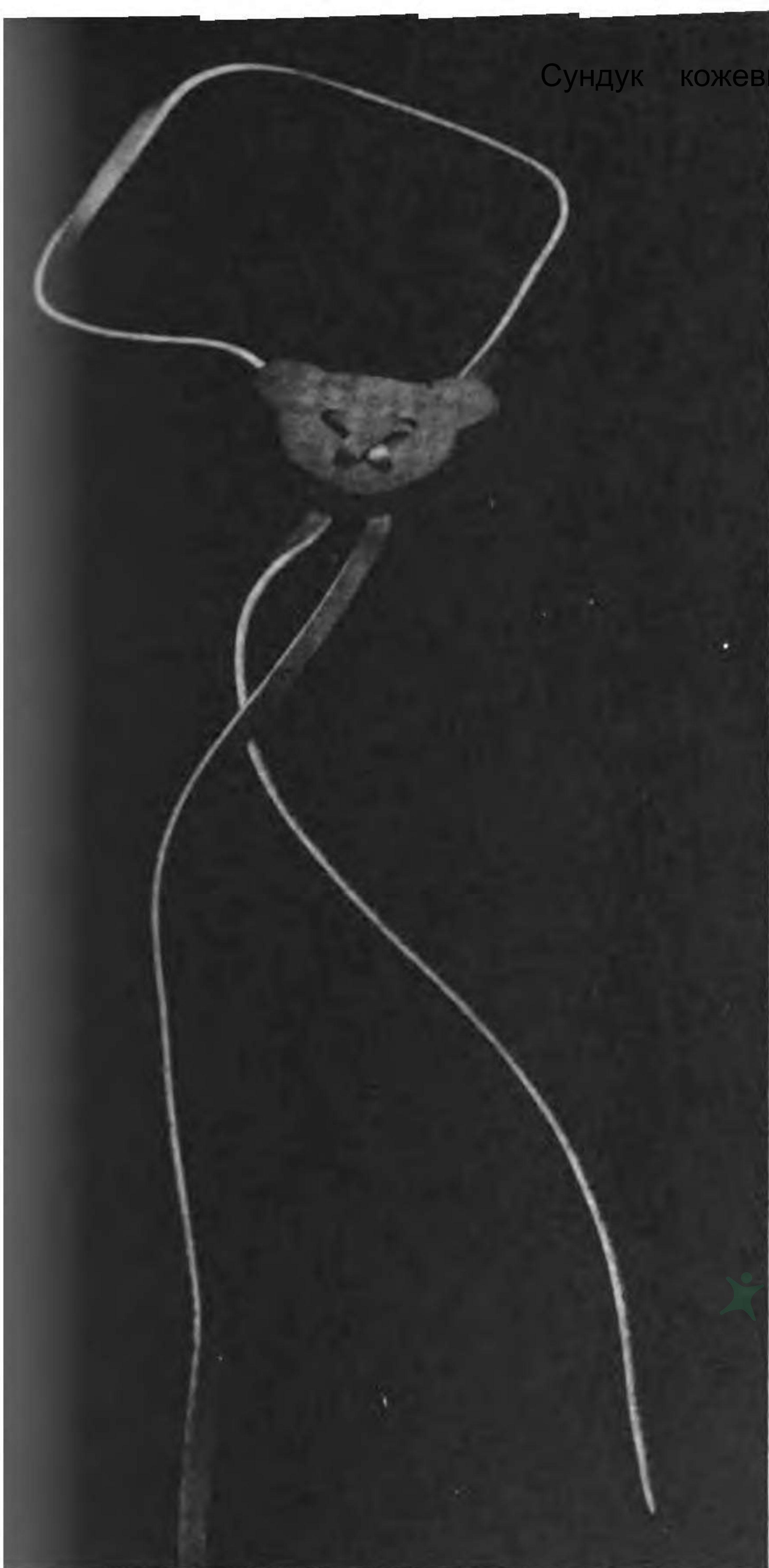
8. Apply rubber cement to all pieces where they will overlap, and press

firmly in position. Unit 15.

9. Sew all parts together with a machine as indicated in Fig. 255. See Unit 16.

10. Punch holes in the tongue for proper belt adjustment. Unit 22.

11. Clean the belt and apply a suitable wax or lacquer finish. Unit 28.



257. Western Style Necktie

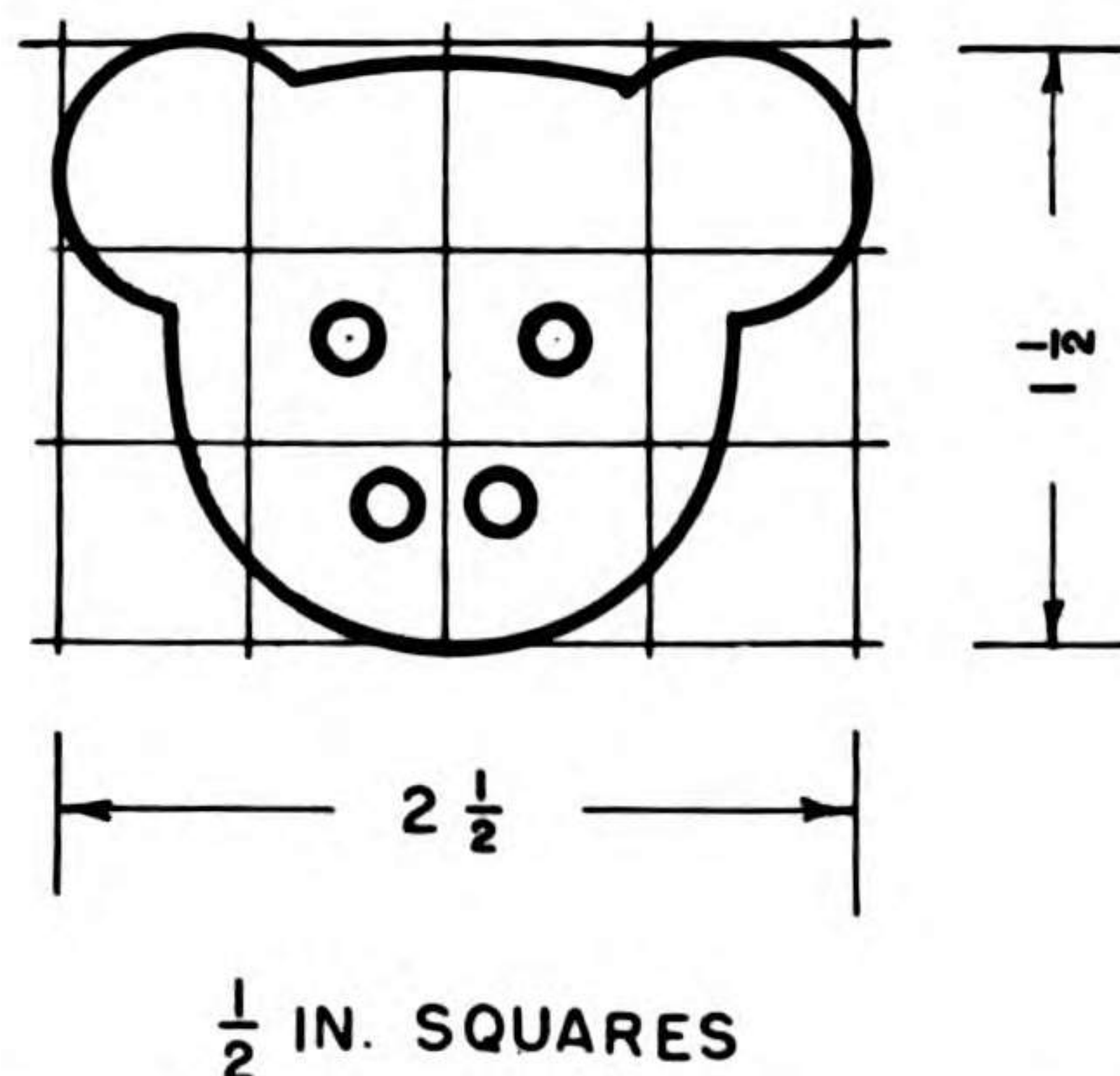
This is a sports wear item that will appeal to those persons liking Western attire or accessories, Fig. 257. The collar piece can be cut from a piece of scrap 8 to 10 ounce cowhide, and an individual design may be applied by

11 WESTERN STYLE NECKTIE

stamping or carving. The 40 inch length tie strap can be cut from 4 or 5 ounce vegetable tanned calfskin or steerhide.

Procedure

1. Make a pattern of the collar piece. See Fig. 258.
2. Lay the pattern on a piece of cowhide and mark.
3. Cut out the collar piece. Unit 6.
4. Mark and punch the holes in the collar piece. Unit 22.
5. If carving or stamping is to be done, prepare the leather for carving. Unit 7.
6. Carve or stamp, as desired. Units 10 or 12.
7. Cut the tie strap. Unit 6.
8. Clean and finish the leather as desired. Unit 28.
9. Insert the tie strap as shown in Fig. 257.

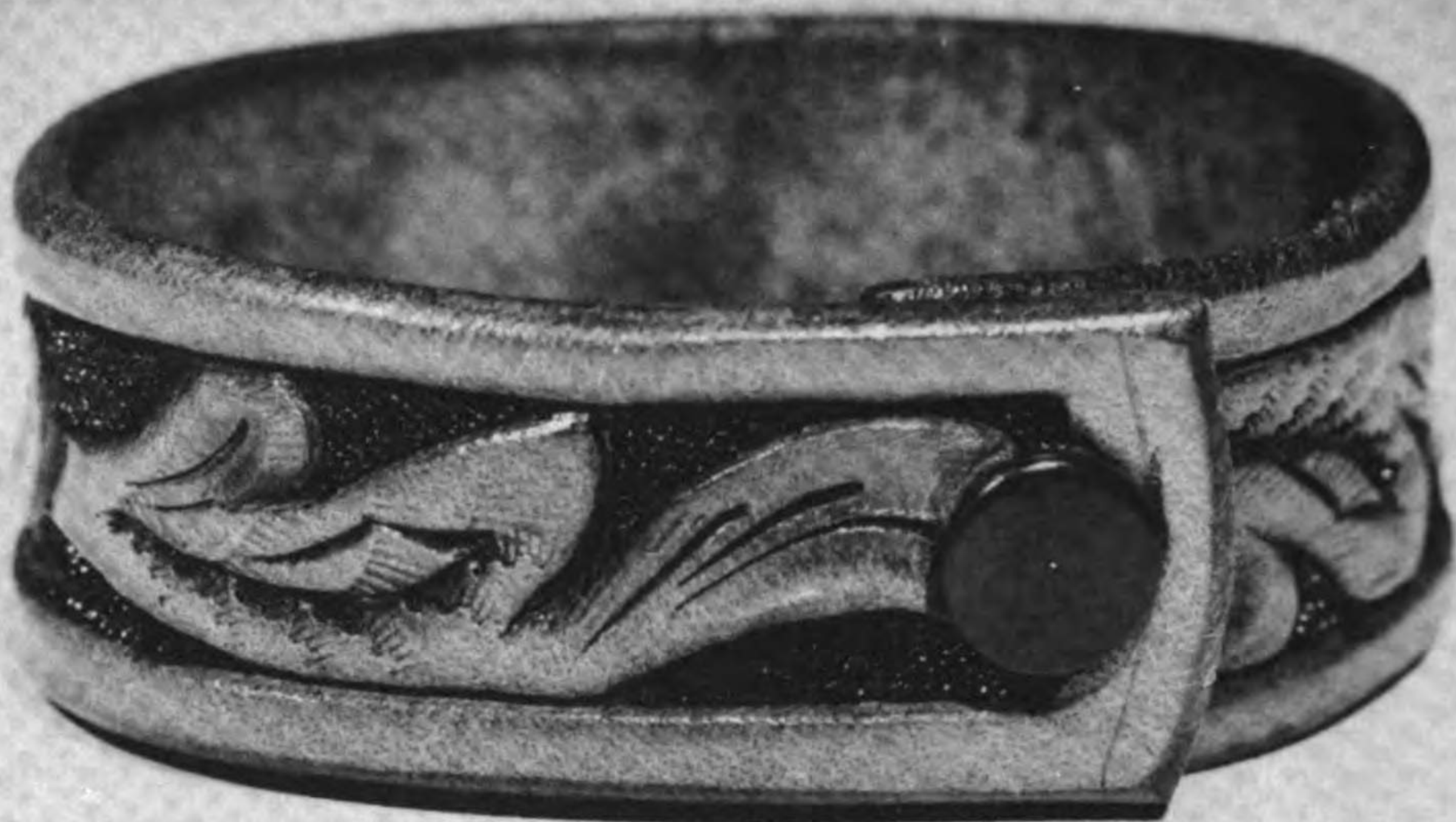


258. Layout for Western Style Necktie

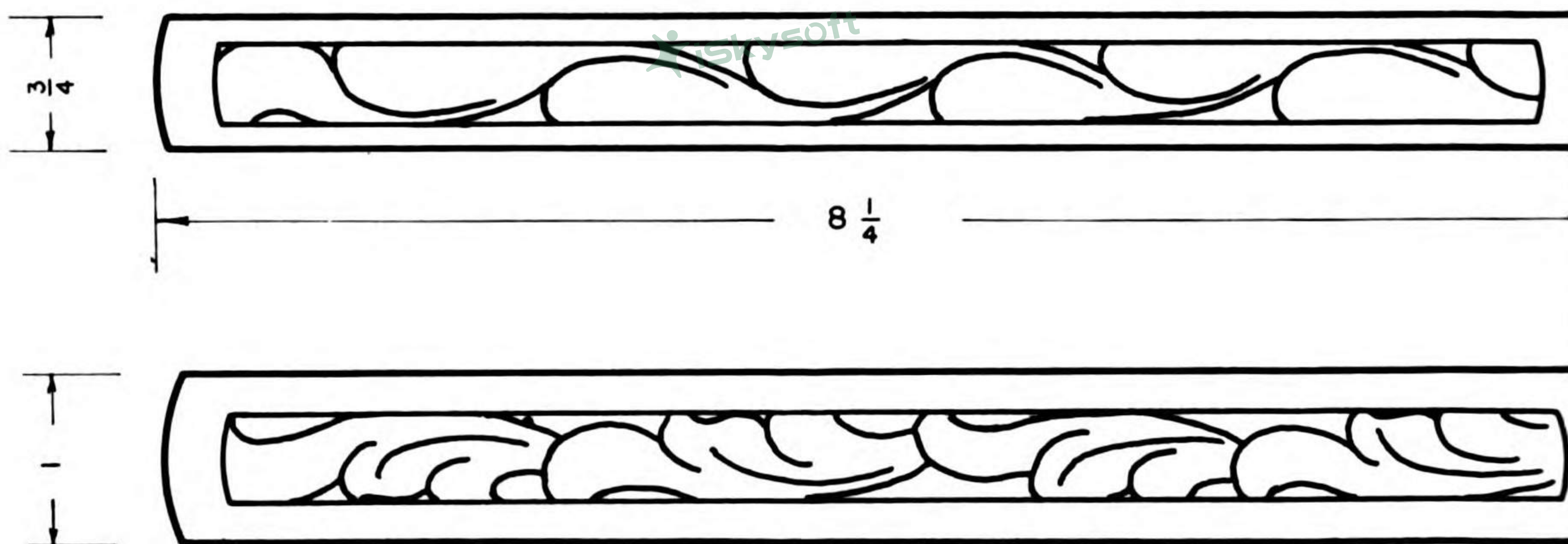
12 WRISTLET

A wrist band of this type offers an opportunity to the beginner who wants to try carving on an inexpensive piece of leather. The one shown in Fig. 259

has the background dyed to accentuate the design. Seven or eight ounce strap leather, $\frac{3}{4}$ inch or 1 inch wide by 8 inches long, is the only piece required.



259. Wristlet



260. Layout and Designs for Wristlet

Procedure

1. Mark and lay out the wrist band directly on the piece of cowhide. Unit 5. See Fig. 260.

2. Cut out the piece with a knife or draw gauge. Unit 6.

3. Select or create the desired design. See Fig. 260.

4. Moisten the leather for carving. Unit 7.

5. Transfer the design. Unit 8.

6. Carve the design on the band. Unit 12.

7. Trim the edges slightly. Unit 13.

8. Locate, punch holes, and assemble the snap button. Units 22 and 24.

9. Clean and apply a suitable finish. Unit 28. Figure 259 shows the attractiveness of the wristlet with the background dyed.

13 BILLFOLDS

Billfolds, Figs. 261, 262, 263, and 264, are probably the most popular projects for leatherworkers. They seem to be suitable gifts for all occasions, and embody many essential processes in the making. Since they are popular, a wide selection of designs and styles is presented. Personal preference will determine the most suitable tooled or carved surface design, as well as the pocket arrangement. The decorative carving process for a billfold is illustrated and described in Unit 8, Figs.

261. Billfold, Front and Interior Views



iskysoft



262. Ideas for Carved Billfold Designs

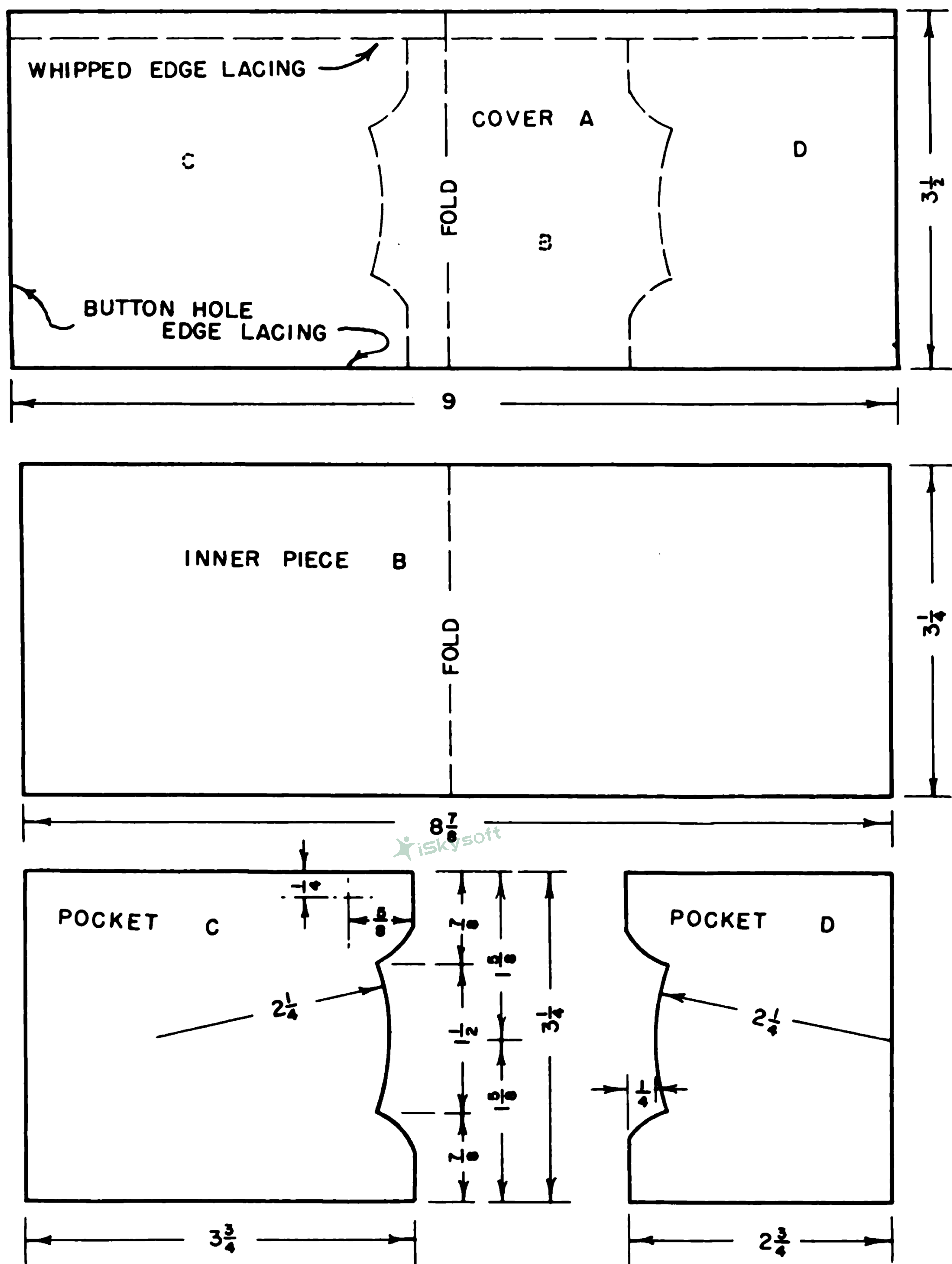


263. Ideas for Billfold Interiors

264. Front and Interior of Carved Billfold
Made by Professional Leatherworker

COURTESY TEX TAN TANNERY





265. Layout for Billfold

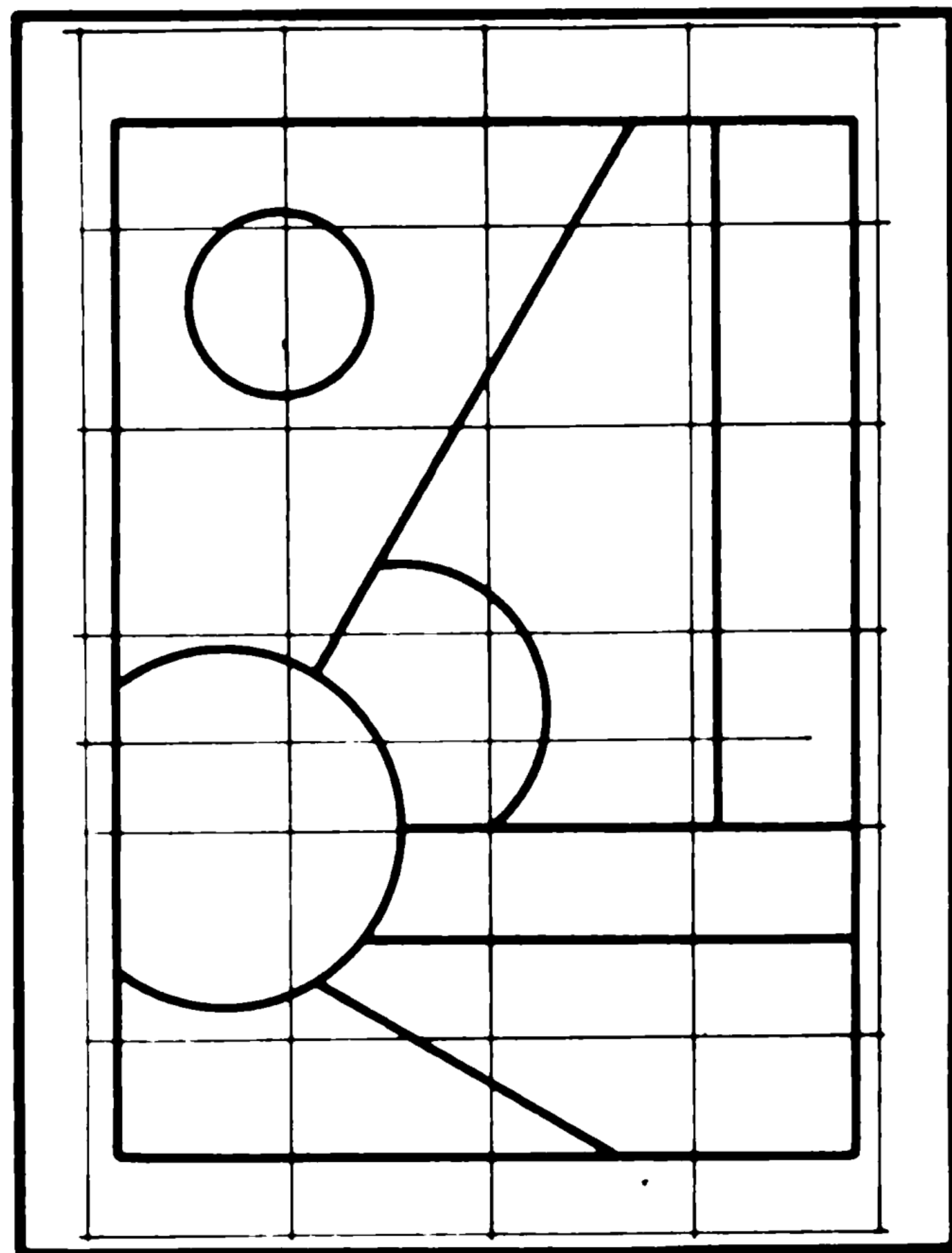
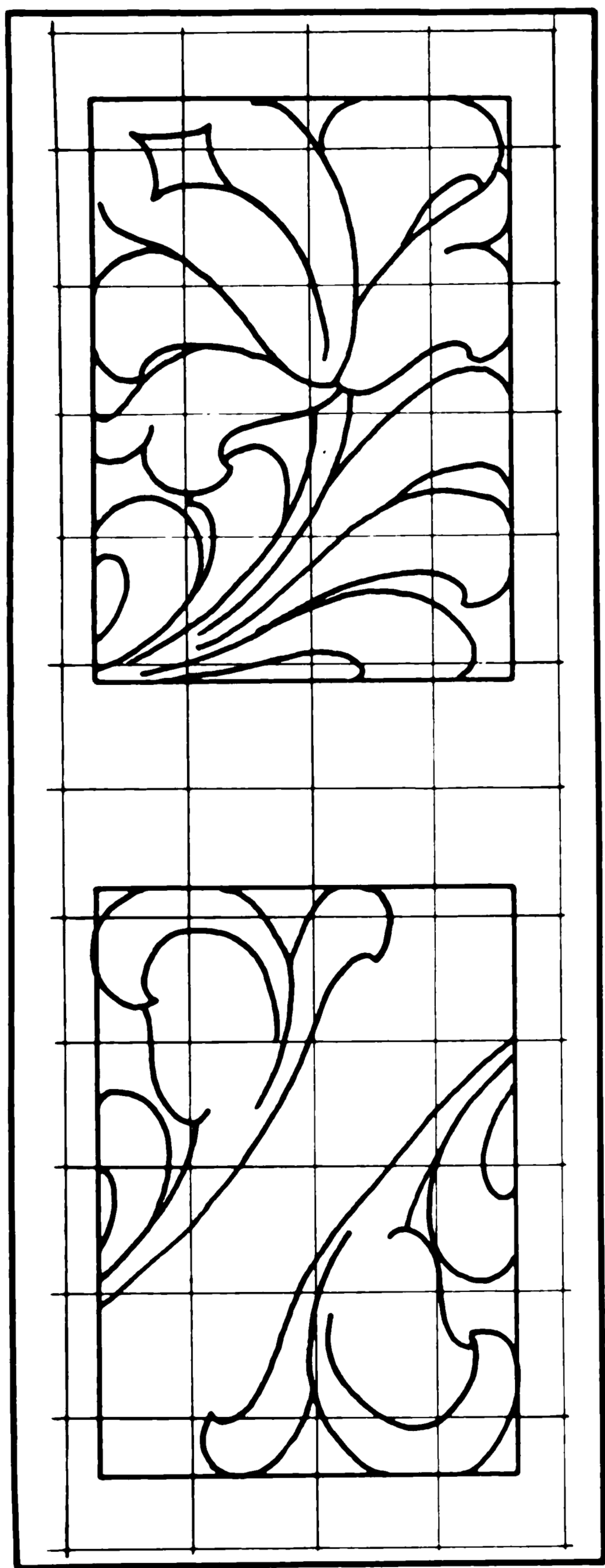
60 and 62, and Unit 12, Figs. 76 through 91.

