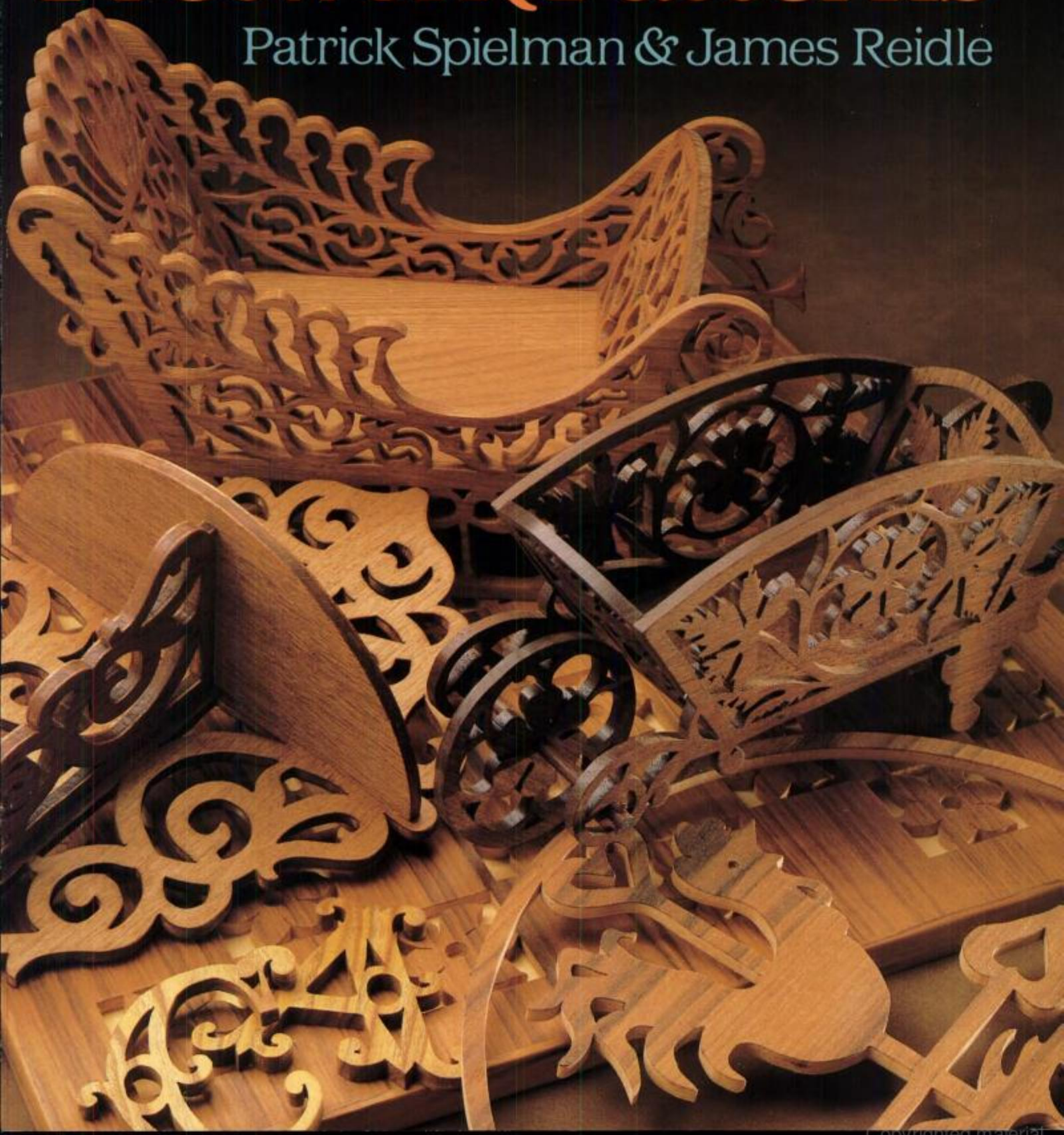
Scroll Saw Fretwork Patterns

Patrick Spielman & James Reidle



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Scroll Saw Fretwork Patterns



Patrick Spielman
& James Reidle

Drawings by
Dirk Boelman,
The Art Factory

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Acknowledgments

We are especially grateful to our good woodworking friends who have contributed to the content and the overall impact of this book. Their generosity in sharing plans and ideas to help spread and improve the art and craft of scroll-saw fretwork has been very gratifying.

First, and most importantly, we extend thanks to Henry Aldinger for contributing pattern sources and other historical material. We appreciate his dedicated efforts, which have evolved into a major part of the book.

We want to thank our friend and master fretworker, Carl Weckhorst, for sharing so many fretwork patterns and ideas. Carl and his wife, Phyllis, allowed us to photograph several of his extraordinary fretwork pieces in their home for this book.

Likewise, Kirk Ratajesak, also known as "the fretworker," has generously donated many of his original miniature designs and other patterns, which, along with the photographs of his work, also fill a number of these pages.

Many great patterns and some completed pieces that we captured with the camera were enthusiastically provided by talented fretsawer John Polhemus of J.P. Woodworks, Waldorf, Maryland. Some of his patterns are sure to become woodworking classics, and we are certainly happy to include them here.

We also want to thank Hanns Derke of Advanced Machinery Imports, Ltd. for allowing us to adapt two patterns from AMI's pattern book to include in ours. In addition, we want to thank Don Strong of Strong Tool Design, who helped us with leads and suggestions.

The skillful rendering of the patterns by Dirk Boelman of the Art Factory, Richland Center, Wisconsin, is a very special feature of this book. We are grateful to Dirk Boelman not only for his graphic arts talent, but also for his patience, understanding, and steadfast dedication—and for the friendship that developed while we were working on the book.

Others who in one way or another influenced the outcome of this book include Elaine Reidle and Patricia Spielman, Mark Obernberger, Larry Boehner, Conrad Jensen, Ken Gould, and Gus Stefureac—to all, we express our appreciation for helping us bring *Scroll Saw Fretwork Patterns* to all woodworkers.

Patrick Spielman, Spielmans Wood Works, and
James Reidle, Reidle Products

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Introduction

This book offers numerous full-size fretwork patterns for scroll sawing. Fretwork objects generally are more ornate and delicate, and have substantially more piercing cuts, or cutout open spaces, than other scroll-sawn objects. Still, doing fretwork can be great fun for everyone—male or female, from age 8 to 80.

Fretwork is really nothing new. In fact, fretwork was the national woodworking craze in the United States as far back as the early 1800s, and its popularity continued into the 1940s. Furthermore, historical records indicate that fretwork flourished in many other countries—including England, France, Italy, Switzerland, Germany, and Spain—perhaps centuries before it became the woodworking rage it did in the United States.

The essential difference between 18th-century and 19th-century fretwork has to do with the tools that were used. Much of the early fretwork made abroad was cut with hand-held saw frames that look and function like the hand-held coping saws of today. During the mid- to late 1800s, foot-powered scroll saws—the forerunners of our modern constant-tension parallel-arm scroll saws—were developed in the United States, and this brought about abrupt changes in fretwork. With the foot-powered scroll saws came increased production output, accuracy, and speed, making fretwork easier and even more enjoyable.

During the 1800s scroll-sawing fretwork projects was often a family activity, for rich and poor alike. Back then, leisure time fretwork took the place of TV, videos, and other kinds of family entertainment. In some circles, fretwork was even considered a serious art form. Others involved with fretwork were employed in industry. They produced the Victorian gingerbread architectural embellishments that were so popular around the turn of the century.

This book provides many patterns that were popular over a century ago as well as other patterns that represent more contemporary design trends. However, all the patterns in the book are sawn by using the same essential techniques, which are fairly easy to master.

The interest in fretwork now appears to be resurfacing once again, and vigorously at that. This has no doubt been spurred on by the current resurgence of scroll sawing in general, which is probably due to the introduction of the modern constant-ten-

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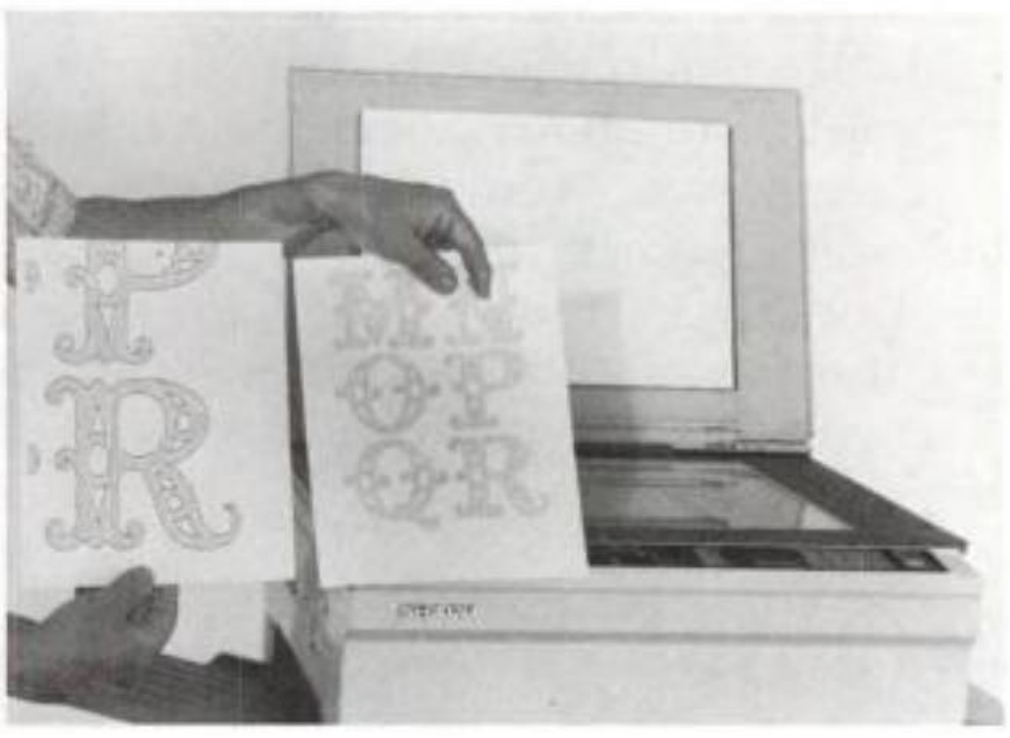
sion scroll saws during the late 1970s and early 1980s. Today there is a wide range of excellent tools and scroll-sawing machines, which makes scroll sawing and fretwork easier and more fun than ever before in history. Consequently, and perhaps for the exact same reasons it was so popular some centuries ago, fretwork is about to emerge again as a major woodworking activity. Here are some reasons why fretwork is so popular:

- Fretwork is a useful spare time activity.
- It requires very little space.
- The tools and materials required are relatively inexpensive.
- You can fit fretwork into a busy schedule, starting and stopping whenever it's convenient.
- Fretsawing provides an immediate sense of achievement and accomplishment.
- Fret projects can be as simple or complex as you desire.
- Fretwork is a good activity for all ages and all woodworking levels.
- New project ideas, plans, and patterns, as well as improved tools, are introduced regularly to freshen and inspire the overall state of the art.

Patterns—Copying, Enlarging or Reducing, and Transferring

Naturally, we feel we have developed and provided you with patterns that are appropriate in terms of style and size. However, we realize that special individual needs may arise causing some patterns to require certain alterations. Thus, we encourage you to make size enlargements or reductions as well as design modifications to suit your individual needs.

You can change pattern sizes in a number of different ways. The most modern and popular approach is to use a copy machine. Patterns can not only be copied in a one to one size scale, but they can also be enlarged or reduced to any size simply with the touch of a button. See Illus. 1.



Illus. 1. An office copy machine is ideal for reproducing patterns from this book, and some machines also have the capability to enlarge or reduce, as shown.

Other conventional enlargement or reduction procedures are the use of a pantograph and the graph square, or grid, method. A pantograph is an inexpensive tool that can be used to enlarge a pattern as much as ten times its original size or reduce it down to one tenth of its original size. The enlargement or reduction can be drawn directly onto the workpiece or onto paper.

To enlarge a pattern with the grid method, begin with some transparent tissue paper. Accurately rule it out, making a grid of ¼" or ½" squares. Placing the tissue paper over the pattern, trace the lines of the design. Next, on a larger piece of paper, about the size that you want the eventual pattern to be, divide the space up with exactly the same number of squares. The size of the larger set of squares can also be determined by the enlargement ratio desired. If you want the design twice the original size, then draw the large squares twice

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the size of the smaller ones. Now, copy the design square by square onto the larger grid. Curves may be drawn by eye after you've located them with reference to their surrounding square; however, it is more accurate to mark the points where the line of the curve strikes each horizontal and vertical line. To reduce a pattern, follow this procedure in reverse.

With this technique, you can also draw the design directly on the surface of the wood. However, usually the pattern is drawn onto paper first since it's easier to erase, refine, and smooth out contoured lines on paper. When you've made your full-size paper pattern, you have several choices of how to transfer the pattern to the wood.

The method that we recommend involves the use of special spray adhesives (Illus. 2) that temporarily bond paper copies of patterns to the workpiece surfaces. Bonding copy-machine copies of patterns to the wood is the easiest and quickest method that we know of or have tested.

Another way to transfer patterns to wood involves tracing the pattern from the book and then transferring this pattern to the workpiece with carbon or graphite paper. Incidentally, graphite paper is preferable to carbon paper. Since carbon paper is greasy, it's hard to erase from wood, and any remaining marks ieft on the surface are very difficult to finish over. Graphite paper, on the other hand, erases easily and sands away without difficulty, and it's also available in white as well as dark. White graphite paper is ideal for transferring patterns to darker woods, such as walnut, cherry, and padauk. See Illus. 3. Graphite paper is



Illus. 2. These spray adhesives are perfect for bonding copies of patterns directly to the wood. The pattern and the wood are then cut together.

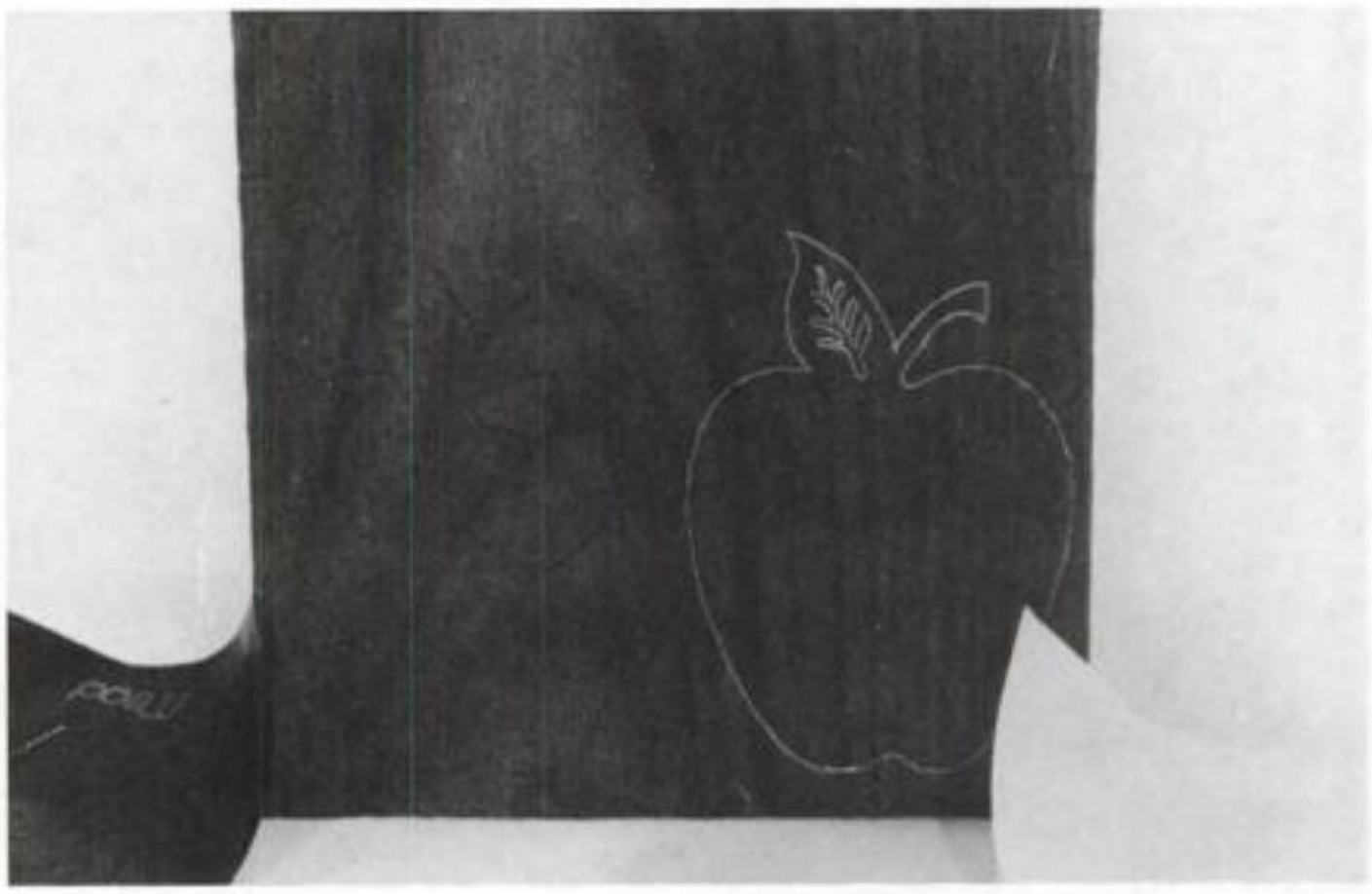
available at most office-supply and graphic arts stores.

The use of a pattern template (Illus. 4) is still another way of transferring patterns to wood surfaces. A template is nothing more than a full-size pattern made of stiff, rigid material that can be easily traced around. Templates can be cut from a variety of different materials with a scissors or knife, but the easiest way to make them is to saw them out when you saw the basic shape of the project. Suitable template materials include tagboard, cardboard, file folder stock, oiled stencil board, and thin plastics. Unlike pasted-down patterns, which get cut up during the sawing, you can reuse good templates again and again.

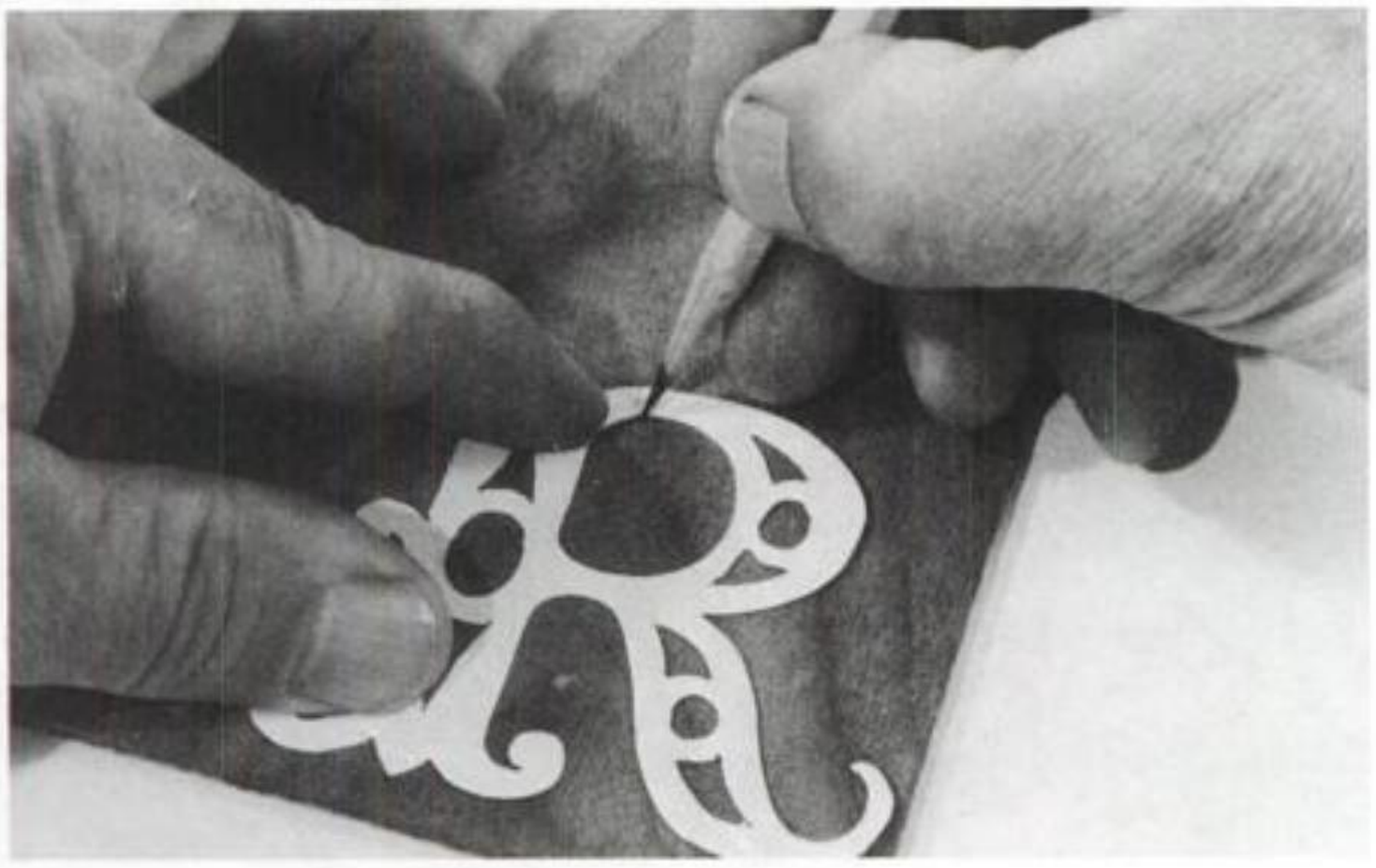
Wood Materials

In the pre-plywood days some decades ago, only solid woods were used for fretwork projects since they were the only wood materials available. Although most serious fretworkers and masters of the art today prefer using solid woods, you shouldn't overlook the many advantages and conveniences afforded by conventional plywood

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Illus. 3. Graphite paper works better than carbon paper for transferring designs, and it's available in white for use on dark woods.

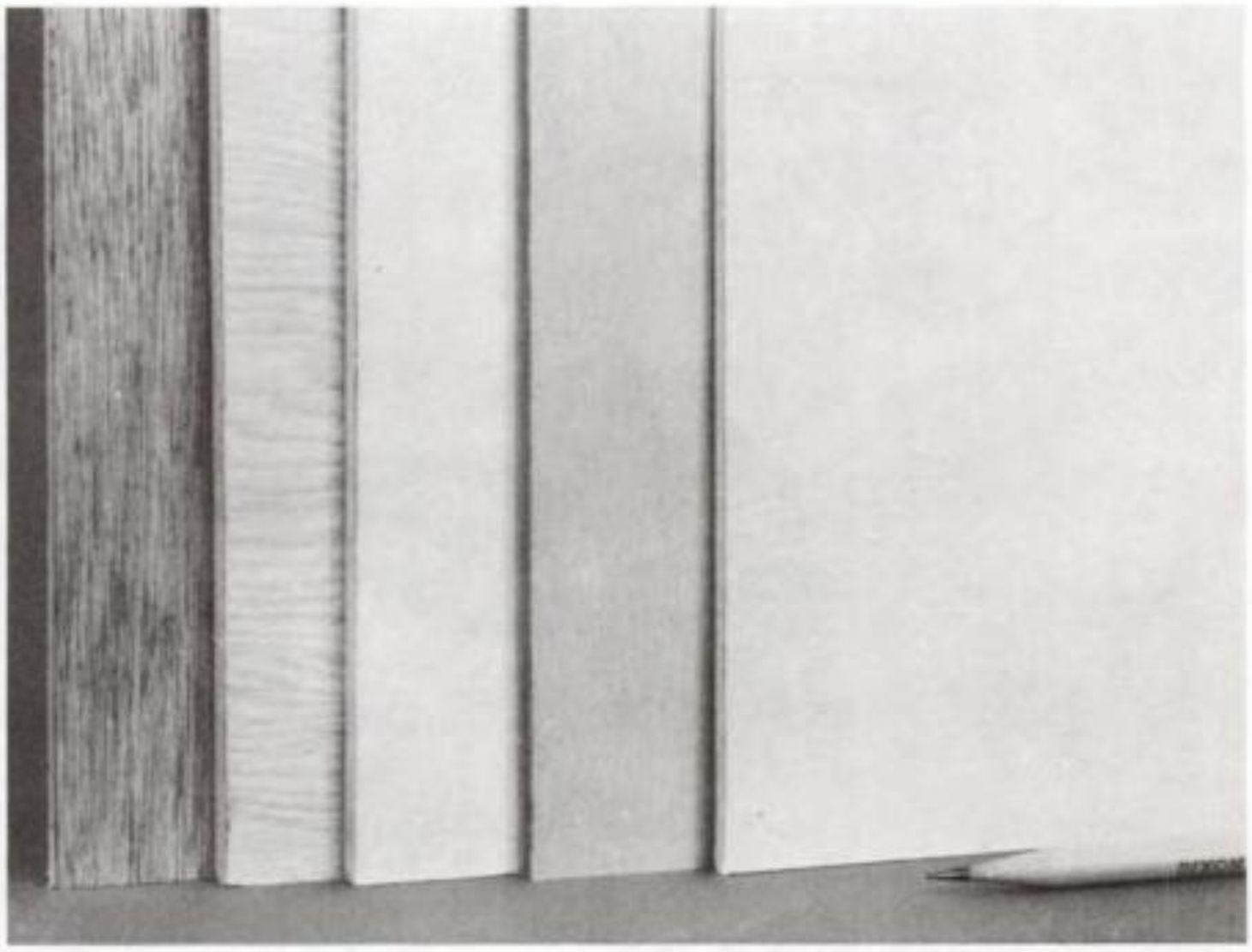


Illus. 4. Cardboard templates can be used, as shown, to transfer the pattern to the wood. Templates can be reused again and again.

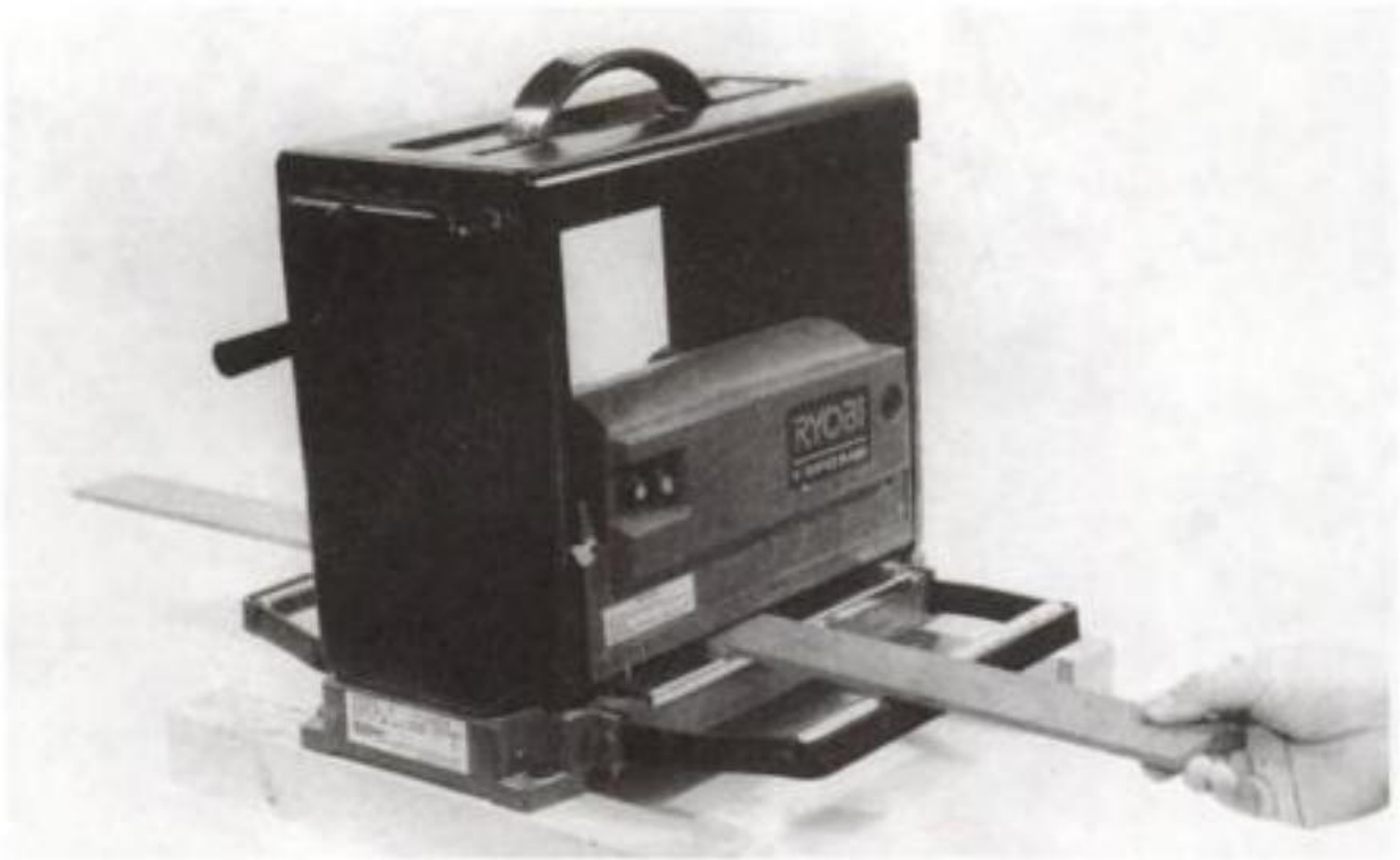
and other modern materials. Even though the edges of fret-sawn plywoods are obviously less desirable than those of solid woods for some applications and are frequently more difficult to finish and conceal, plywoods offer more strength and durability than many of the solid materials. Plywoods are good for very fragile and delicate cuttings; and since they are available in large lengths and widths, in thin thicknesses, they are ideal for large patterns and projects. See Illus. 5.

Most traditional fretwork is cut from material that is ¼", or less, thick, which makes plywood appear to be the logical choice for many projects. However, the smaller projects tend to be better-looking while also fairly sturdy when sawn from quality thin solid woods. Today, many woodworkers have small planers in their home shops for preparing their own material (Illus. 6). If you don't have your own planer, you can purchase small quantities of thin, solid, fancy woods, in ⅛", ¼", and ½" thicknesses by mail order. Fine hardwood plywoods—such as teak, cherry, walnut, mahogany, zebra, and maple—as well as micro lumber in standard or exotic species can be obtained from some major outlets.

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Illus. 5. You can use thin hardwood plywoods of any species for fretwork projects.



Illus. 6. Thin solid woods are ideal for many fret projects—but especially for those where the edges of the plywoods may be objectionable. Small shop planers, such as the one shown here, can reduce your stock to any thickness desired.

The Basics and Getting Started

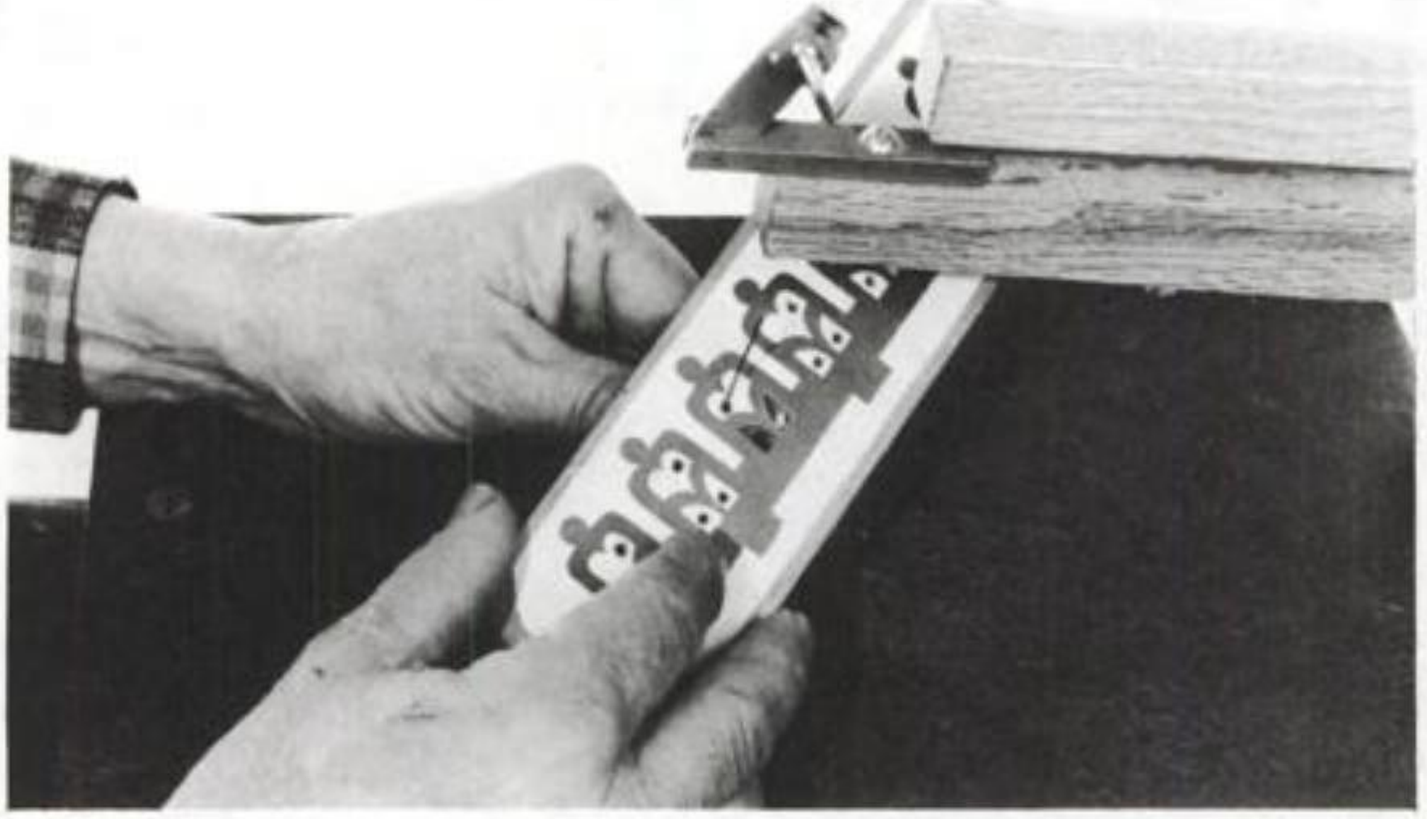
The entire process of fretwork revolves around the technique of making inside cutouts of various designs. This is known as piercing work. See Illus. 7 and 8. The process is very straightforward: First, you drill holes into the waste, or areas that will be cut away. Next, you thread the blade through, reclamp and retension the blade in the saw, and then proceed to complete the cutout. You repeat this process as many times as necessary to finish the project.

If you are a beginner, it's best to start with the less complex pieces, avoiding designs that require numerous cutouts and those that have very distinct repetitive shapes within themselves. Ornate designs with identical geometrical forms on either side as well as very delicate large pieces should

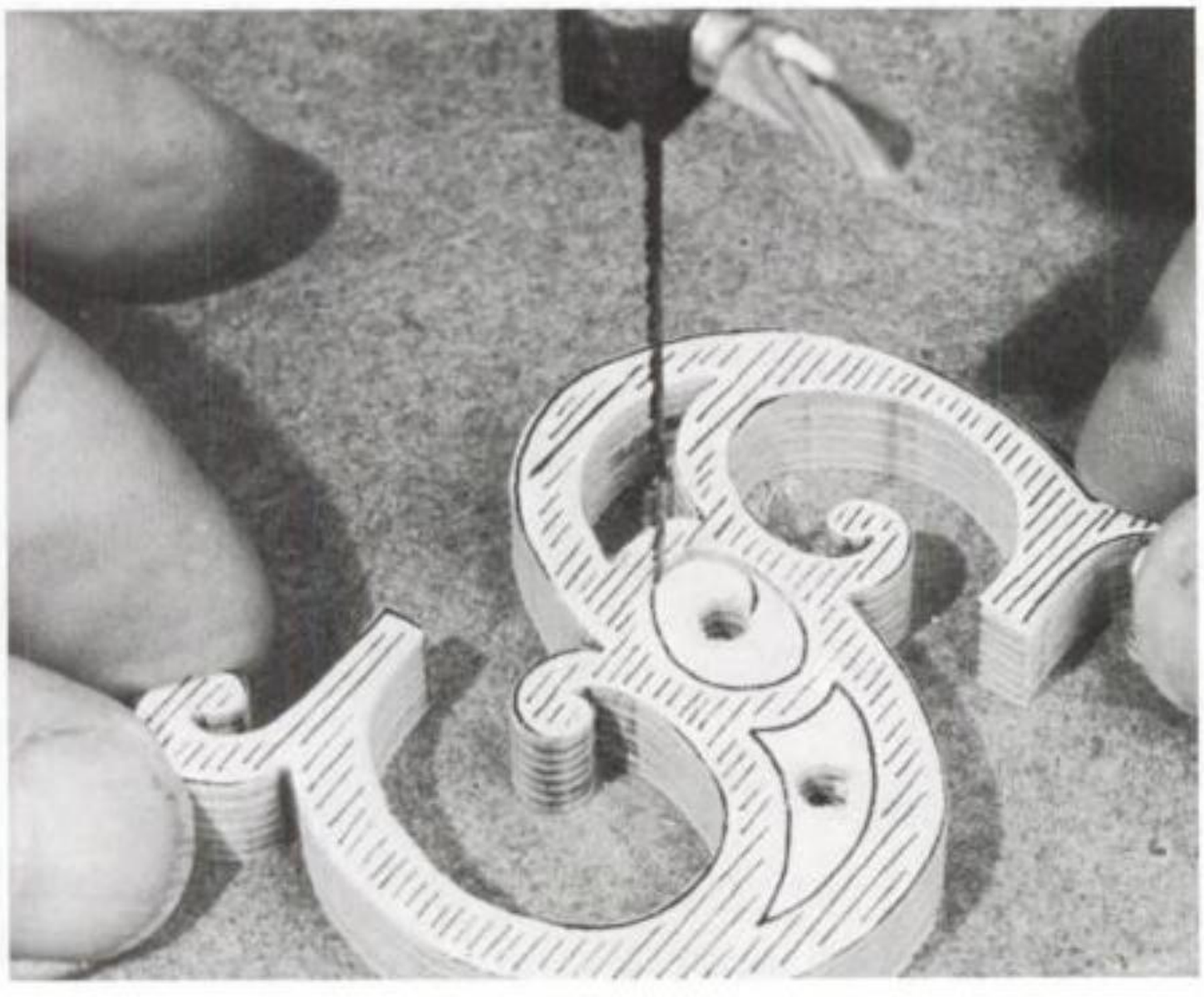
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not be undertaken until you've gained some experience. However, skill at working the saw and material together in harmony will come quickly and automatically with little conscious effort. For your first few projects, select patterns that you can complete within a short work period. In the course of working these smaller projects, you will be able to get a good idea of how much work you can do within a given time period. If you start with a very complex or highly ornate design that requires much more time than you initially may want to invest, you are likely to rush and make mistakes. So, start with short projects and allow yourself to enjoy the pleasurable and rewarding craft fretwork is intended to be.

As you work through this book, you will come across some special techniques that will enhance your work. One helpful technique is stack cutting, which refers to cutting multiple pieces of the same design, one on top of the other, all at once. See Illus. 9. Not only does this method increase output but it also guarantees that all resulting pieces will be absolutely identical.

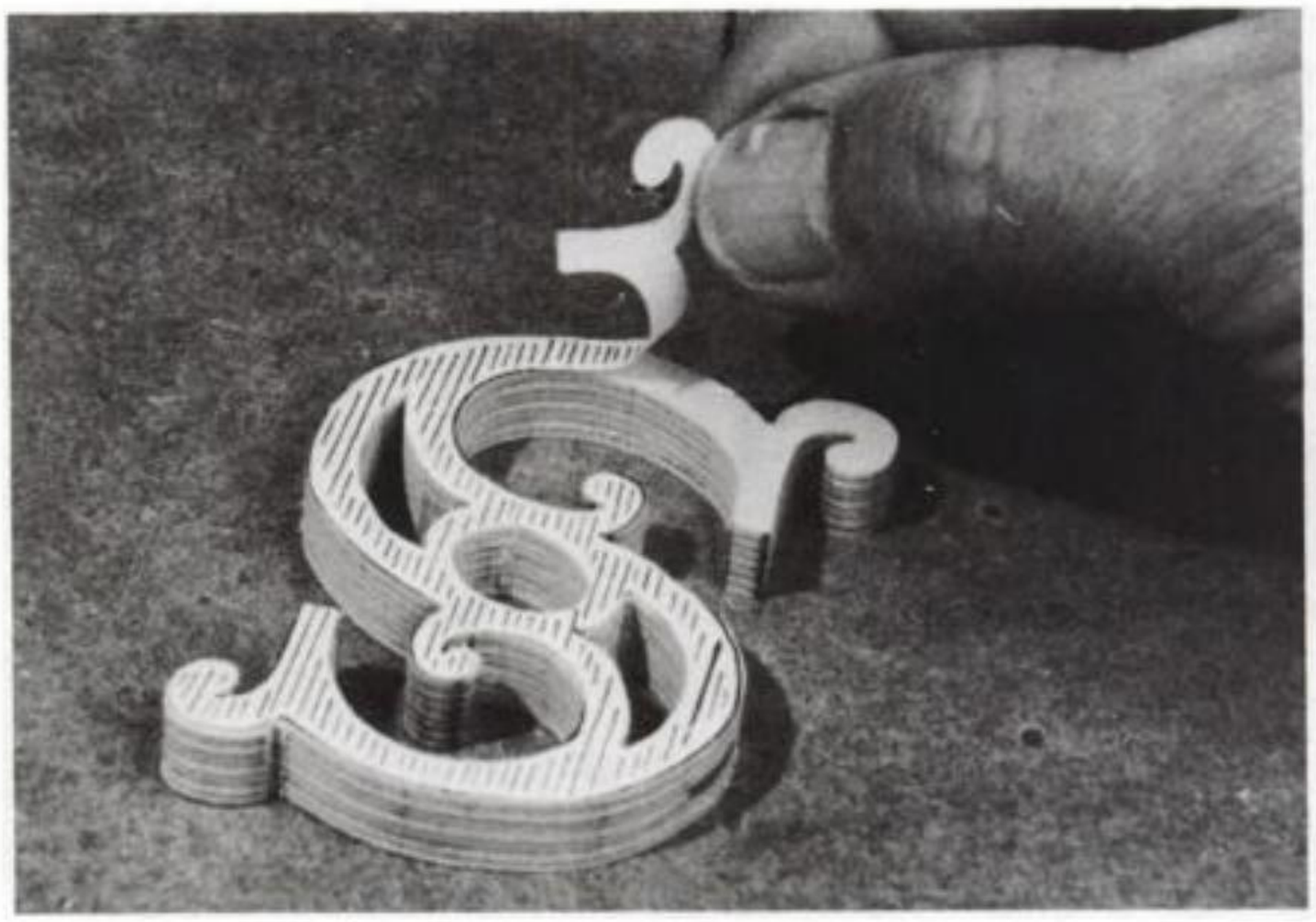


Illus. 7. Inside openings are made by drilling holes in the area that is to be cut away; then the blade can be threaded through the workpiece and reclamped.



Illus. 8. A typical cutting job in progress.

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Illus. 9. Cutting several layers of stock at once is called stack cutting. Note how easily the pattern, temporarily bonded to the wood with a special spray adhesive, is removed.

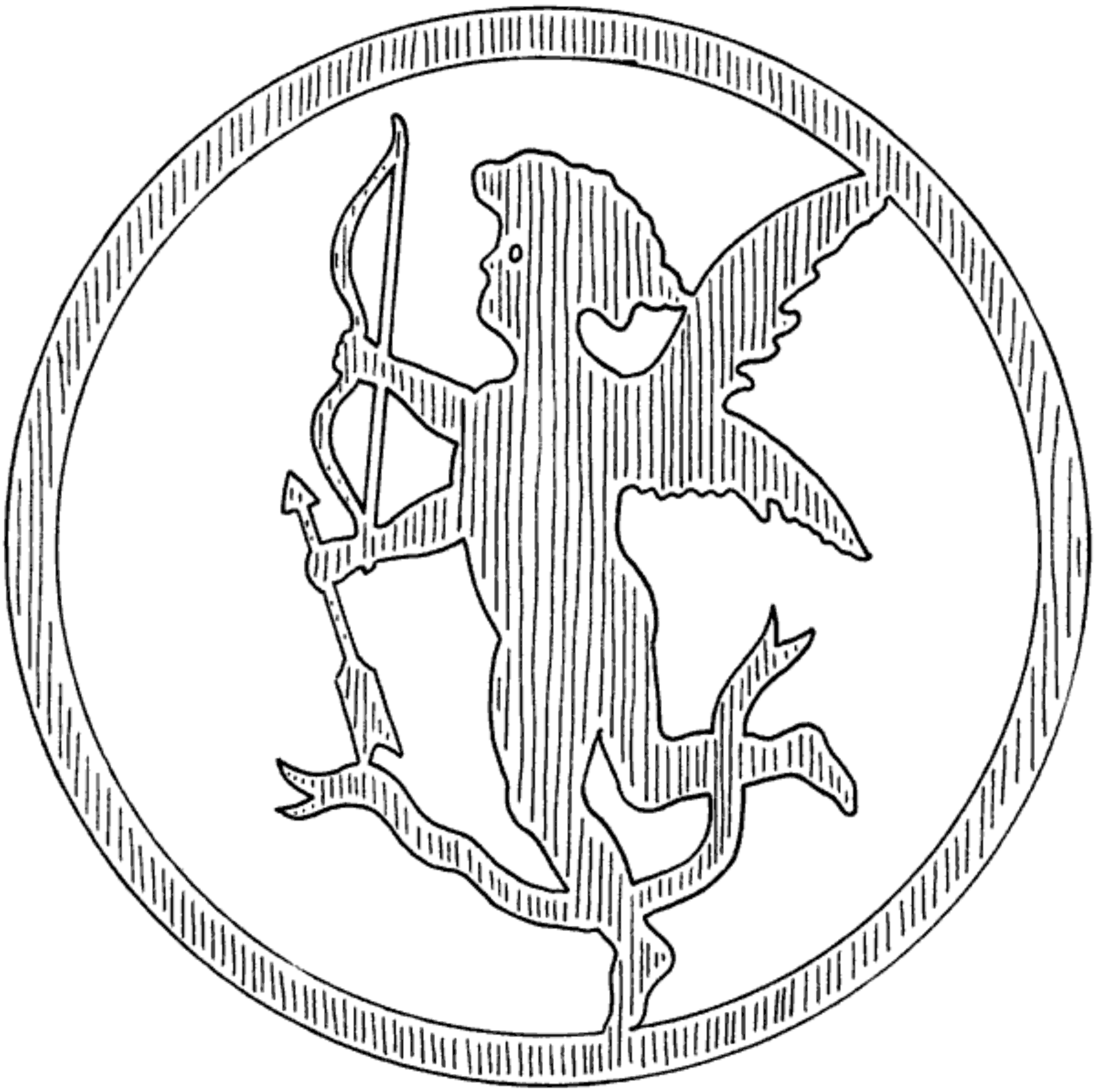
Multiple Uses of Patterns

Many of the patterns in this book can be used as ornamental features, as is. They can be used as inlays, overlays, and other types of decorative embellishments on boxes, cabinet doors, furniture, and architectural panels. The book provides patterns for various alphabets, signs, country designs, Christmas items, silhouettes, shelves, picture frames, and projects in many other categories—which can be combined and interchanged, creating a variety of new uses. You should also be aware of the designs that are possible by using only certain segments of a particular design motif. For example, with the pattern shown in Illus. 71 on pages 84–85, you can lift the hummingbird from the flower and frame design. Or, you can simply use the pattern for the outer frame, eliminating the floral and hummingbird interior. In addition, many patterns can be revised by omitting some of the cutout spaces, thereby making the project less complicated and quicker to complete. Being aware of these multiple usages should help you get the most from the patterns provided here.

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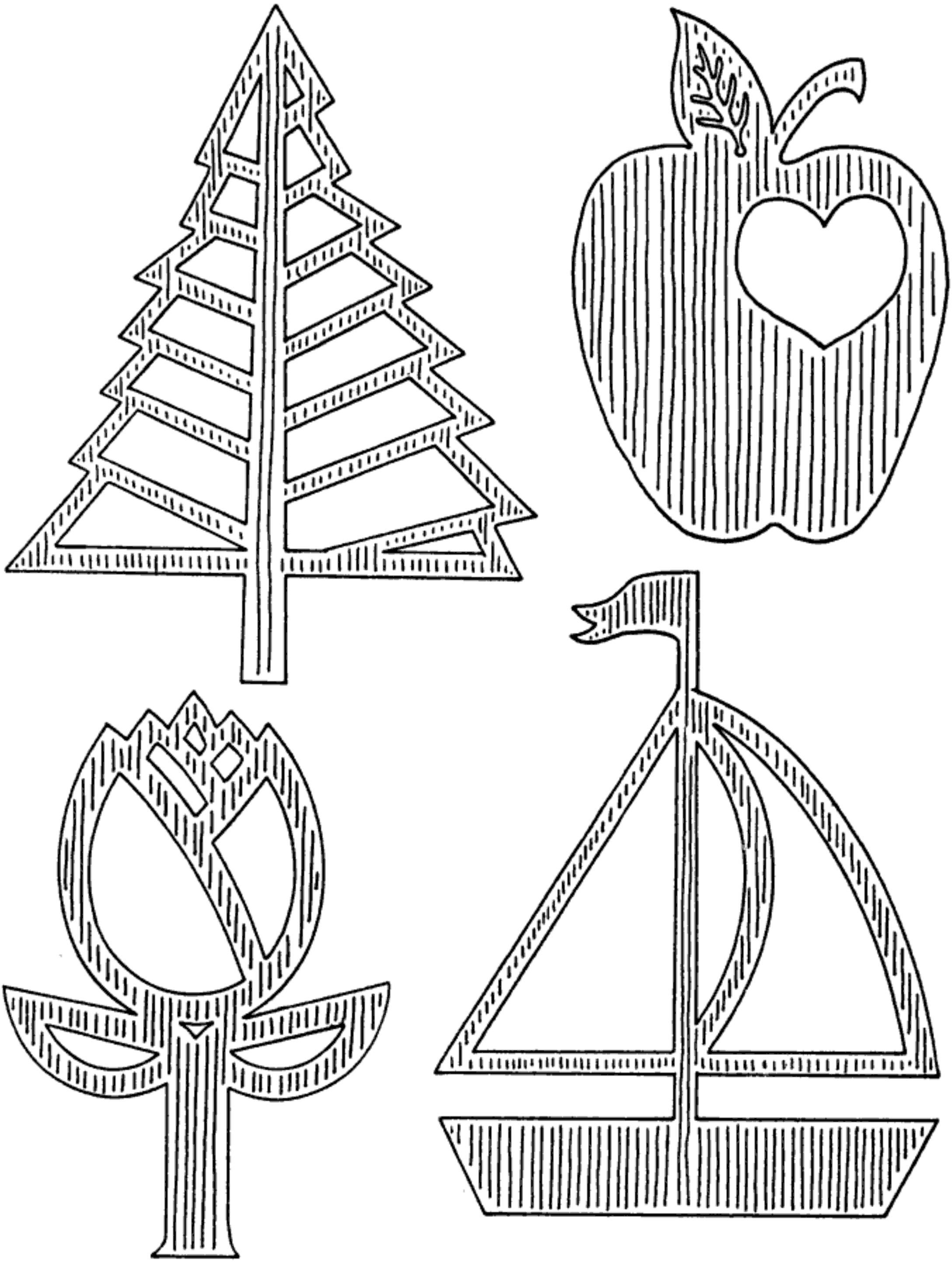
Patterns

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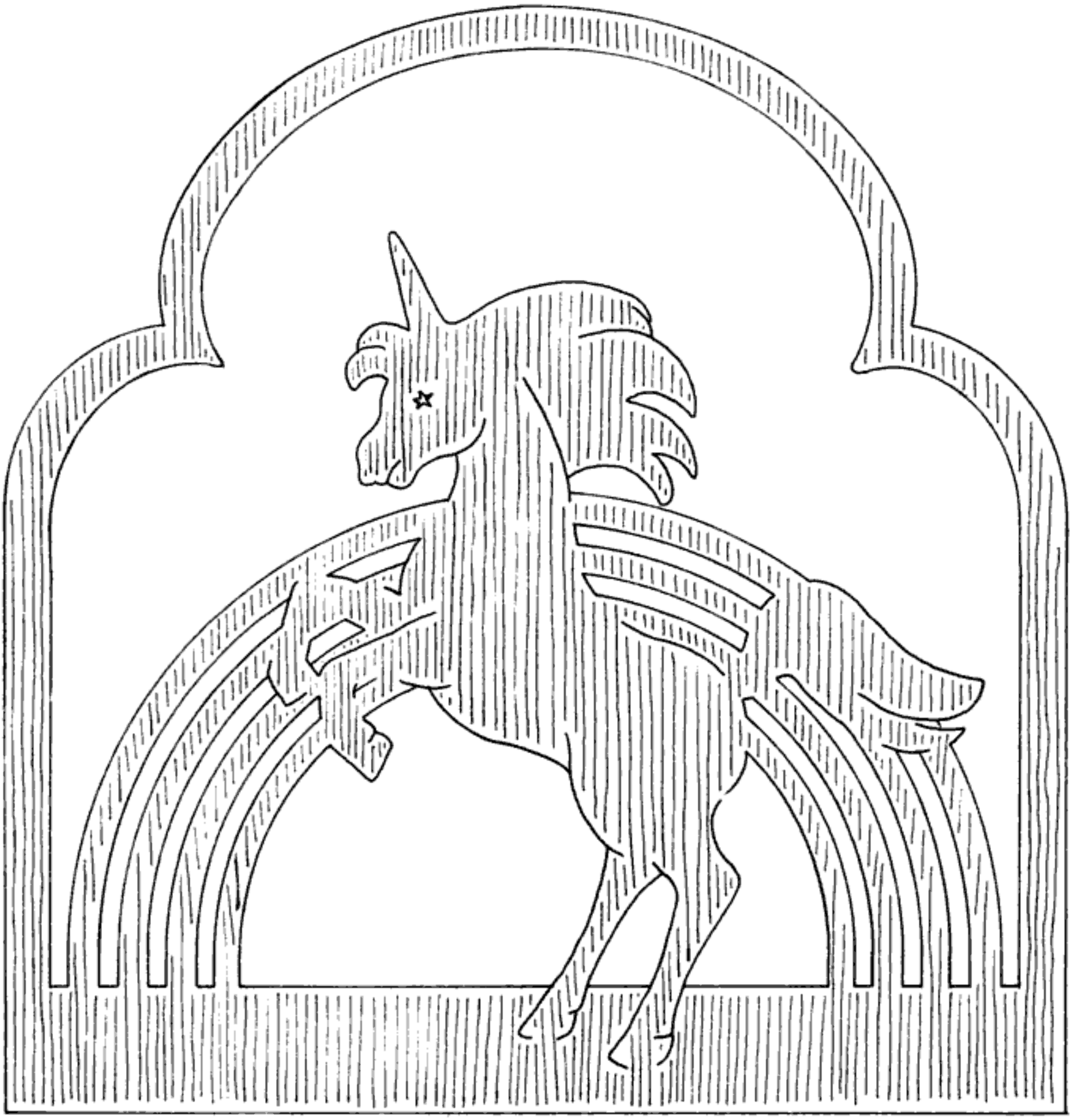
Illus. 10. Cupid silhouette pattern.

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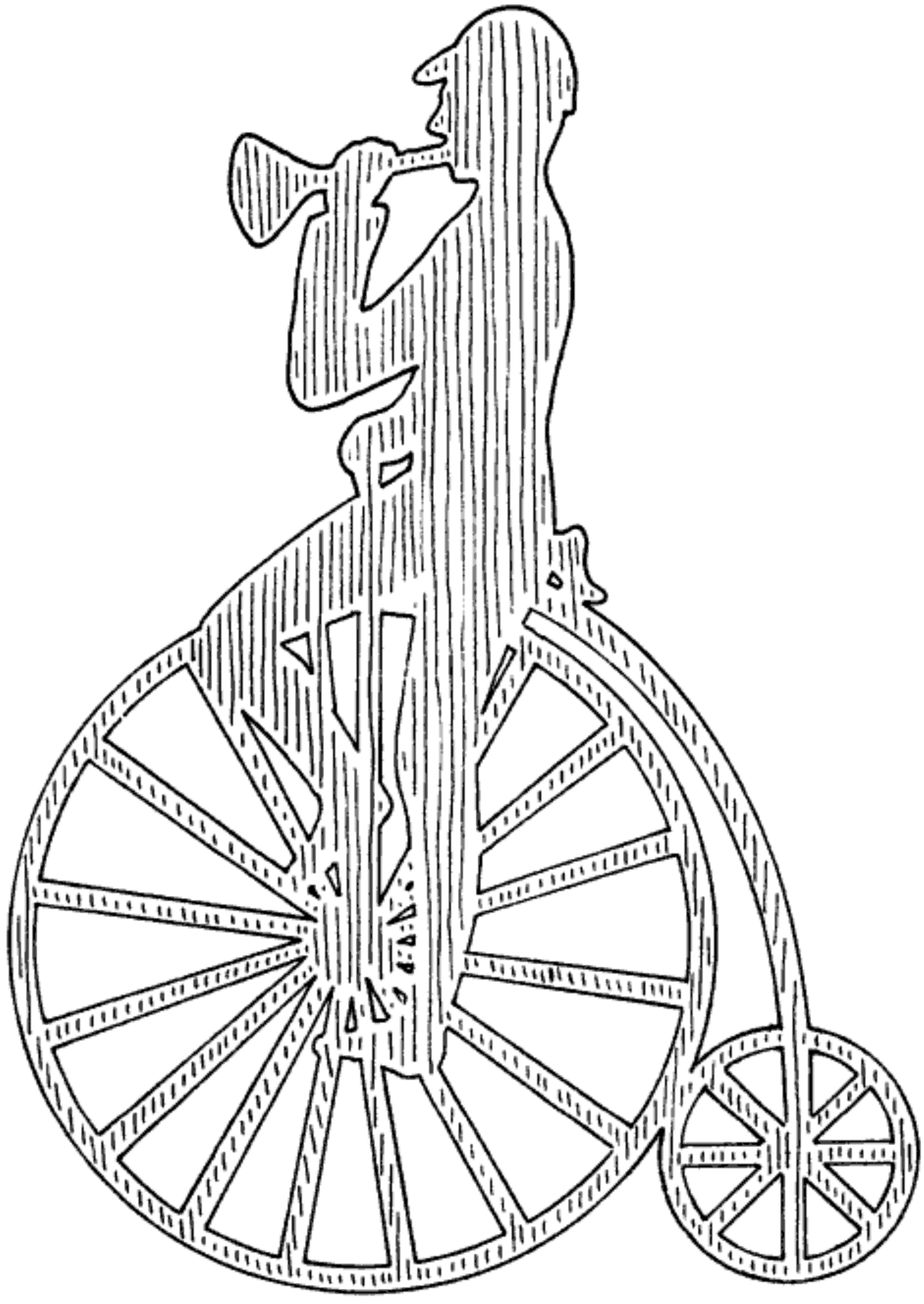
Illus. 11. Tree, apple, flower, and sailboat silhouette patterns.

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Illus. 12. Unicorn silhouette pattern.

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Illus. 13. Old-fashioned bicyclist silhouette pattern.

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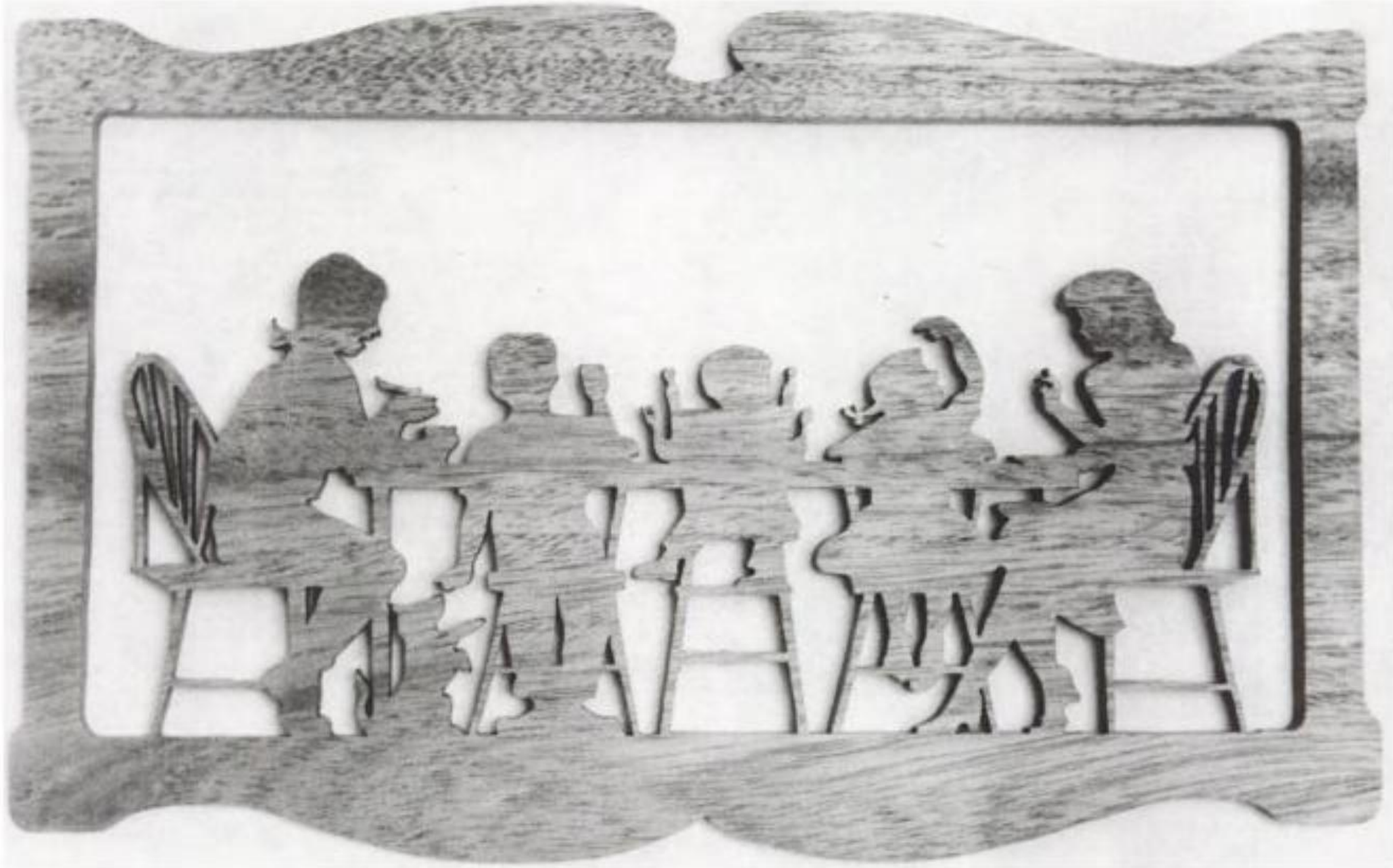


Illus. 14. Seated-girl silhouette, designed and sawn by John Polhemus. (Turn to pages 20–21 for the pattern.)



Illus. 15. A closeup look at the line-work detailing achieved by the saw kerf. The white and black lines are all saw cuts; the black lines are simply shaded by the angle of the camera lens.

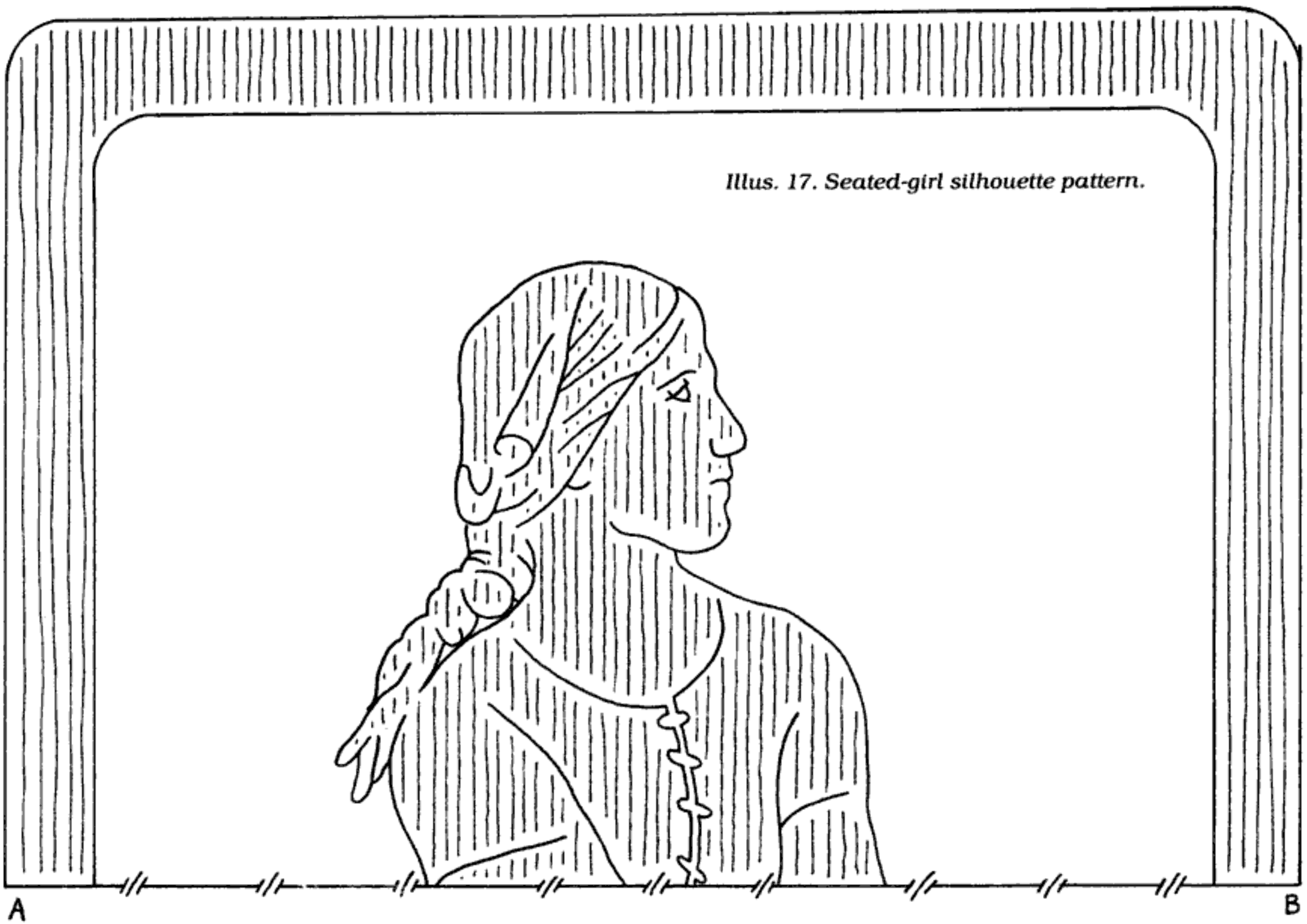
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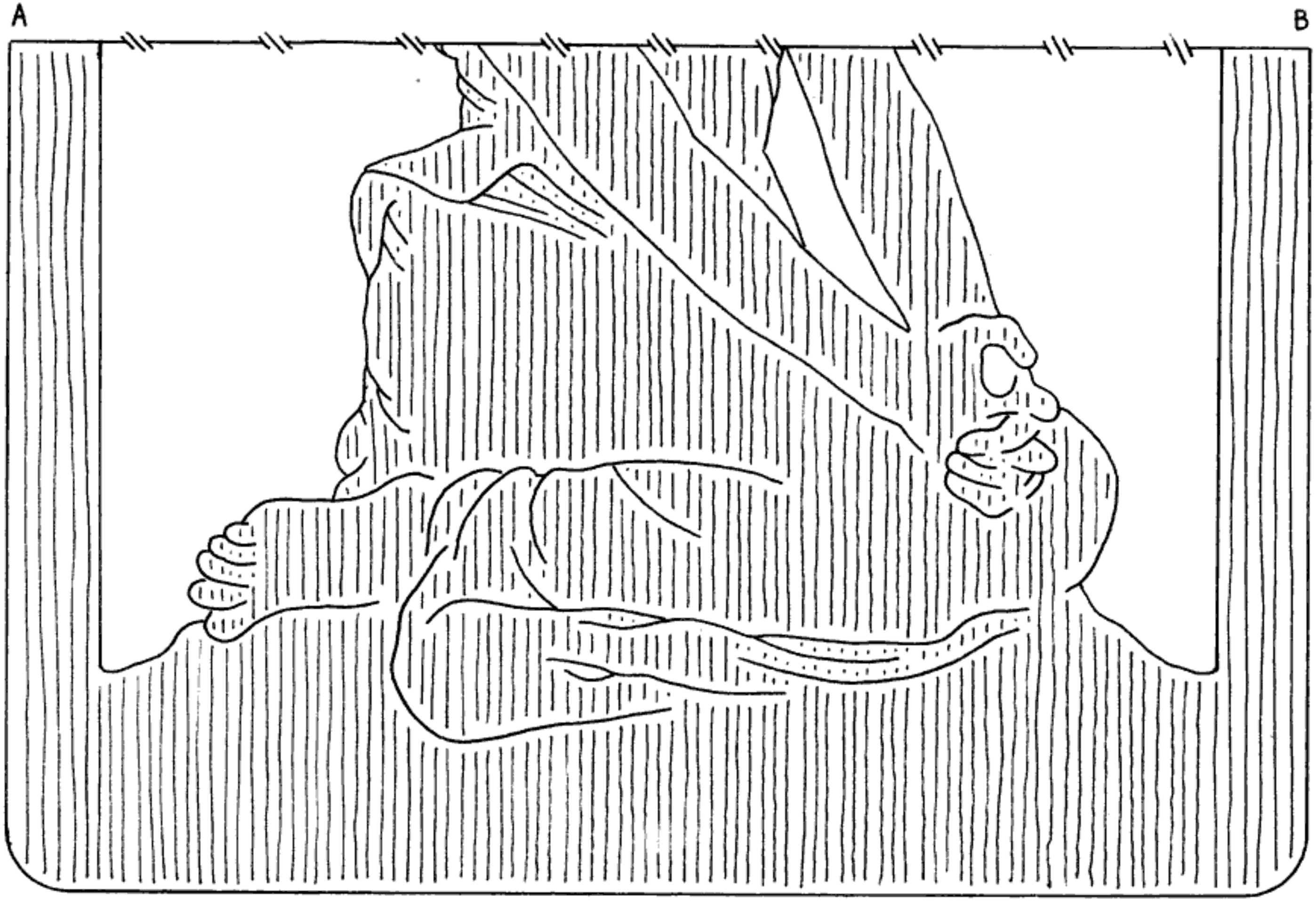
Illus. 16. Family supper silhouette. (Turn to pages 22–23 for the pattern.)

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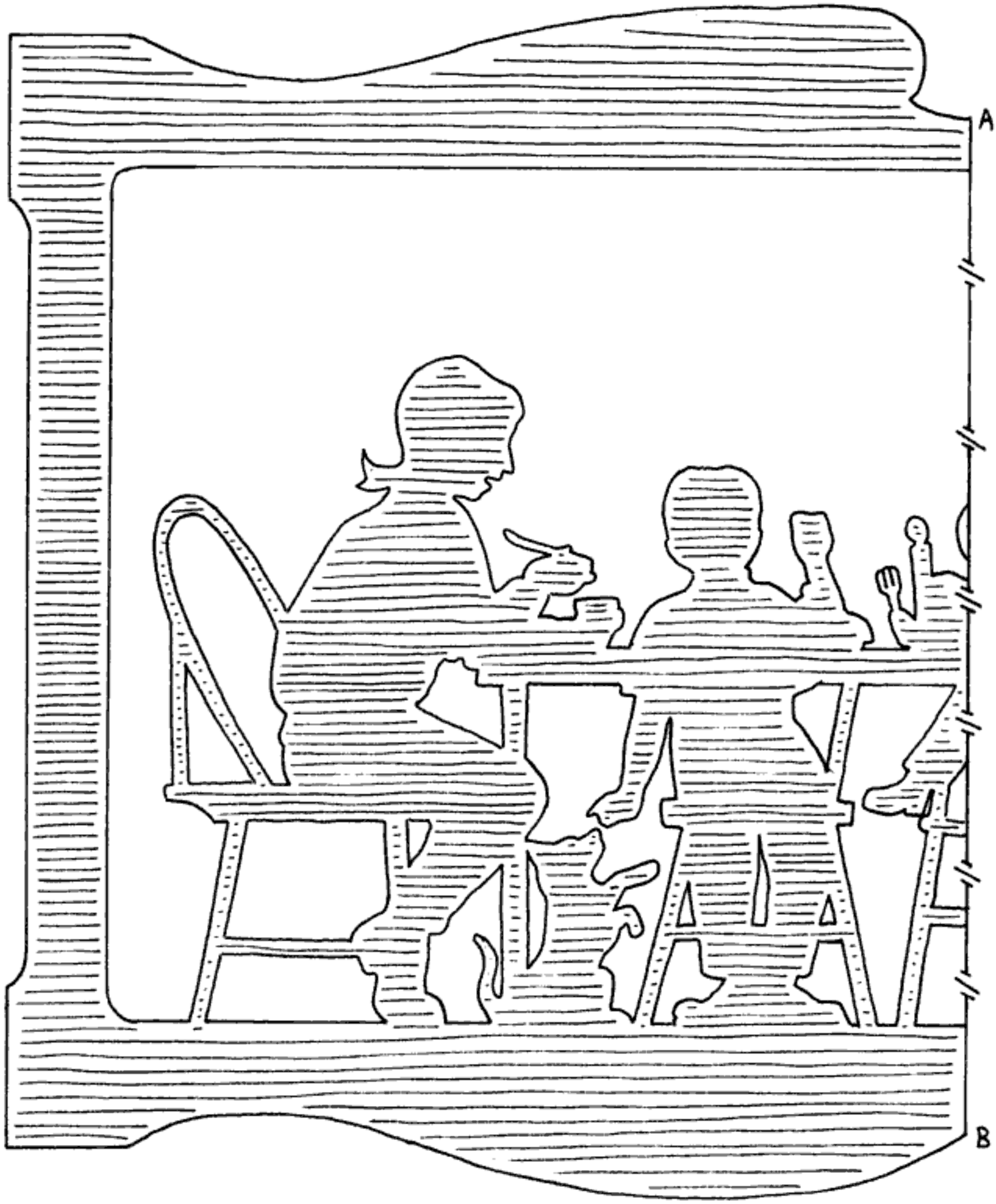
Illus. 17. Seated-girl silhouette pattern.