Figure 265 is a working drawing of common measurements which may be altered to suit the individual. Two and 3-ounce calfskin or mottled steerhide is suggested for a tooled design,

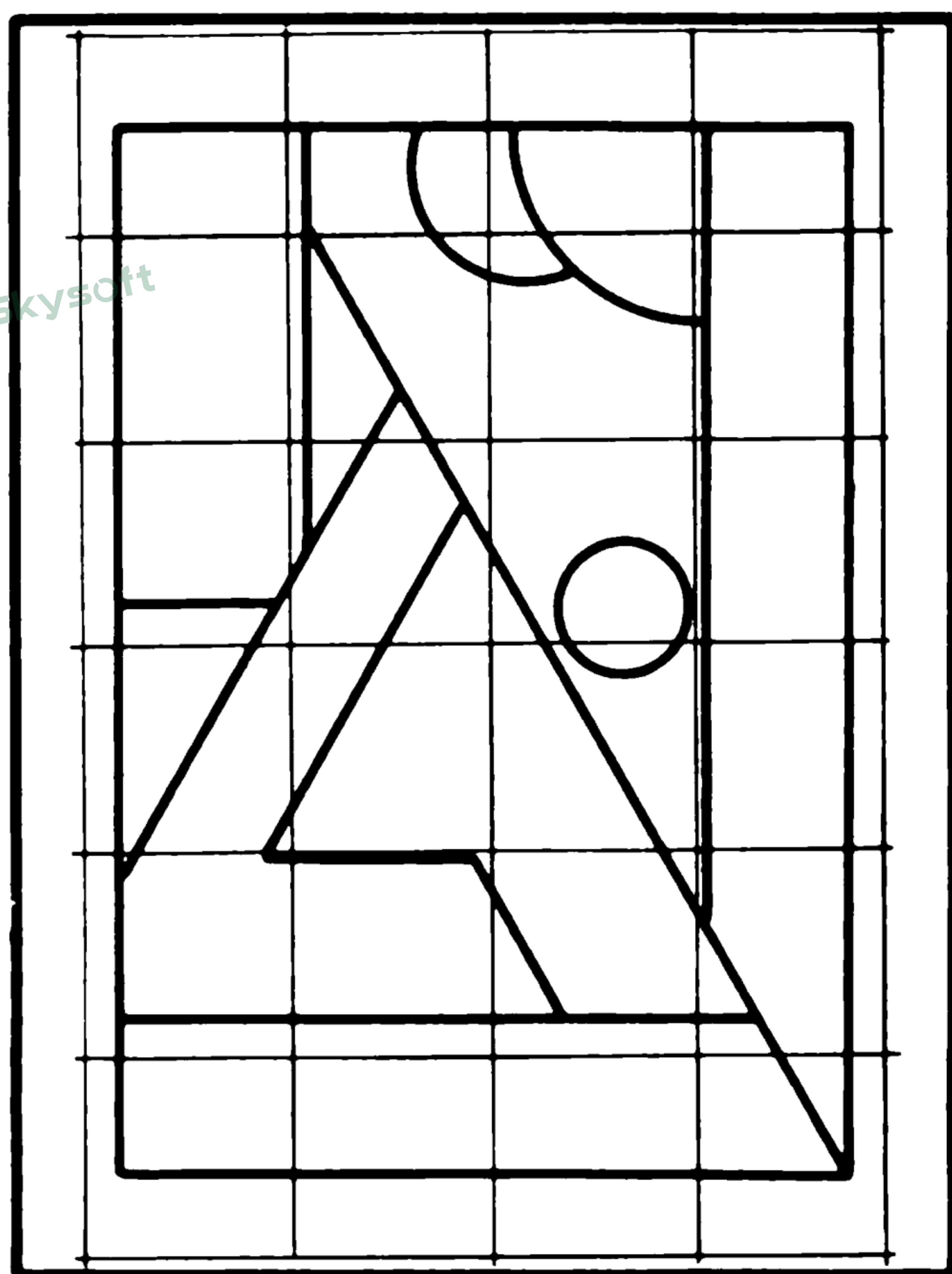
while 4 ounce calfskin or steerhide is recommended for a carved design. The pockets may be made from 2 and 3 ounce material, and the lining should be of skiver or kidskin.

Procedure

1. Draw and cut out the patterns,



$\frac{3}{4}$ IN. SQUARES



266. Designs for Billfold

or mark and lay out the measurements directly on the leather. Units 4 and 5. See Fig. 265 for suggested dimension. Pocket sizes will depend on the style.

2. Cut out all pieces. Unit 6.

3. Select or create the cover design. See Fig. 266. You should also determine if the pockets are to be tooled or

carved as shown in Fig. 263.

4. Moisten the cover piece for tooling or carving, if desired. Unit 7.

5. Transfer the design. Unit 8.

6. Tool or carve the design. Unit 9 or 12.

7. Crease the edges of the pockets which will not be laced. Unit 14.

8. Skive all edges which are to be laced. Unit 13.

9. If a lining is desired, cement it to the cover piece. Unit 15.

10. Color all edges which are not to be laced. Unit 28.

11. Apply a narrow strip of rubber cement along the edges of all pieces to be laced and fasten together. Unit 15.

12. Round the four corners slightly.

13. Punch holes or make slits for edge lacing. Unit 17.

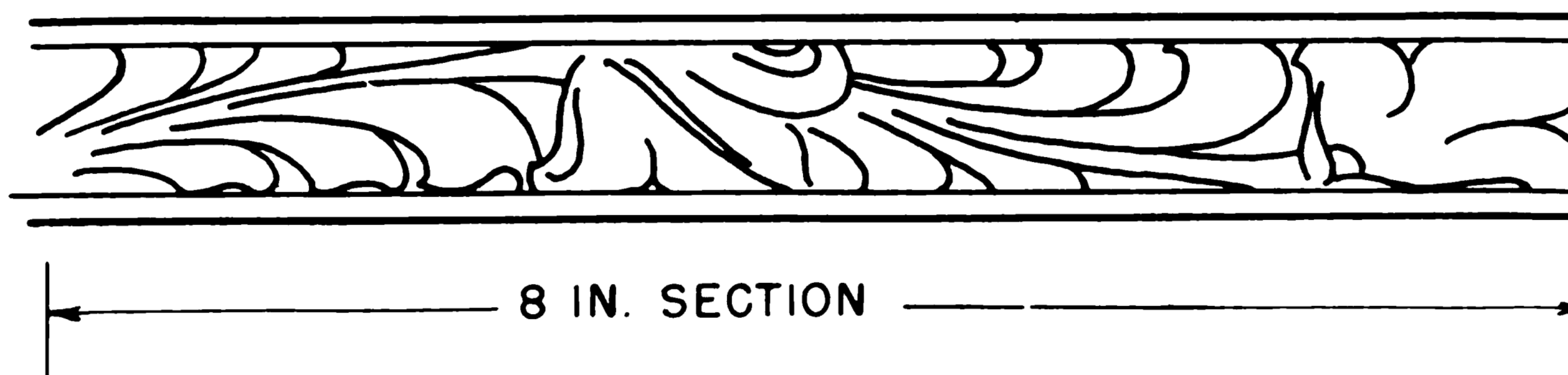
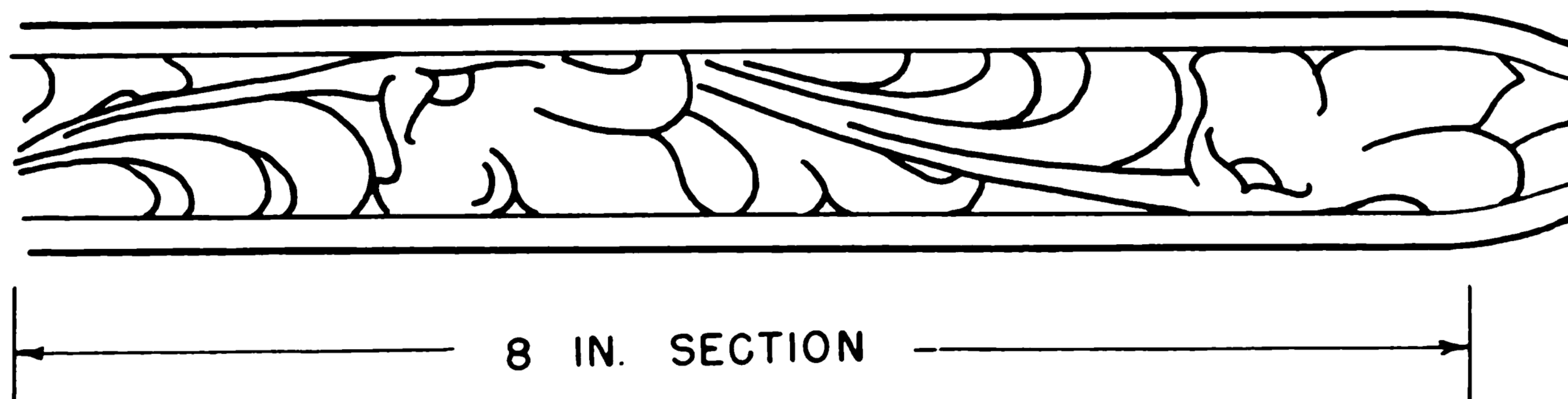
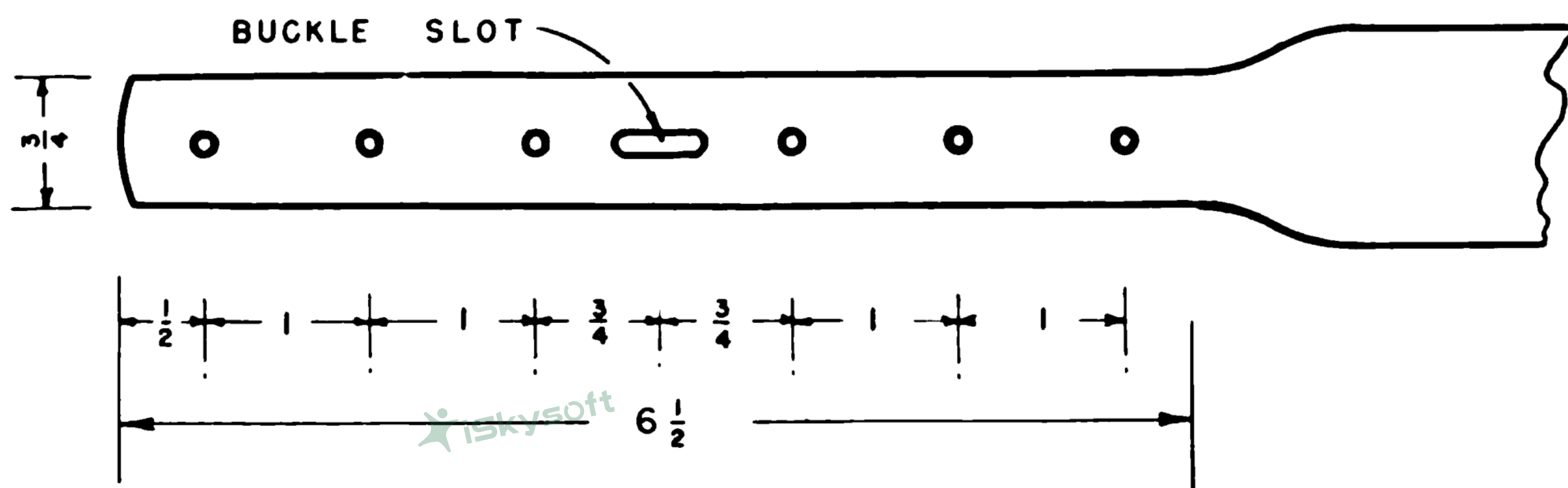
14. Lace the edges with the single or double Cordovan stitch. Unit 21.

15. Clean and apply a suitable finish. Unit 28. Coloring of the background is done before the final wax or lacquer finish is applied.

14 MEN'S BELTS

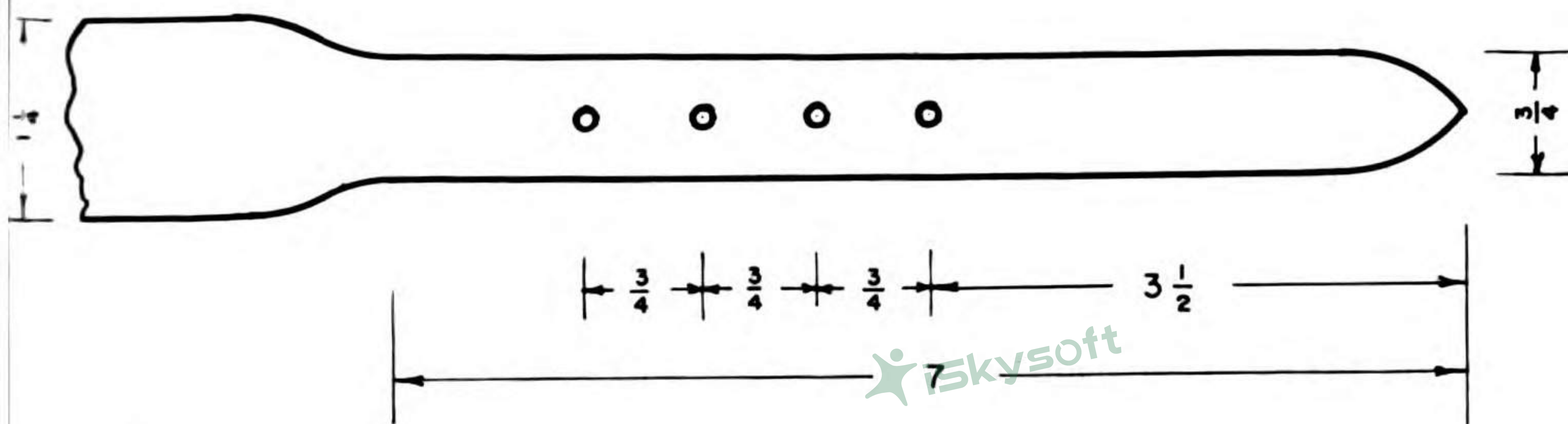
Making belts is always interesting because of the varied ornamentation and their usefulness. They may be personalized as shown in Fig. 267 with

a name or monogram. Figures 270 and 271 show two carved sections of different belts. Belt designs are usually made up of repeated sections.



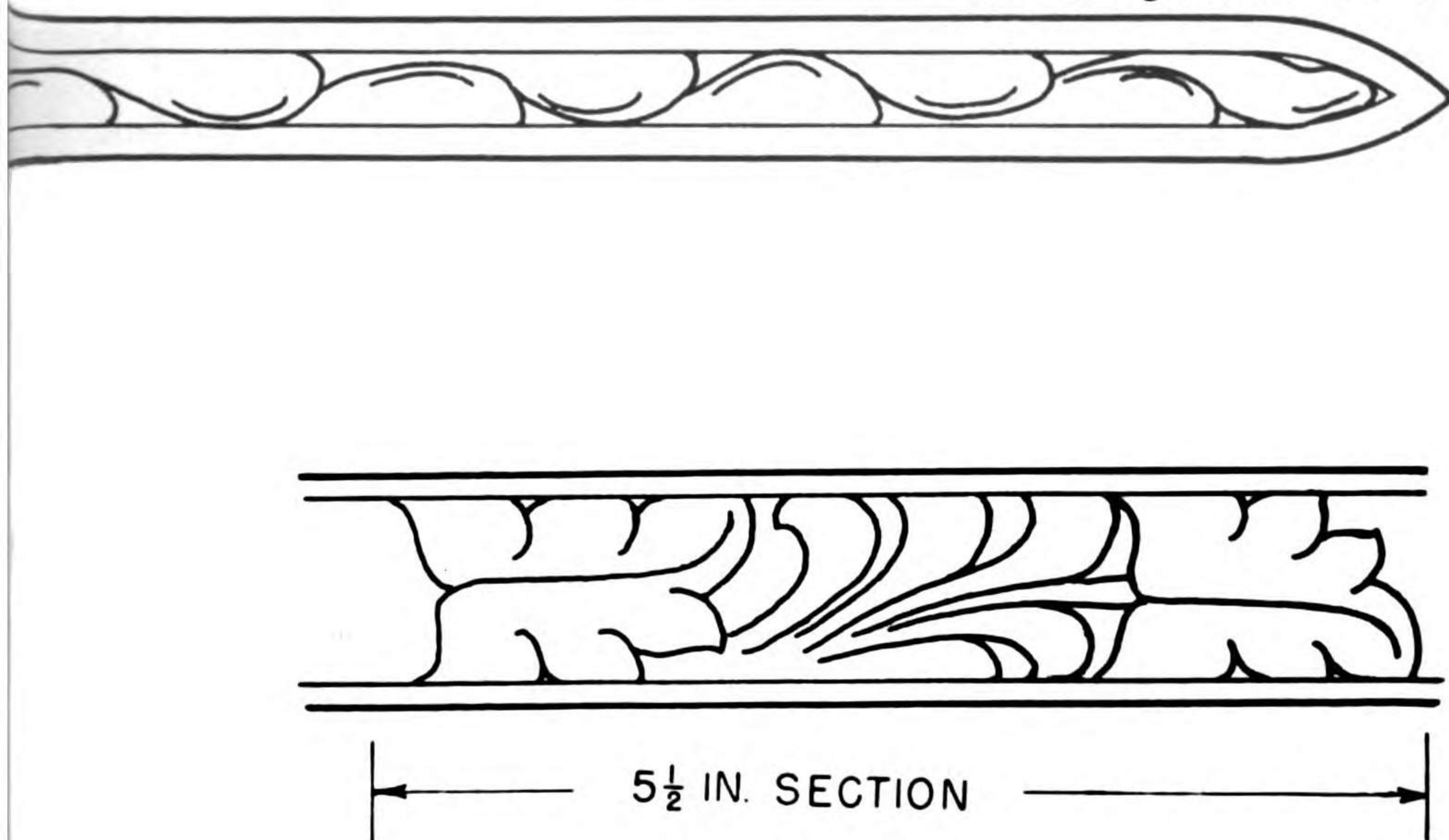


267. Carved Design Belt



268. Layout for Belt Ends

269. Design Sections for Belt



270. Carved Section of Belt



271. Another Carved Section of Belt

The measurements suggested are for the buckle and tongue ends. The remainder of the belt will be determined by the waist size of the person for whom it is intended. A total of 10 inches should be allowed beyond actual waist measurement for the tongue and buckle ends. Eight and nine ounce cowhide is sufficiently sturdy for carving.

Procedure

1. Lay out belt measurements directly on the smooth side of the cowhide. Unit 5. See Fig. 268.

2. Cut the belt strap with the draw gauge. Unit 6. The tongue and buckle ends should be cut with a sharp pointed knife.

3. Prepare the belt blank for carving. Unit 7.

4. Transfer the desired design. Unit 8. See Fig. 269.

5. Carve the design. Unit 12. See Figs. 270 and 271.

6. Trim the edges slightly. Unit 13.

7. Mark, punch holes for the buckle, and assemble the heavy duty snap button. Units 22 and 24.

8. Color the edges and burnish them. Unit 28.

9. Clean and apply a suitable finish. Unit 28.

10. Fasten the buckle set to the belt.

11. Punch the necessary holes in the tongue end for the correct waist adjustment.

15 LETTER HOLDER

A letter holder is a desk accessory which uses a metal form around which the leather is laced, Fig. 272. The surface design may be tooled or carved. Four ounce tooling calfskin or mottled steerhide is an ideal weight.

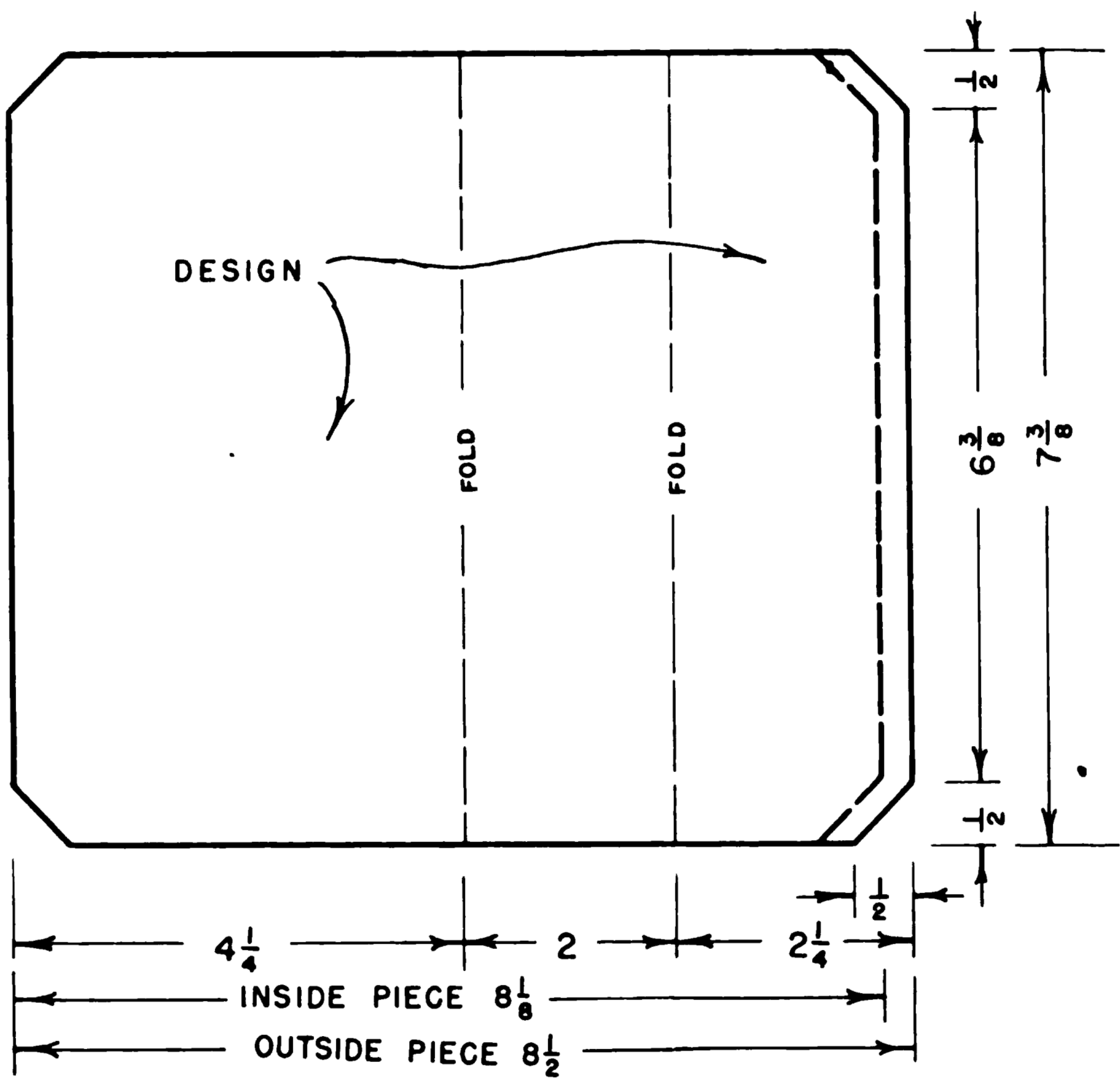
Procedure

1. Mark and lay out the patterns for

118

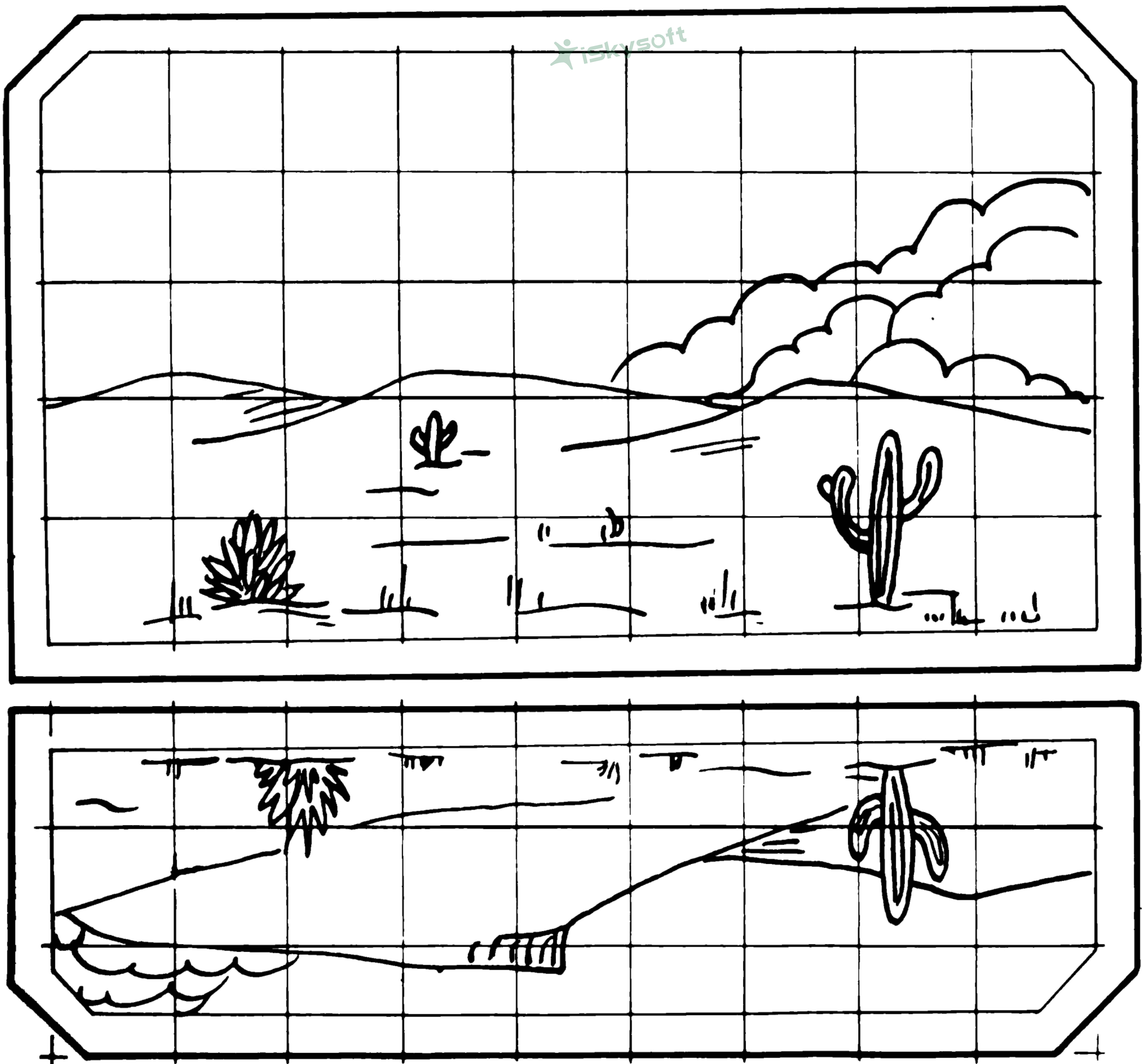
272. Letter Holder

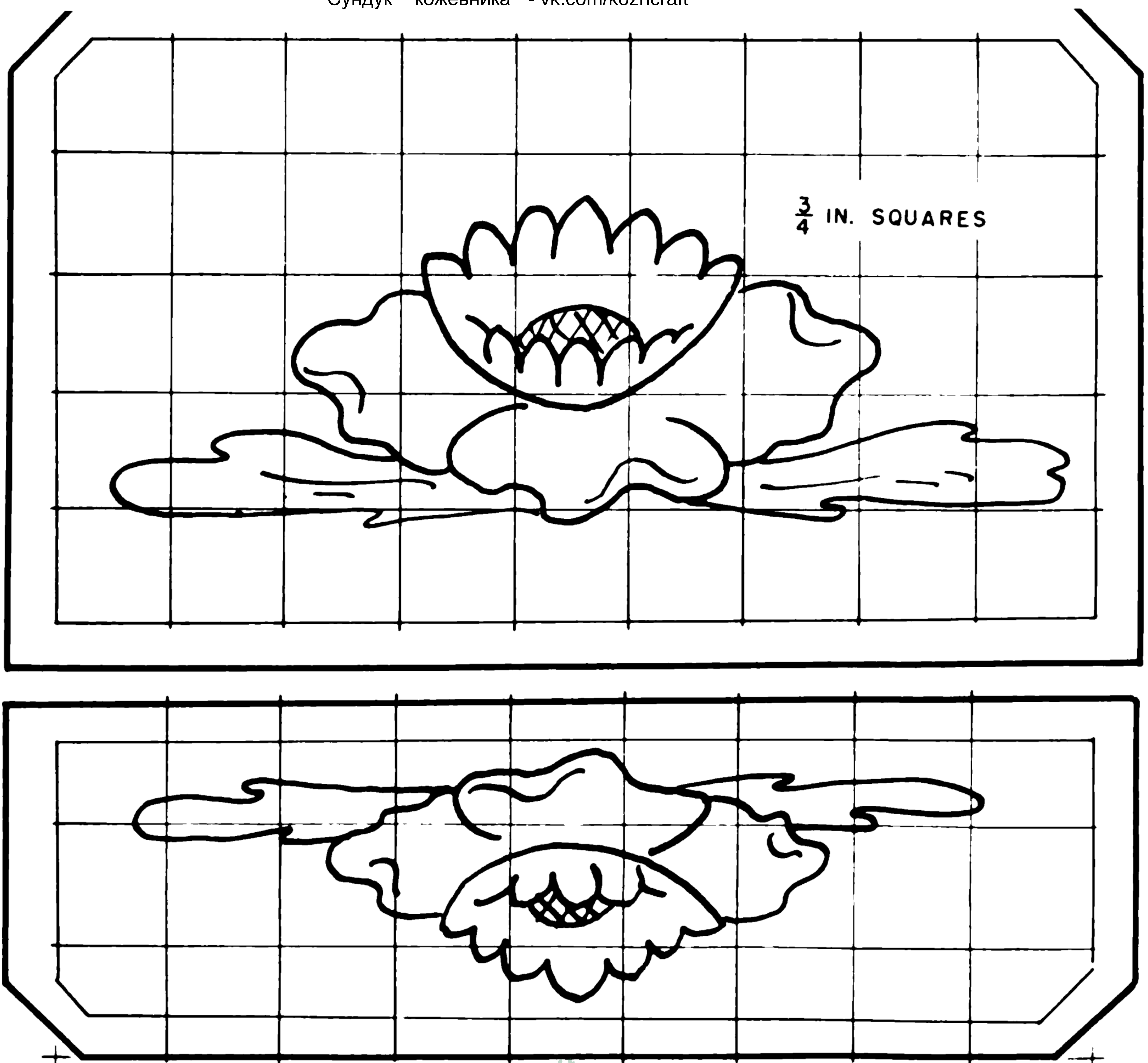




273. Layout for Letter Holder

274A. Designs for Letter Holder





274B. Designs for Letter Holder

the inside and outside pieces on the finished or smooth side of the leather. Unit 5. See Fig. 273.