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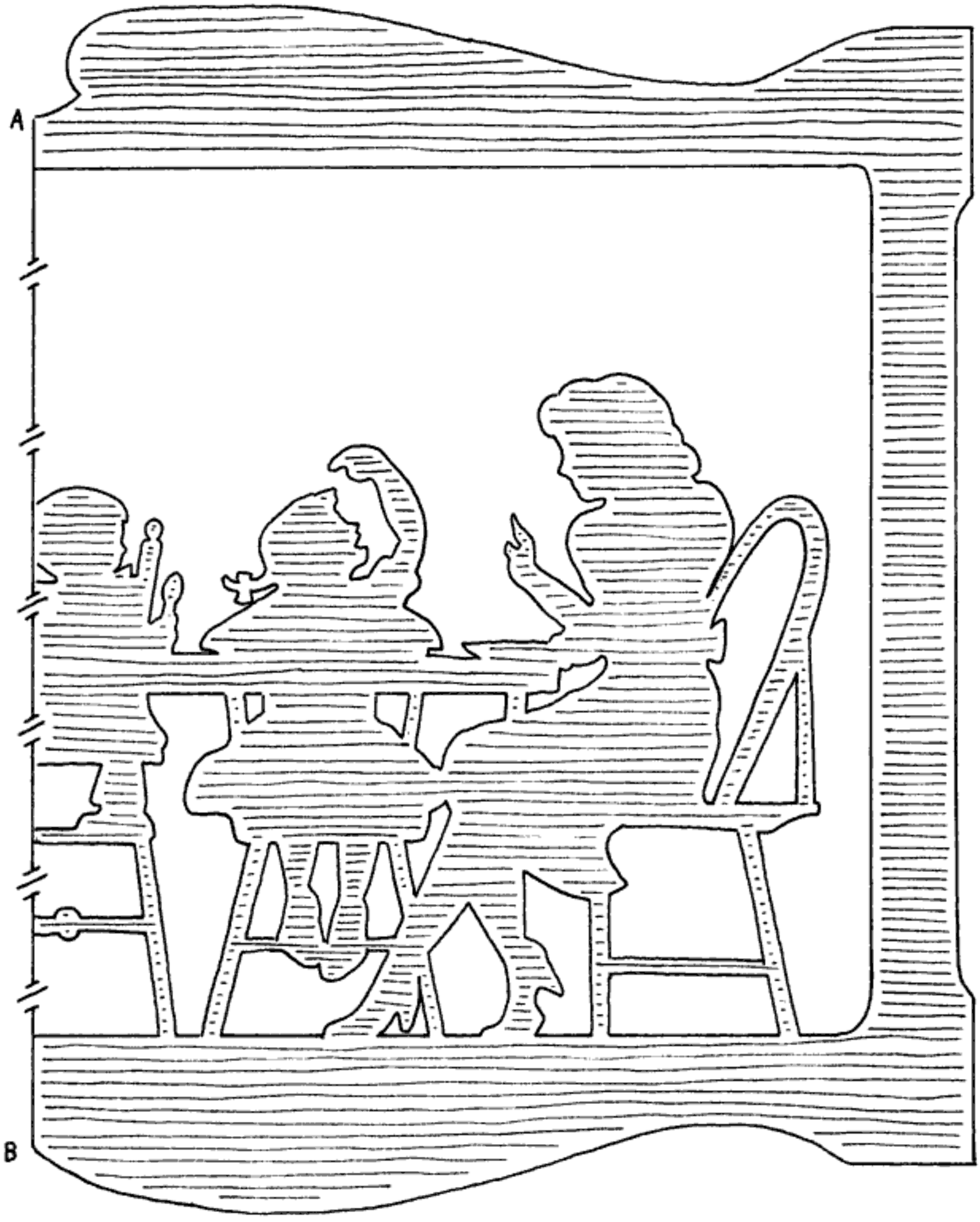


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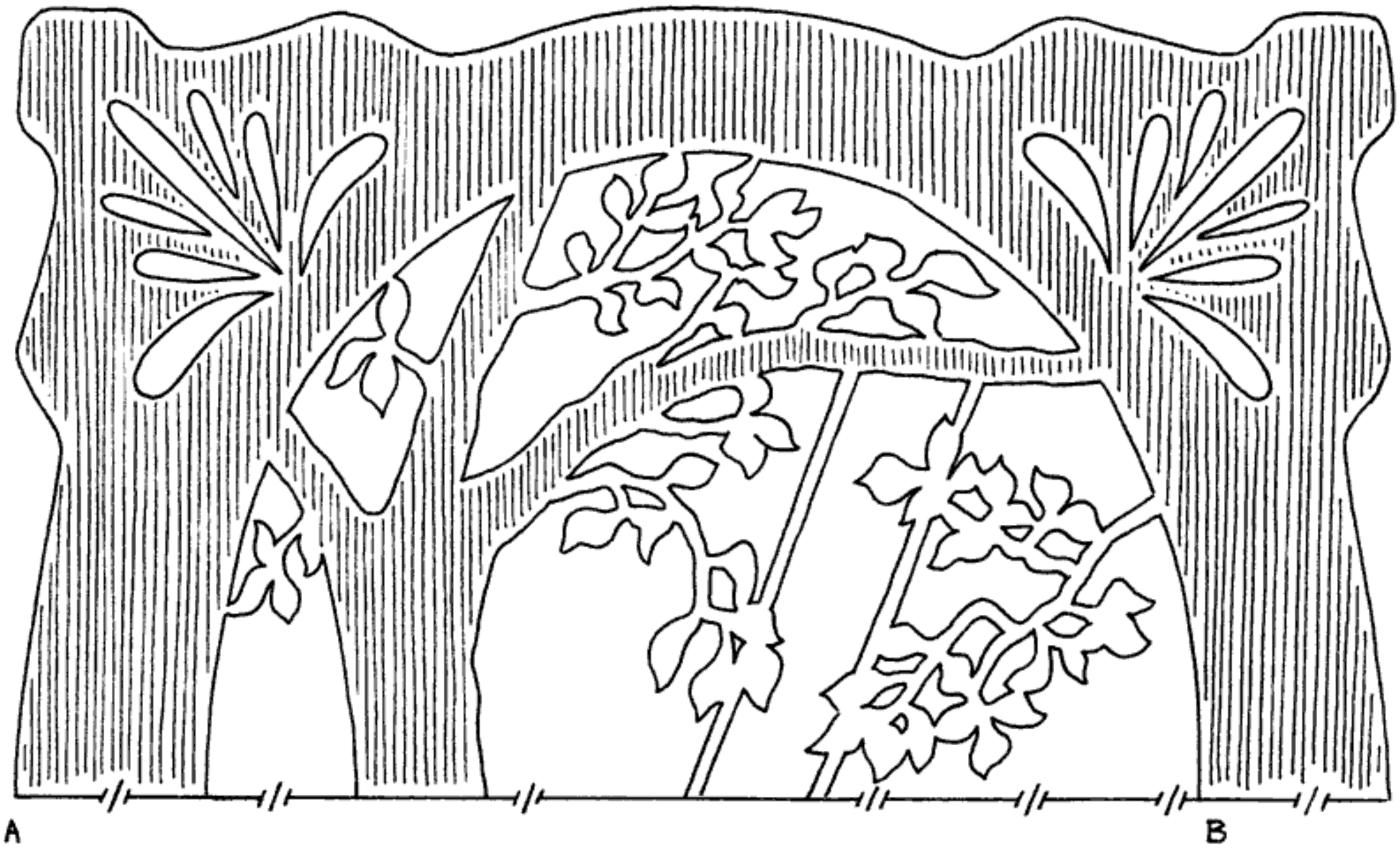
Illus. 18. Family supper silhouette pattern.

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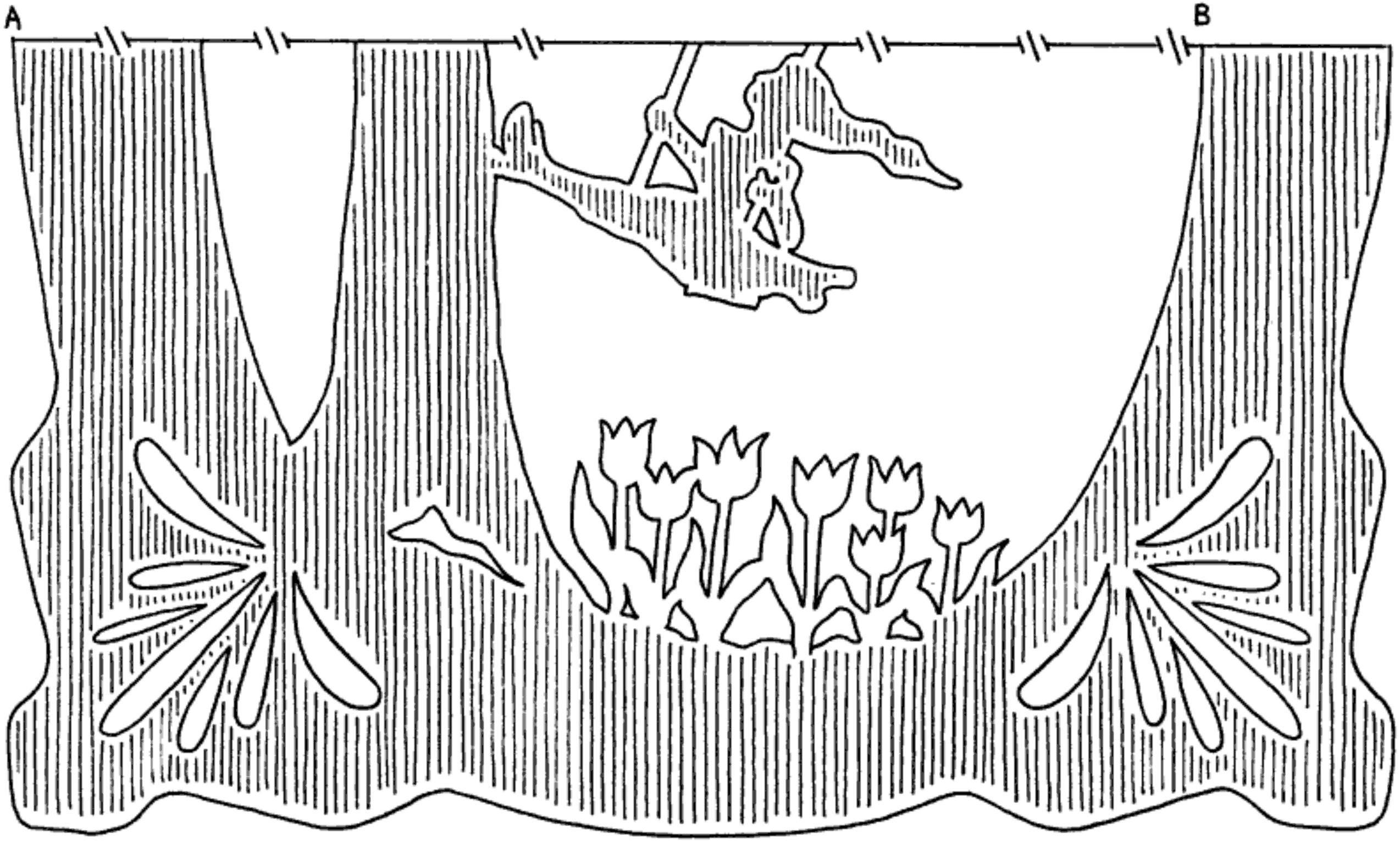


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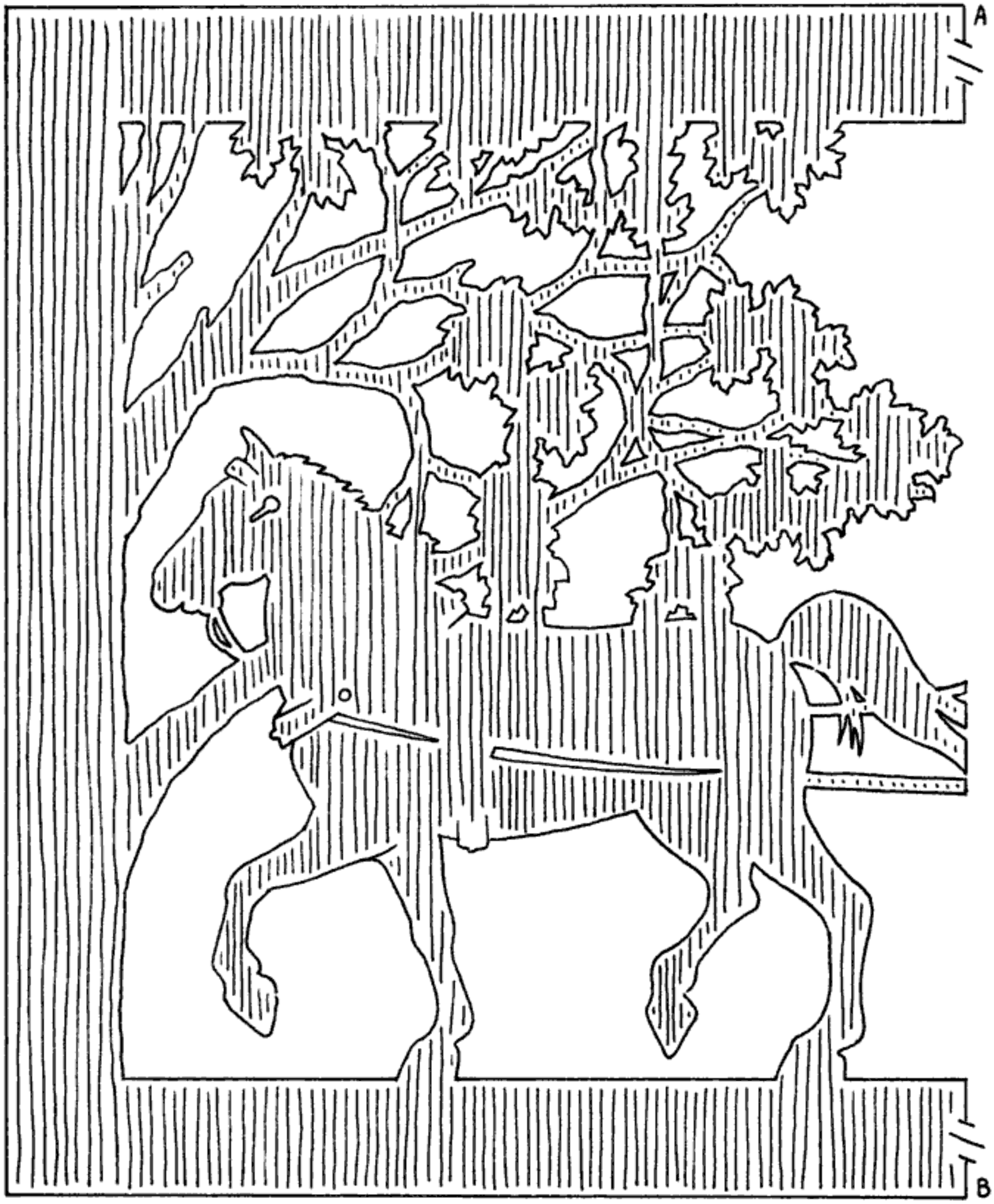
Illus. 19. Girl-in-swing silhouette pattern.



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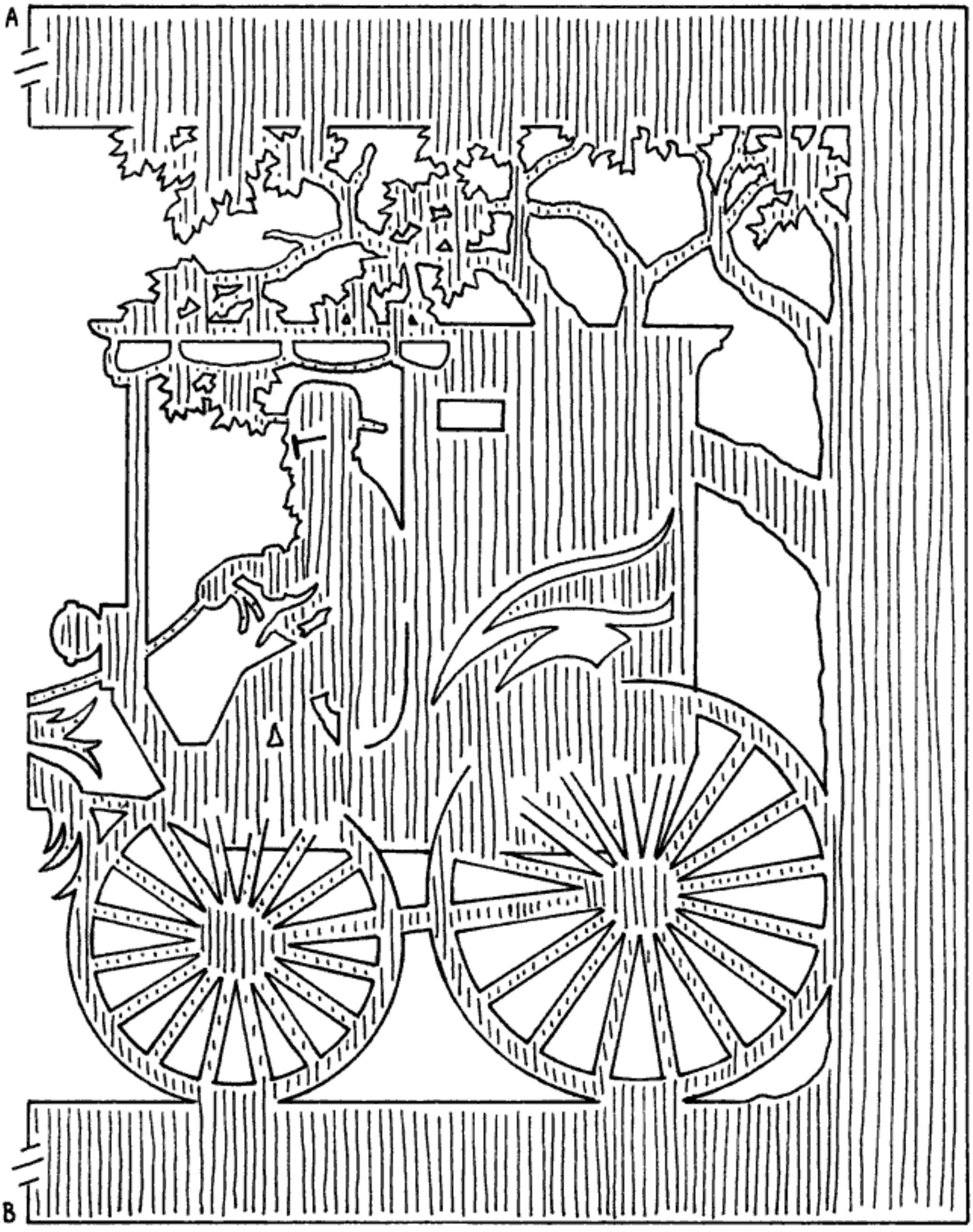


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Illus. 20. Horse-and-carriage silhouette pattern.

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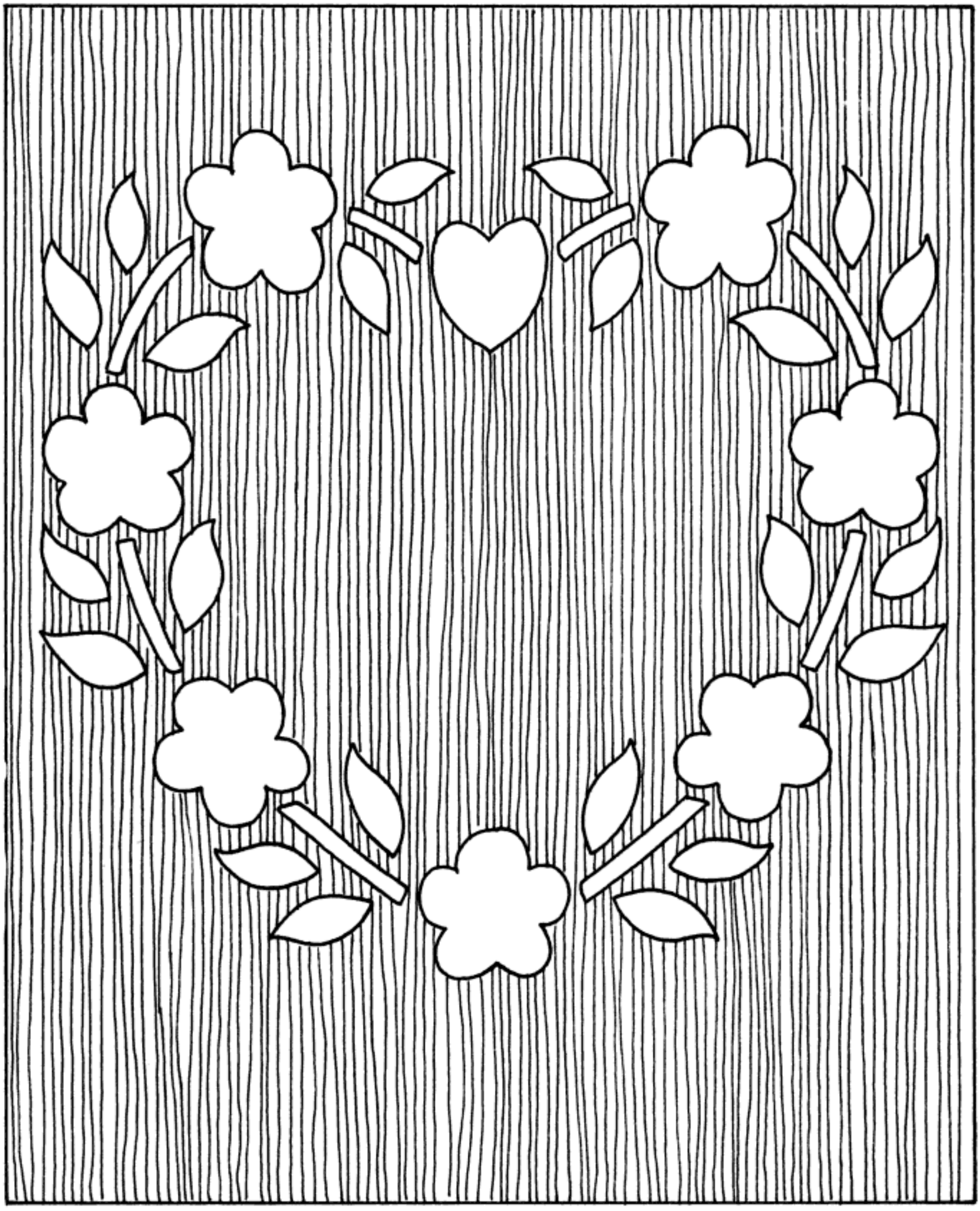


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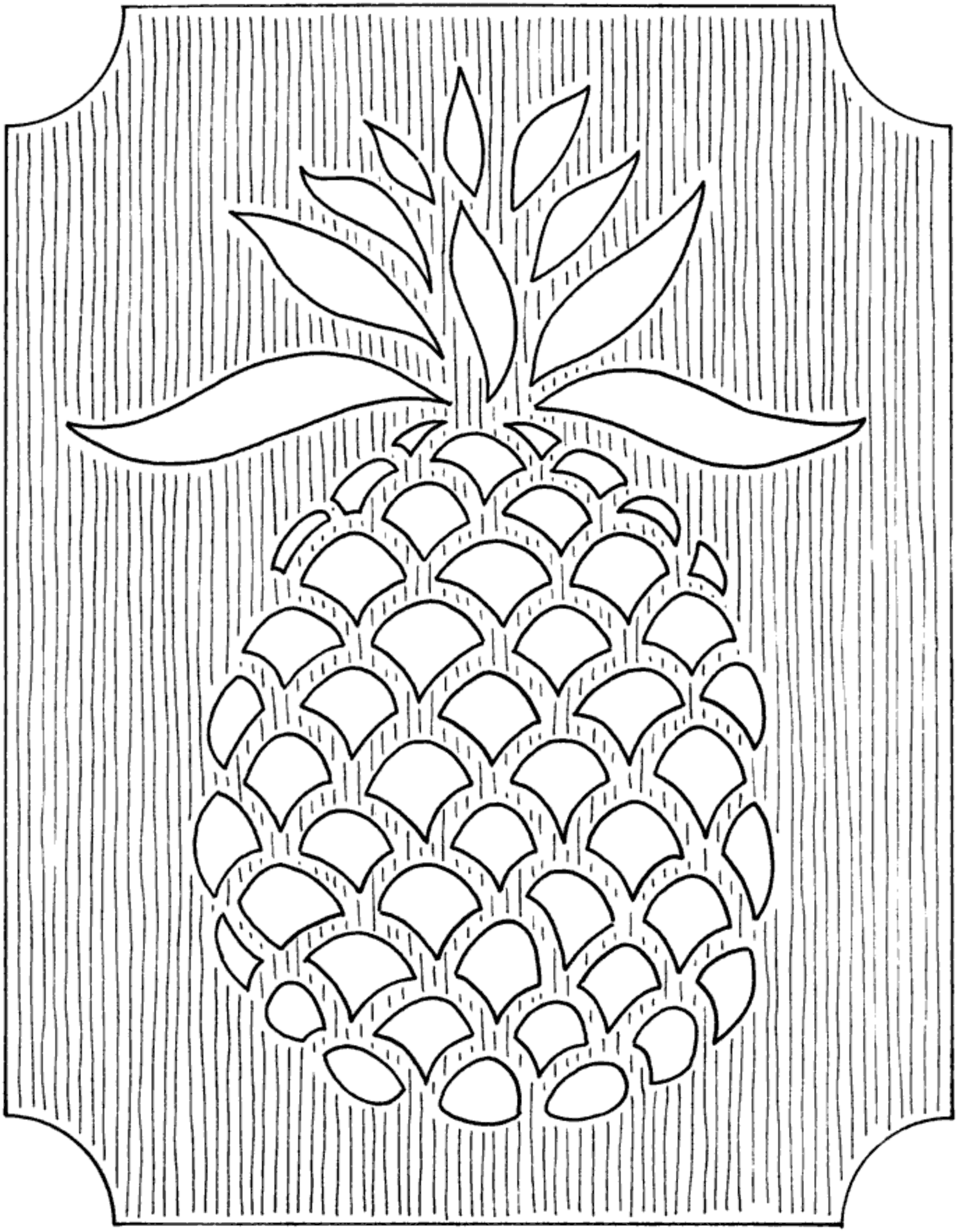
Illus. 21. Woman's portrait silhouette pattern.

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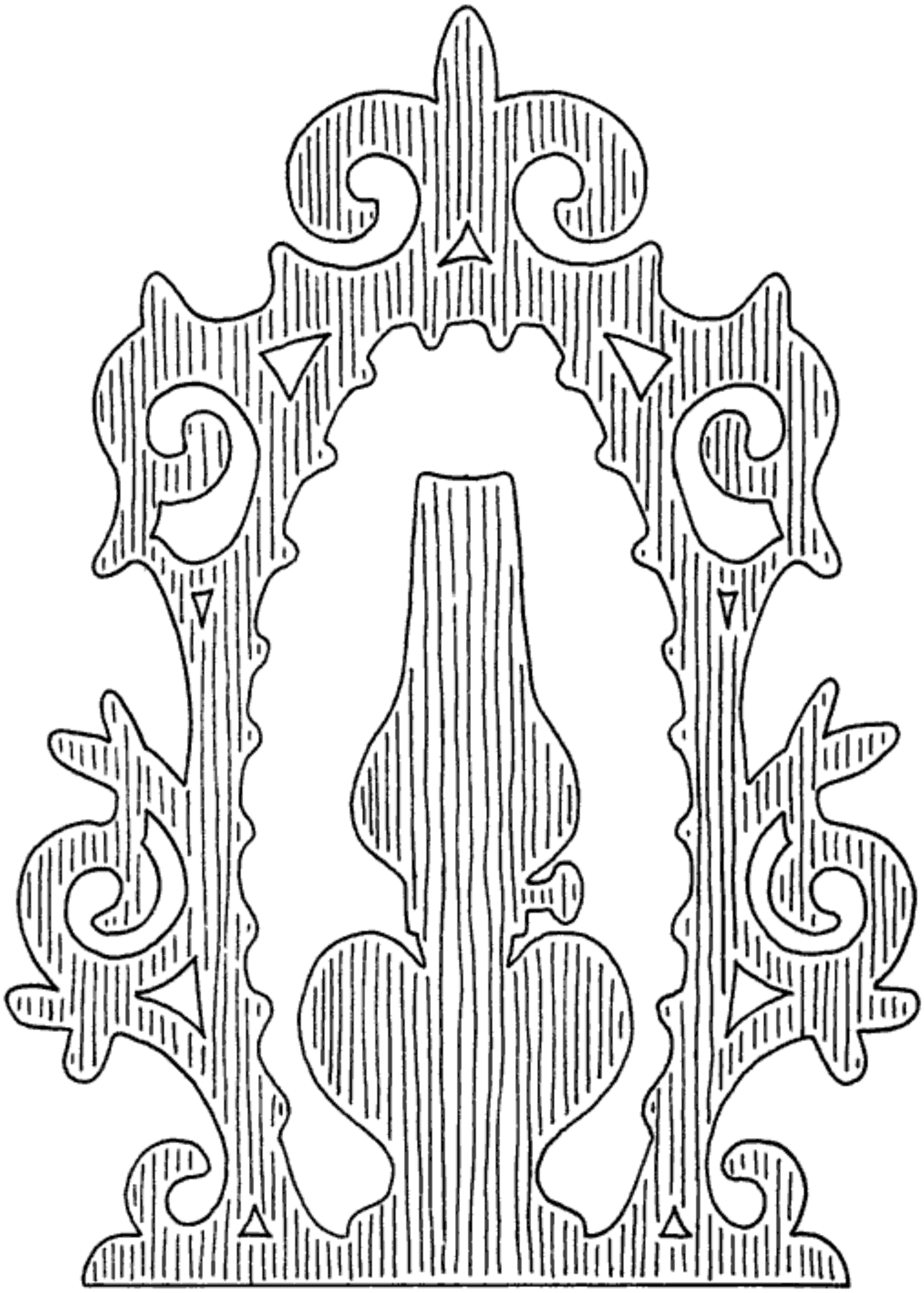
Illus. 22. Heart-shaped wreath pattern.

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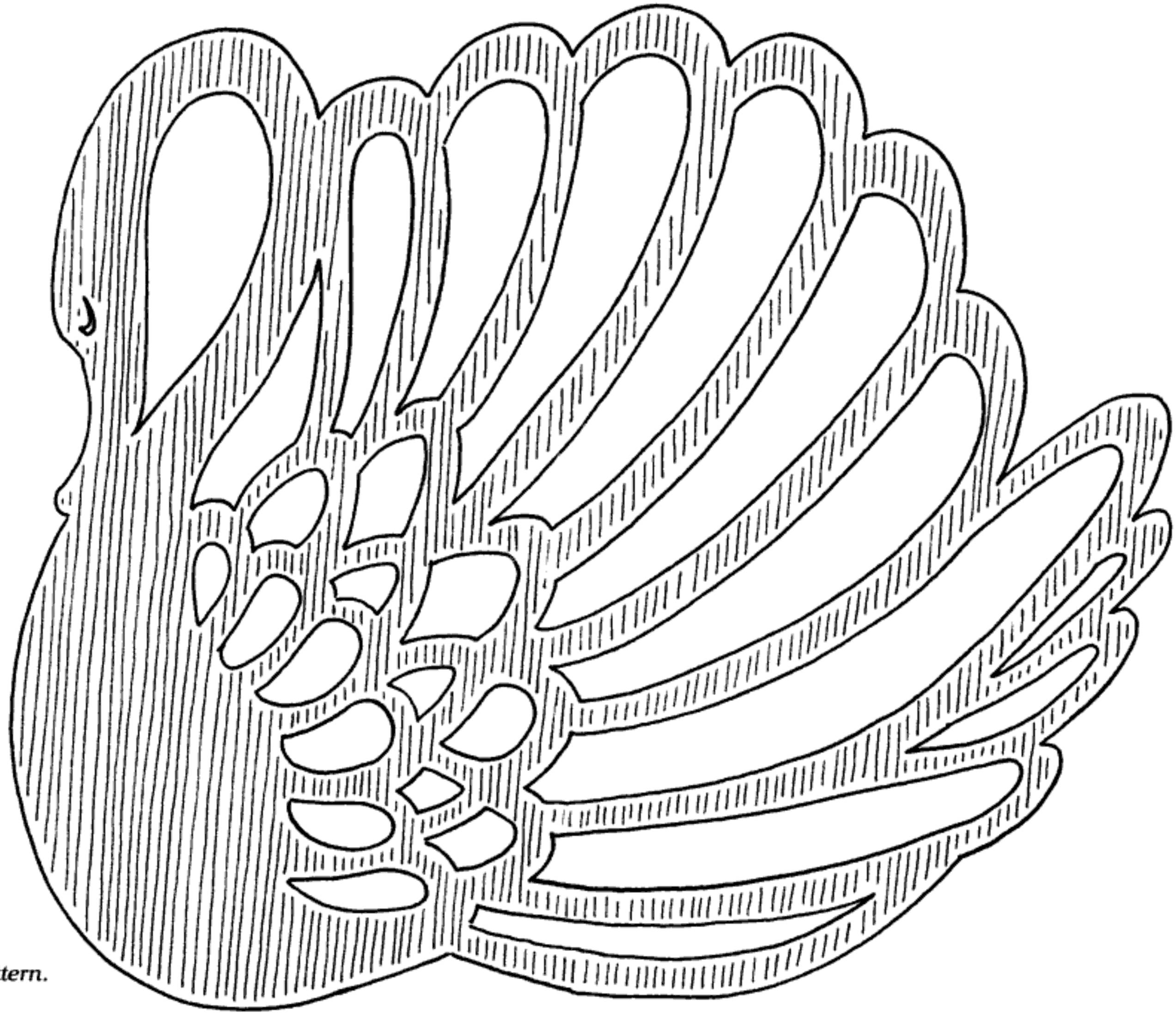
Illus. 23. Pineapple pattern.

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Illus. 24. Lamp pattern.

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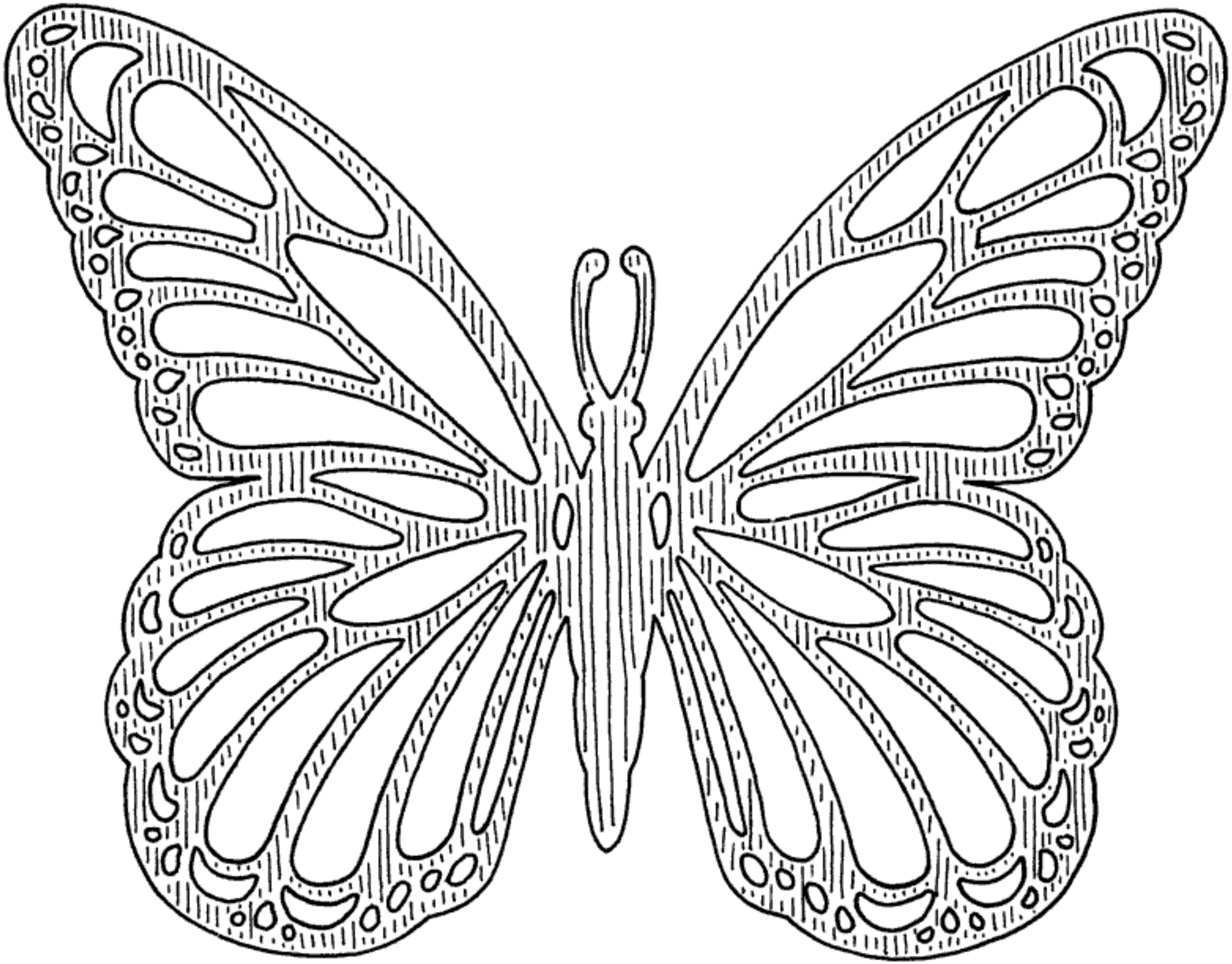
Illus. 25. Swan pattern.

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Illus. 26. Swan pattern.

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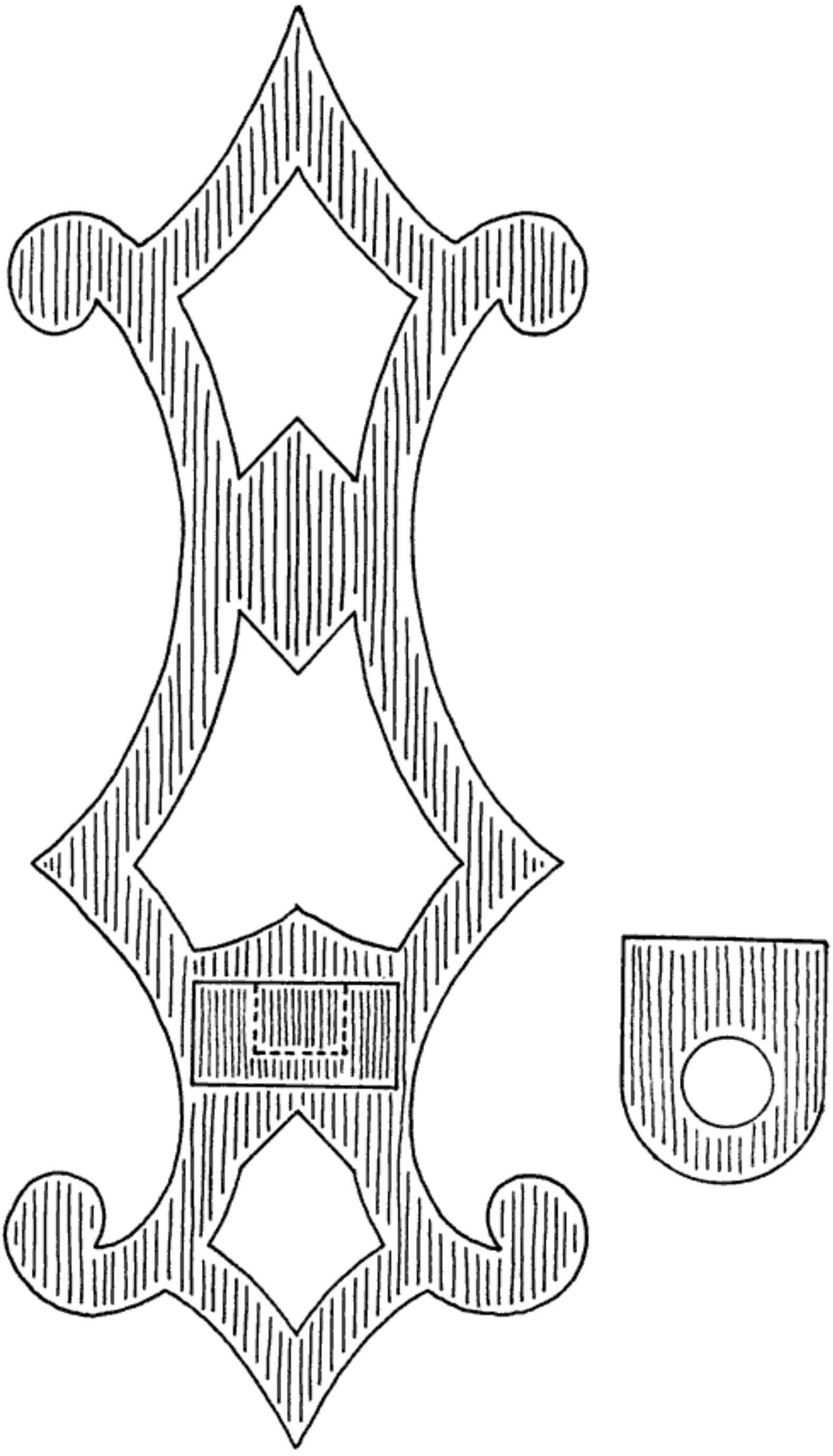
Illus. 27. Butterfly pattern.

Copyrighted material

Illus. 28. Welcome-sign pattern.

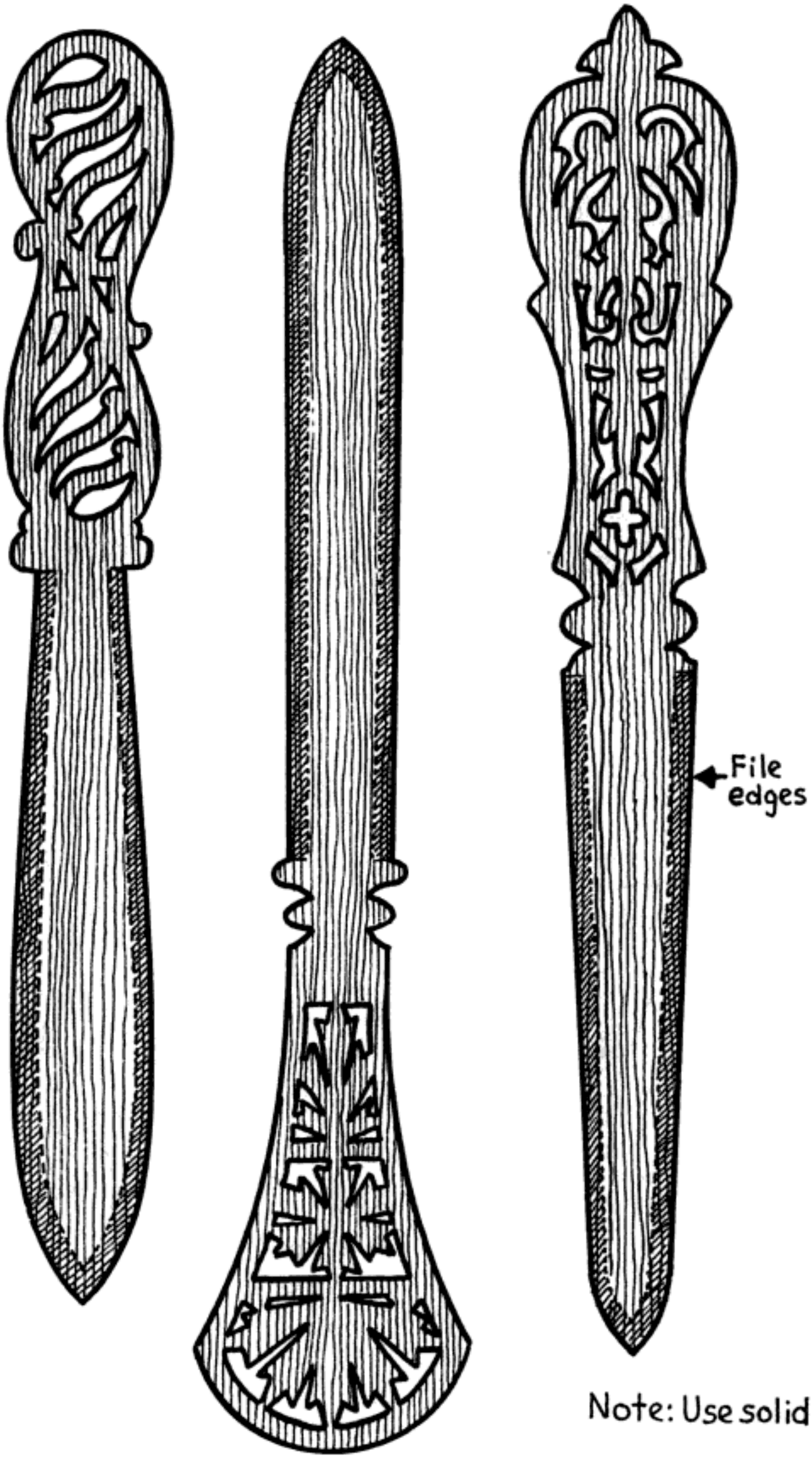


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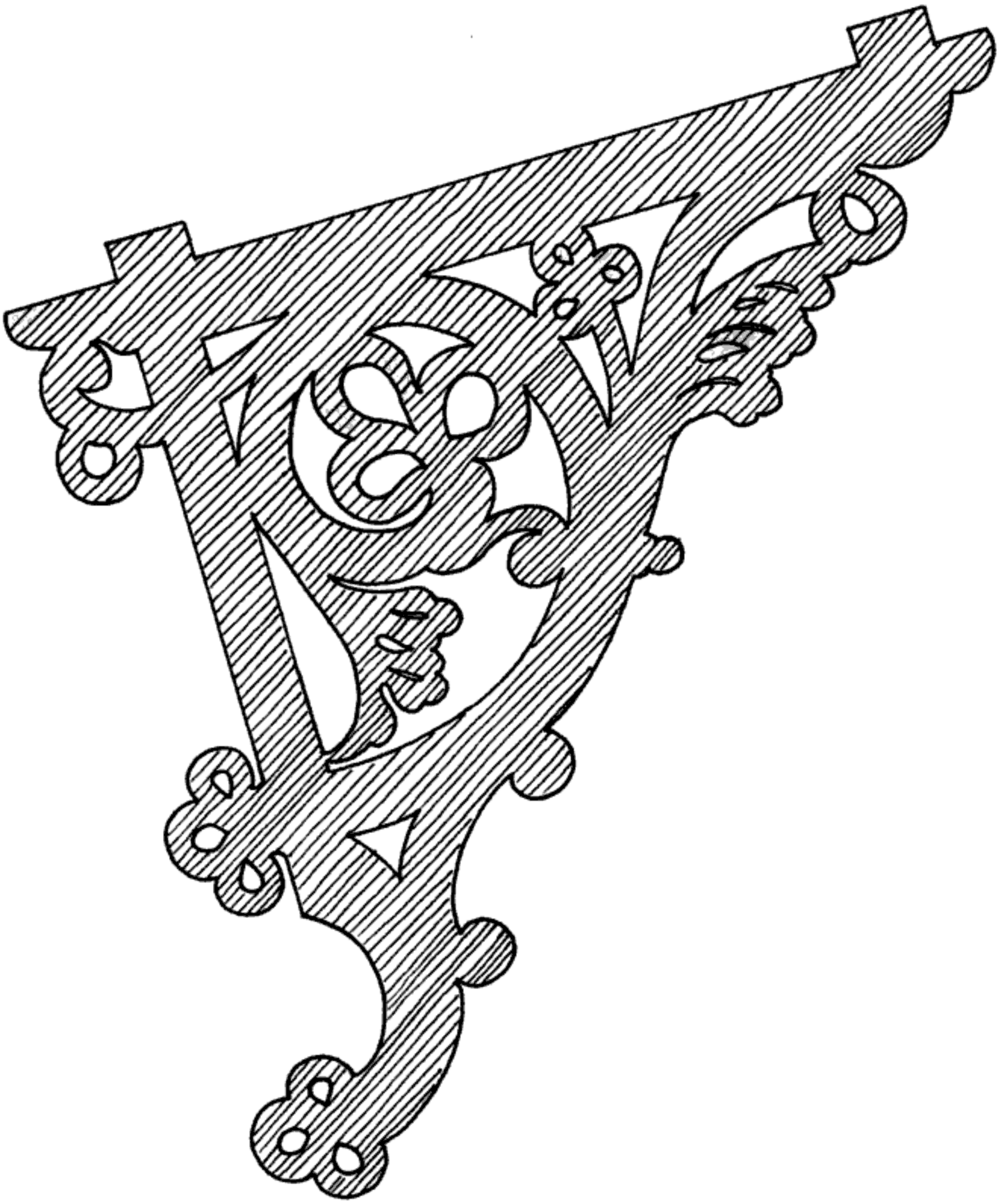
Illus. 29. Candle-holder pattern.

Copyrighted material



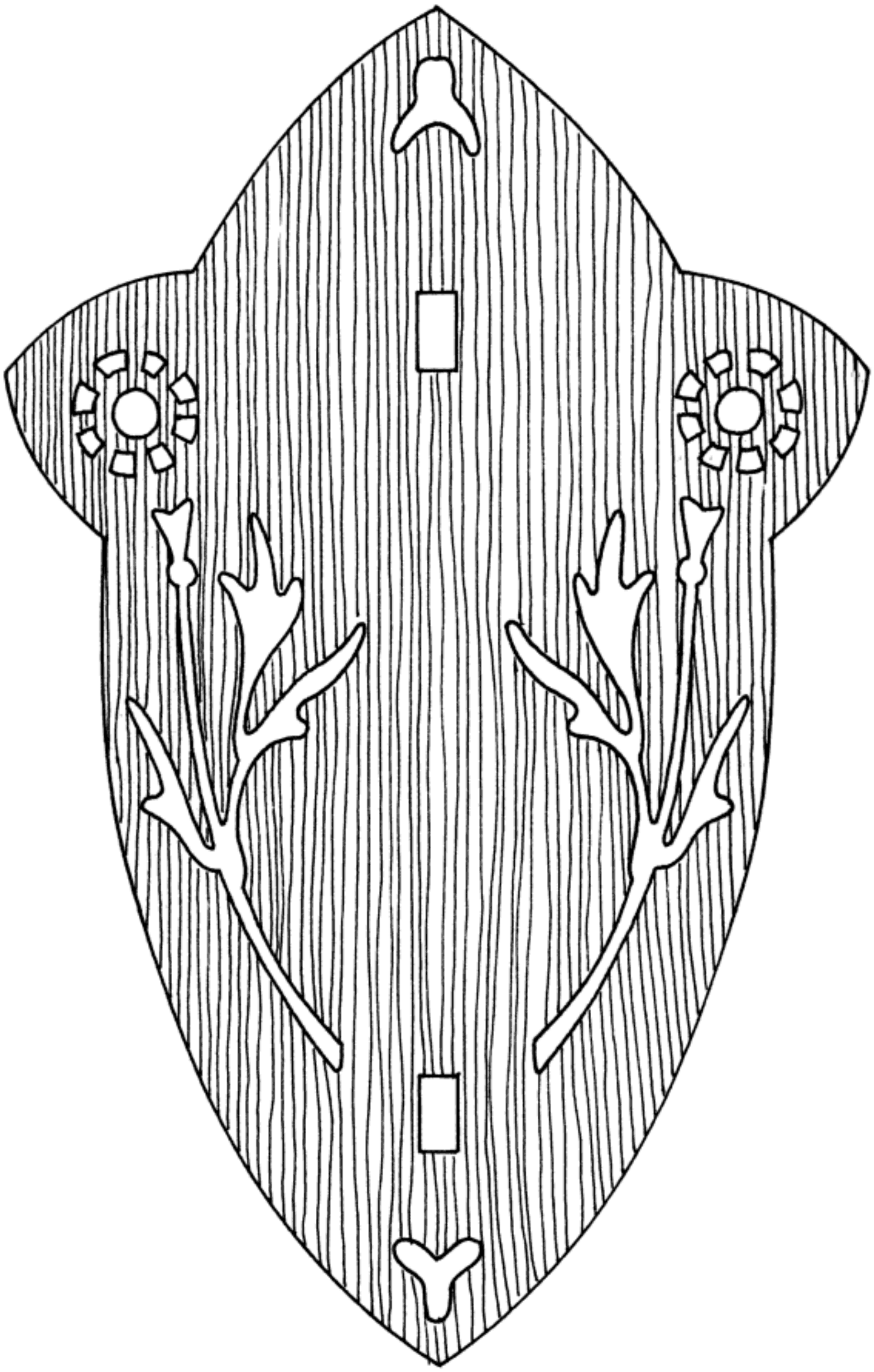
Illus. 30. Letter-opener patterns.

Copyrighted material

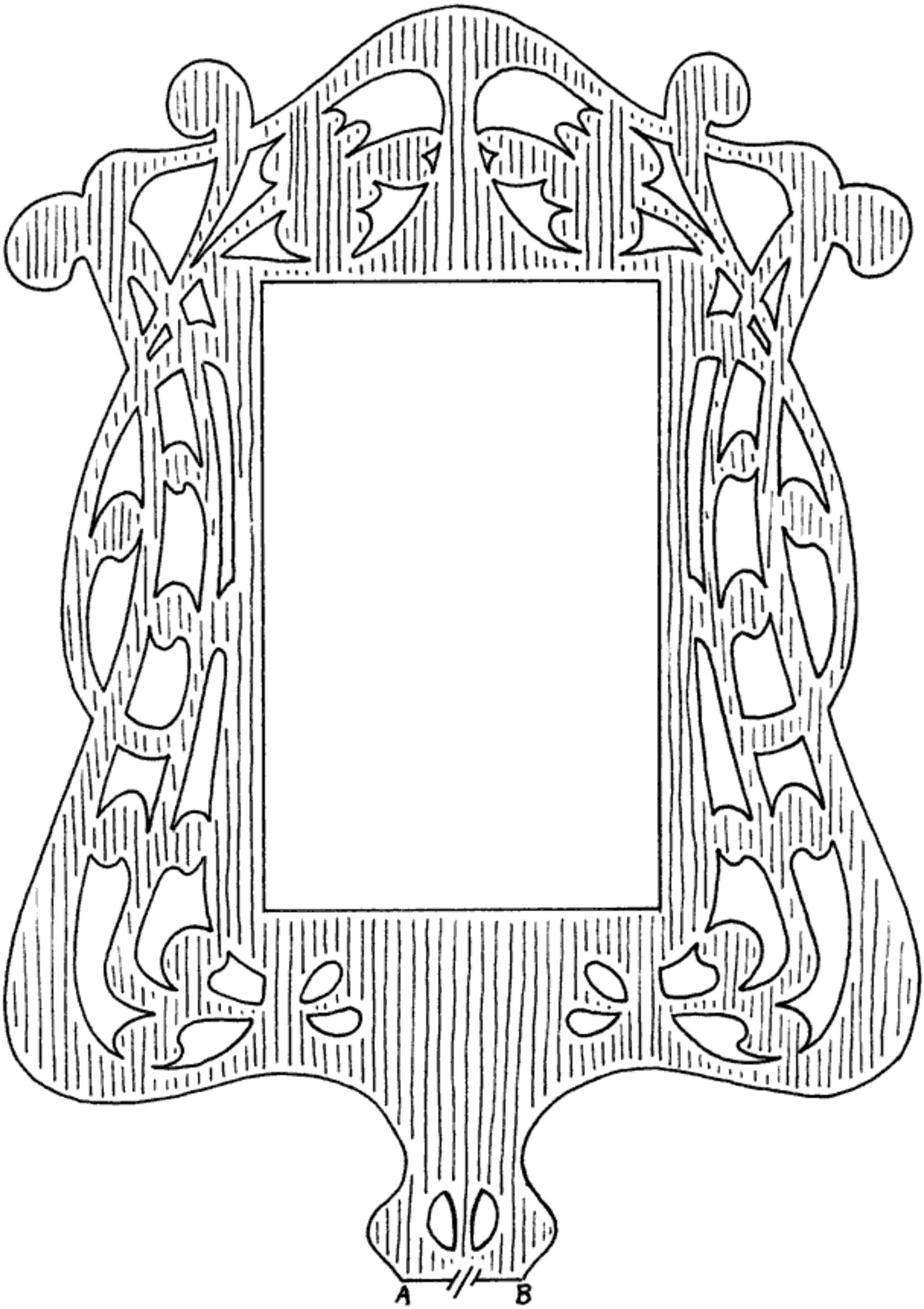


Illus. 31. Plant-hanger pattern. (Continued on the next page.)

Copyrighted material

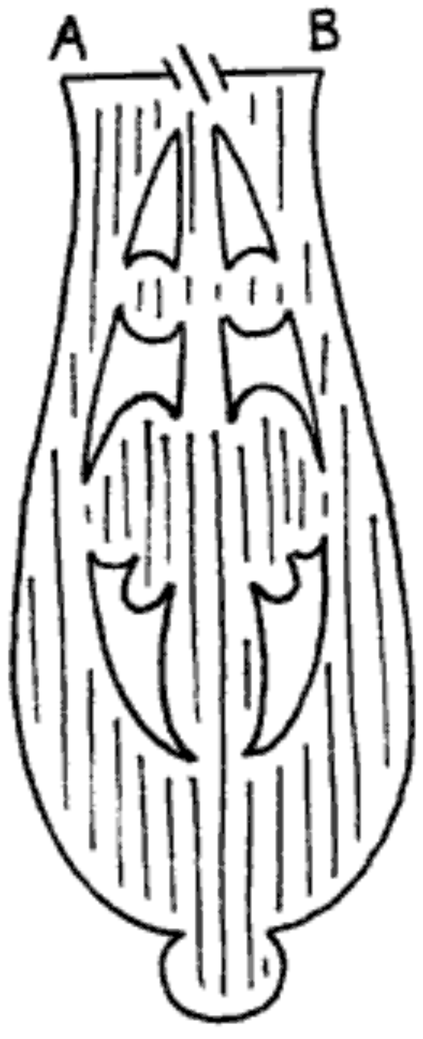


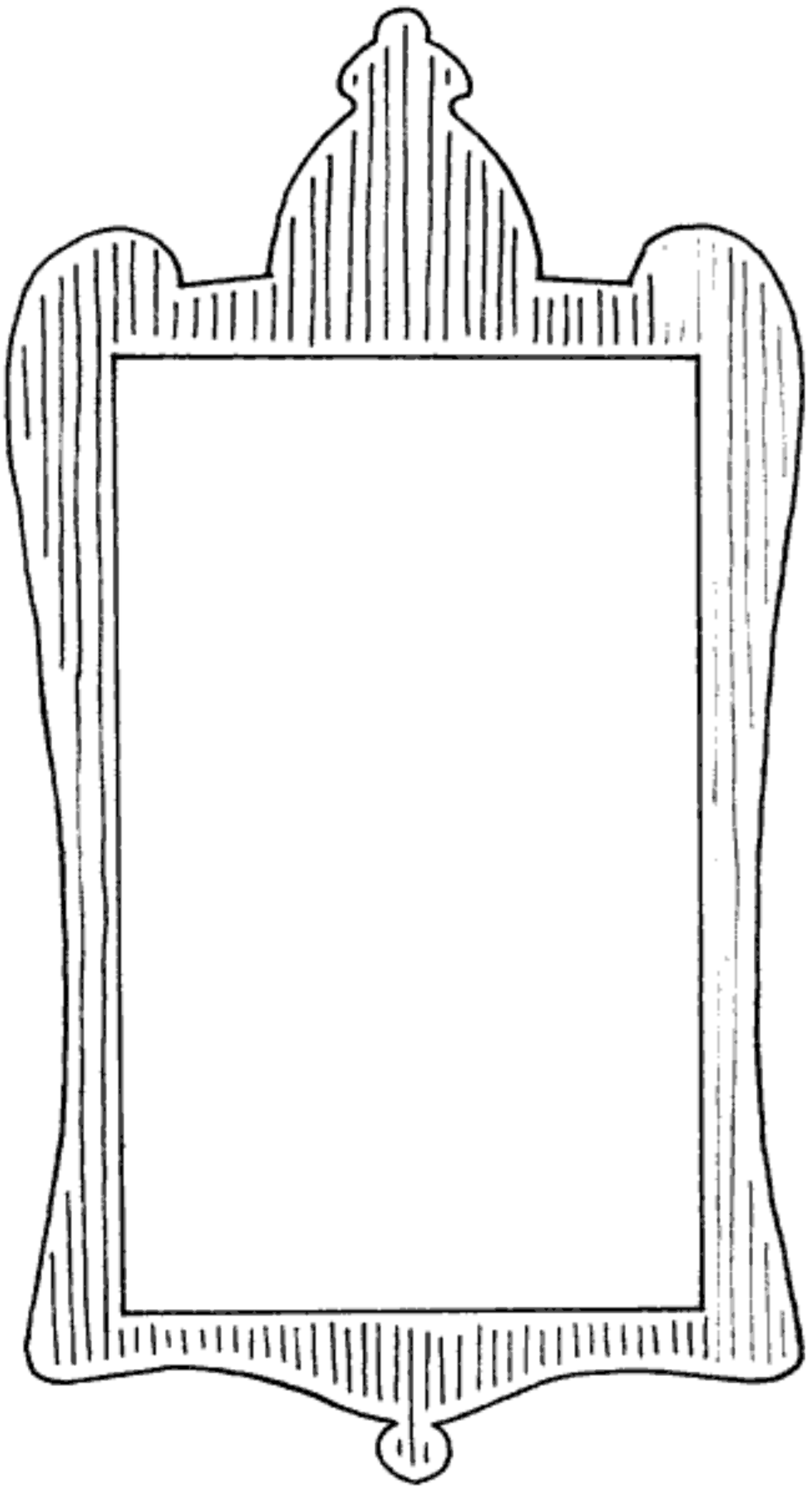
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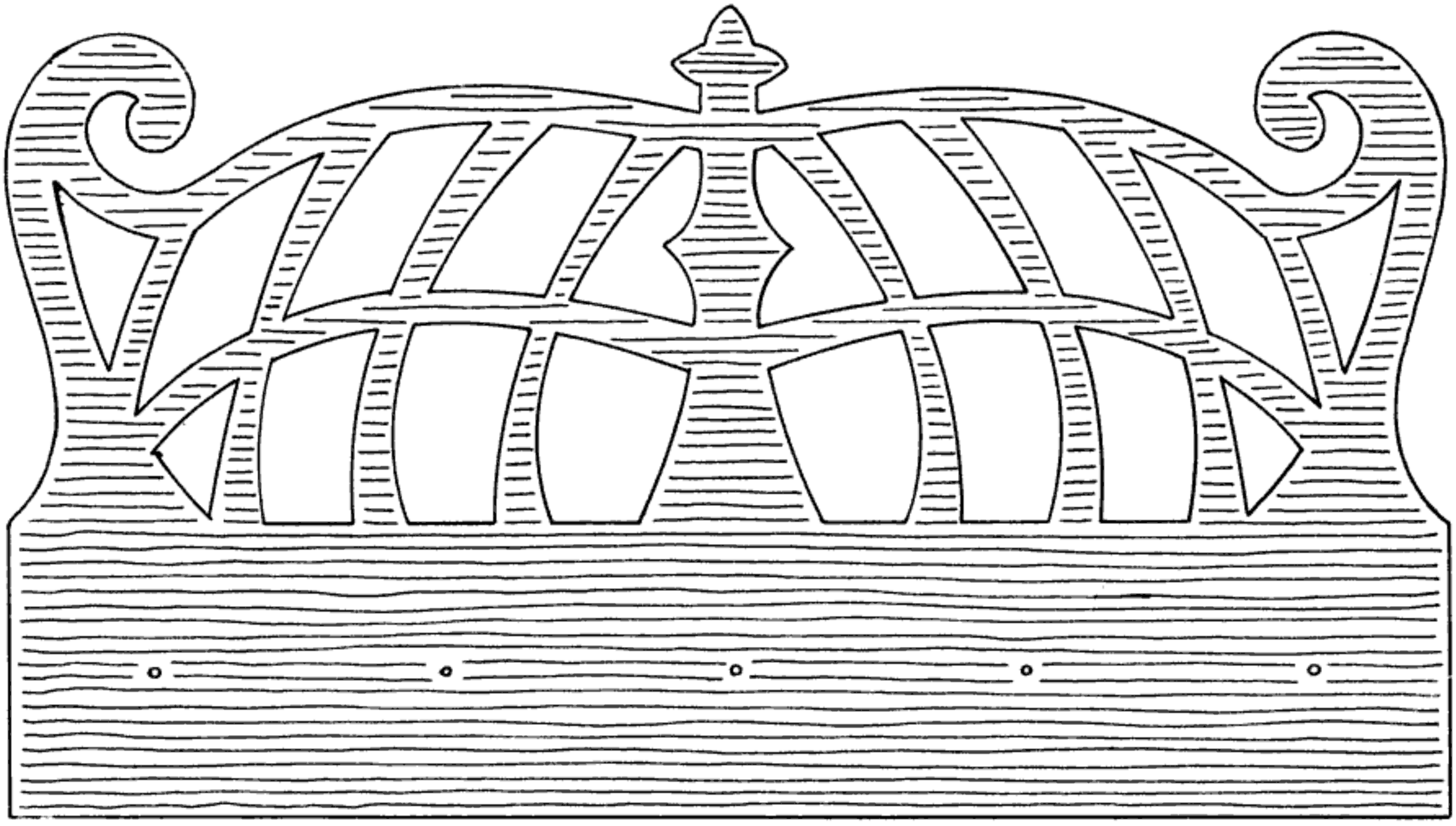
Illus. 32. Hand-mirror pattern. The pattern on the opposite page is overlaid on the larger pattern above to form a rabbet to receive the mirror.

Copyrighted material





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Illus. 33. Key-rack pattern.

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Illus. 34. Pencil holder, by Henry Aldinger. (The pattern follows.)

Copyrighted material



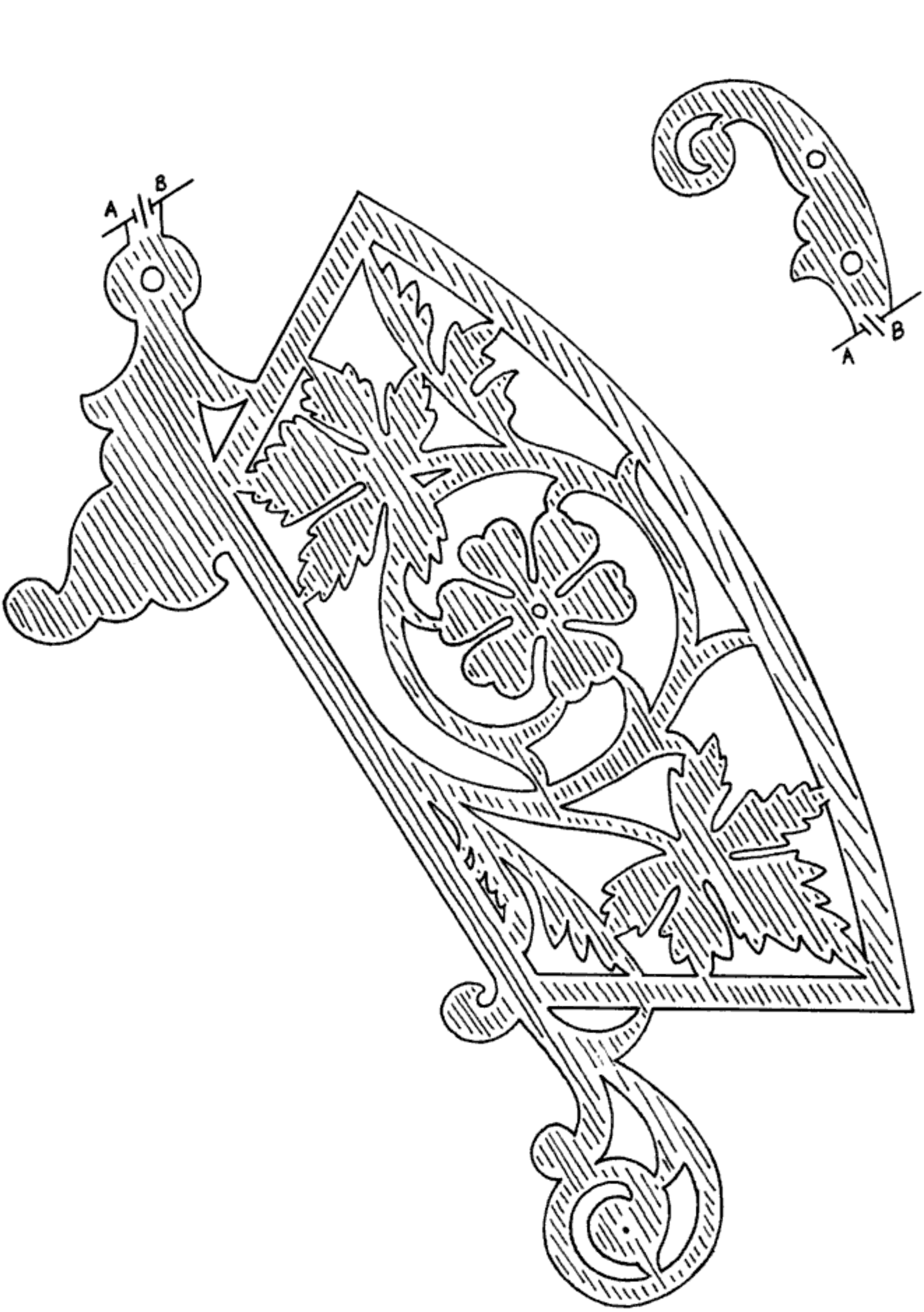
Ilus. 35. Pencil-holder pattern.

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Illus. 36. Wheelbarrow, made of 3/16" walnut. (The pattern follows.)

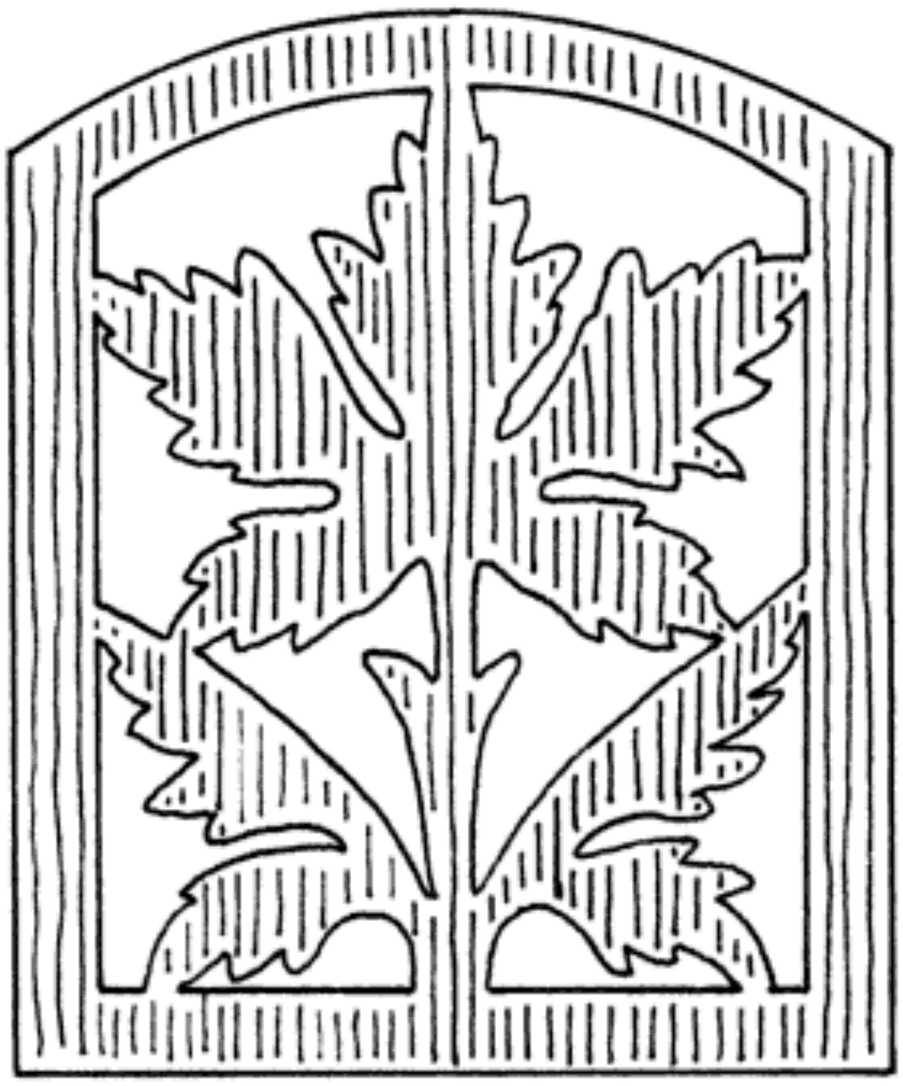
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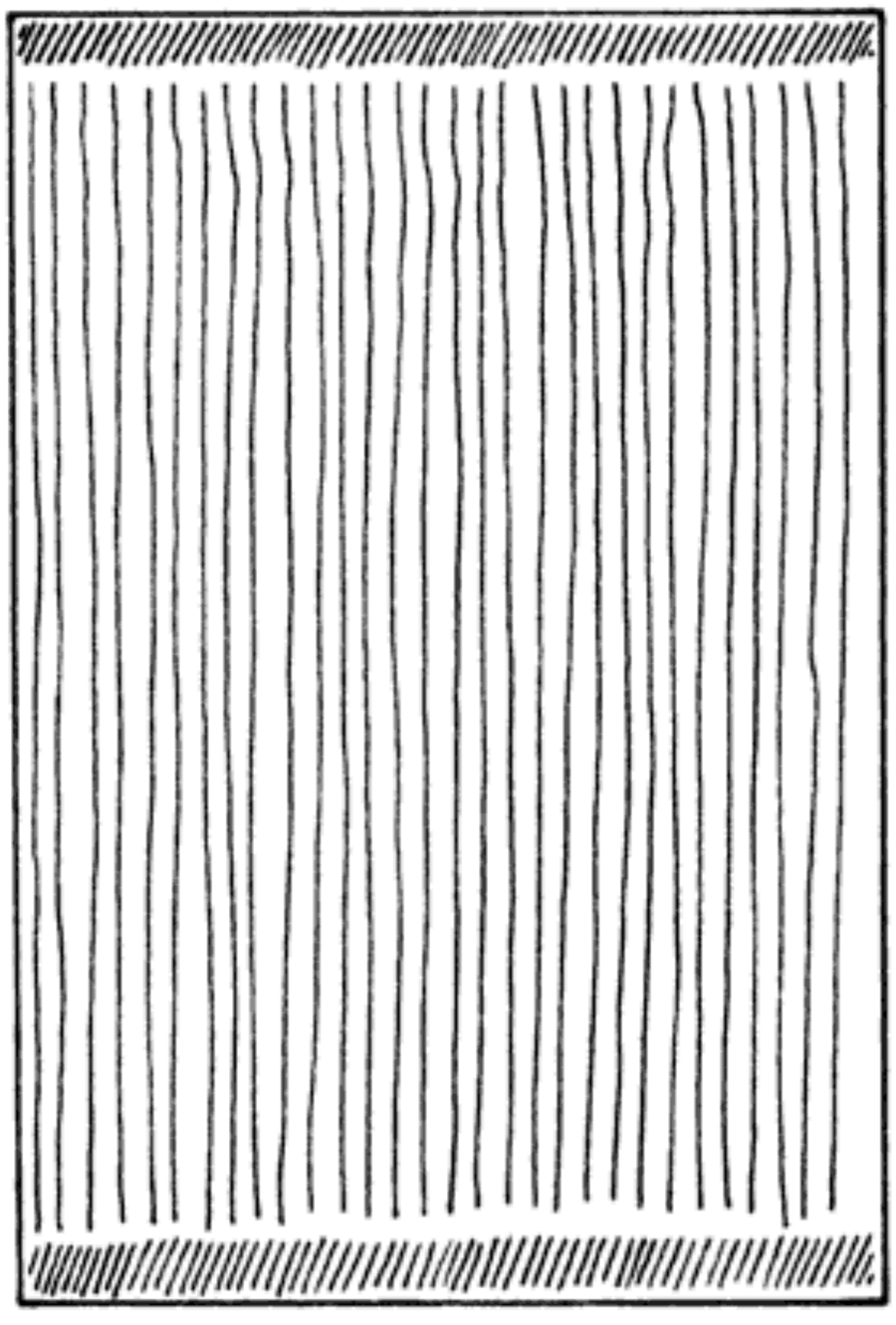
Illus. 37. Wheelbarrow pattern (continued on the next page). Use ¼" dowel axle and drill a ¼" hole in the wheel.

Copyrighted material







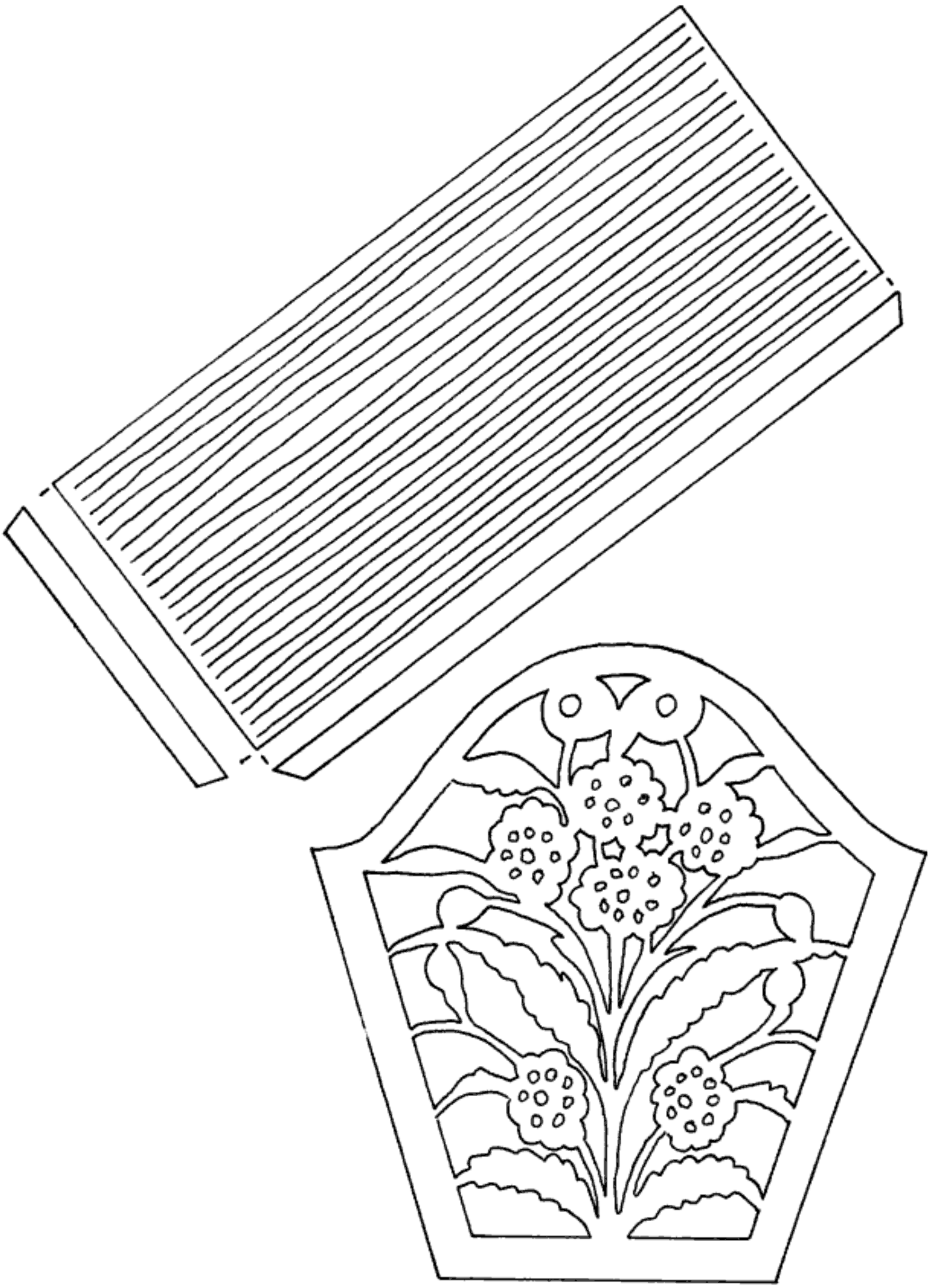


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Illus. 38. Card-holder pattern. (Continued on the next page.)

Copyrighted material



(2 Pieces)

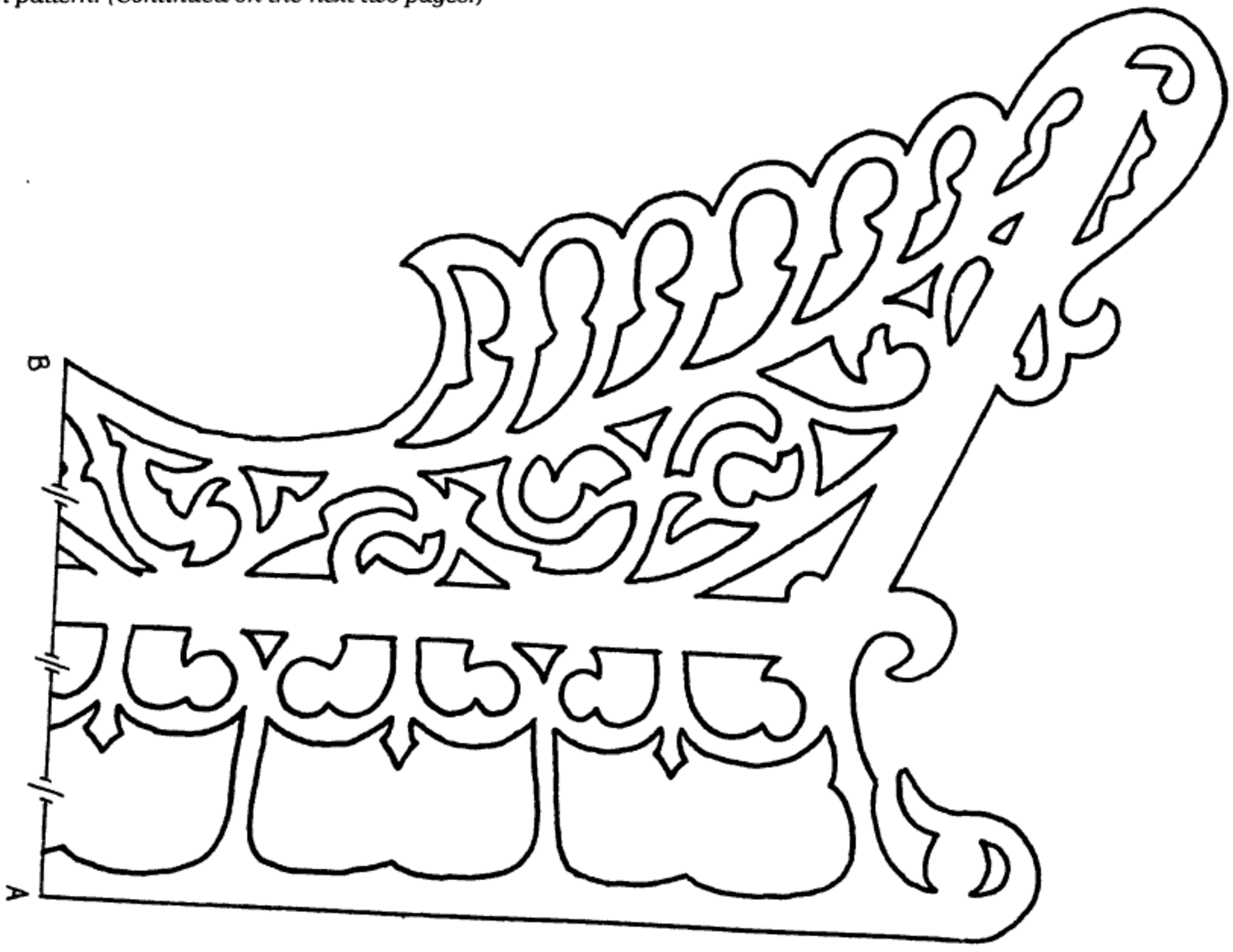
Copyrighted material



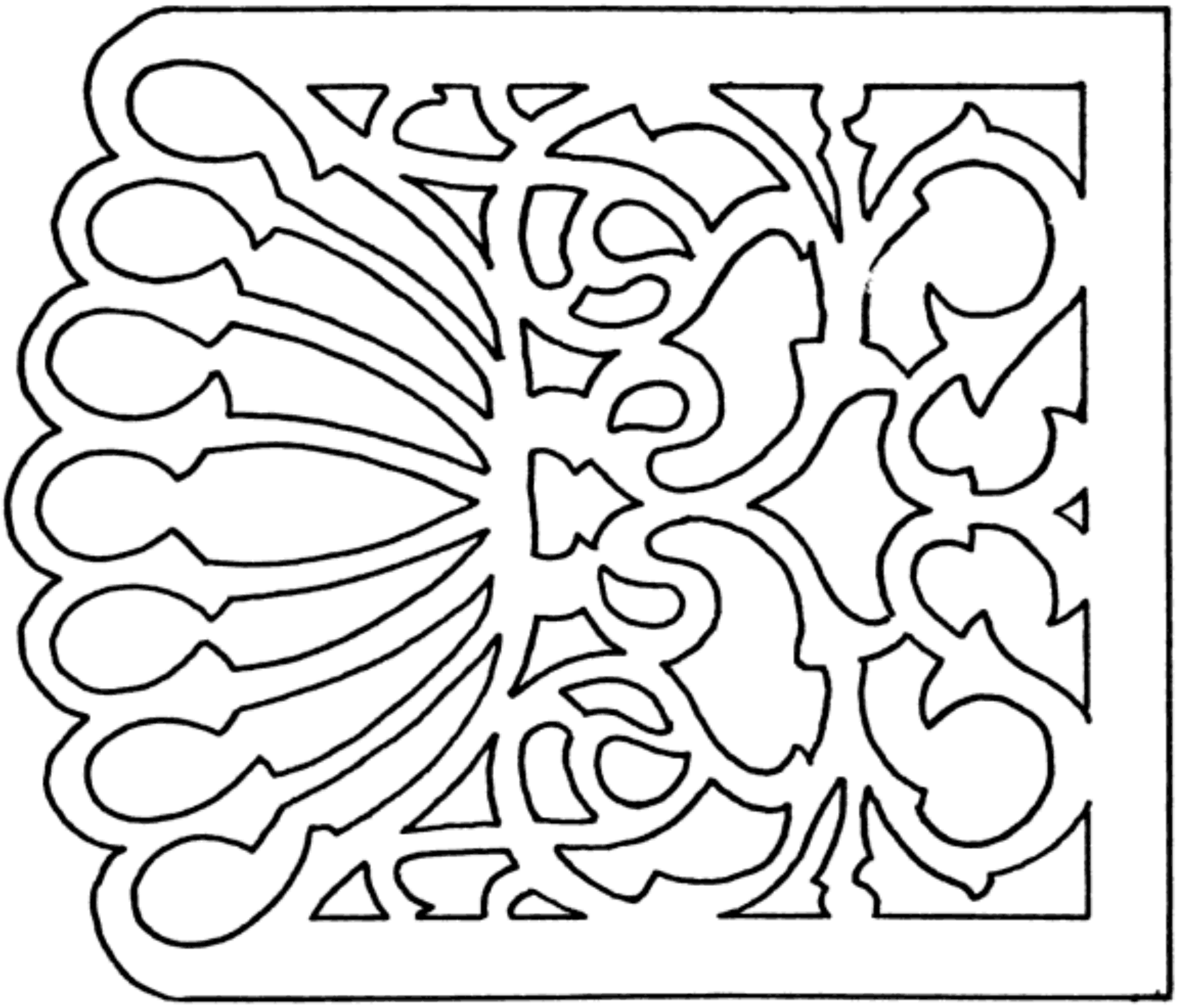
Illus. 39. Sleigh.

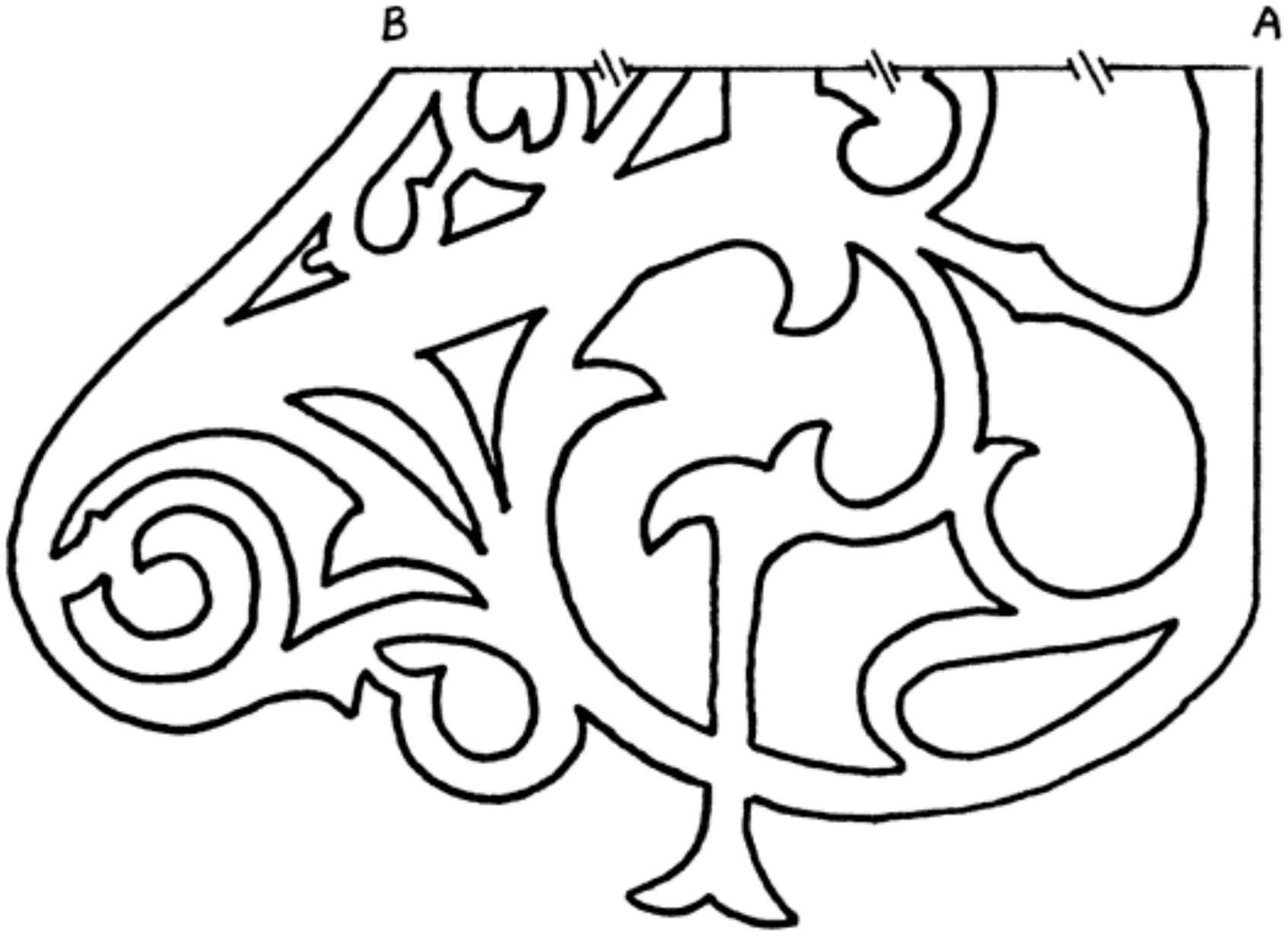
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Illus. 40. Sleigh pattern. (Continued on the next two pages.)

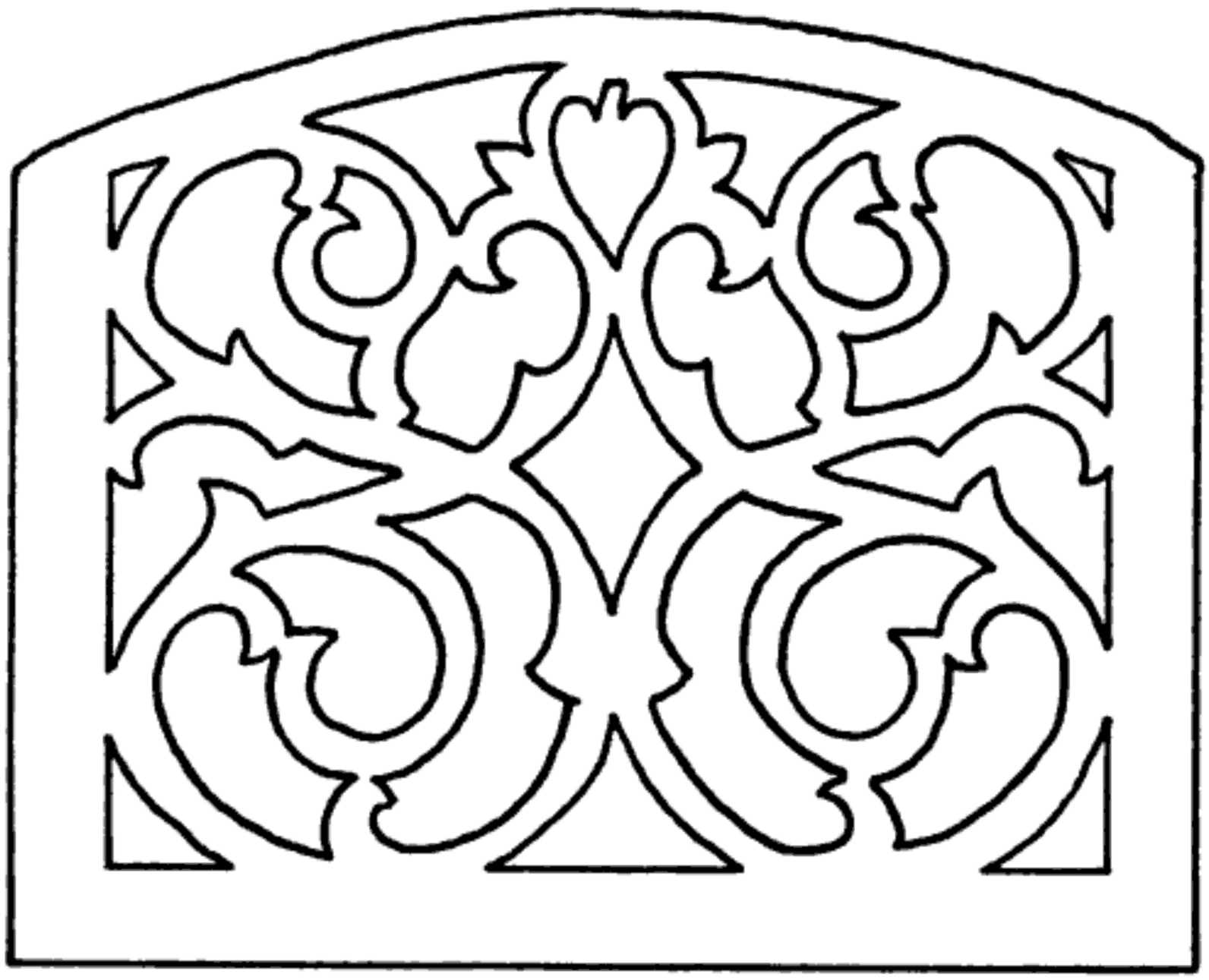


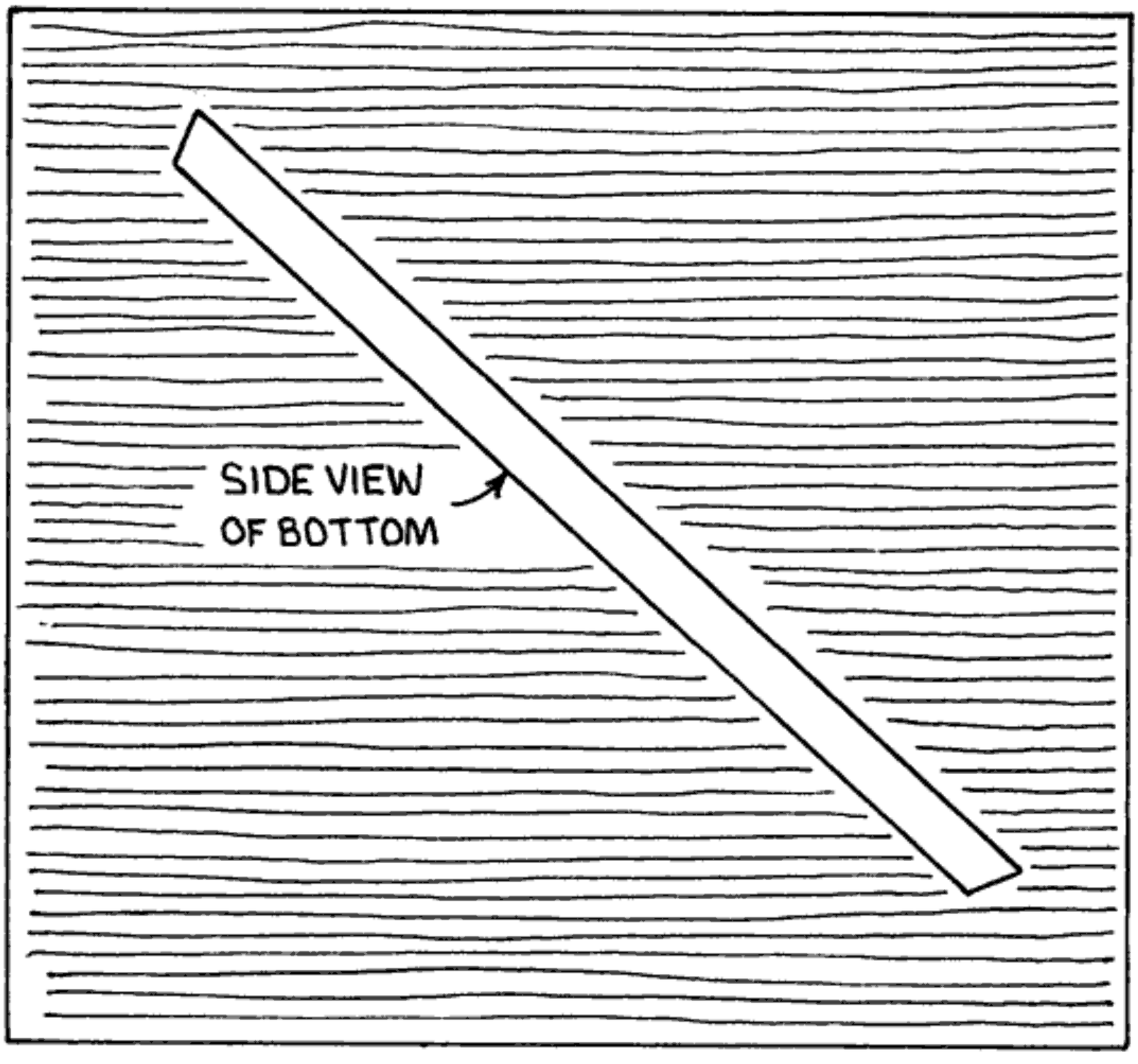
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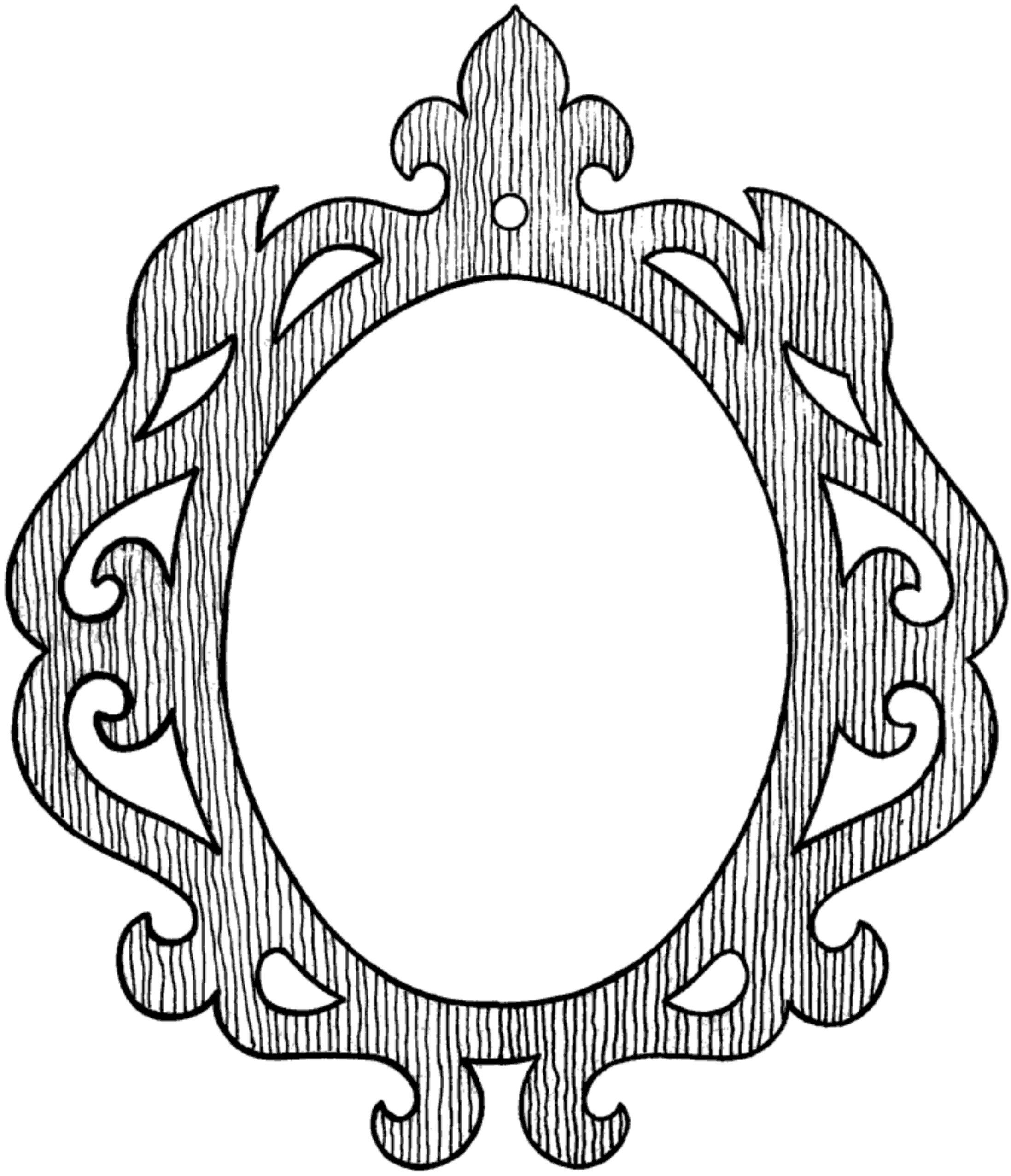


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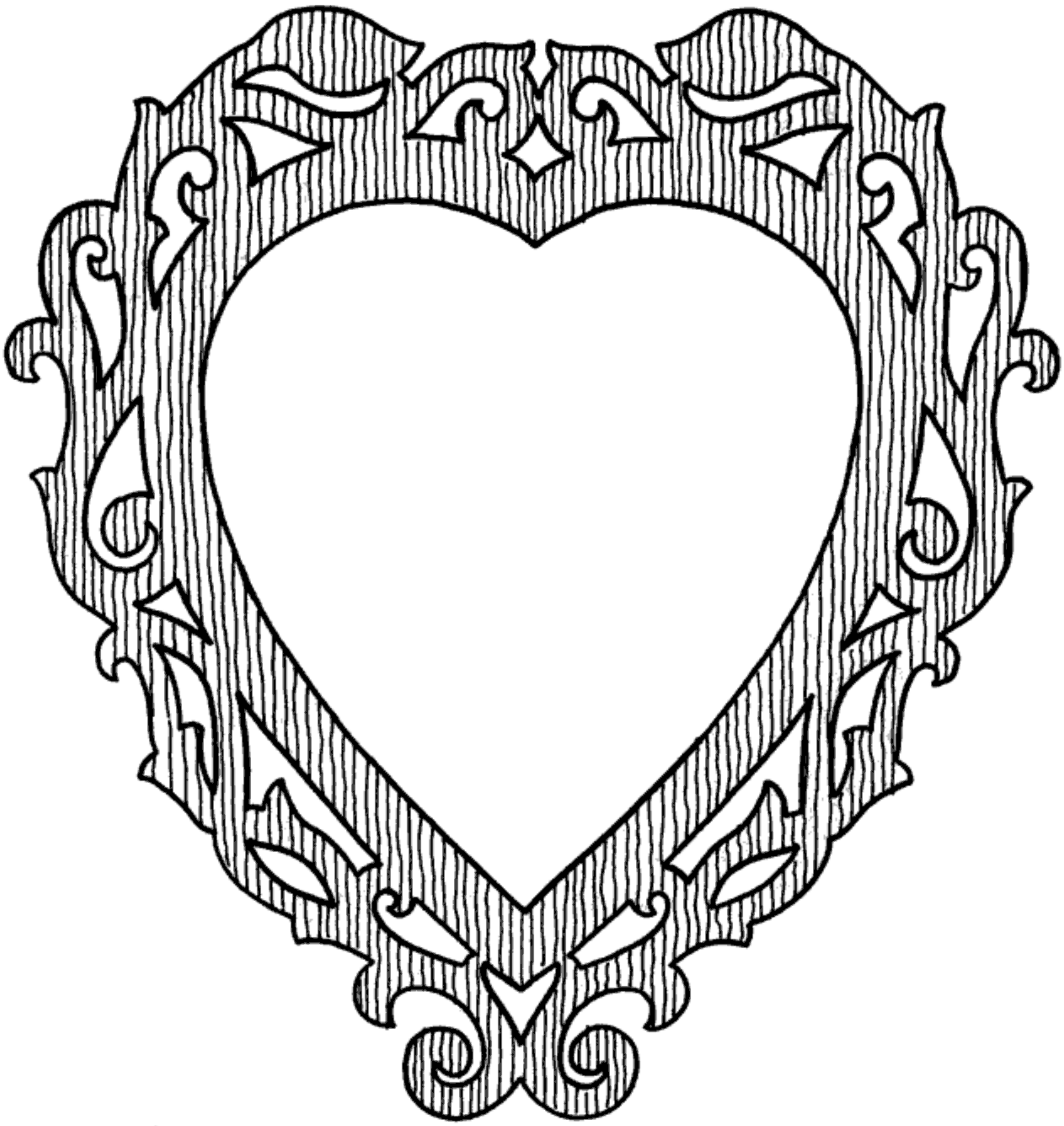


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Illus. 41. Pattern for oval frame. Design by Kirk Ratajesak.

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Illus. 42. Pattern for heart-shaped frame. Design by Kirk Ratajesak.

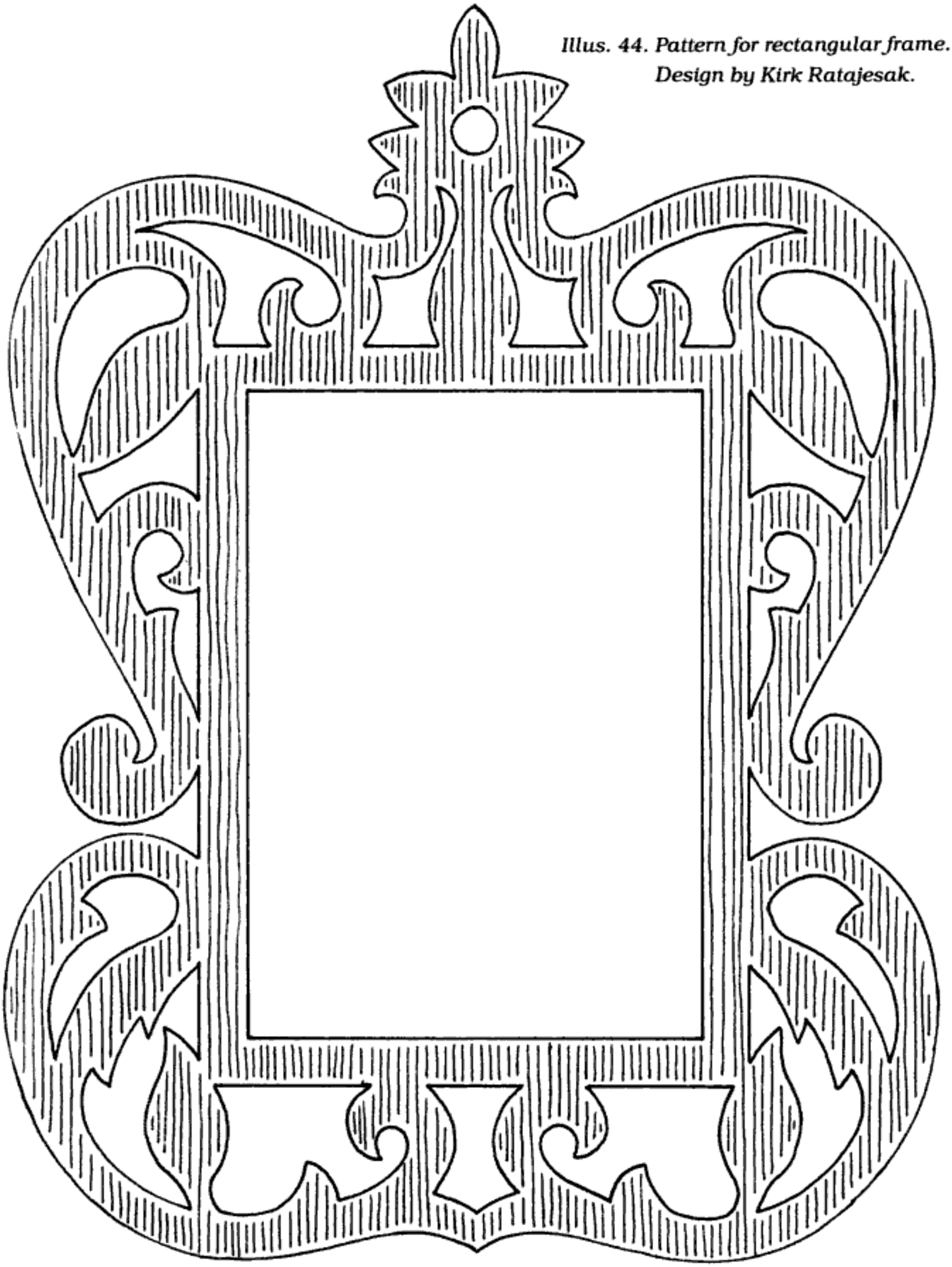
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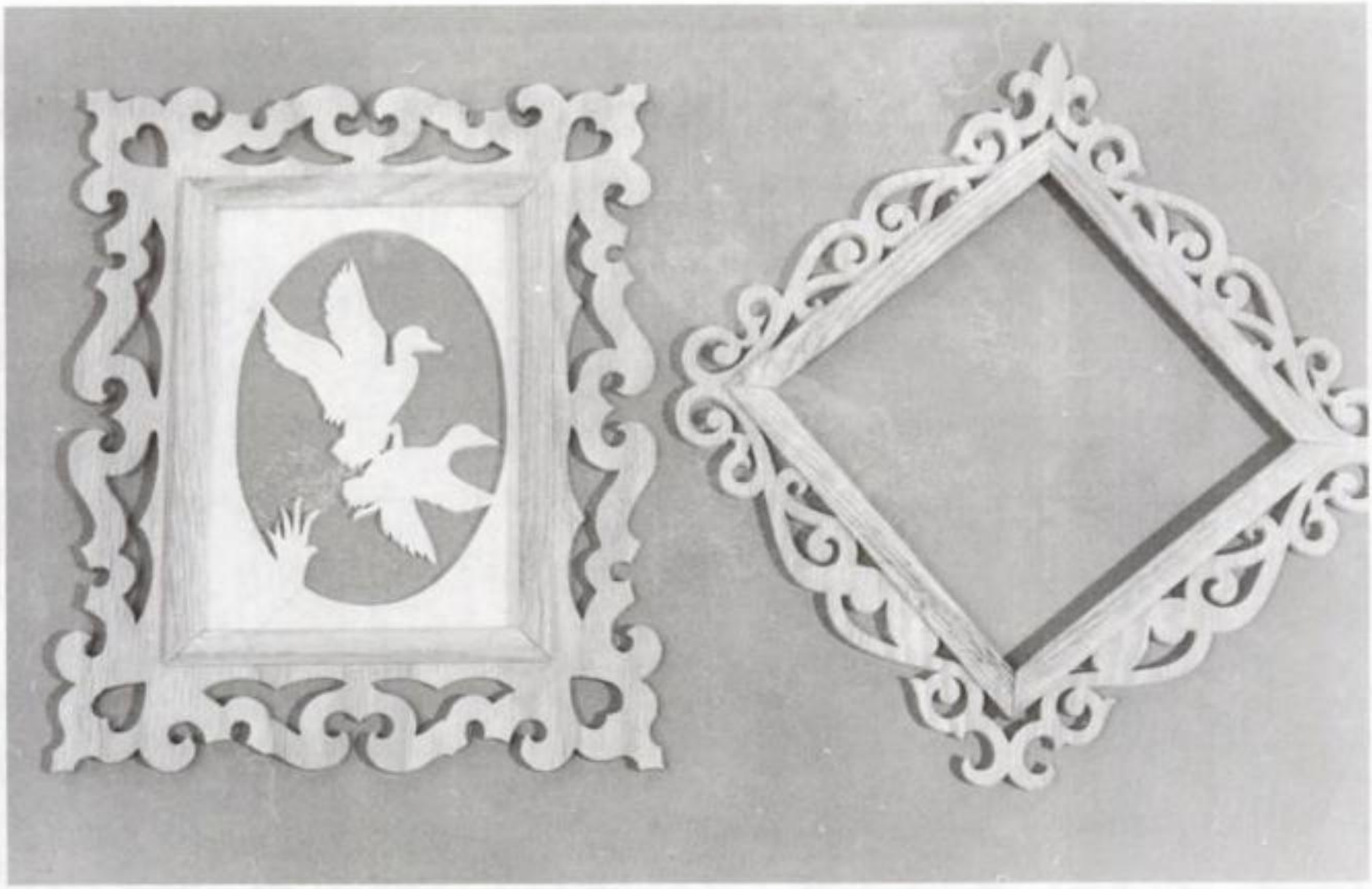
Illus. 43. Pattern for rectangular picture frame. Design by Dirk Boelman.

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Illus. 44. Pattern for rectangular frame.
Design by Kirk Ratajesak.

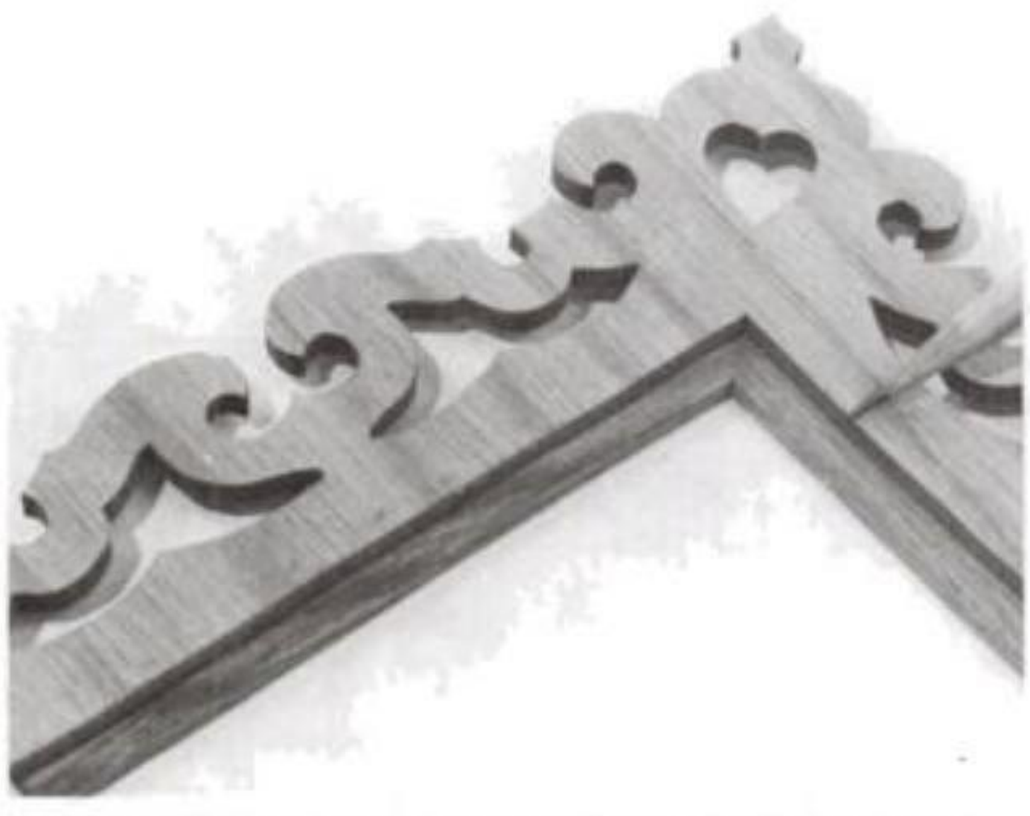


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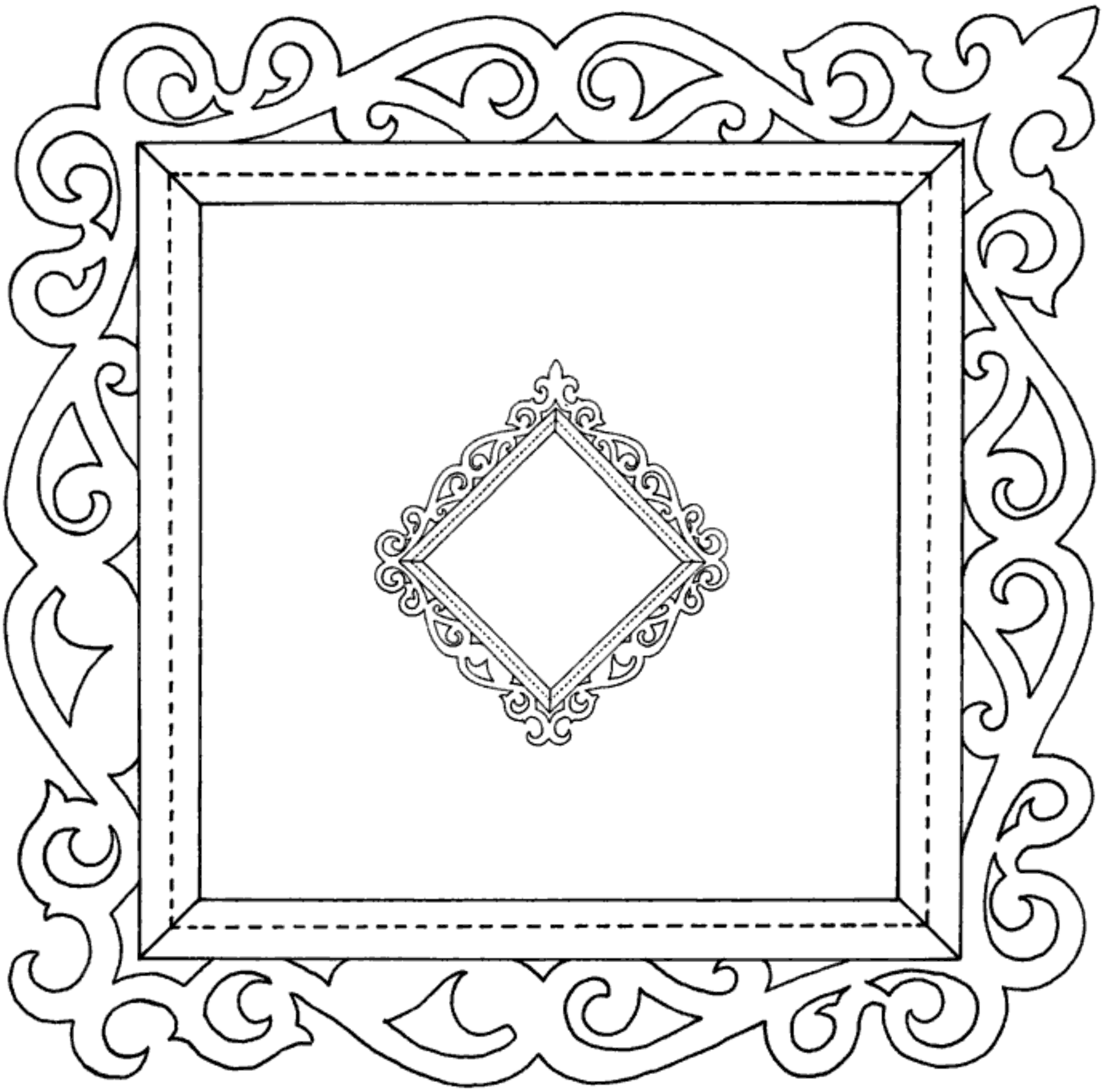
Illus. 45. Rectangular and square frame designs, by Kirk Ratajesak. (The patterns follow.)





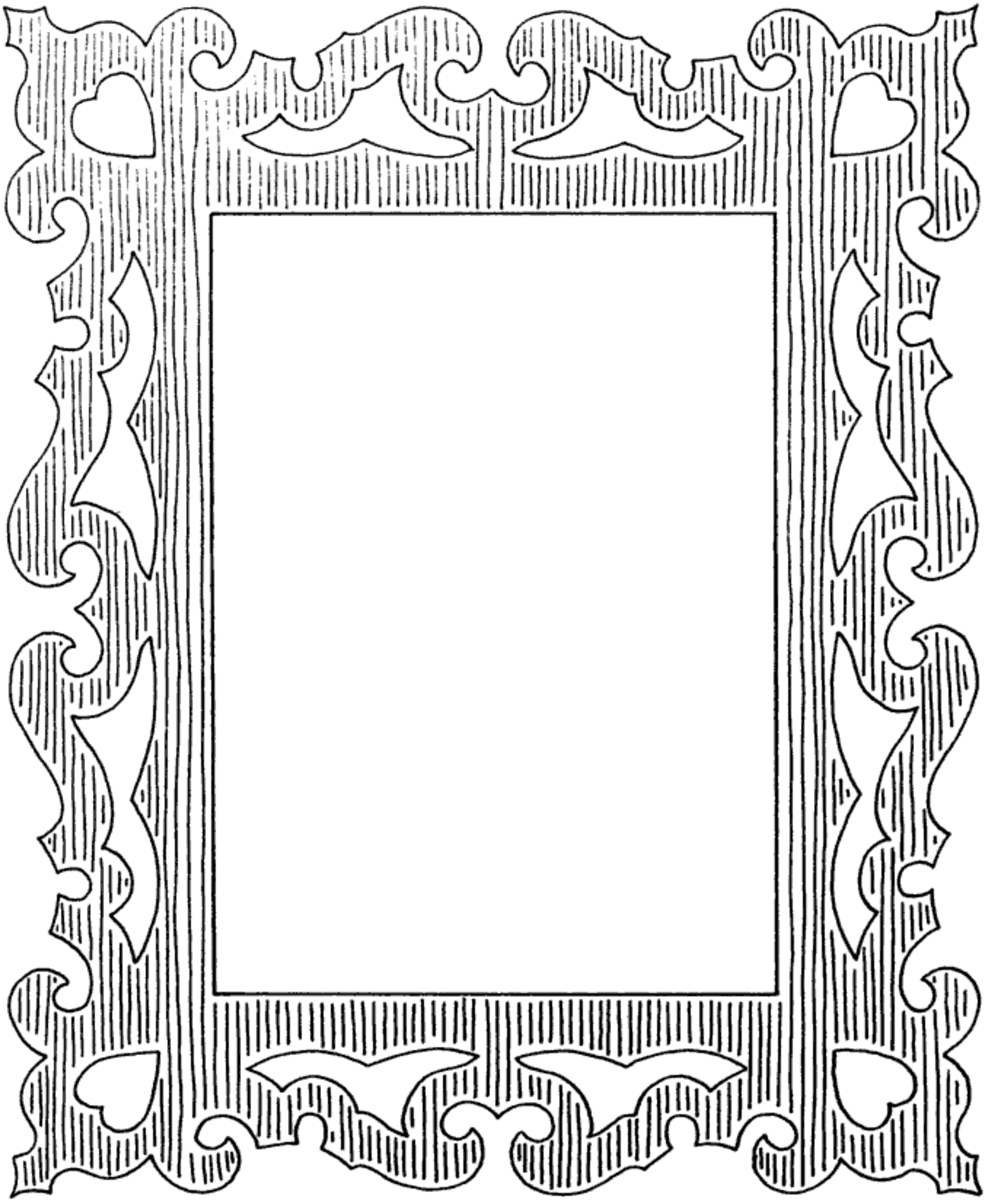
Illus. 46 (left). Strips that are ⅛" × ½" and overlaid make the rabbet for the photo or mirror.
Illus. 47 (right). The rear of the frame showing the rabbet.

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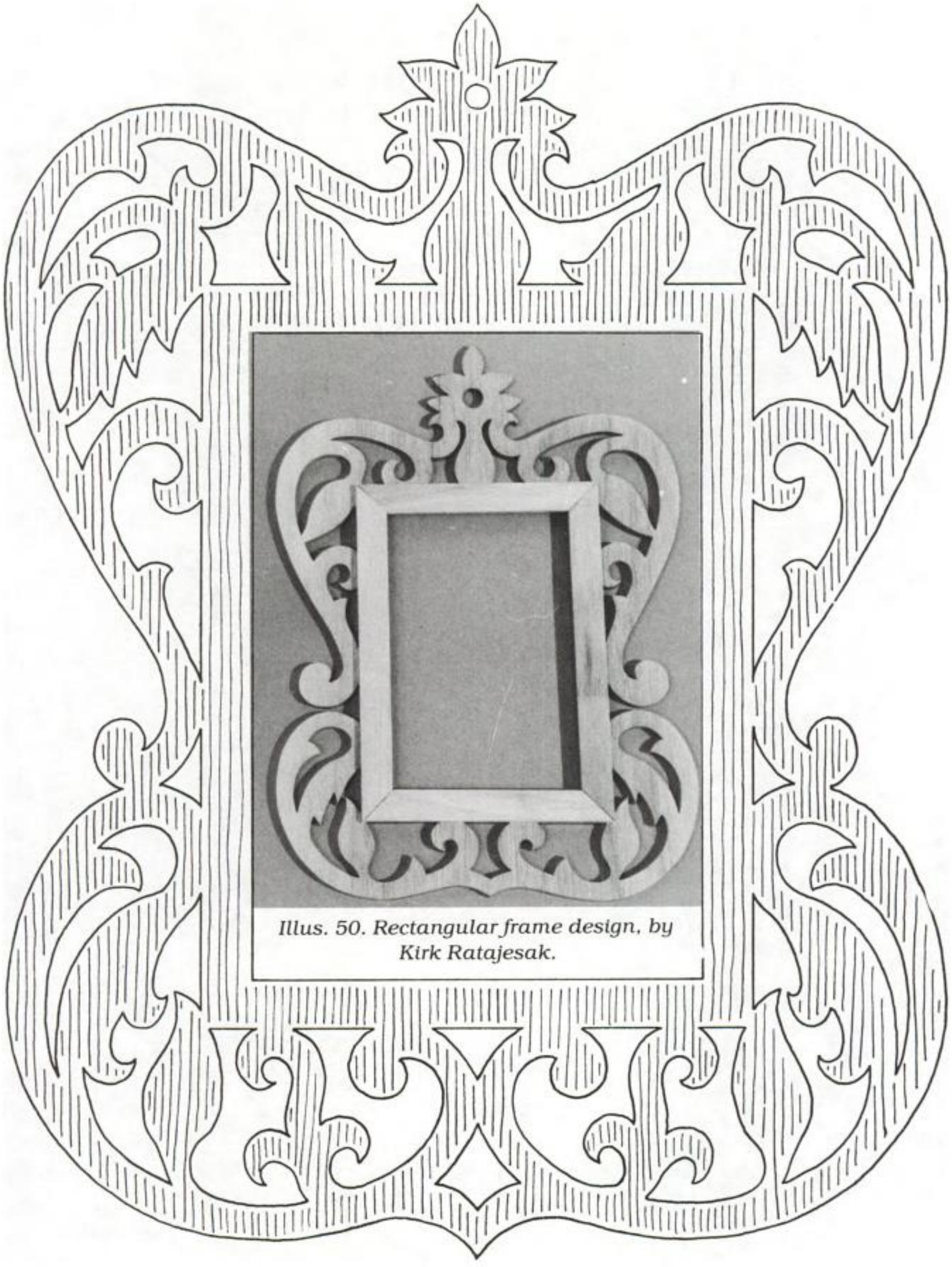
Illus. 48. Pattern for square frame.

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Illus. 49. Pattern for rectangular frame

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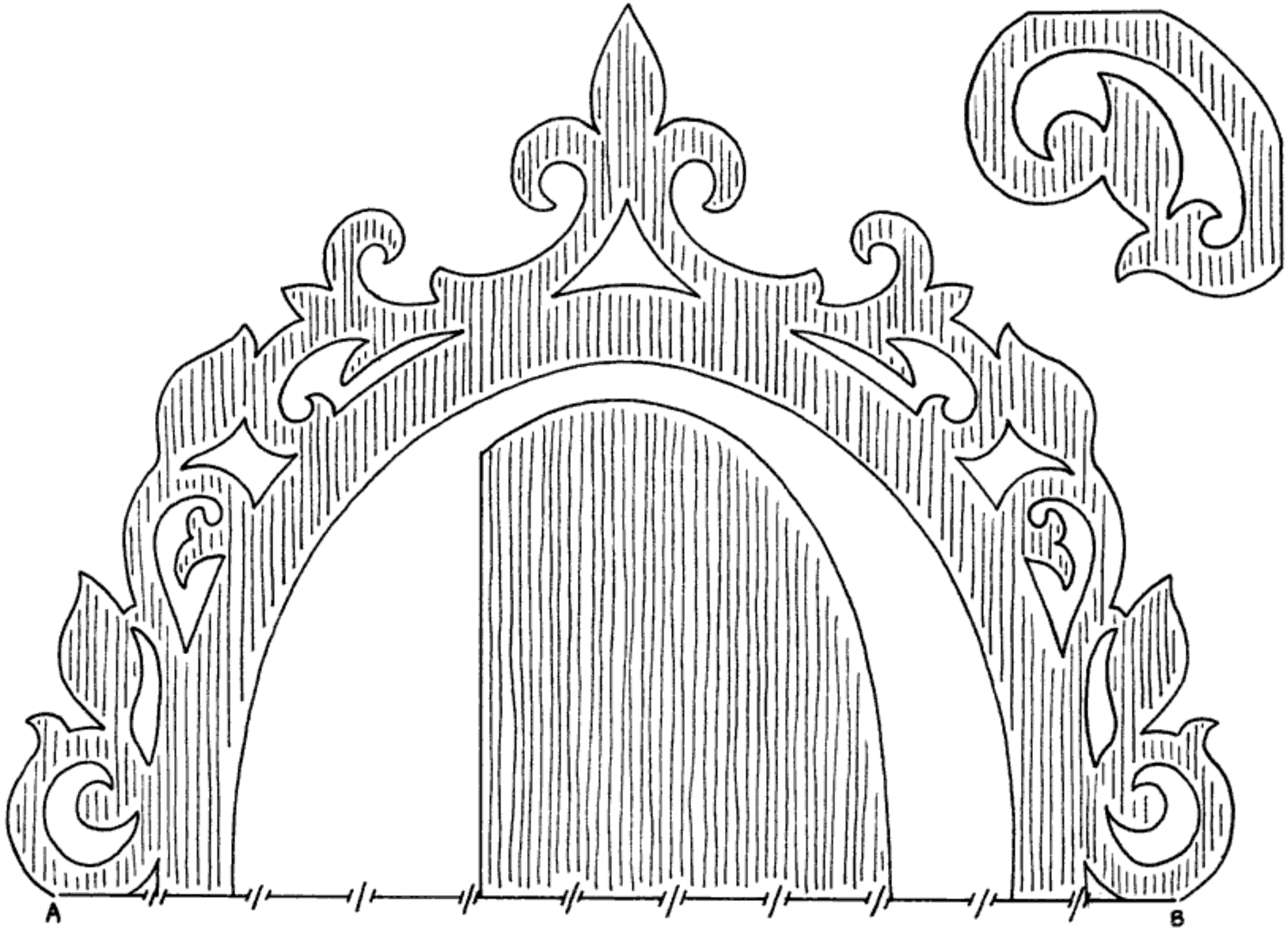


Illus. 50. Rectangular frame design, by Kirk Ratajesak.

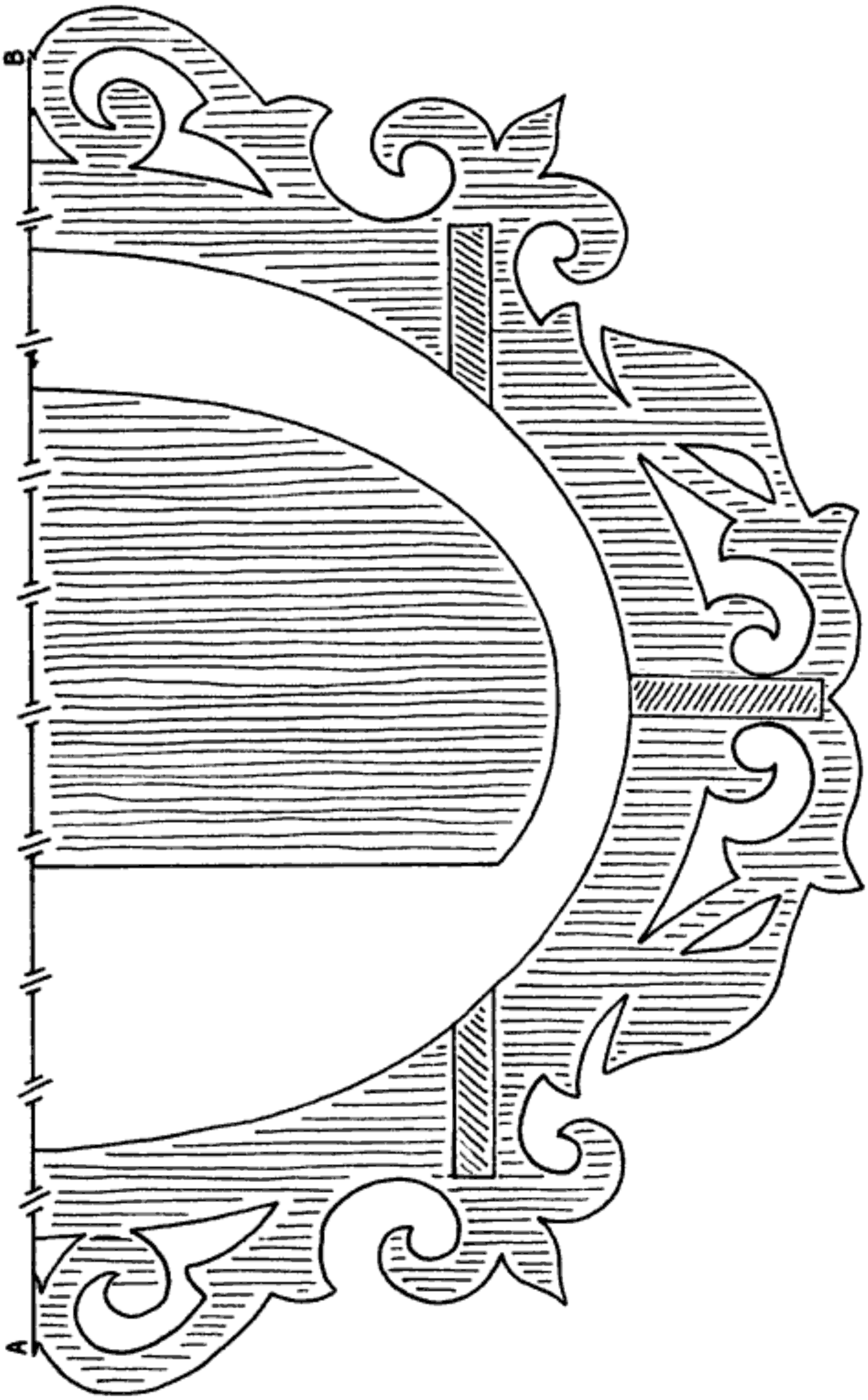
Illus. 51. Pattern for rectangular frame.

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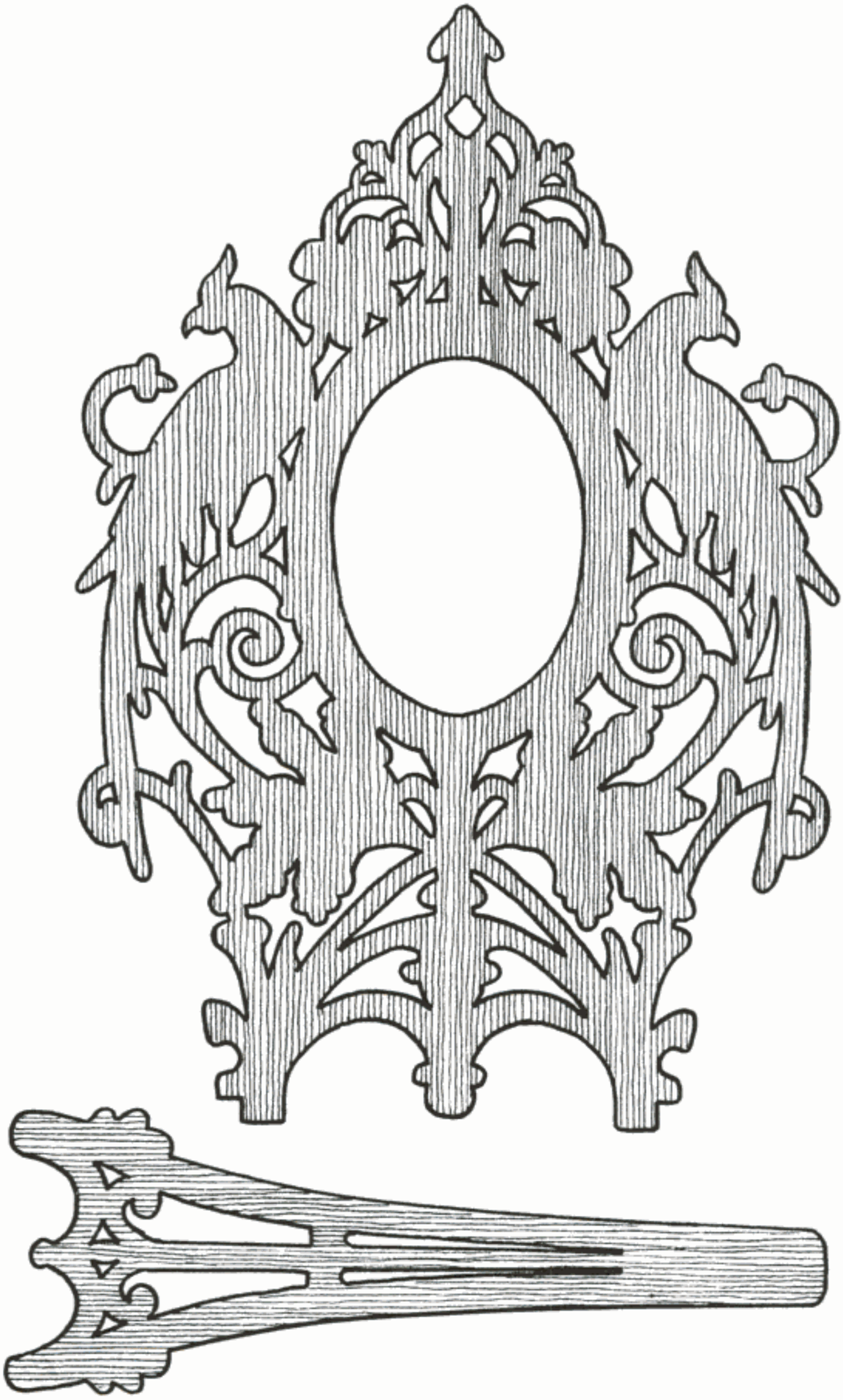
Illus. 52. Pattern for mirror frame with shelf.



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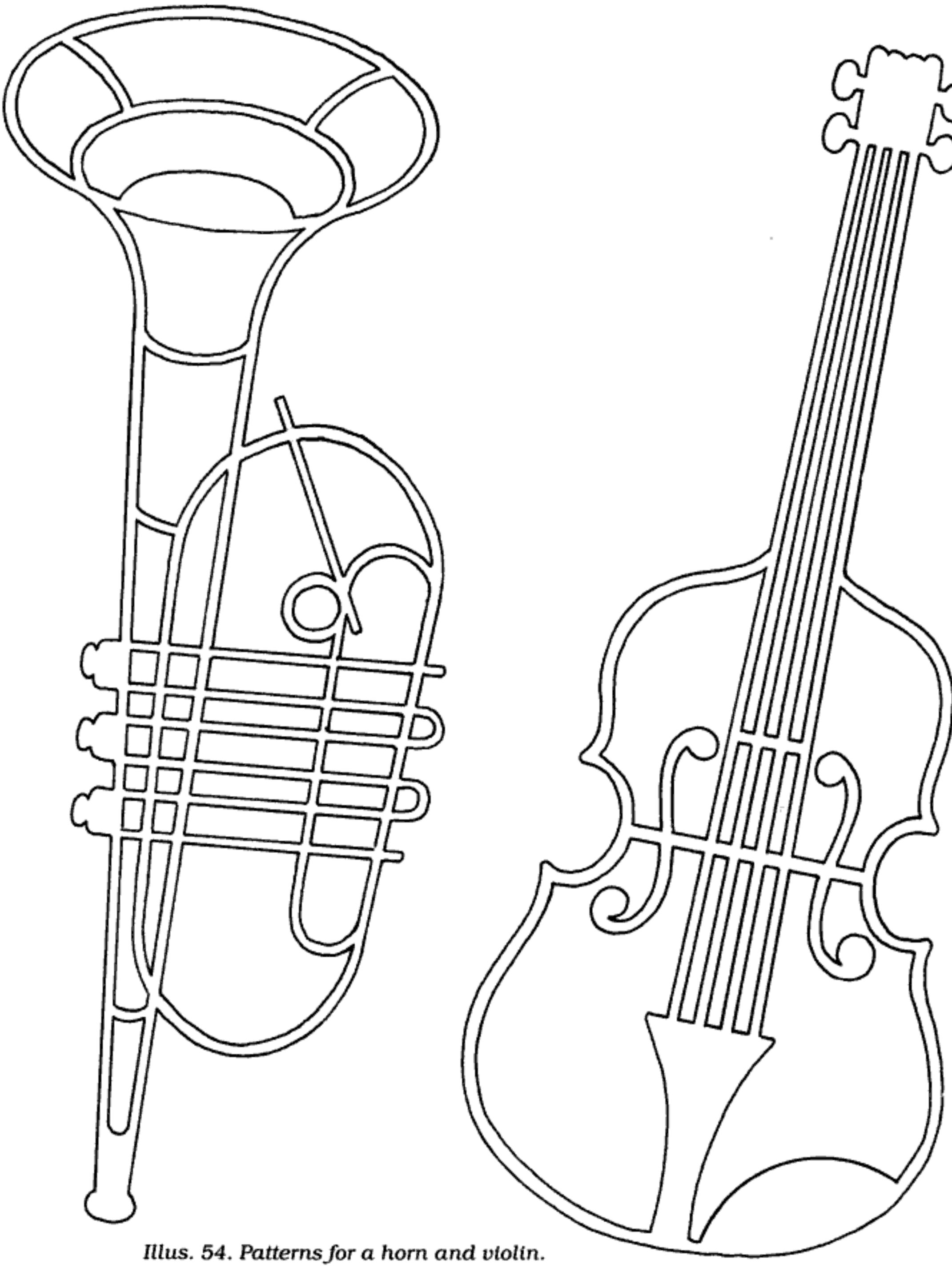
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Illus. 53. Pattern for standing photo frame.

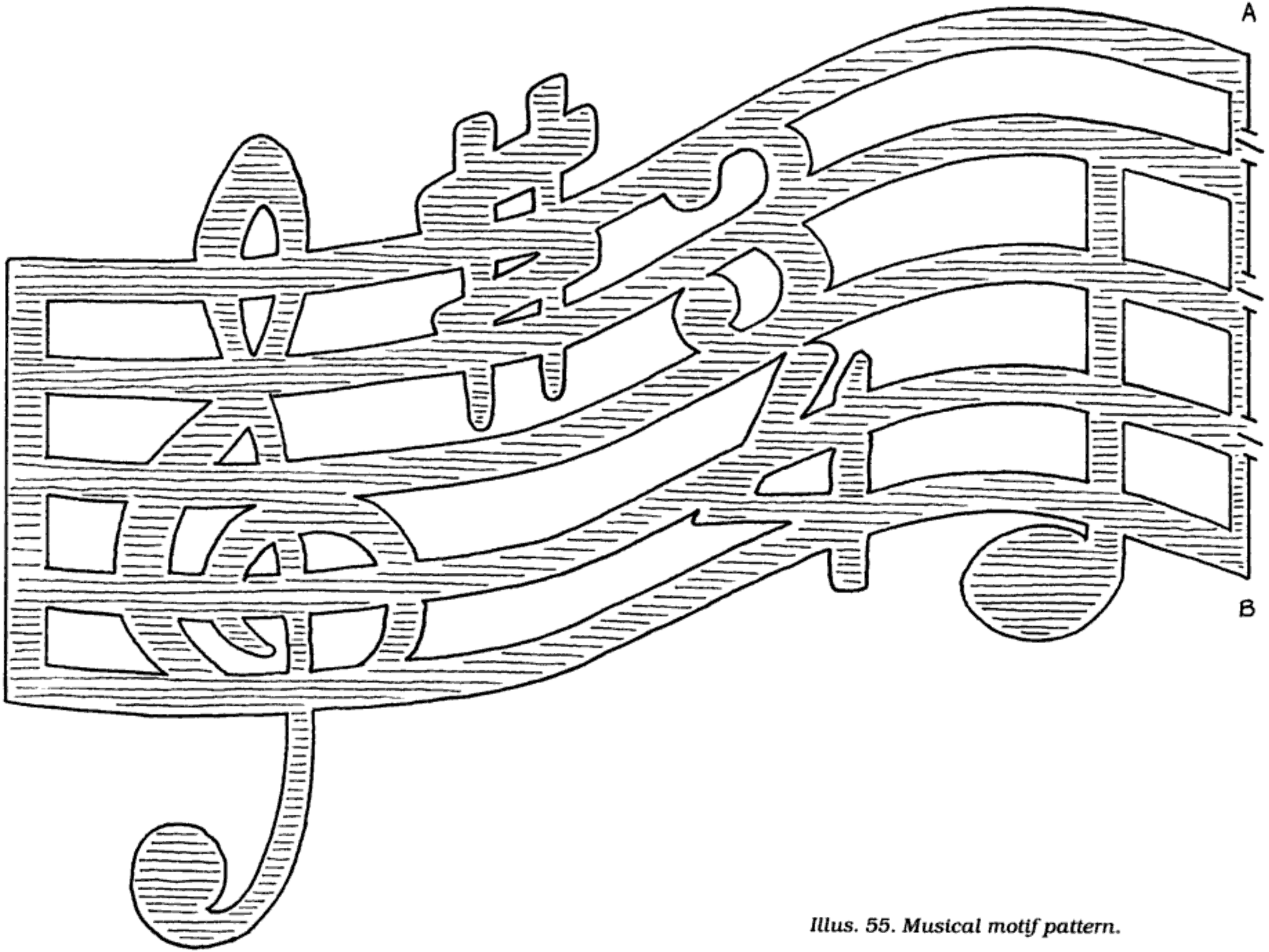
Copyrighted material

Musical Designs



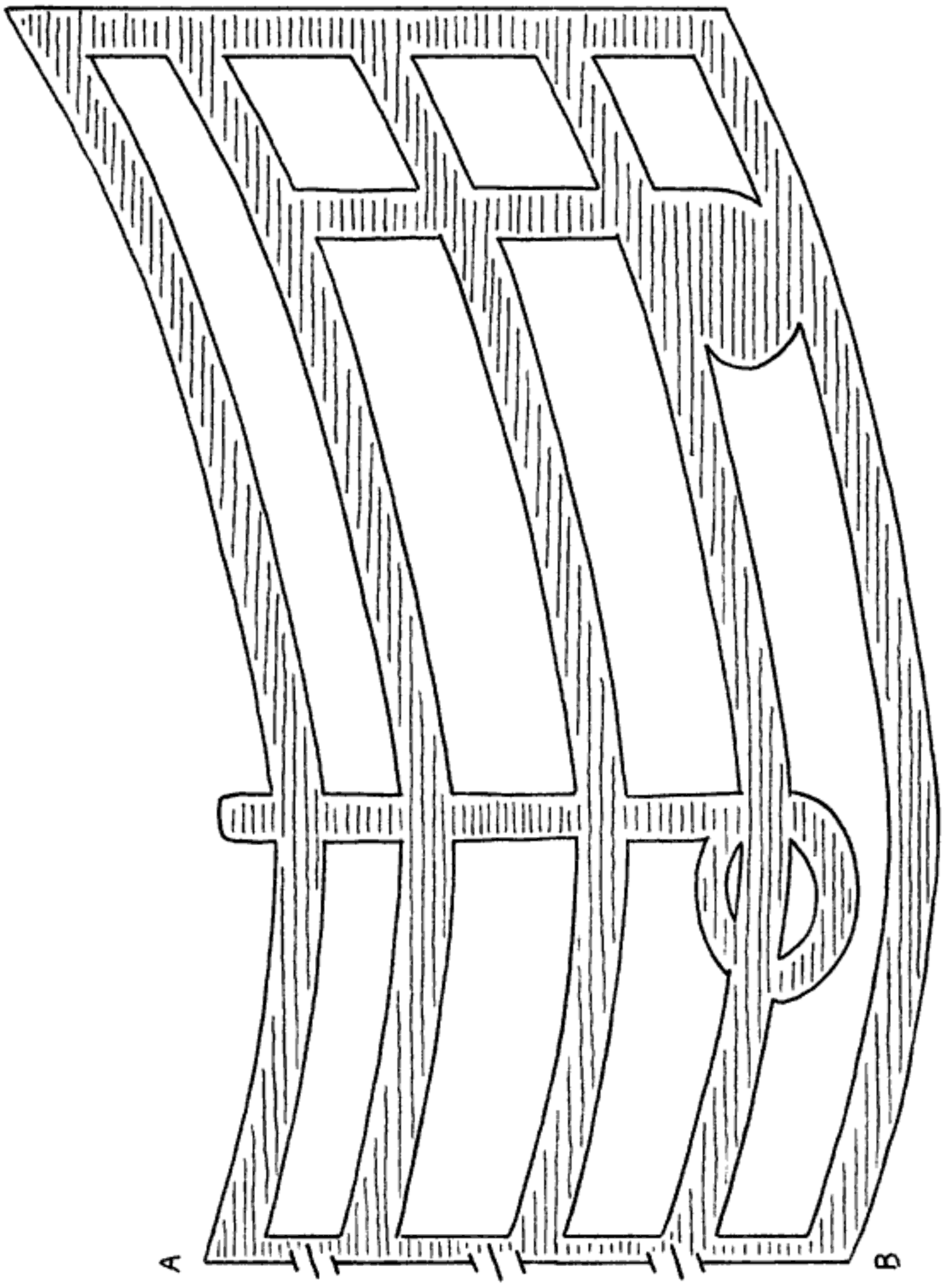
Illus. 54. Patterns for a horn and violin.

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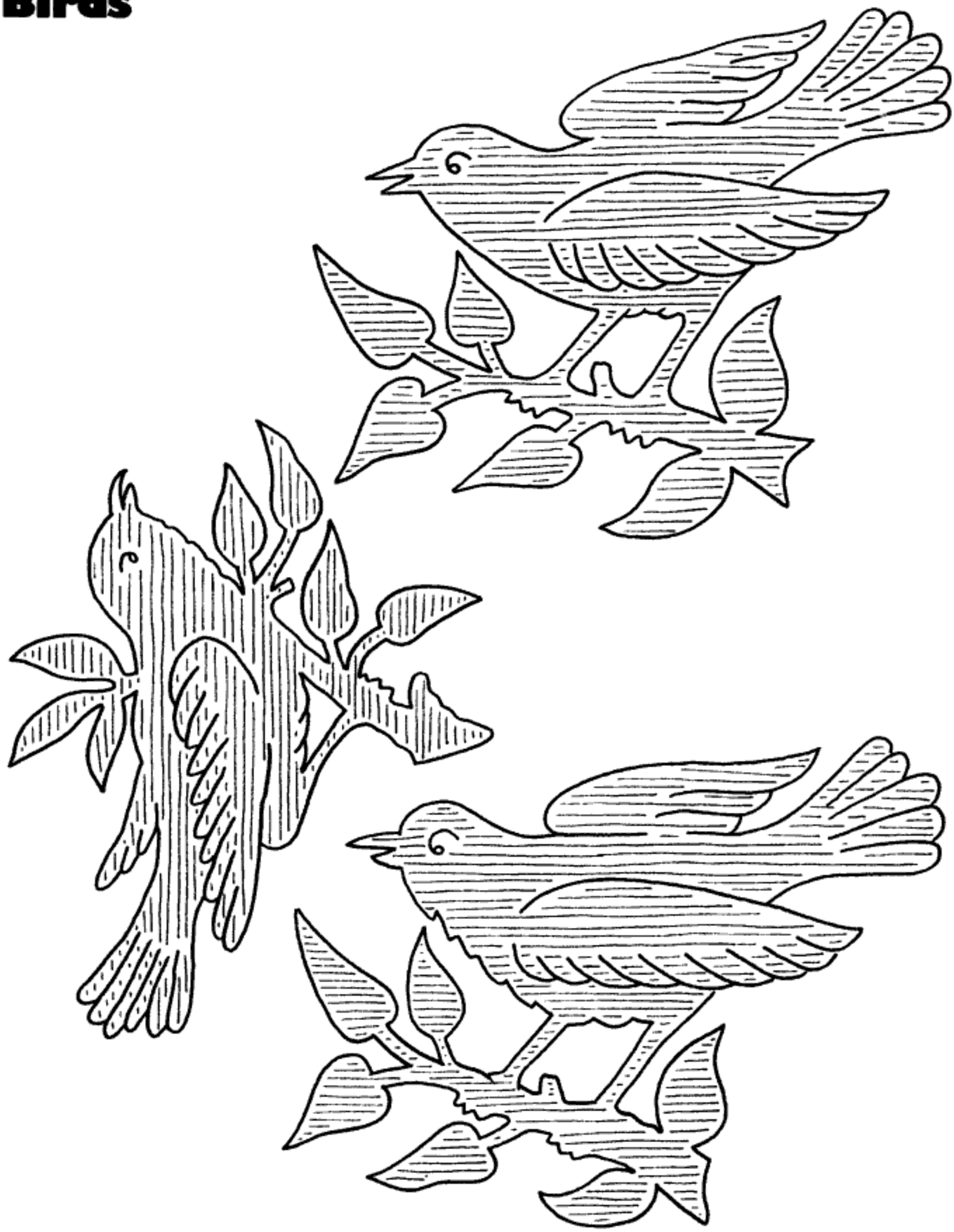
Illus. 55. Musical motif pattern.