2. Cut out the pieces with a scissors. Unit 6.

3. Select or create a design. See Figs. 274A and 274B.

4. Prepare the leather for tooling or carving. Unit 7.

5. Transfer the design to the cover piece. Unit 8.

6. Tool or carve the selected design on the cover. Unit 9 or 12.

7. Skive the inside edges of both pieces. Unit 13.

8. Apply rubber cement to the skived edges. Unit 15.

9. Assemble the pieces over the metal form and press the cemented edges together as indicated in Unit 15, Figs. 103 and 104.

10. Color the edges. Unit 28.

11. Punch holes or make slits for edge lacing. Unit 17.

12. Lace the edges. Units 20 or 21.

13. Clean the leather and apply a suitable finish. Unit 28.

16 BOOK ENDS

The book ends shown in Fig. 275 use an 18 or 20 gauge sheet metal form around which the leather is laced. The leather covering may be tooled, stamped, or carved. Mottled steerhide

creates a very interesting surface texture on which to tool.

The process of raising certain parts of the design is referred to as "embossing" or "repoussé" modeling. Padding

the metal form with a thin layer of cotton gives an upholstered appearance and adds greatly to the attractiveness and value of the article. *Note that the procedure is given for one book end only.*

Procedure

1. Mark and lay out the patterns for the inside and outside pieces on the finished or smooth side of 4 ounce leather. Unit 5. See Fig. 276.

2. Cut out the pieces with a scissors.

3. Select or create a design. See Figs. 277A and 277B.

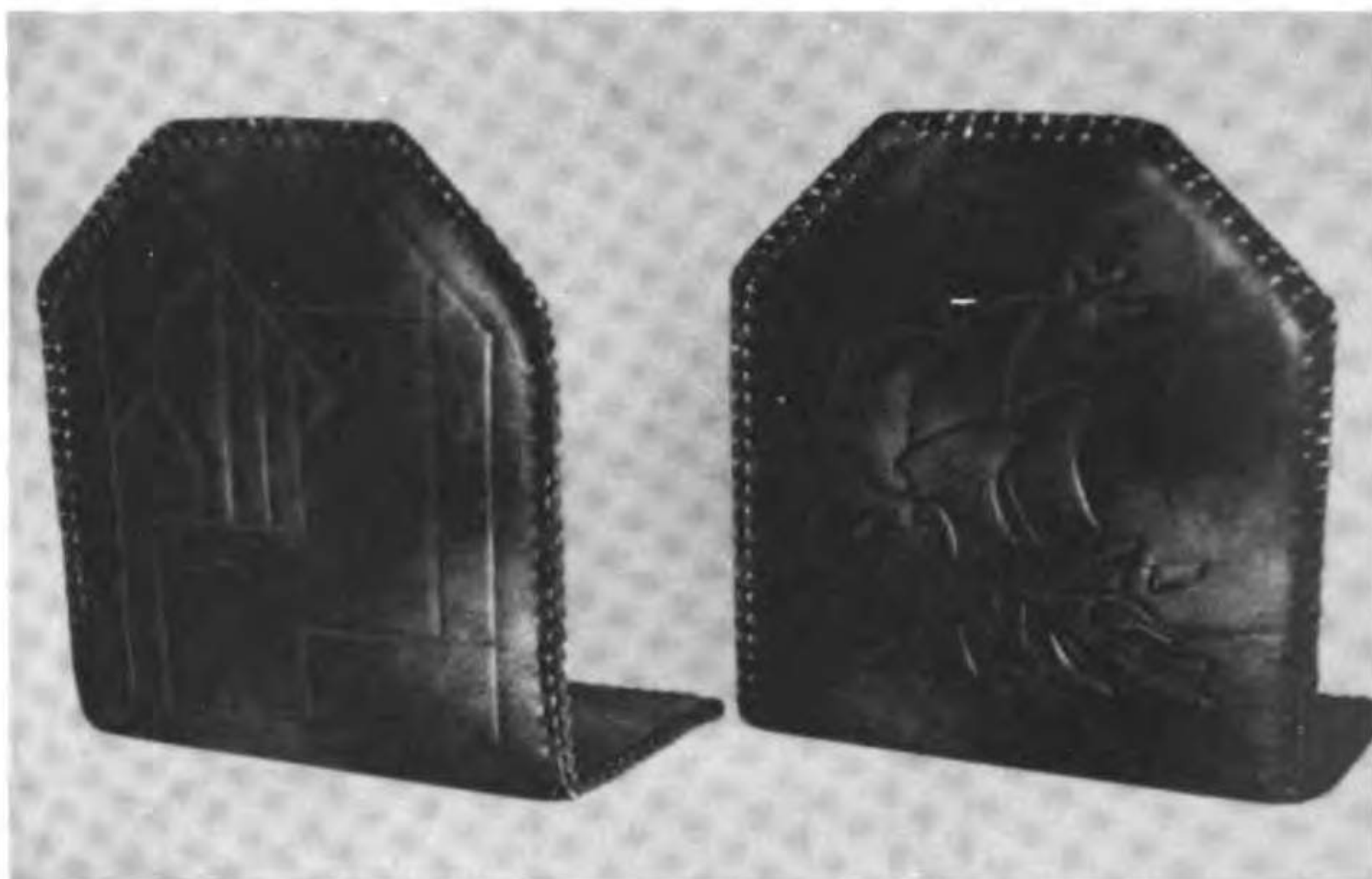
4. Moisten the leather for tooling or carving. Unit 7.

5. Transfer the design to the cover piece. Unit 8.

6. Tool or carve the selected design on the cover. Unit 9 or 12. If certain parts of the design are embossed, it is suggested that you refer to Unit 11, Figs. 71 through 74.

7. Apply rubber cement to the face side of the metal form. Unit 15, Fig. 101.

8. Place the metal form on a thin,



275. Book Ends

smooth sheet of cotton, and allow it to dry for a few minutes. Unit 15, Fig. 102.

9. Trim the surplus cotton from the edges of the metal form with a scissors.

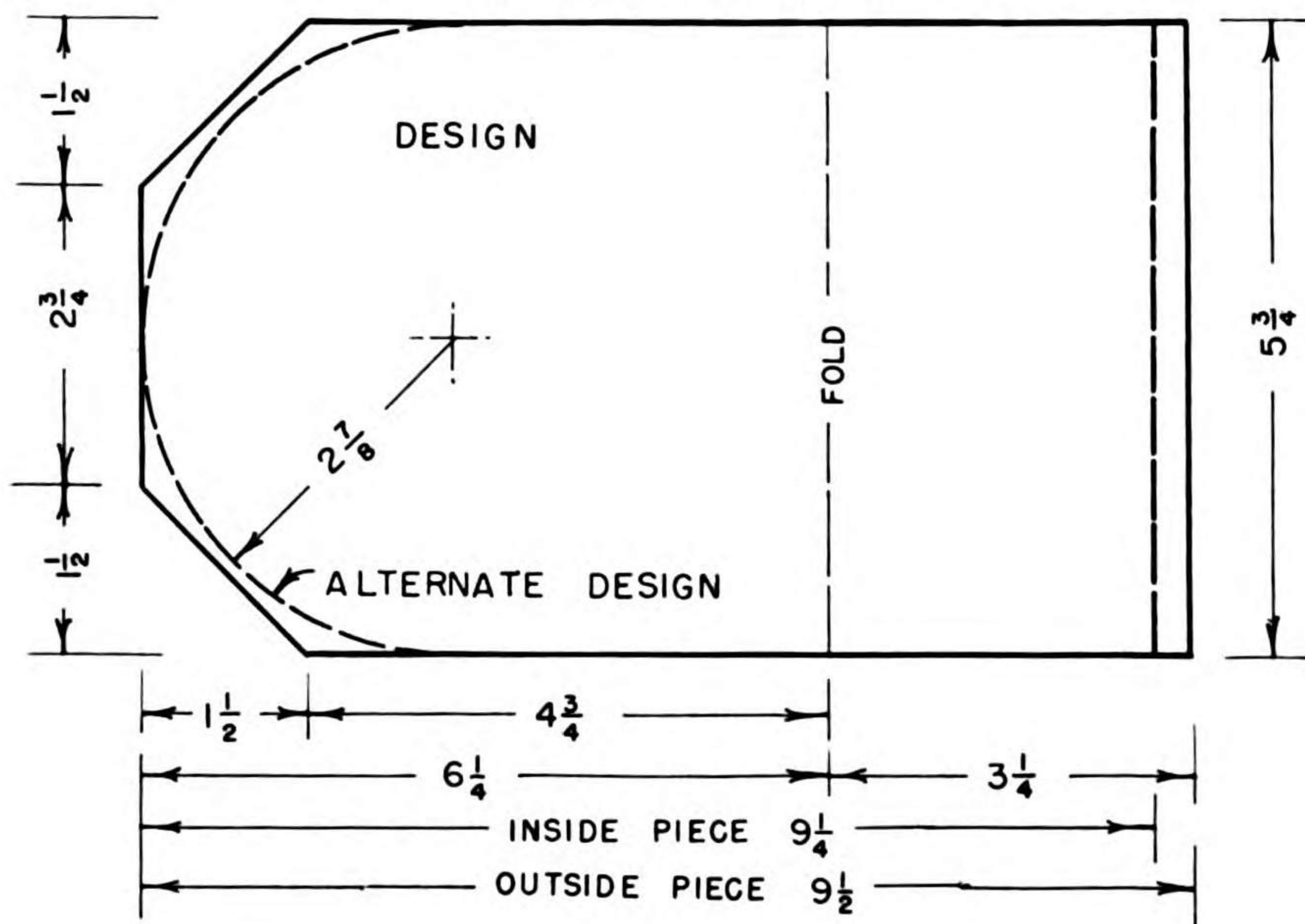
10. Skive the inside edges of both pieces of leather. Unit 13.

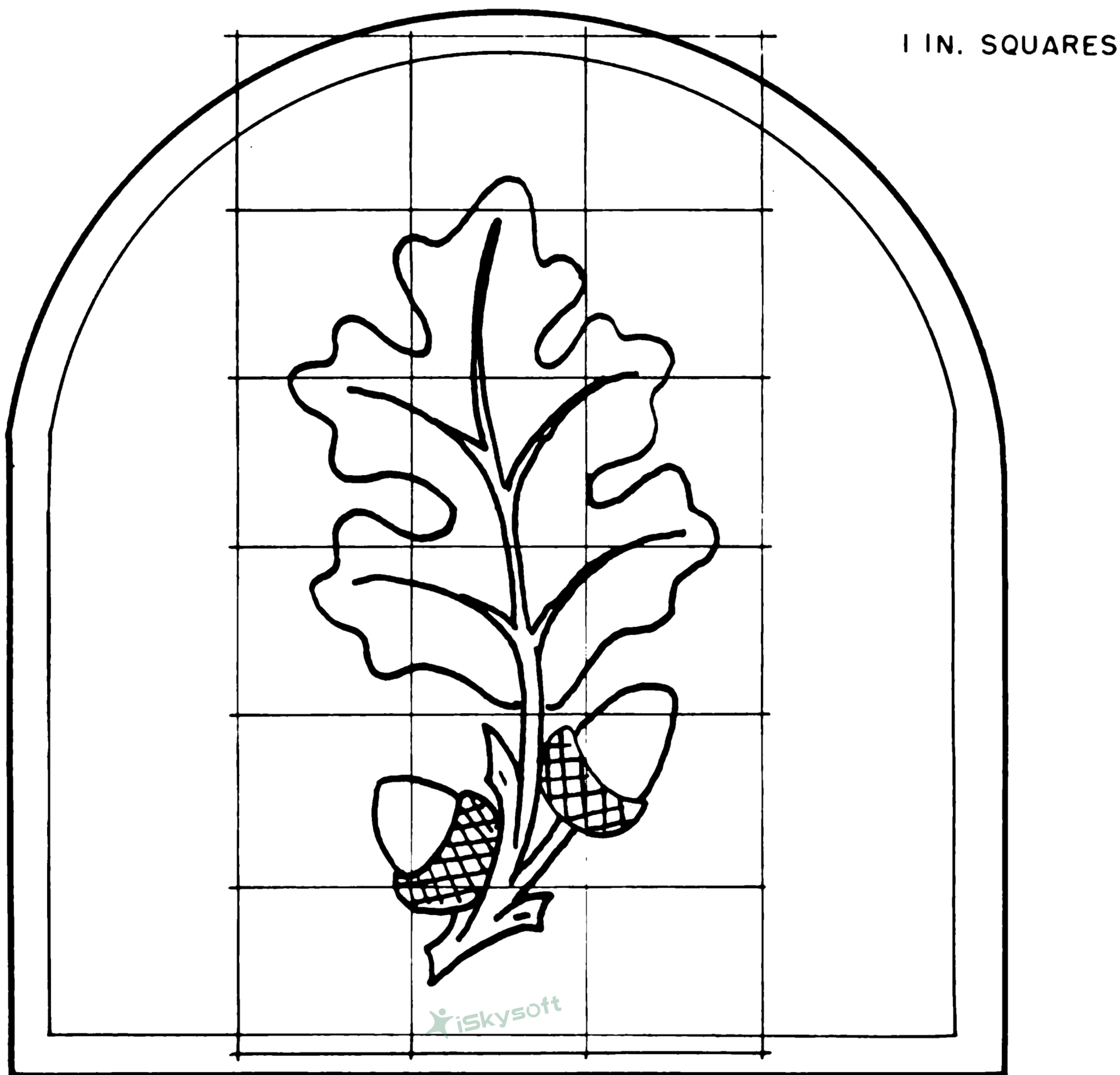
11. Apply rubber cement on the skived edges. Unit 15.

12. Assemble the pieces over the metal form and press the cemented edges together.

13. Color the edges. Unit 28.

276. Layout for Book End





277A. Design for Book End

14. Punch holes or make slits for edge lacing. Unit 17.
15. Lace the edges. Units 20 or 21.

16. Clean the leather and apply a suitable finish. Unit 28.

17 PHOTOGRAPH ALBUM AND SCRAPBOOK

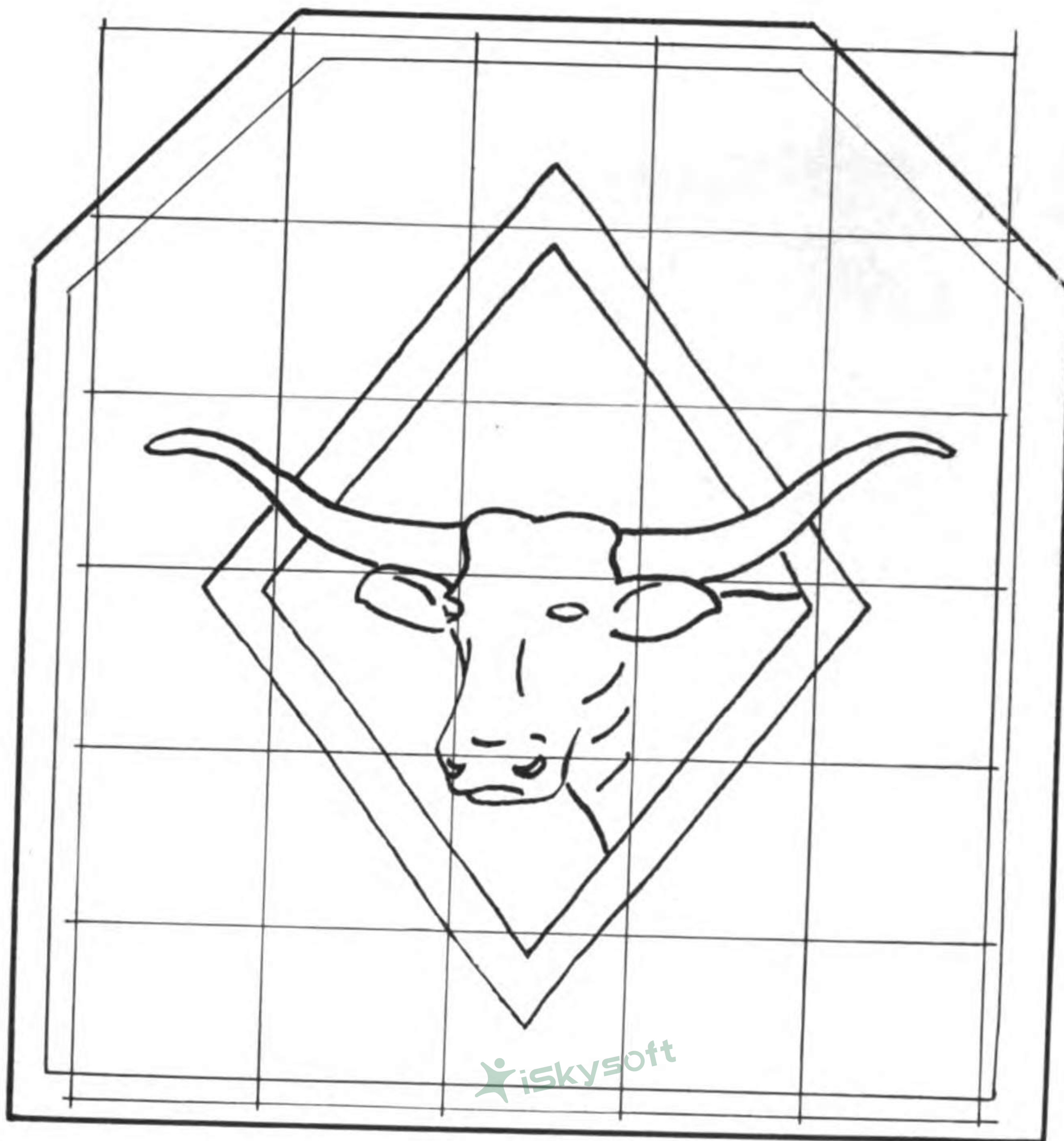
Very popular projects for leathercrafters are the photograph album, Fig. 278, and the scrap book, Fig. 279. Either offers many opportunities for individuality of design. The ones shown here are made of 7 and 8 ounce cowhide with a skiver liner backing, and a contrasting color edge lacing. The photograph album and the scrapbook are planned to fit standard size commercial 11 x 15 inch fillers.

The process steps of both projects are practically identical. The sizes of

both will need to be changed if different size fillers from that mentioned above are used.

Procedure

1. Lay out and mark the measurements as shown in Figs. 280 or 281 on the finished side of the leather. Unit 5.
2. Cut out the pieces with a knife and scissors. Unit 6.
3. Select or create a design, Figs. 282, or 283.
4. Prepare the leather for carving.



1 IN. SQUARES
277B. Design for Book End

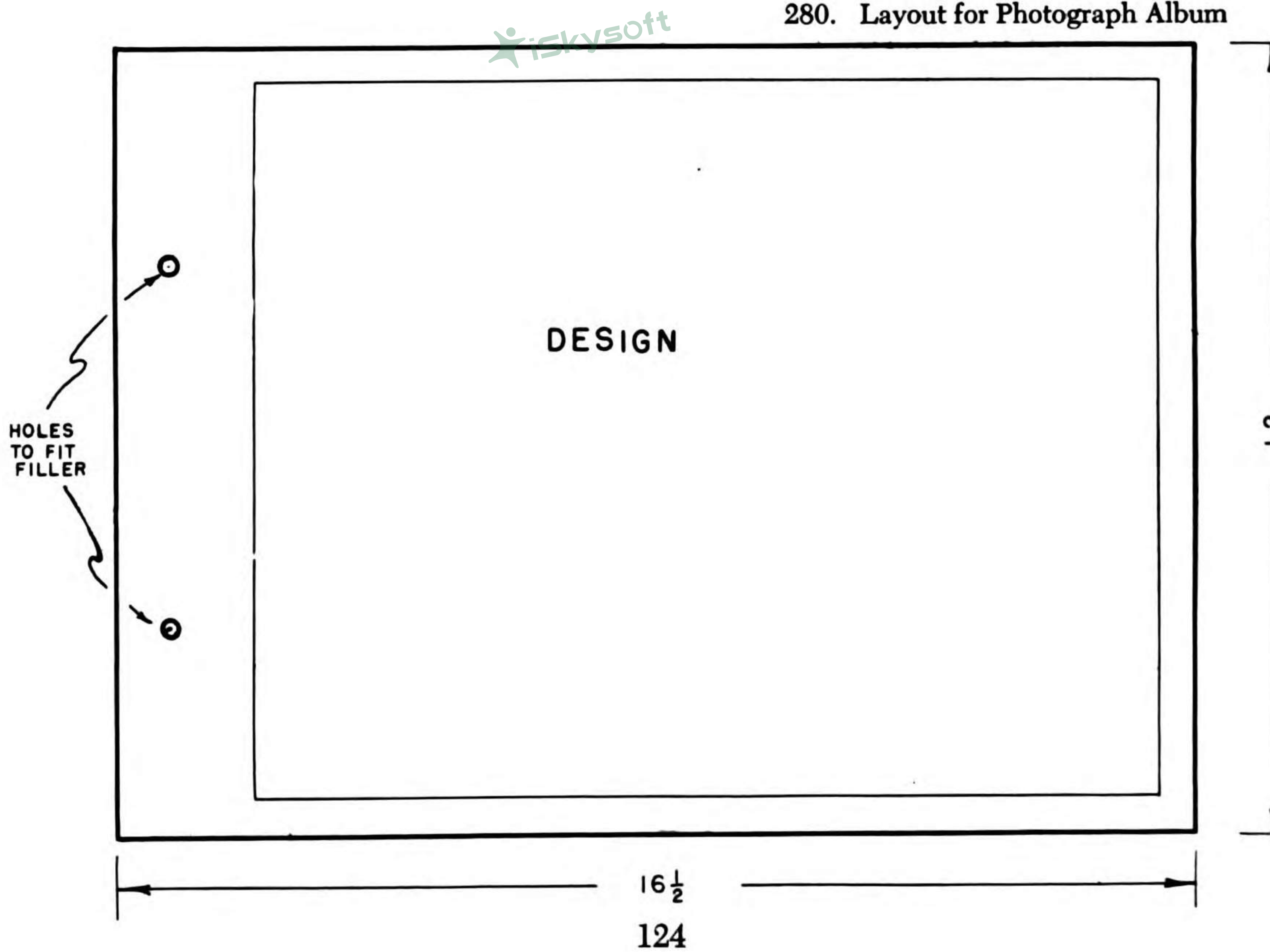
278. Photograph Album

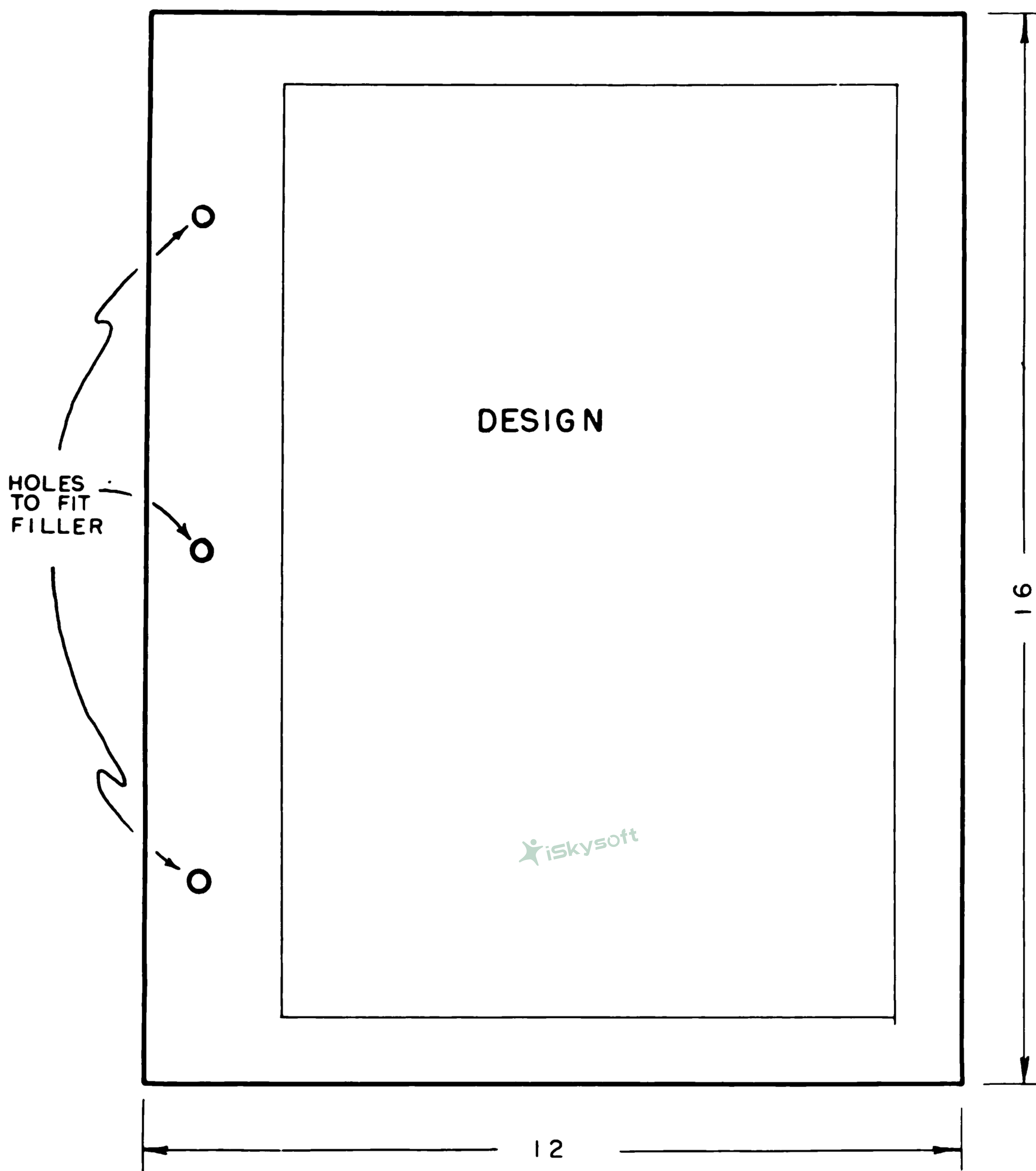




279. Scrap Book

280. Layout for Photograph Album



Plans

281. Layout for Scrap Book

5. Transfer the design to the cover piece. Unit 8.

6. Carve the selected design on the cover. Unit 12.

7. Apply a coat of rubber cement to the entire flesh surface (inside) of the cover and back pieces, and to the rough surfaces of the lining pieces. Unit 15.