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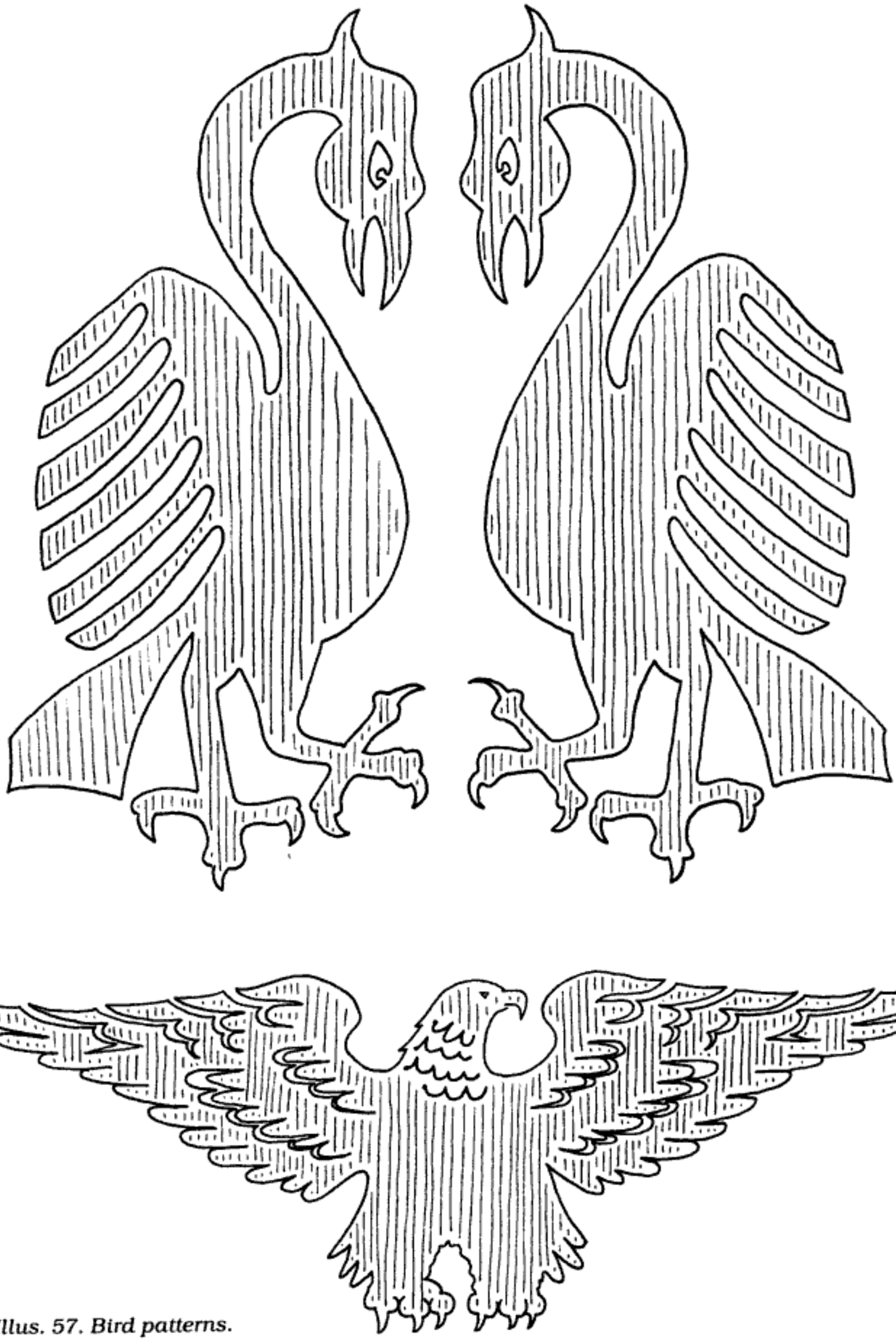
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Birds



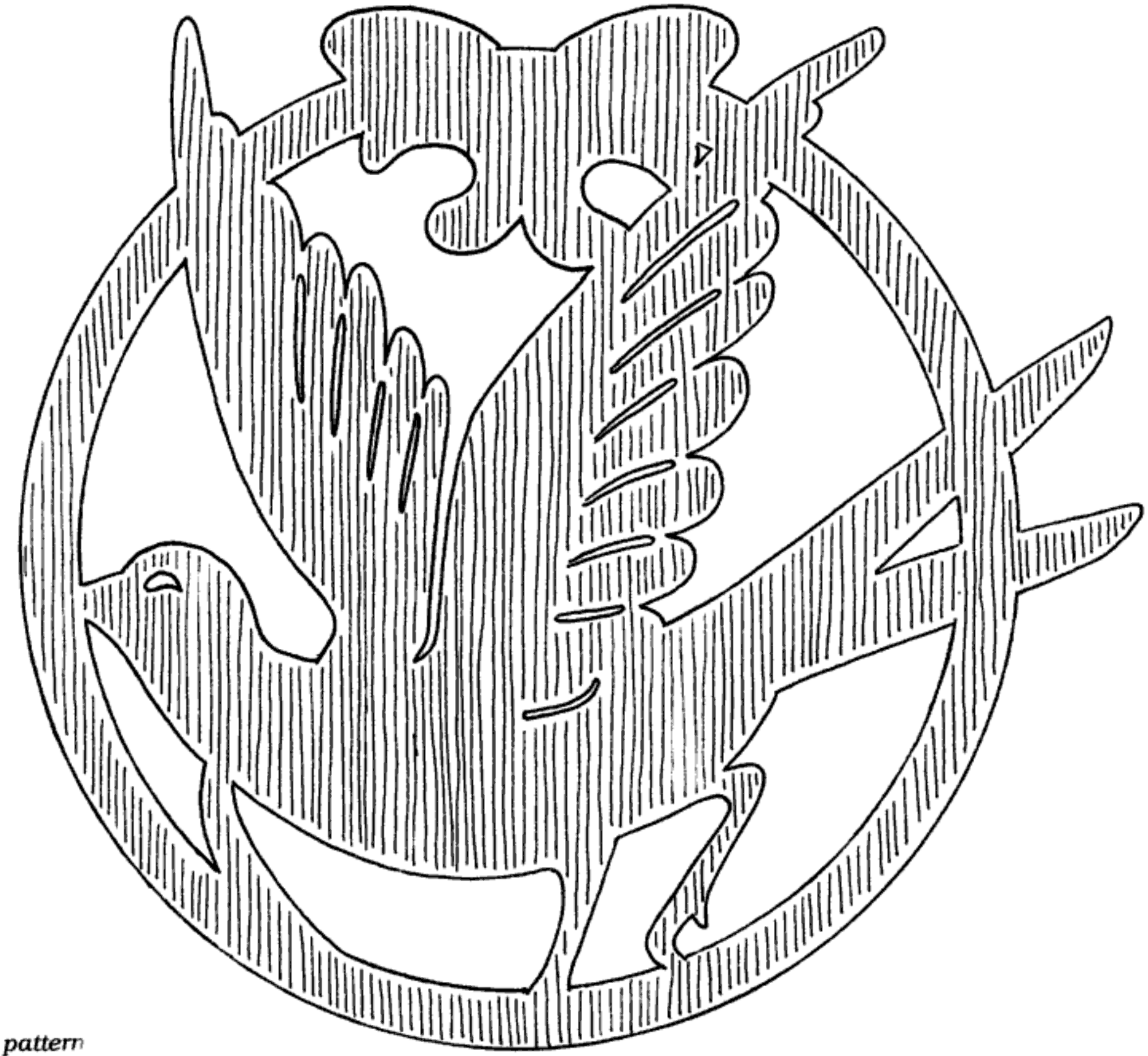
Illus. 56. Bird patterns.

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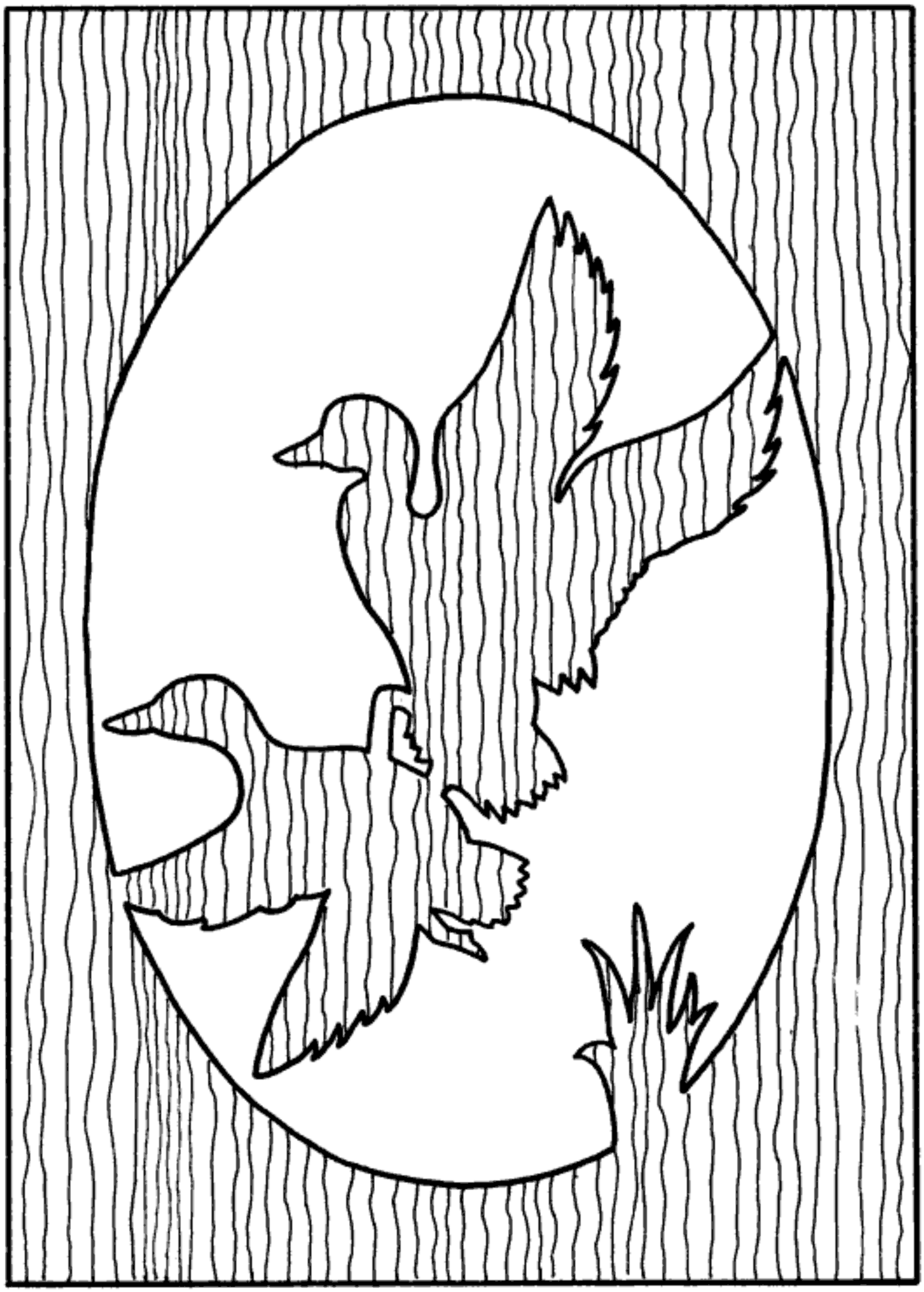
Illus. 57. Bird patterns.

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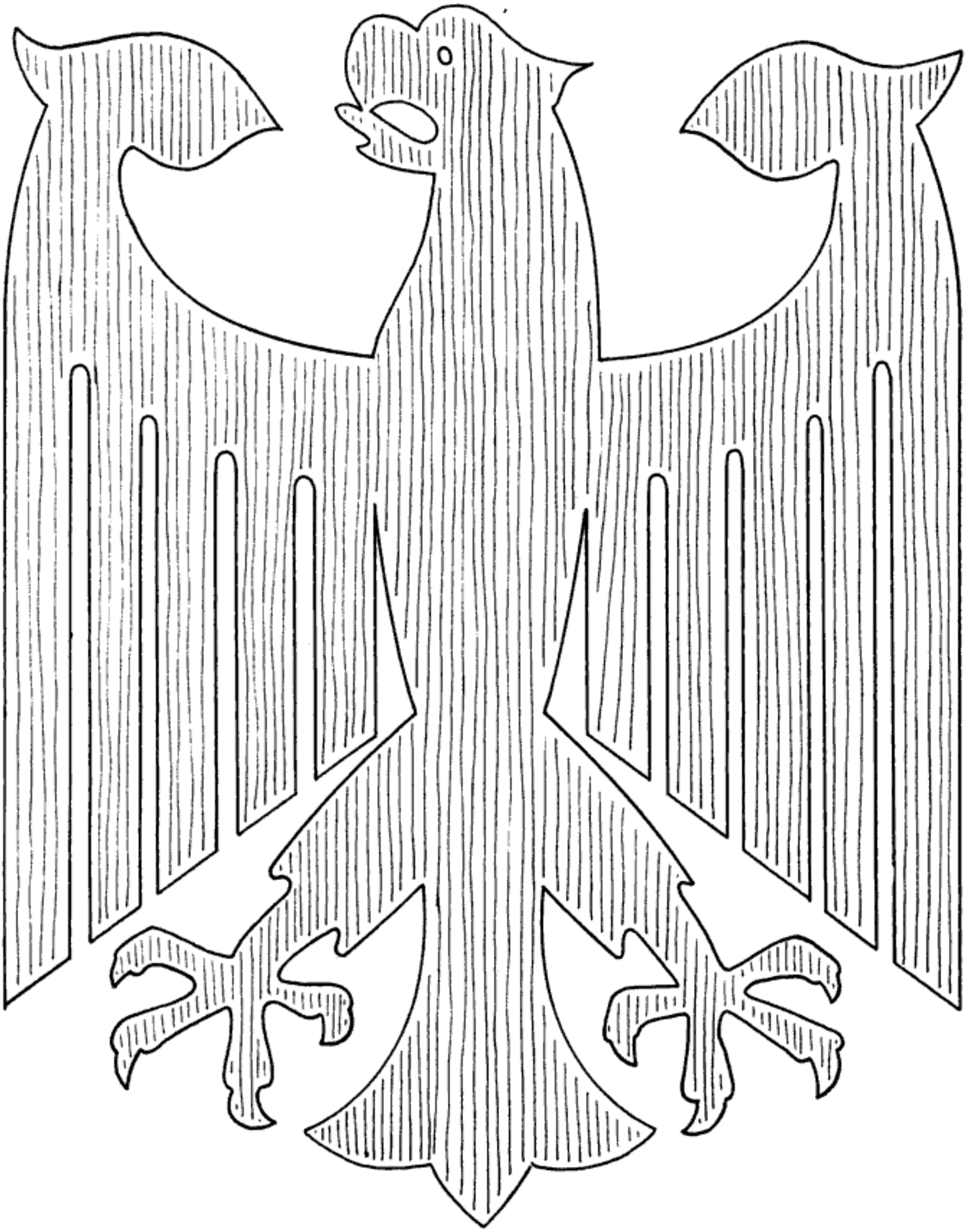
Illus. 58. Bird pattern

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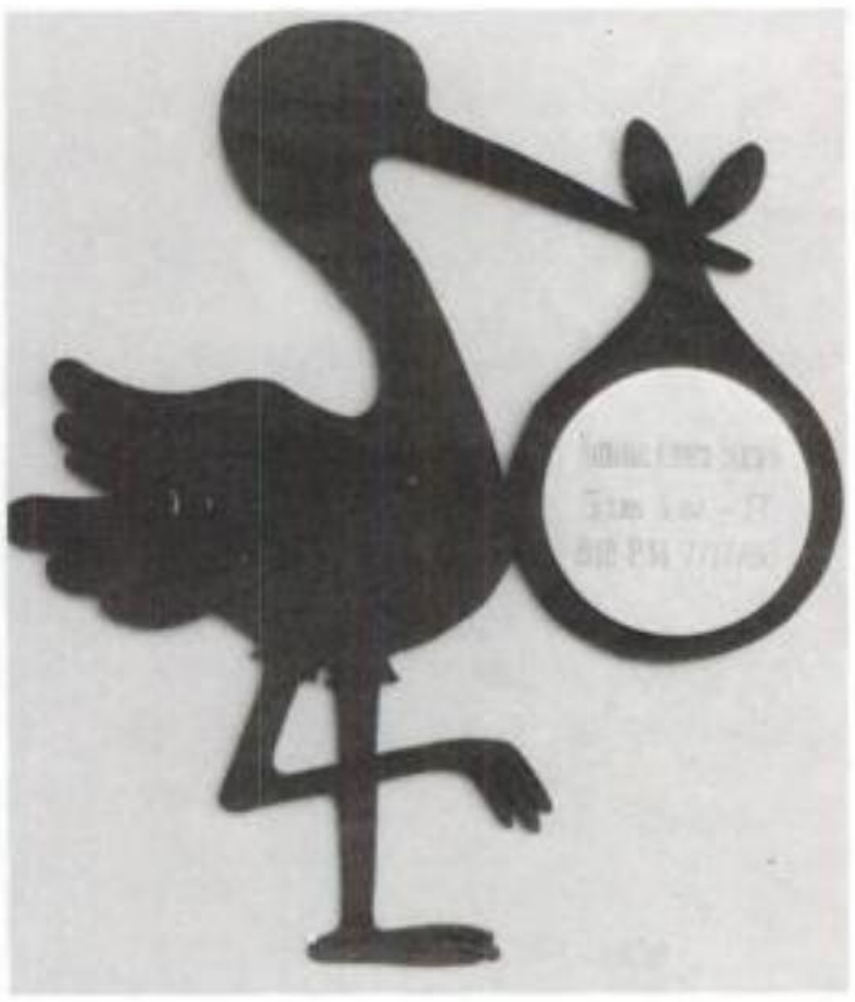
Illus. 59. Birds pattern.

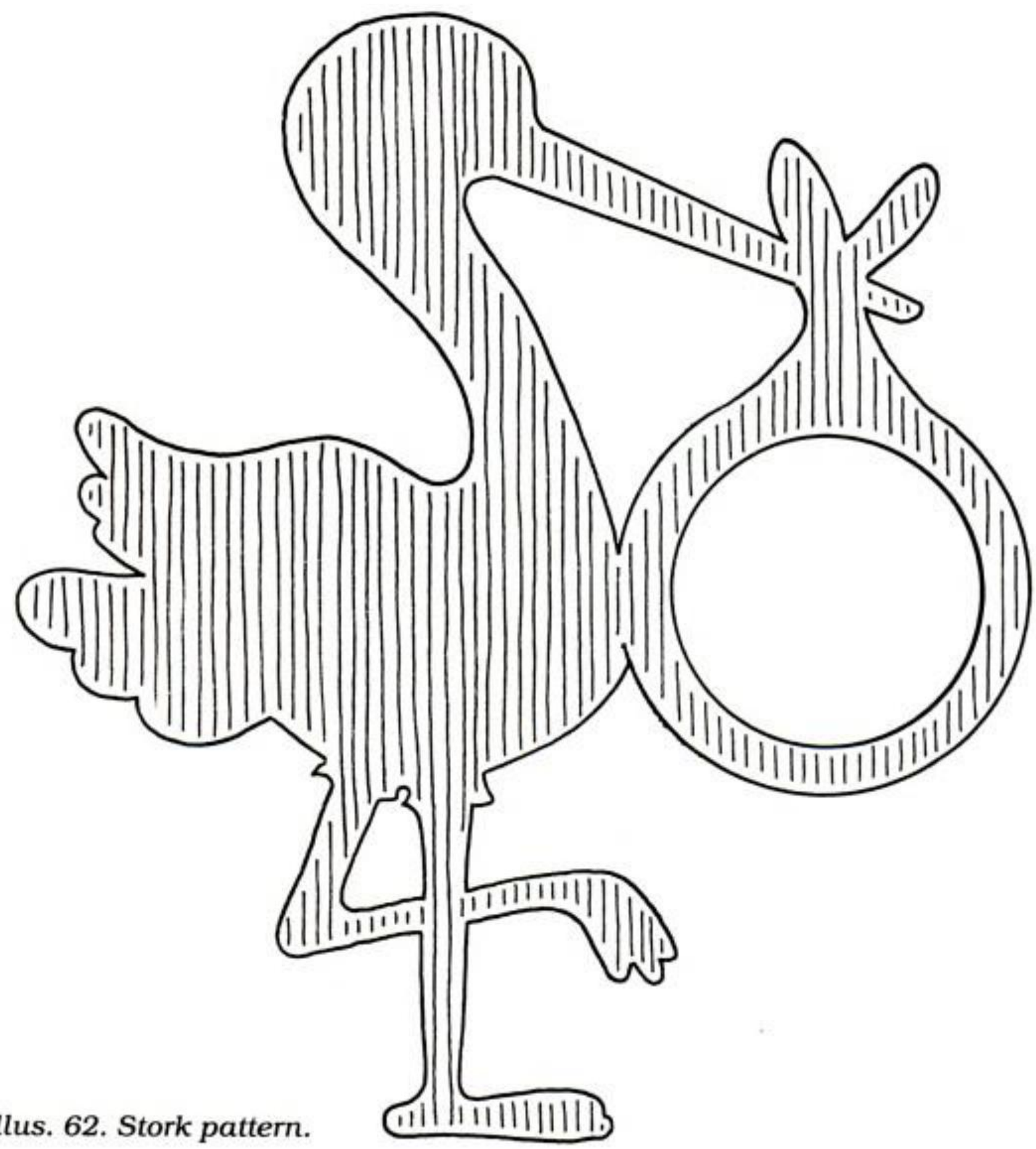
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Illus. 60. Bird pattern.

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Illus. 62. Stork pattern.

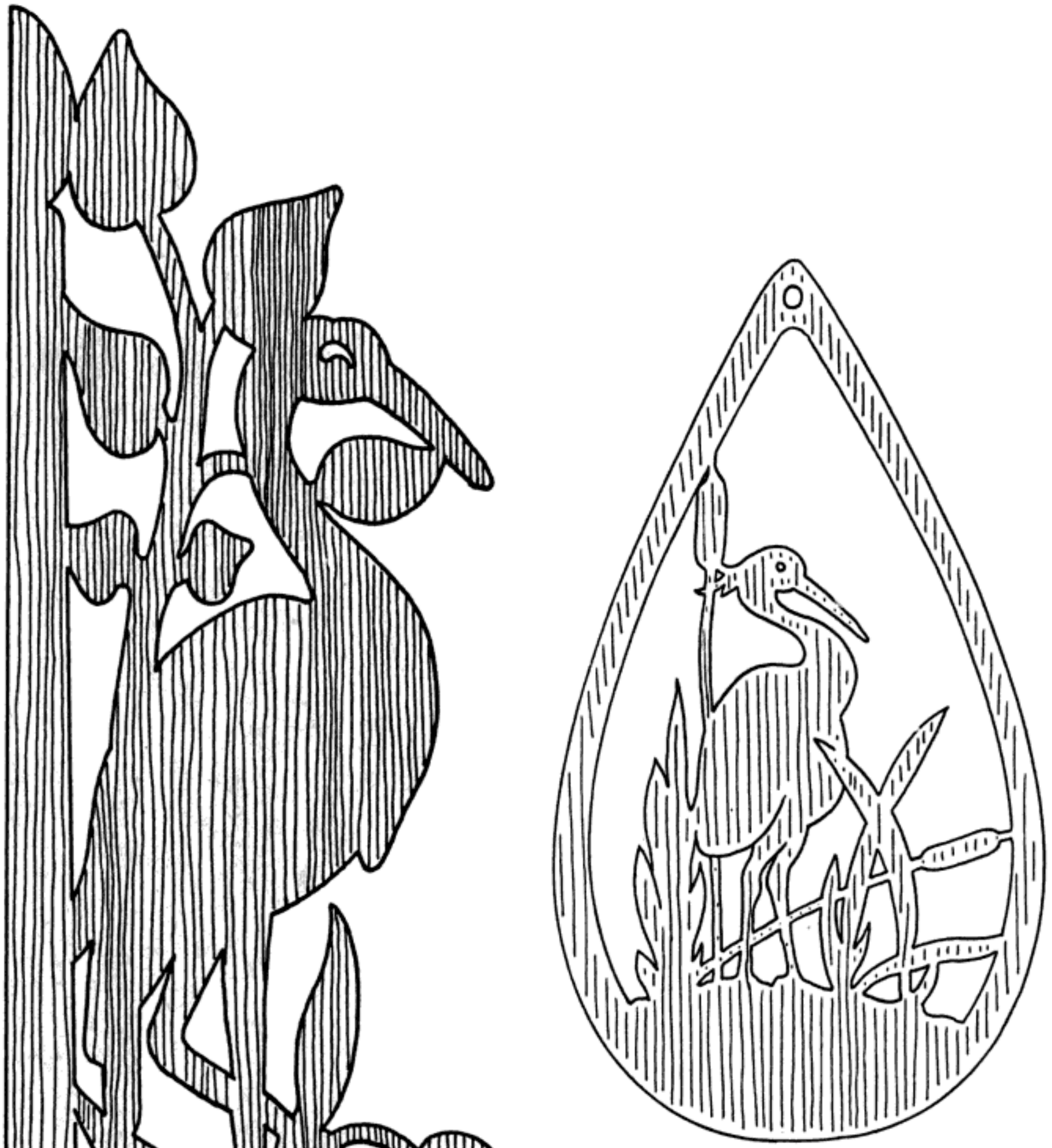
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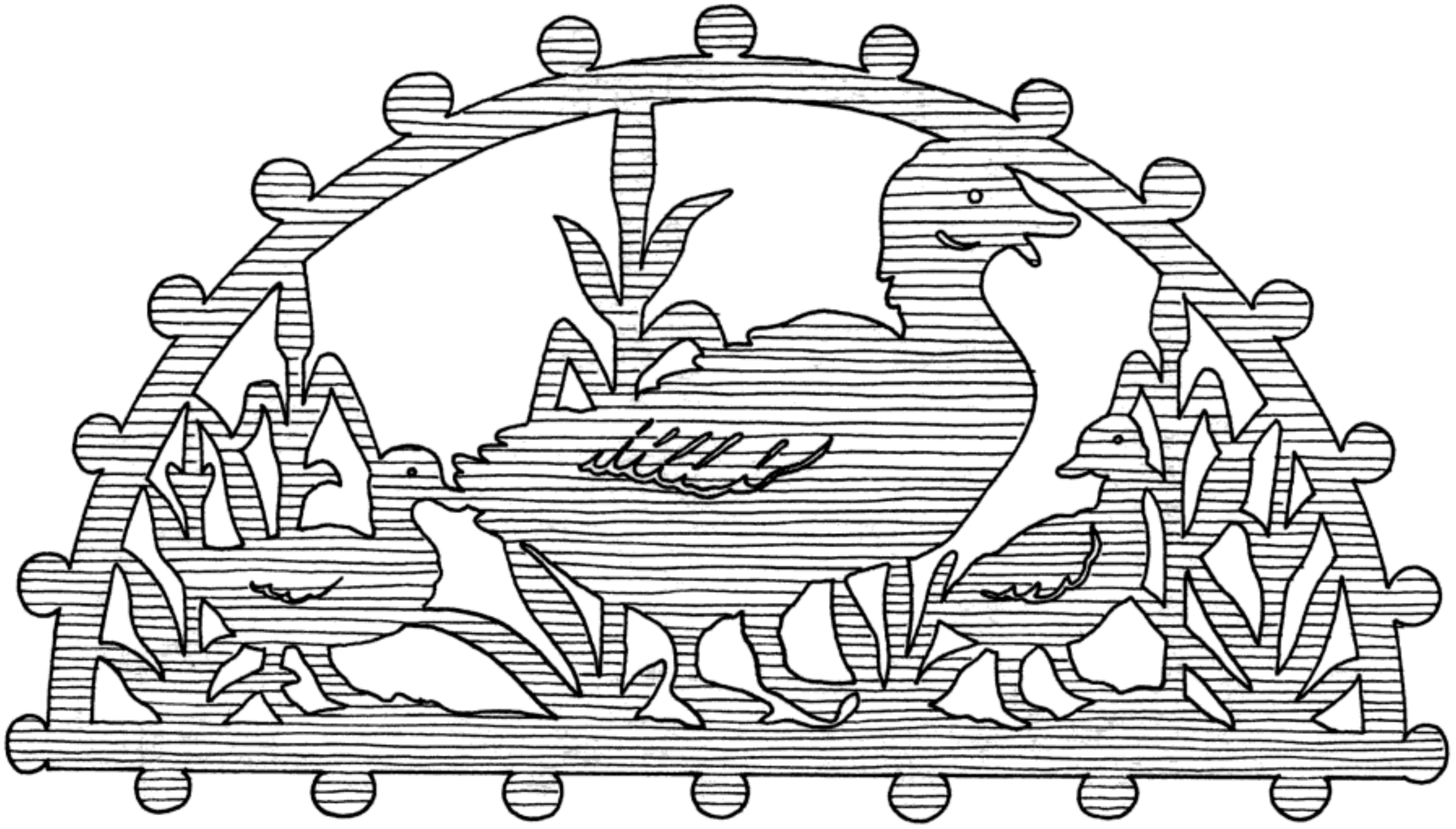
Illus. 63. Bird and butterfly patterns.

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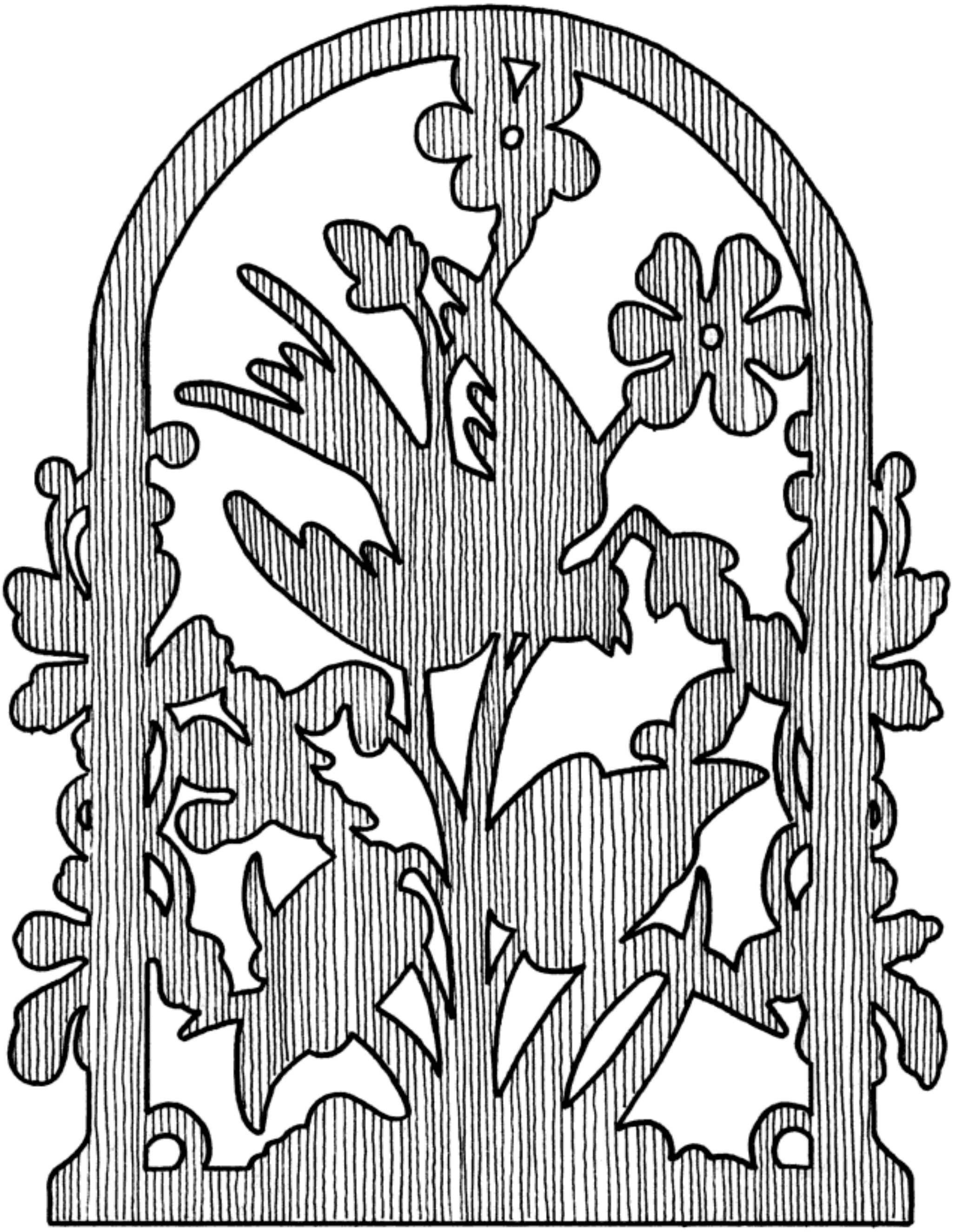
Illus. 64. Bird patterns.

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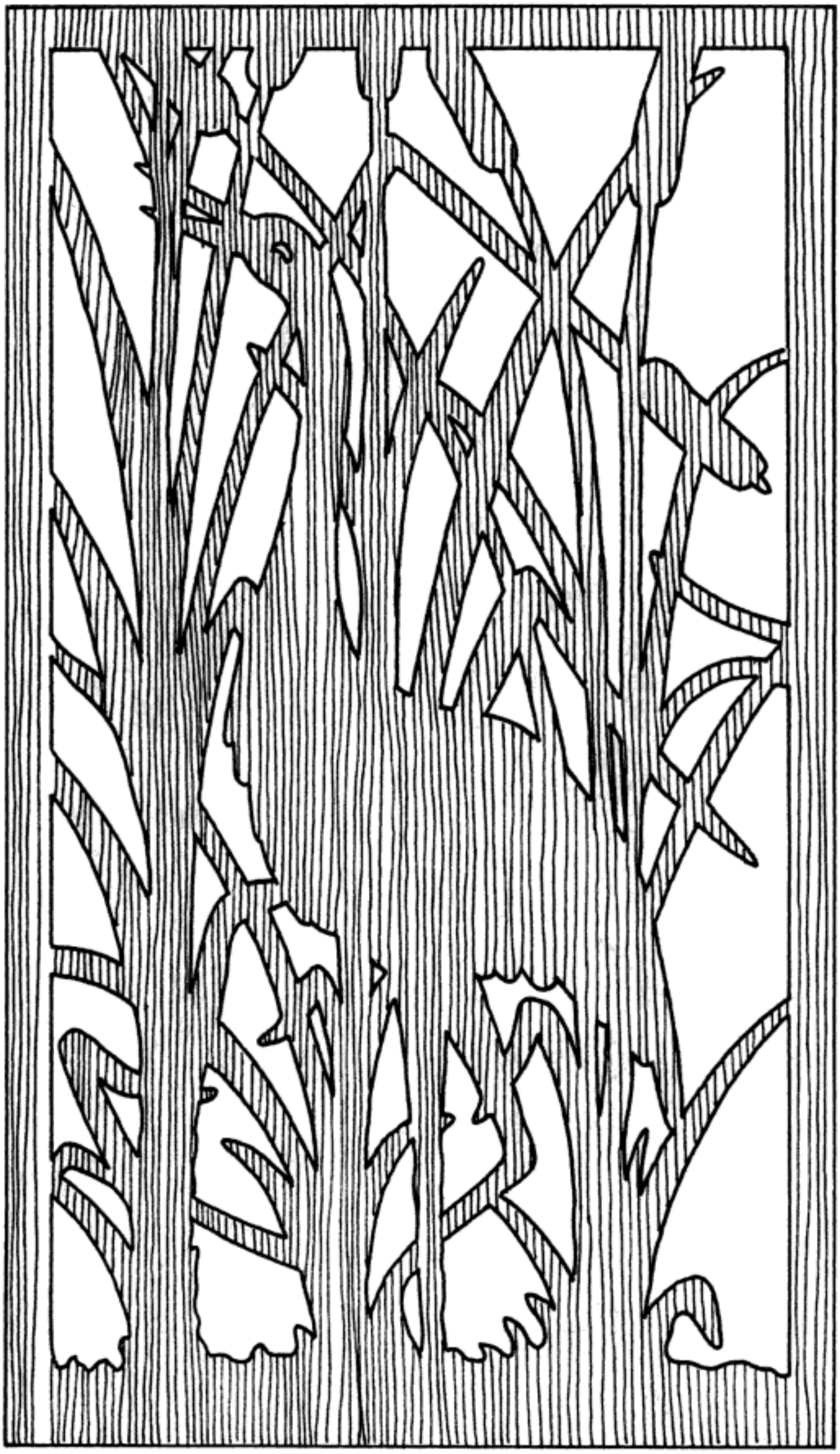
Illus. 65. Birds pattern.

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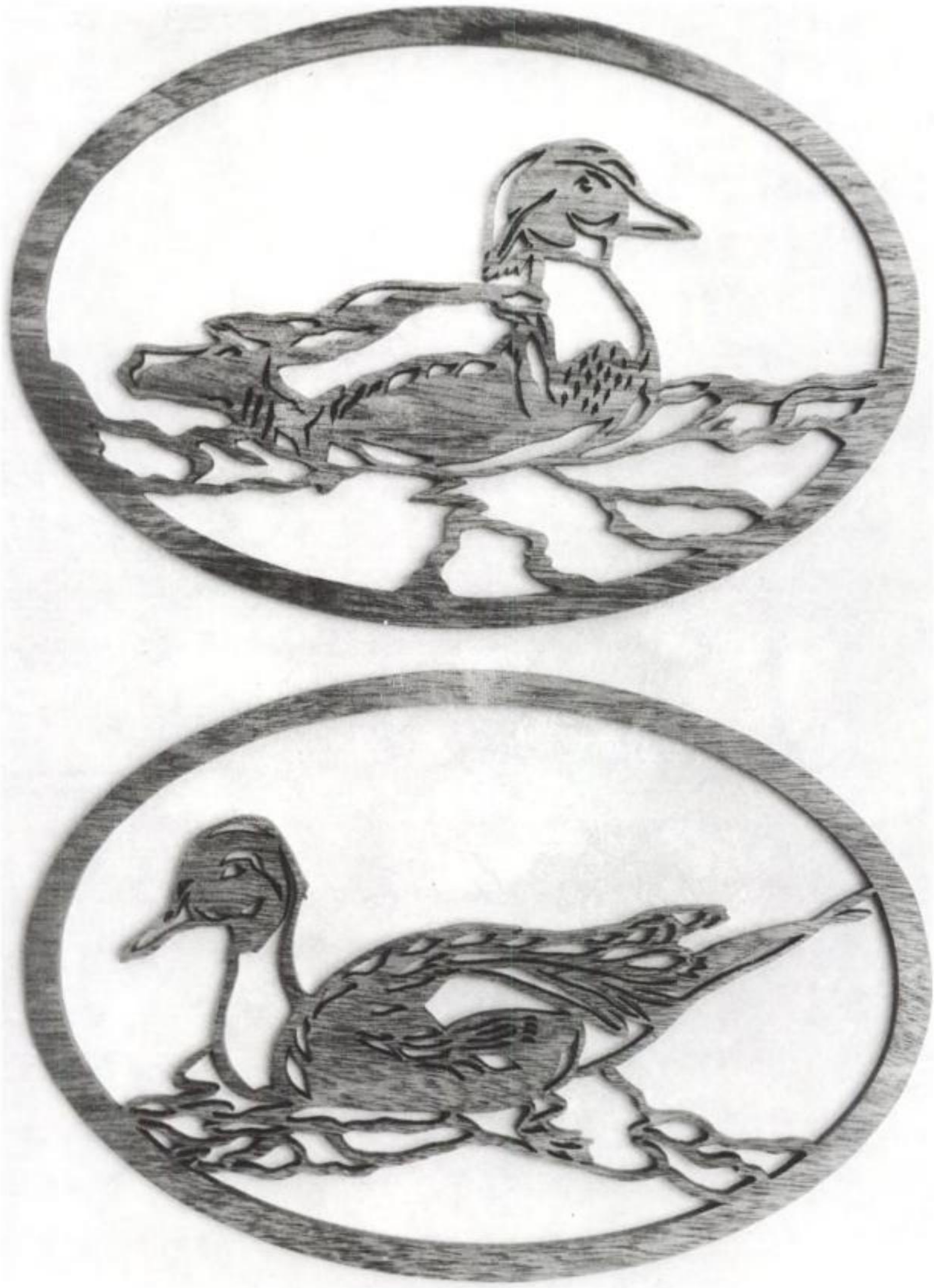
Illus. 66. Bird pattern.

Copyrighted material



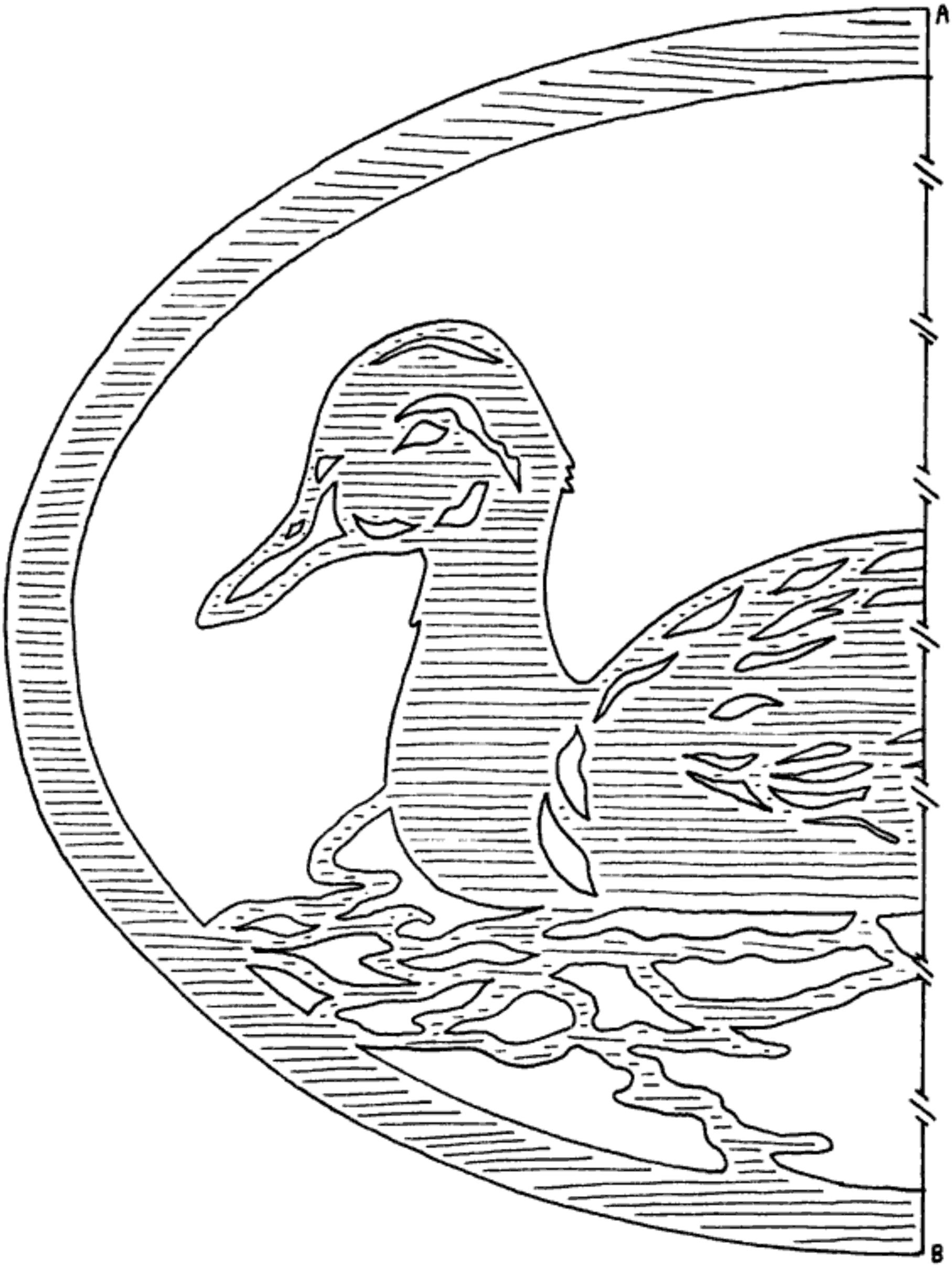
Illus. 67. Bird pattern.

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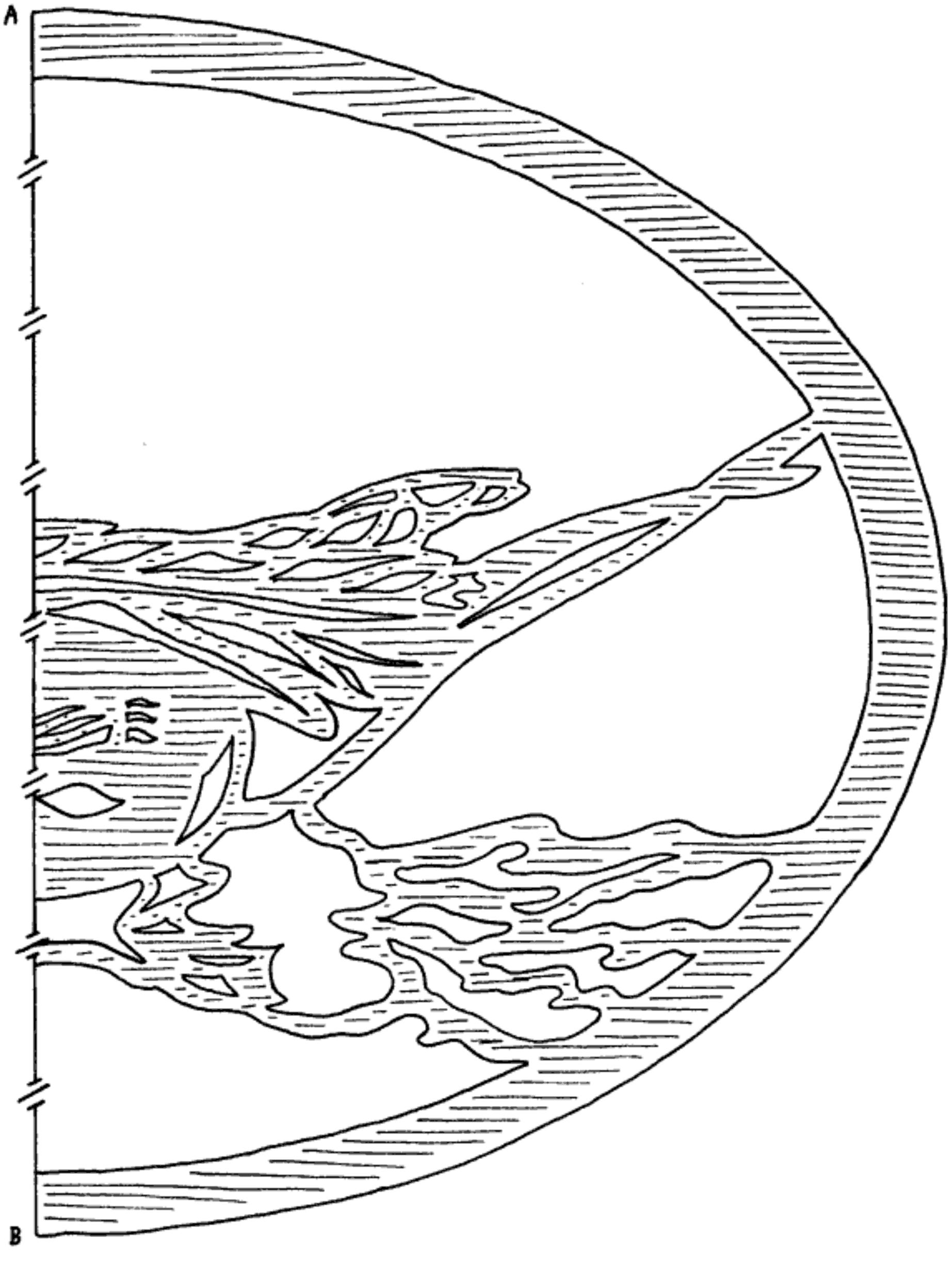
Illus. 68. Ducks. (The patterns follow.)

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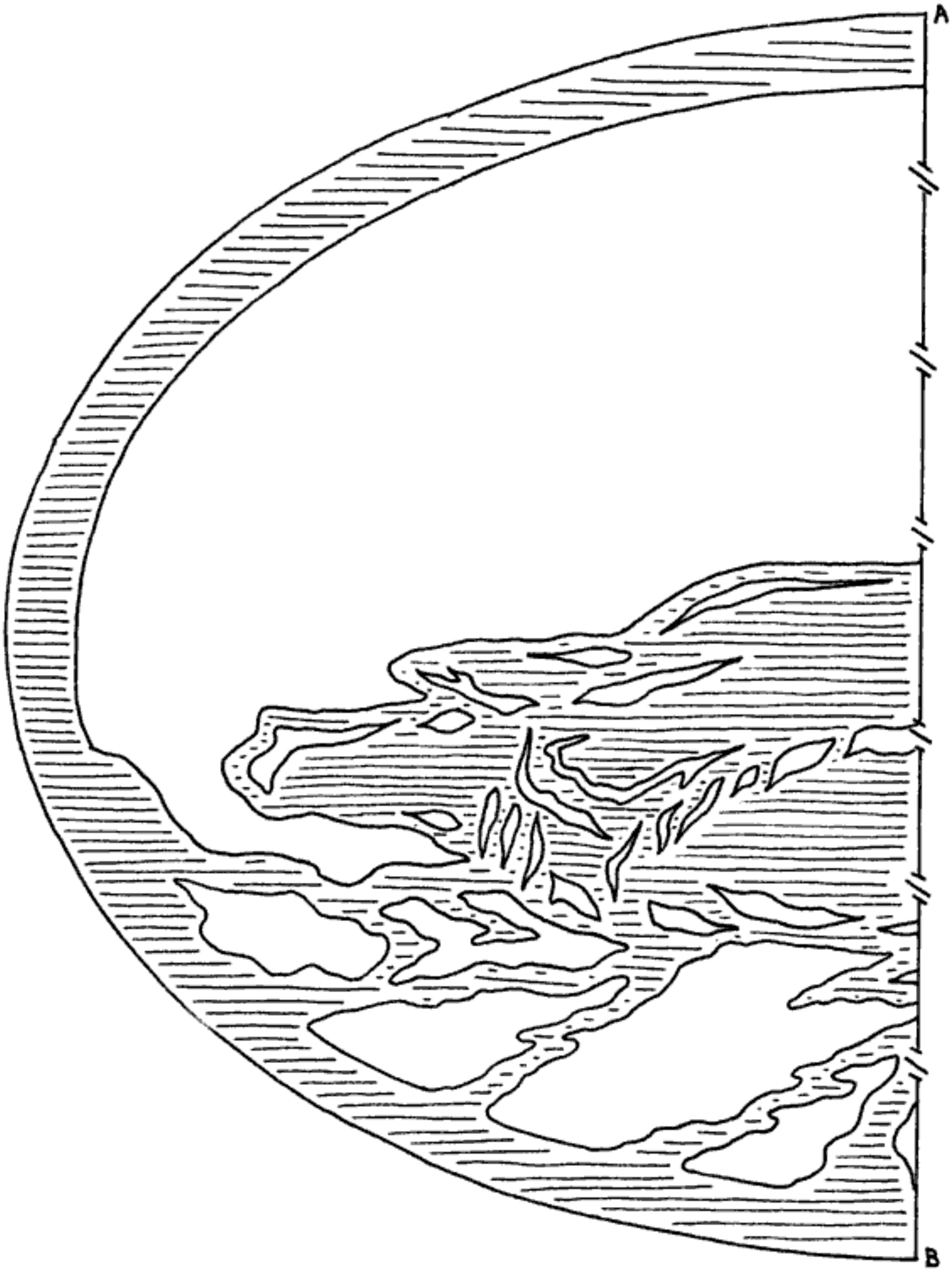


Illus. 69. Duck pattern.

Copyrighted material



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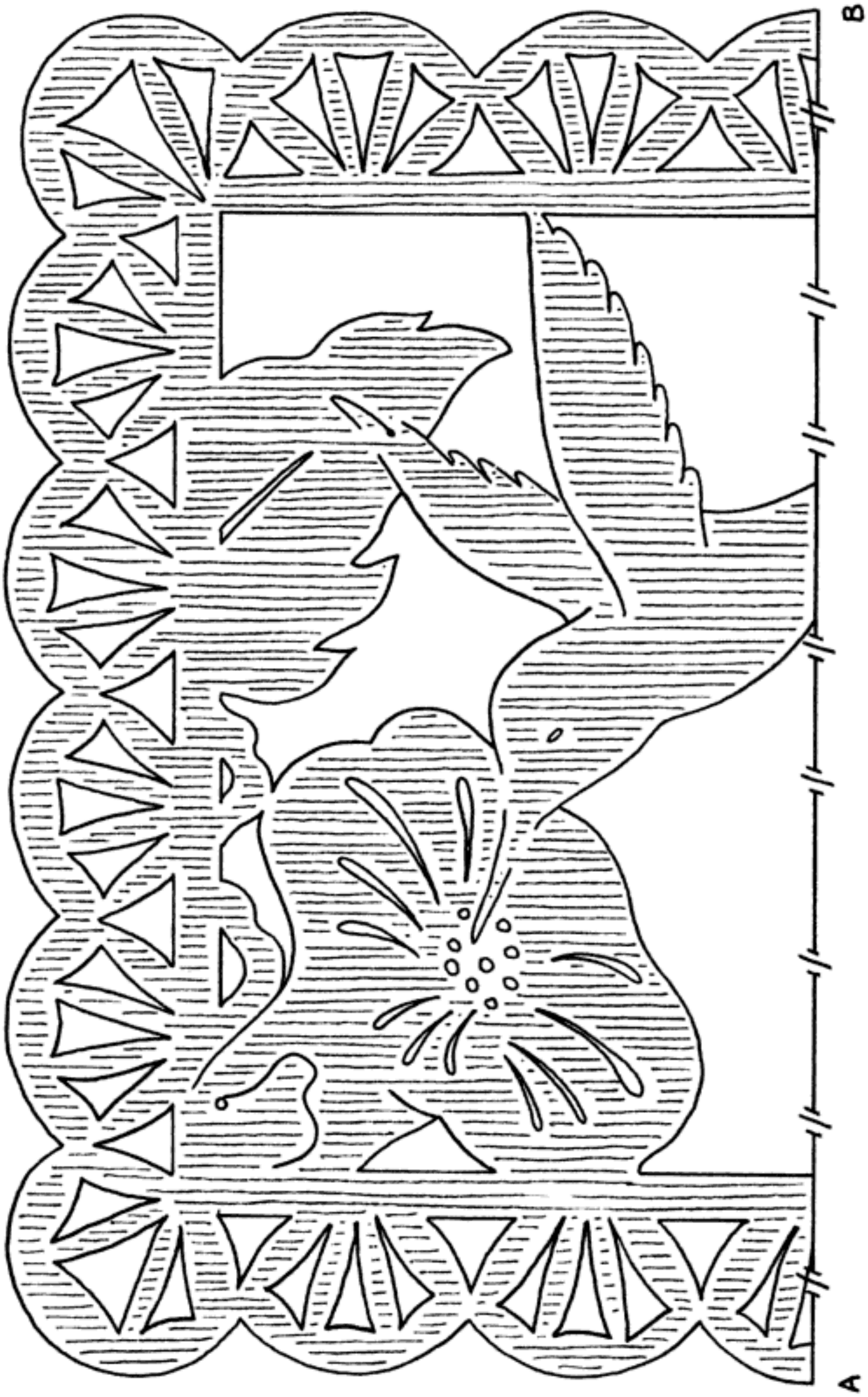


Illus. 70. Duck pattern.

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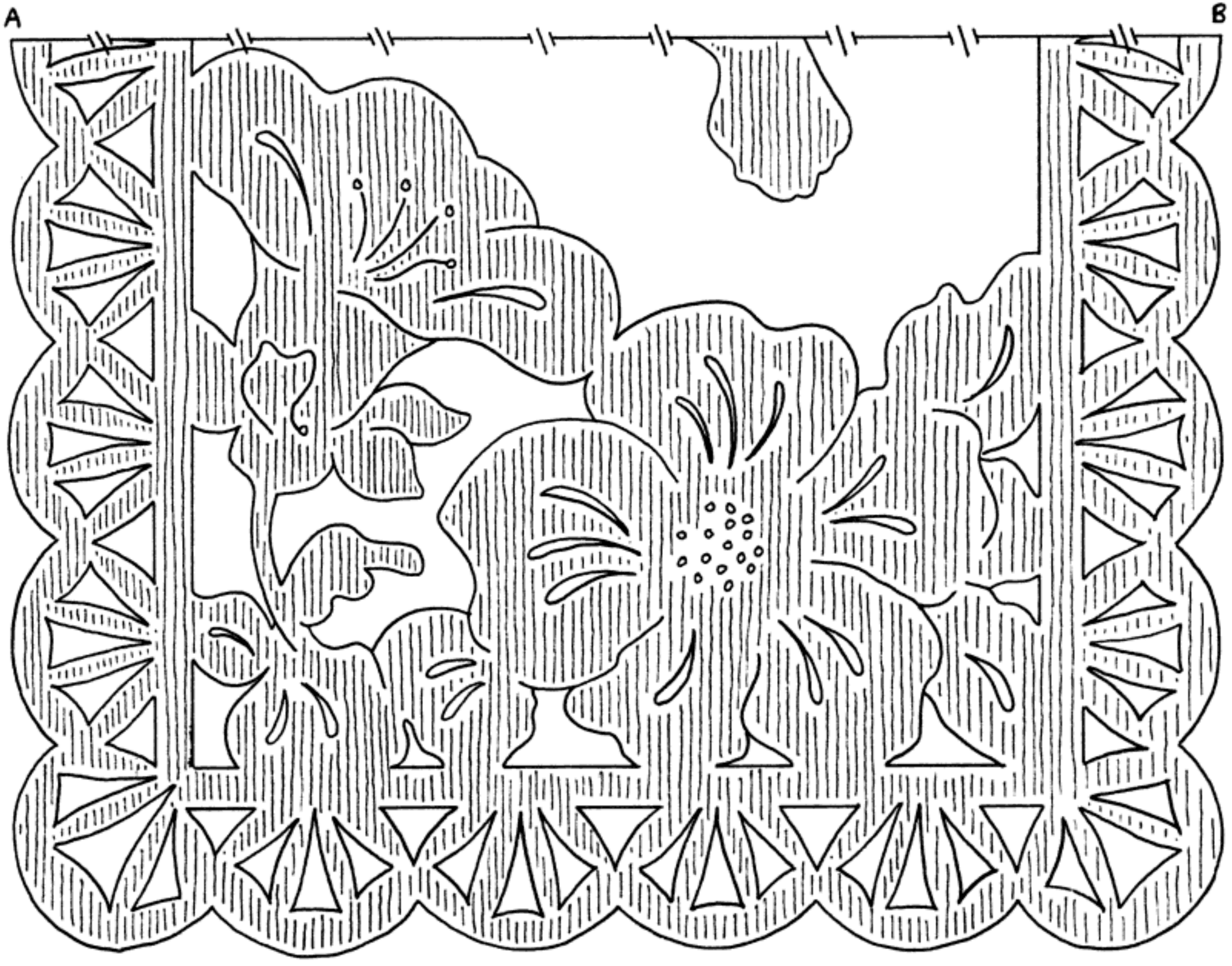


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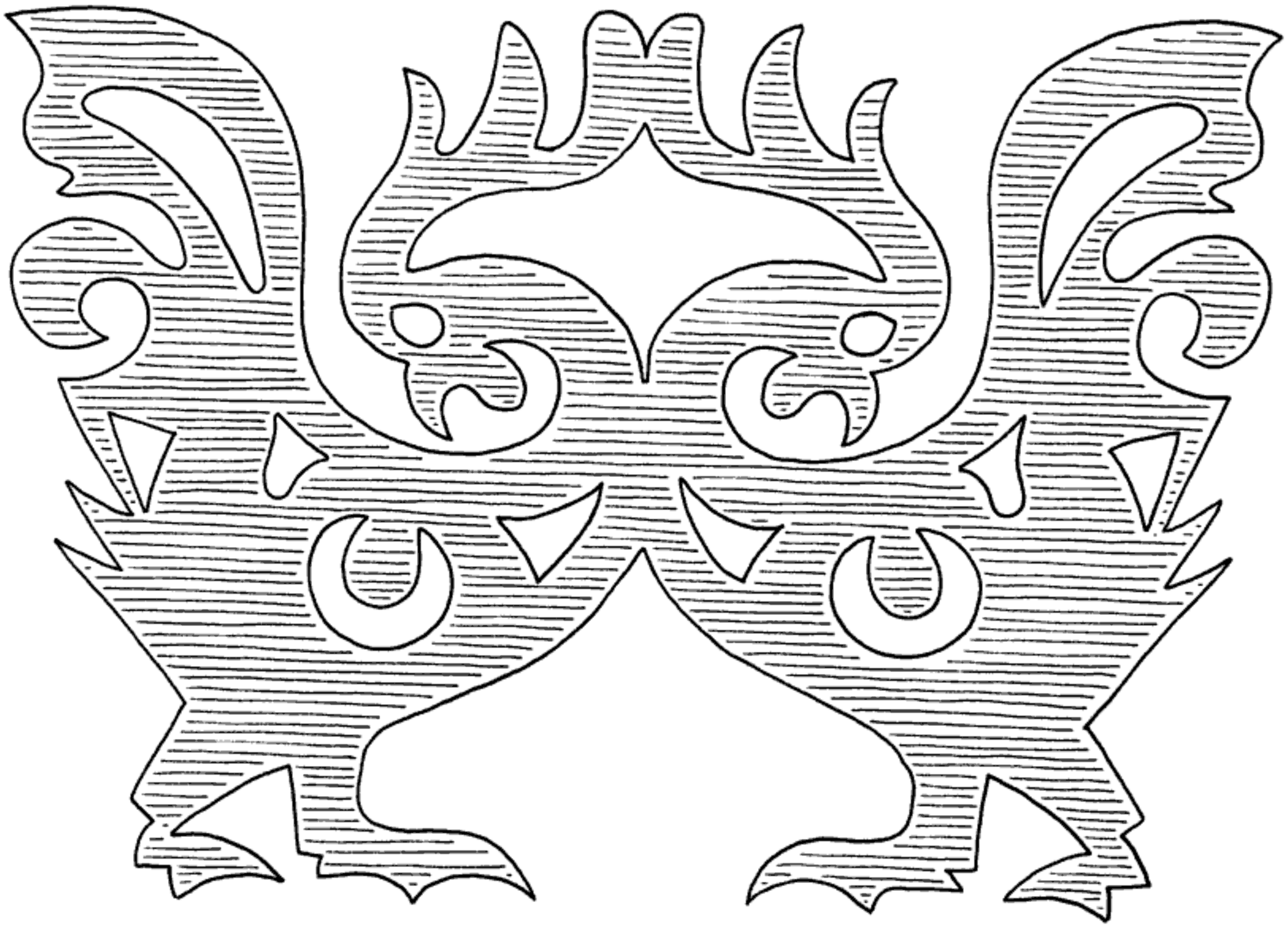


Illus. 71. Hummingbird pattern.

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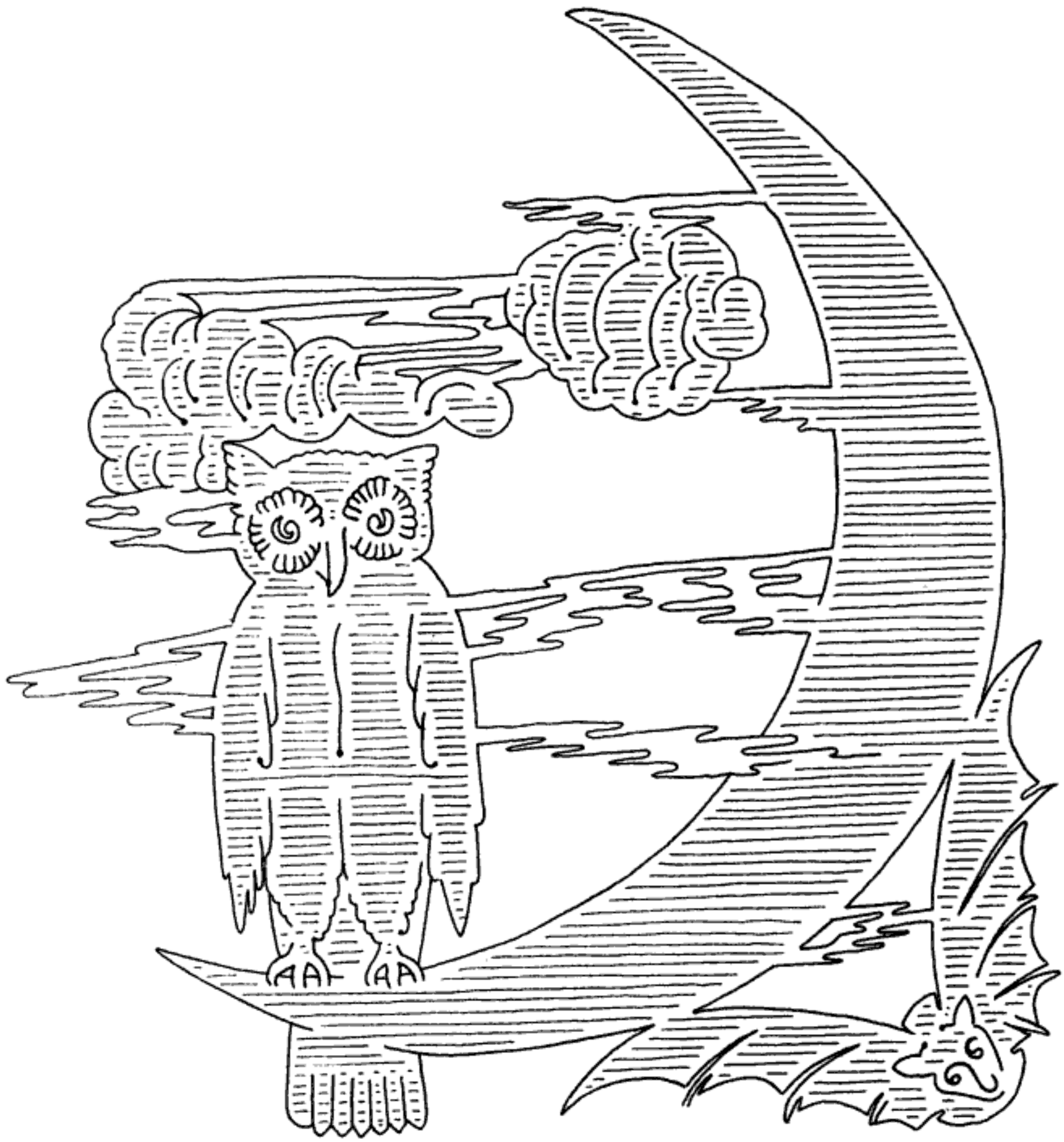


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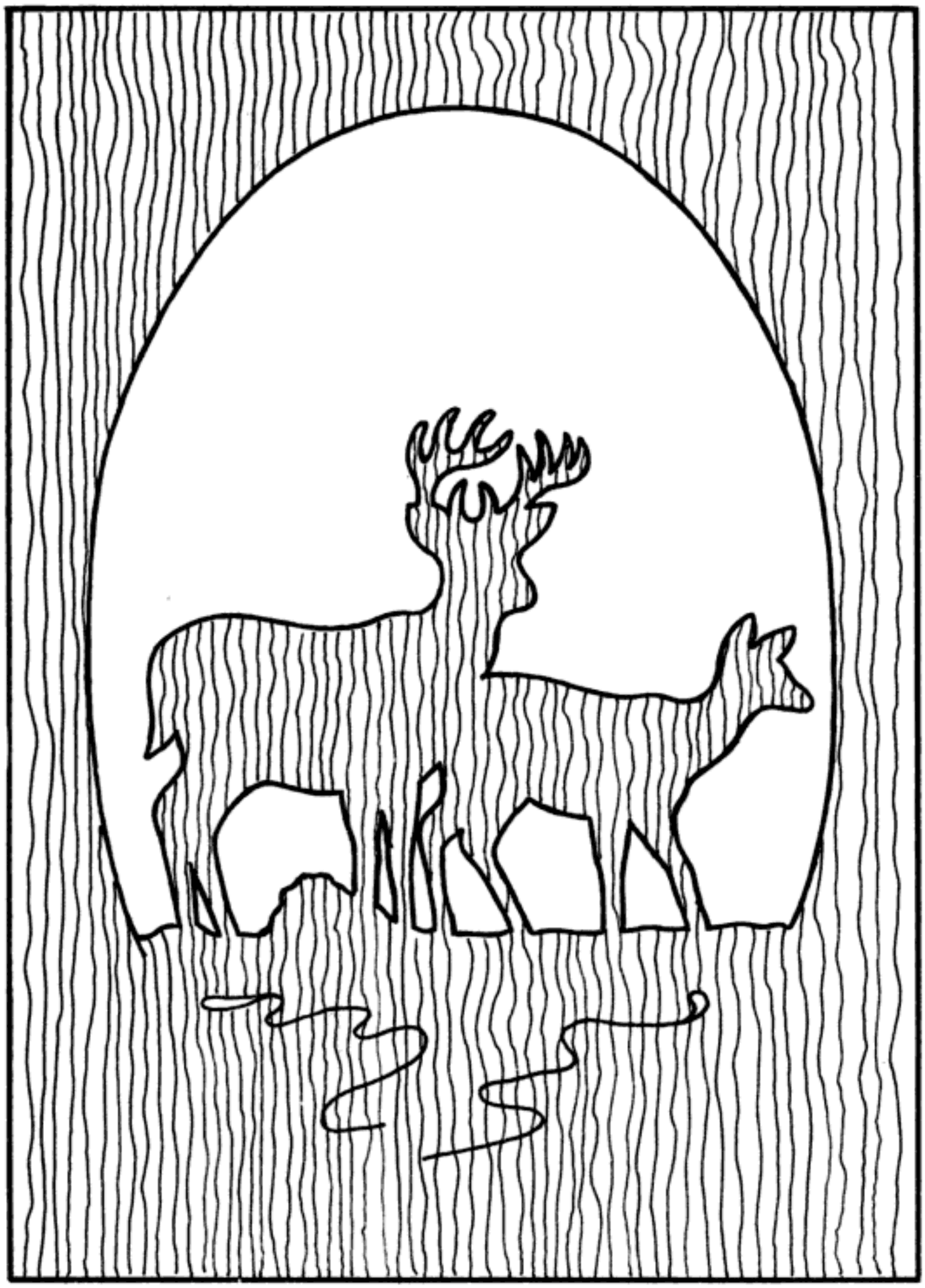
Illus. 72. Roosters pattern.

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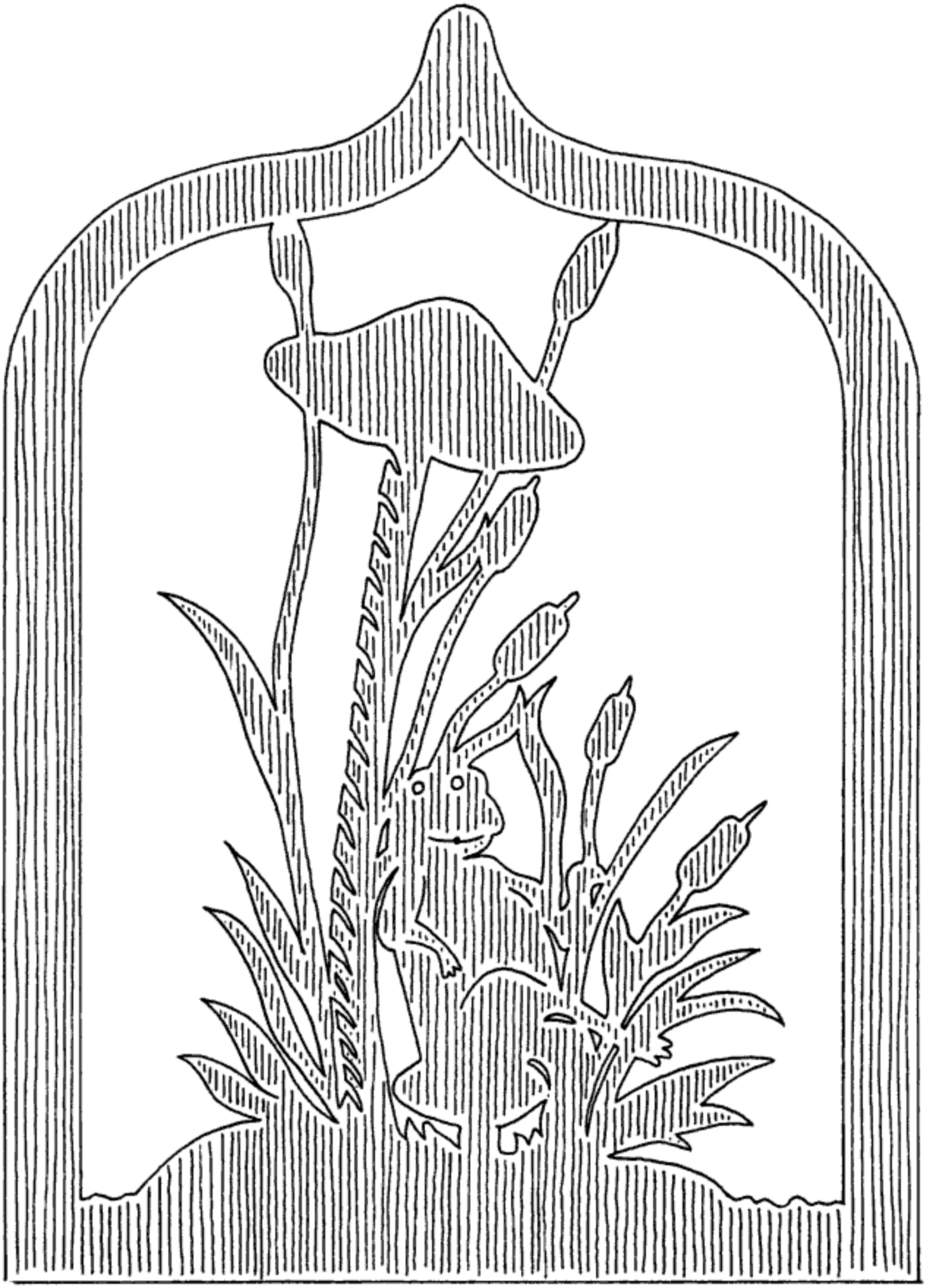
Illus. 73. Owl and bat pattern.

Copyrighted material



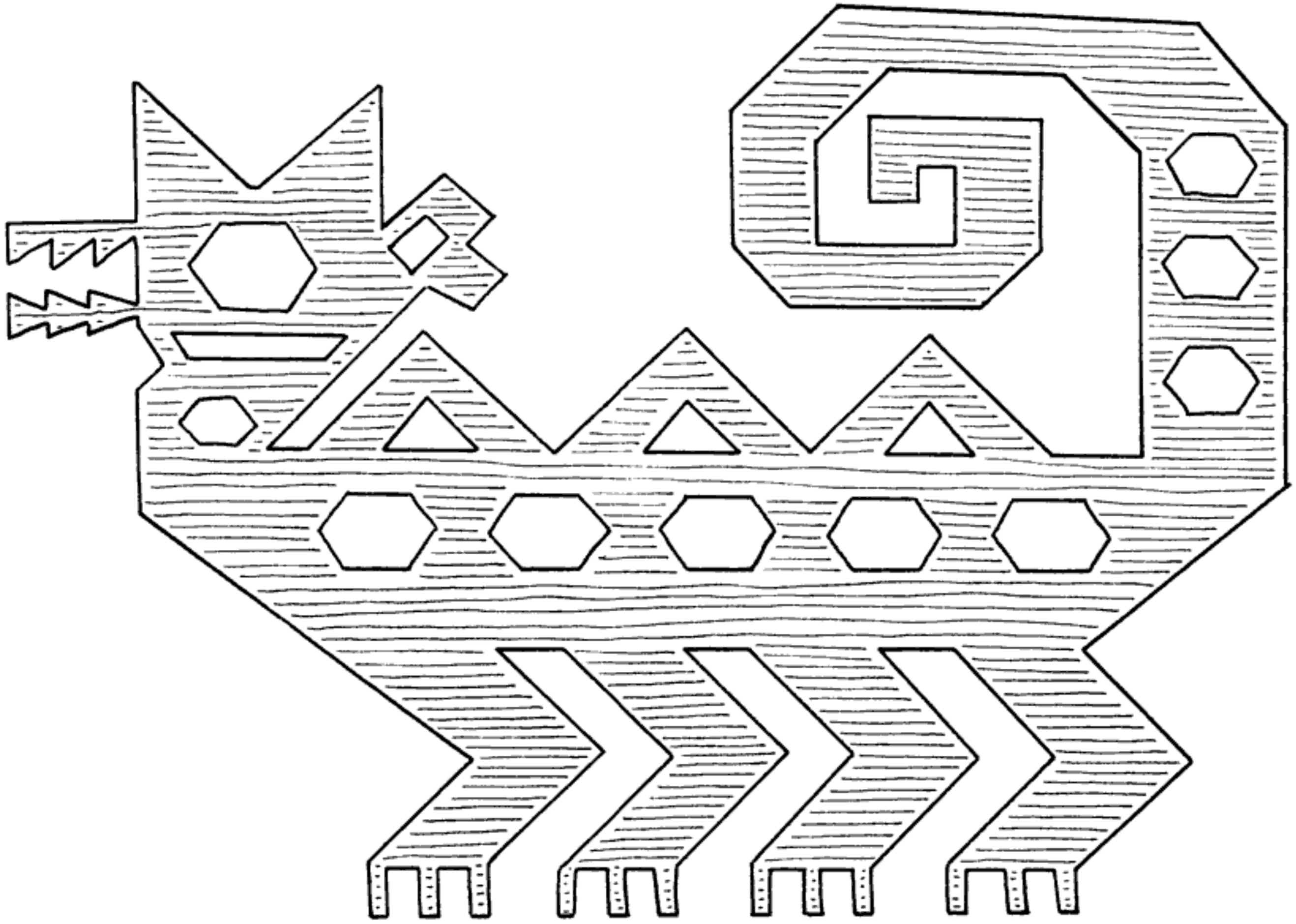
Illus. 74. Deer pattern.

Copyrighted material



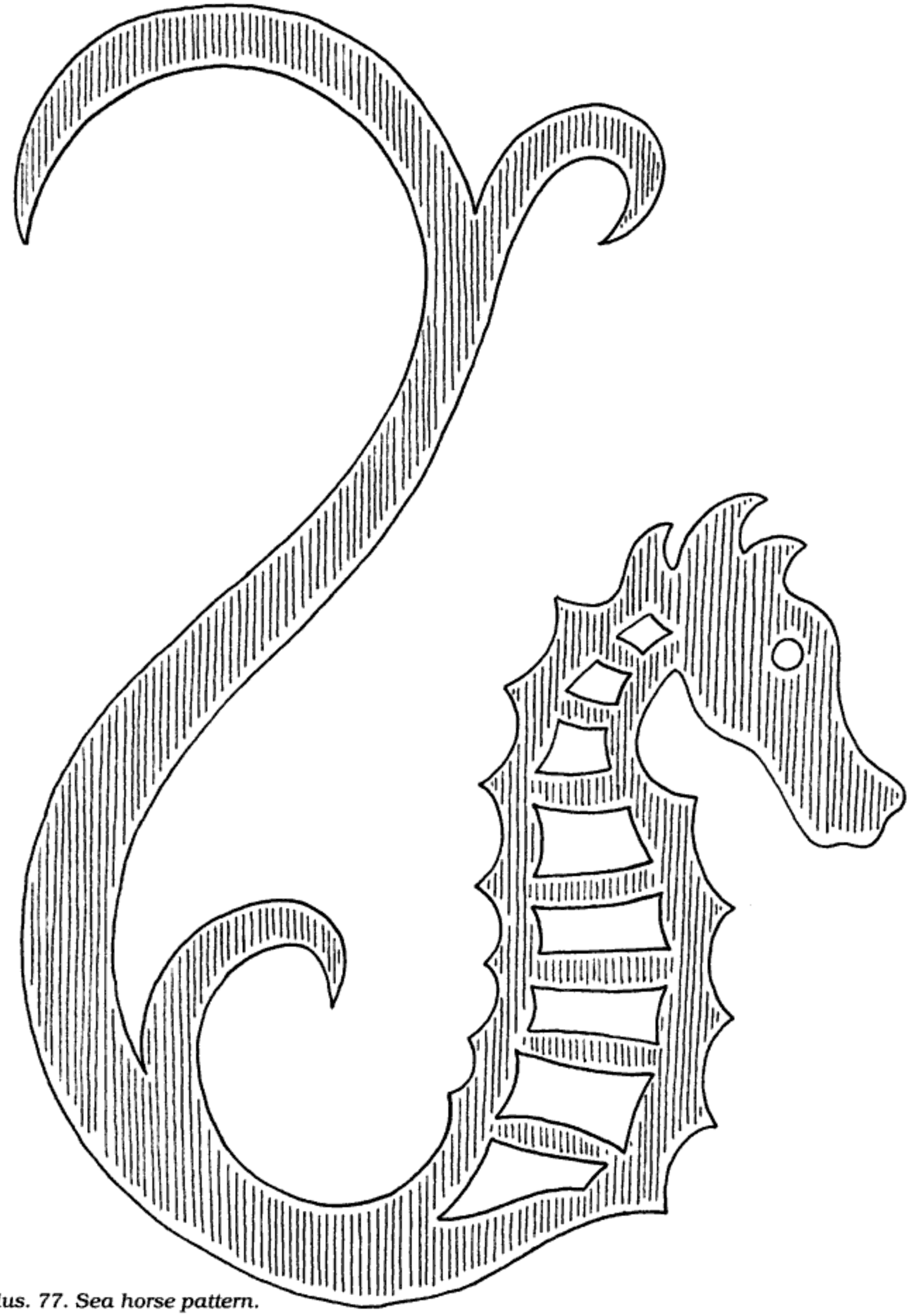
Illus. 75. Frog pattern.

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Illus. 76. Cat pattern.

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Illus. 77. Sea horse pattern.

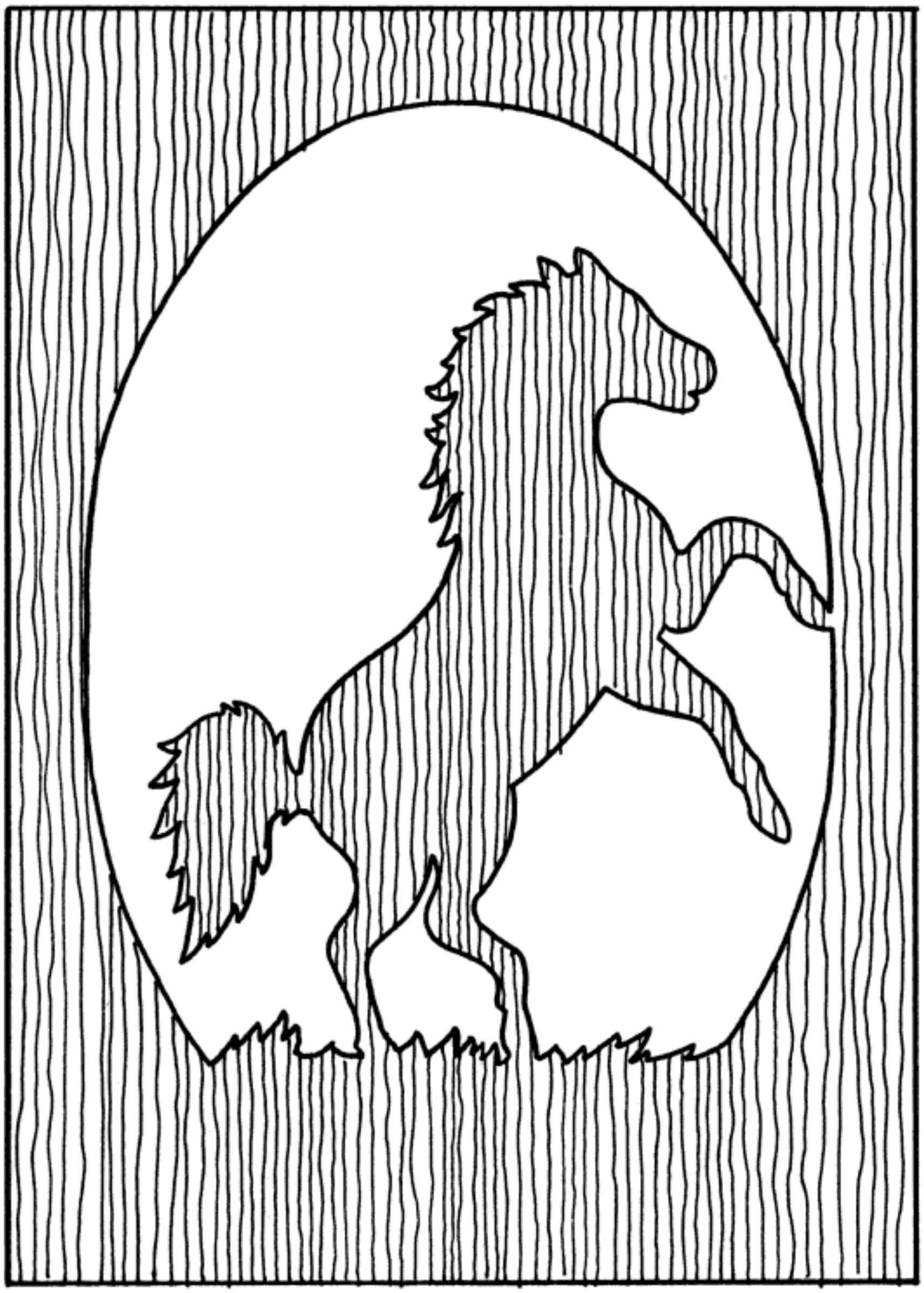
Copyrighted material

Illus. 78. Squirrel and giraffe patterns.





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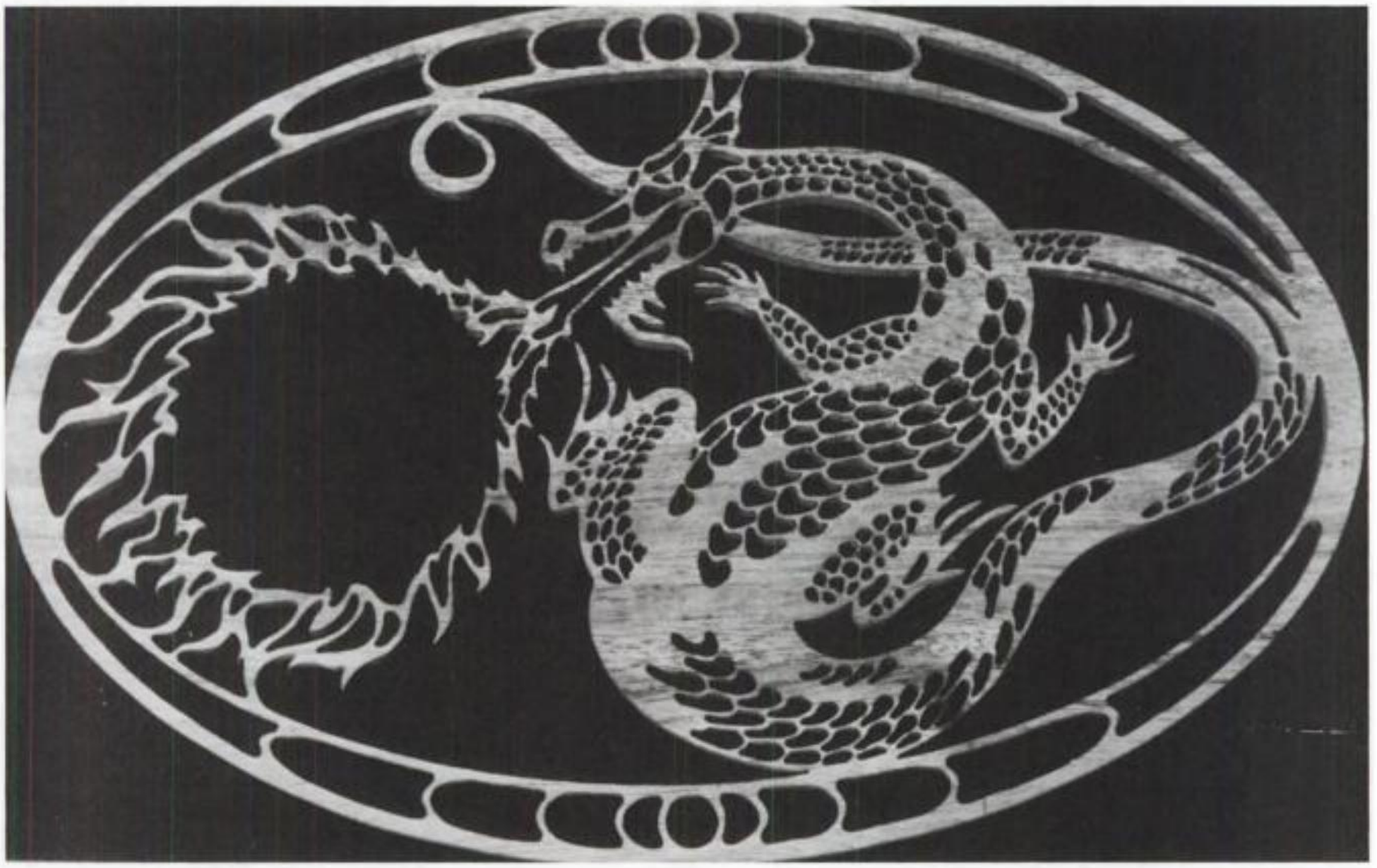
Illus. 79. Horse pattern.

Copyrighted material

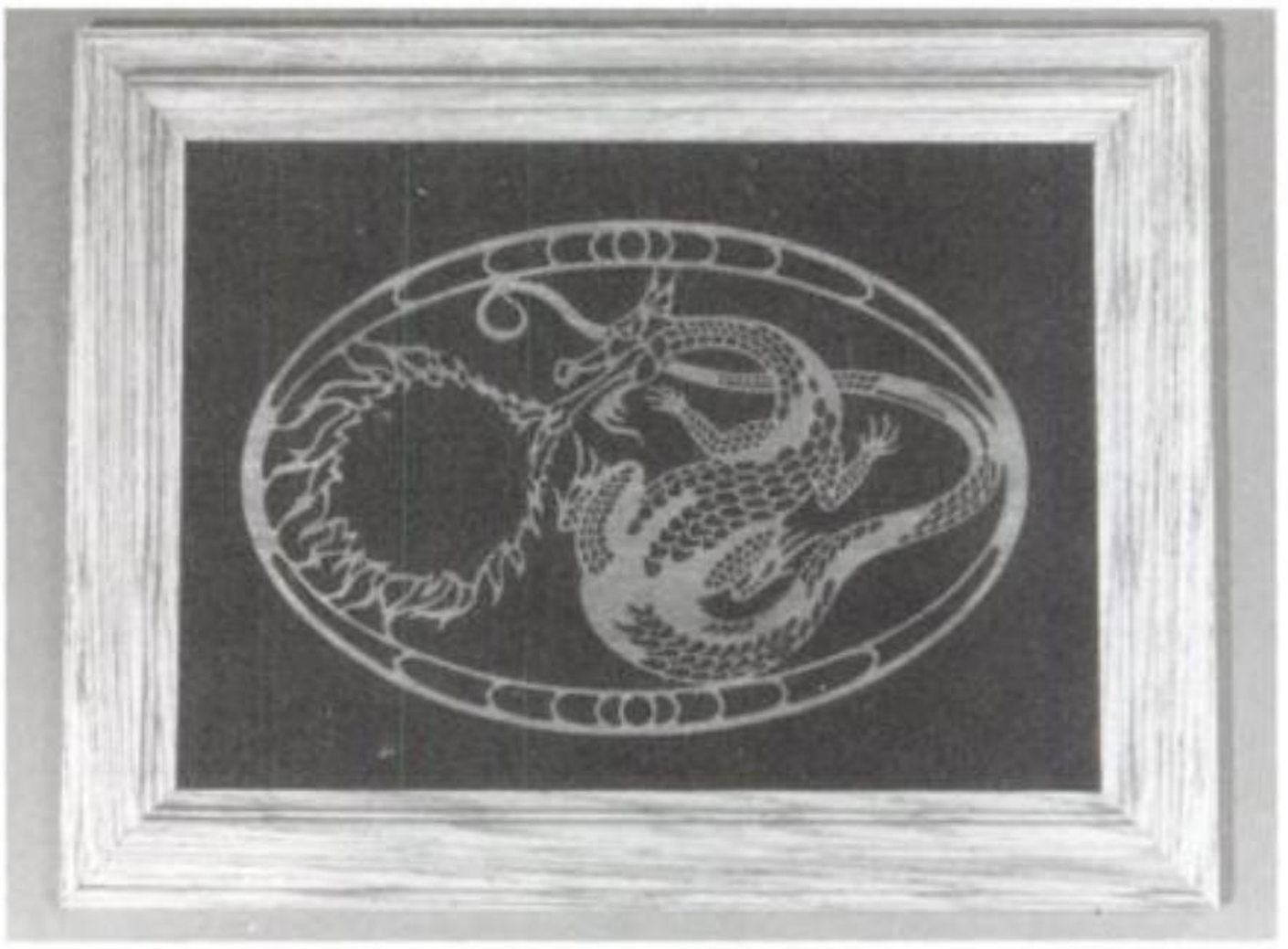


Illus. 80. Deer pattern.

Copyrighted material

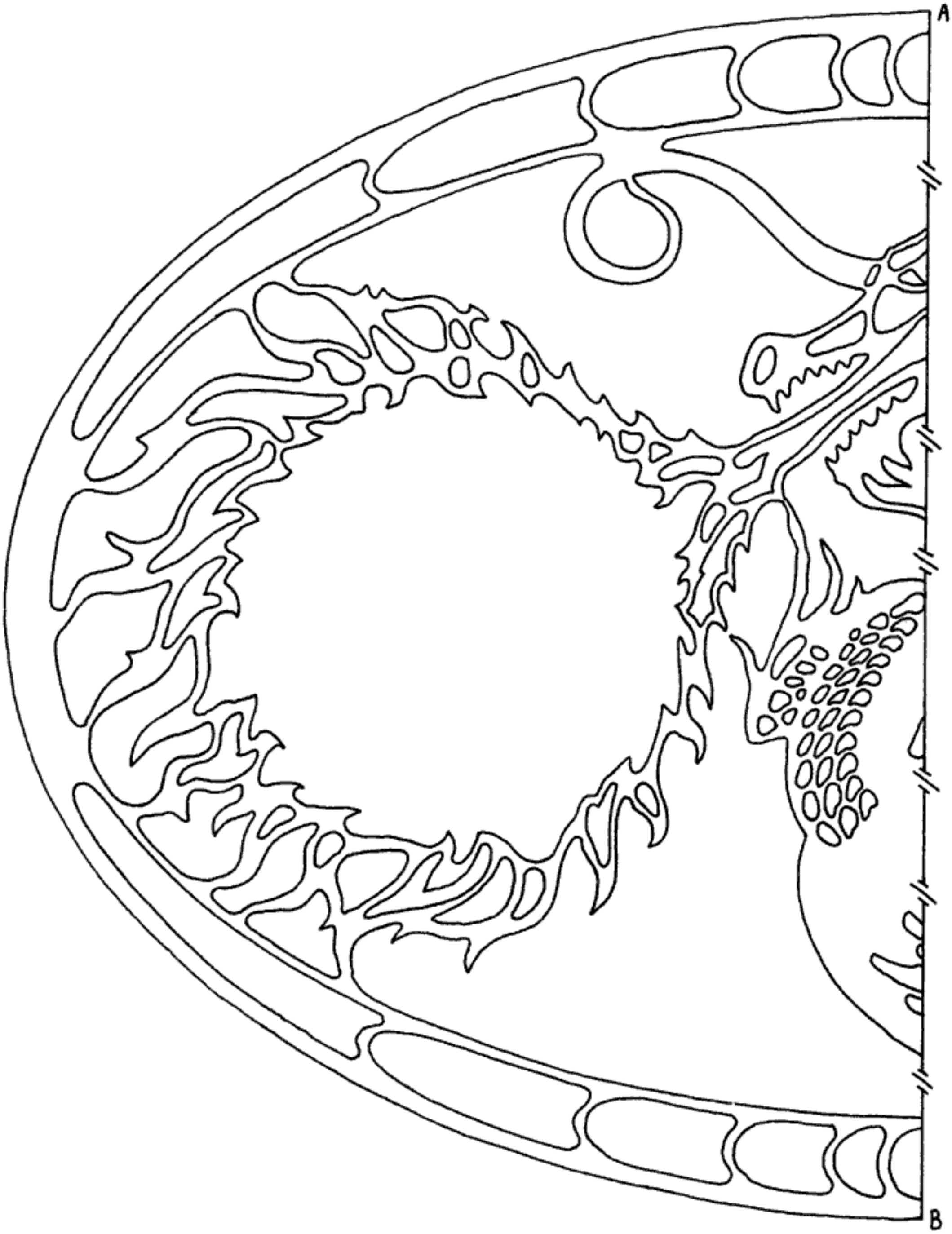


Illus. 81. This design, crafted by John Polhemus, is sawn from ¼" mahogany and placed on a black velvet background. (The pattern appears on the following pages.)



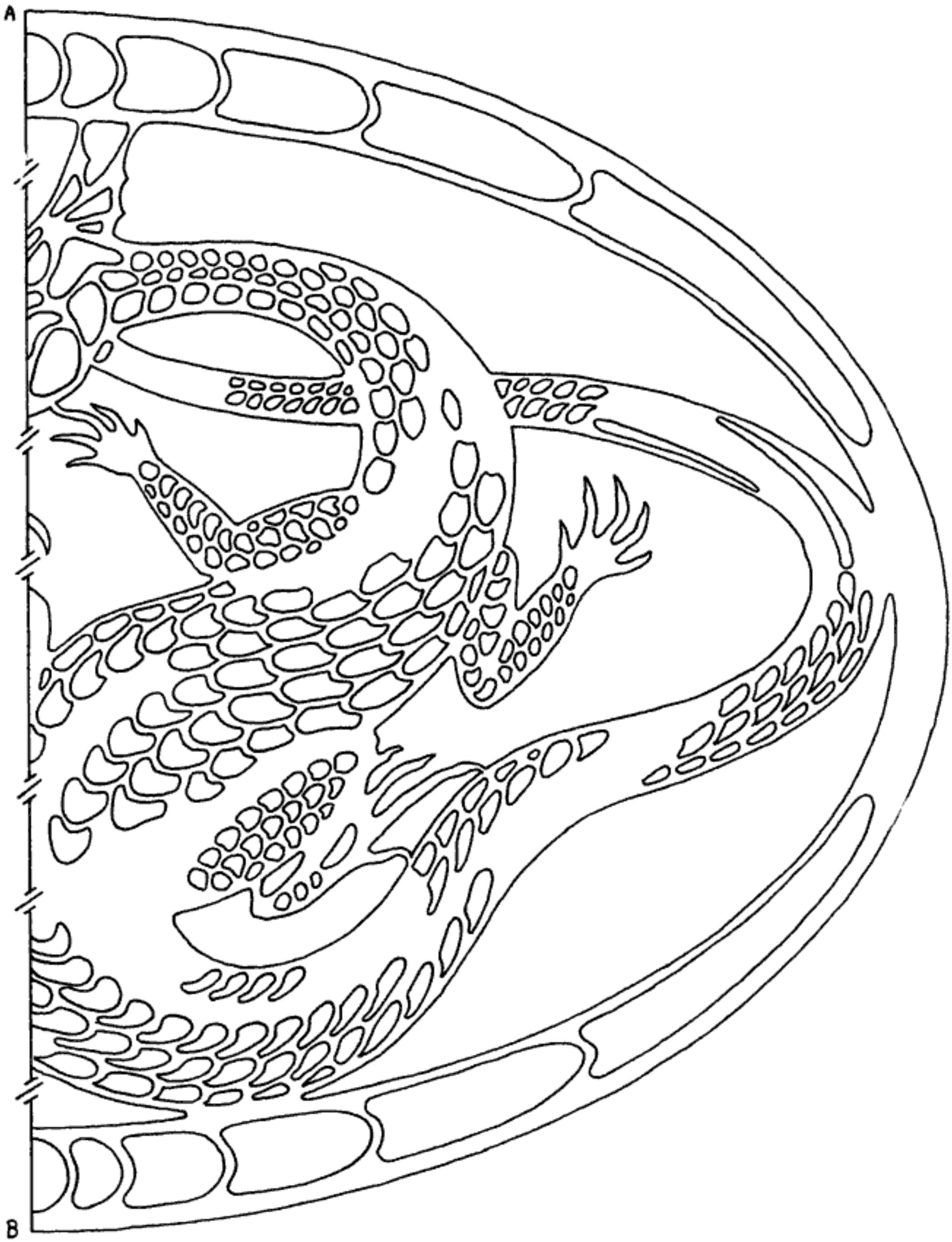
Illus. 82. Here is the dragon framed under glass.

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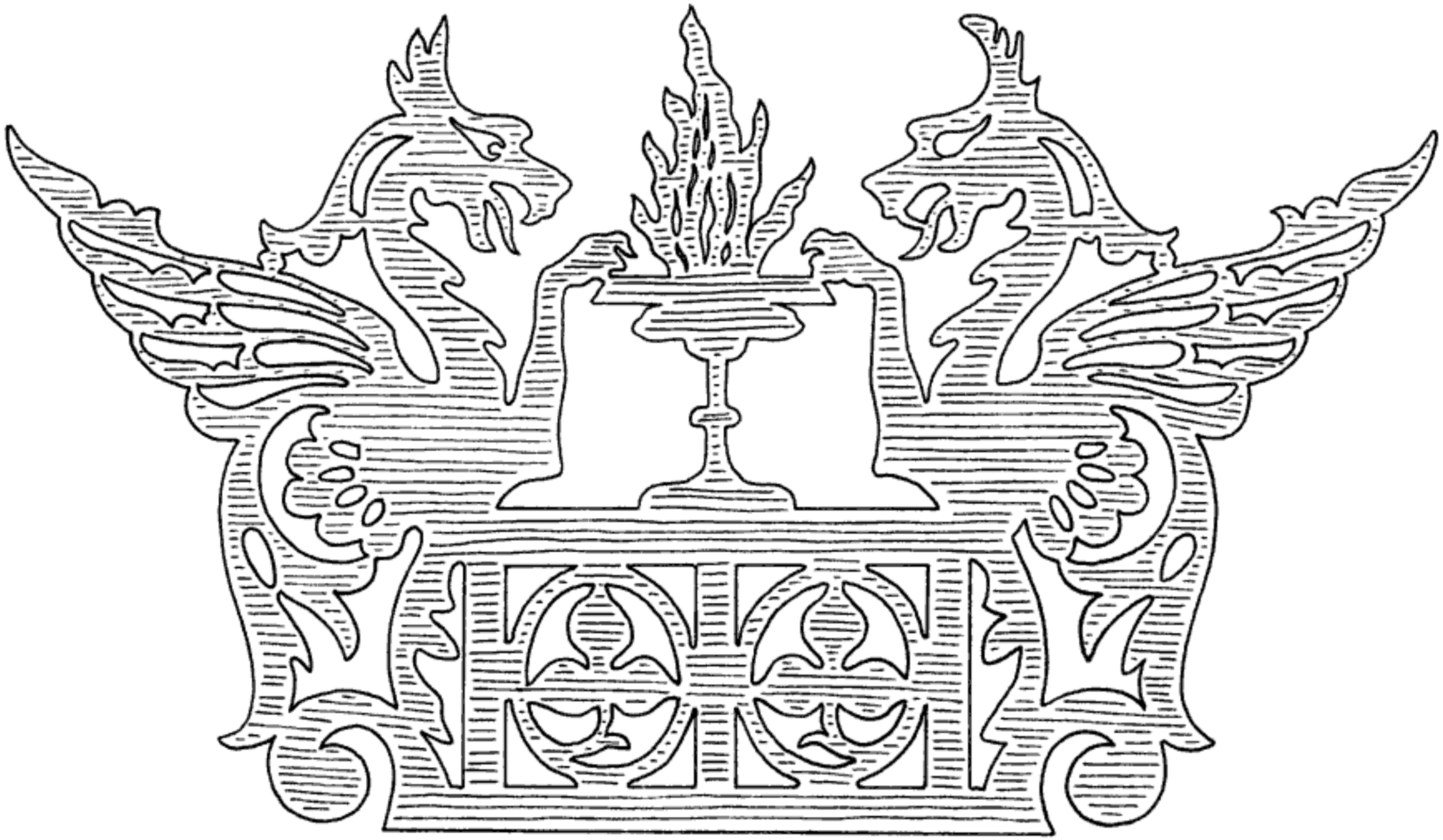


Illus. 83. Dragon pattern.

Copyrighted material



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Illus. 84. Griffin pattern.

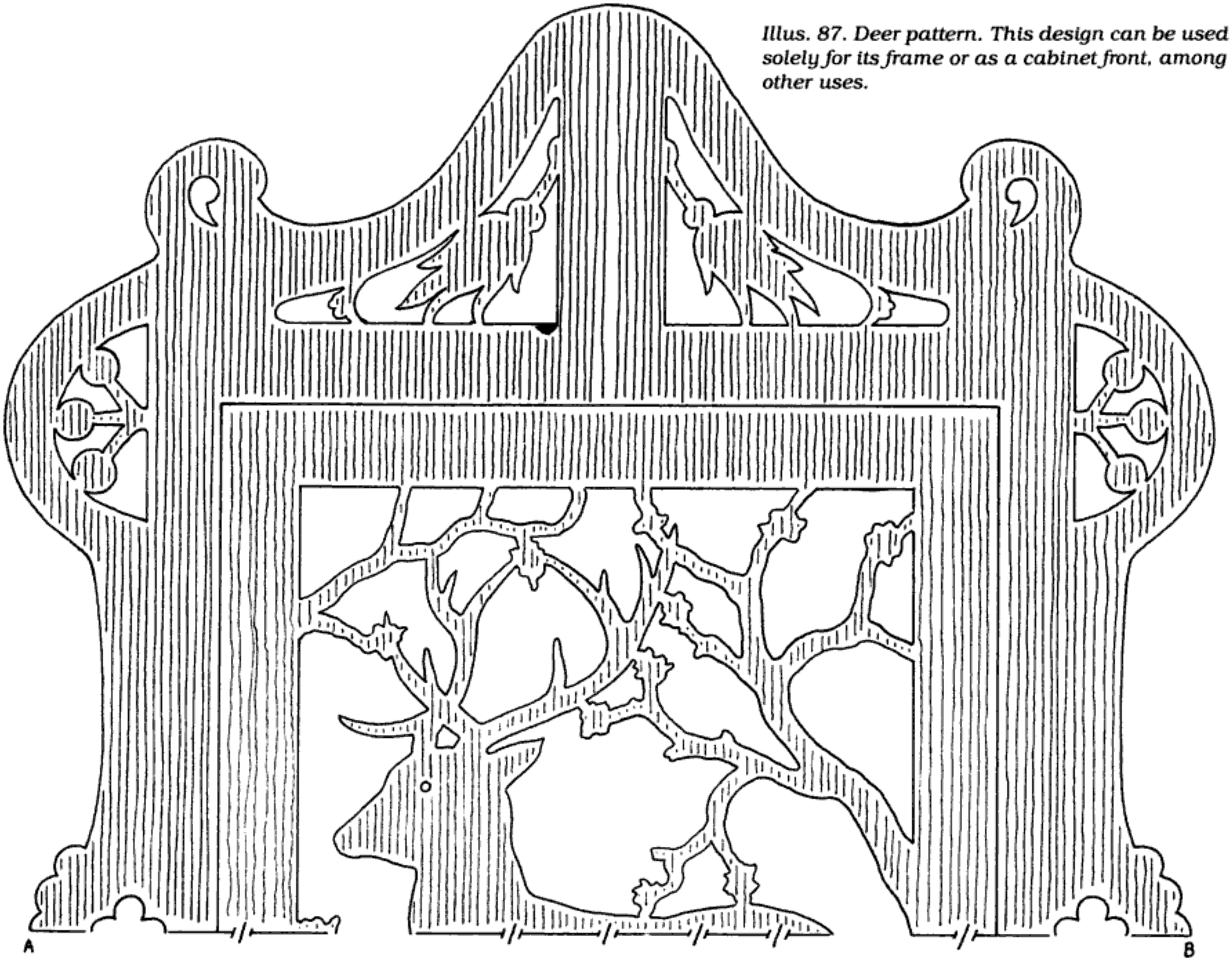
Copyrighted material



Illus. 85. Unicorns, designed by Kirk Ratajesak

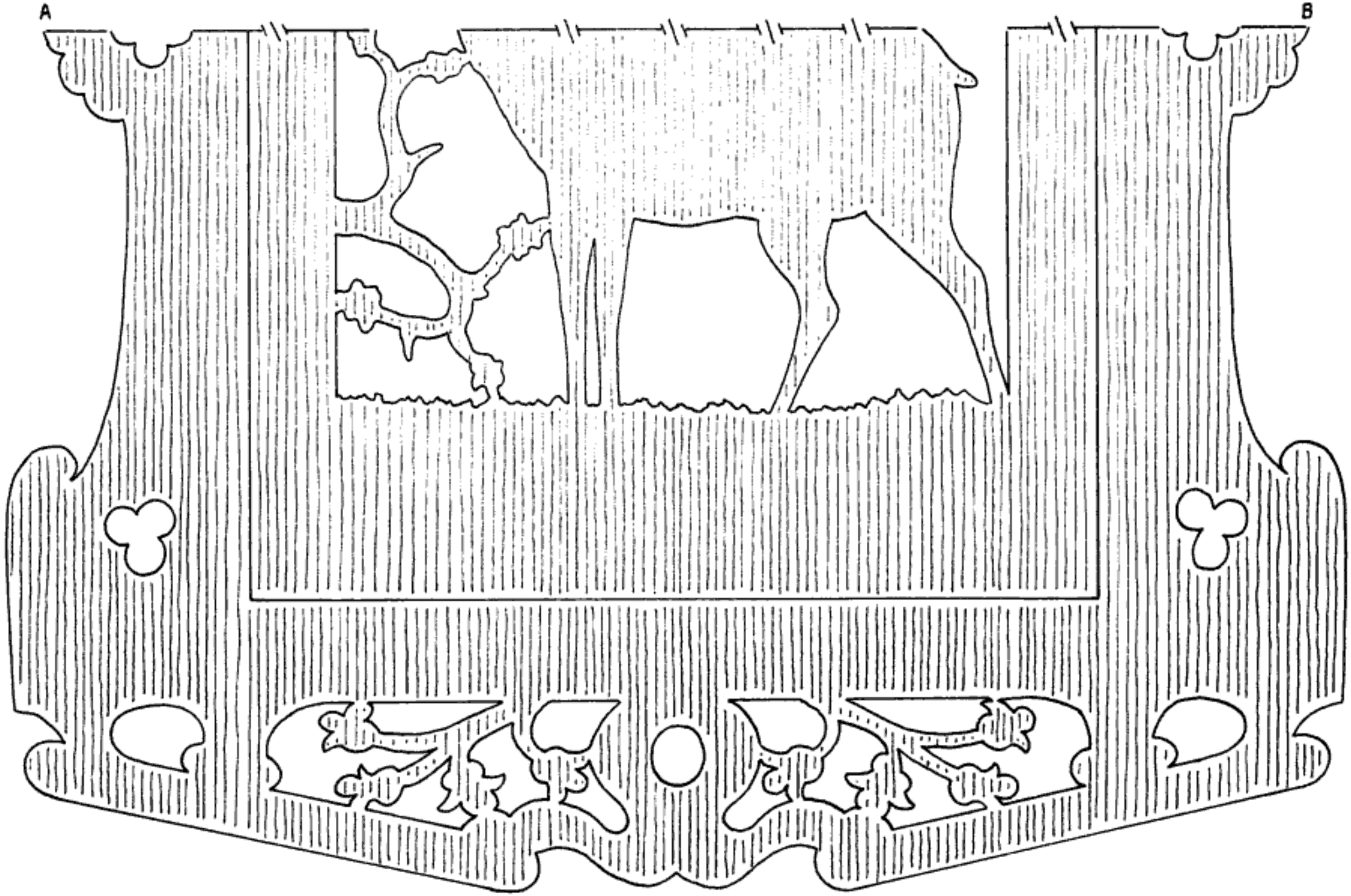
Illus. 86. Unicorn pattern.

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Illus. 87. Deer pattern. This design can be used solely for its frame or as a cabinet front, among other uses.

Copyrighted material



Copyright Material

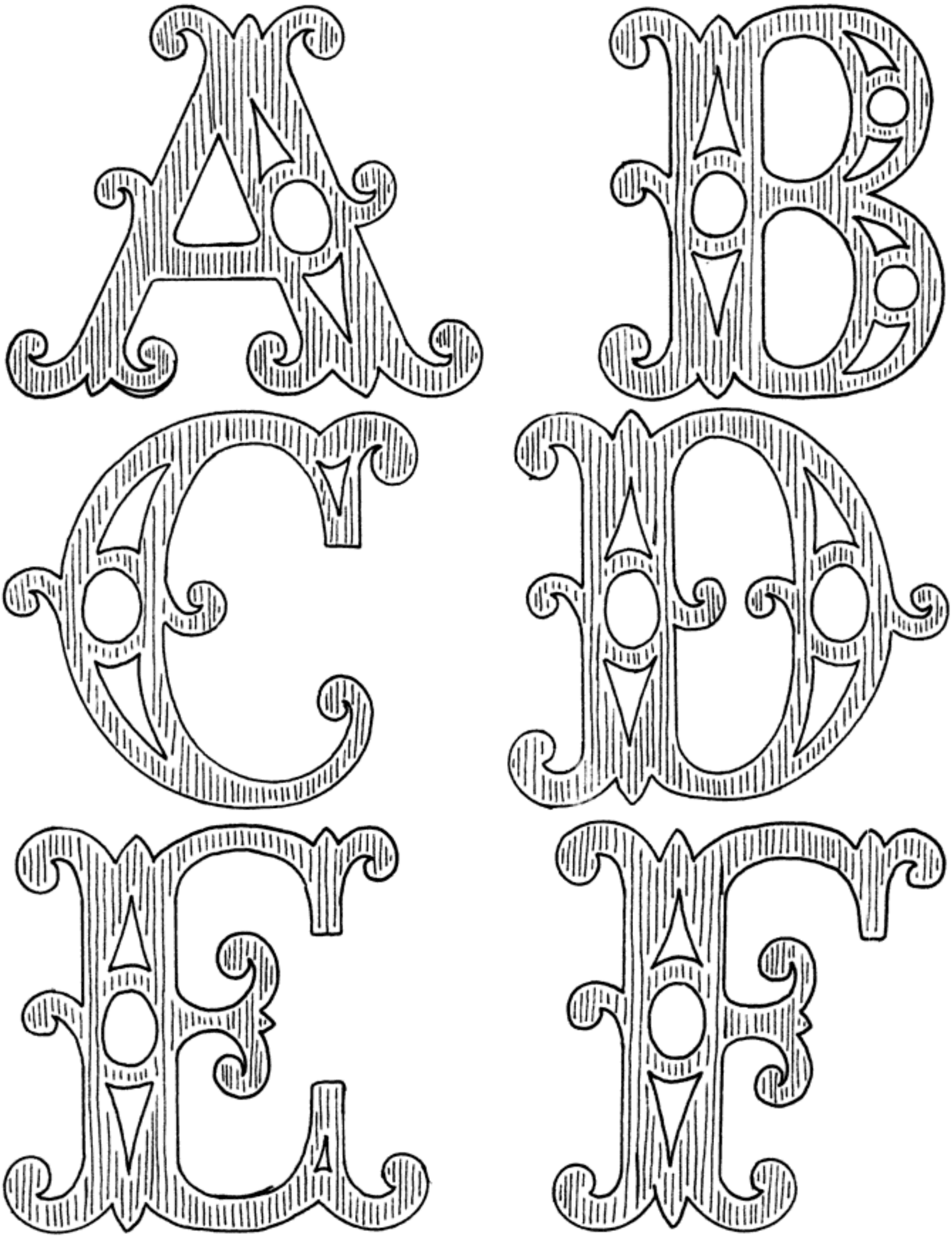


Illus. 88. These are Gay Nineties letters.



Illus. 89. Here, one is applied as an overlay design on a box.

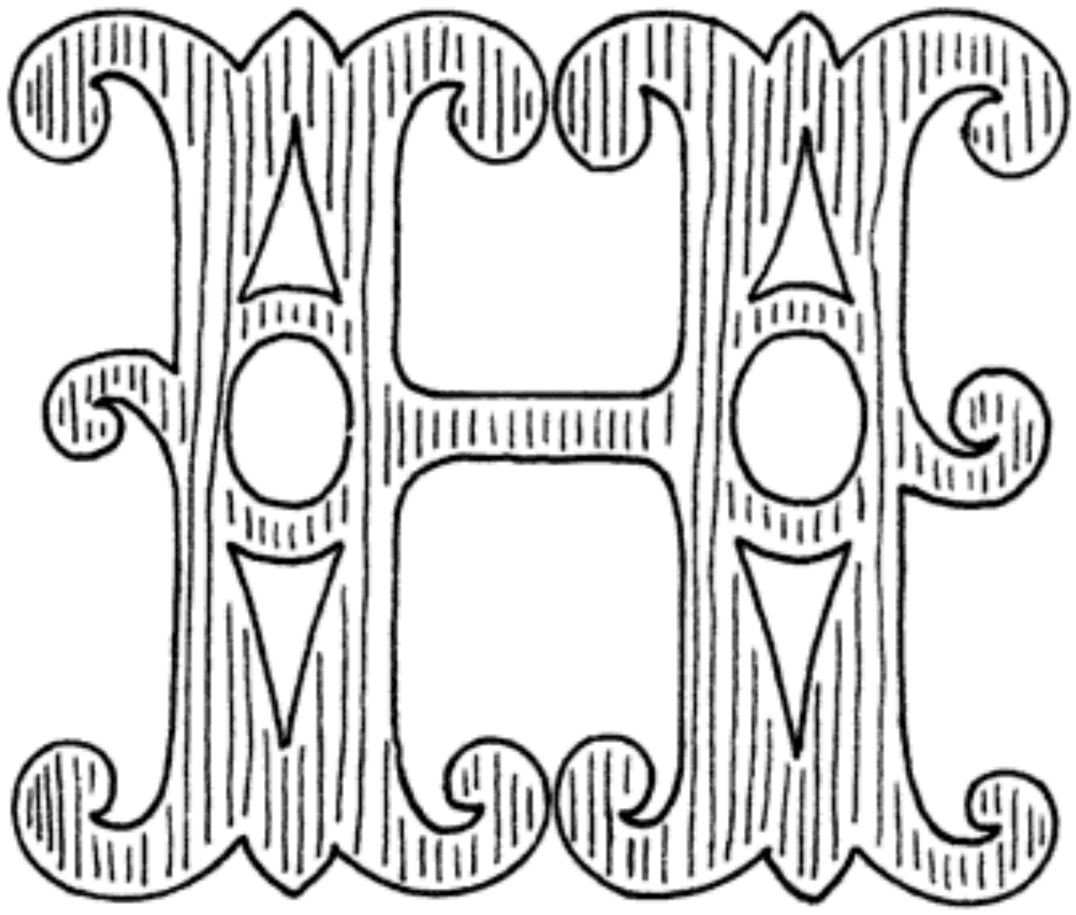
Copyrighted material

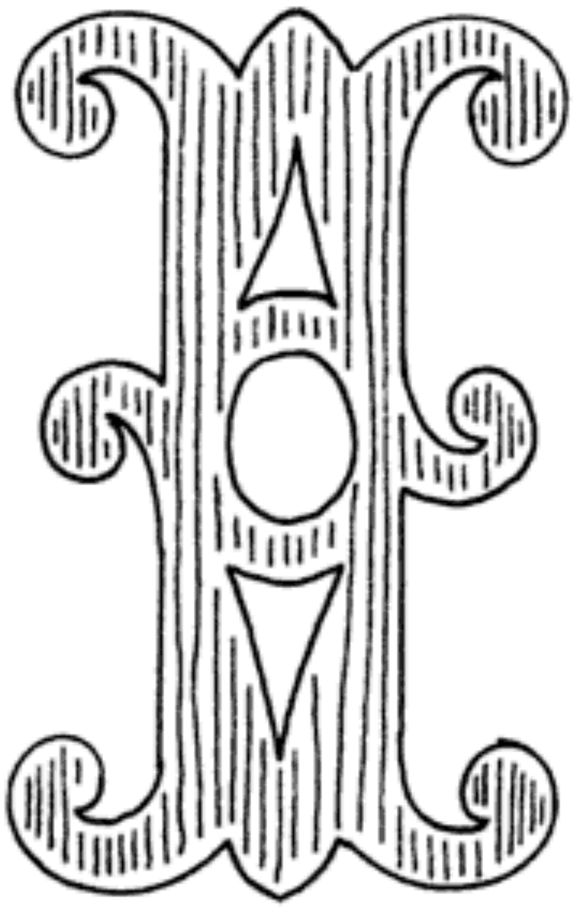


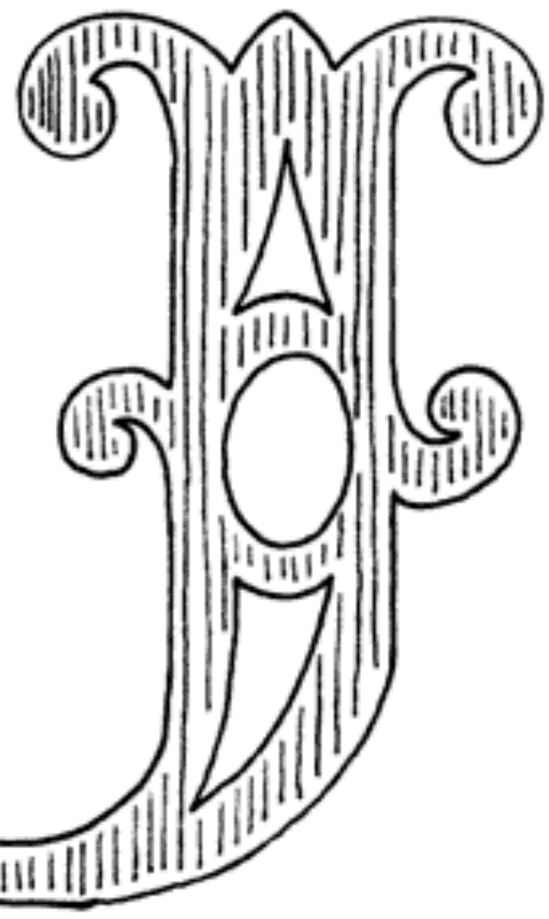
Illus. 90. Pattern for Gay Nineties uppercase letters and numbers. (Continued on the following five pages.)

Copyrighted material

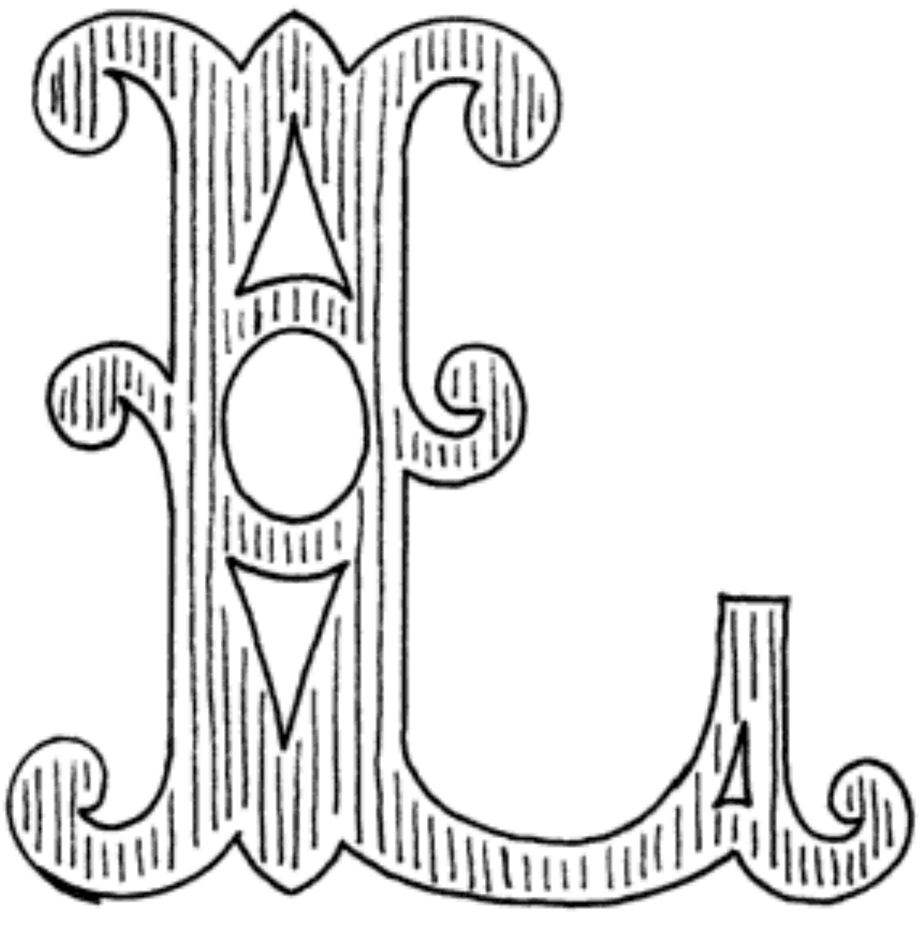




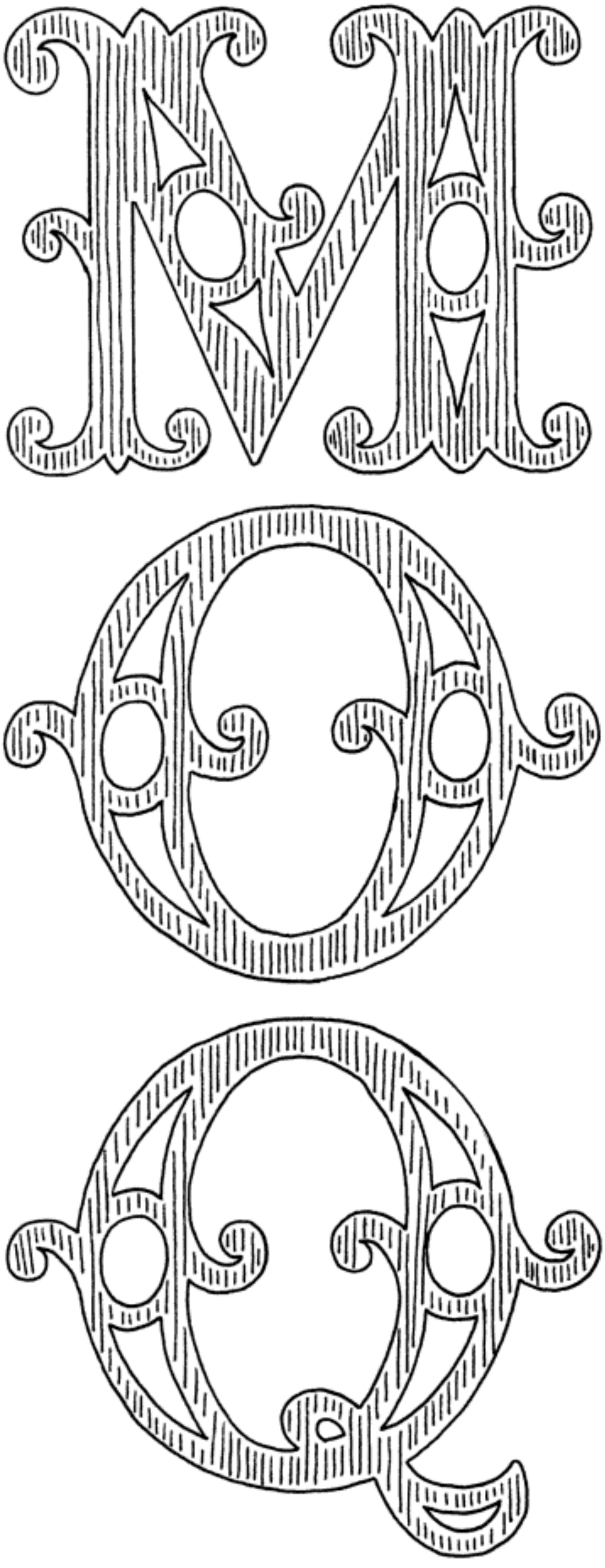


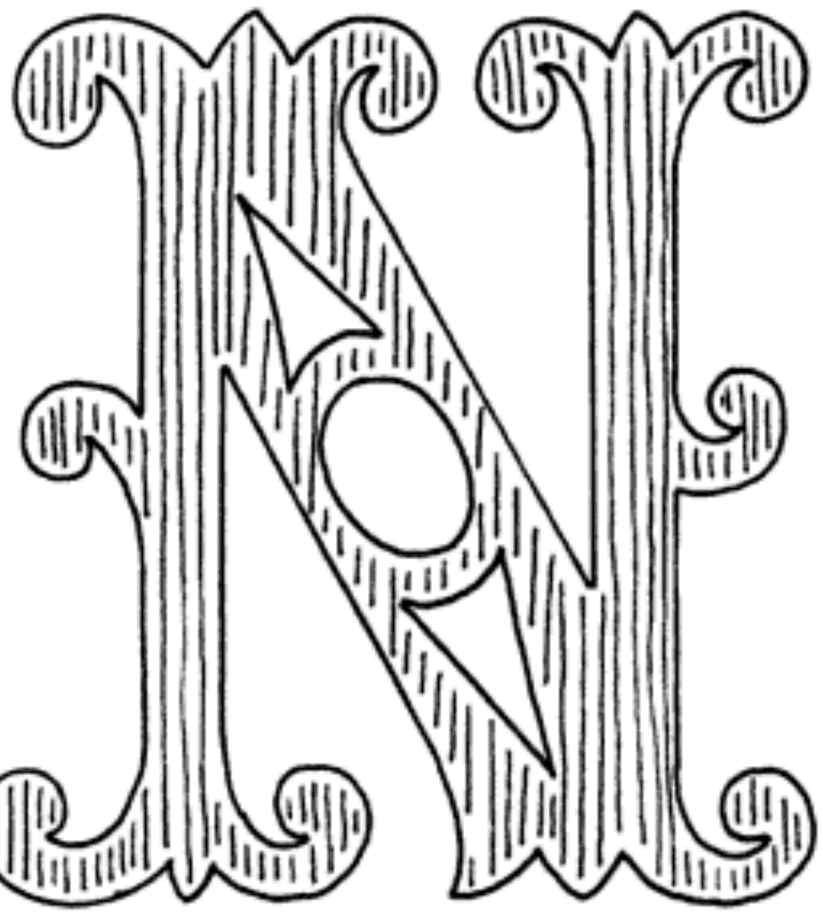


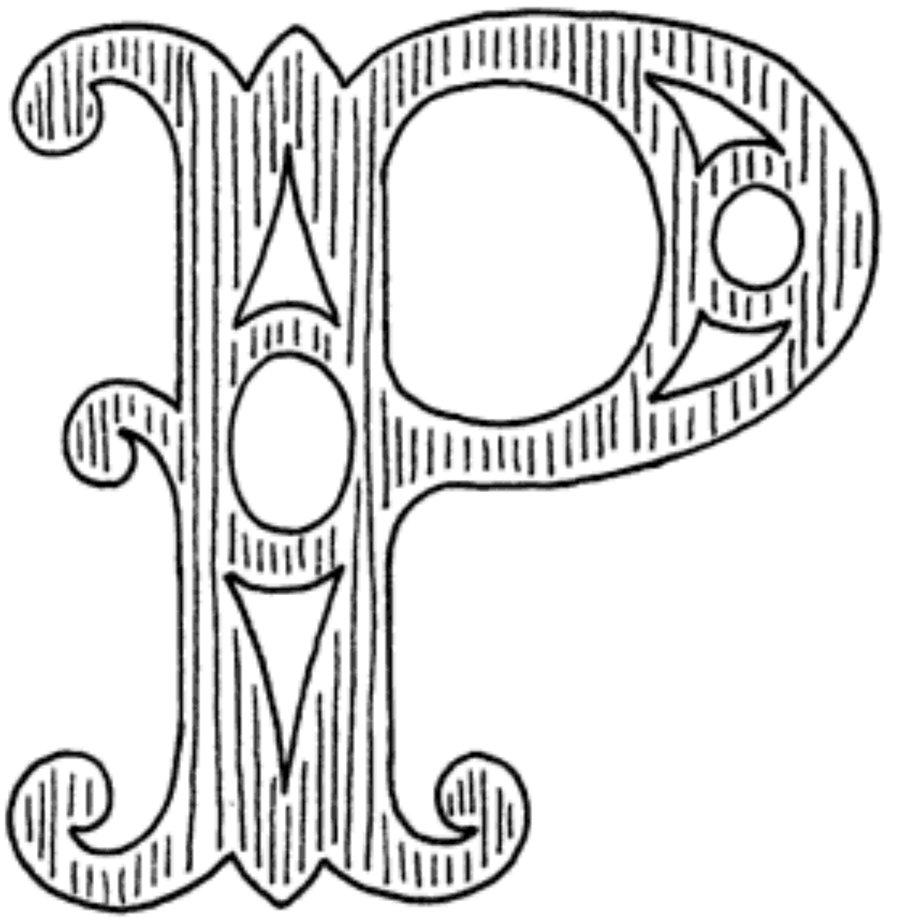




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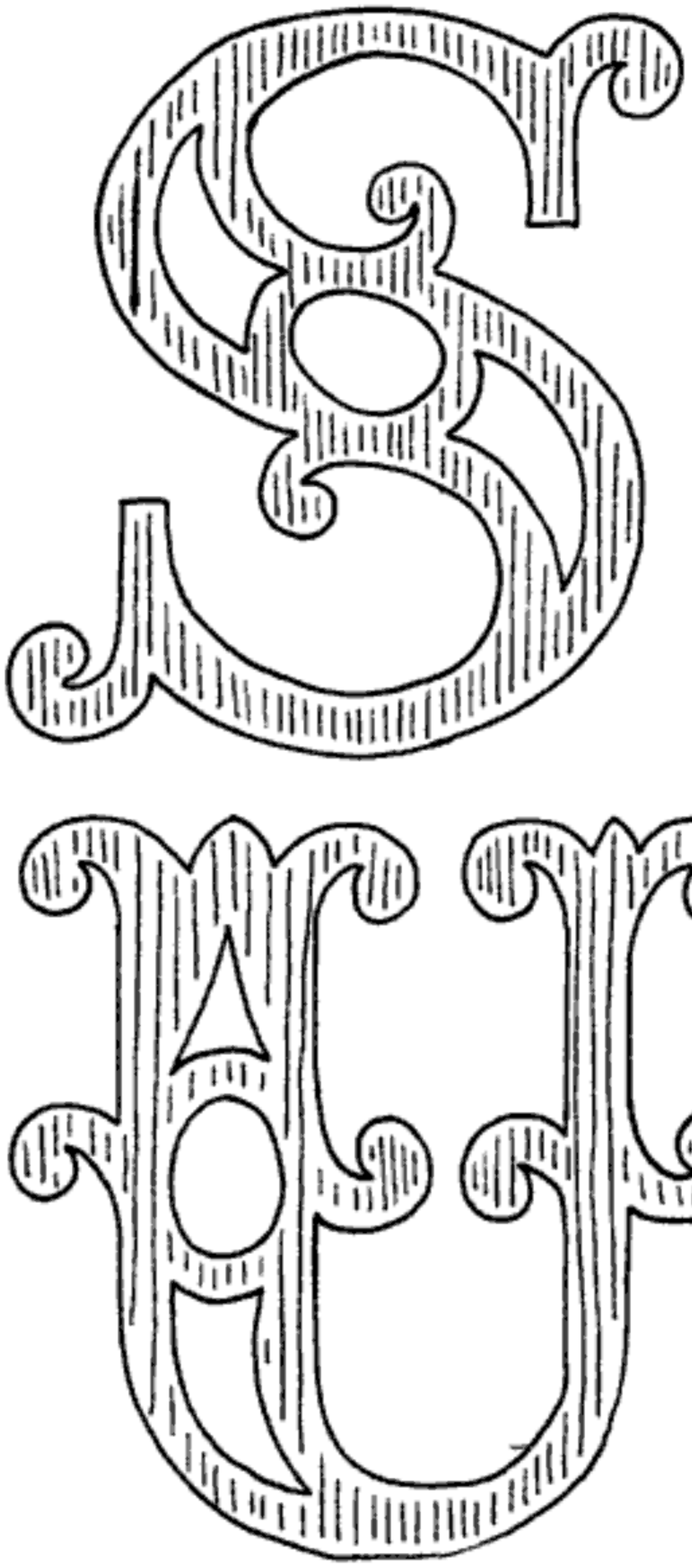


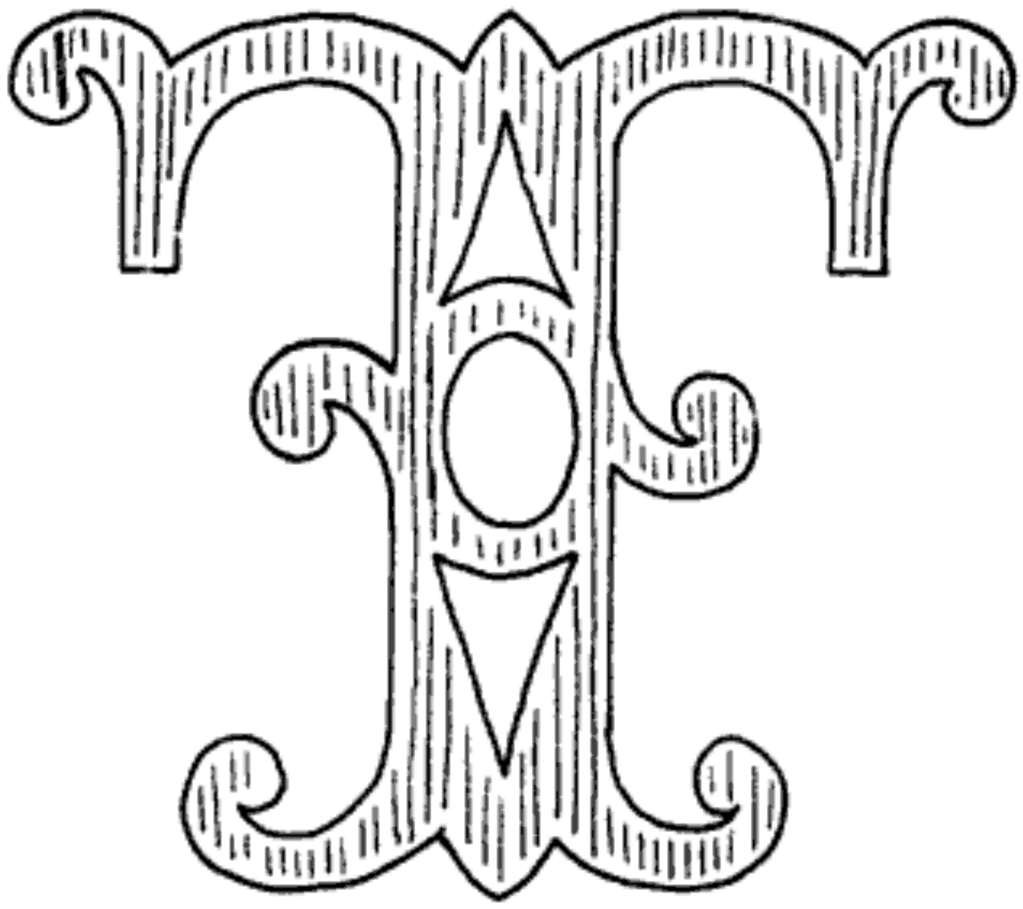


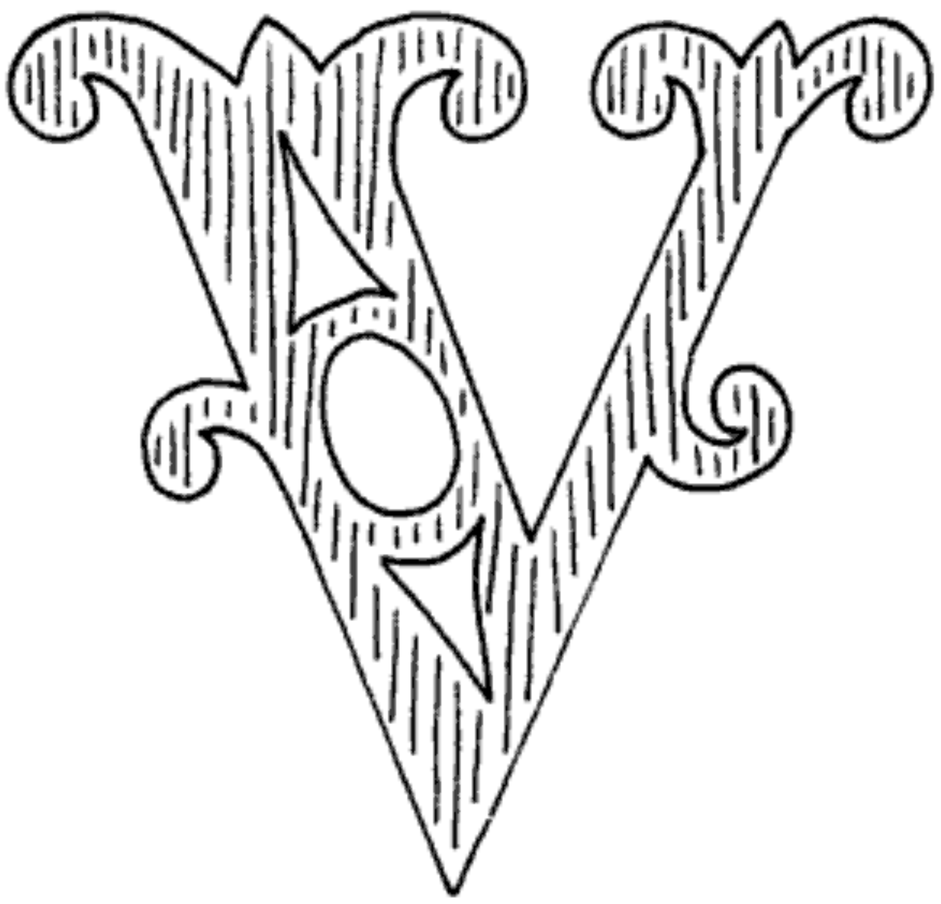


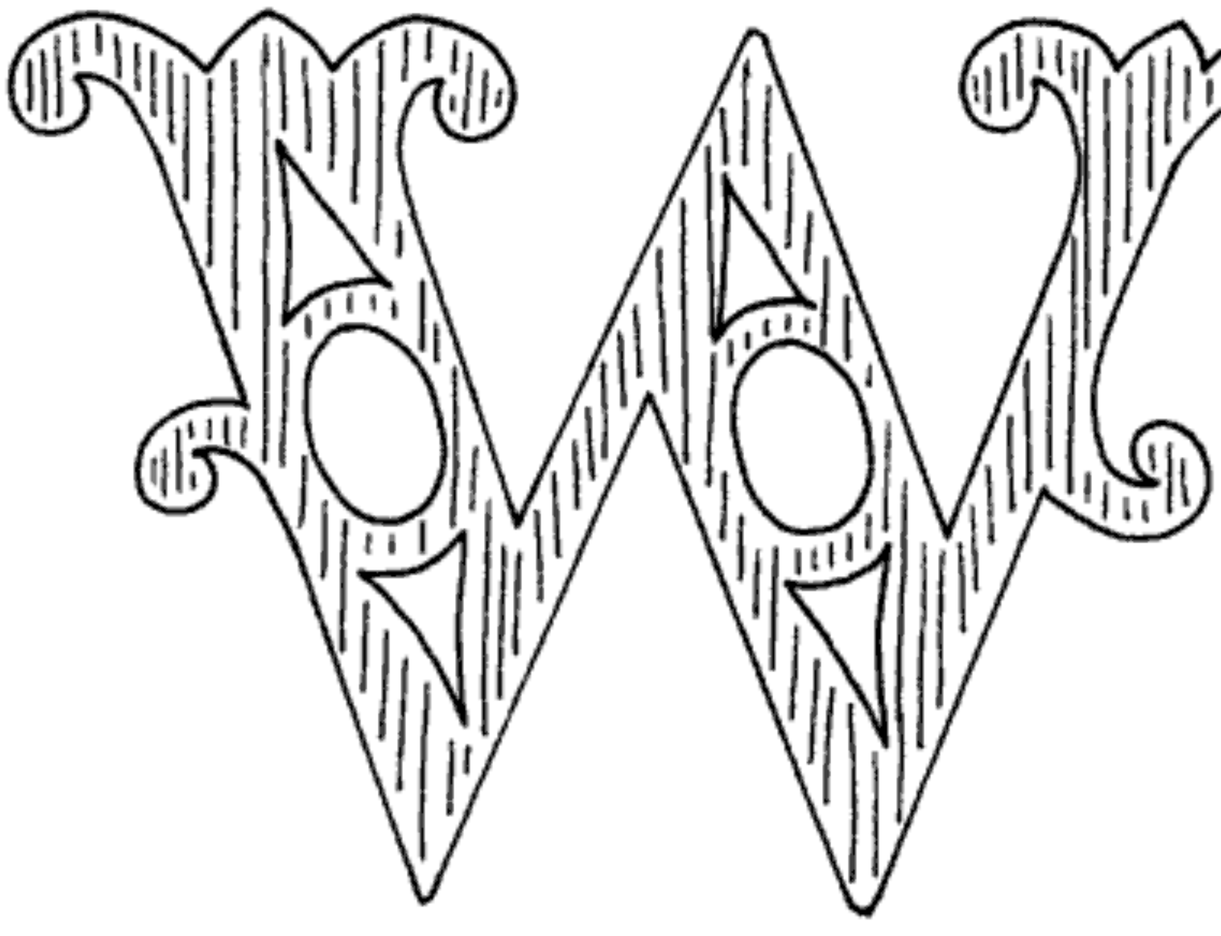


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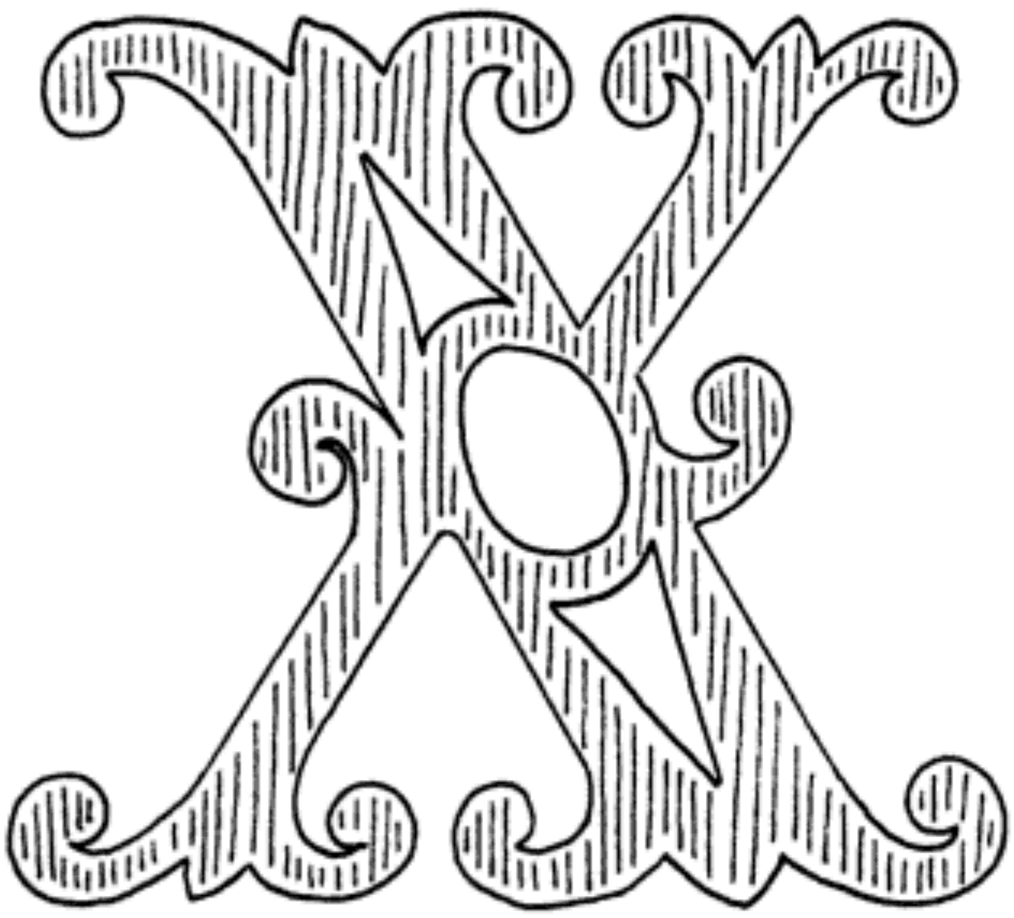


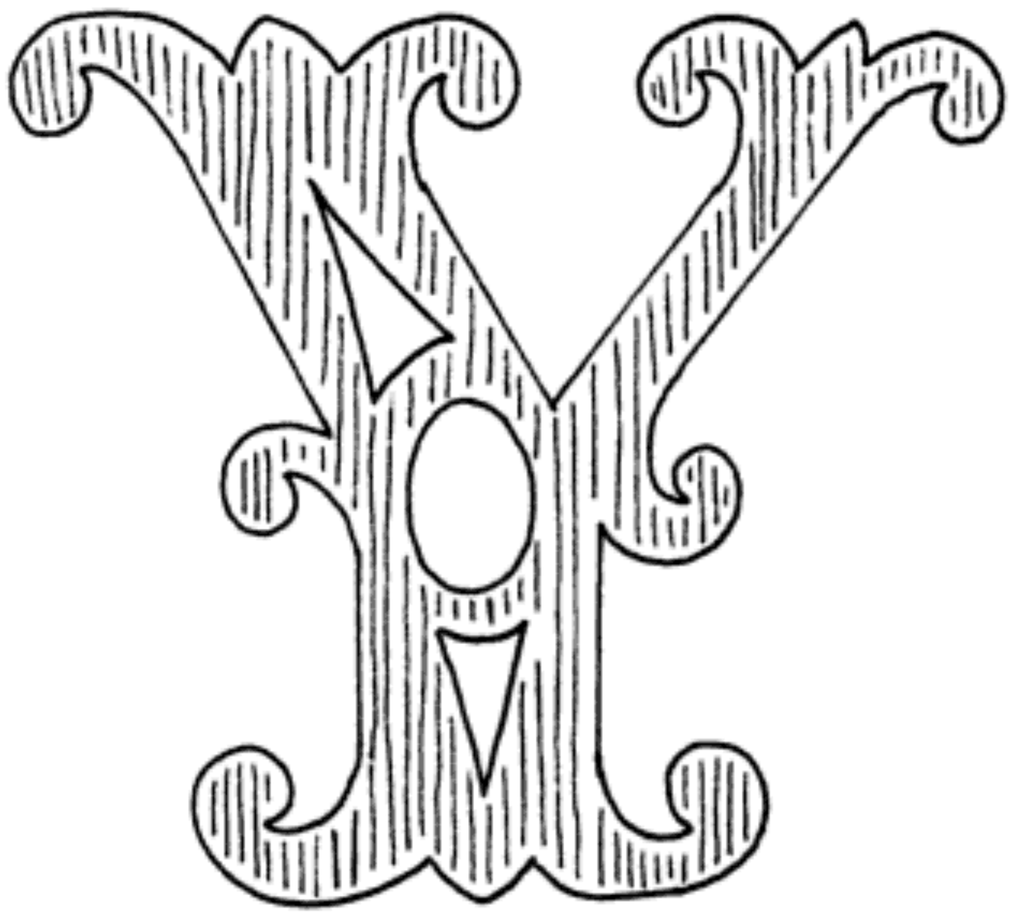


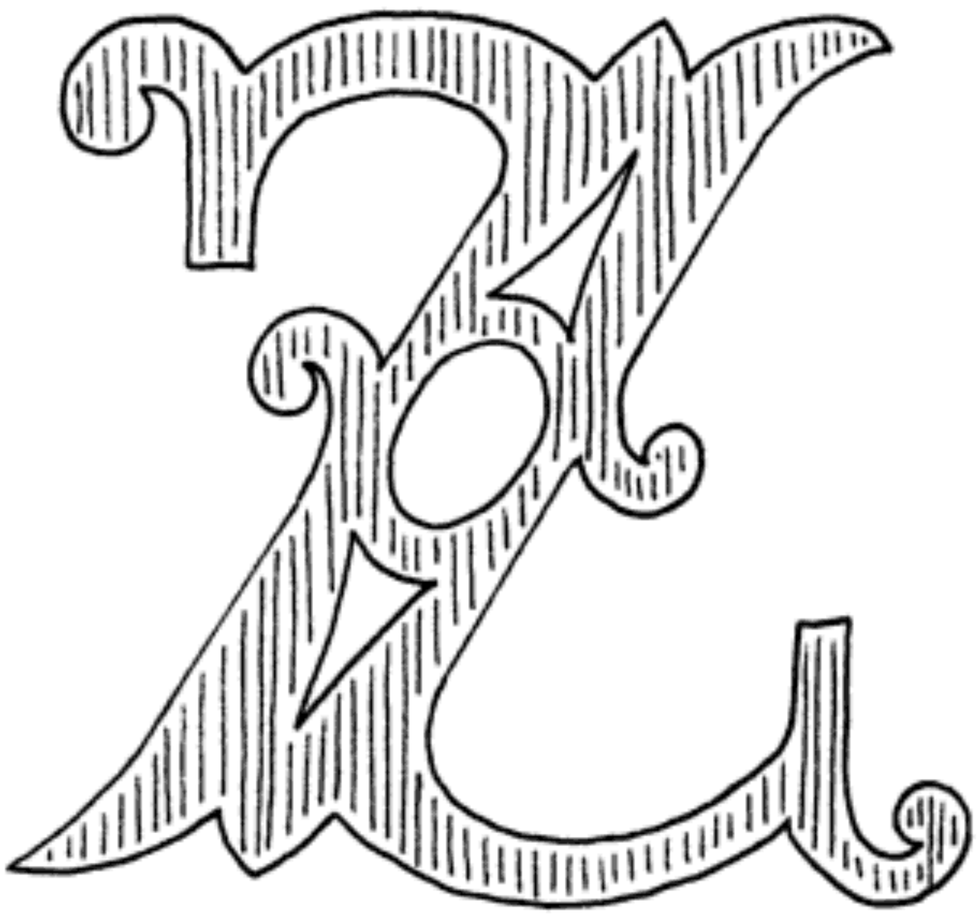


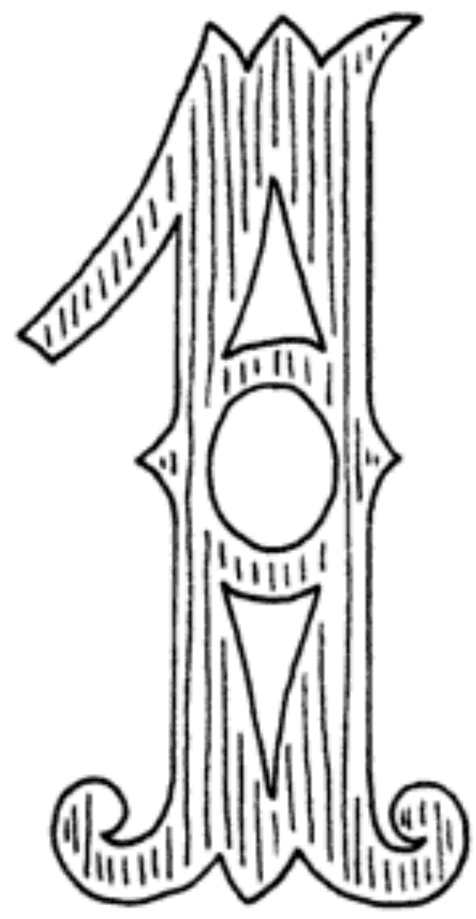


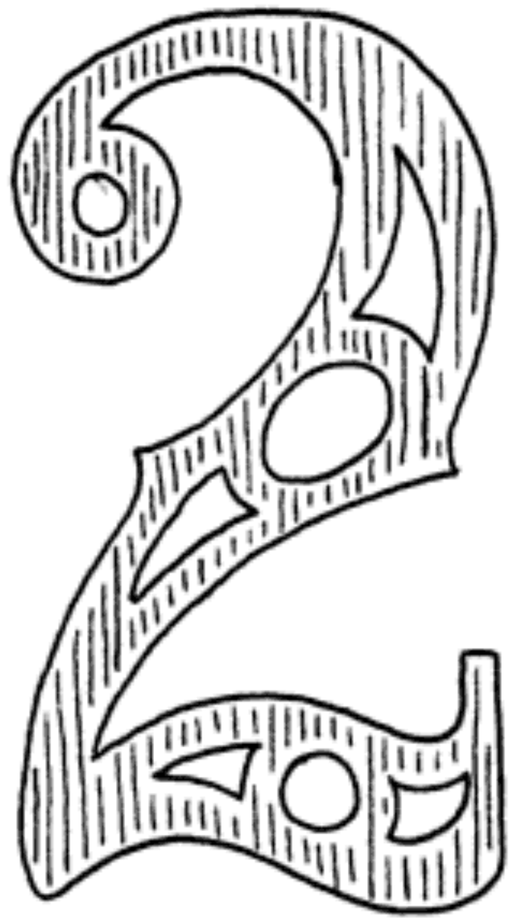
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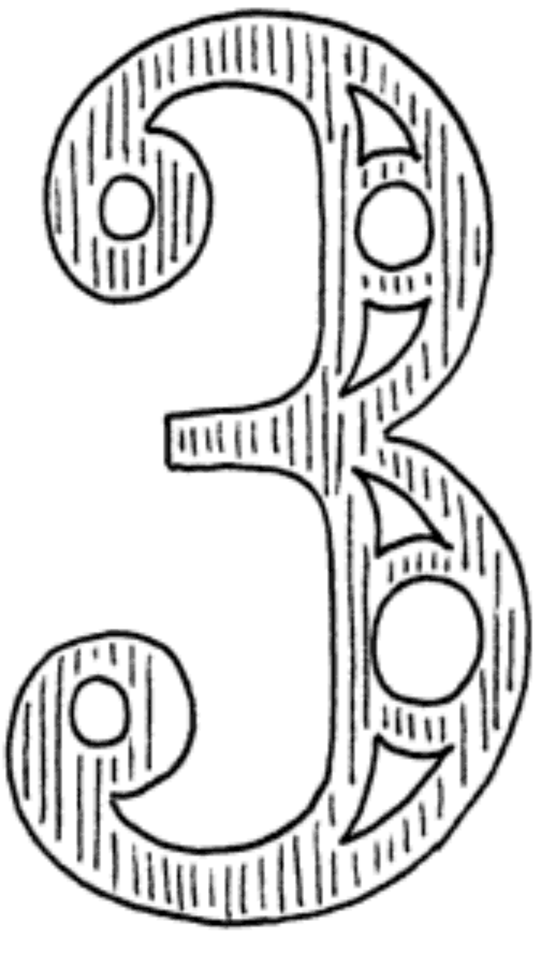