8. Press the lining pieces firmly to the cemented sides of the cover and back pieces. Unit 15.

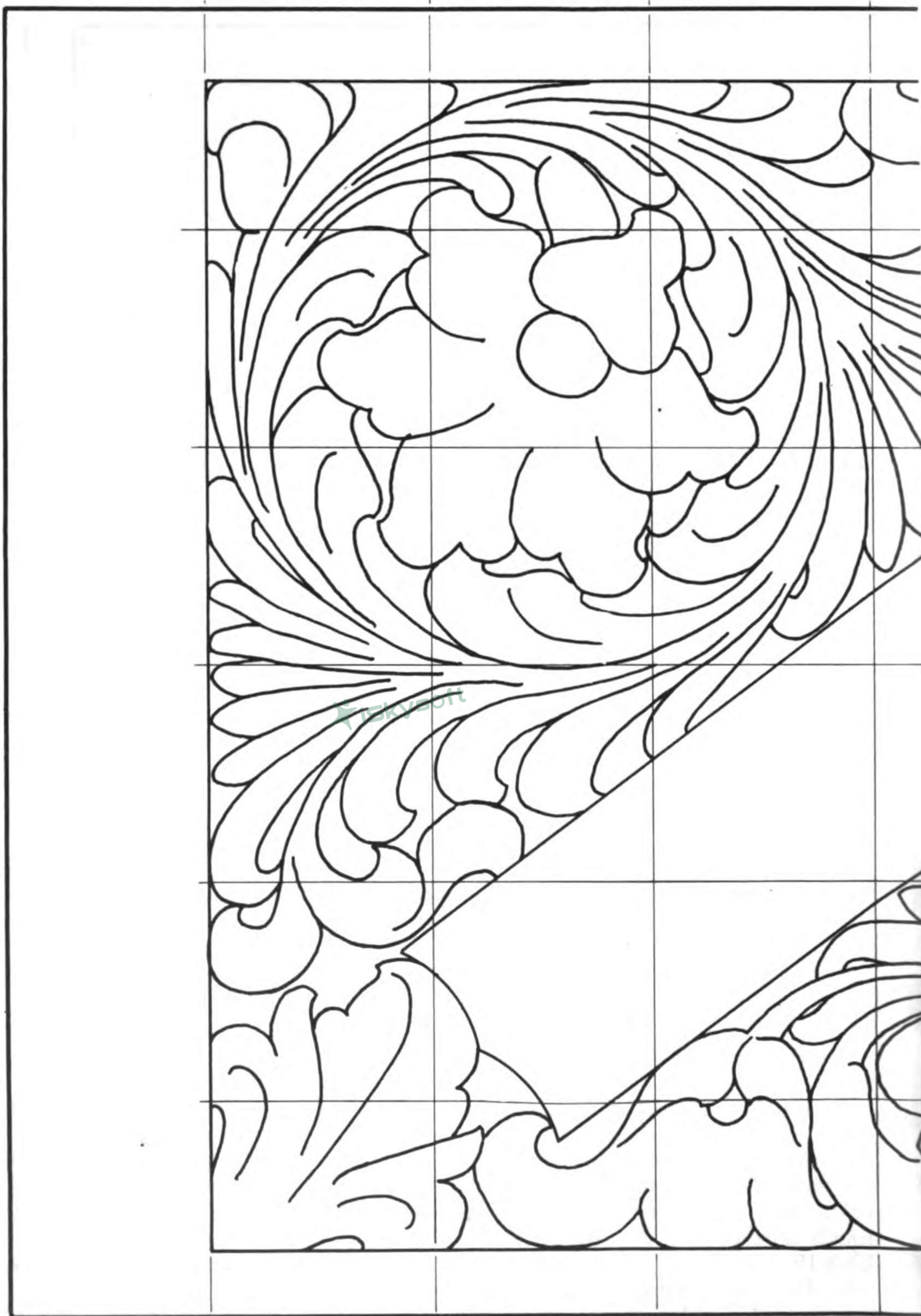
9. Punch holes or make slits for edge lacing. Unit 17.

10. Lace the edges with the double Cordovan stitch. Unit 21.

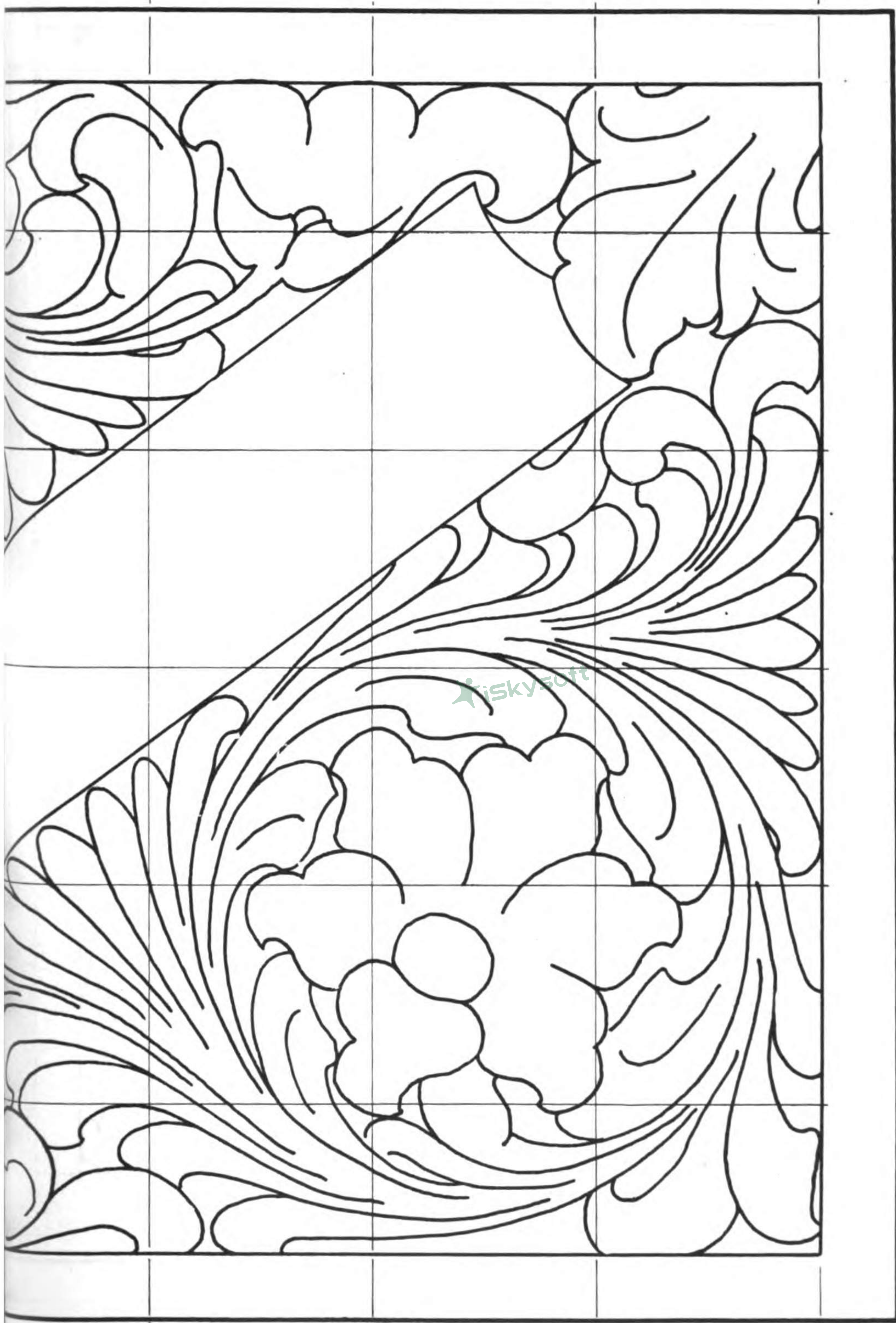
11. Mark and punch the holes in the cover and back pieces to correspond with the holes of the filler sheets. Unit 22.

12. Clean and apply a suitable finish. Unit 28.

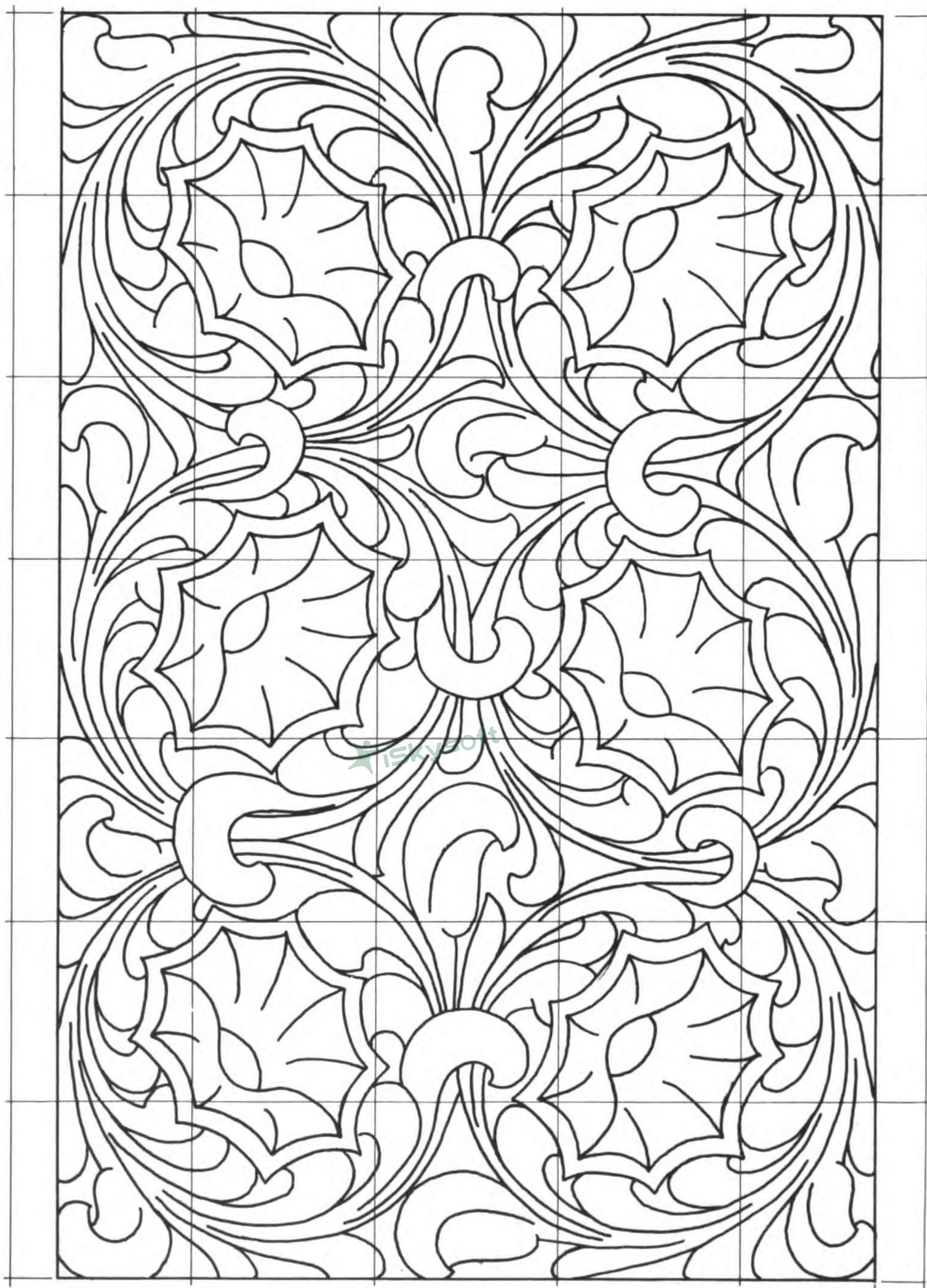
13. Fasten the filler sheets between the covers with binding posts.



282. Design for Photograph Album



127 2 IN. SQUARES



2 IN. SQUARES

283. Design for Scrap Book
128

18 CARVED NOTEBOOK

A carved design notebook, Fig. 284, presents an excellent opportunity for the leather craftsman to employ initiative and individuality in designing. This notebook is standard size, and uses a regular 2 or 3 ring plate. The interior is lined, giving it an exclusive and finished appearance. The cover material is 7 and 8 ounce stamping cowhide, and skiver is used as lining.

Procedure

1. Lay out and mark the measurements, as shown in Fig. 285, on the smooth side of the leather. Unit 5.

2. Cut out the pieces with a knife and scissors. Unit 6.

3. Select or create a design. See

Fig. 285.

4. Prepare the leather for carving. Unit 7.

5. Transfer the design to the case. Unit 8.

6. Carve the selected design on the case. Unit 12.

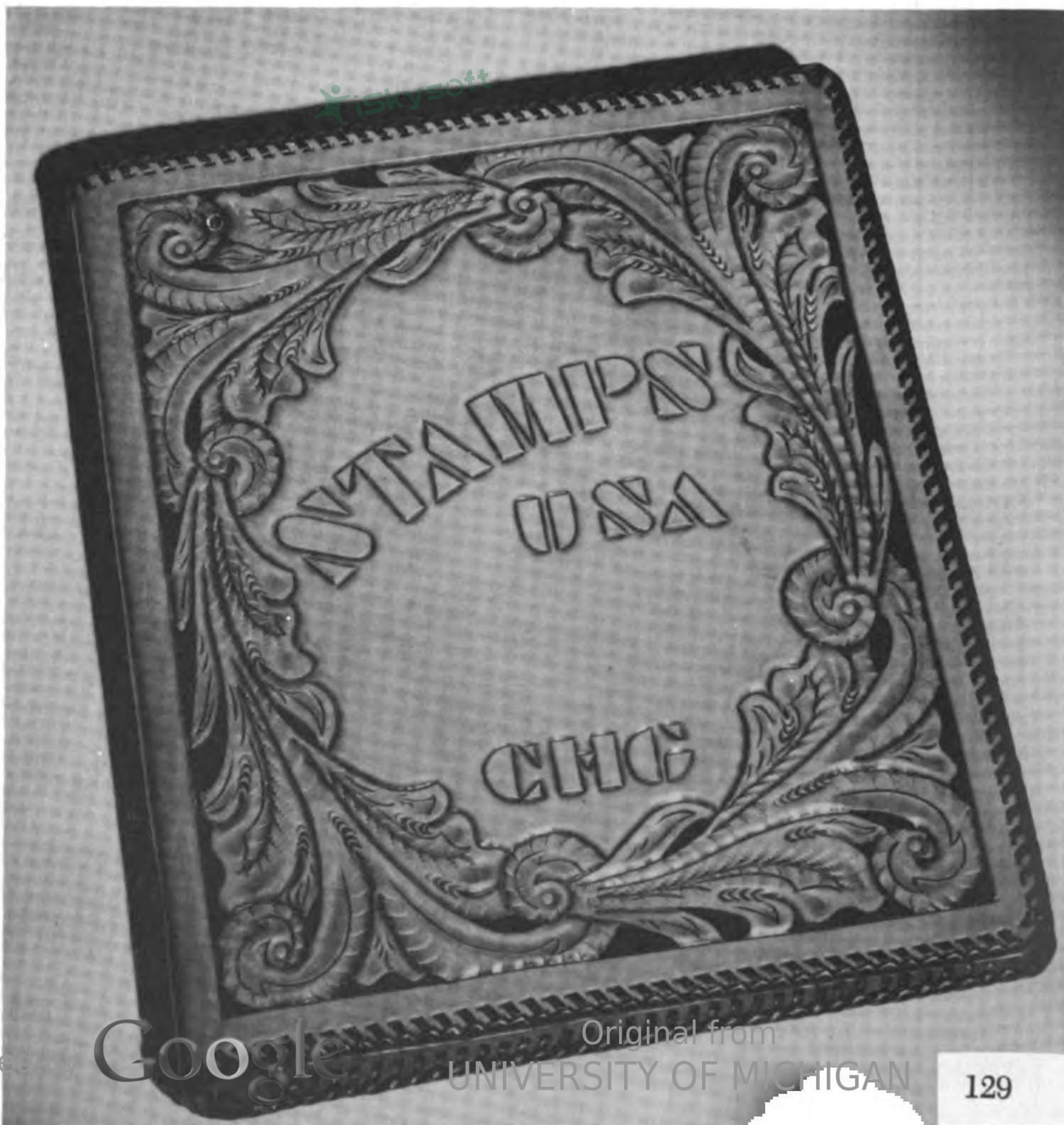
7. Make a V cut on the back (rough side) of the cover for making folds. Unit 27.

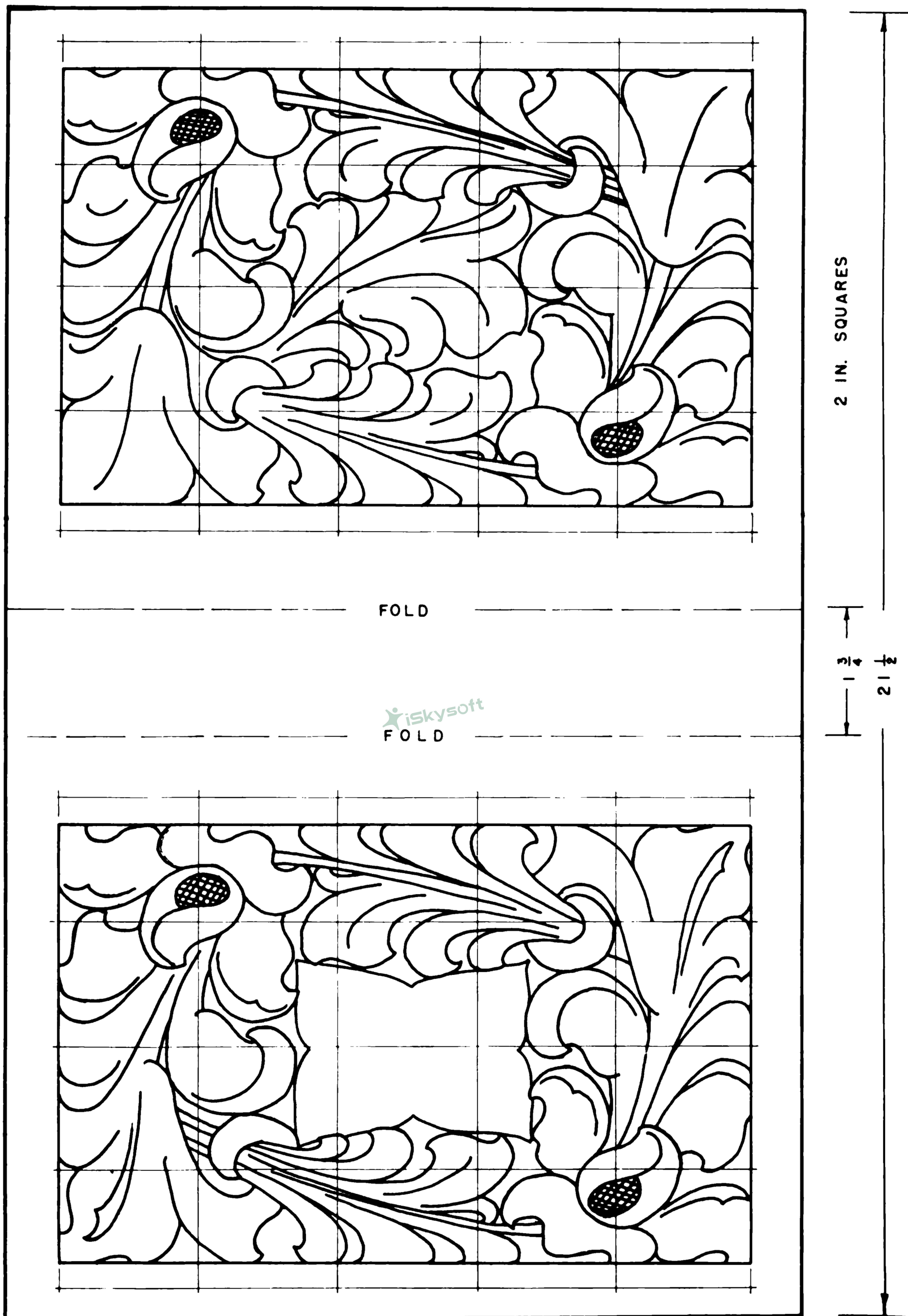
8. Apply a coat of rubber cement to the entire flesh (inside) surface of the case, and to the rough surface of the lining. Unit 15.

9. Press the cemented surfaces of the lining firmly to the case. Unit 15.

10. Mark, punch holes, and rivet the

284. Carved Notebook





285. Layout and Designs for Carved Notebook

ring plate to the case. Units 22 and 25.

11. Punch holes or make slits for edge lacing. Unit 17.

12. Lace the edges with Venetian or double Cordovan stitch. Unit 20 or 21.

13. Clean the case and apply a suitable finish. Unit 28. The background of the notebook in Fig. 284 has been dyed a contrasting color to give it dimensional effect.

19 ZIPPER NOTEBOOK

A leather zipper notebook is convenient for any person who has occasion to take care of papers and other data. The one shown in Figs. 286 and 287 will wear well and last indefinitely. The ring plate may be procured from a discarded notebook, and riveted in place in the new leather case. The effectiveness of the 36 inch zipper will be increased by the addition of the thong pull.

The case may be made of 7 and 8 ounce cowhide for carving, or you may use 4 ounce tooling calfskin or mottled steerhide. It is lined with skiver lining and the pockets are of 4 ounce calfskin or steerhide.

Procedure

1. Lay out and mark the measurements as shown in Fig. 288 on the smooth side of the leather. Unit 5.

2. Cut out the several pieces with a scissors or knife. Unit 6.

3. Select or create a design. See Figs. 289 or 290.

4. Prepare the leather for tooling or carving. Unit 7.

5. Transfer the design to the case. Unit 8.

6. Tool or carve the selected design on the case. Unit 9 or 12.

7. Mark and punch rivet holes for the key plate on pieces C, B, and E respectively. Unit 22.

8. Insert split rivets through pieces E, B, and C and the metal ring plate, and set them with a center punch so the rivet spreads. Unit 25.

9. Rubber cement pocket B and fasten to Lining A-1. Unit 15.

10. Sew A-1 to B close on either side of the paper ring plate. Unit 16. This serves to form bottoms of pockets and the back of the notebook.

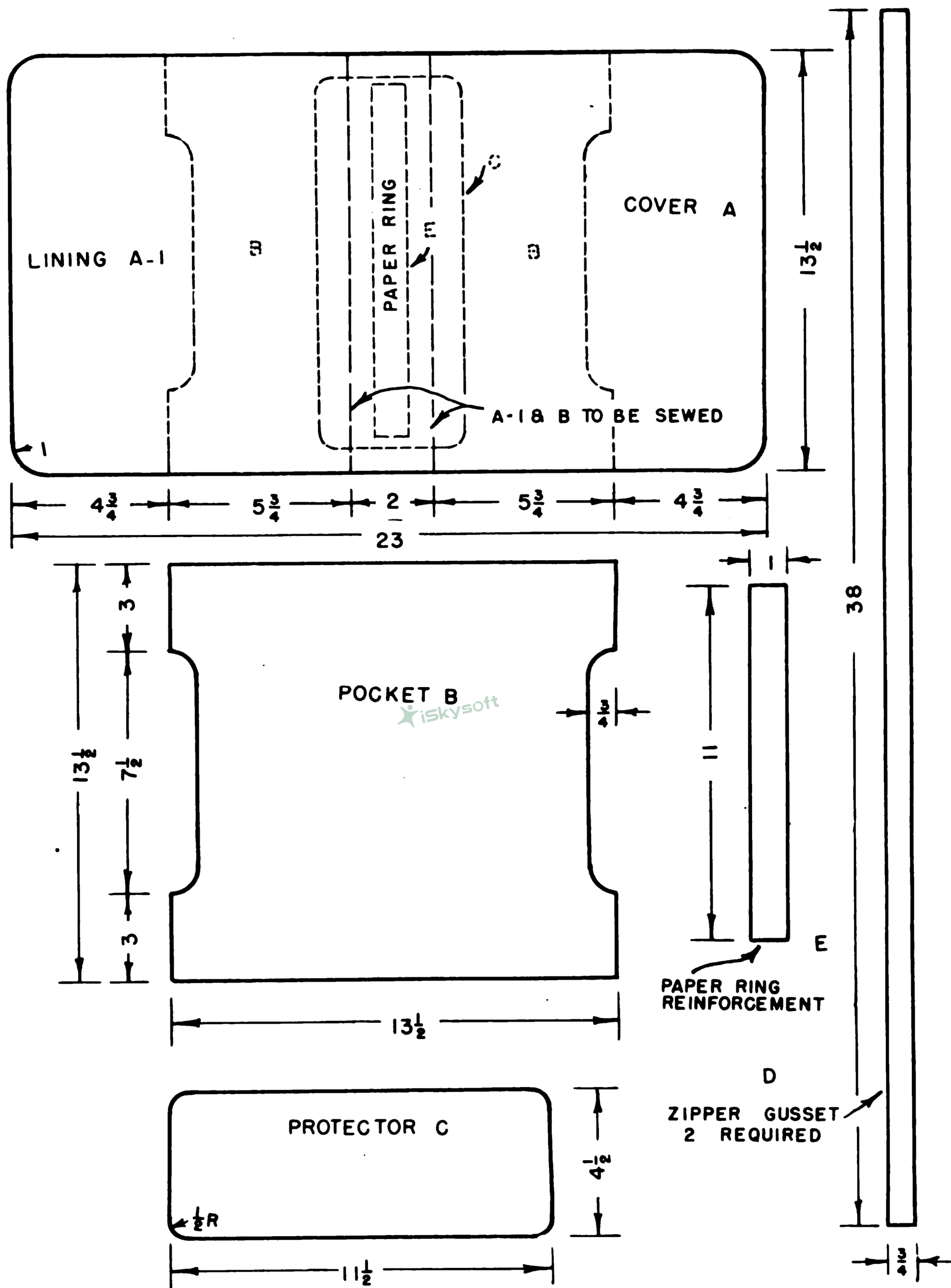
11. Apply rubber cement along the outside of the unfinished surfaces of



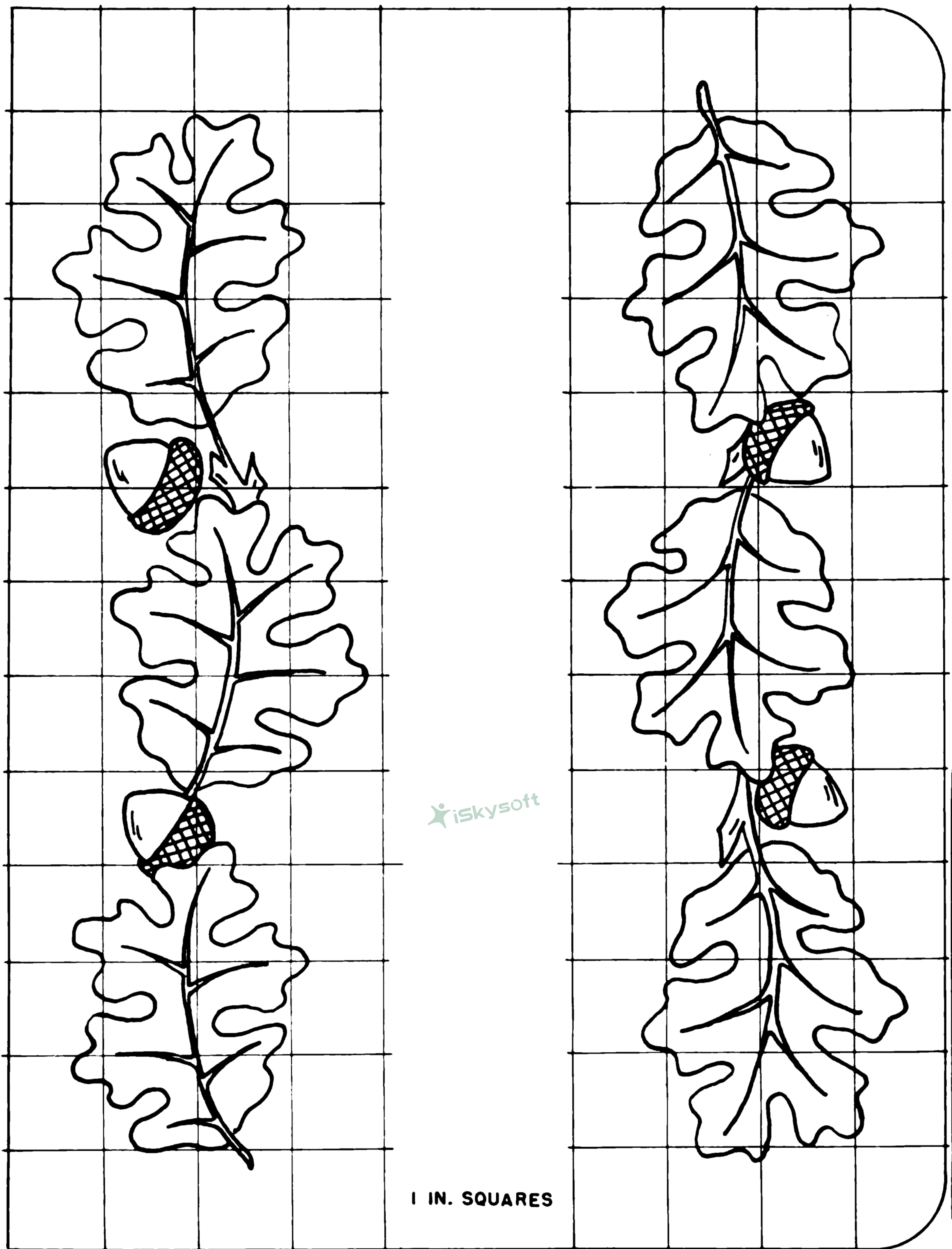
286. Zipper Notebook with Pockets

287. Zipper Notebook, Open





288. Layout for Zipper Notebook



289. Acorn Leaf Design for Zipper Notebook

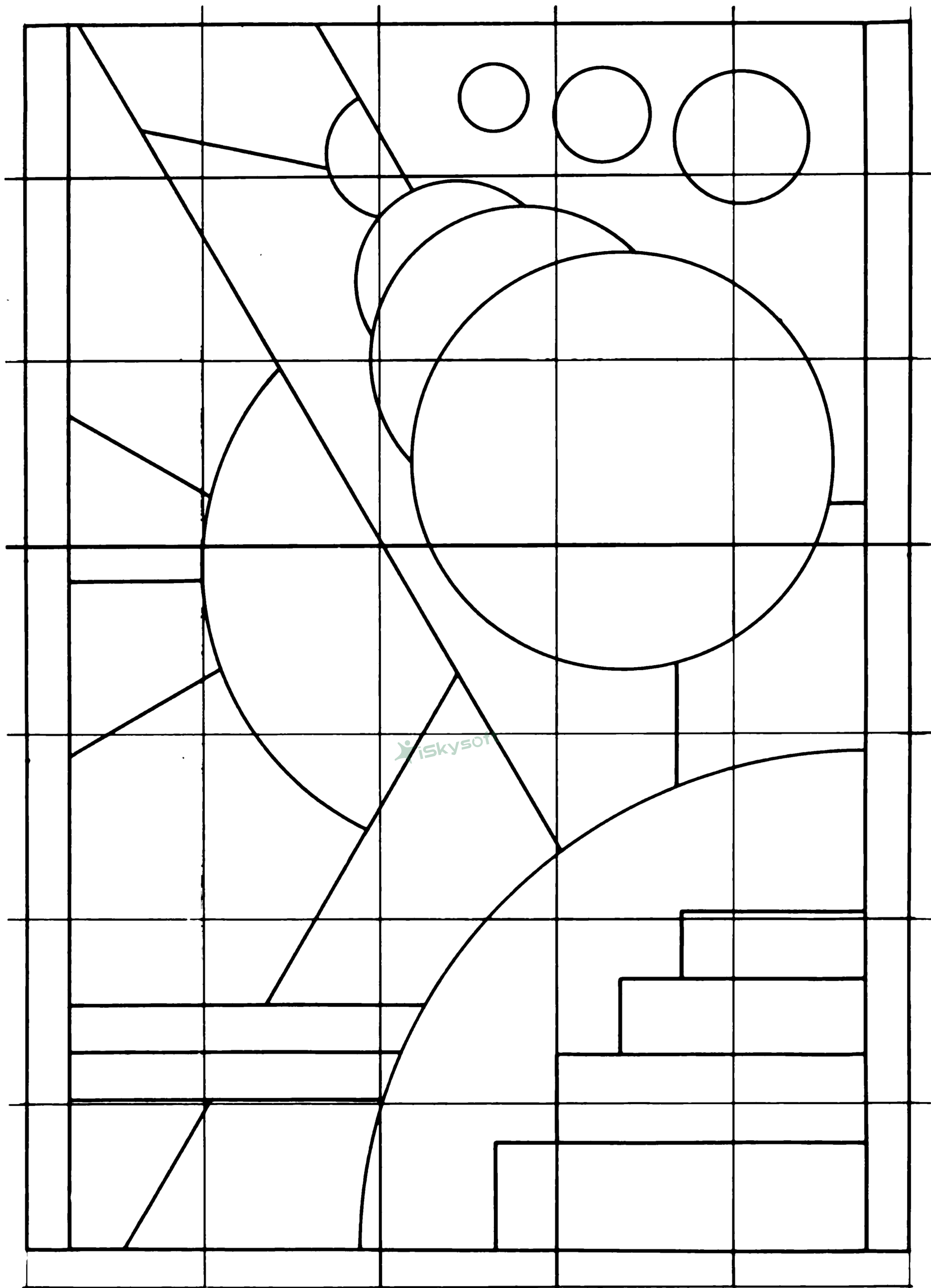
the cover and lining, and press these pieces firmly together. Unit 15.

12. Apply rubber cement to the zipper tape and to the unfinished surfaces of the two zipper gussets D; press the zipper gussets firmly to the zipper. Allow an inch at each end of the gus-

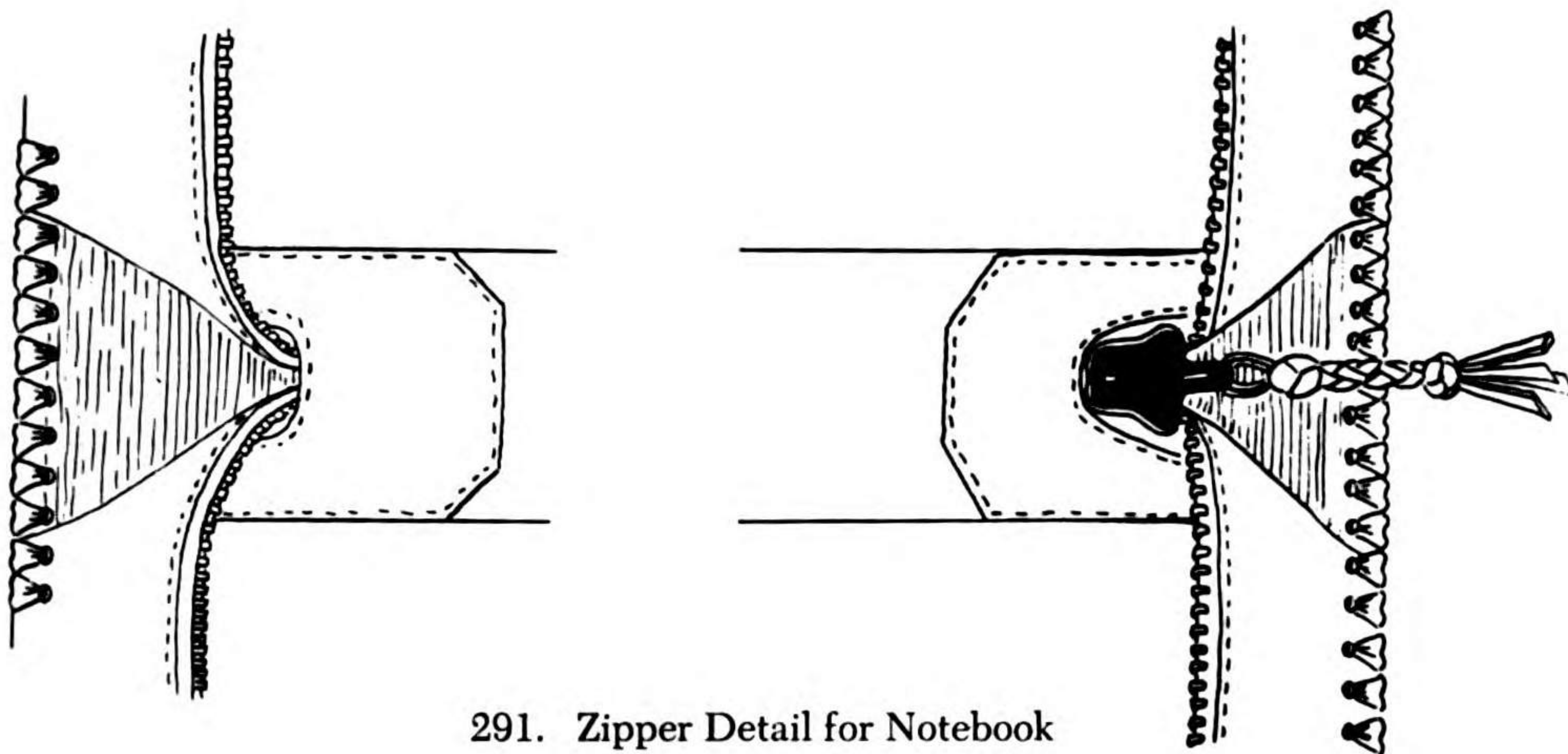
sets, and sufficient space for the zipper to be opened and closed.

13. Sew the zipper to the gussets with a sewing machine. Unit 16.

14. Apply rubber cement along the opposite edge of the unfinished surfaces of gussets D, which have not been



290. Modern Design for Zipper Notebook



291. Zipper Detail for Notebook

sewed to the zipper tape, and also on the glazed surface of the skived lining. This is in preparation for aligning gussets to the assembled case.

15. Press gussets firmly to the case, and trim off irregularities of assembled parts. Figure 291 shows the detail on how to tuck in and fasten the zipper ends and gussets.

16. Color edges which are to be laced. Unit 28.

17. Crease all edges which will not be laced. Unit 14.

18. Punch holes or slits for edge lacing. Unit 17.

19. Lace the edges with Venetian or double Cordovan stitch. Unit 20 or 21.

20. Make a thong zipper pull if desired. Unit 30.

21. Clean and apply a suitable finish. Unit 28.

20 LADIES' ZIPPER HANDBAG

The handbag, Fig. 292, has a 7 inch recessed zipper with a plaited thong to open it. The stippled area in the center could carry a monogram. Four ounce tooling calfskin is ideal for tooling or carving.

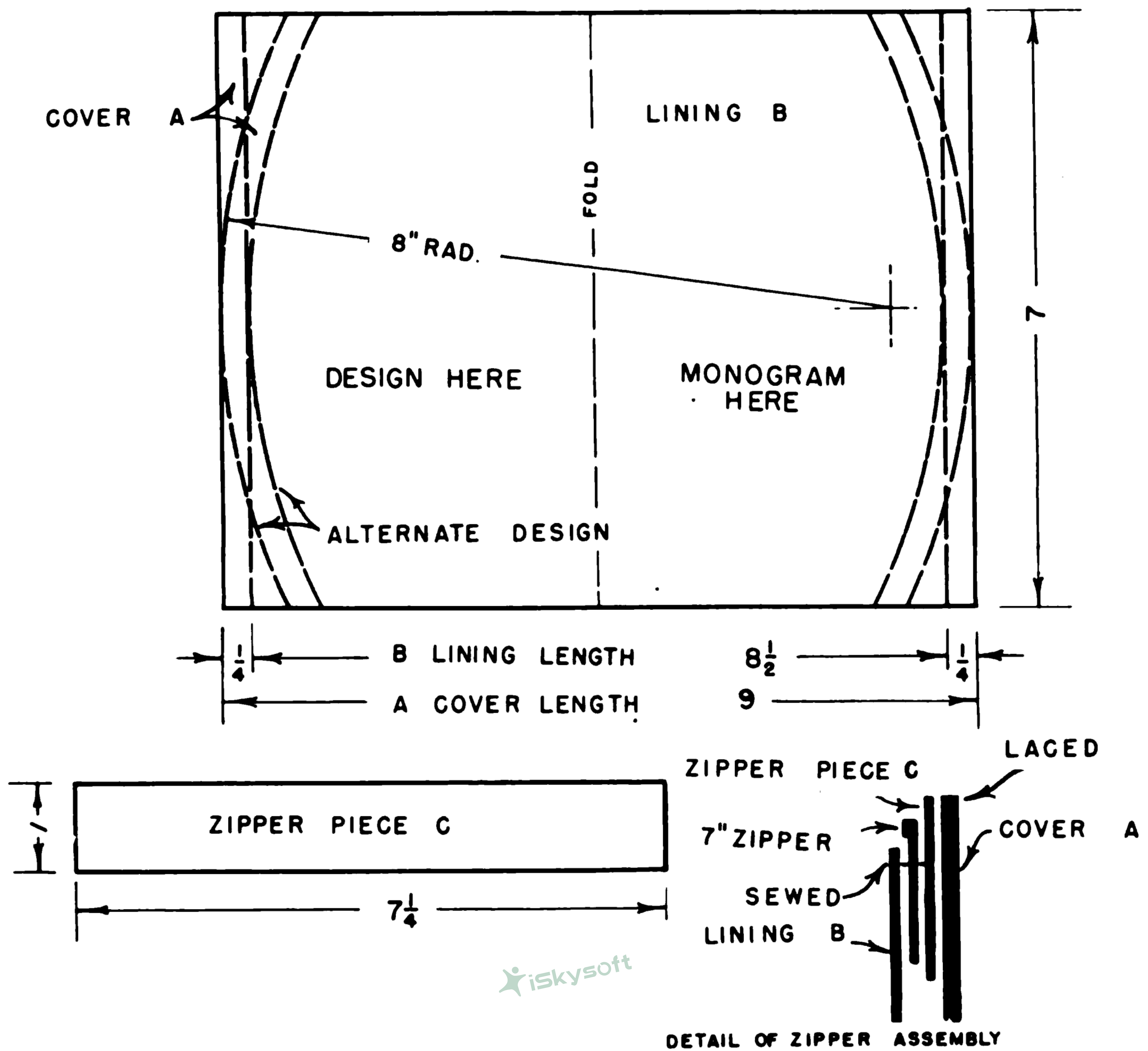
Procedure

1. Lay out the measurements as shown in Fig. 293 on the smooth side of the leather. Unit 5. The zipper piece may be 3 ounce tooling calfskin, and the lining can be skiver liner.

2. Cut out the several pieces with the scissors. Unit 6.

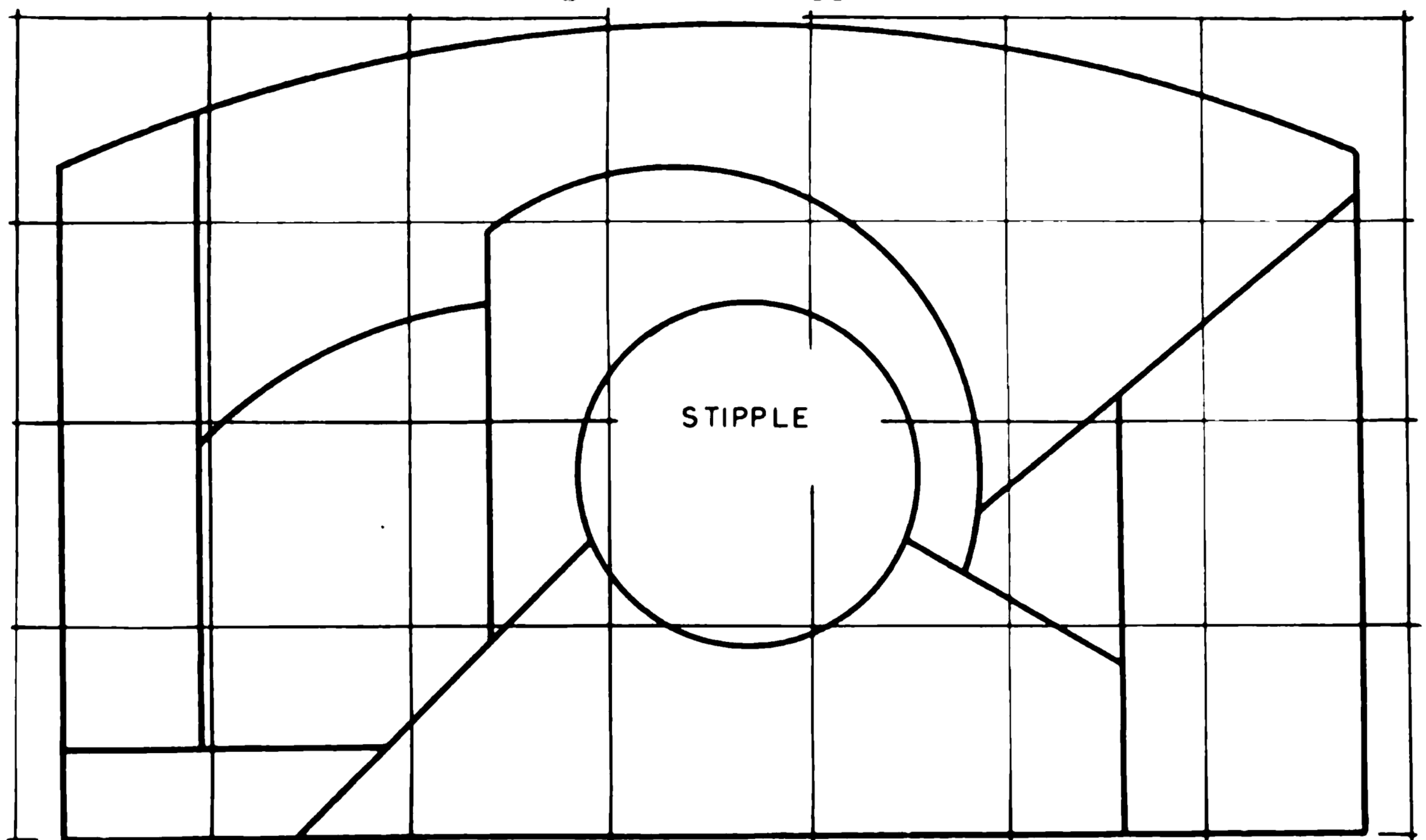
292. Ladies' Zipper Handbag



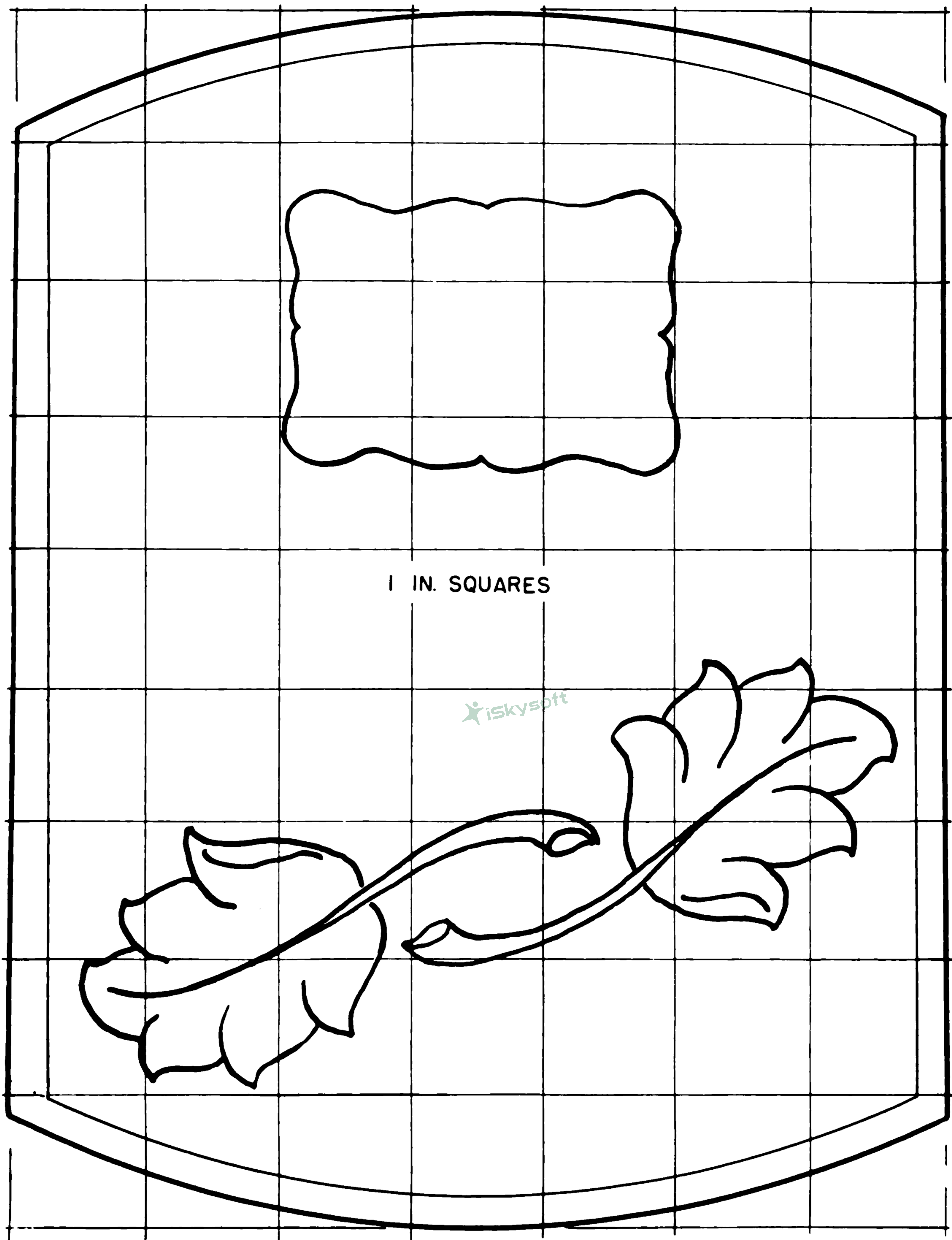


293. Layout for Ladies' Zipper Handbag

294A. Design for Ladies' Zipper Handbag



Plans



294B. Design for Ladies' Zipper Handbag

3. Select or create a design. See Unit 8.
4. Prepare the leather for tooling or carving. Unit 7.
5. Transfer the design to the cover.
6. Tool, stipple, or carve the selected design on the cover. Units 9, 10, 11, or 12.
7. Apply rubber cement along the

top unfinished surface of lining B, and to the bottom side of the zipper tape. See that the zipper will open correctly.

8. Press the cemented edges firmly together. Unit 15.

9. Apply rubber cement to the top side of the zipper tape, and to one edge of the finished surface of narrow pieces C.

10. Press the cemented pieces firmly together, Unit 15. Also see the working drawing, Fig. 293.

11. Sew the zipper to lining B and to zipper pieces C. Unit 16.

12. Cement and sew the assembled pieces of lining, zipper, and pieces C.

13. Skive the inside edges of cover A. Unit 13.

14. Apply rubber cement along the outside edges of the rough (flesh) surface of lining B; on the rough surface of attached pieces C; and also on skived edges of cover A. Unit 15.

15. Press the cemented parts firmly together. Unit 15.

16. Color the edges as desired. Unit 28.

17. Punch holes or slits for edge lacing. Unit 17.

18. Lace the edges with the single or double buttonhole stitch. Unit 21.

19. Make the thong for the zipper, if desired. Unit 30.

20. Clean and apply a suitable finish. Unit 28.

21 LADIES' HANDBAG WITH ZIPPER OPENING

This is a compact, skiver-lined bag which is economical to make and is of popular size, Fig. 295. The handle is made from that part of the zipper gusset piece which has been cut open for the 18 inch zipper, and is then turned back under and sewn in place.

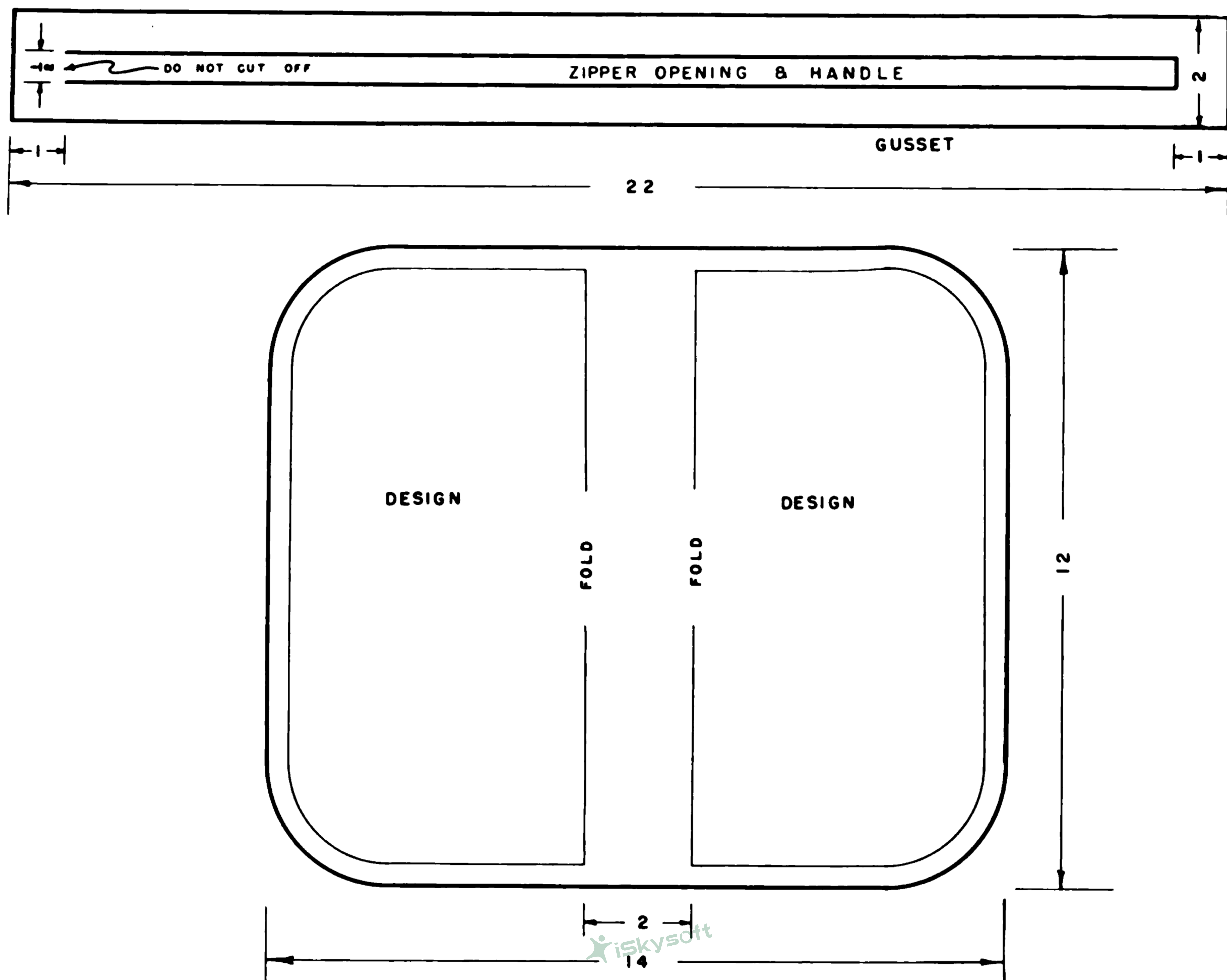
The case and the gusset are from 8 and 9 ounce cowhide.

Procedure

1. On the smooth side of the leather, lay out and mark the measurements as shown in Fig. 296. See Unit 5.

295. Ladies' Carved Handbag





296. Layout for Ladies' Carved Handbag

2. Cut out the pieces for the bag and gusset with a knife; the lining, with scissors. Unit 6. Note on Fig. 296 that the zipper opening on the gusset is not cut out at one end, to provide a handle.

3. Select or create a design. See Fig. 297.

4. Prepare the cowhide bag piece for carving. Unit 7.

5. Transfer the design to the bag cover. Unit 8.

6. Carve the selected design on the cover. Unit 12.

7. Apply a coat of rubber cement to the entire flesh surface of the bag cover, and to the rough surface of the lining. Unit 15.

8. Press the cemented surface of the lining firmly to the bag cover. Unit 15.

9. Apply rubber cement to the rough surface of the gusset piece, and

to the top sides of the zipper fabric. Unit 15.