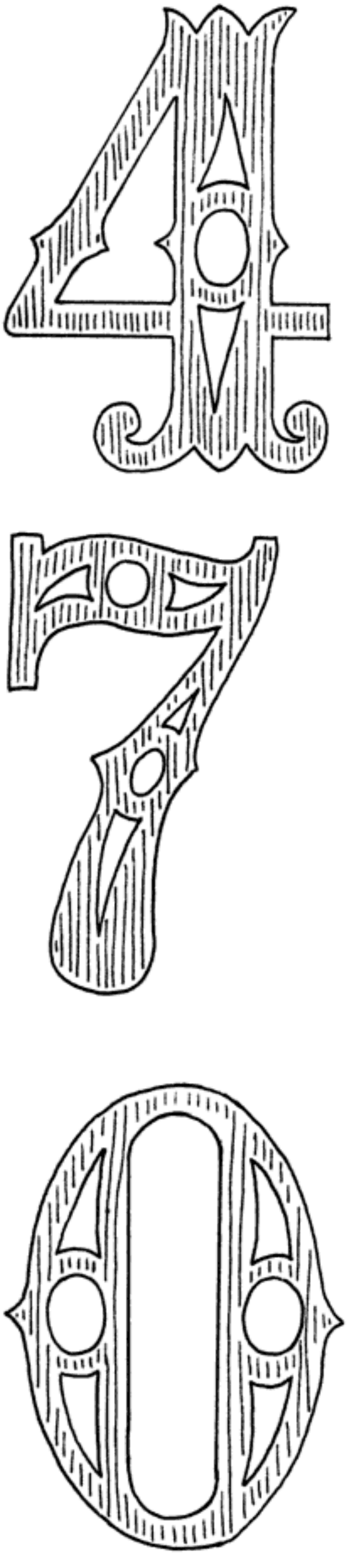




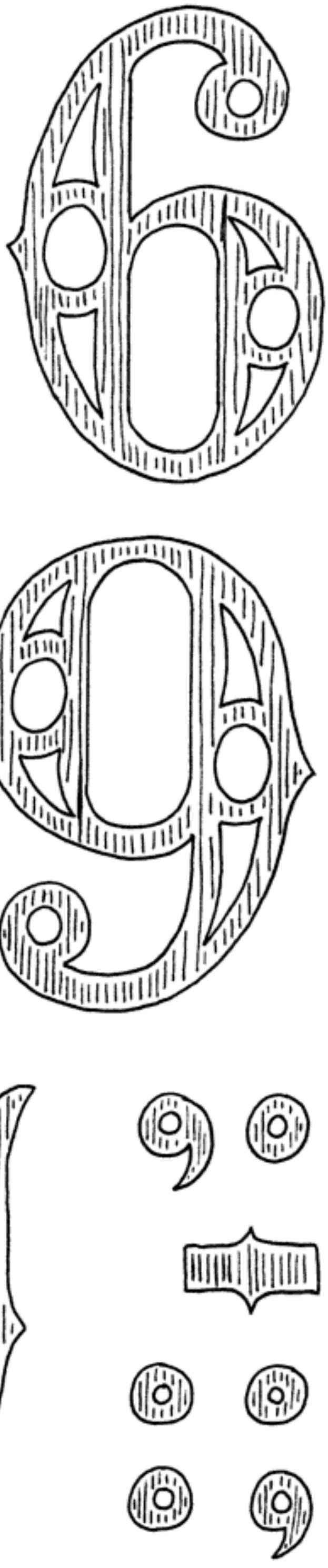




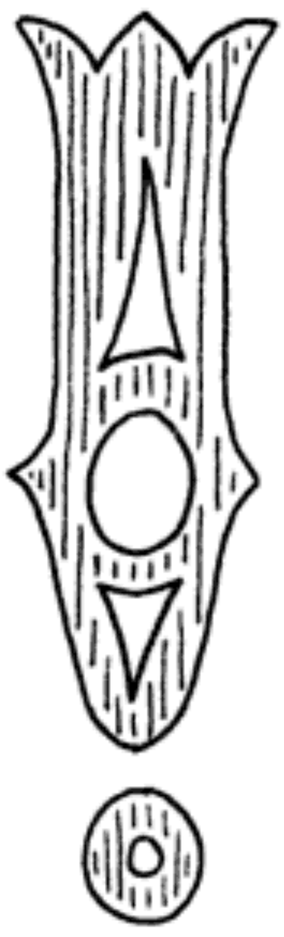
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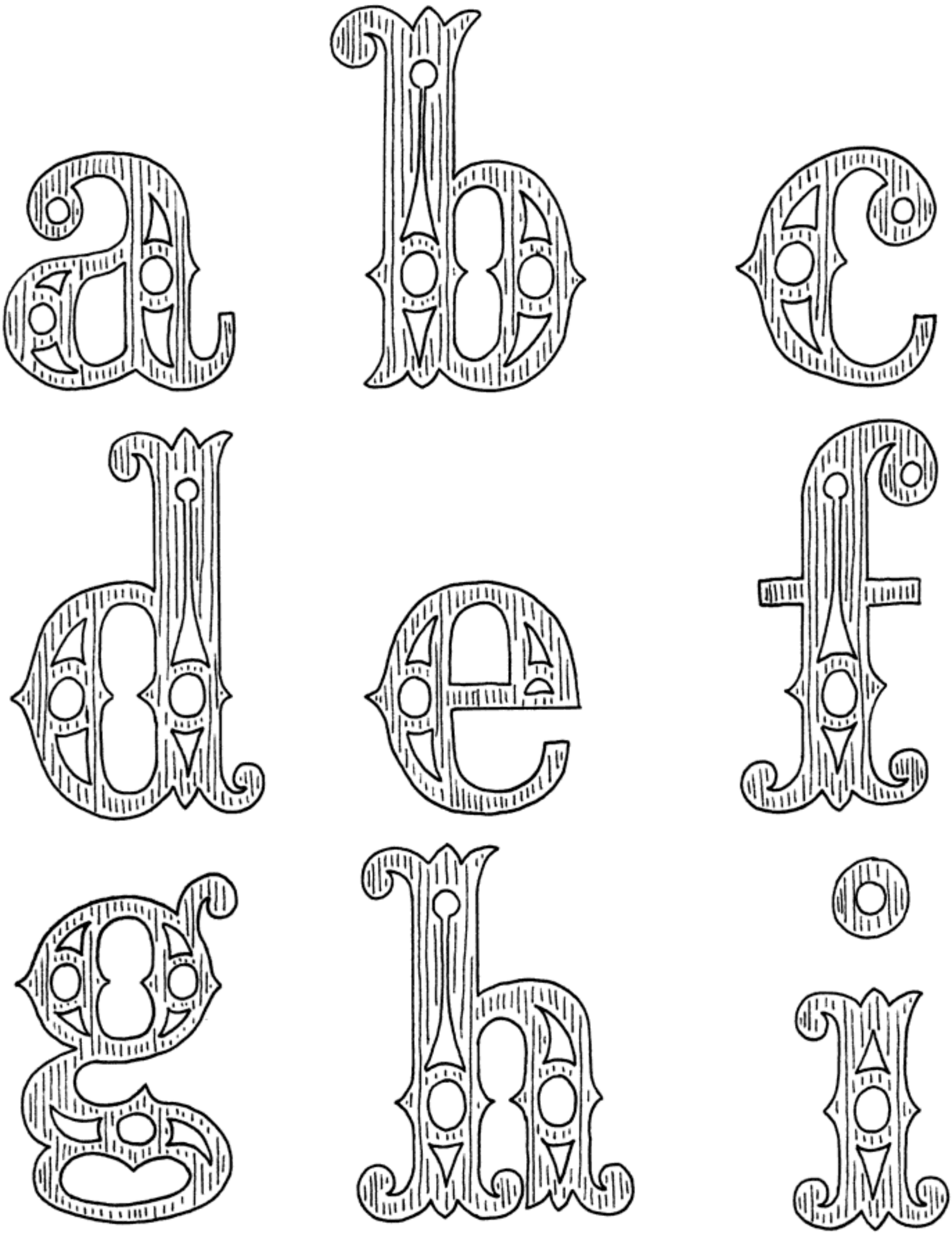






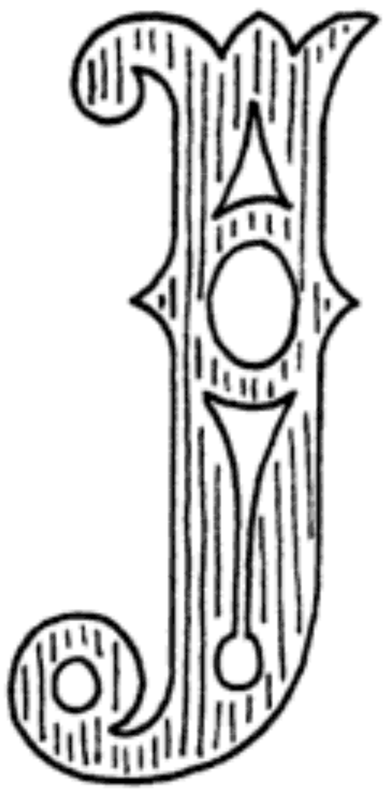


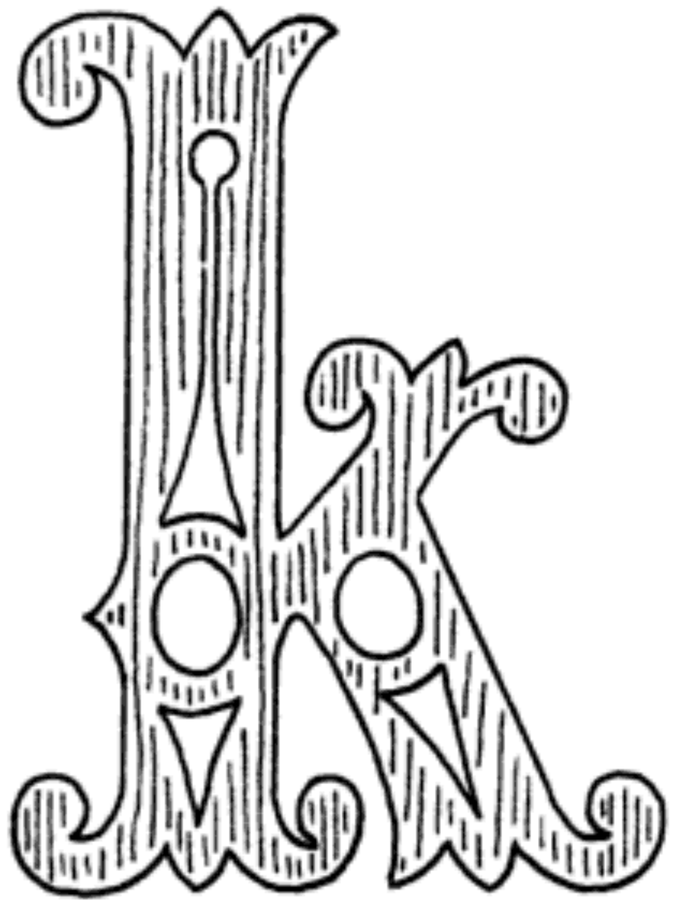
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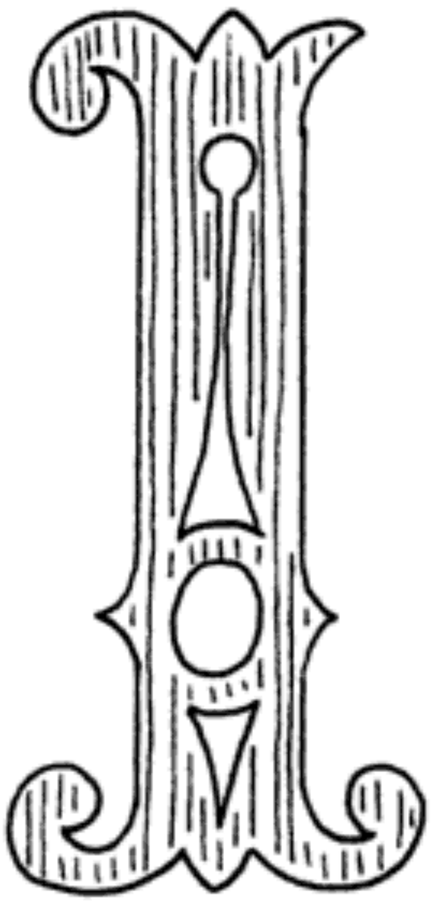


Illus. 91. Pattern for Gay Nineties lowercase letters. (Continued on the following two pages.)

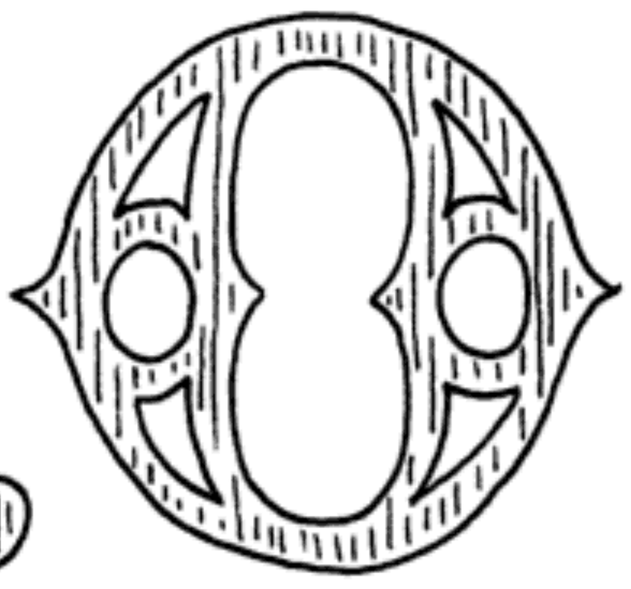
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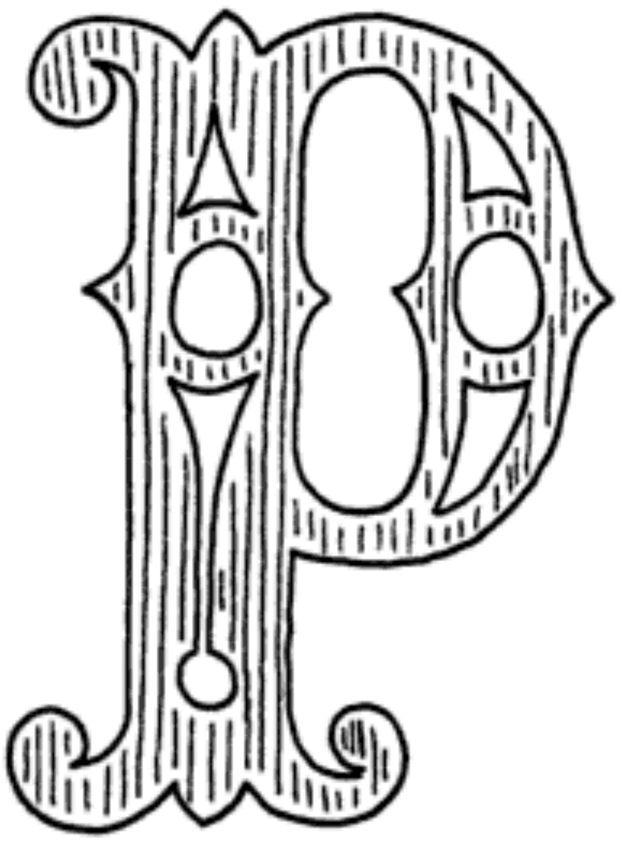


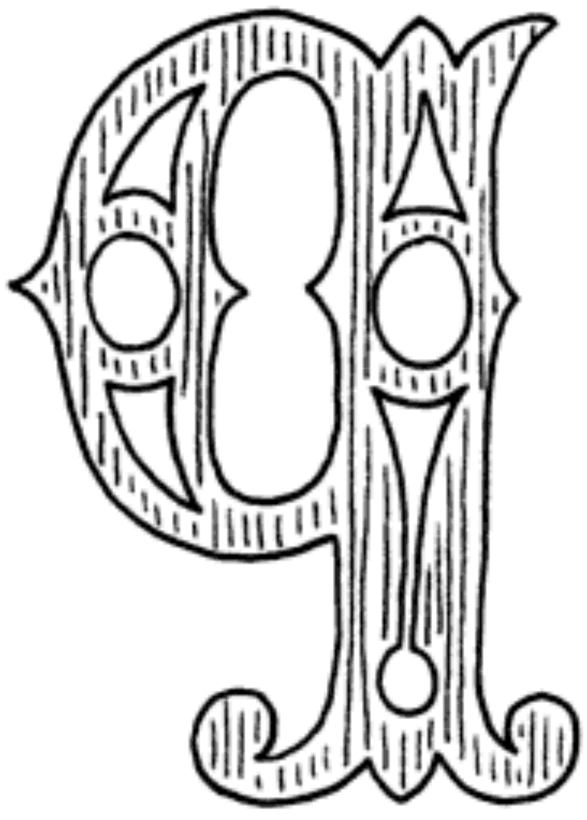








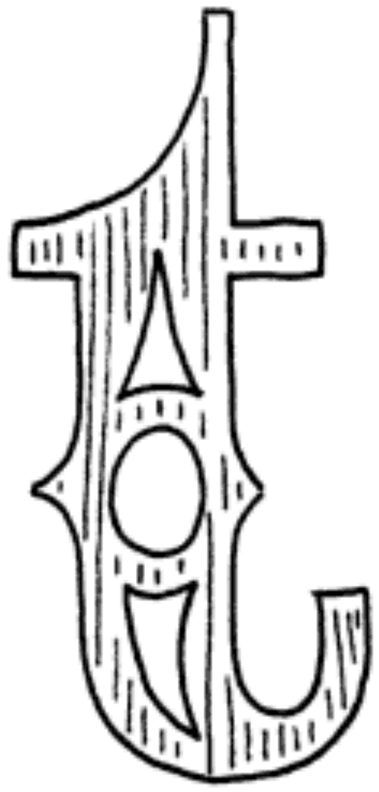






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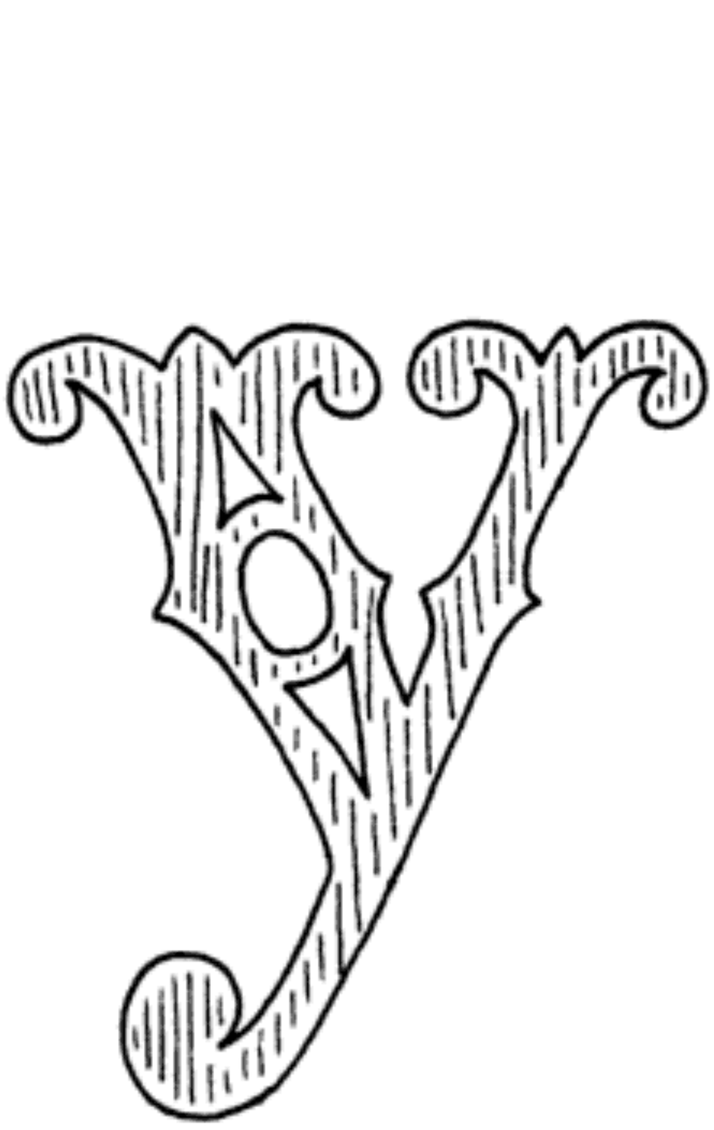




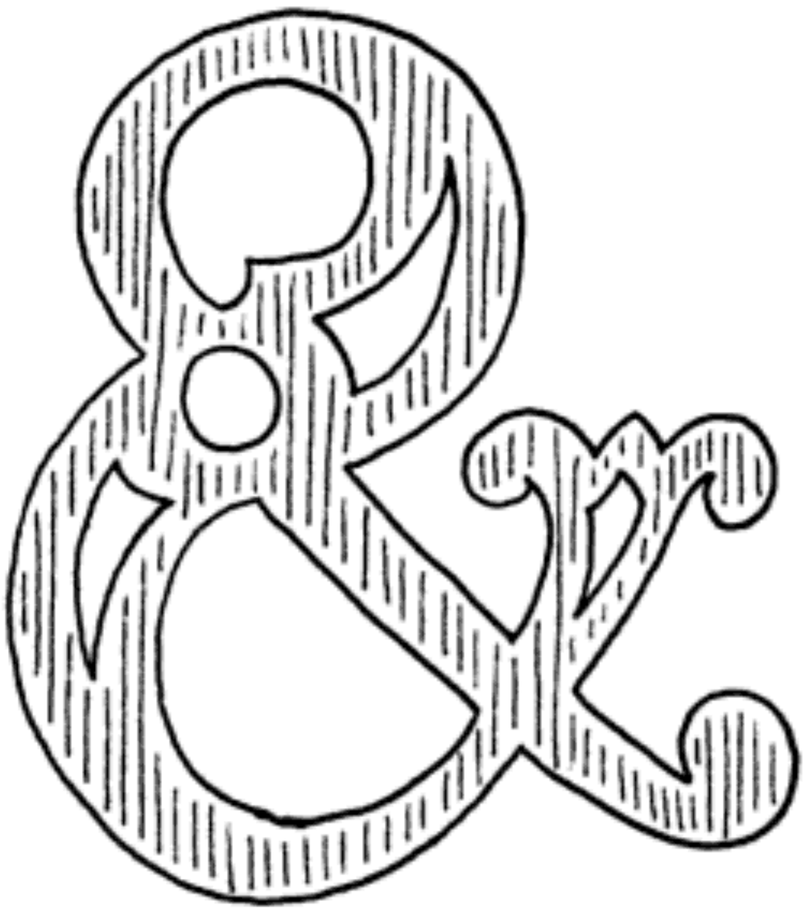






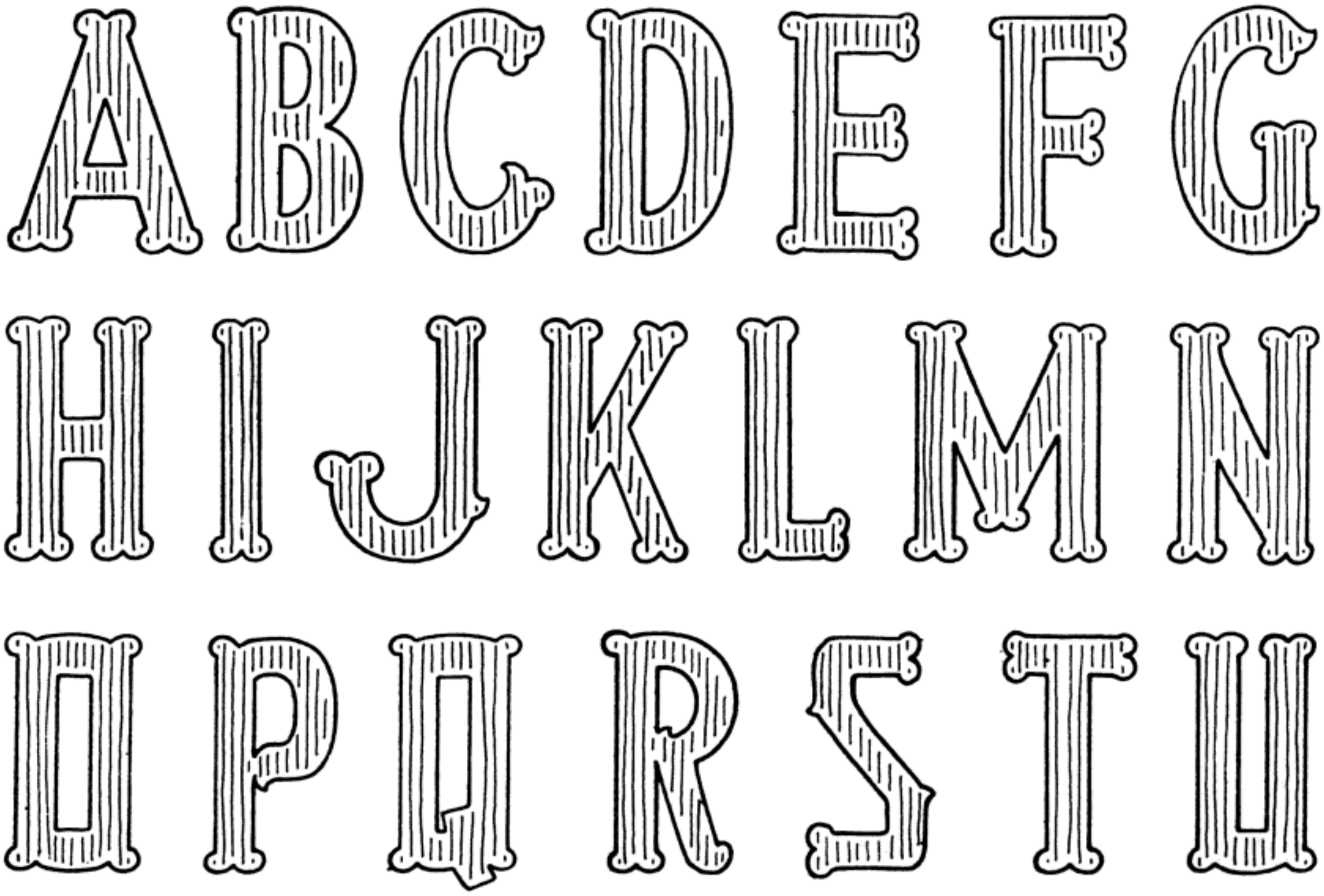




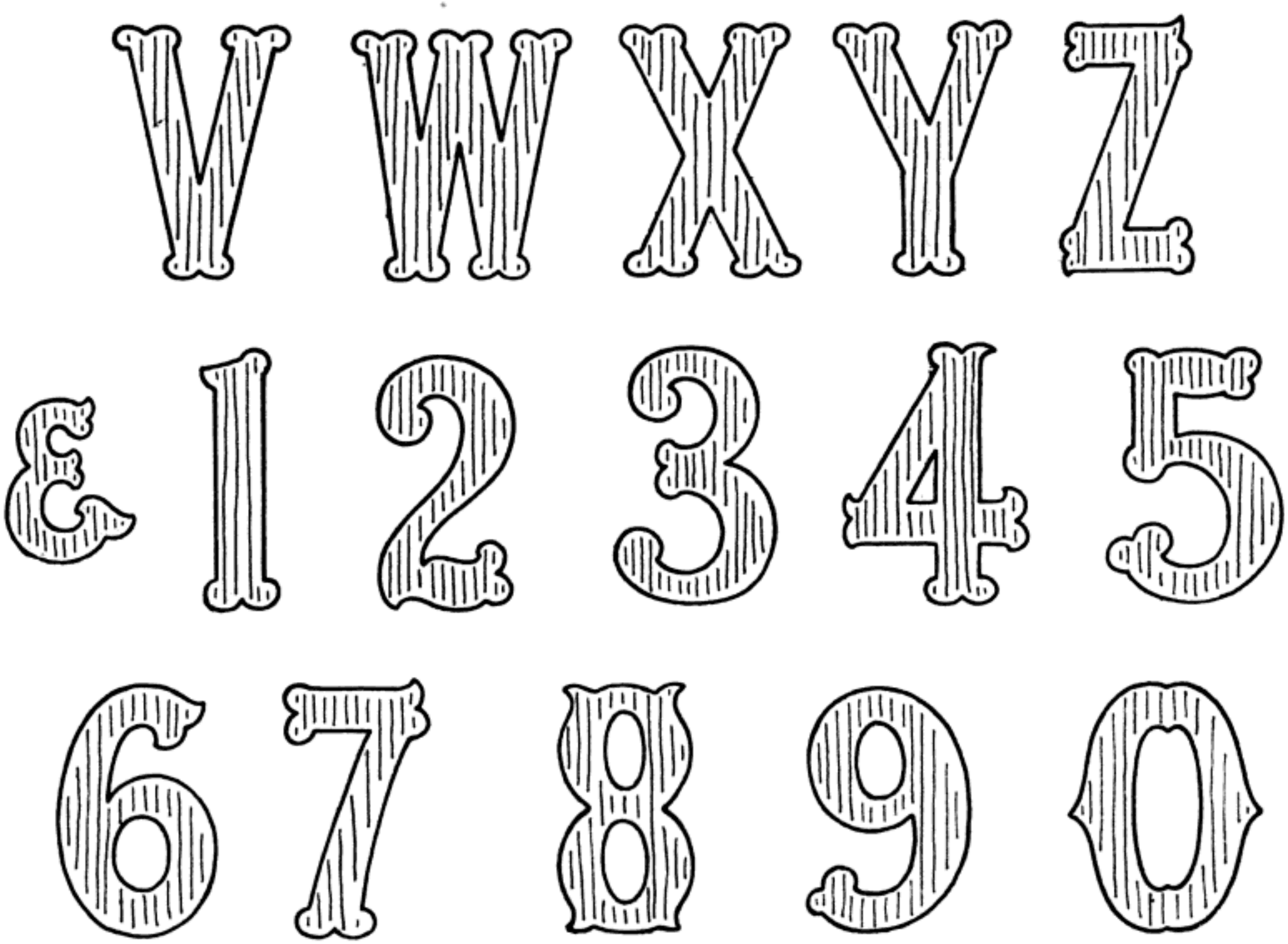


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Illus. 92. Pattern for letters and numbers.



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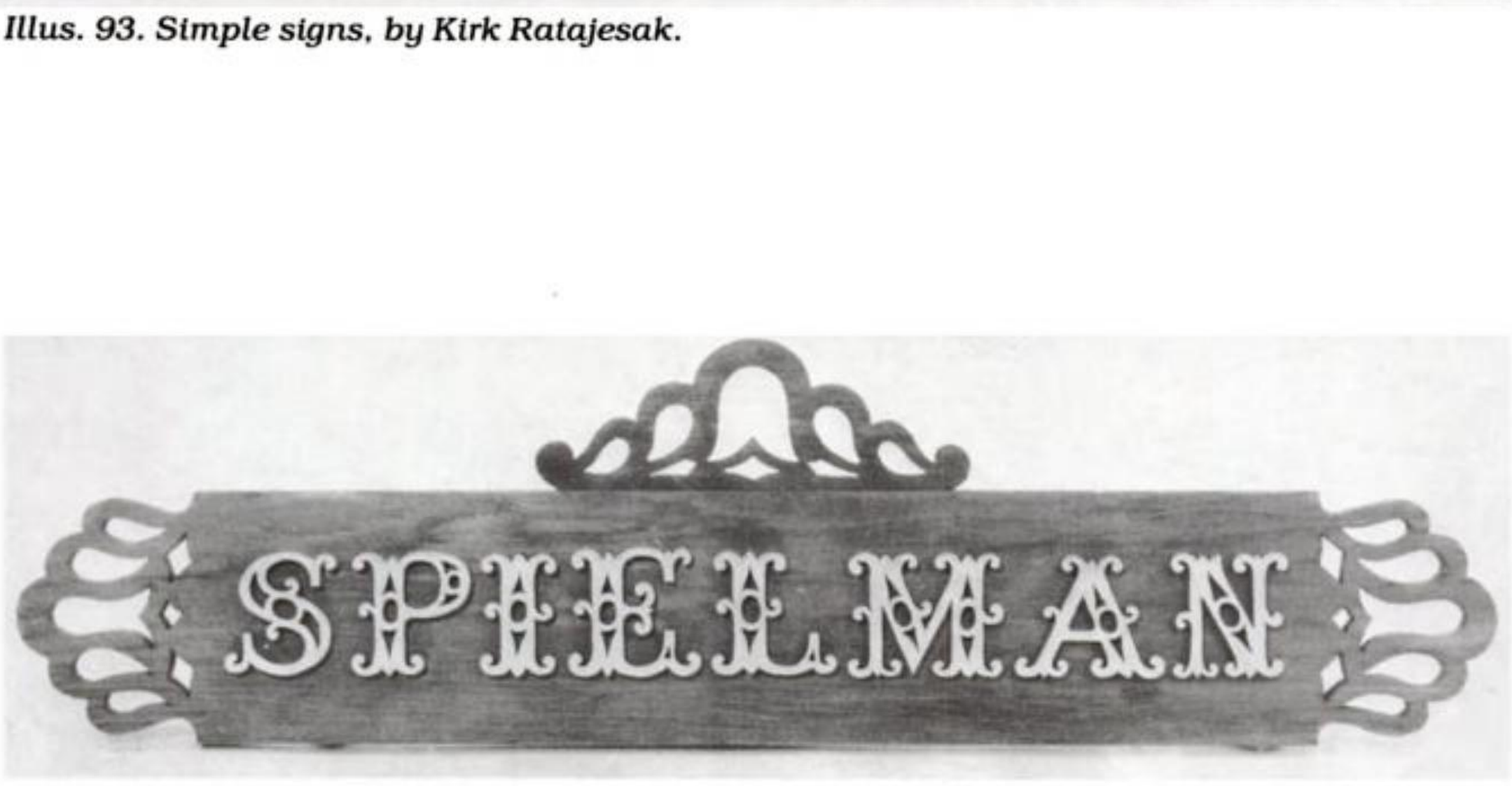


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Signs

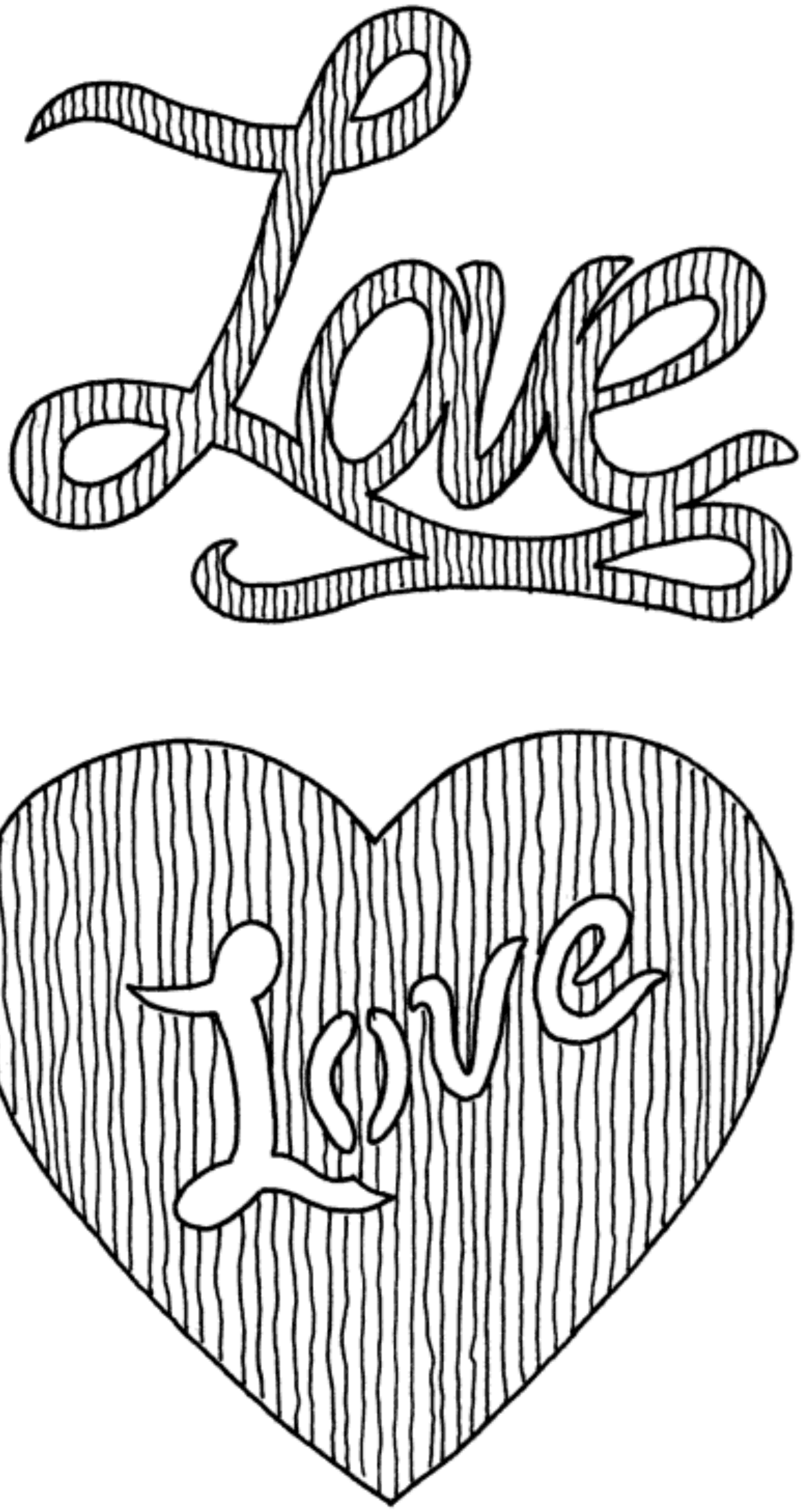


Illus. 93. Simple signs, by Kirk Ratajesak.



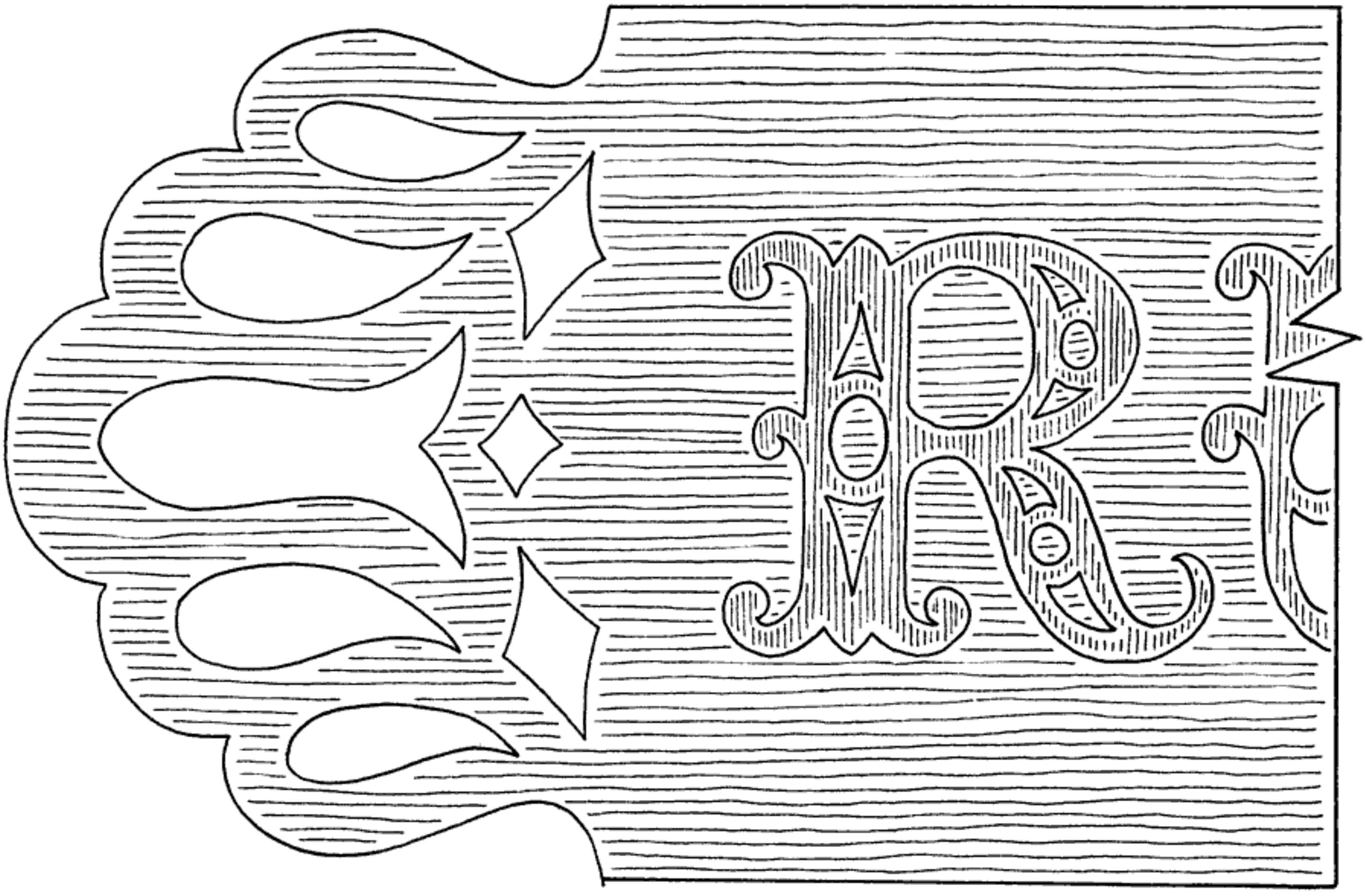
Illus. 94. Signboard with Gay Nineties lettering. The top design is optional. (Turn to pages 116–117 for the patterns.)

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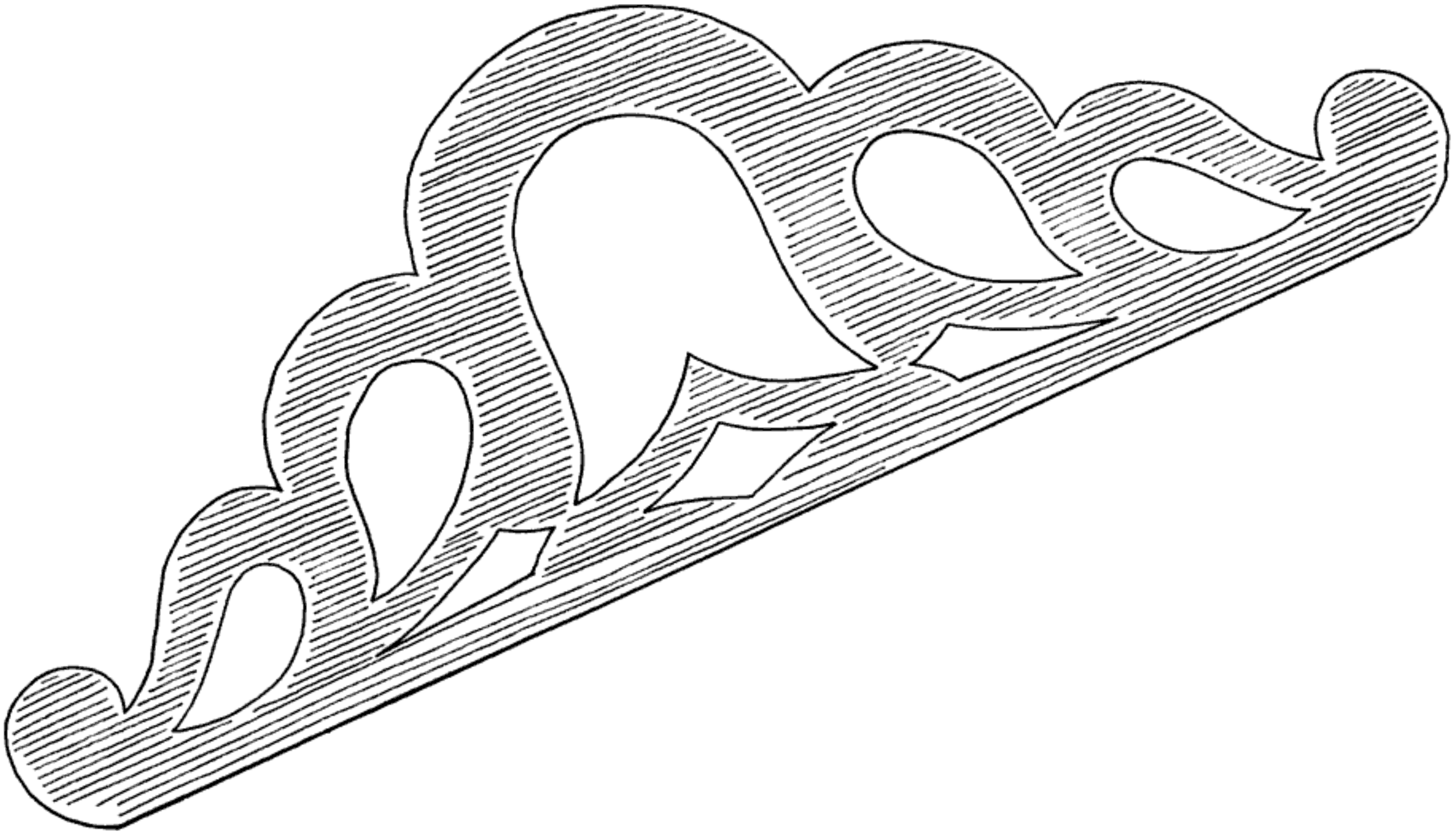
Illus. 95. Patterns, courtesy of Kirk Ratajesak.

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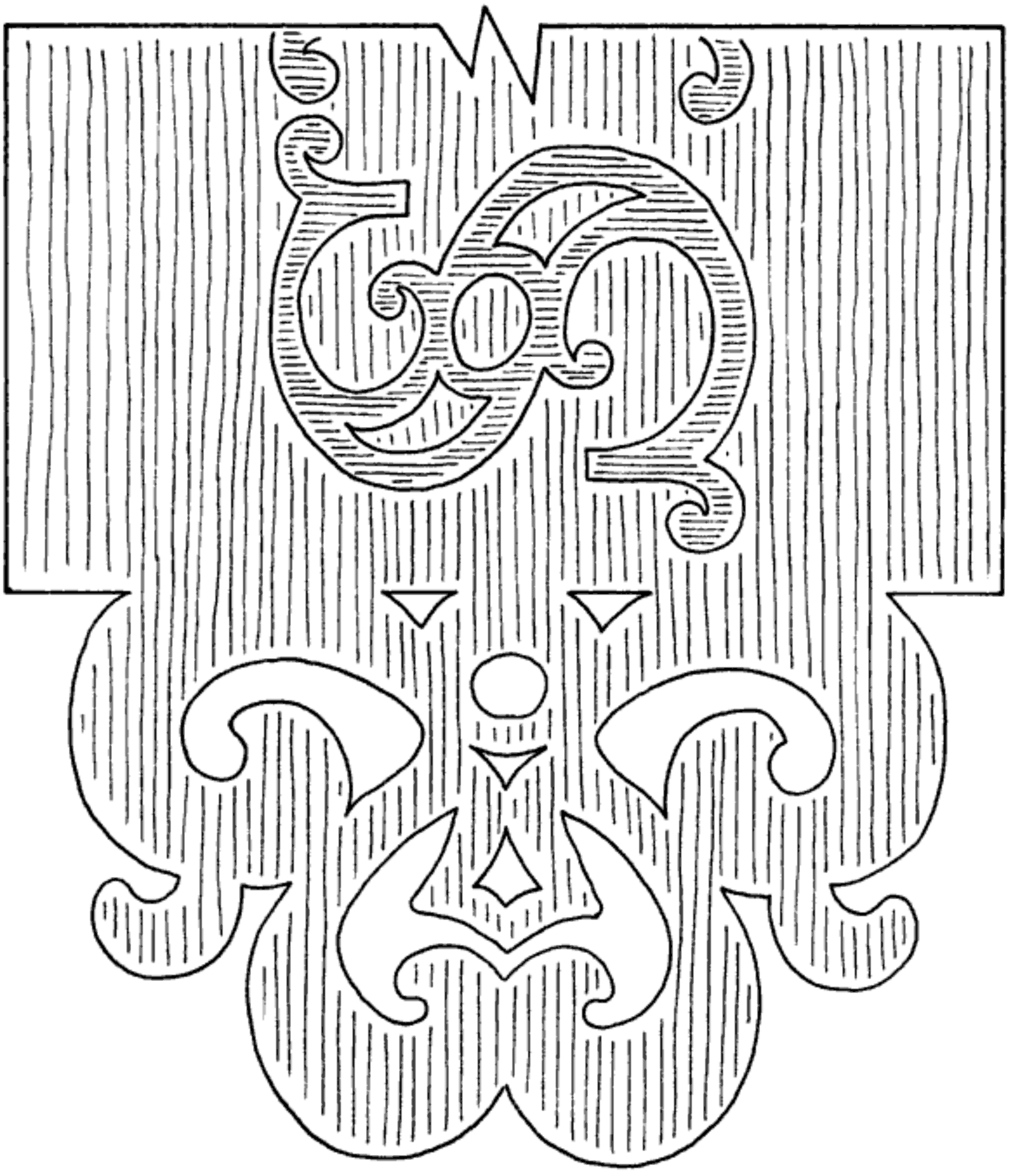
Illus. 96. Signboard pattern. This pattern is designed for one line of letters.

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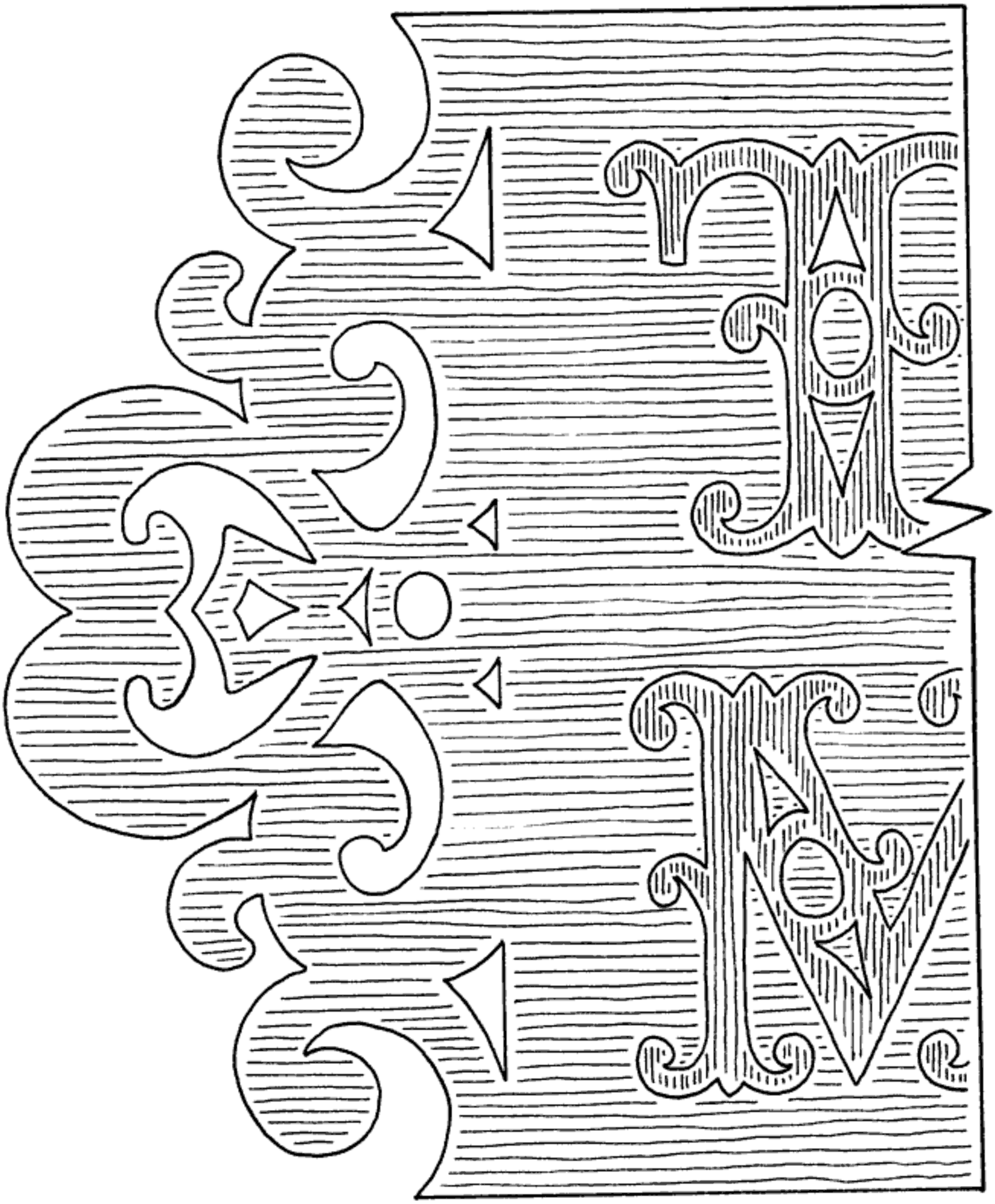
Illus. 97. Pattern for optional signboard ornament.

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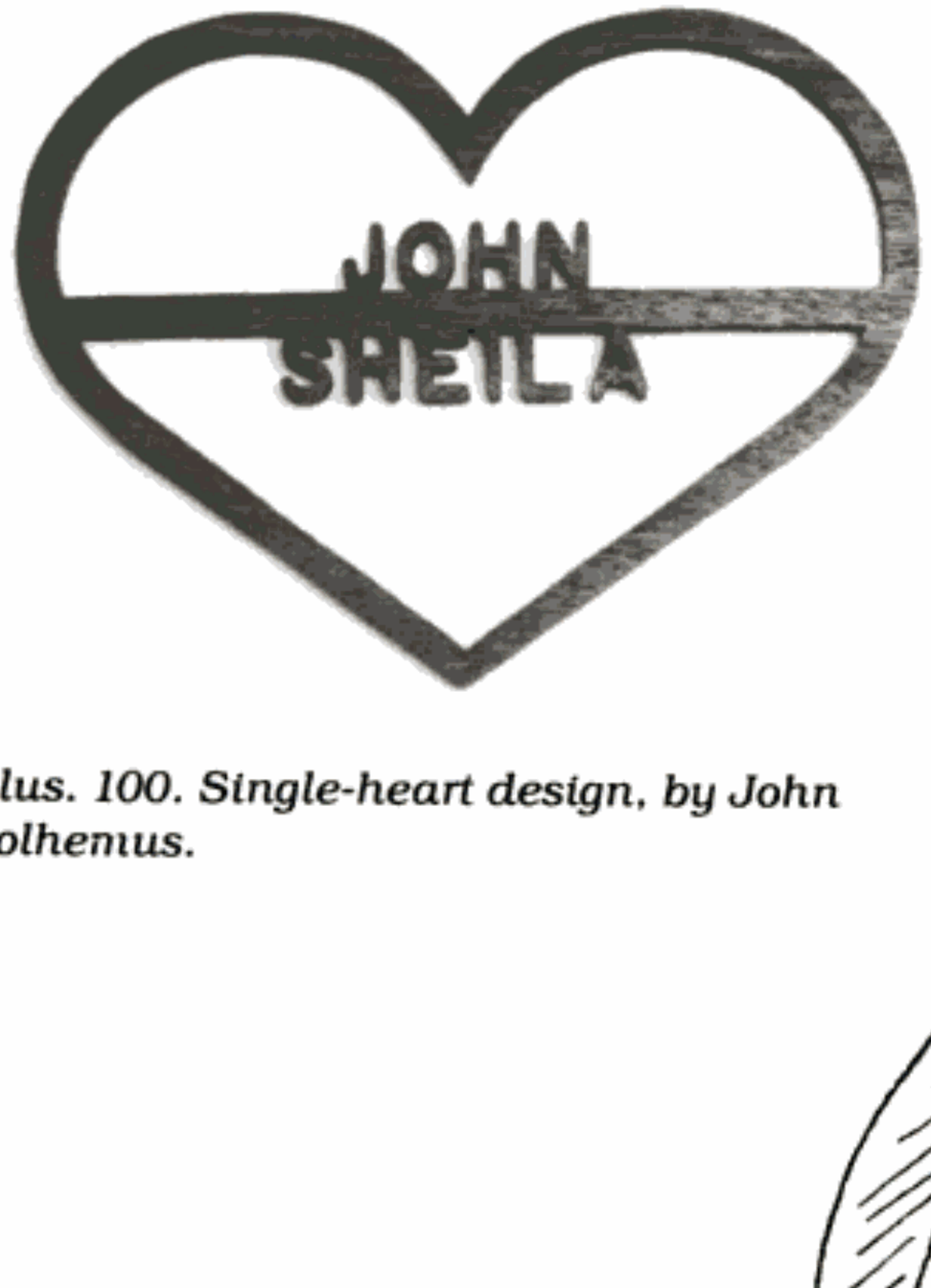
Illus. 98. Signboard pattern, designed for one line of letters.

Copyrighted material

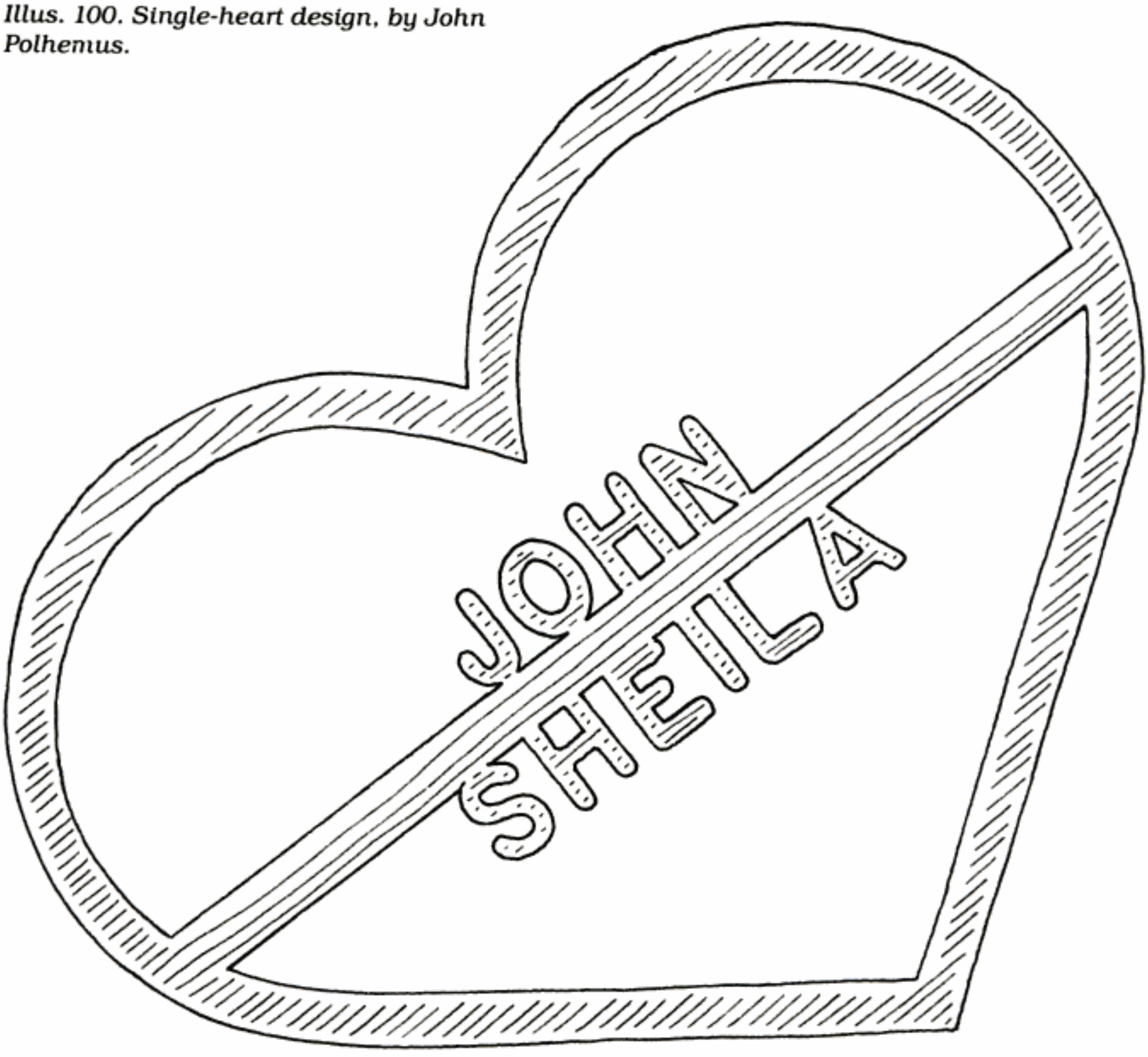


Illus. 99. Signboard pattern, designed for two lines of letters.

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Illus. 100. Single-heart design, by John Polhemus.



Illus. 101. Single-heart pattern.

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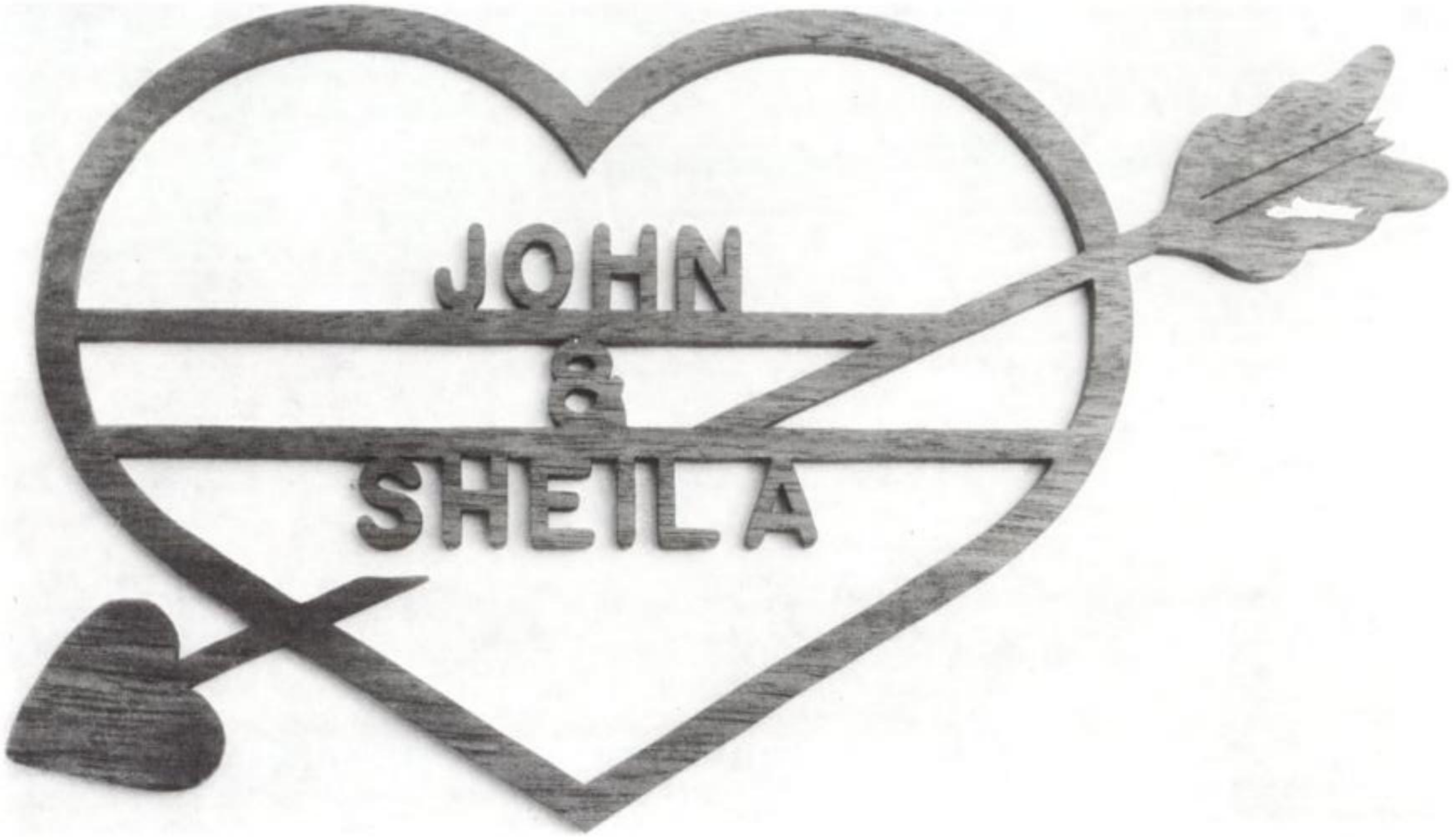
A B C D E F G H I
J K L M N O P Q
R S T U V W X
Y Z 1 2 3 4 5 6
7 8 9 0

Illus. 102. Basic-alphabet pattern.



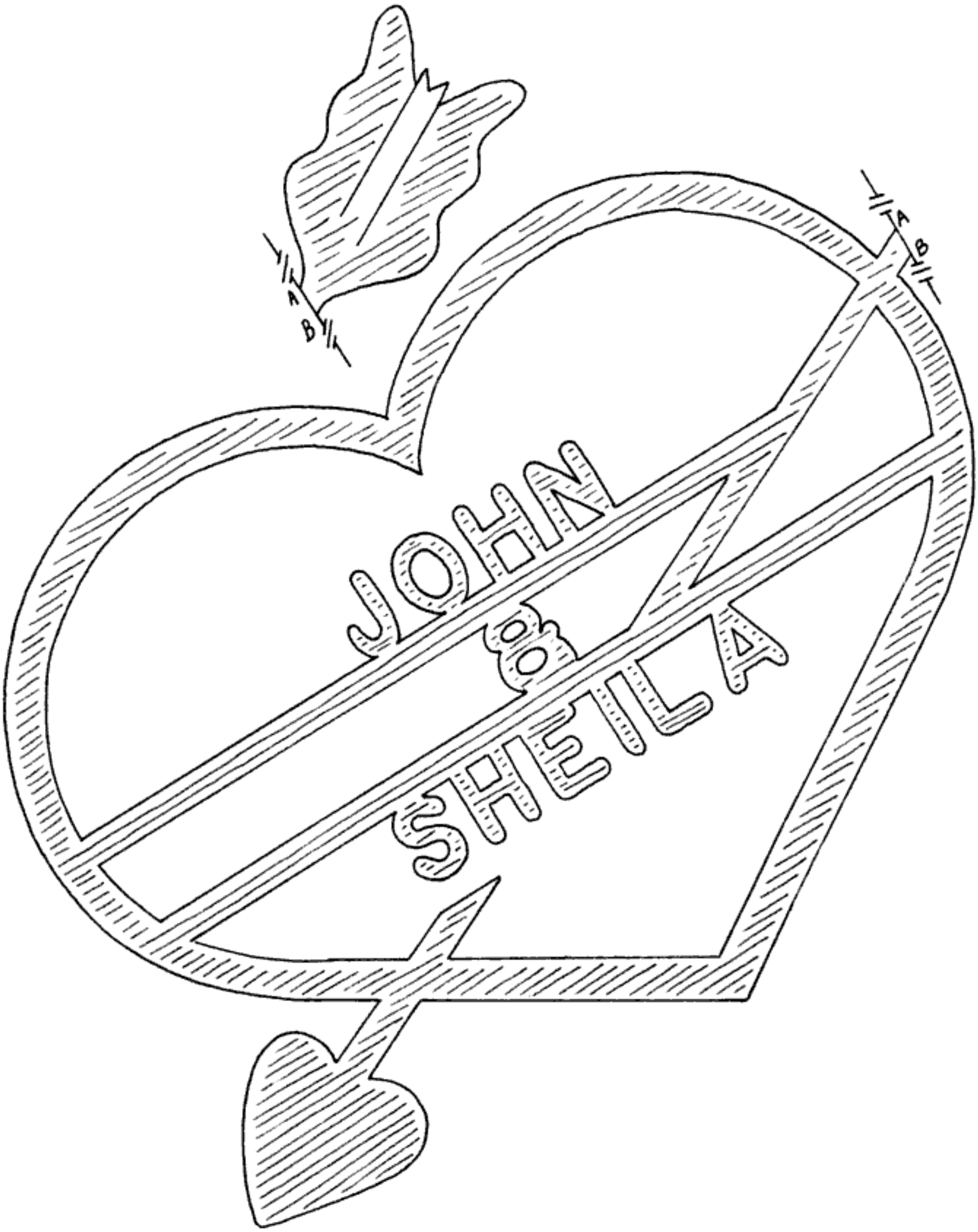
Illus. 103. Desk names, using the same basic alphabet shown in Illus. 102.

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Illus. 104. Single heart and arrow, designed by John Polhemus.

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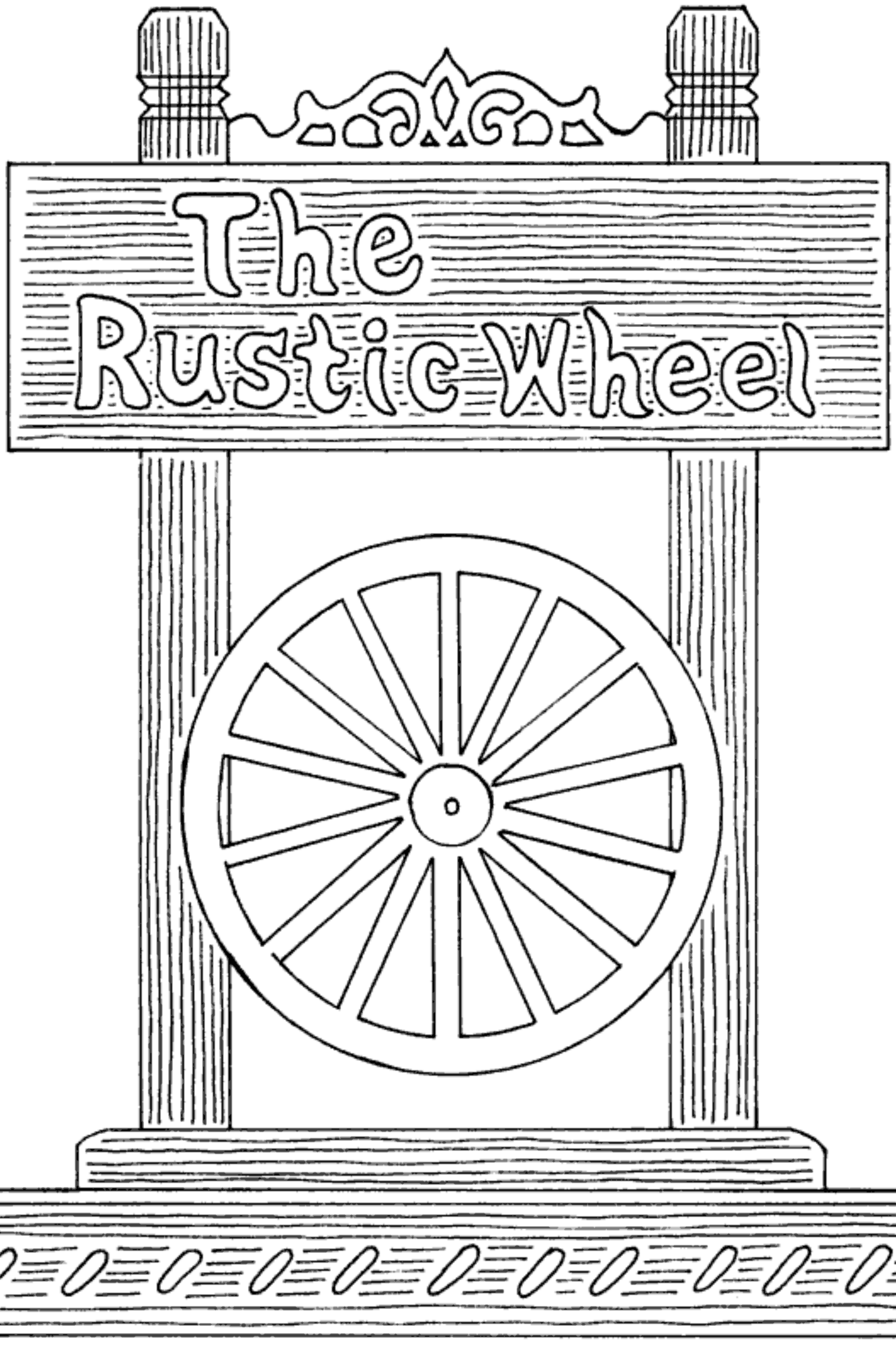
Illus. 105. Single heart and arrow.

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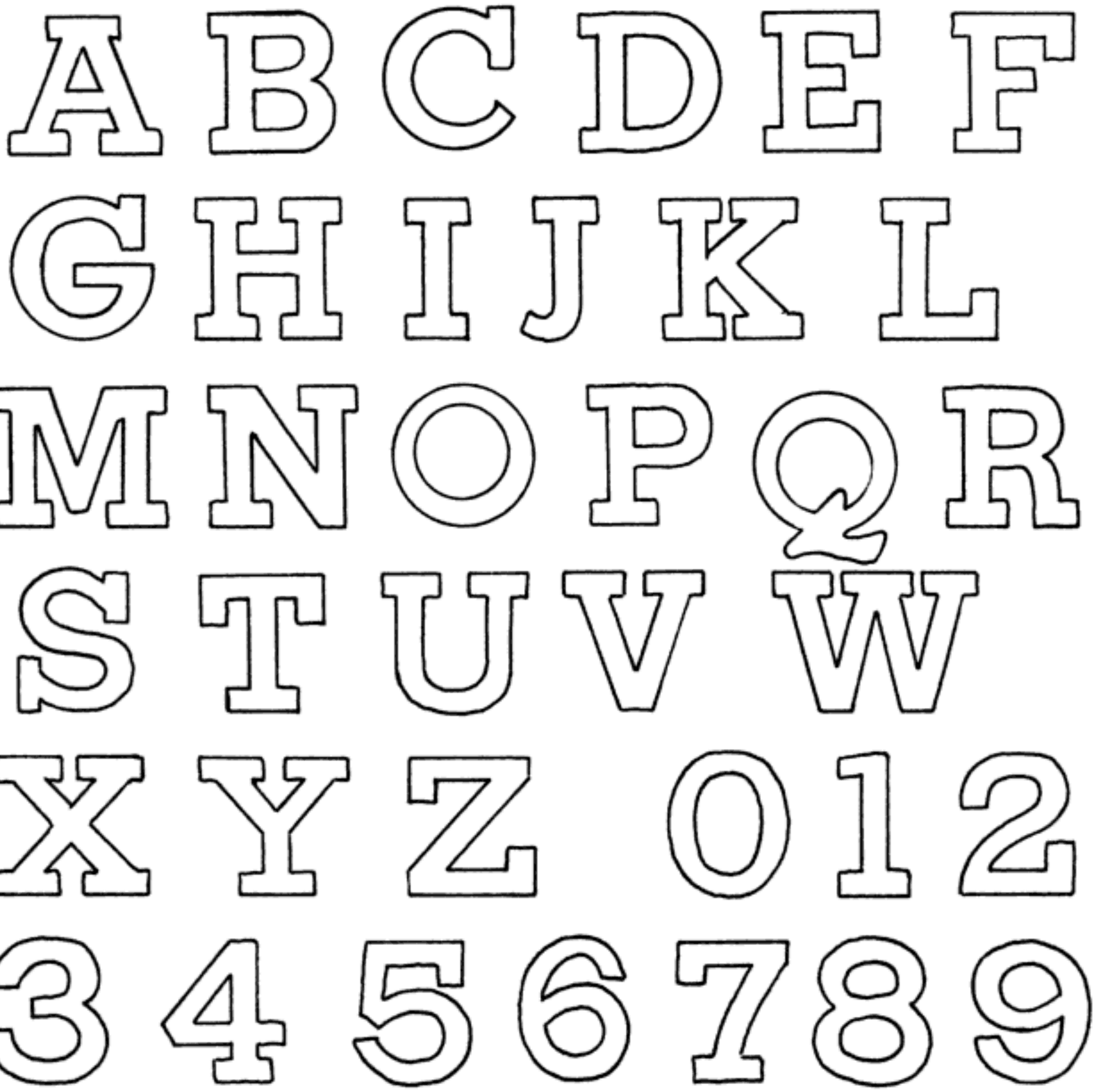
Illus. 106. Small desk sign.

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Illus. 107. Pattern for small desk sign.

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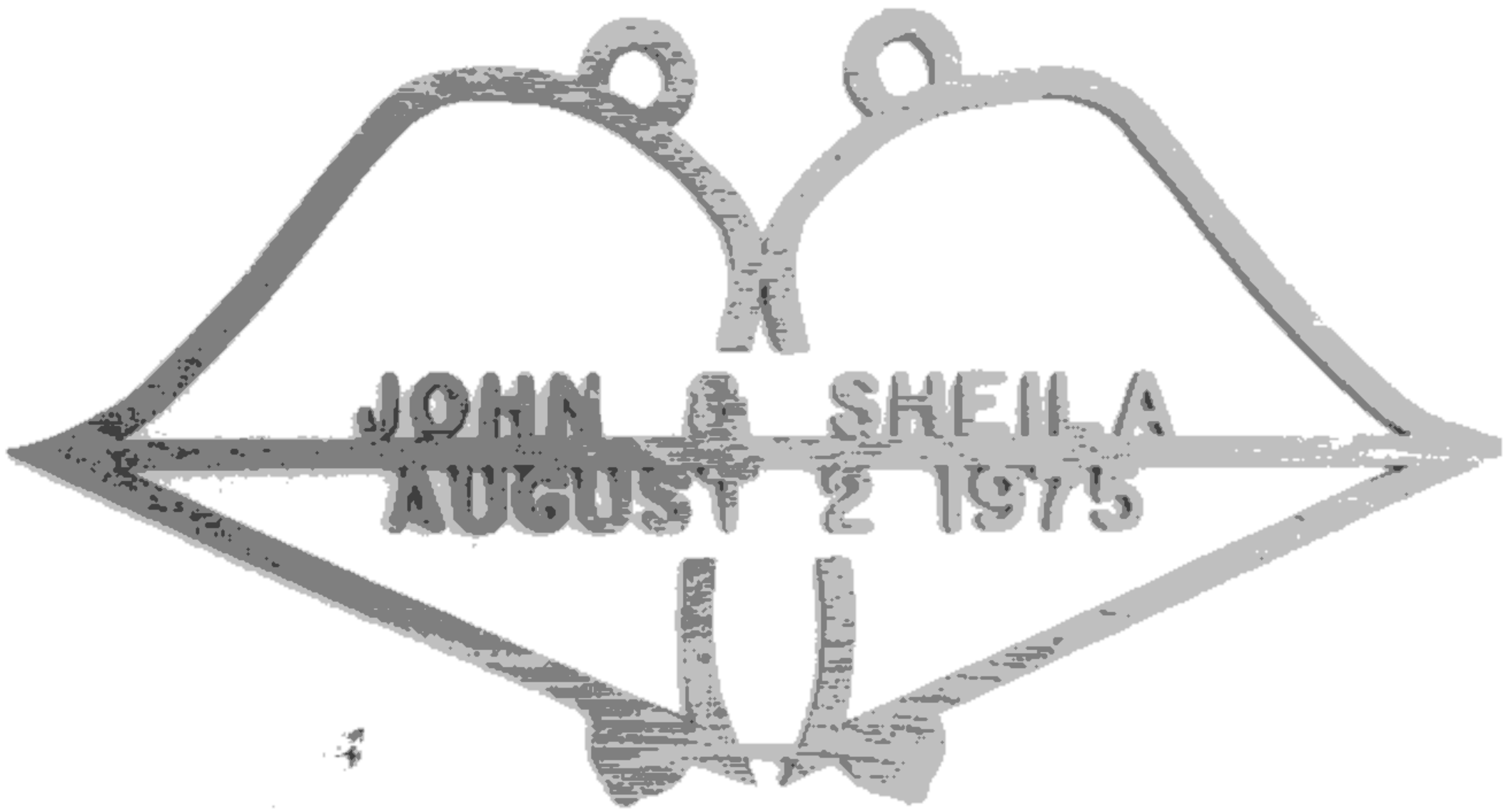


Illus. 108. Alphabet pattern.

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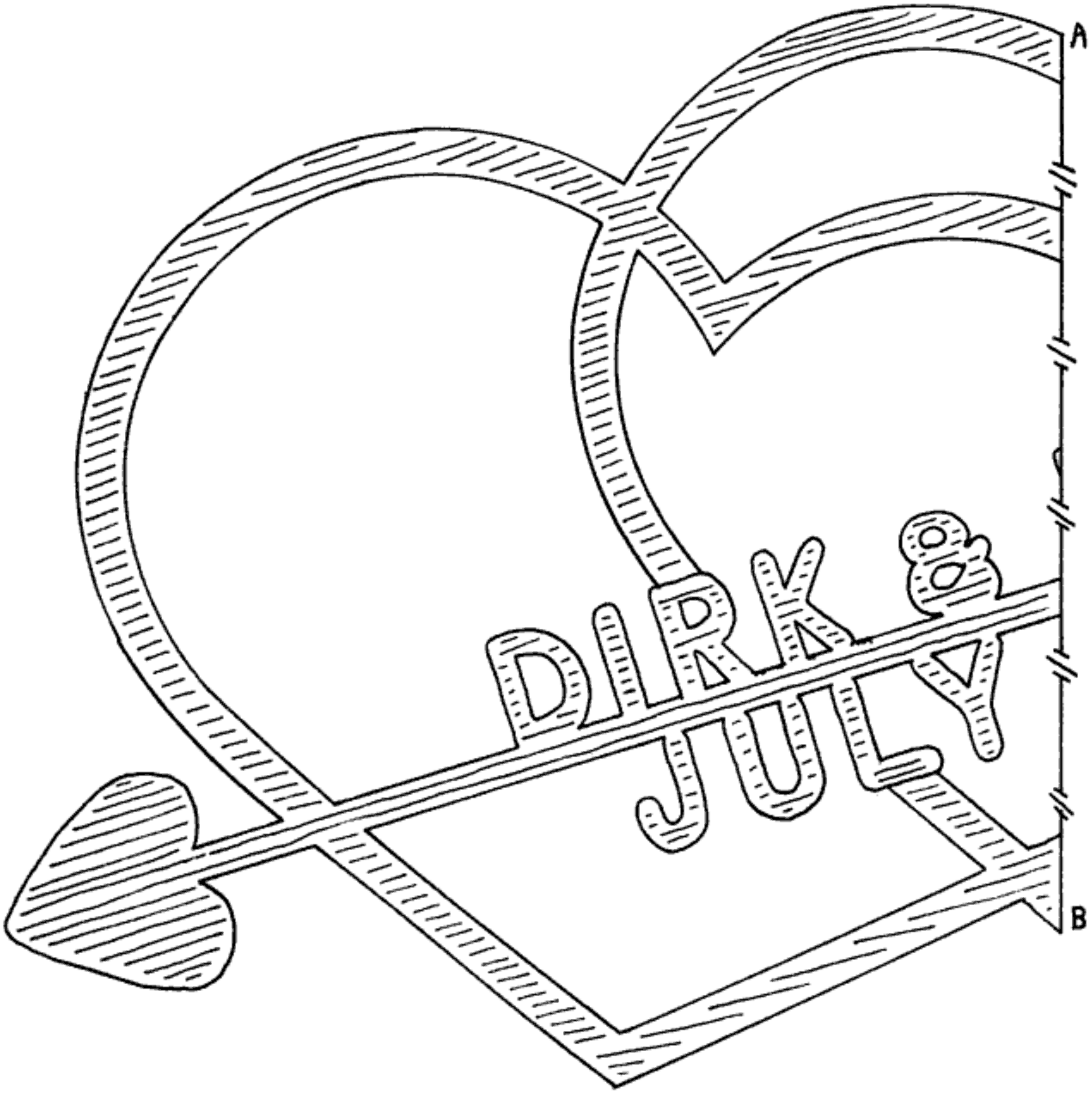


Illus. 109. Double heart and arrow, courtesy of John Polhemus. (The pattern follows.)



Illus. 110. Wedding bells, designed by John Polhemus. (See pages 130–131 for the pattern.)

Copyrighted material

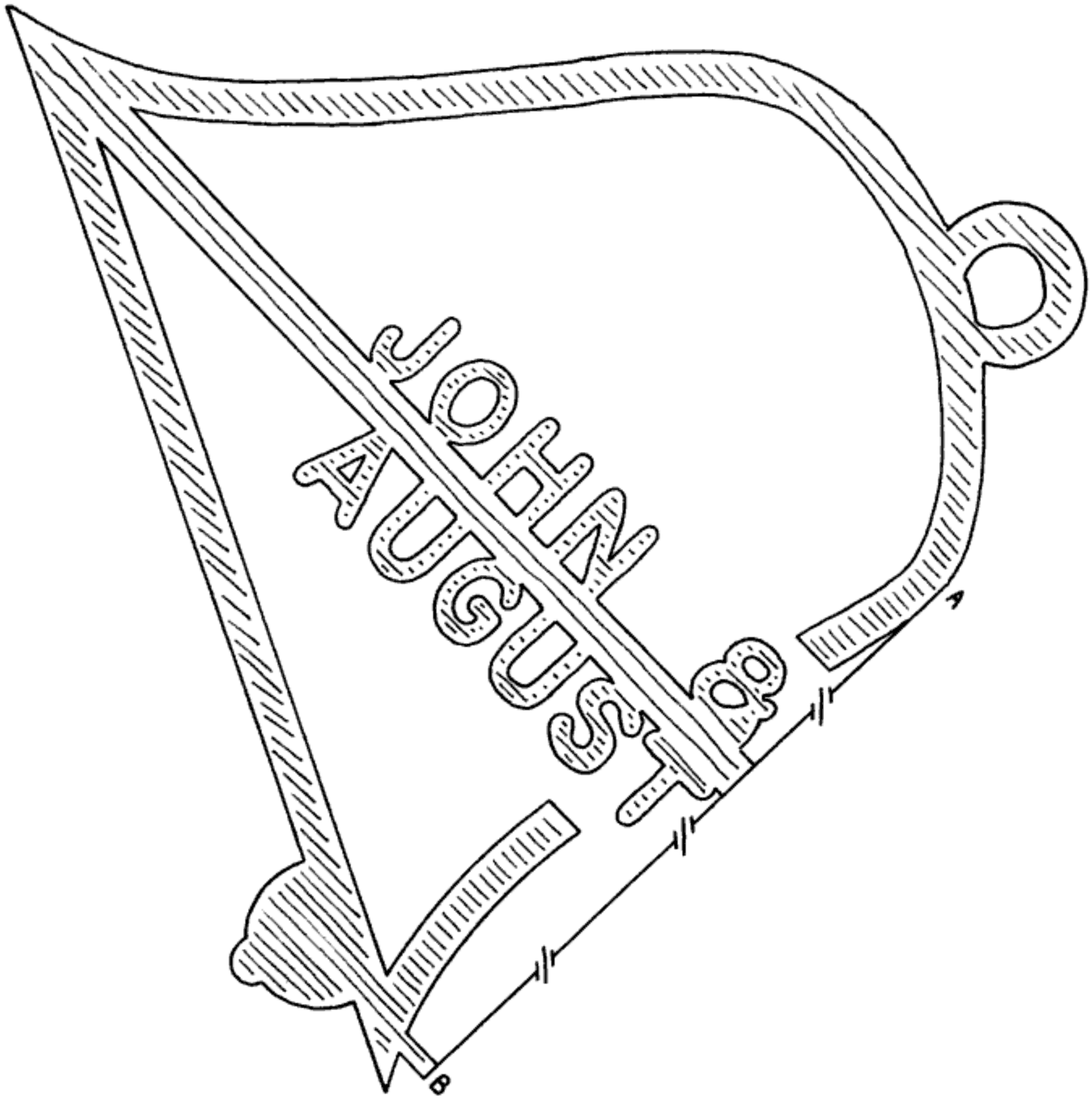


Illus. 111. Pattern for double heart and arrow.

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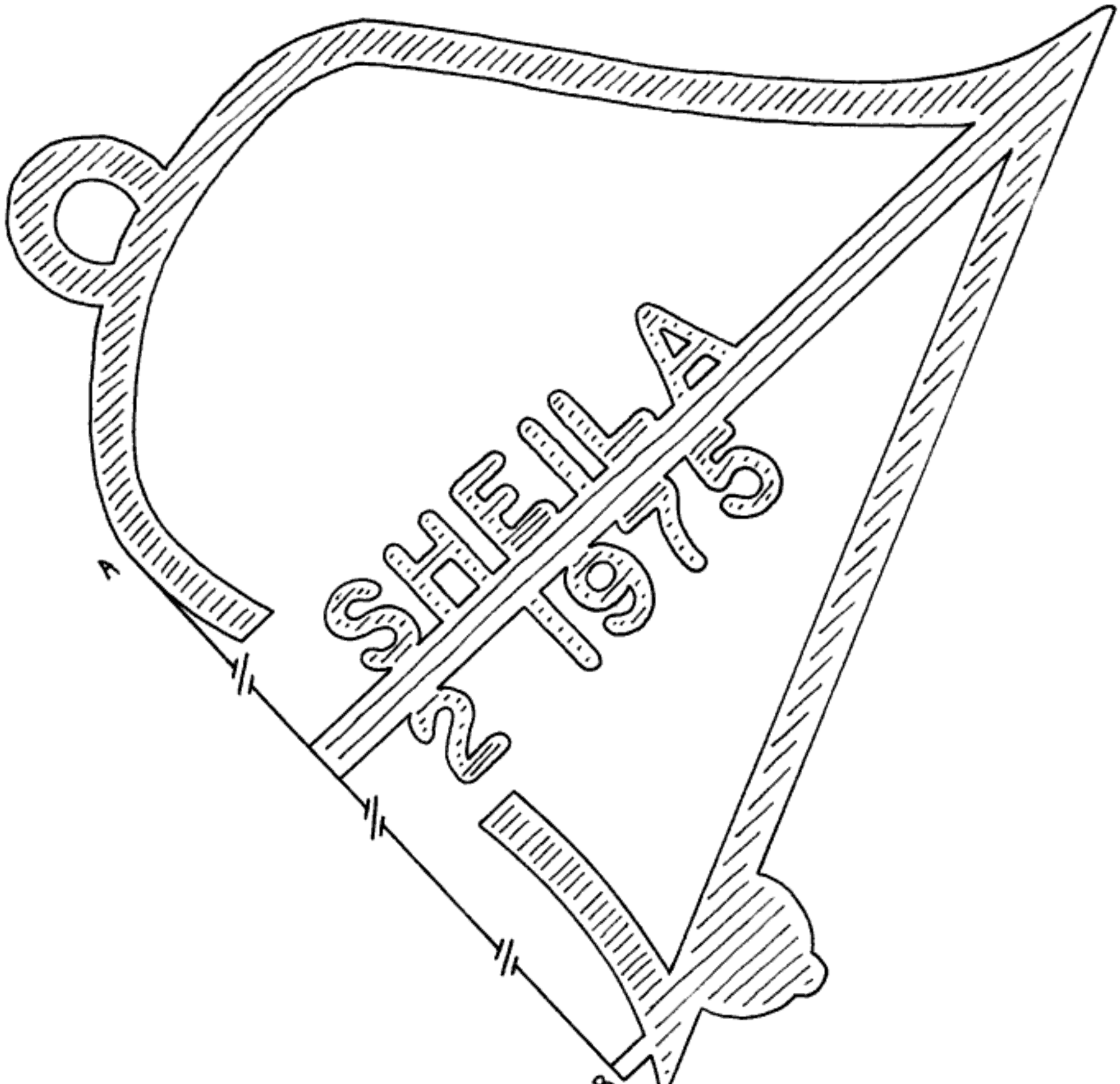


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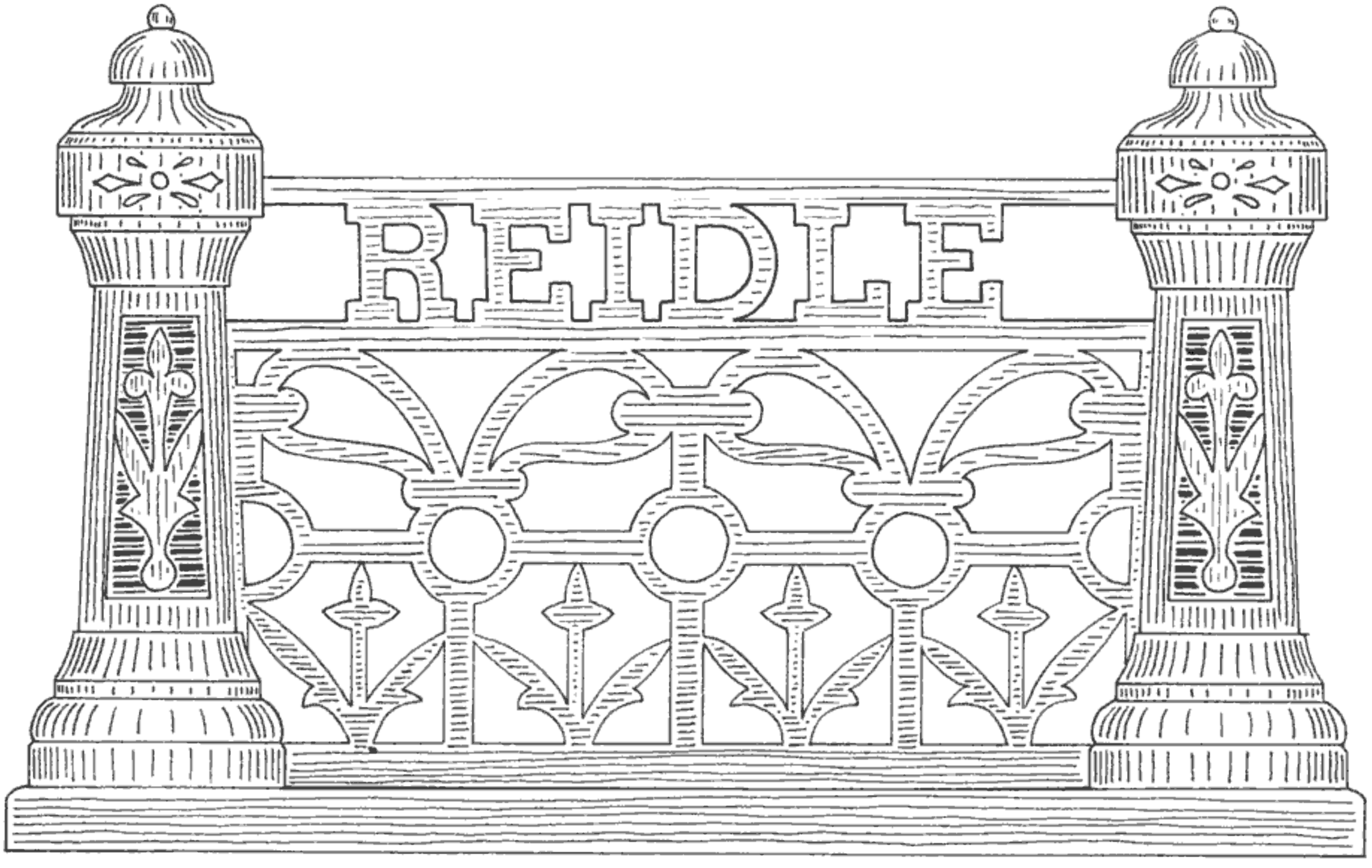
Illus. 112. Wedding bells pattern.

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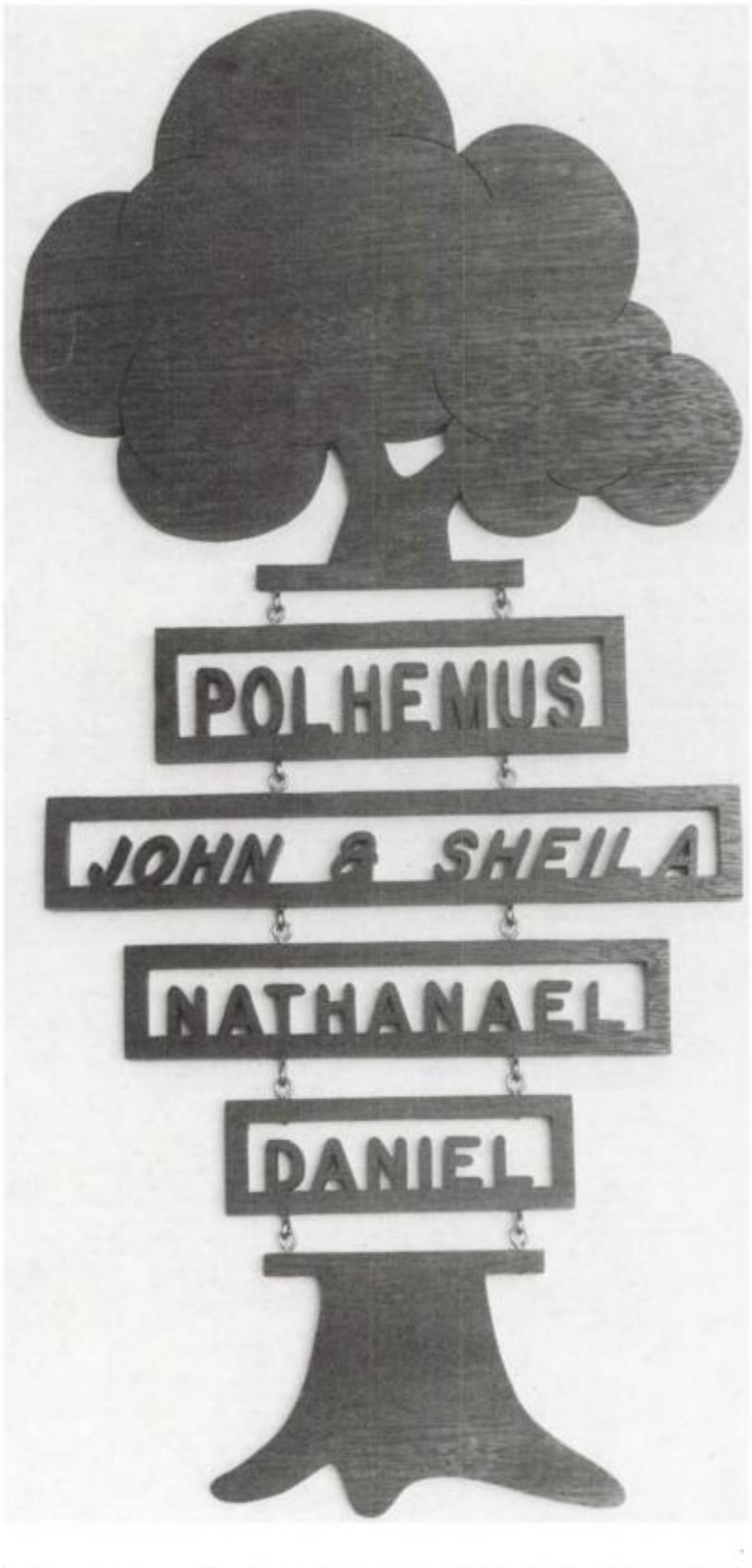


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Illus. 113. Pattern for sign with posts. The posts can be turned and slotted or halved. Or, the entire pattern can simply be sawn out of flat stock.

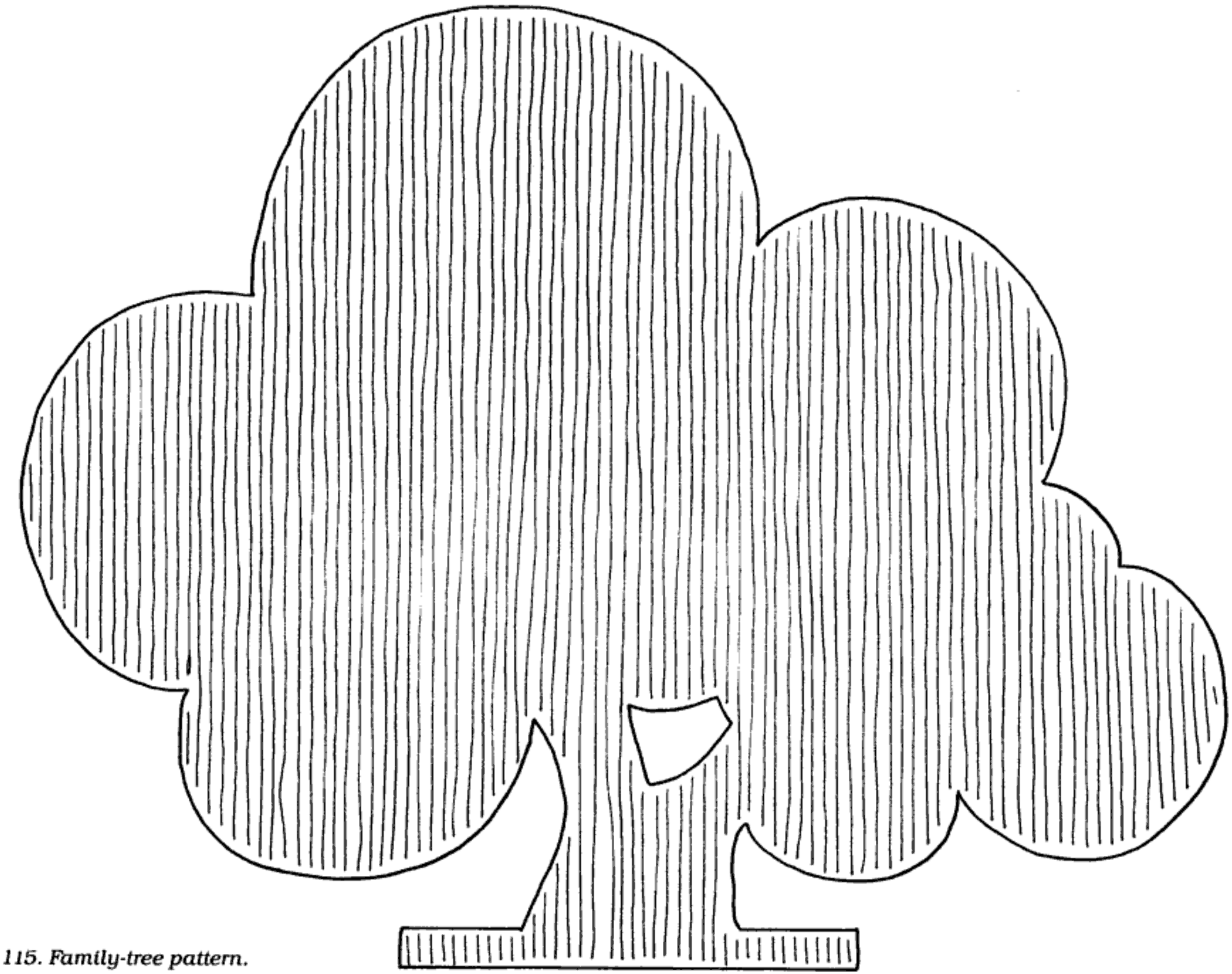


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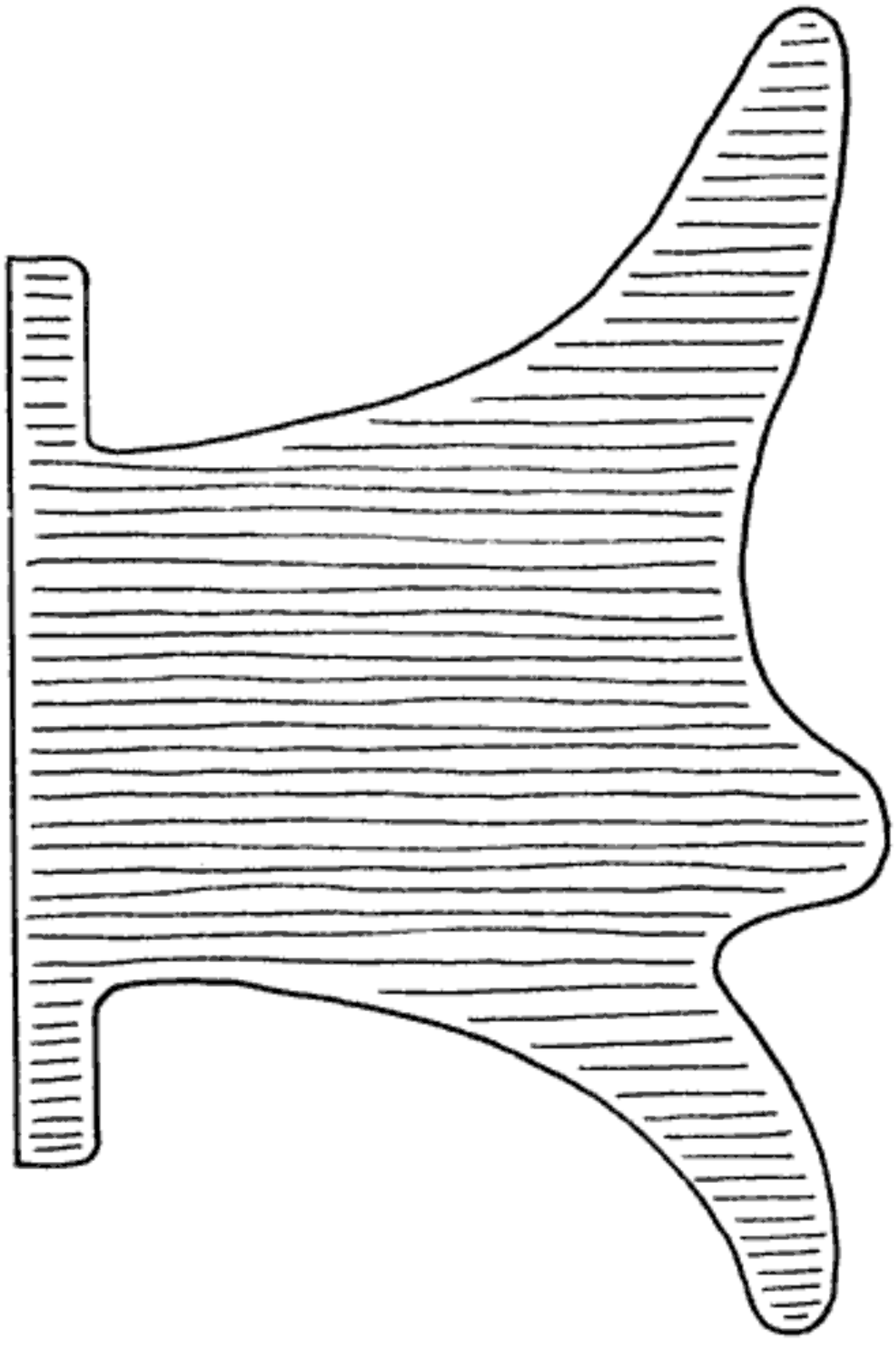
Illus. 114. Family tree, developed by John Polhemus. (The pattern follows.)

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Illus. 115. Family-tree pattern.

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Illus. 116. Pattern for sign with bird and flowers. The shaded areas indicate glued-on overlays.

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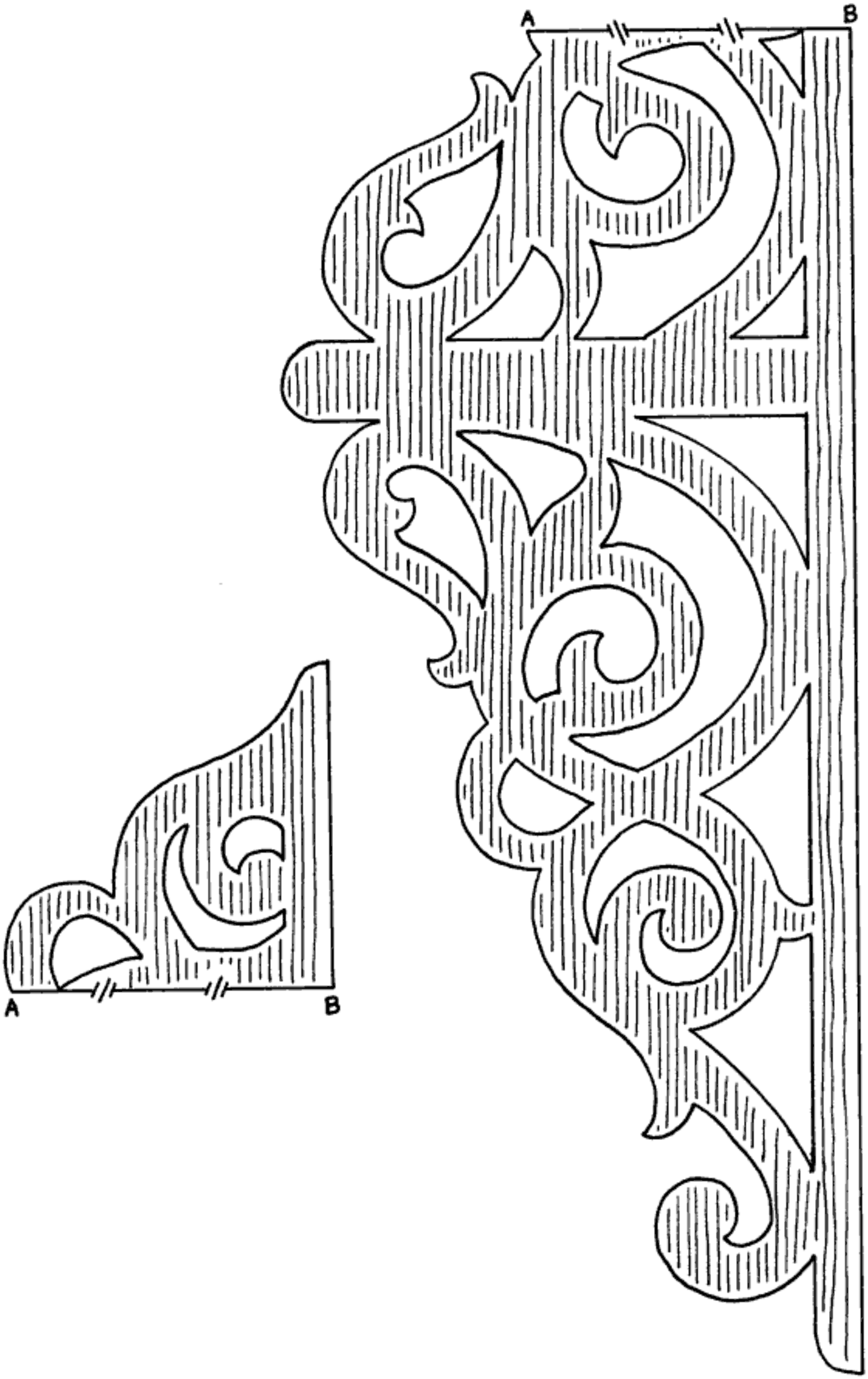
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Shelves



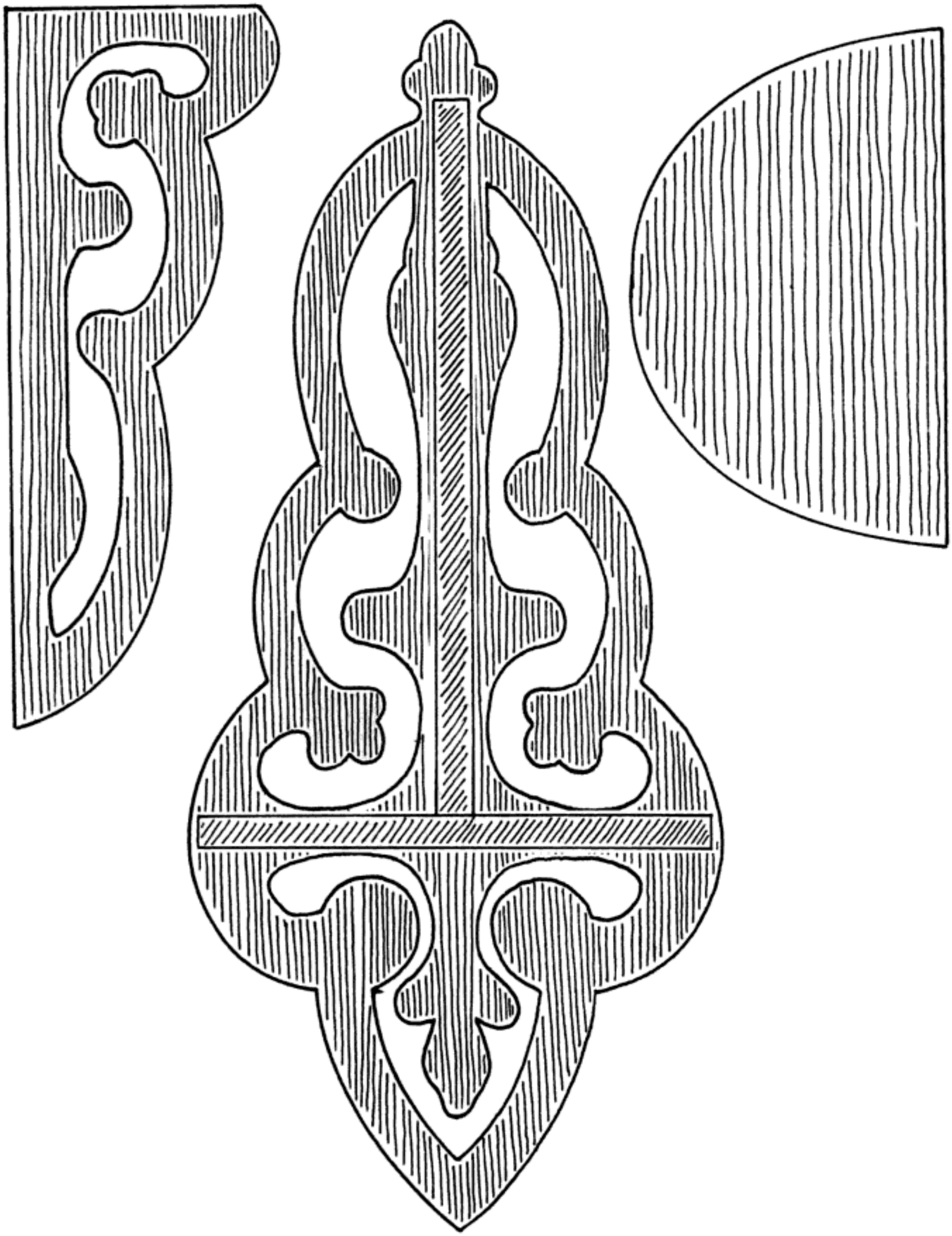
Illus. 117. This photo shows how one basic bracket design (lower middle) can be used to make several different kinds of shelves. When making corner shelves, add the thickness of the stock along one edge of just one bracket member to allow for the overlap of a simple nailed butt joint. Corner shelves are one fourth of a circle. Wall shelves can be made to whatever length you desire between brackets.

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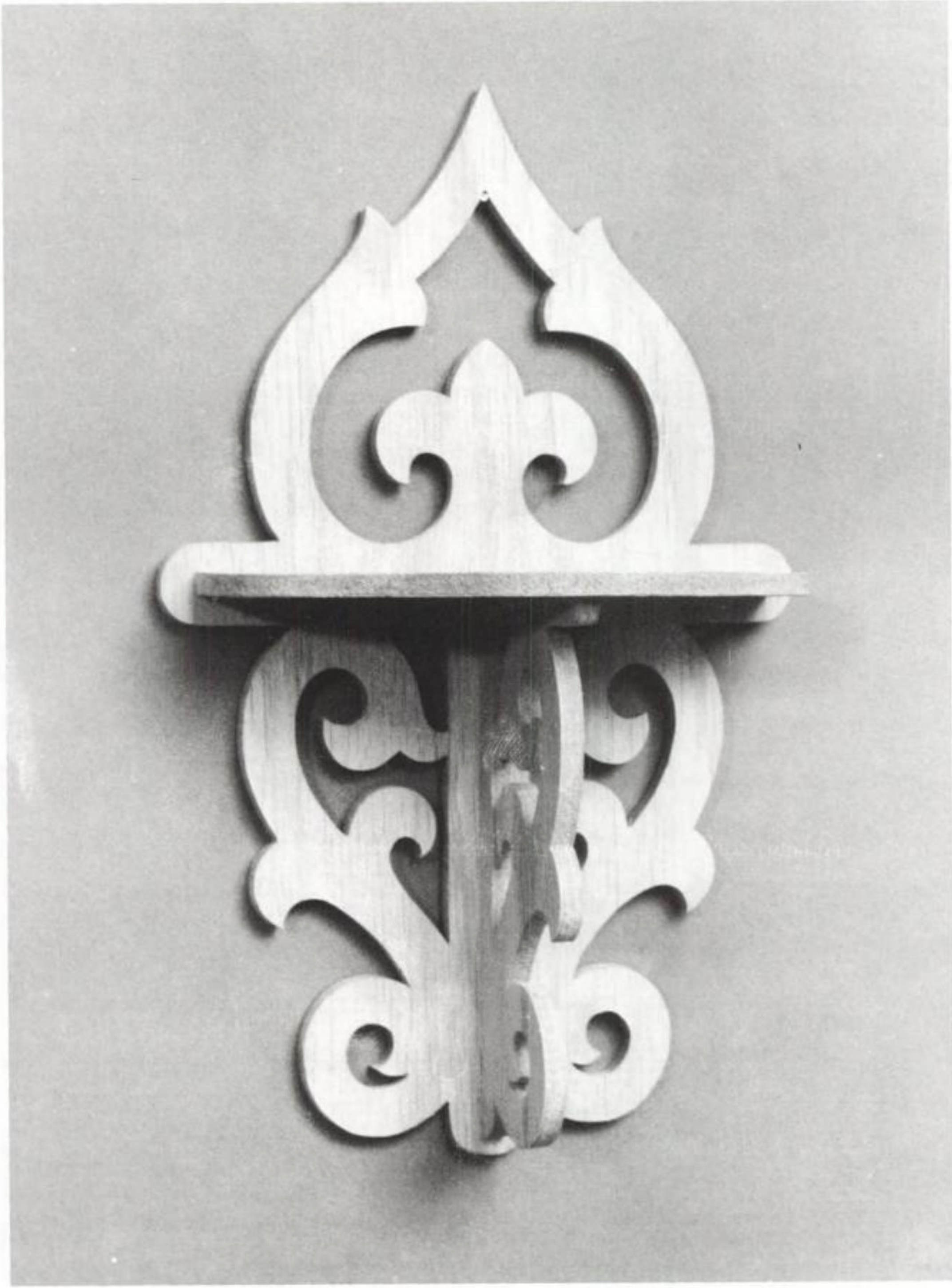
Illus. 118. Bracket pattern for shelves shown in Illus. 117.

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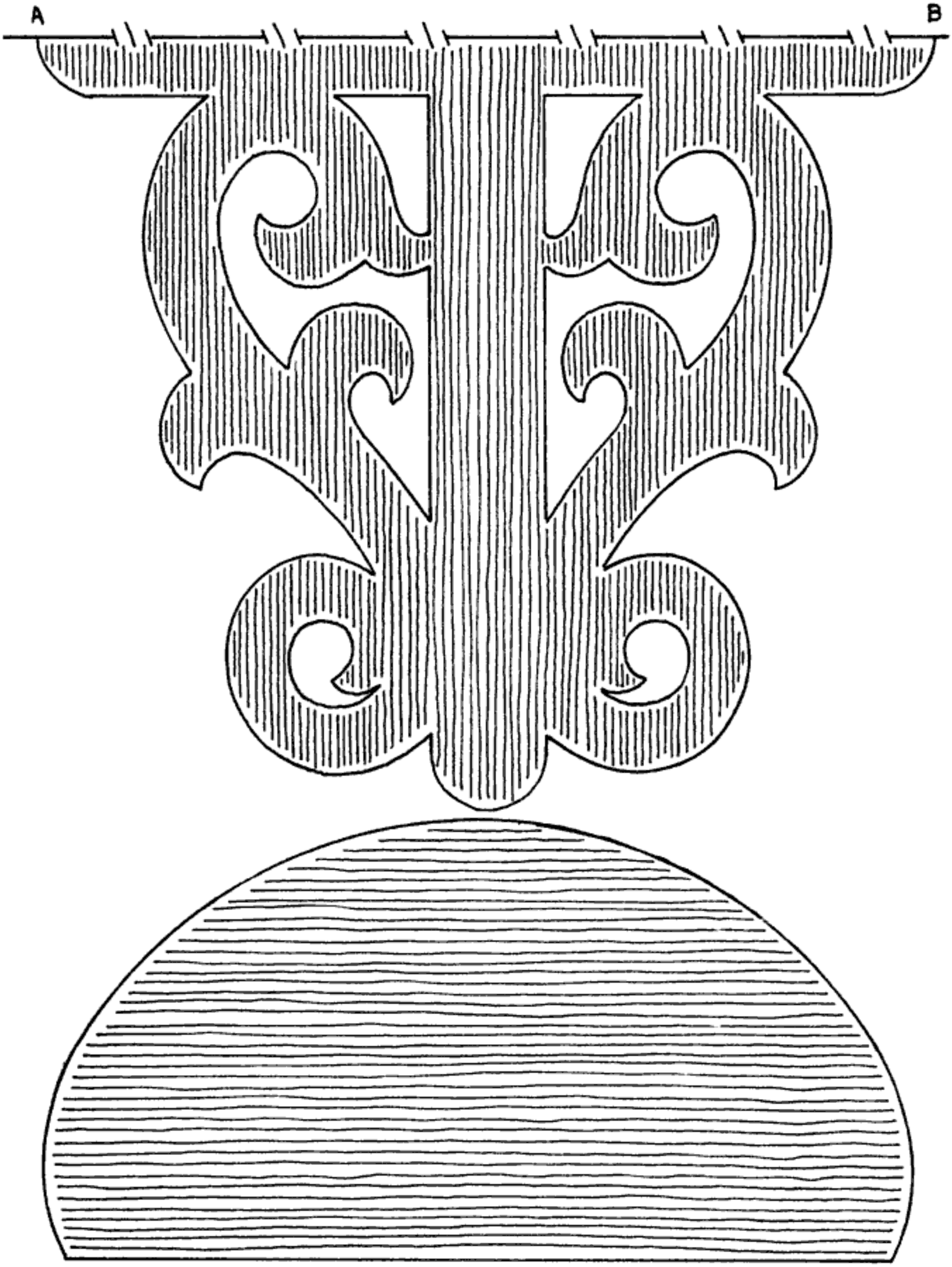
Illus. 119. Shelf pattern.

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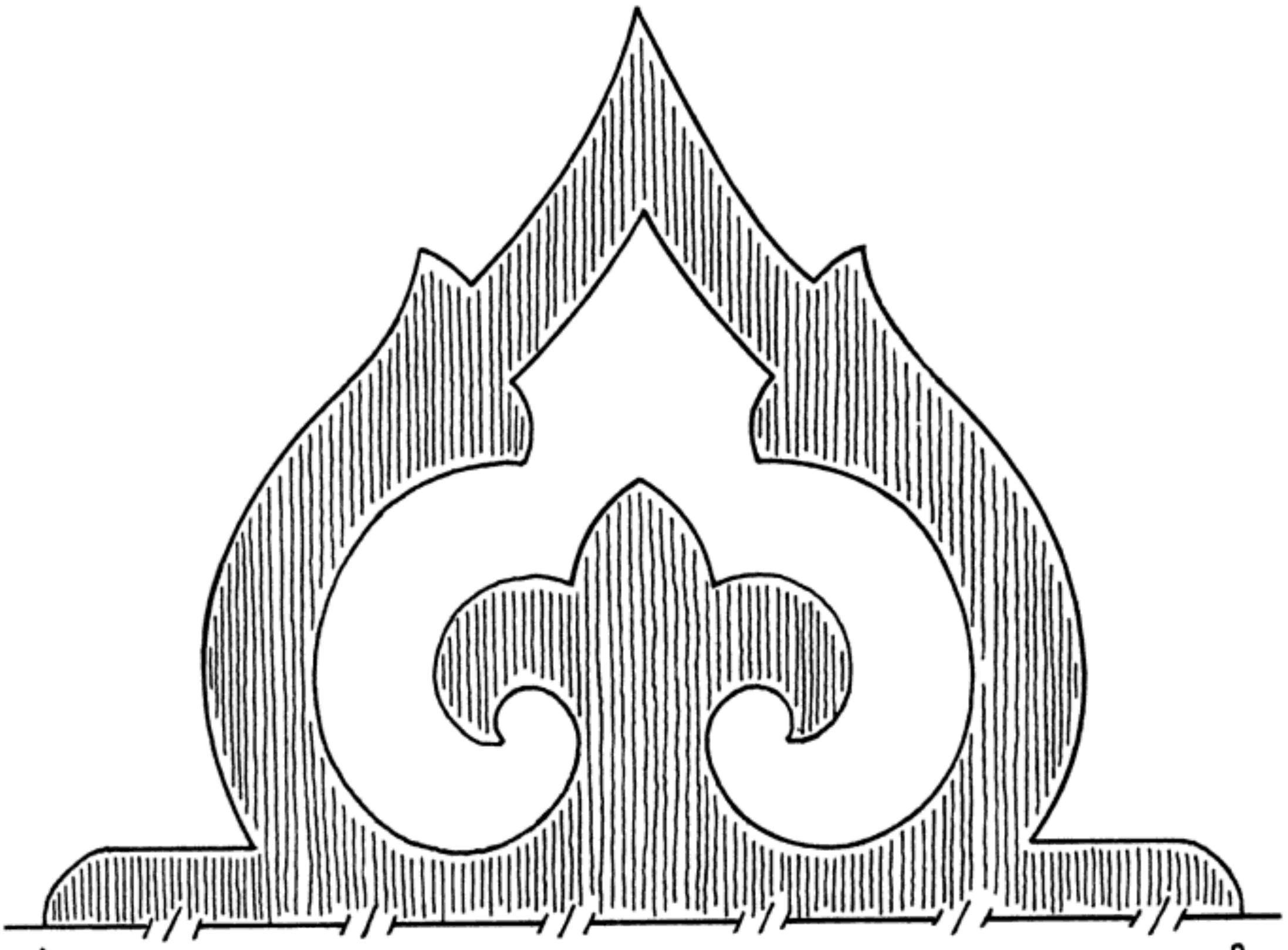
Illus. 120. Shelf design, by Kirk Ratajesak. (The pattern follows.)

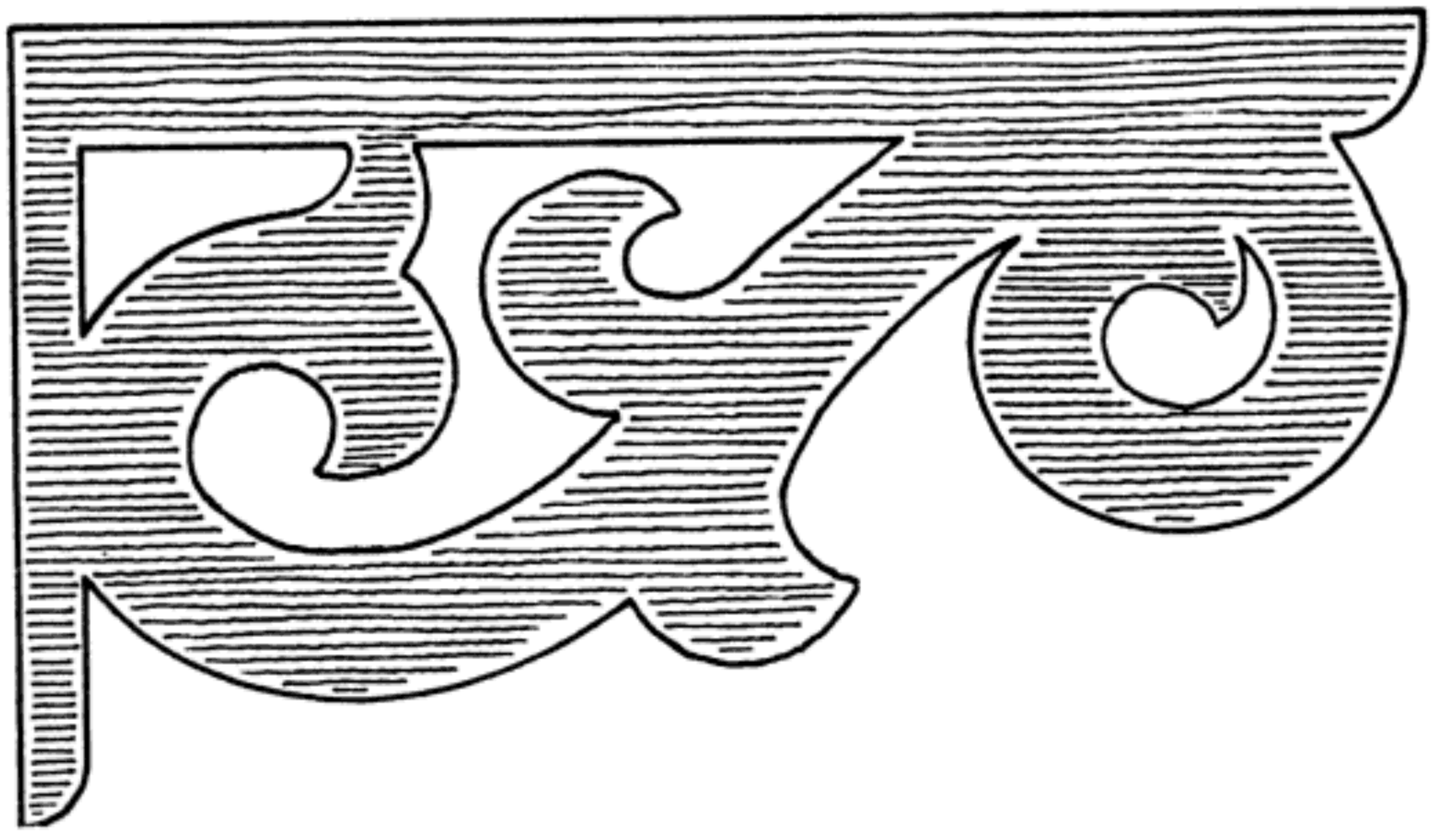
Copyrighted material



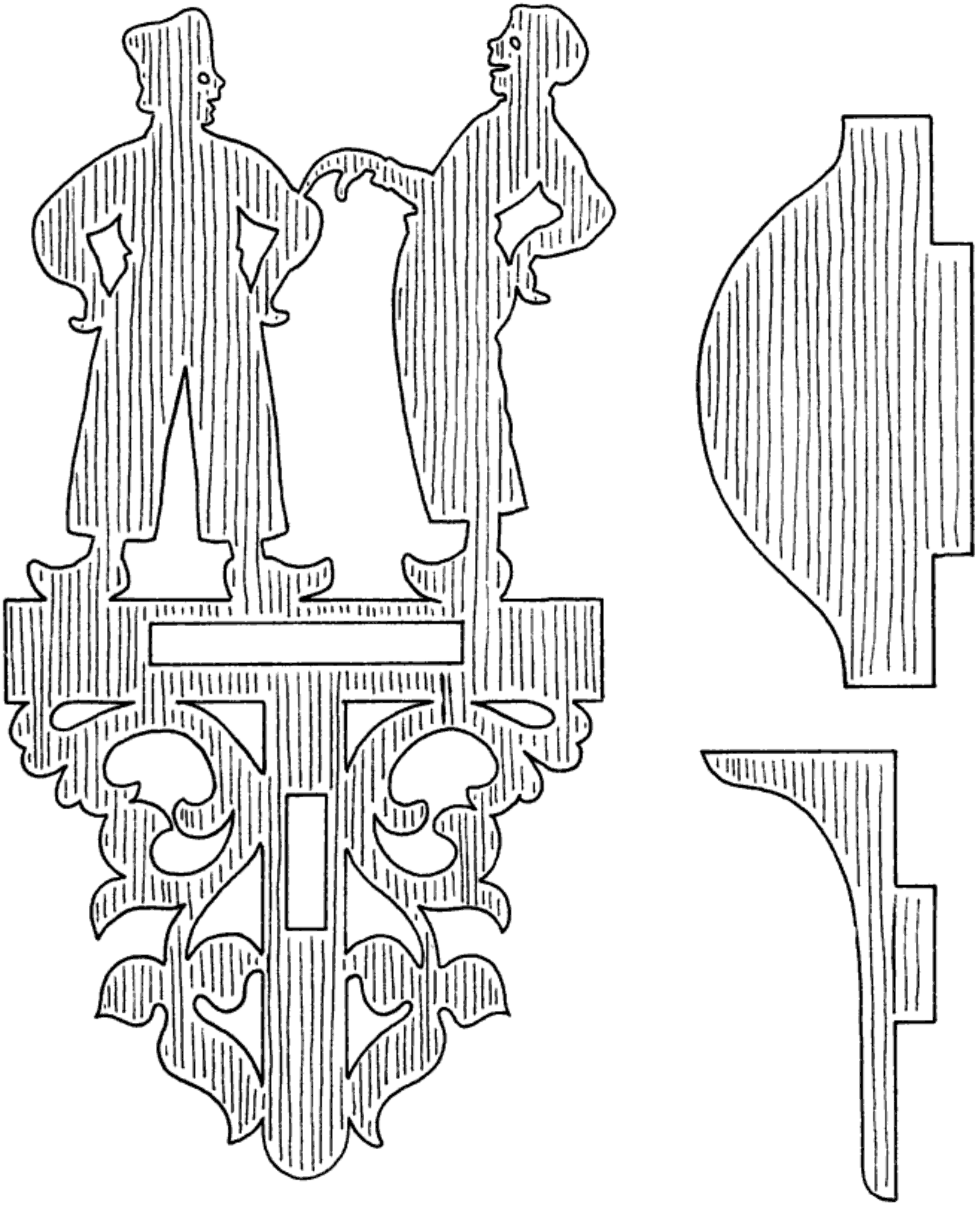
Illus. 121. Shelf pattern. (Continued on the next page.)

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Illus. 122. Shelf pattern.

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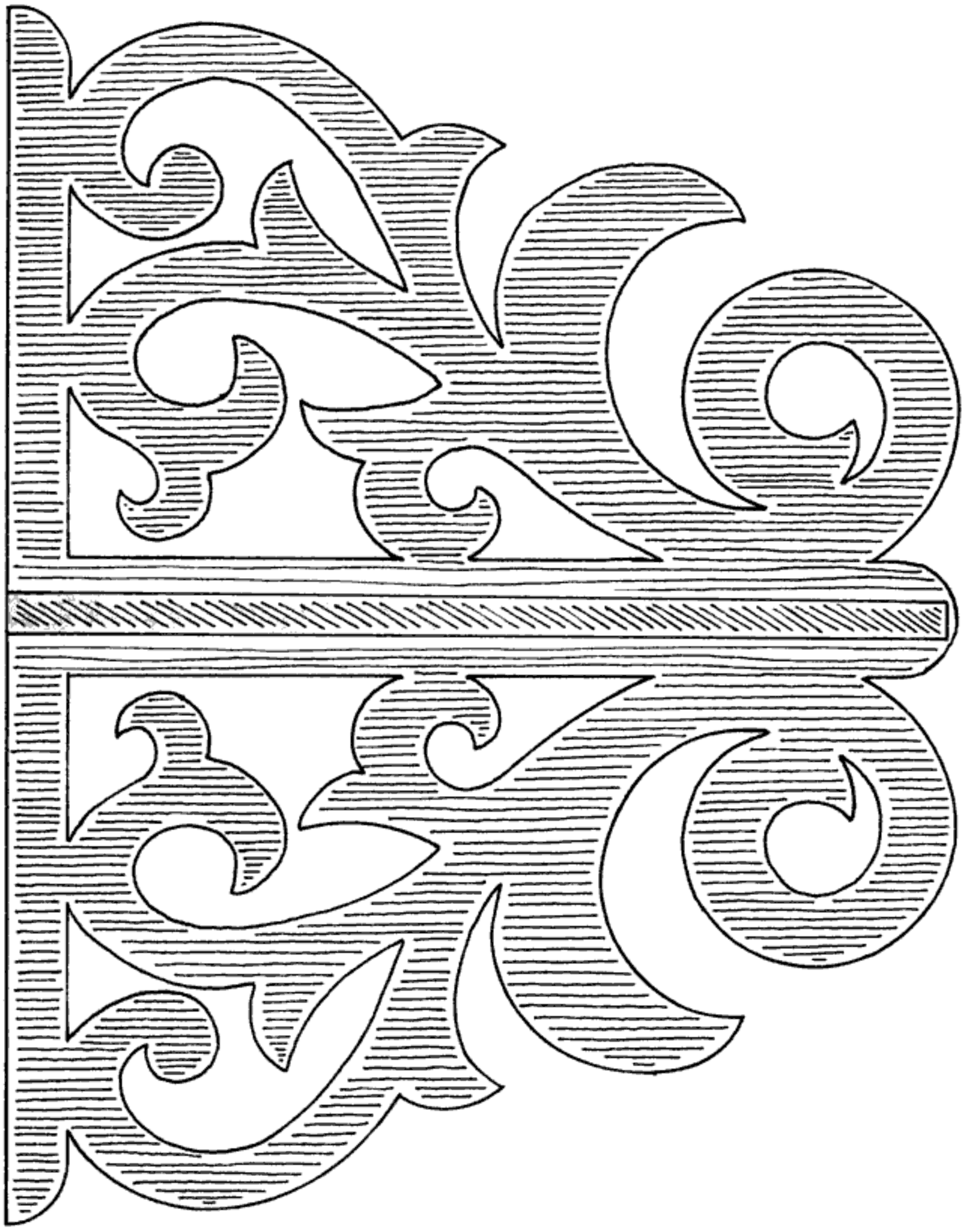


Illus. 123. Shelf design. (See pages 146–147 for the pattern.)



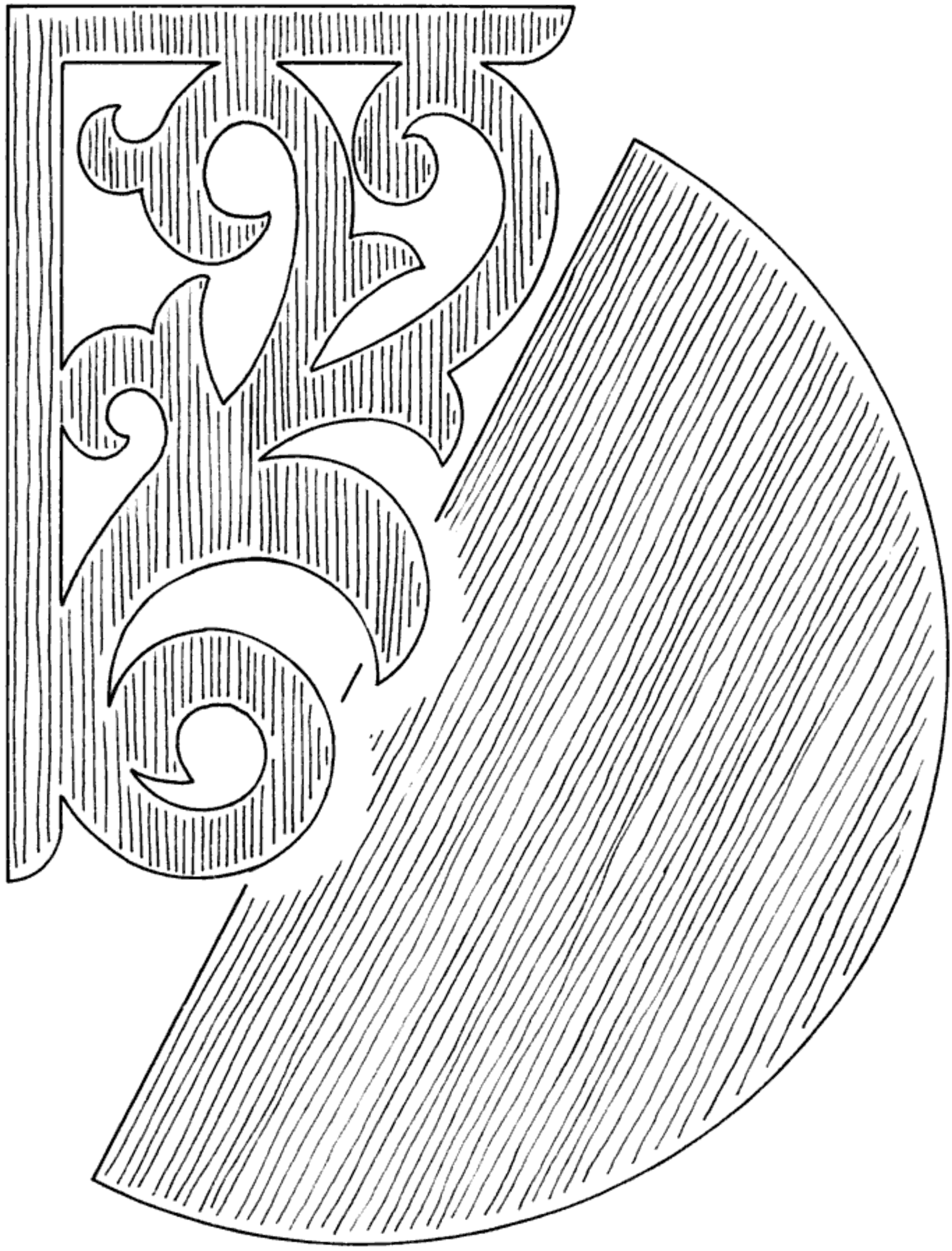
Illus. 124. Shelf design, by Kirk Ratajesak. (See pages 148–149 for the pattern.)

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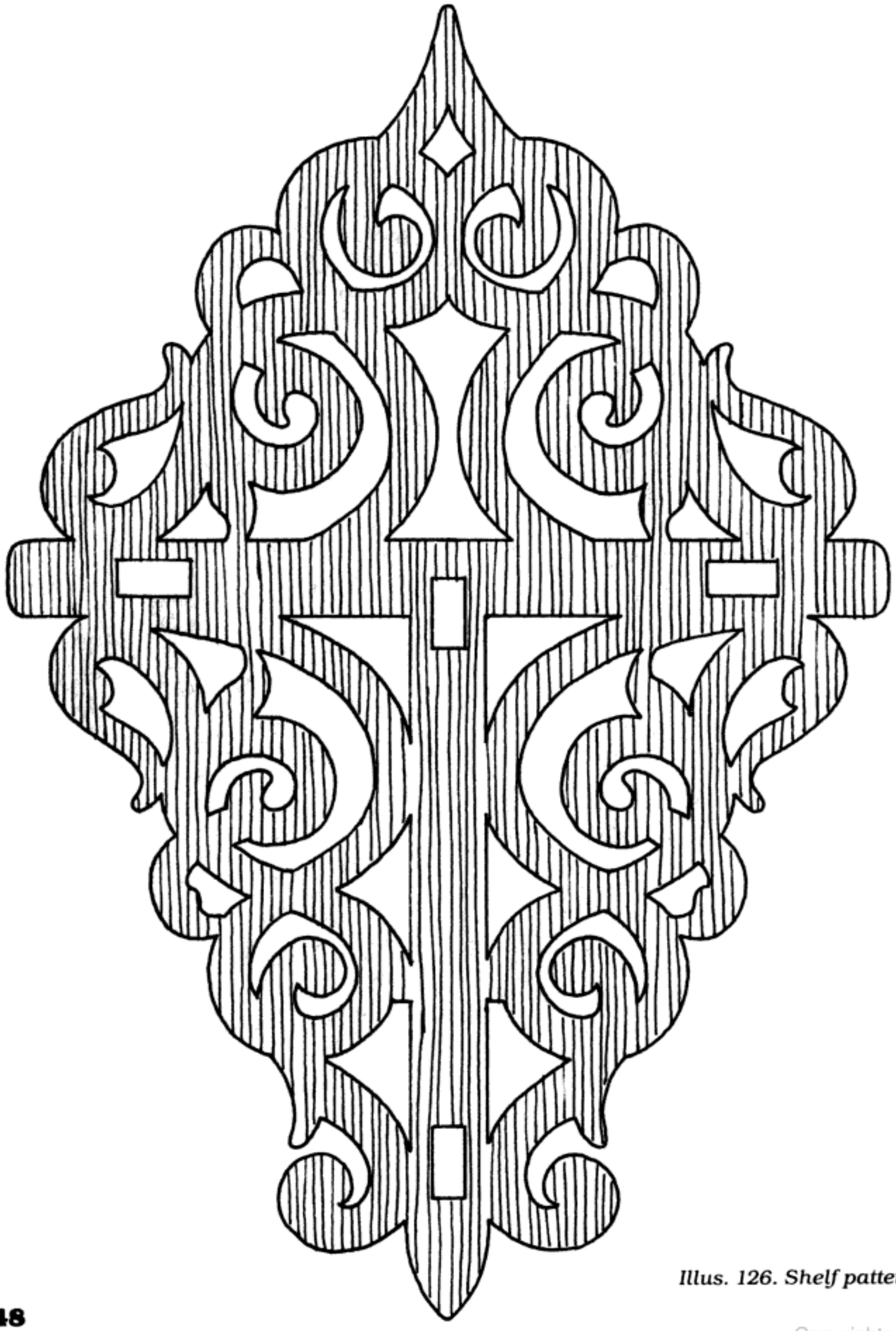


Illus. 125. Shelf pattern.

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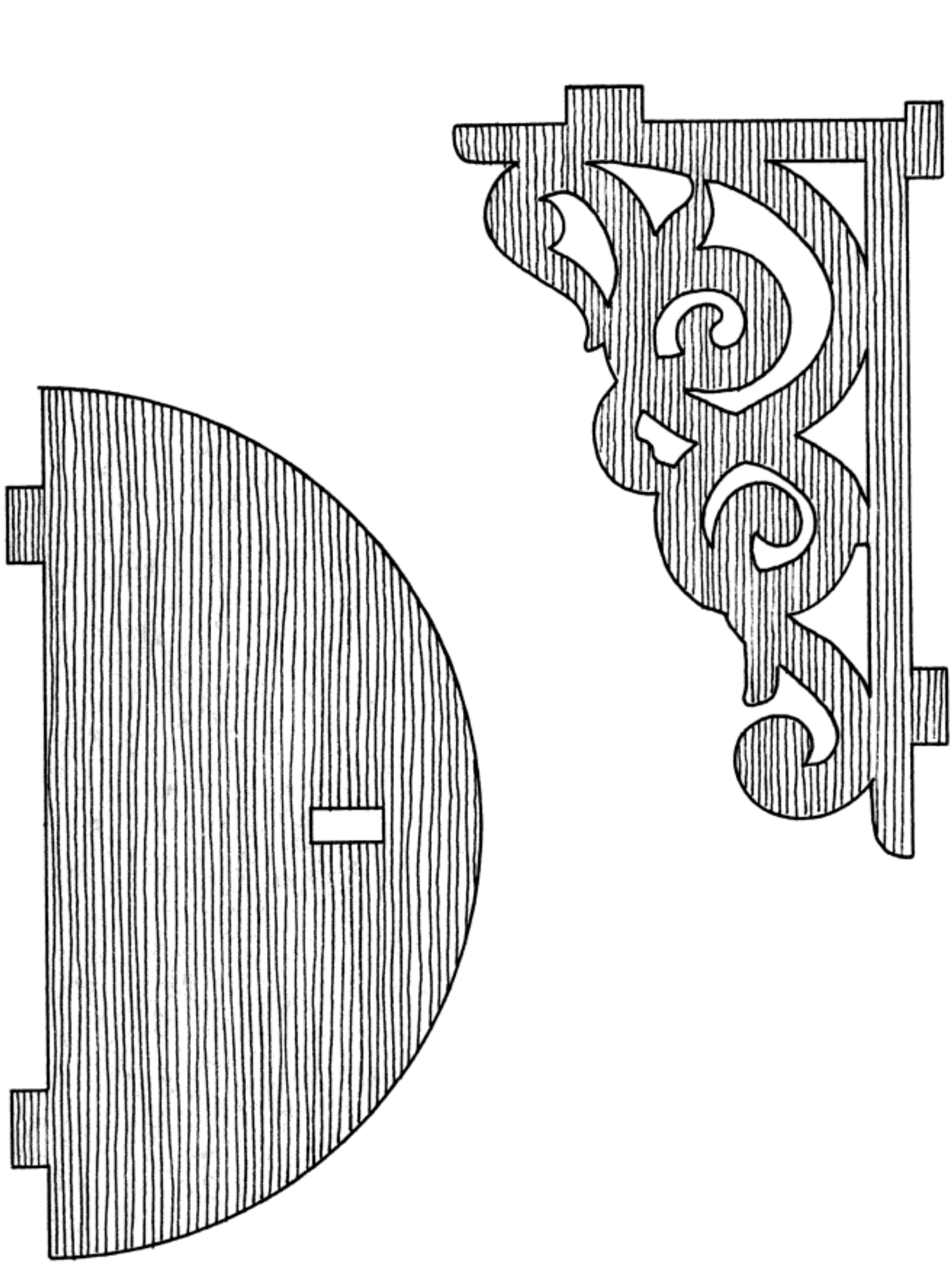


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Illus. 126. Shelf pattern.