10. Press the gusset piece to the zipper fabric. Unit 15.

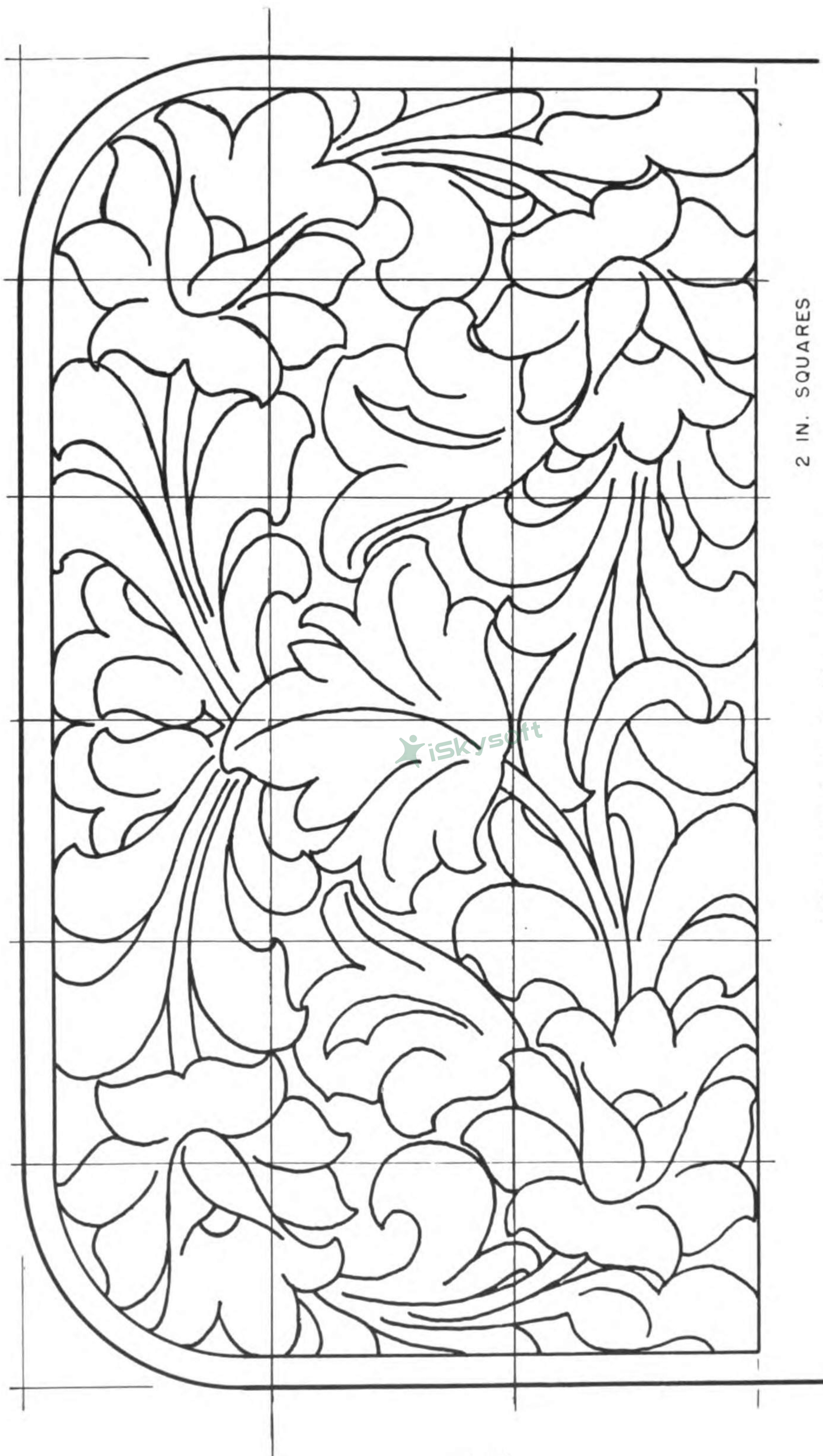
11. Sew the gusset piece to the zipper fabric with a machine. Unit 16. Note in Fig. 295 that the sewing is made more secure if a second row of stitching is made parallel to the first. Make sure that the hand strap is sewn in place in this process.

12. Apply a strip of rubber cement along the edges of the gusset and the bag cover which are to be edge laced, and press the corresponding pieces together firmly. Unit 15.

13. Punch holes or make slits for edge lacing. Unit 17.

14. Lace the edges with the double Cordovan stitch. Unit 21.

15. Clean and apply a suitable finish. Unit 28.



2 IN. SQUARES

297. Design for Ladies' Carved Handbag

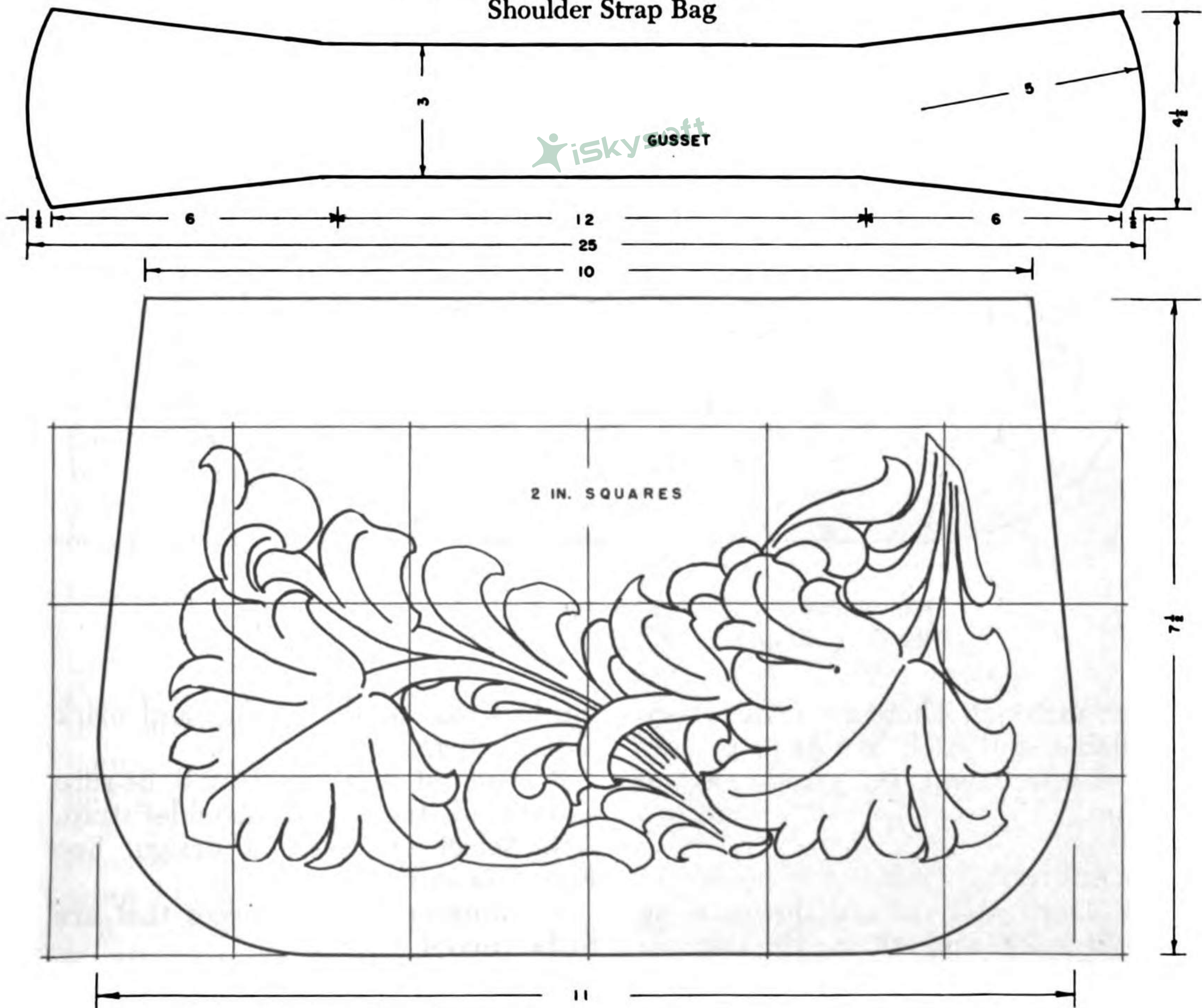


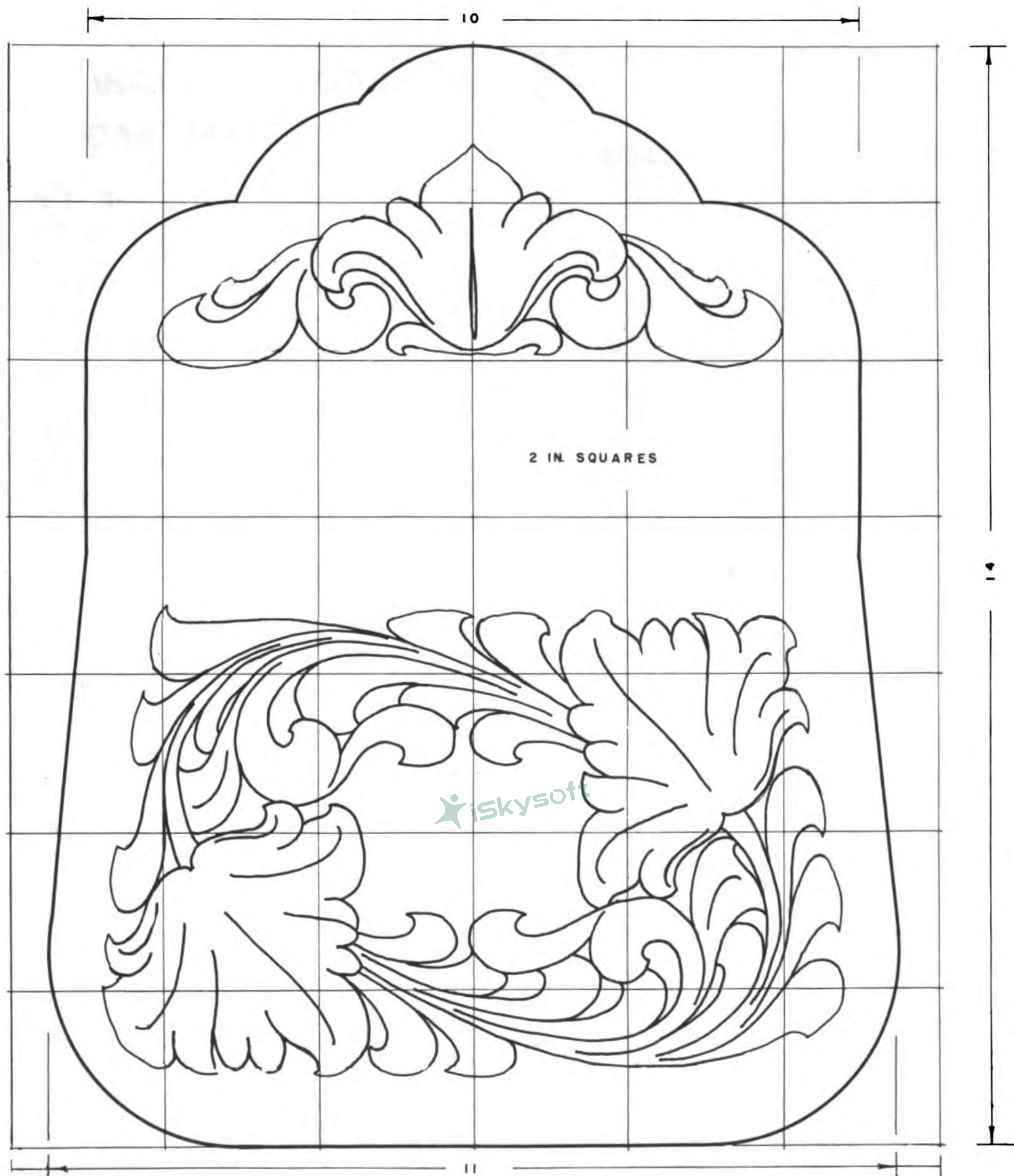
298. Ladies' Shoulder Strap Bag

22 LADIES' SHOULDER STRAP BAG

A roomy, shoulder-strap bag, Fig. 298, can be made by following the procedure given below. The 1 inch strap width can be any length desired, or can be made adjustable for either carrying over the shoulder or by hand, through the use of D-rings and snap buttons. It is a most convenient size, and offers exceptional possibilities for designing and carving. The bag and shoulder strap are of 8 and 9 ounce cowhide and the lining is of

299. Layout and Design for Ladies' Shoulder Strap Bag





300. Layout and Design for Ladies' Shoulder Strap Bag. Height: 14 inches

skiver material. There are many clasps available, and each has its own manner of attachment, but all are easy to put on.

Procedure

1. Draw and cut out the patterns. See Figs. 299 and 300 for dimensions.
2. Place the pattern pieces on the

finished side of the leather and mark around them. Unit 5.

3. Cut out all pieces. Unit 6. Be sure and include the hand or shoulder strap.

4. Select or create a design. See Figs. 299 and 300.

5. Moisten the bag pieces that are to be carved. Unit 7.

6. Transfer the design to these

pieces to be carved. Unit 8.

7. Carve the selected design. Unit 12.

8. Mark and cut the slots in the gusset for holding the ring straps. See Fig. 298.

9. Insert the ring straps on the rings, through the gusset slot, and sew to the gusset with the machine. Unit 16. The three-hole fastener, Unit 26, may be used instead of the rings. This will not entail cutting slots in the gusset.

10. Apply a coat of rubber cement to the entire flesh surfaces of the bag parts, the gusset, and to the corresponding lining pieces. Unit 15.

11. Press the cemented lining pieces to their respective bag case pieces. Unit 15.

12. Apply a narrow strip of rubber cement along the edges of all parts

which are to be edge laced, and press them together.

13. Punch holes or make slits for edge lacing. Unit 17.

14. Lace the edges with the double Cordovan stitch. Unit 21.

15. Crease the edges of the bag which have not been laced, and the edges of the shoulder strap. Unit 14.

16. Mark, punch holes, and assemble the snap button on the shoulder strap. Units 22 and 24.

17. Locate and punch, or cut the slot for the fastener and secure it properly. The method will depend on the clasp selected.

18. Assemble the shoulder strap with rings to the bag, and snap the snap buttons.

19. Clean and apply a suitable finish to the completed bag. Unit 28.

23 CAMERA CASE

Photography hobbyists always need a custom-made camera case, Fig. 301, because of the numerous accessories they wish to take along. This is the same article that was illustrated in Unit 4, Fig. 44. You will note in Fig. 44 the camera and the accessories. Every camera and the number of accessories will require different measurements for the case. The ones given in Fig. 302 are for a Kodak Monitor. Eight or 9 ounce cowhide should be used for carving, as well as to insure a sturdy case.

Procedure

1. Draw and cut out the patterns. Unit 4. See Fig. 302. For a project of this type it might be desirable to tack the patterns together to make a preliminary mock-up of the case, as shown in Fig. 44.

2. Place the pattern pieces on the smooth side of the leather and mark around them. Unit 5.

3. Cut out the leather pieces. Unit 6. Also cut out pieces of skiver, if a

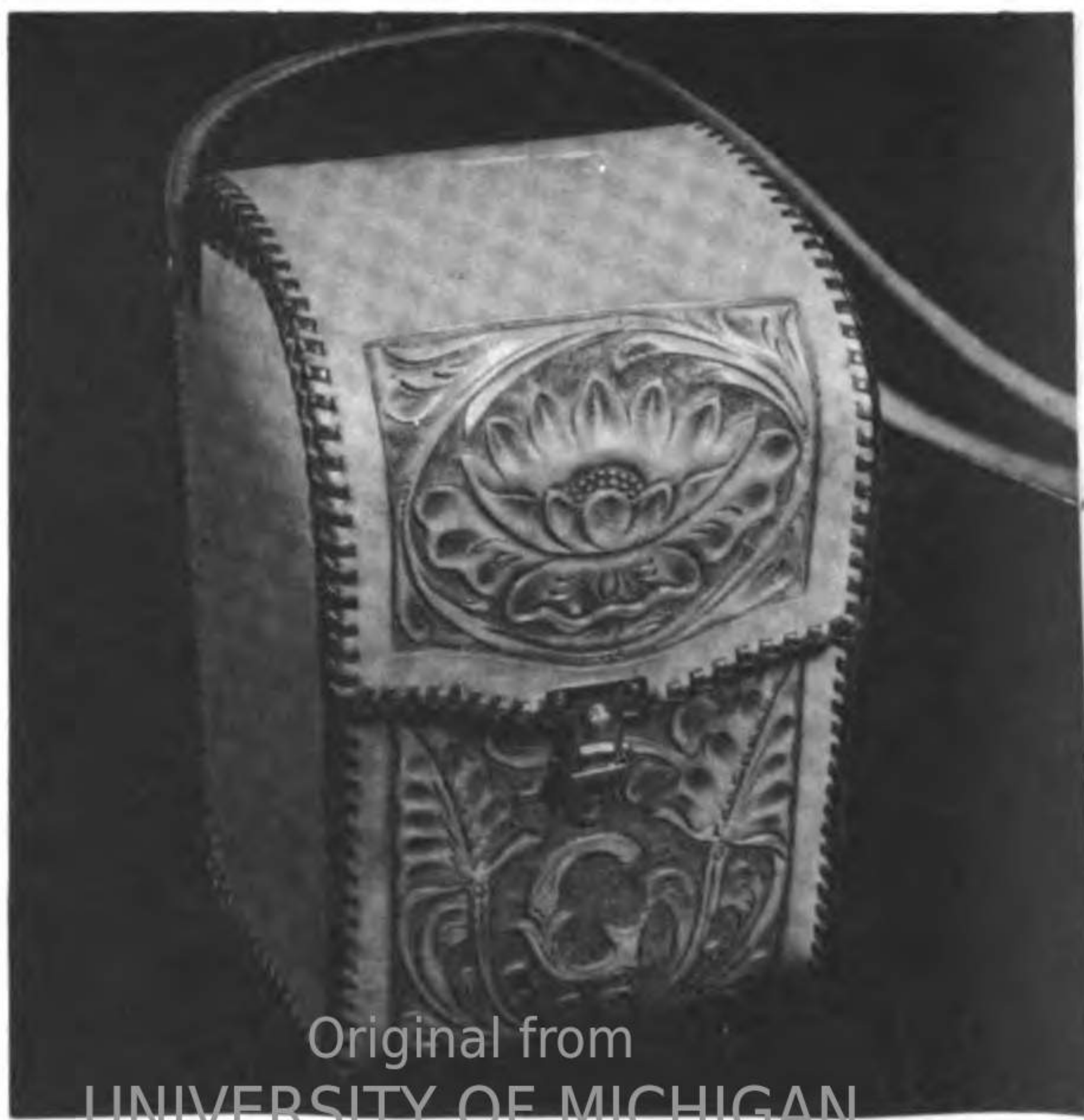
lining is desired. A $\frac{5}{8}$ x 48 inch handle is made from heavy cowhide.

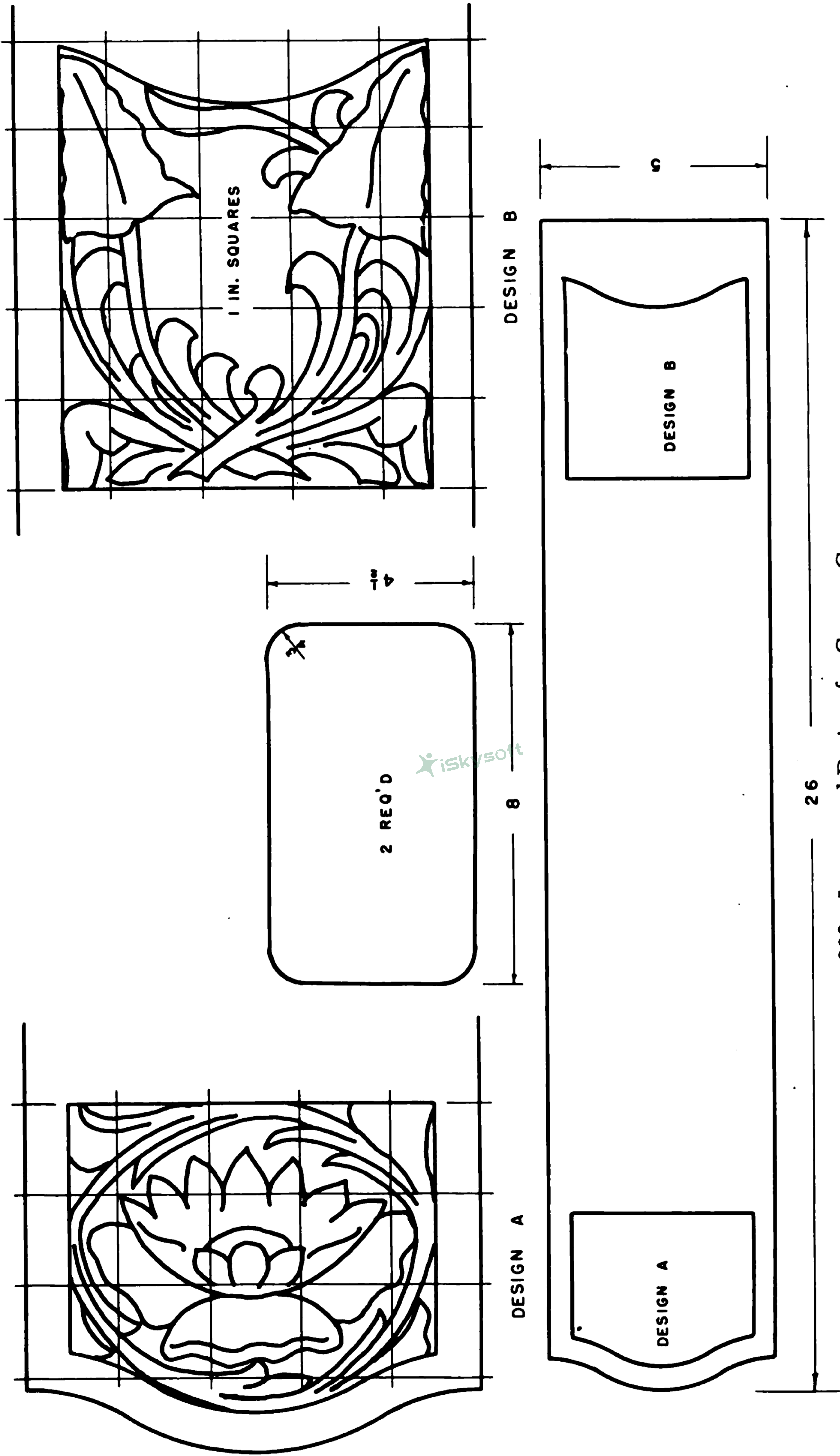
4. Select or create a design. See Fig. 302.

5. Prepare the leather for carving. Unit 7.

6. Transfer the design to the cover. Unit 8.

301. Camera Case





302. Layout and Designs for Camera Case

7. Carve the selected design on the cover. Unit 12.

8. Apply a coat of rubber cement over the entire rough surface of the cowhide cover and the end pieces. Also apply a coat of rubber cement to the rough side of the lining material. Unit 15.

9. Press the lining firmly to the cover and the end pieces. Unit 15.

10. Round the corners of the end pieces slightly.

11. Punch holes or slits for edge lacing. Unit 17.

12. Lace the edges with the Venetian edge lacing, Unit 20, or the double Cordovan stitch, Unit 21.

13. Crease the edges of the shoulder strap. Unit 14.

14. Dye the edges of the shoulder strap. Unit 28.

15. Mark the location and punch holes in the shoulder strap and case for fastening the strap. Unit 22.

16. Fasten the strap with rivets, Unit 25; binding posts, as used for key cases; or with the three-hole fastener, Unit 26.

17. Locate and fasten the clasp on the front. The method of fastening will be determined by the type or style of clasp used.

18. Clean and apply a suitable finish. Unit 28.

24 GADGET BAG OR OVERNIGHT TOILET CASE

This gadget case solves the problem of storing and carrying many miscellaneous articles and sundries on a trip. The one shown in Fig. 303 can be highly ornamental as well as useful. The case pictured has all of the laced edges, except the top, reinforced with $\frac{1}{8}$ inch brazing rod. Coat hanger wire is also sufficiently sturdy. The leather required for making the adjustable hand or shoulder strap is 1 x 48 inches. Eight or nine ounce cowhide should be used.

Procedure

1. Lay out the measurements as shown in Fig. 304 on the smooth side of the leather. Unit 5. These measurements can easily be altered to suit individual needs.

2. Cut out the pieces. Unit 6. Also cut out pieces of skiver if a lining is desired. Include the piece for the handle from heavy cowhide.

3. Select or create a design. See Fig. 305.

4. Prepare the leather for carving. Unit 7.

5. Transfer the design to the cover. Unit 8.

6. Carve the selected design on the

case. Unit 12.

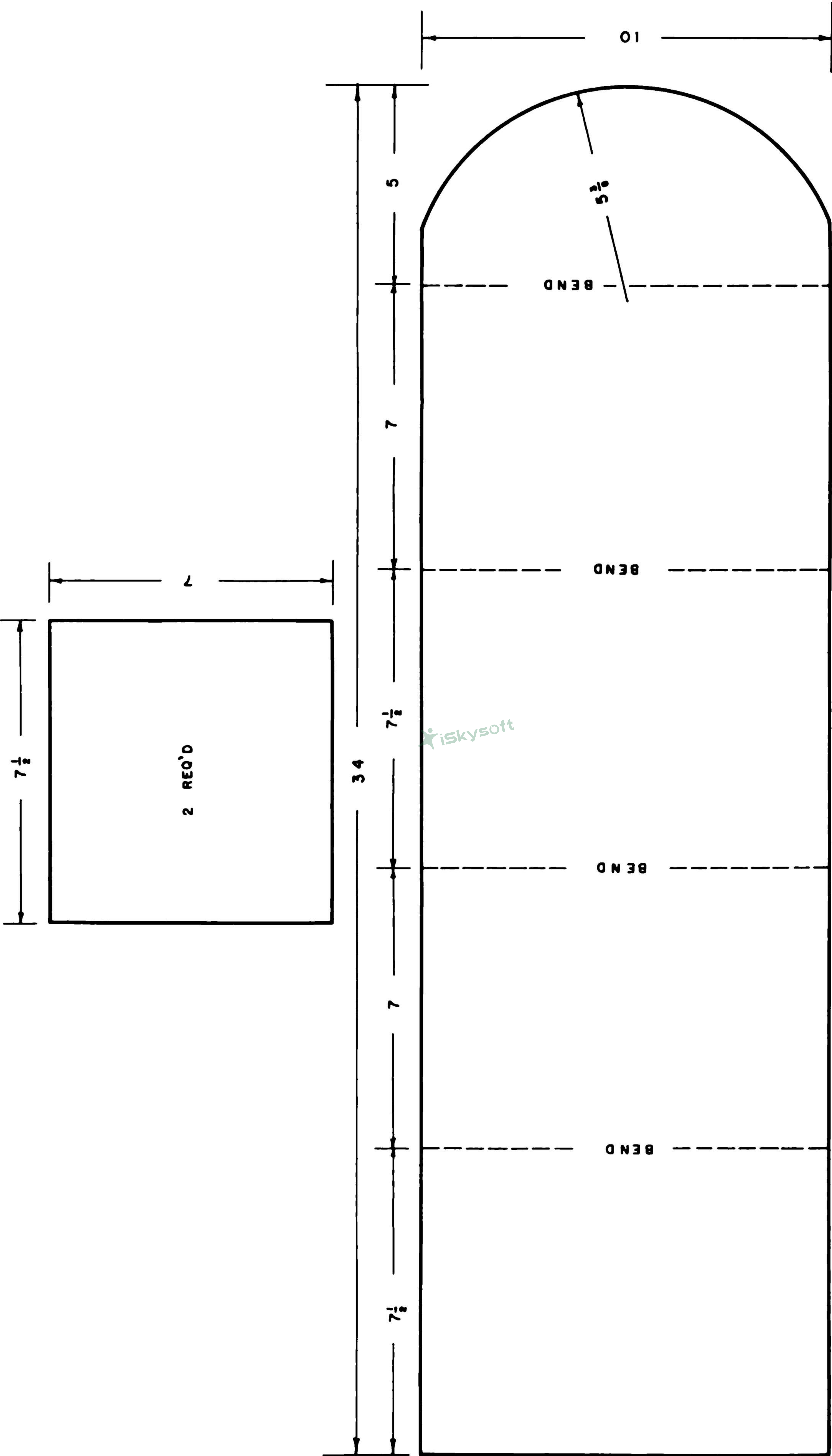
7. Apply a coat of rubber cement over the entire rough side of the cowhide pieces, and to the rough side of the lining material. Unit 15.

8. Press the lining firmly to the cowhide. Unit 15.

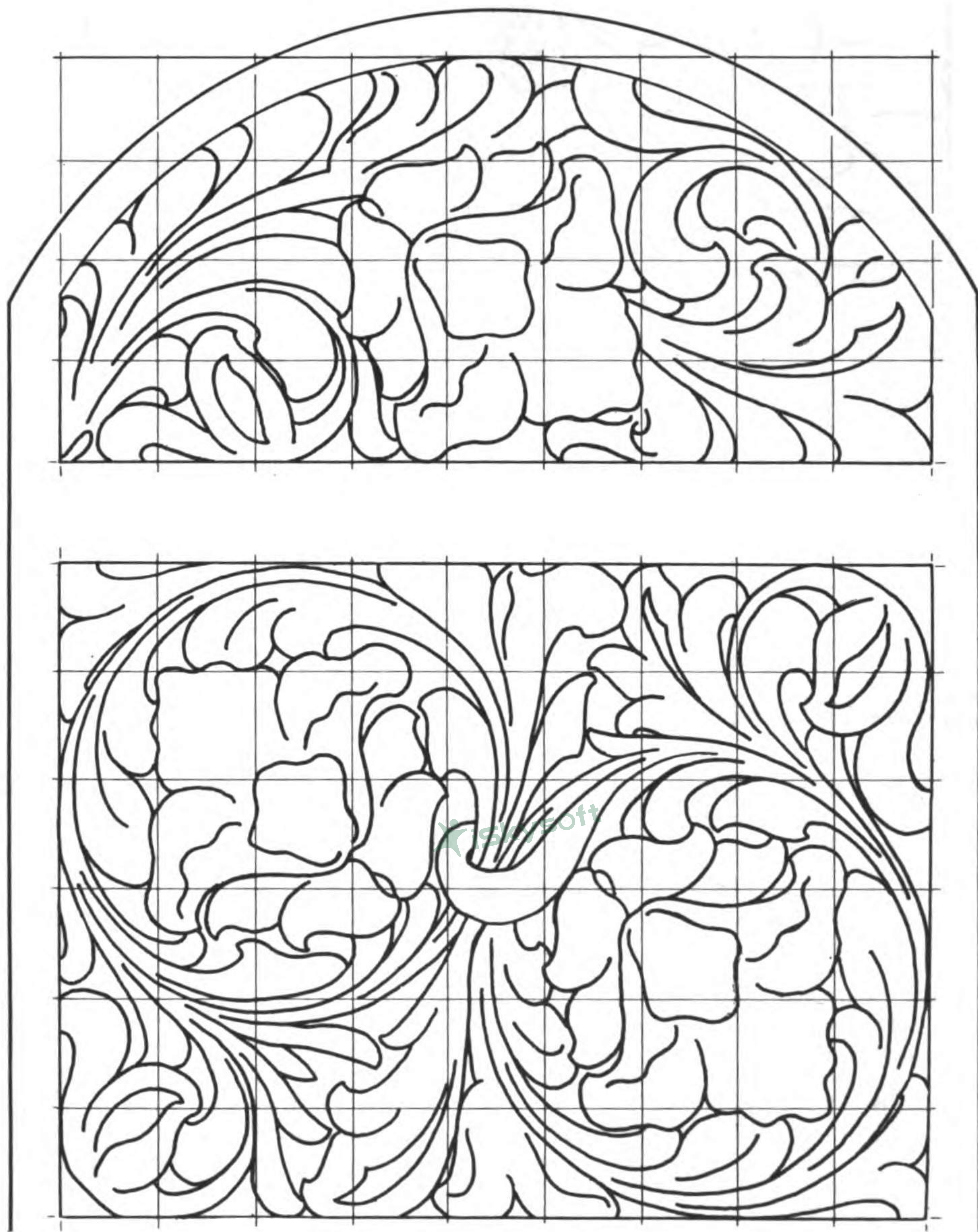
9. Punch holes or slits for edge lacing. Unit 17.

303. Gadget Bag





304. Layout for Gadget Bag



305A. Designs for Gadget Bag

10. Form the reinforcing wire pieces to fit the case.

11. Lace the edges with the Venetian edge lacing, Unit 20, or the double Cordovan stitch, Unit 21. Be sure the reinforcing wire is placed in position as you lace.

12. Crease the edges of the shoulder strap. Unit 14.

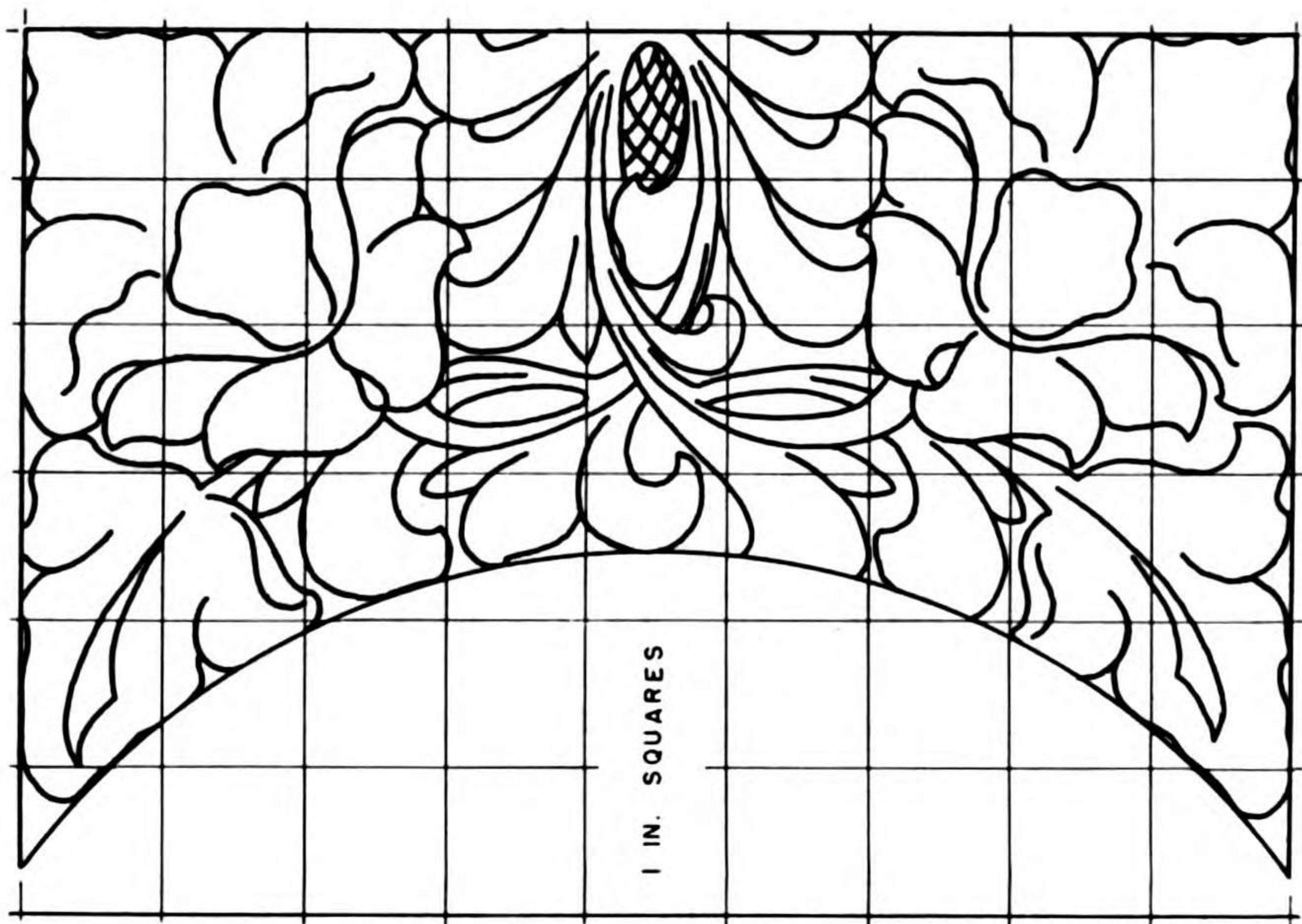
13. Dye the edges of the shoulder strap. Unit 28.

14. Mark the location and punch holes in the shoulder strap and case for fastening the strap. Unit 22.

15. Fasten the strap with rivets, Unit 25; or with the 3-hole fastener, Unit 26.

16. Locate and fasten the clasp on the front. The method of fastening will be determined by the type or style of clasp used.

17. Clean and apply a suitable finish. Unit 28.



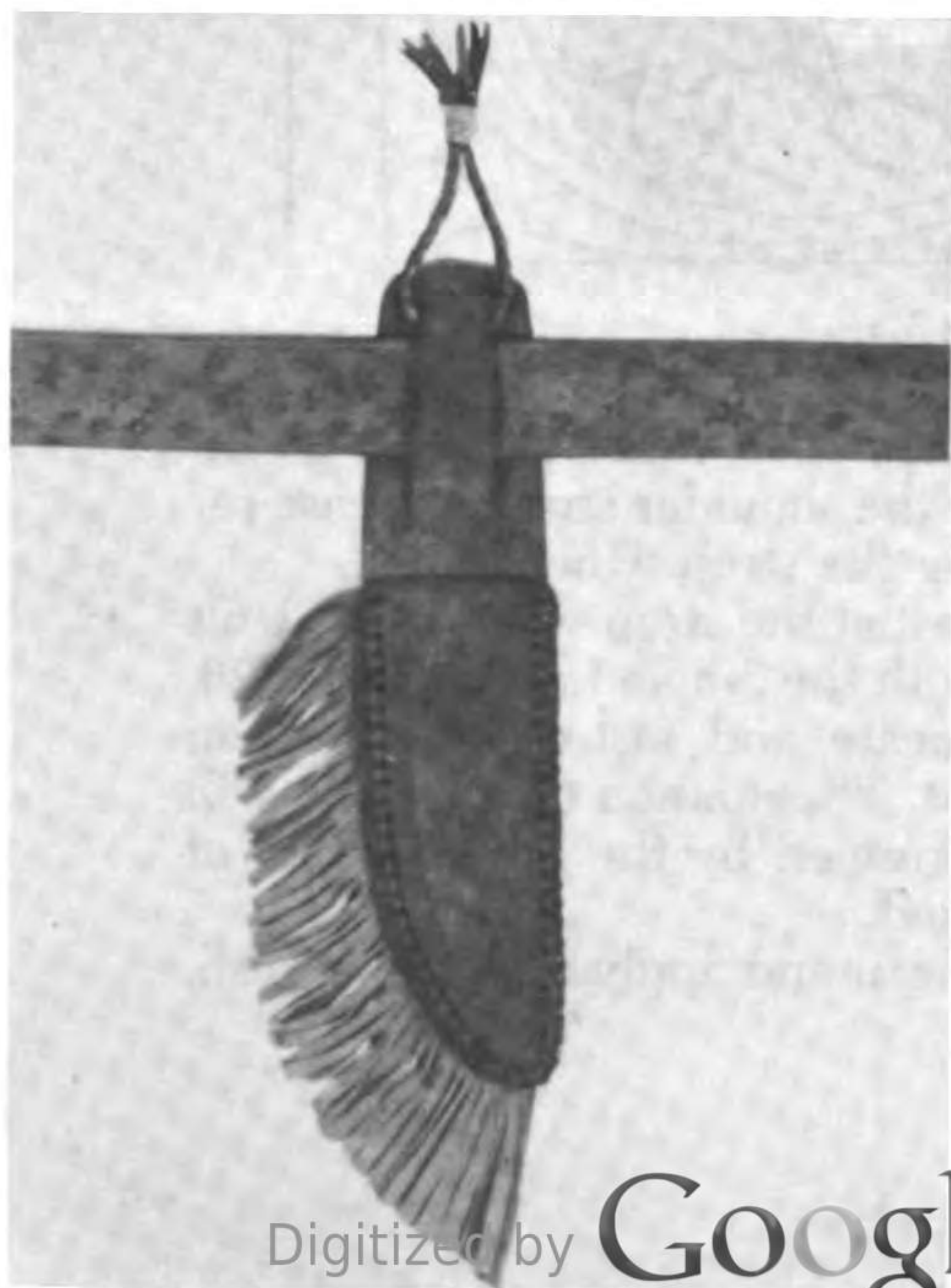
305B. Design for Gadget Bag

25 KNIFE SHEATH

A knife sheath, Fig. 306, is indispensable to a boy, particularly if he is interested in Boy Scout activities. A surface design is not given here because of the many possibilities in stamping

and embossing to suit the individual's taste and ability. The dimensions given in Fig. 307 may have to be altered, depending upon the size of the knife. Seven ounce strap or cowhide leather is best, with the fringe being cut from suede.

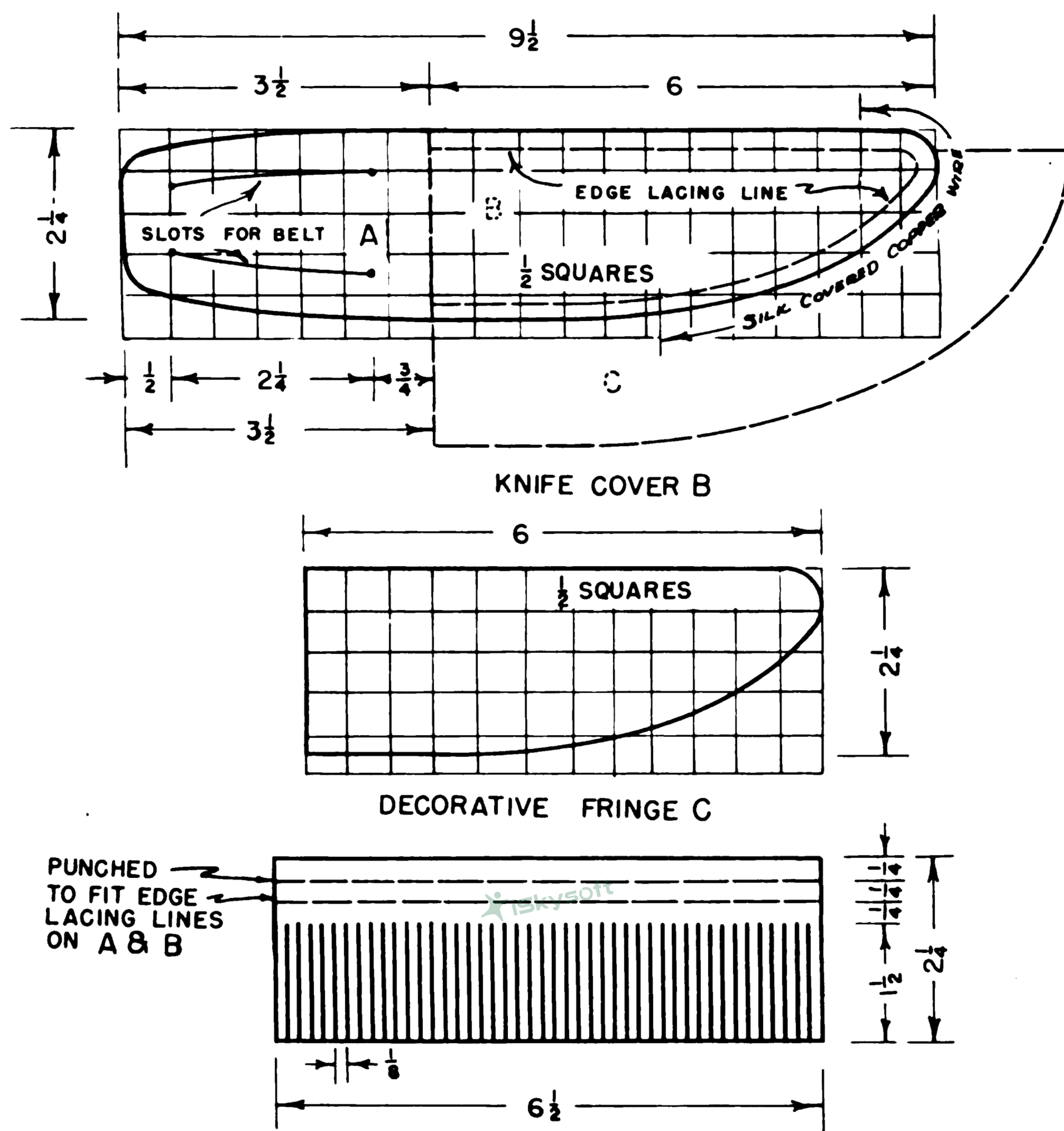
306. Knife Sheath Complete with Fringe, Reinforced Wire Edge, and Plaited Thong Handle Holder



The lacing should be reinforced with soft copper enameled wire to prevent the knife point and edge from cutting the lacing. Thong work may be added, as described in Units 30 and 31, to hold the handle against the sheath.

Procedure

1. Draw and cut out the pattern pieces. Unit 4. See Fig. 307 for dimensions.
2. Place the pattern pieces on the smooth side of the leather and mark around them.
3. Cut out the pieces. Unit 6.
4. Create a design for stamping or embossing. This will depend on the stamping tools and embossing wheel available.
5. Prepare the leather for stamping. Unit 7.



307. Layout for Knife Sheath

6. Stamp and/ or emboss the created design as planned. Units 10 and 11.

7. Crease the edges which will not be laced. Unit 14.

8. Mark, punch, and cut the belt slots. Units 6 and 22.

9. Skive the edges of the rough surface of B and along the finished surface of A, to which B will be laced. Unit 13.

10. Mark and make the fringe cuts in the suede piece. See Fig. 307.

11. Apply a narrow strip of rubber cement along the skived edges of A and B, and on both surfaces of the uncut portion of fringe piece C. Unit 15.

12. Place fringe piece C in its proper

place on piece A, over which cover B is pressed firmly.

13. Punch holes or slits for edge lacing. Unit 17.

14. Punch an additional line of holes, or make slits on the fringe piece C just off the edge of the main sheath. These holes should correspond to the holes on the sheath, and are for the purpose of lacing through the fringe piece.

15. Lace the edge with the Venetian edge lacing, Unit 20, or the double Cordovan stitch, Unit 21.

16. Reinforce the laced edges with soft copper wire. This should be similar to the cobbler's stitch, Unit 16.

17. Clean and apply a suitable finish.

26 AX SHEATH

An ax sheath, Fig. 308, is a companion project to the knife sheath. It can be made very elaborate through the many interesting stamping and embossing designs which you can create. The suede leather fringe is purely ornamental, but enhances the general appearance. Figure 309 provides measurements for a standard size ax sheath; however, it may be necessary to alter the size to fit a particular ax. The case is made from 7 or 8 ounce cowhide; the fringe may be of either calfskin or suede.

Procedure

1. Draw and cut out the patterns. Unit 4. See Fig. 309.

2. Place the pattern pieces on the smooth side of the leather and mark around them. Unit 5.

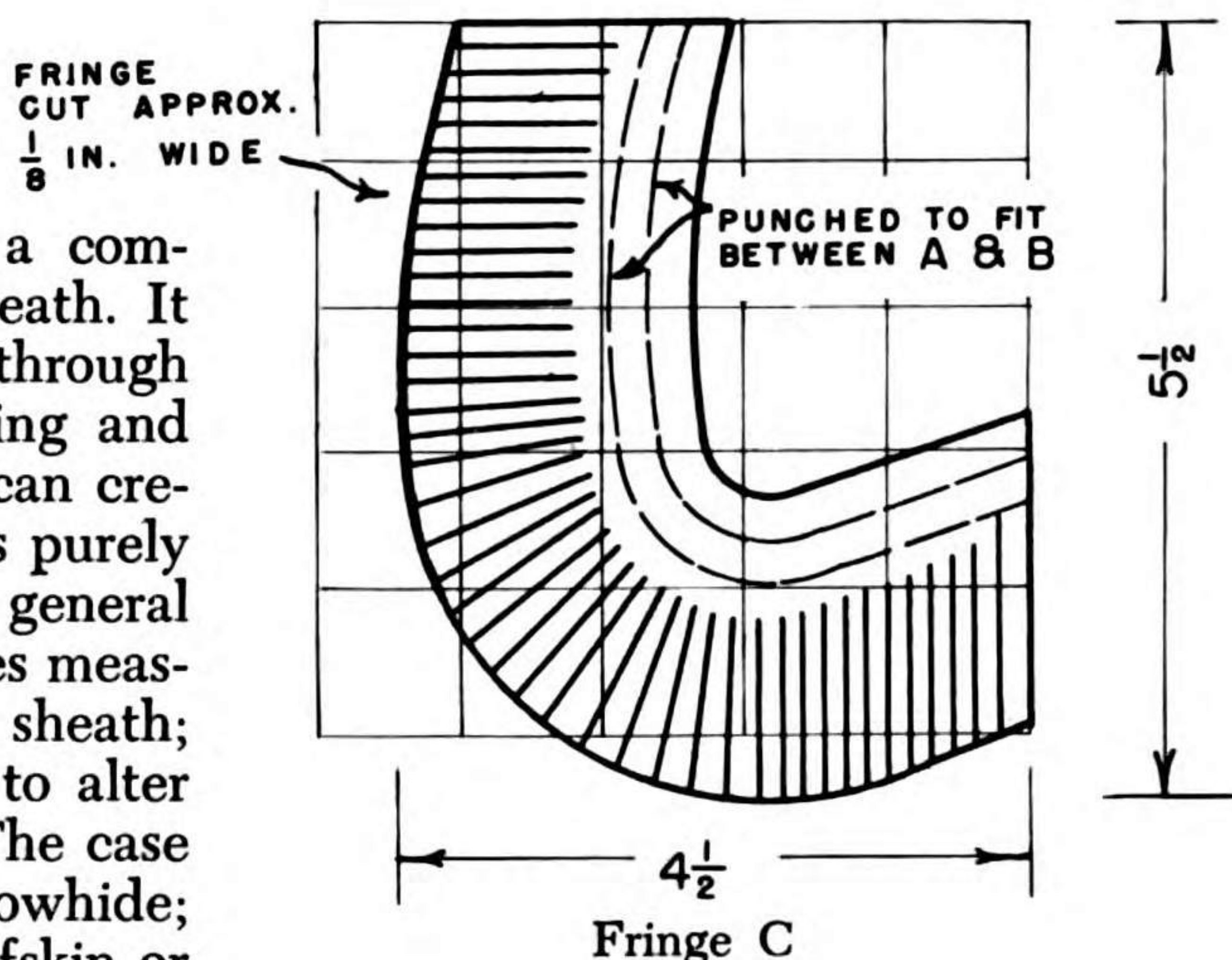
3. Cut out the pieces. Unit 6. Also cut out the fringe piece c from suede or calfskin.

4. Create a design from the available background stamps and embossing wheels.

5. Prepare the leather for stamping or embossing. Unit 7.

6. Stamp and emboss the selected design on piece B and the flap of piece A. Units 10 and 11.

7. Locate, punch holes, and cut the



slots for the belt. Units 6 and 22.

8. Skive the edges of pieces A and B where the fringe is to fit. Unit 13. This will allow for fringe thickness and for easier lacing. The fringe may be omitted, if preferred.

9. Apply a narrow strip of rubber cement along the skived edges of pieces A and B, and on both surfaces of the uncut portion of the fringe, c. The cement is to be applied only to those edges which are to be laced. Unit 15.

10. Place the fringe piece c in its proper position on A, over which B is pressed firmly. Unit 15.

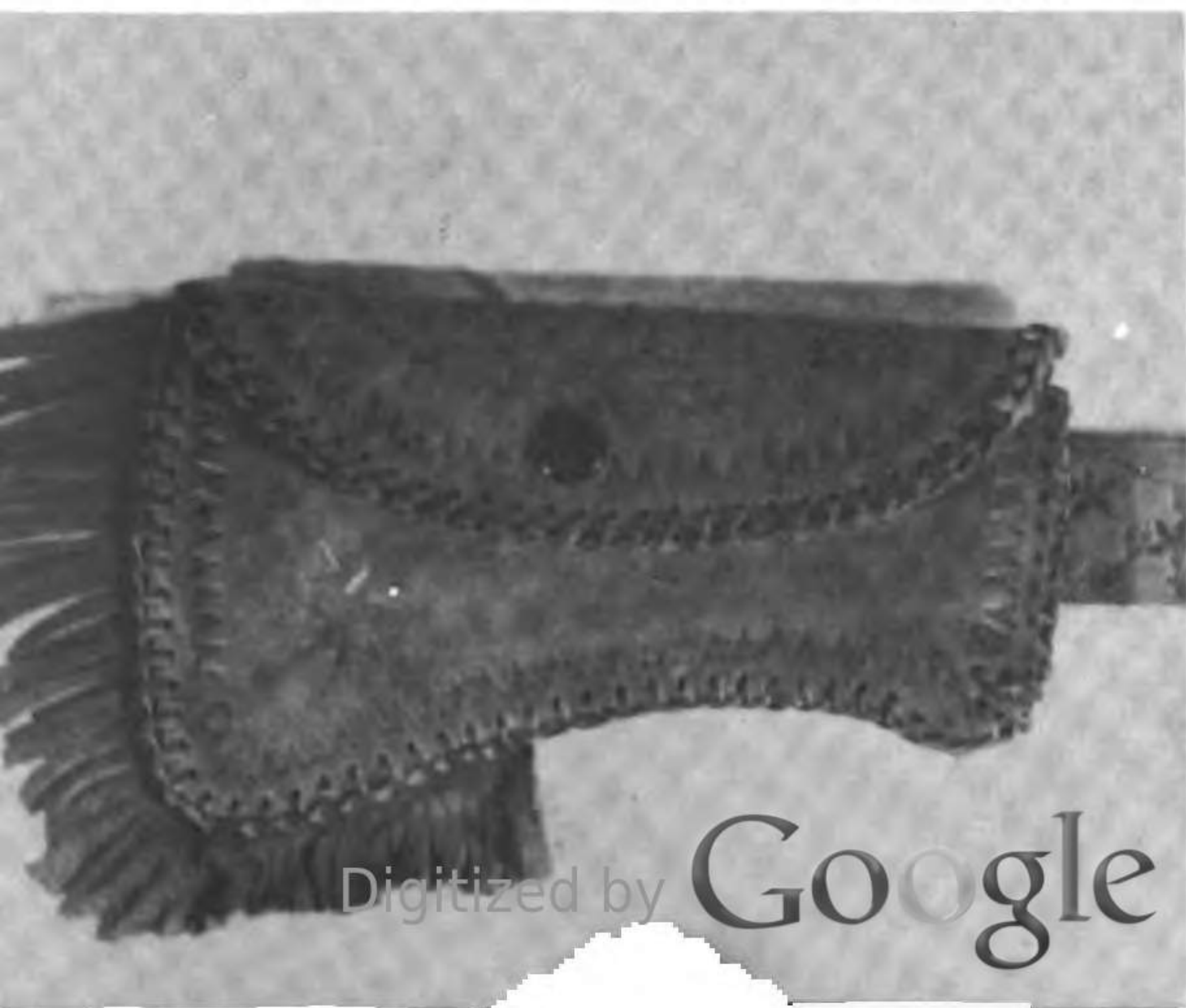
11. Punch holes or make the slits for edge lacing. Unit 17.

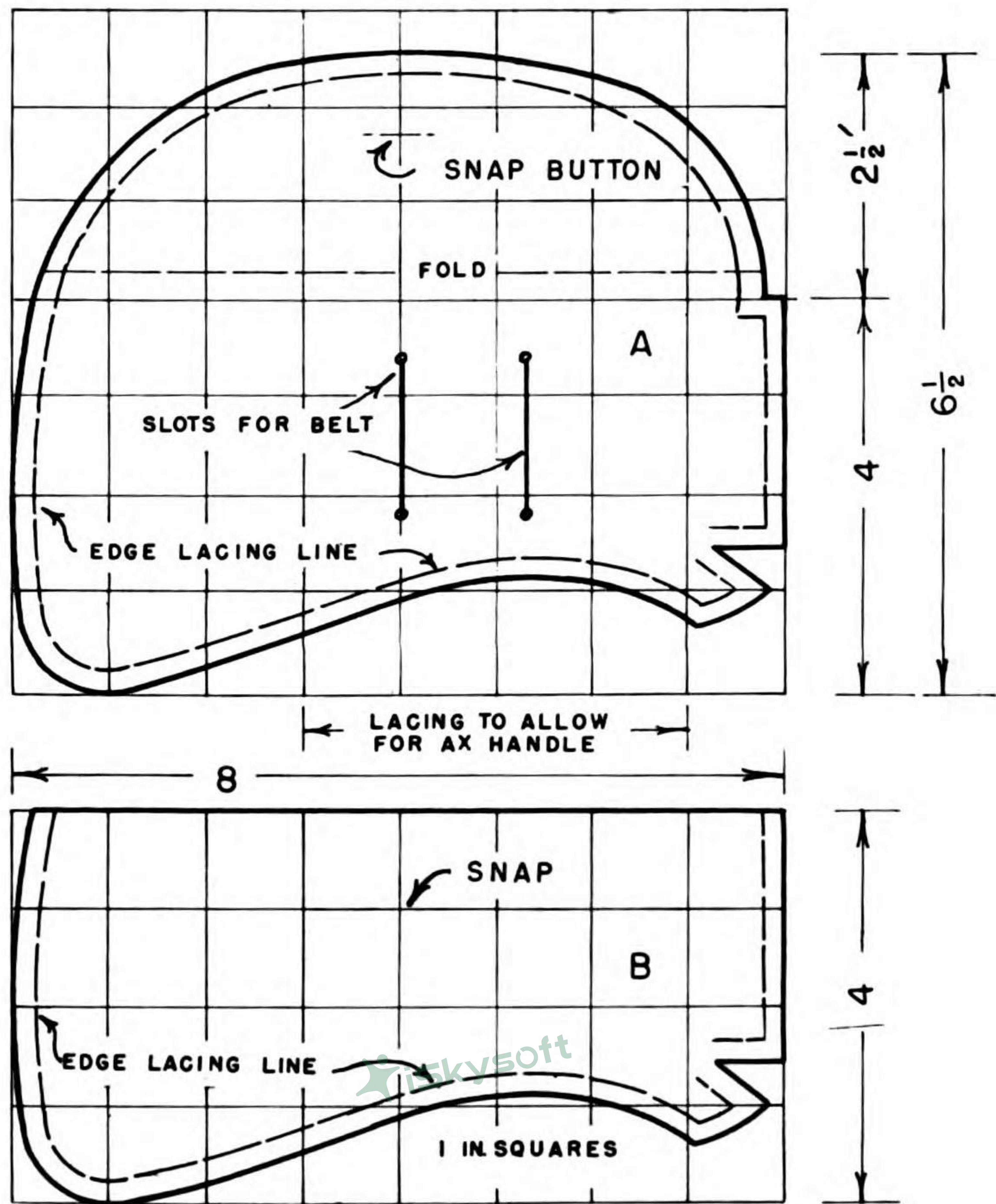
12. Punch an additional line of holes, or make slits on the fringe piece c just off the edge of the main sheath. These holes should correspond to the holes on the sheath, and are for the purpose of lacing through the fringe piece.

13. Lace the edges with the Venetian or double Cordovan stitches, Unit 20 or 21. Do not forget that an opening must be left in the bottom of the sheath for the ax handle.

14. Mark, punch holes, and assemble the snap button. Units 22 and 24.

15. Clean and apply a suitable finish. Unit 28.





309. Layout for Ax Sheath

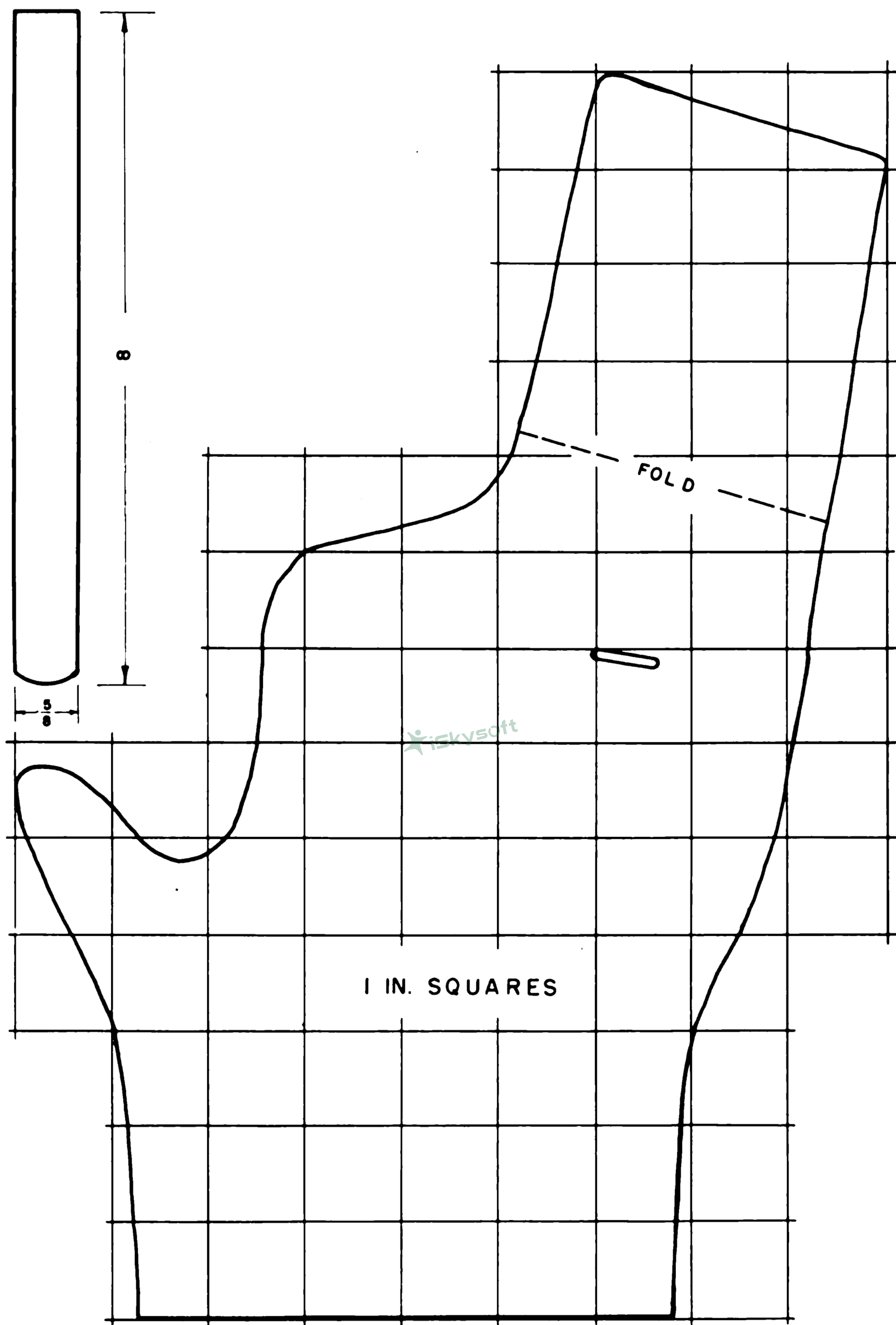
310. Holster

27 HOLSTER

The holster illustrated in Fig. 310 is a necessity for the owner of a pistol or a revolver. There are many varieties, types and sizes of holsters, depending upon the pistol or revolver to be accommodated. The one pictured and described here is for a .38 Colt Automatic. Variations in measurement can be made to suit a specific need.

The exposed surface can be carved or stamped with any of many designs, the selection of which is left to your ingenuity. The finish which you see in Fig. 310 is the popular antique rub, described in Unit 28. Material is 8 and 9 ounce cowhide.





311. Layout for Holster

Procedure

1. Draw and cut out the patterns. See Fig. 311 for dimensions.
2. Place the pattern pieces on the finished side of the leather, and mark around them. Unit 5.

3. Cut out all pieces. Unit 6.
4. Create a design.
5. Prepare the leather for stamping or carving. Unit 7.
6. Transfer the design, if a carved one has been created. Unit 8.
7. Stamp or carve the selected design. Units 10, 11, or 12.
8. Mark and cut the slot for the strap. Unit 6.
9. Turn down the back side, insert the strap through the slot, and rivet or sew both in place to form the belt loop. Units 22 and 25.

10. Apply rubber cement on the edges to be laced, and press them firmly together. Unit 15.

11. Punch holes or make slits for edge lacing. Unit 17.

12. Lace the edges with the double whip or the Venetian stitch. Unit 19 or 20. Figure 310 was laced with the double whip stitch.

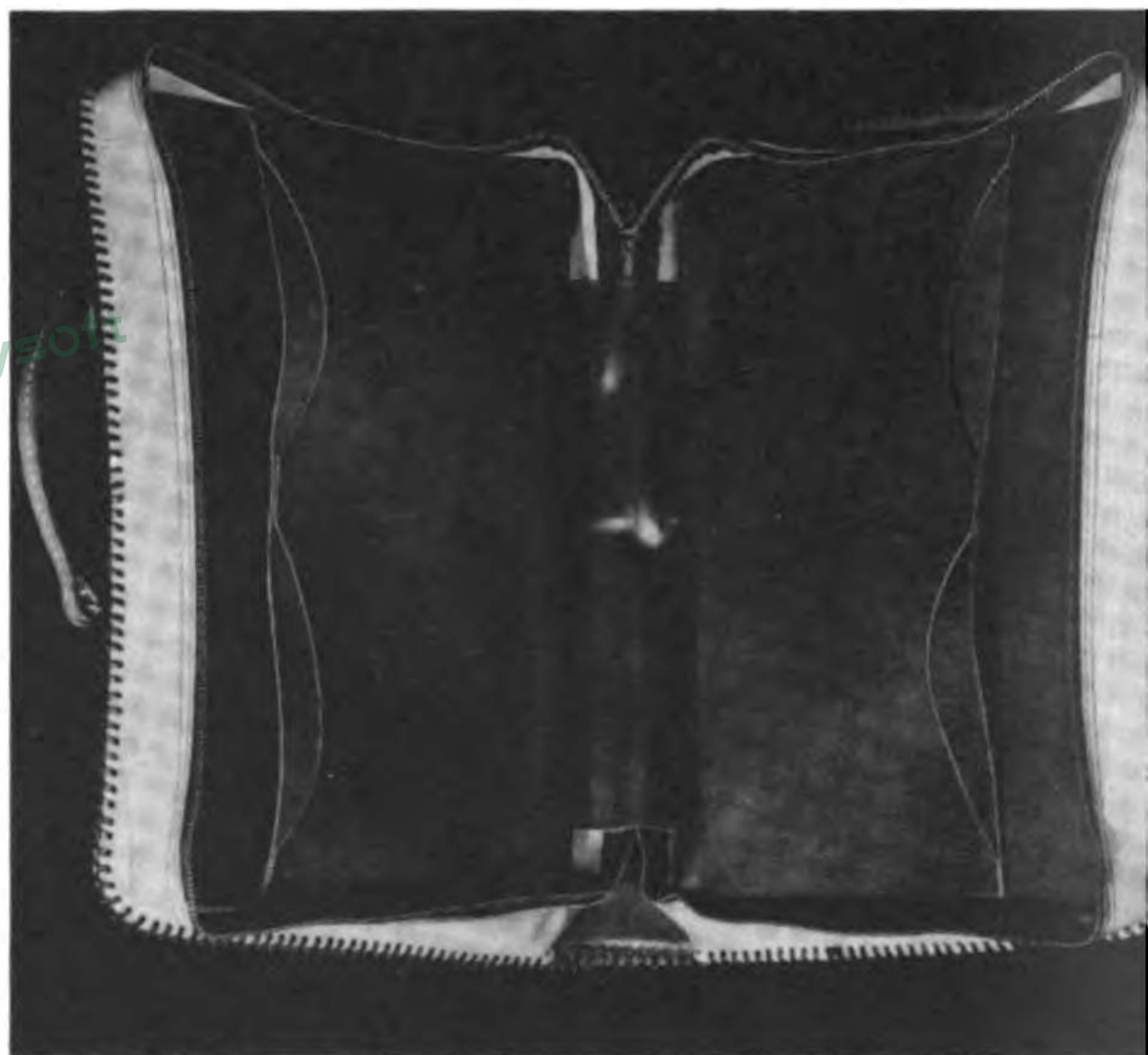
13. Locate, punch holes, and assemble the snap button. Units 22 and 24.

14. Clean and apply a suitable finish. Unit 28.

28 COMPACT BRIEF CASE



312. Compact Brief Case—Closed



313. Compact Brief Case—Open

The compact brief case pictured in Figs. 312 and 313 was made by a high school student. A project of this type is a challenge to ingenuity, craftsmanship, and design. It measures approximately 12 x 16 inches and is closed with a 36-inch heavy duty zipper.

Nine and ten ounce cowhide makes excellent material for the cover. The gusset may be made of lighter 4 to 5

ounce stock. The lining and pockets may be of 3 and 4 ounce calfskin or other suitable skin or hide.

Any of the notebook designs suggested in this book may be adapted for the cover decoration, or you may plan your own, giving rein to your originality. The design in Fig. 312 is brought into greater prominence by the application of the antique finish.

IDEAS FOR ADVANCED LEATHER PROJECTS

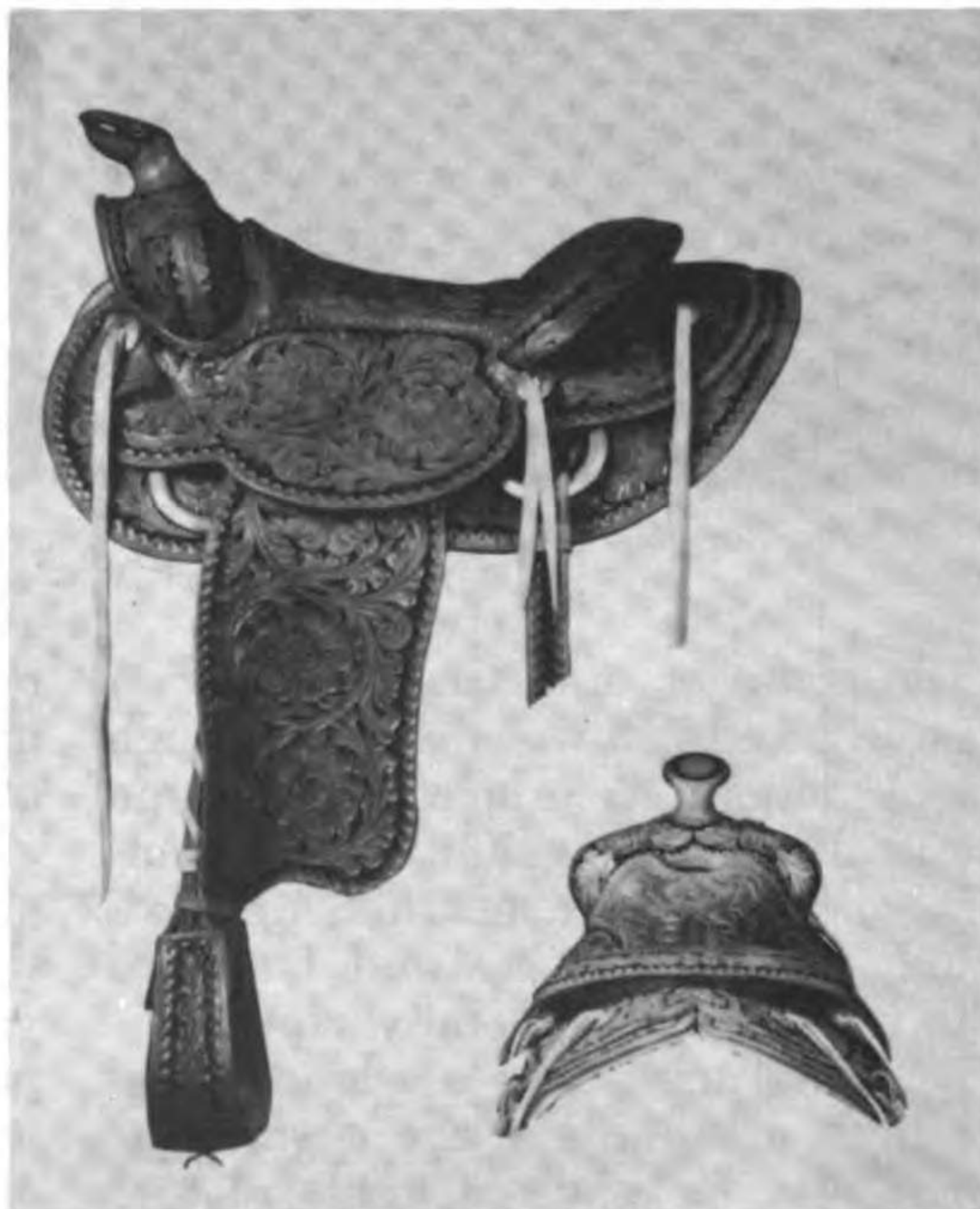


314. Man's Carved Gladstone Bag—
Made by Advanced
Leathercraftsman

The two suggestions on this page were made by leathercraft experts. These pictures show the extent to which a leather craftsman can apply his initiative, originality and skill.

315. Carved Design Saddle—Made by
Professional Leathercraftsman

COURTESY TEX TAN TANNERY





MONOGRAM STYLES

This page contains a few suggestions to the modern approach of designing monograms to fit given spaces in designs. An initial or monogram individualizes a project and makes it more meaningful and personal.

HELPFUL SOURCES FOR ADDITIONAL INFORMATION

The titles listed below present a variety of leathercraft activities. This is not an all-inclusive list, but rather a selected one.

- Baird, F. O. *Leather Secrets*, Manitou Springs, Colorado: F. O. Baird, Publishers, 1951.
- Cherry, Raymond. *General Leathercraft*. Bloomington, Illinois: McKnight & McKnight Publishing Company, 1955.
- Dean, John W. *Leathercraft Techniques and Designs*. Bloomington, Illinois: McKnight & McKnight Publishing Company, 1949.
- Griffin, Ken. *Scrap Book*. Los Angeles, California: Craftool Company, 1952.
- Griffin, Ken. *The Art of Leather Carving*. Los Angeles, California: Craftool Company, 1949.
- Griswold, Lester. *Handicraft, Simplified Procedures and Projects*. Colorado Springs, Colorado: Lester Griswold, Publisher, 1951.
- Groneman, Virginia. *Ladies' Glovemaking*. Peoria, Illinois: Chas. A. Bennett Company, Inc., 1952.
- . *Lucky Seven*. Los Angeles, California: Craftool Company, 1955.
- Muma, Robert. *Color in Leathercraft*. Scottsville, New York. Craftsman Supply Company, 1954.
- Shelton, Al. *Operation Leather Carving*. Los Angeles, California: Craftool Company, 1952.
- Stohlman, Al. *Figure Carving*. Los Angeles, California: Craftool Company, 1953.
- Stohlman, Al. *How to Carve Leather*. Los Angeles, California: Craftool Company, 1952.
- Thompson, R. W. *How to Lace*. Los Angeles, California: E. U. Drake, Publisher, 1955.
- Thompson, Robert W. *Leathercraft*. New York City, New York: D. Van Nostrand Company, 1947.

INDEX

A

Alligator briefcase, 27
 Alligator-grained leather, 79
 Antique finishing, 58-59
 Awl
 pointing of, 59
 use of, in hole punching, 50
 Ax sheath, 150-151

B

Backgrounding, 35-36
 Belly hide, 79
 Belts
 braided, 67-71
 ladies' leaf design, 109-110
 leather for, 79
 men's, plans for, 116-118
 novelty link, 71-72
 three-hole fastening of, 54
 Beveling, 34
 Bevel point knife, 12-13
 Billfolds
 plans for making, 113-116
 Book ends, 120-122
 Books on leathercraft, 156
 Braided belt, 67-71
 Braiding a four-plait, diamond design round
 thong, 61-64
 Brief case, 153
 Buckskin, 79
 Buttonhole edge lacing, 46

C

Cabretta leather, 79
 Calfskin, 79
 Calling card holder, 105-106
 Camera case, 19, 143-145
 Camouflage, 33-34
 Capeskin, 79
 Carved notebook, 129-131
 Carving, 30-36
 Carving project list, 11
 Cattle hide, 85

Charts

hole size and spacing, 42
 of punch numbers and hole sizes, 49

Chisels, thonging, 17-18

Chrome tanning, 77-78

Cigarette case

plan, 106-109
 stretching, 55

Cleaning leather, 57

Cobbler's hammer, 12-13

Cobbler's stitch, 41

Coin purse

and key case combination, zipper
 style, 103-104
 simple, 99-101
 temporary assembly of, 39
 wristband, 101-103

Coloring surface, 57-58

Comb case

punching, 43
 temporary assembly of, 38

Commercial design packets, 25

Cordovan leather, 80

Cordovan or buttonhole edge lacing, 46-49

Cotton batting, used in padding metal
 form, 39-40

Cowhide, 80

Crown and turkshead forming, 63-64

Cutting

leather, 22-23
 to form fold, 56

D

Decorative cuts, 36

Design development of a billfold, 30-36

Design transferring, 20, 25-26

Dividers, 12-13, 21, 42

Doeskin, 80

Drawgauge, 12-13, 23

Dressing edges, 37

E

Early uses of leather, 73

Edge creaser, 12-13

Edge hole and slit punching, 41-44

Edge lace splicing, 44
 Edge lacing, 44-49
 Edger, 12-13
 Edge rolling, with mallet, 47
 Edge trimming and creasing, 36-38
 Embossed leathers, 80
 Embossing, 29-30
 Embossing wheel and carriage, 12-13
 Eyelet
 setters, 12-13
 setting, 51

F

Fancy leather, 80
 Fid
 identifying, 12-13
 use of, 40
 Finishing leather, 77-78
 Flat modeling, 27
 Four prong thonging chisel, use of, 43
 Full grain, 80

G

Gadget bag or overnight toiletry case, 145-147
 Geographical sources of leather, 82-83
 Gladstone bag, carved, idea for, 154
 Glazed finish, 80
 Glove leather, 80
 Goodyear welt shoe, 88
 Grain, 80

H

Handbags, ladies', 135-143
 Hand sewing, 40-41
 Harness leather, 80
 Head knife, 12-13
 Hide, 80
 Hides and skins, 8-9, 75-77
 History of leather, 72-73
 Holder, plastic, for stamping tools and swivel cutter, 15, 17
 Hole size and spacing chart, 42
 Hollow drive punch
 use of, 50
 Holster, 151-153
 Horsehide, 80

I

Imprint, making of, 27-28
 Industrial leathers, 82-85

K

Kangaroo, 81
 Key case
 and coin purse combination, zipper style, 103-104
 edge rolling, 47
 punching with simple tube hand punch, 43
 sewing on machine, 41
 with binding post, 94-95
 with key plate, 96-99
 zipper thong rolling, 64
 Key ring holder, 96-97
 Kid, 81
 Kip, 81
 Knife sheath, 148-149
 Knives
 illustrated, 12-13, 17-18, 23
 sharpening of, 59-60

L

Lace, 10, 81
 Lacing
 braided belt, 71
 needles, 44
 Lacquering, 58-59
 Lasting, shoe, 89
 "Leatherette," 81
 Leather making, 73-78
 Leather uses in industry, 83-85
 Leathers, 8-9
 Letter holder
 plans, 118-120
 punching, 42-43
 temporary assembly of, 39-40
 Lining of leather, 81
 Links for belts, 72

M

Machine sewing, 41
 Mallet
 head refacing, 61
 illustration of, 13-14
 used in carving process, 32-35

Marking

- with a scratch awl, 20
- with a spacer wheel, 43
- with dividers, 42

Masking tape, for holding a design in place, 25

Metal form, used in temporary assembly, 39-40

Mineral tannage, 82

Modeler, 13-14

Modeling tool, use of, 26-29

Monogram styles, 155

N

Notebooks, 129-135

Novelty link belt, 71-72

Nail stamps, 14-15

Neckerchief slide, 65-66

Needles, 14-15

O

Oak-tanned leather, 81

Oblong punch
use of, 50

One prong chisel, use of in making edge
lacing slits, 43

“Ooze,” 82

Outline tooling, 27

P

Padding with cotton batting, 39-40

Paper cutter, use of, 23

Peccary, 81

Pelts and hides, 8-9, 75-78

Photograph album and scrapbook, 122-128

Pigskin, 81

Plans for leathercraft

- ax sheath, 150-151
- billfolds, 113-116
- book ends, 120-122
- brief case, 153
- calling card holder, 105-107
- camera case, 143-145
- cigarette case, 106-109
- comb case, 93-94
- gadget bag, 145-147

holster, 151-153

key case with binding post, 94-95

key case with key plate, 96-99

key ring holder, 96-97

knife sheath, 148-149

ladies' handbags, 135-143

leaf design ladies' belt, 109-110

letter holder, 118-120

men's belts, 116-118

notebooks, 128-135

photograph album and scrapbook,
122-128

simple coin purse, 99-101

western style necktie, 111

wristband coin purse, 101-103

wristlet, 111-112

zipper coin purse key case, 103-104

“Plastic calf,” 81

Pliers, 14-16

Pro-gauge

- attachment for swivel knife, 17-18
- and swivel cutter, 32

Punches

 illustrated, 12-15
uses of, 50

Punching

- edge holes and slits, 41-44
- holes for buckle and fastening in
braided belt, 70
- holes, illustrated, 49-51
- with fid, 40

Punch number and hole size chart, 49

Punch tube dressing, 60

R

Raising, to emboss light leather, 29-30

Rawhide, 81

Relief tooling or flat modeling, 27-28

Revolving tube hand punch, use of, 50

Rivets, setting, 53

Rolling braid, 64

Rubber cement

- applied to metal form, in
temporary assembly, 38-39
- use of in embossing, 30

S

Saddle, carved, idea for, 154
 Saddle stamp
 impressions of, 16
 used in carving process, 32-35
 Scissors, use of, 23
 Scratch awl
 illustrated, 15-17
 use for marking, 20
 Seeding, 34-35
 Shading, 33-34
 Shears, 15-17, 21
 Shoe construction, 86-92
 Shoe leather, 81, 85
 Shoulder strap bag, ladies', 141-143
 Side, 82
 Side-upper leather, 82
 Single tube hand punch using, 43
 Skife
 illustrated, 15-17
 use of, 37
 Skin, 82
 Skiver, 82
 Skiving edges, 36-37
 Sliding knot making, 64-65
 Slunk, 82
 Snap button fastener, 17
 Snap fasteners
 applied, 72
 setting, 52-53
 Soaking leather, 24
 Space marker, 15-17
 Spacer wheel
 marking with, 43
 Splicing
 edge lace, 44
 Split, 82
 Sponge, for moistening leather, 24
 Square, 15-17
 Stamps, saddle, 15-17
 Stamping tools, use of, 28-29
 Steerhide, 82
 Stencils for transferring designs, 25-26
 Stippler
 illustrated, 17
 use of, 28
 Stretching, forming, making molds in
 leather, 55-56

Suede finish, 82

Swivel cutter, use of, 31

Swivel knife, 17-18

T

Tanning, 75-77

Templates

cardboard, for camera case, 19, 21

sheet metal, 21-22

use in making belt links, 72

Temporary assembly, 38-40

Terminology of leathercraft, 79-82

Textures of leather, 78

Thong cutting and braiding, 61-64

Three-hole fastener, making, 54

Tool cabinet, portable, 18-19

Tooling and modeling, 26-27

Tooling project list, 10-11

Tools

maintaining and sharpening, 59-61

variety of, 11-18

Tracing a design, 20, 25-26

V

Vegetable "tannage," 82

Vegetable tanning, 75-76

Venetian or Florentine lacing, 45-46

W

Wallaby, 81

Waxing and polishing, 58-59

Western style necktie, 111

Wheel embossing, 29-30

Whip stitch edge lacing, 44-45

Wooden form for sketching, 55-56

Wristlet, 111-112

Z

Zipper

coin purse key case thong rolling, 64

handbag, with thong, 135-138

notebook, 131-135







iskyssoft