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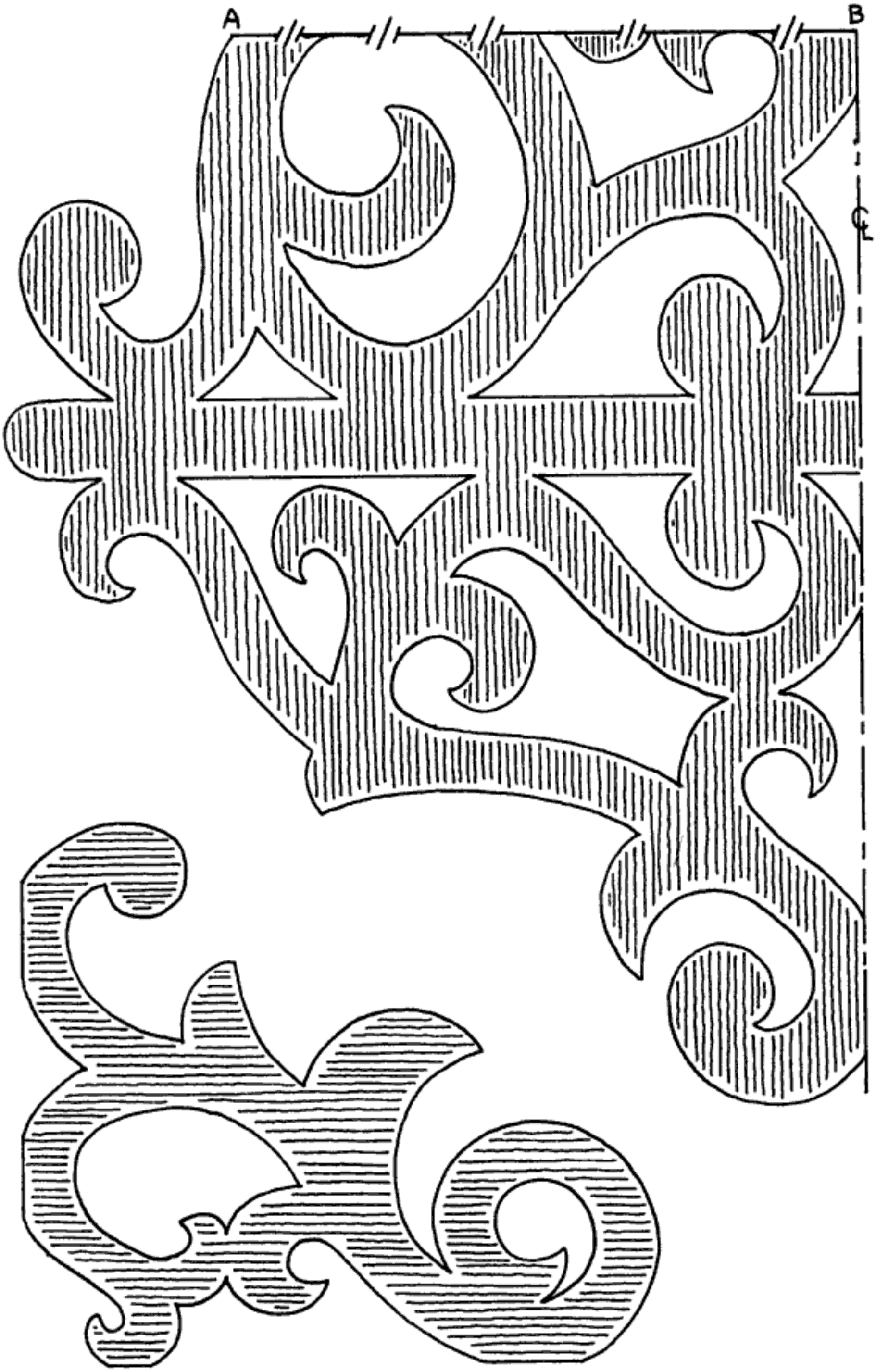
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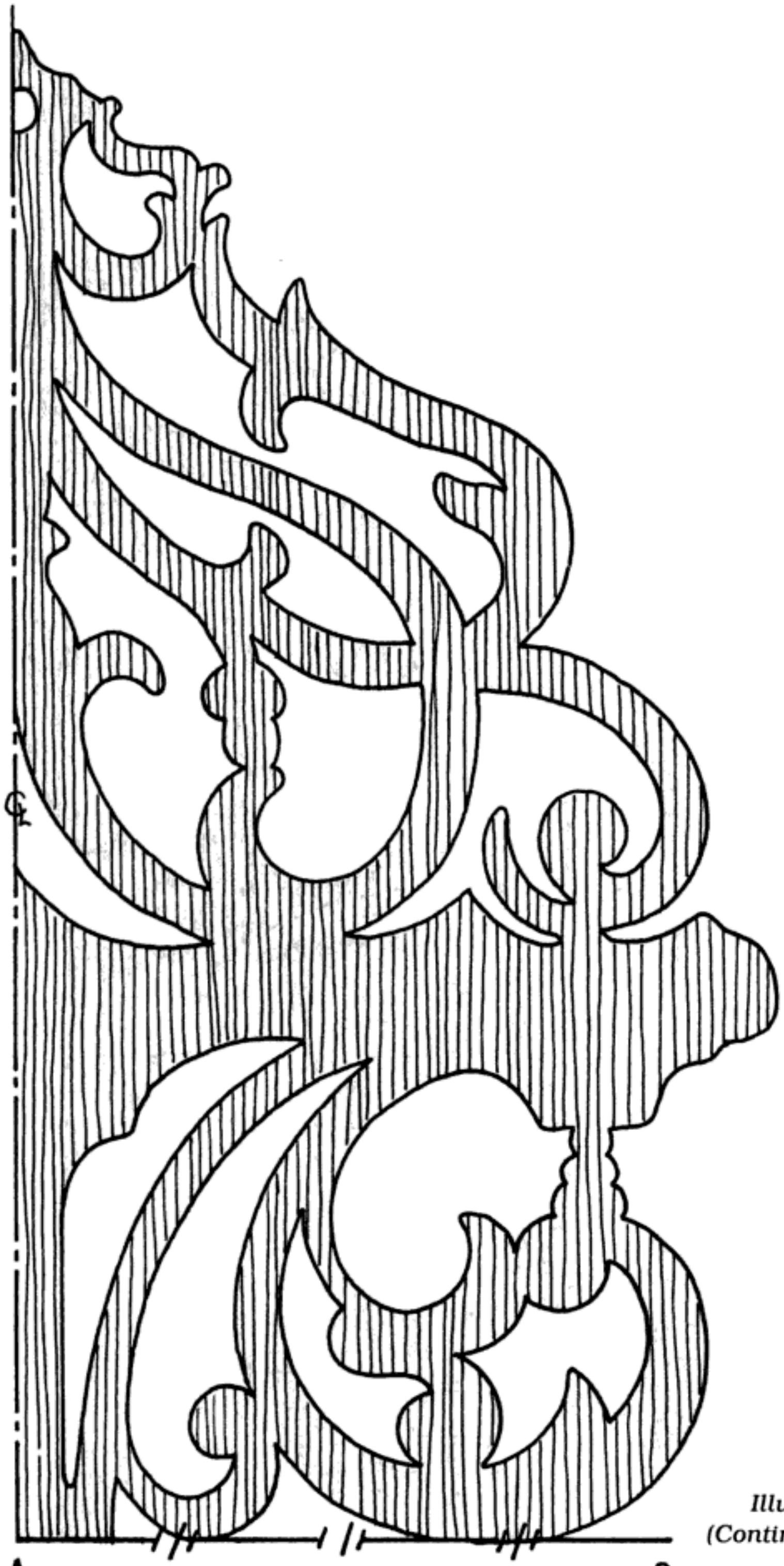
Illus. 127. Shelf design, by Kirk Ratajesak.

Illus. 128. Shelf pattern. (Continued on the next page.)

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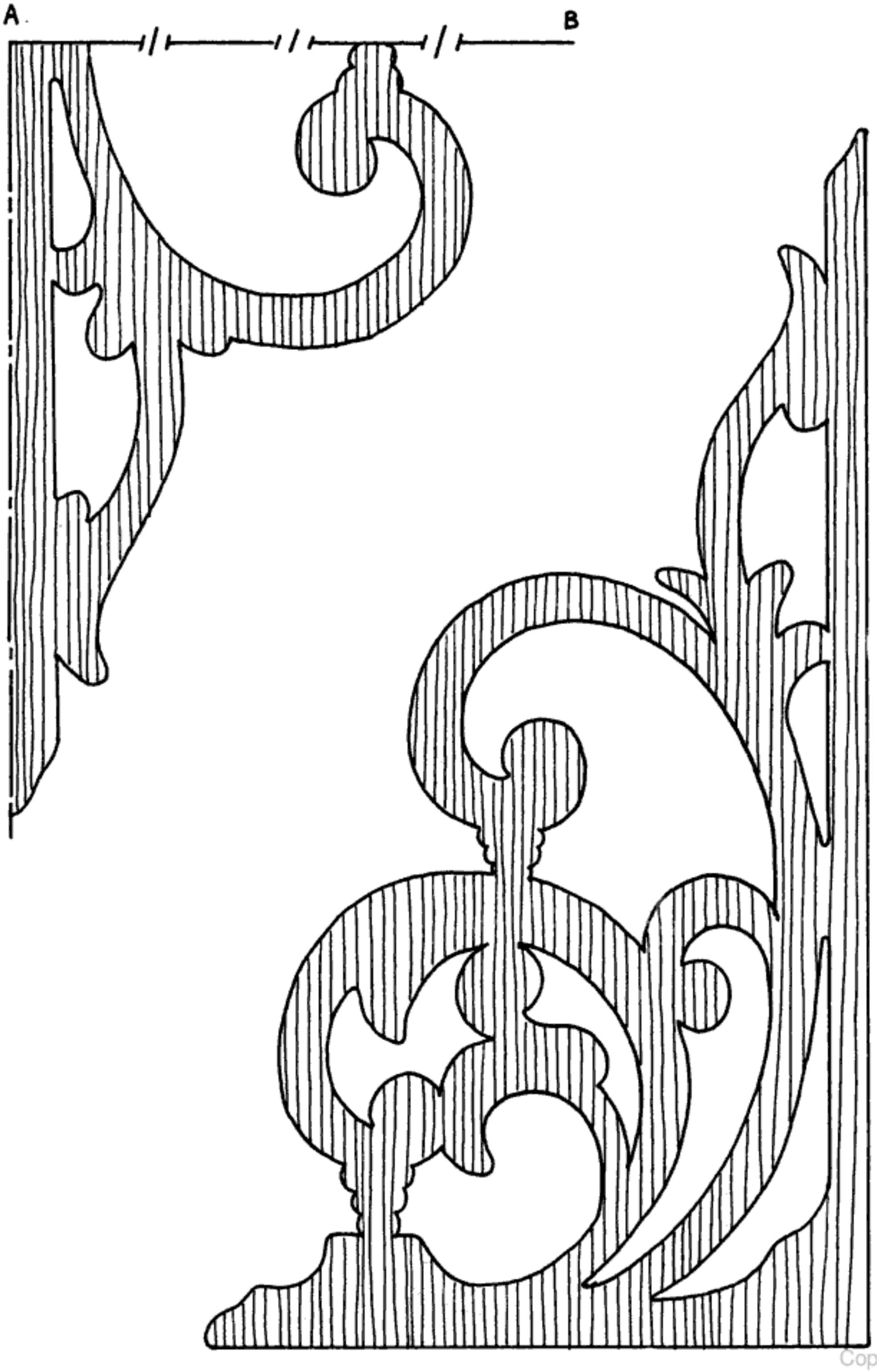


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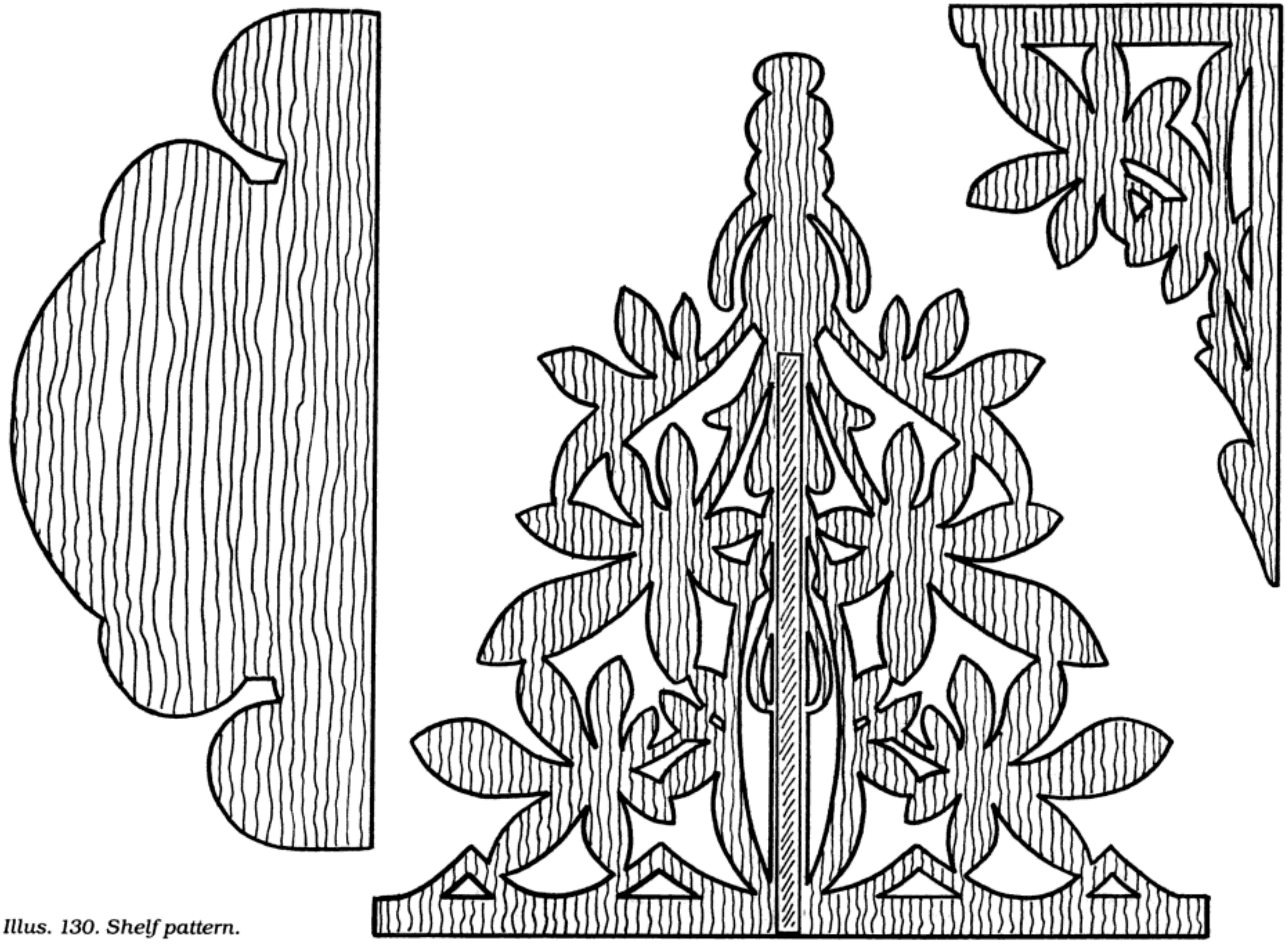


Illus. 129. Shelf pattern.
(Continued on the next page.)

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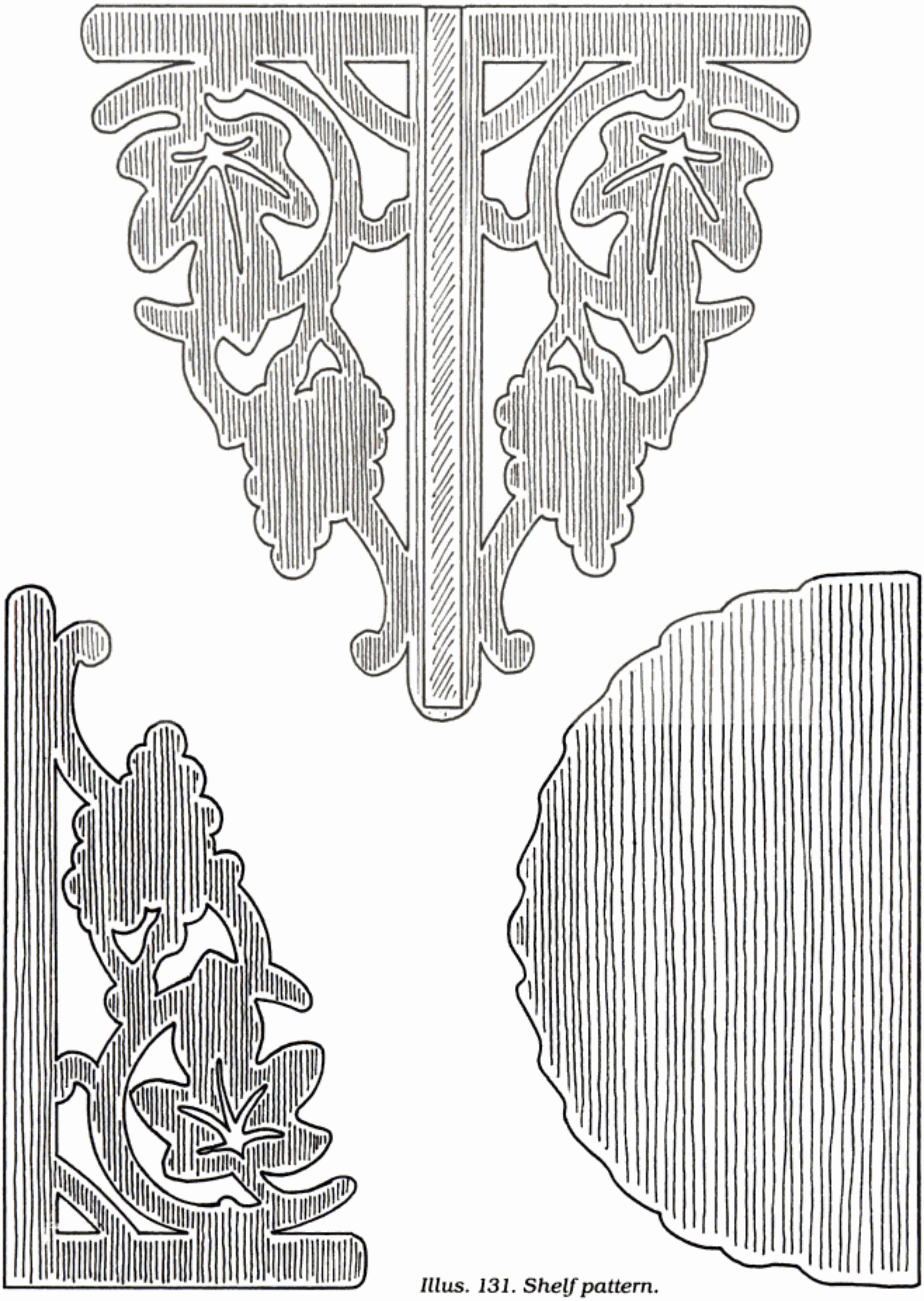


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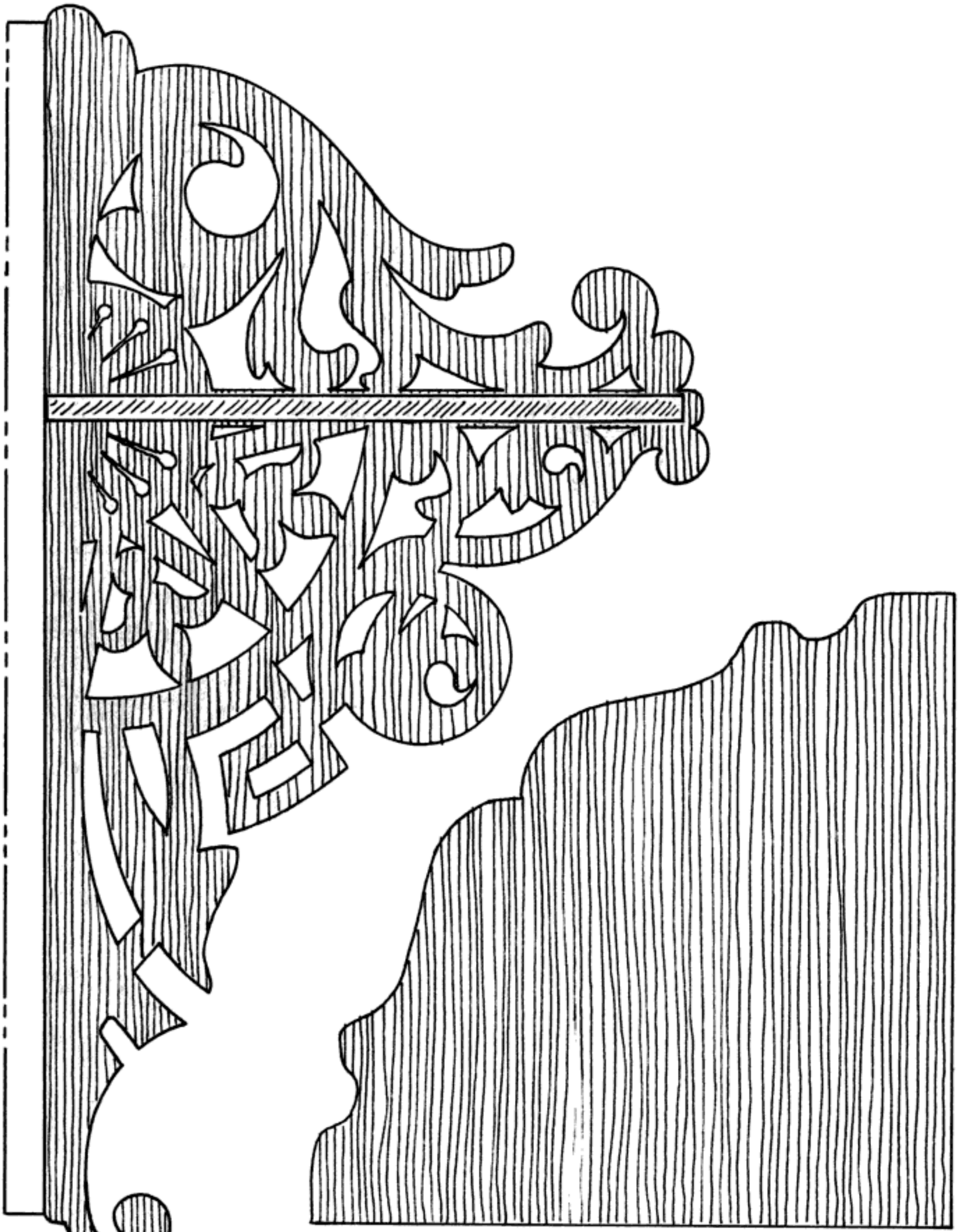
Illus. 130. Shelf pattern.

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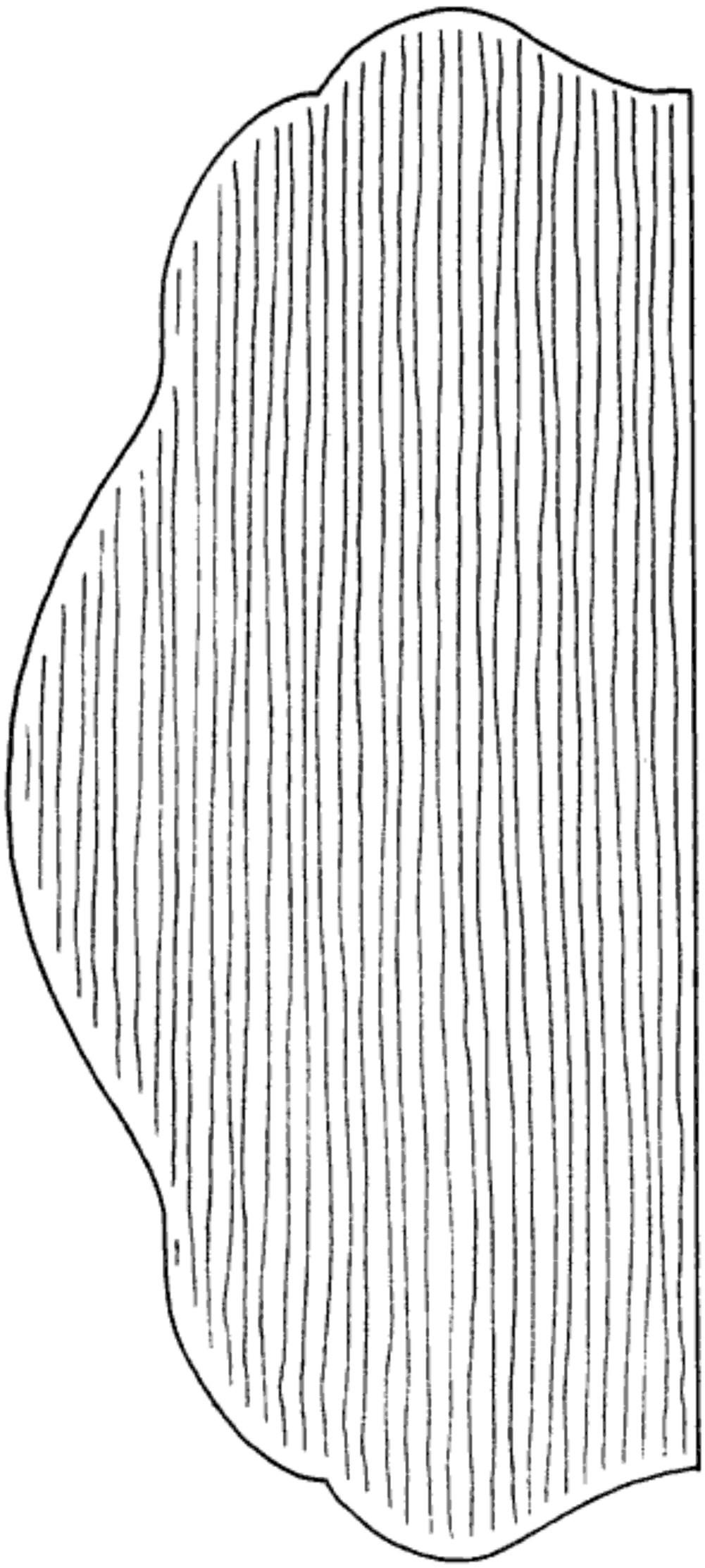
Illus. 131. Shelf pattern.

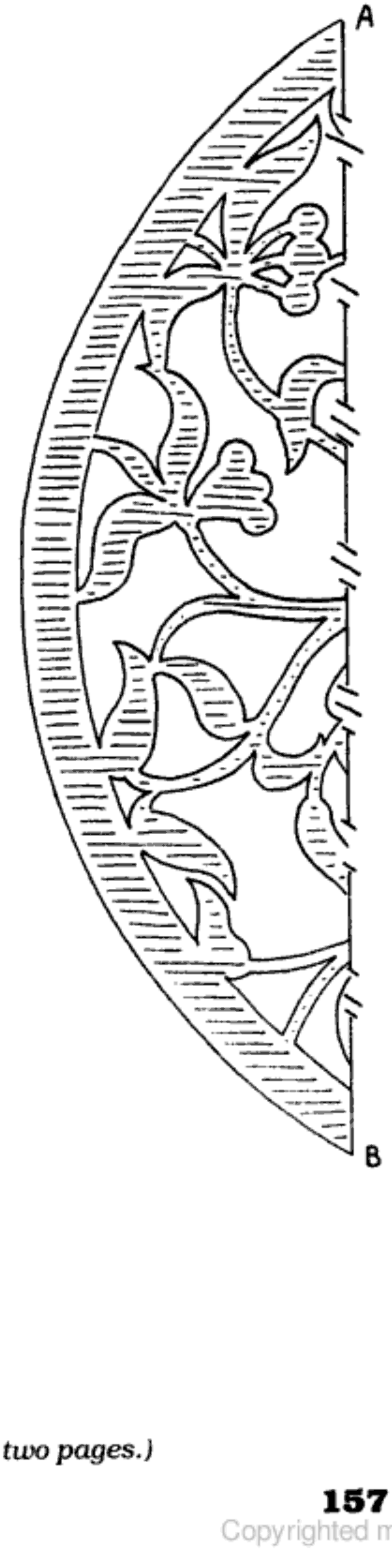
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Illus. 132. Shelf pattern.

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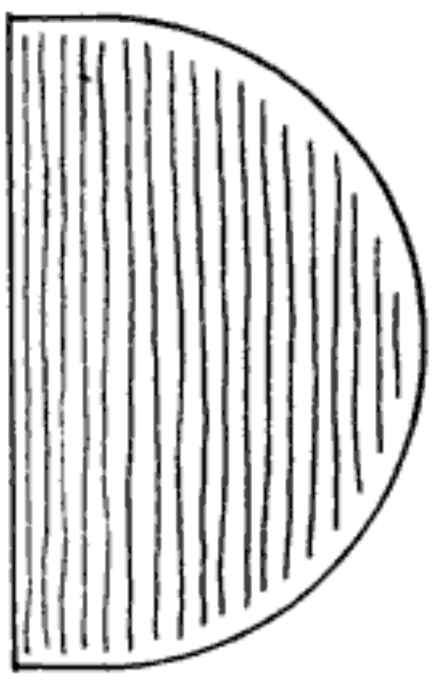
Illus. 133. Shelf pattern. (Continued on the next two pages.)

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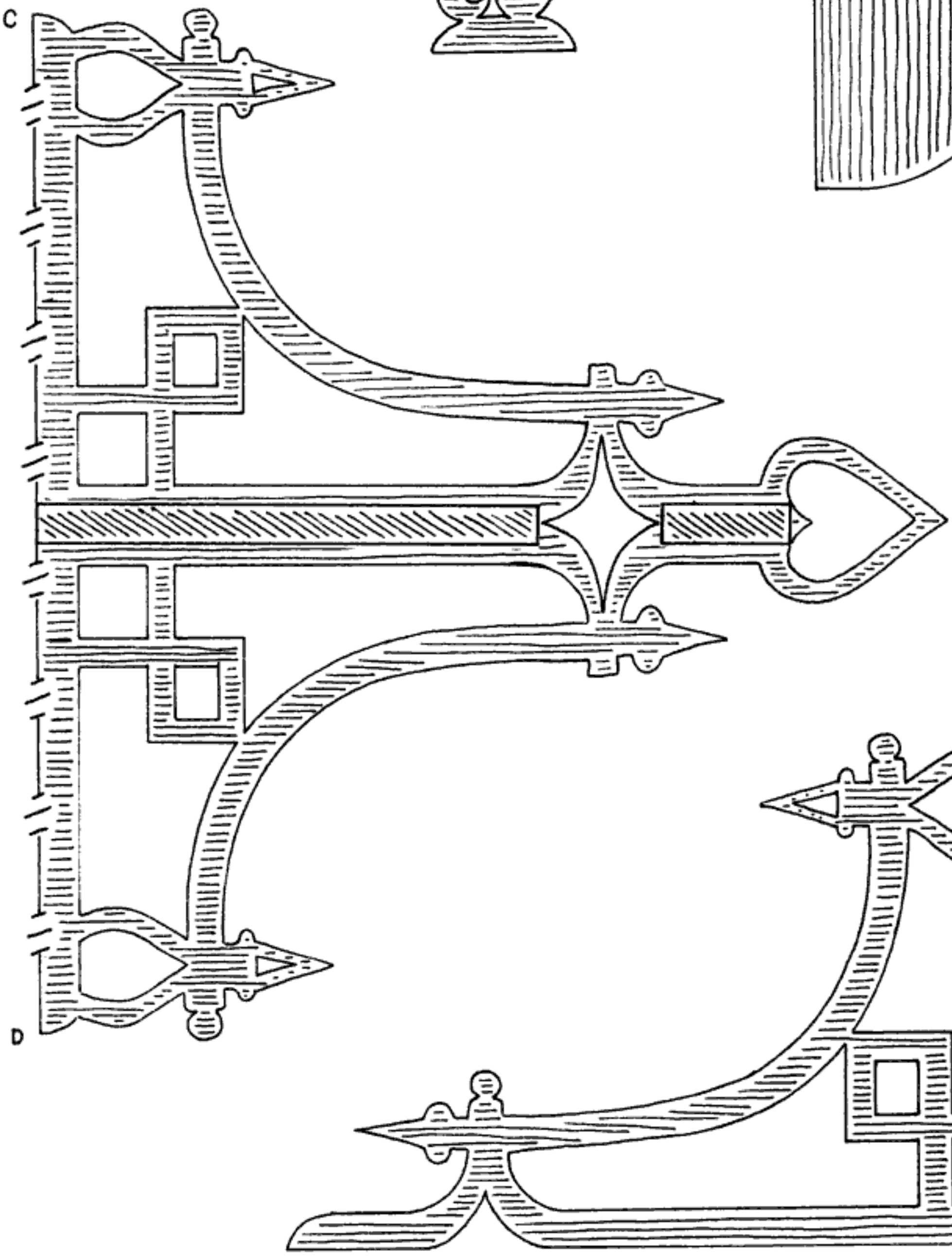


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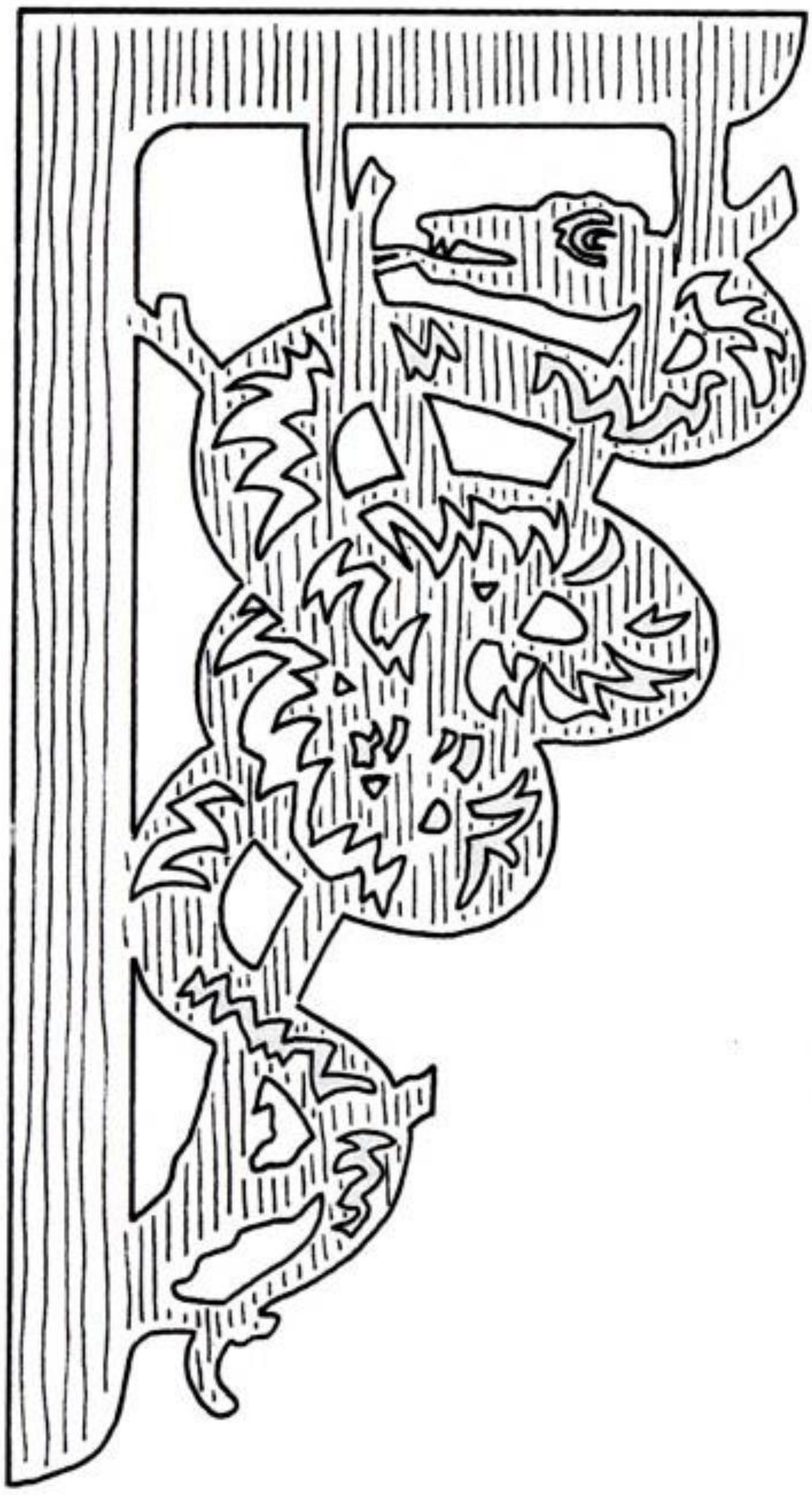


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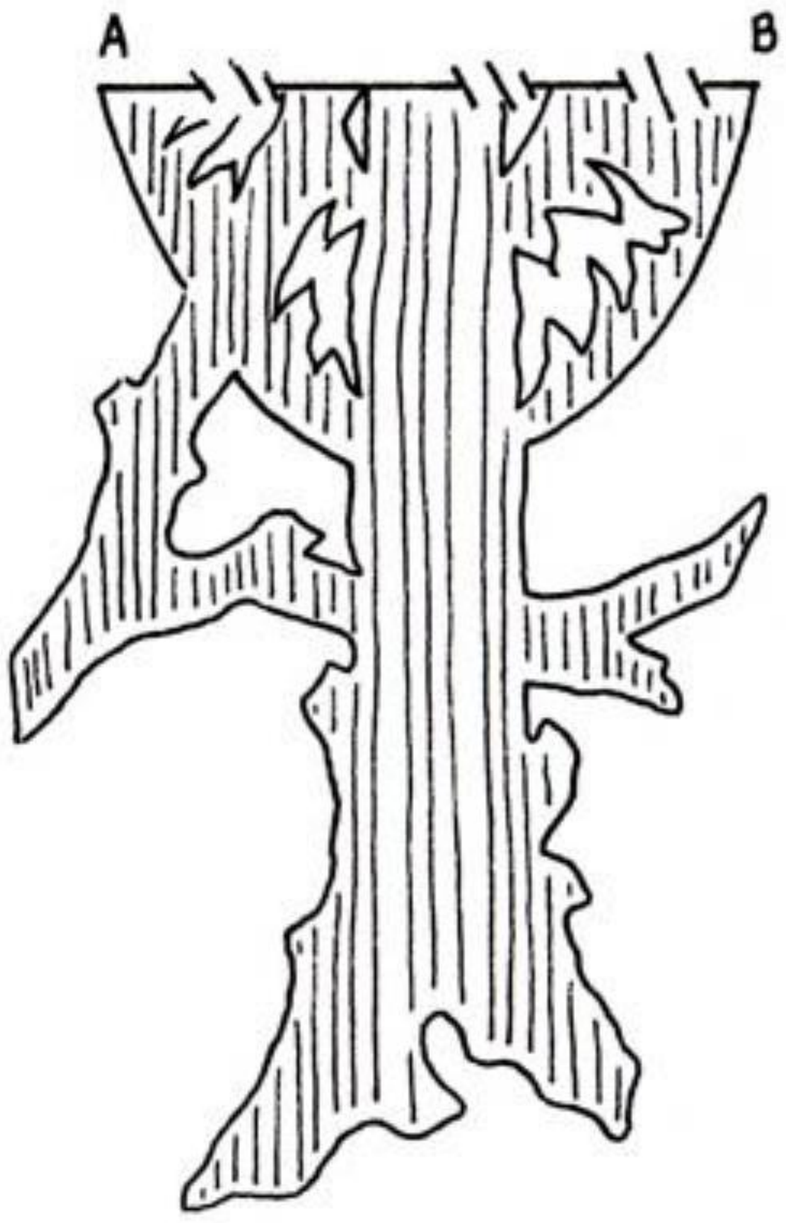
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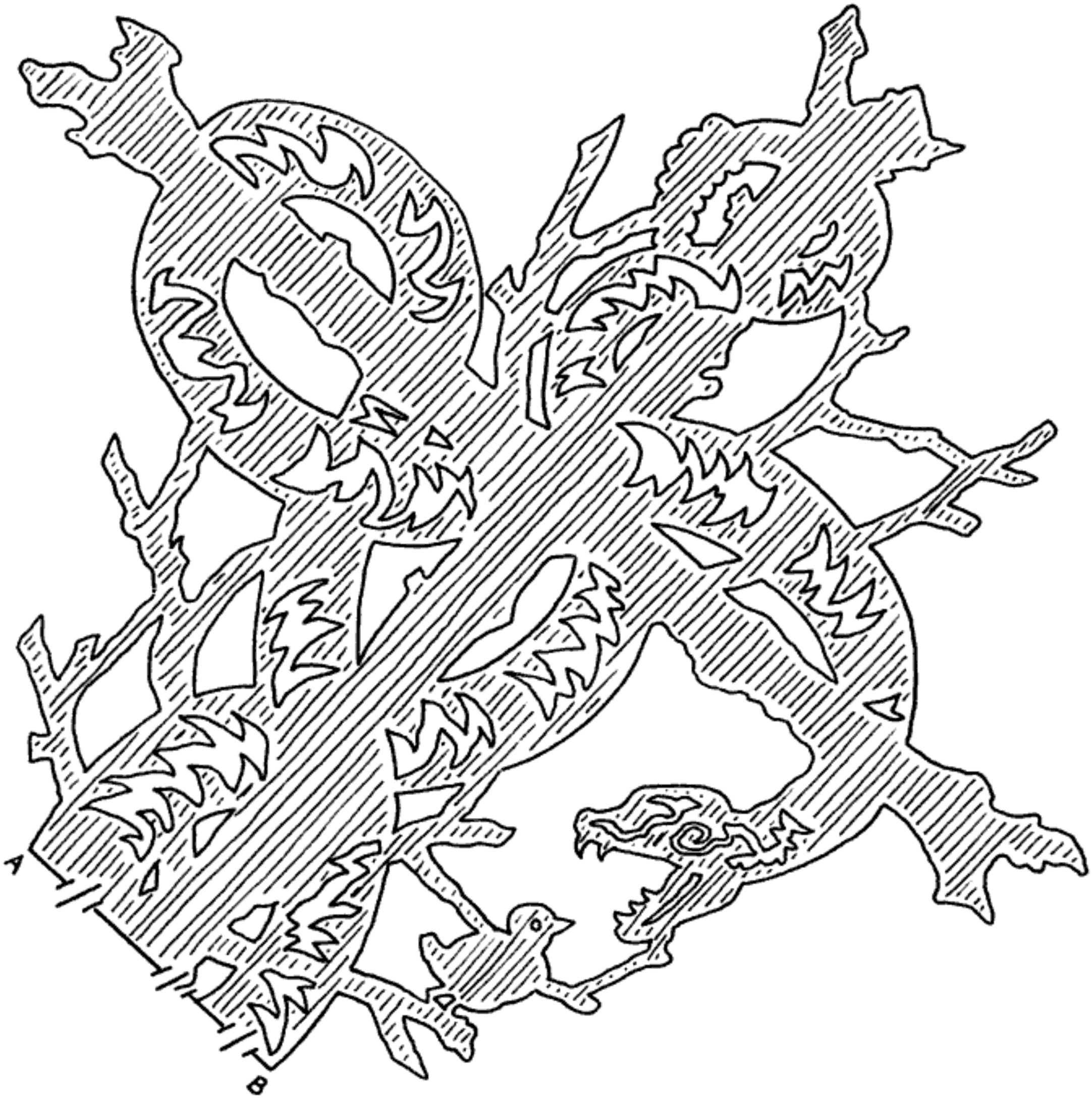


Illus. 134. Snake shelf, made by Carl Weckhorst.

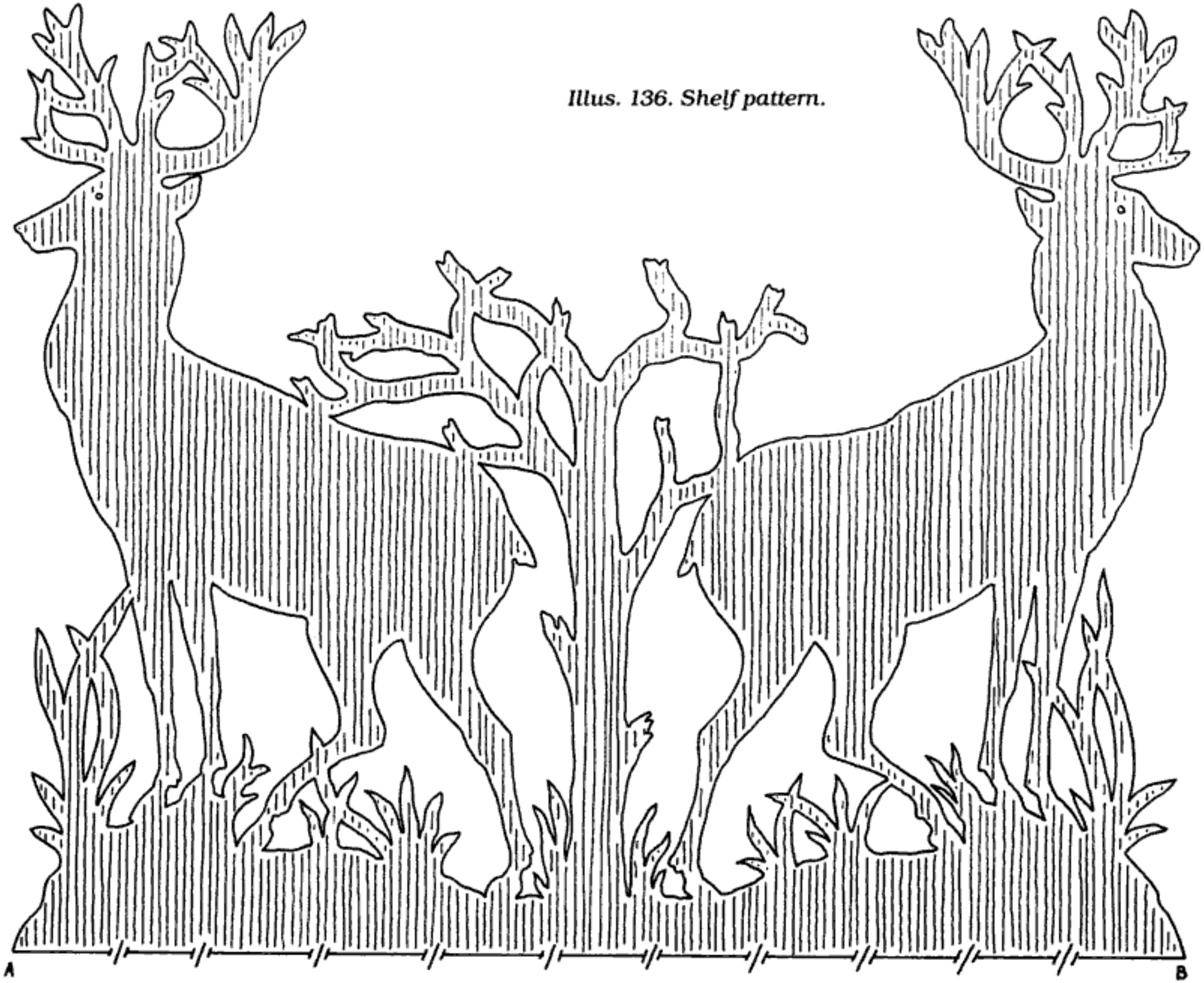


Illus. 135. Snake-shelf pattern. (Continued on the next page.)

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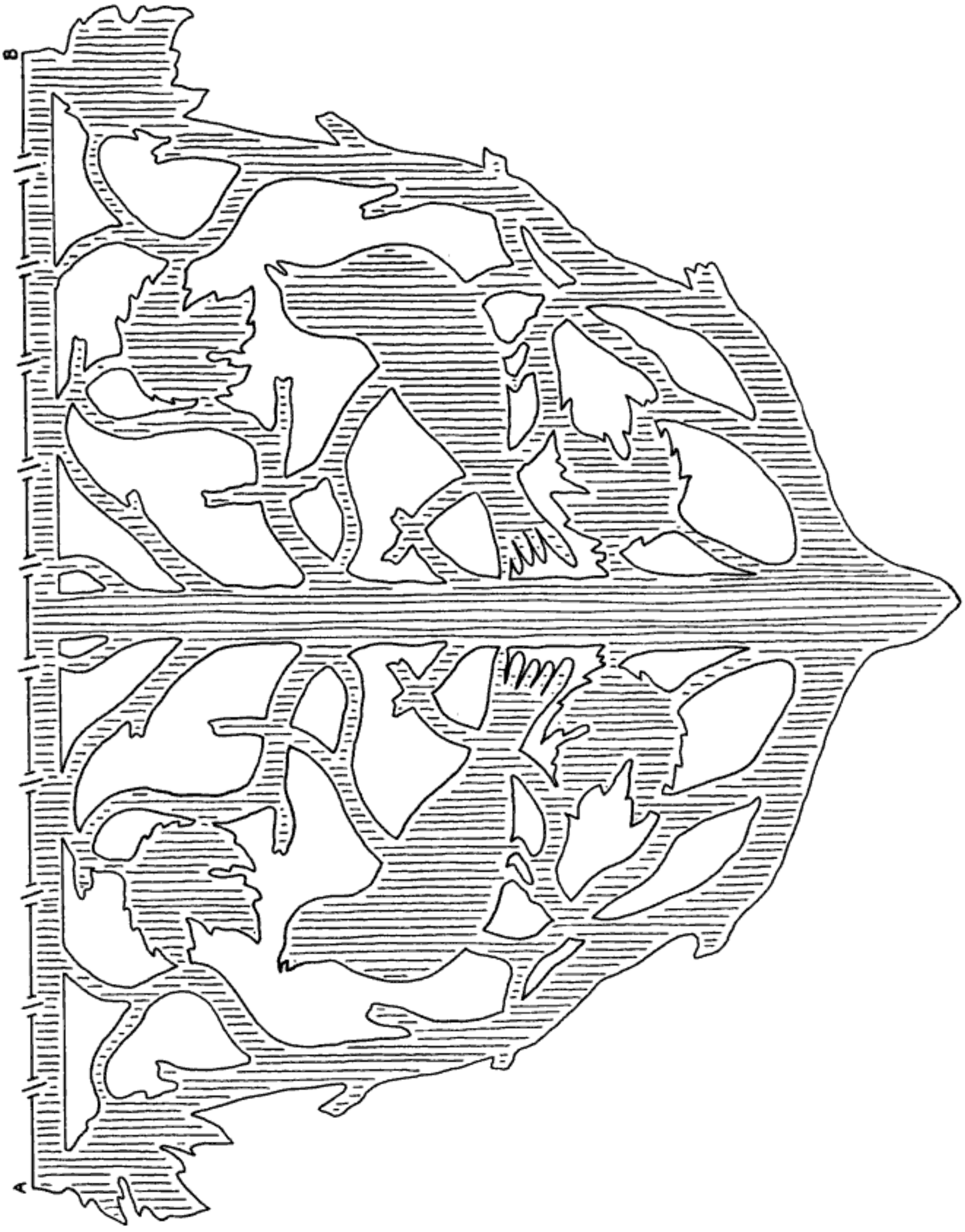


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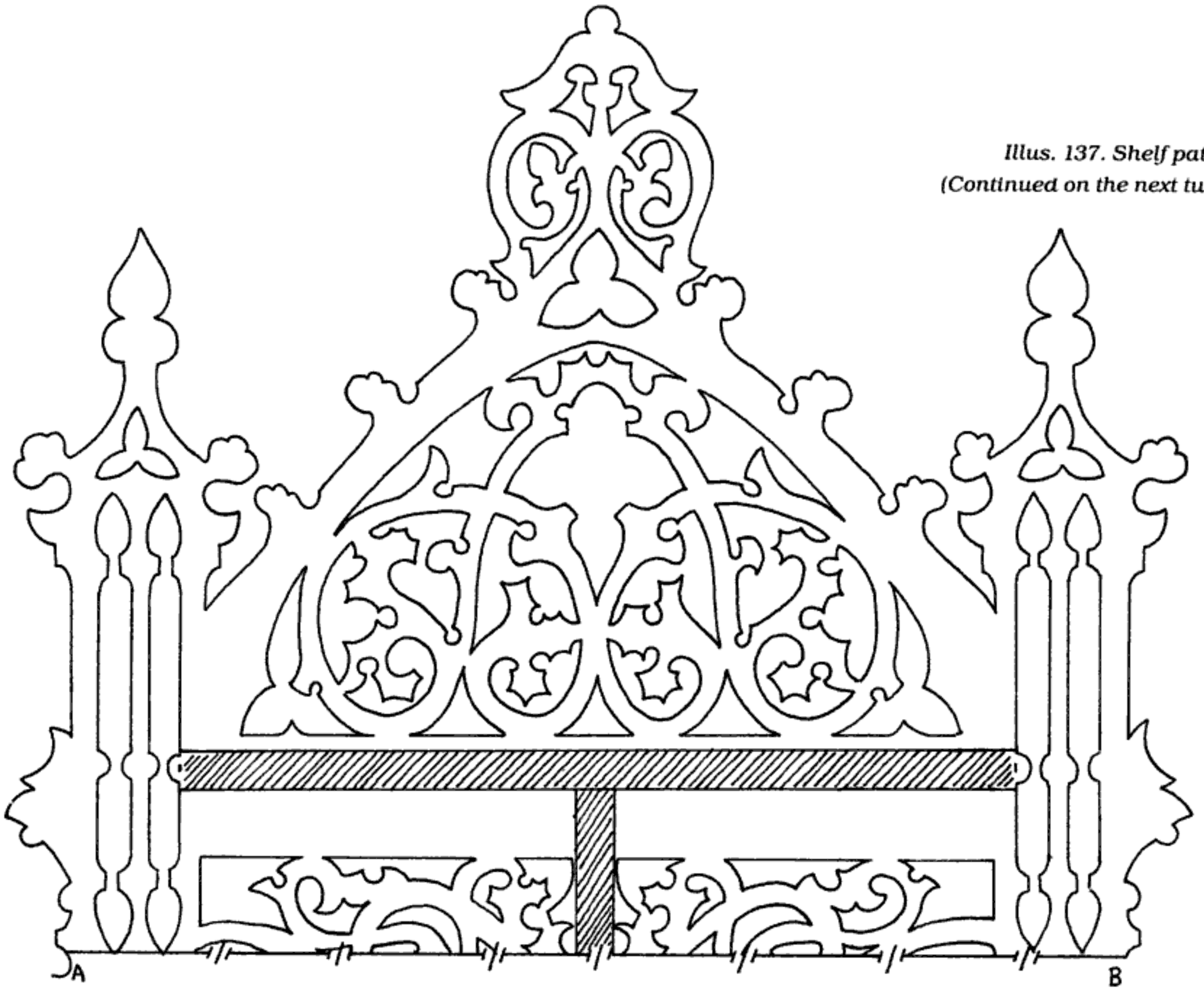
Illus. 136. Shelf pattern.

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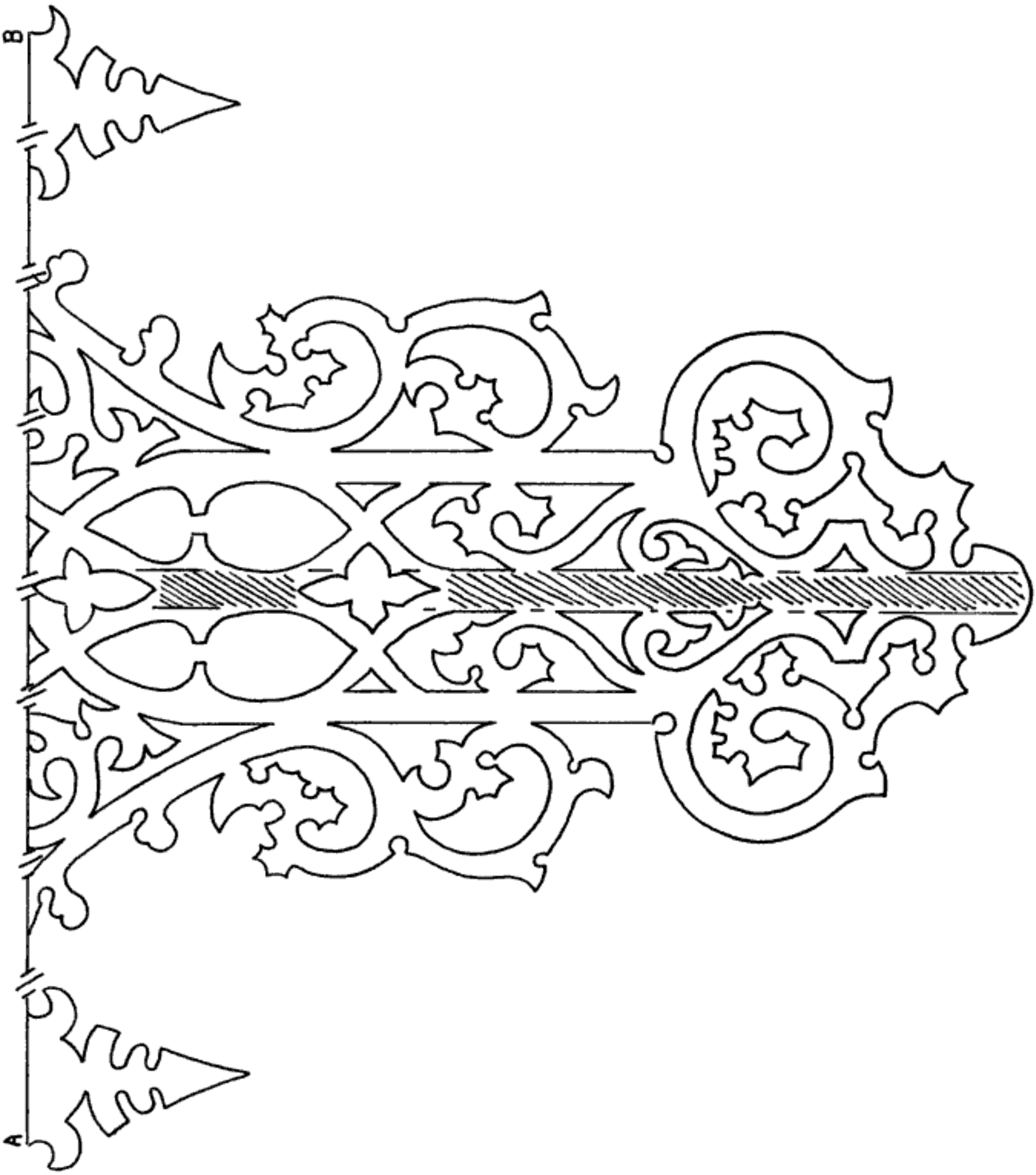


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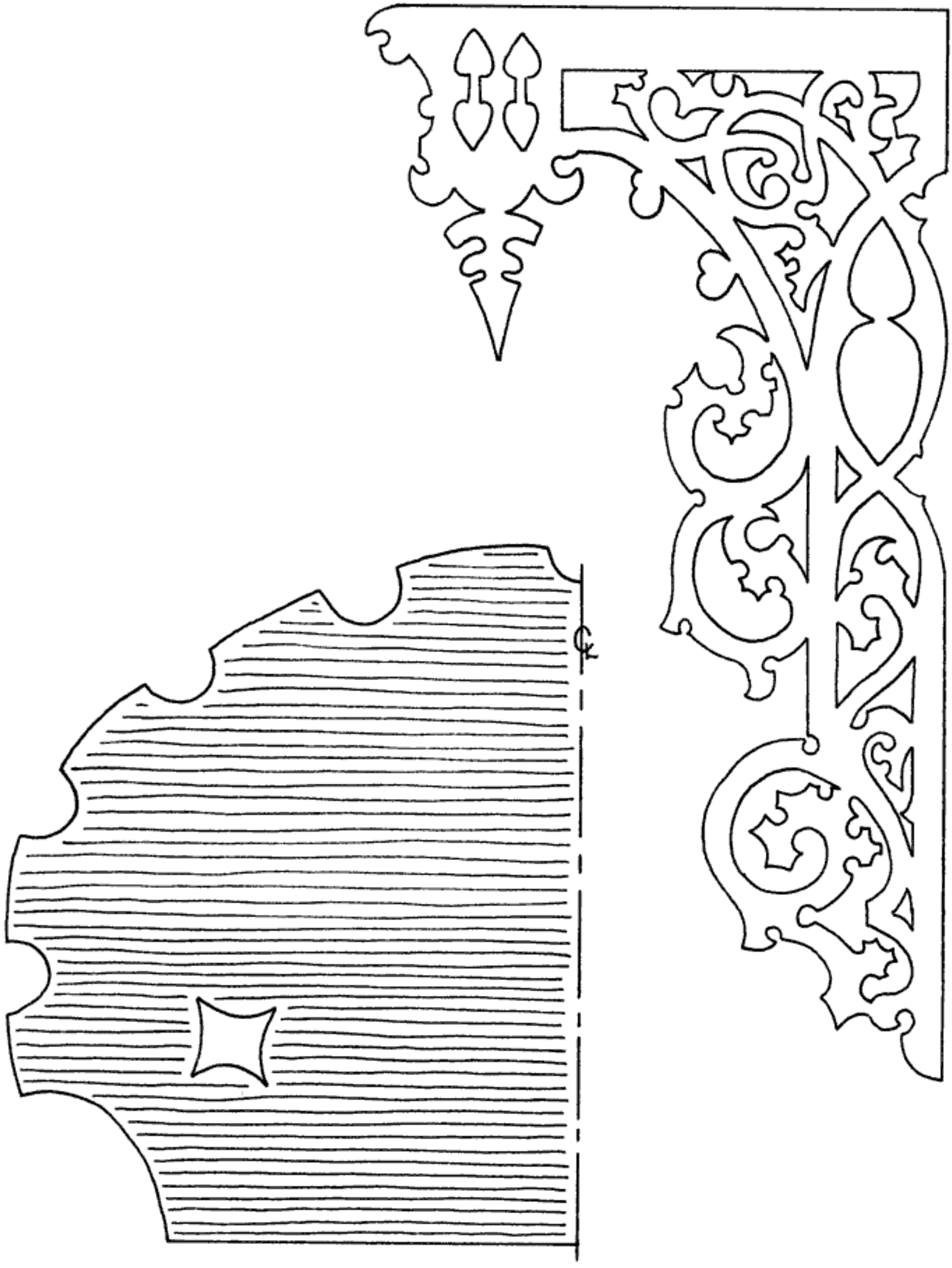
Illus. 137. Shelf pattern.
(Continued on the next two pages.)



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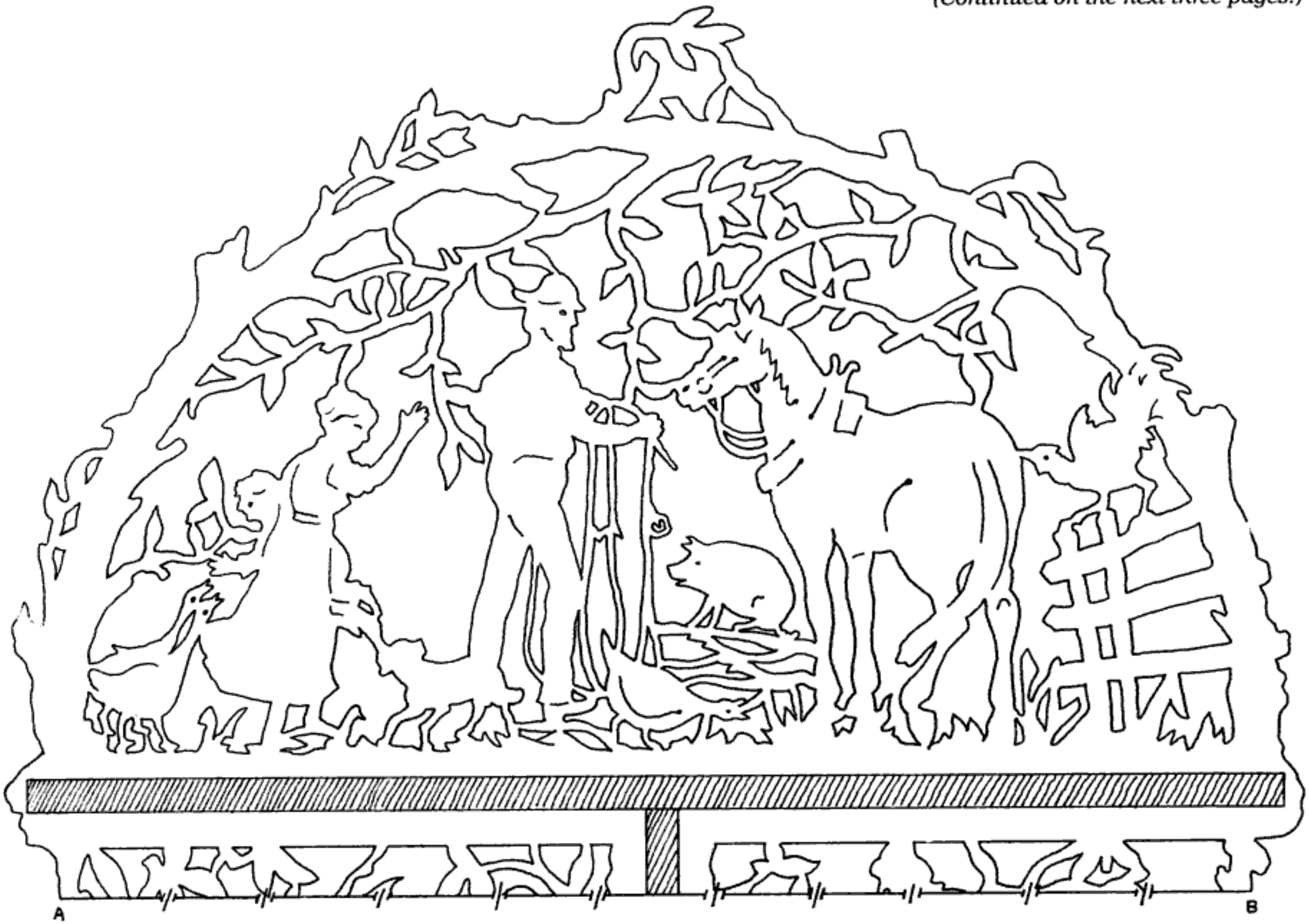


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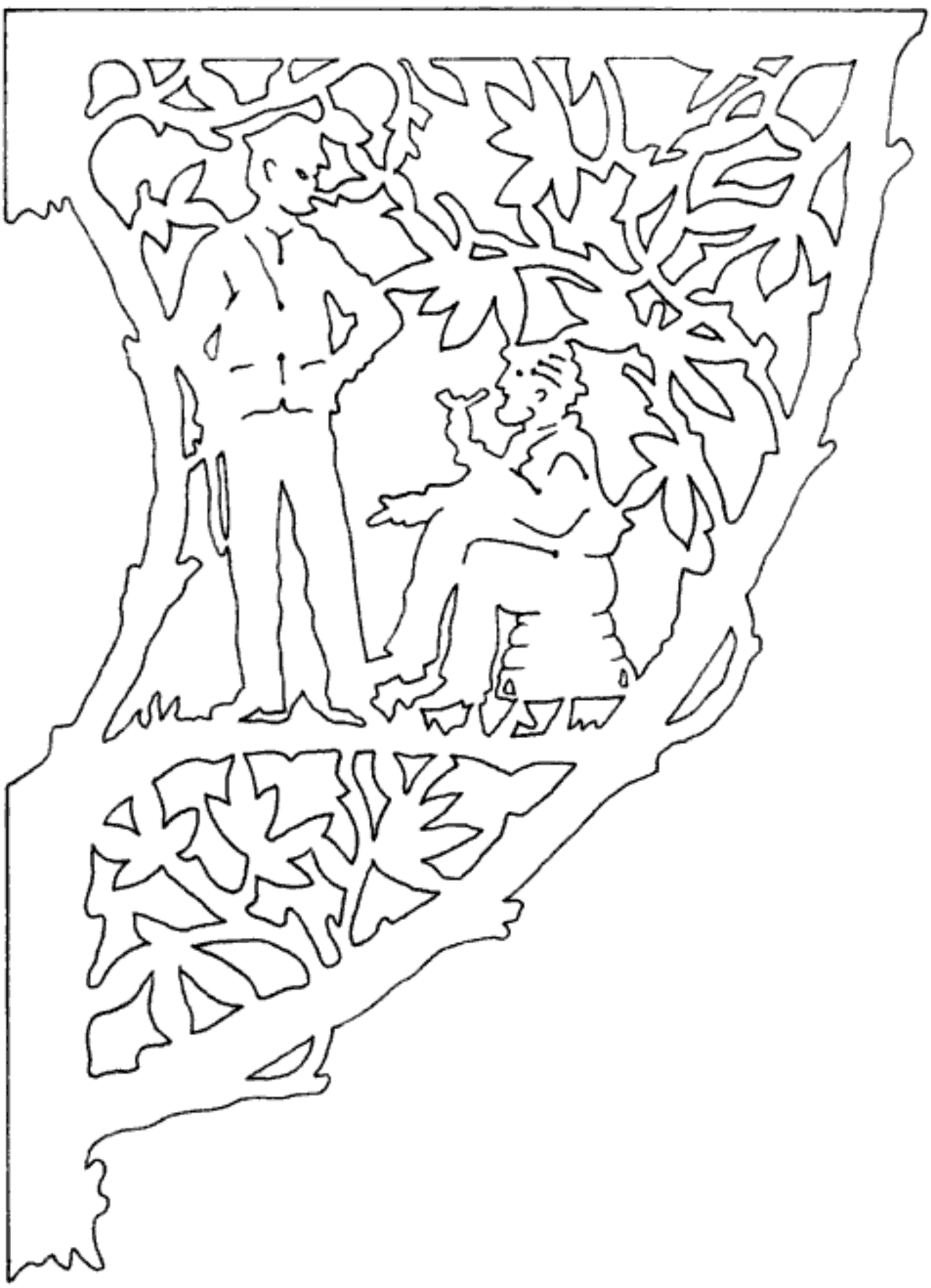
Illus. 138. Shelf pattern.
(Continued on the next three pages.)



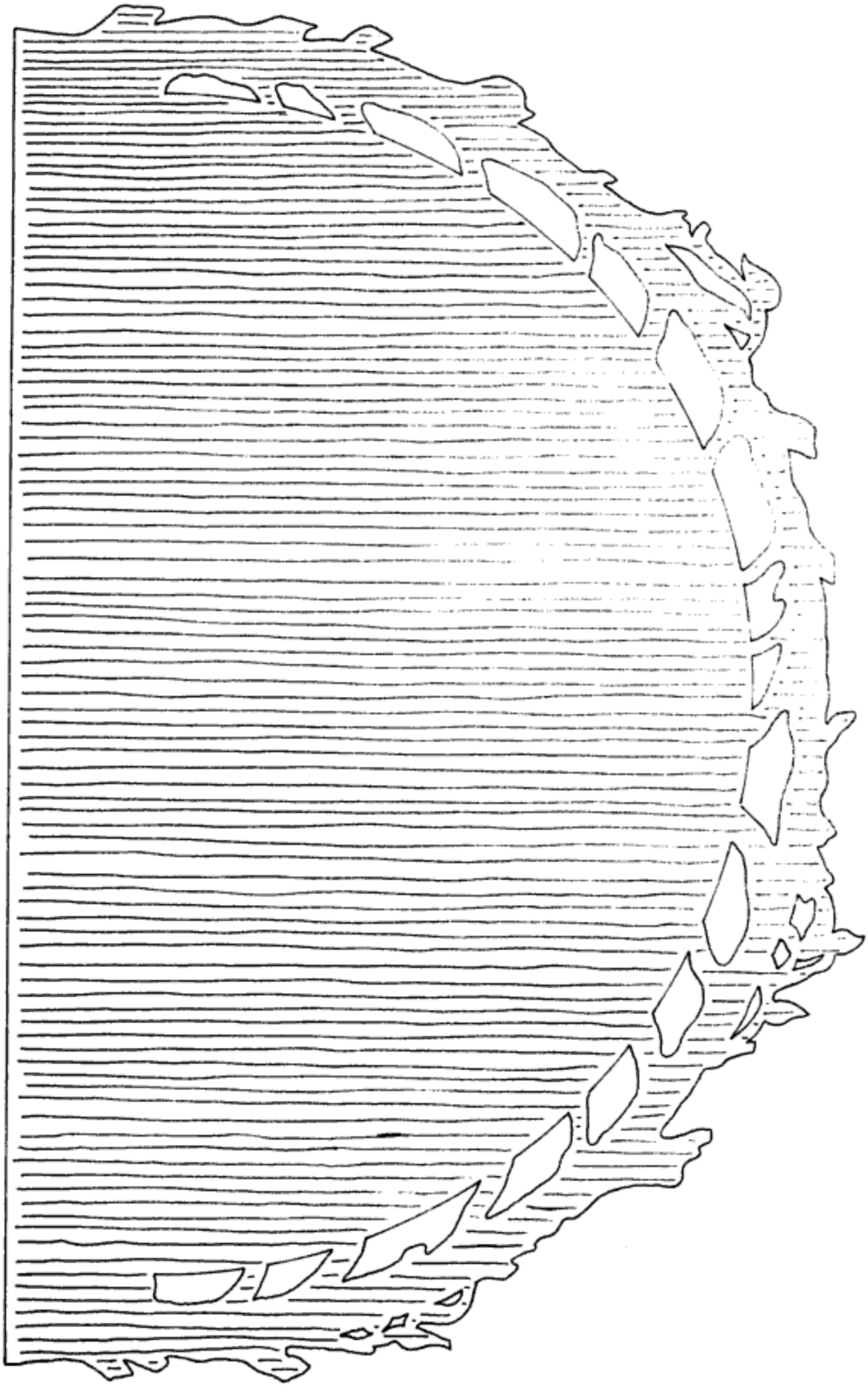
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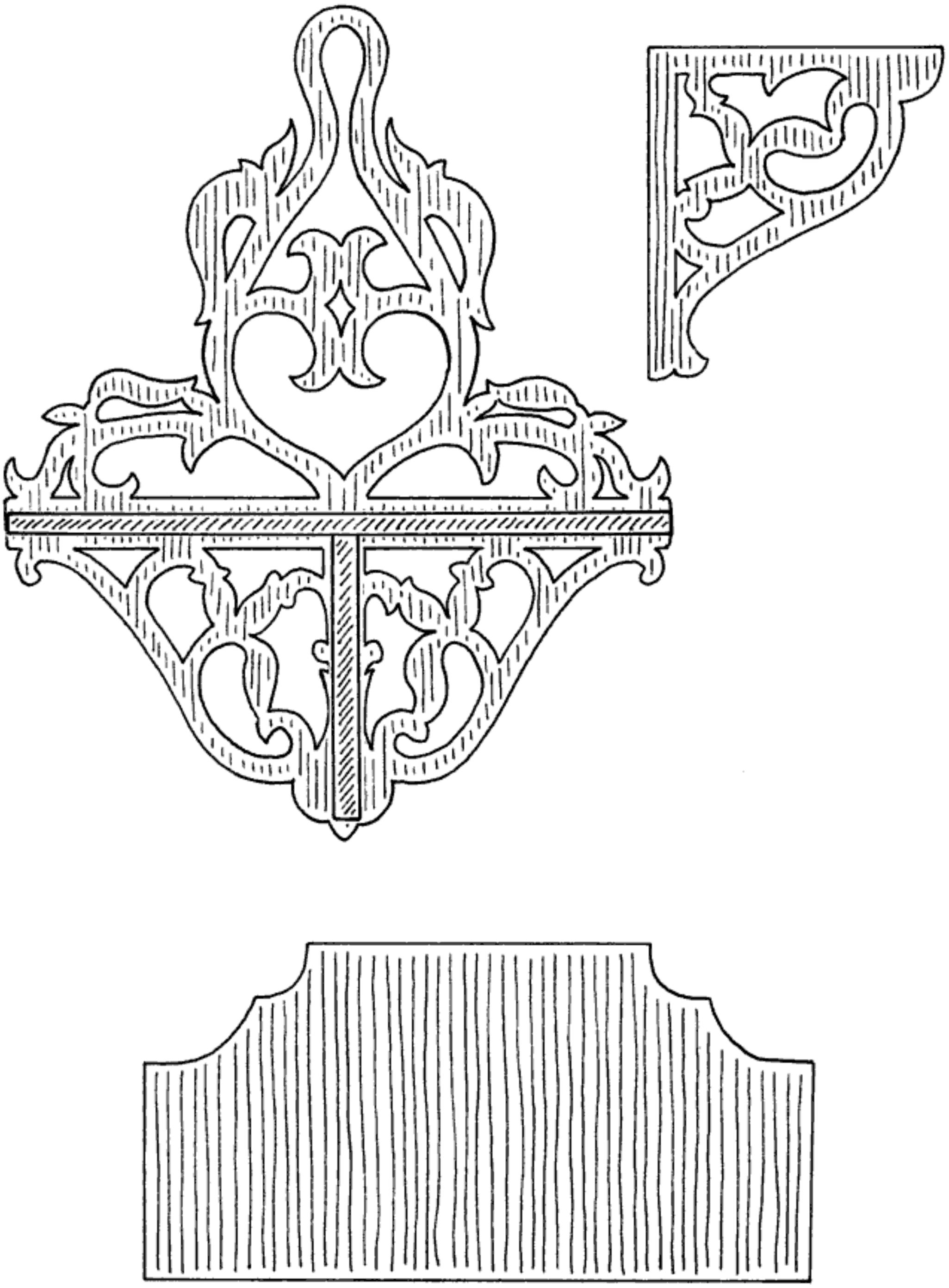
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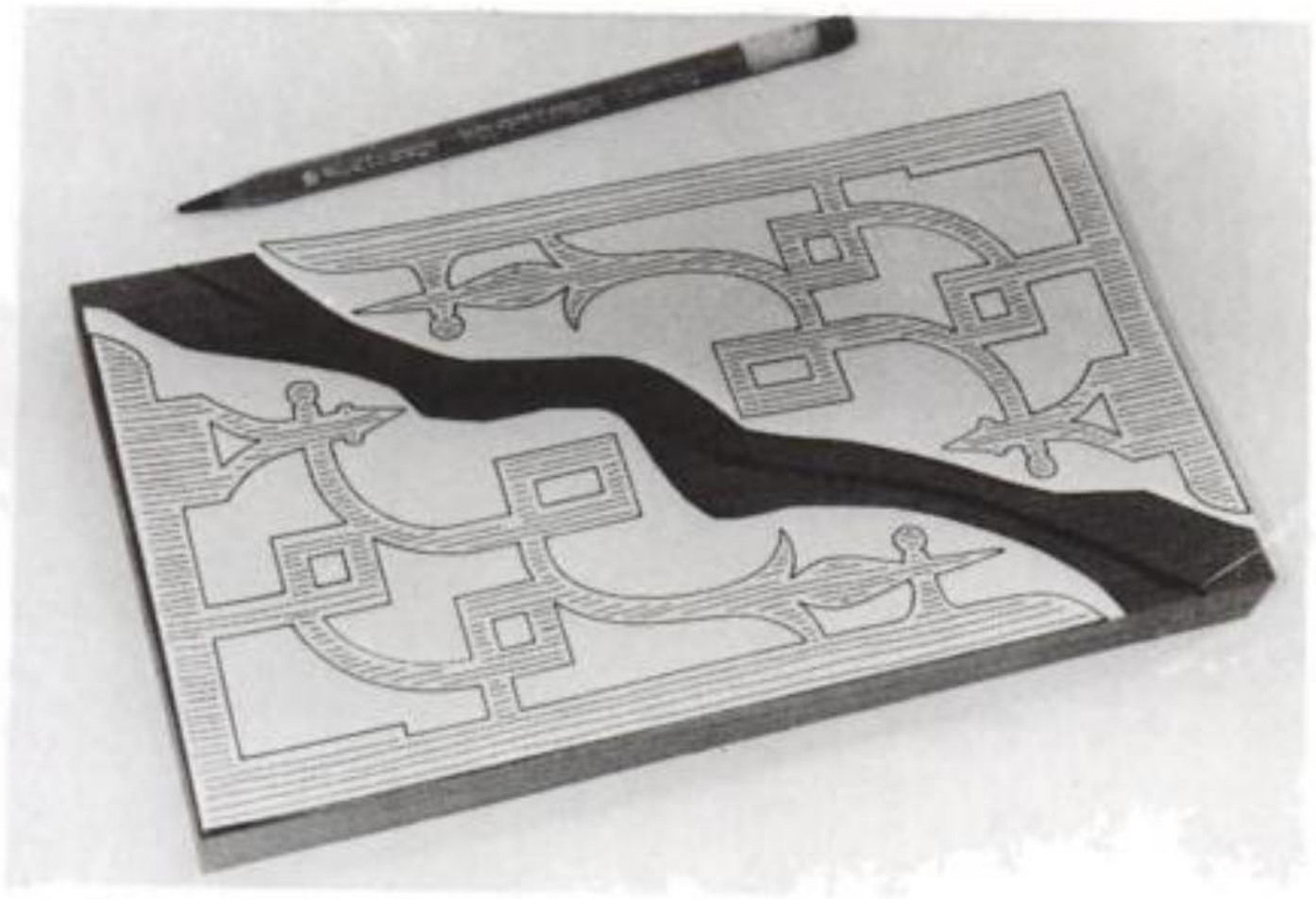
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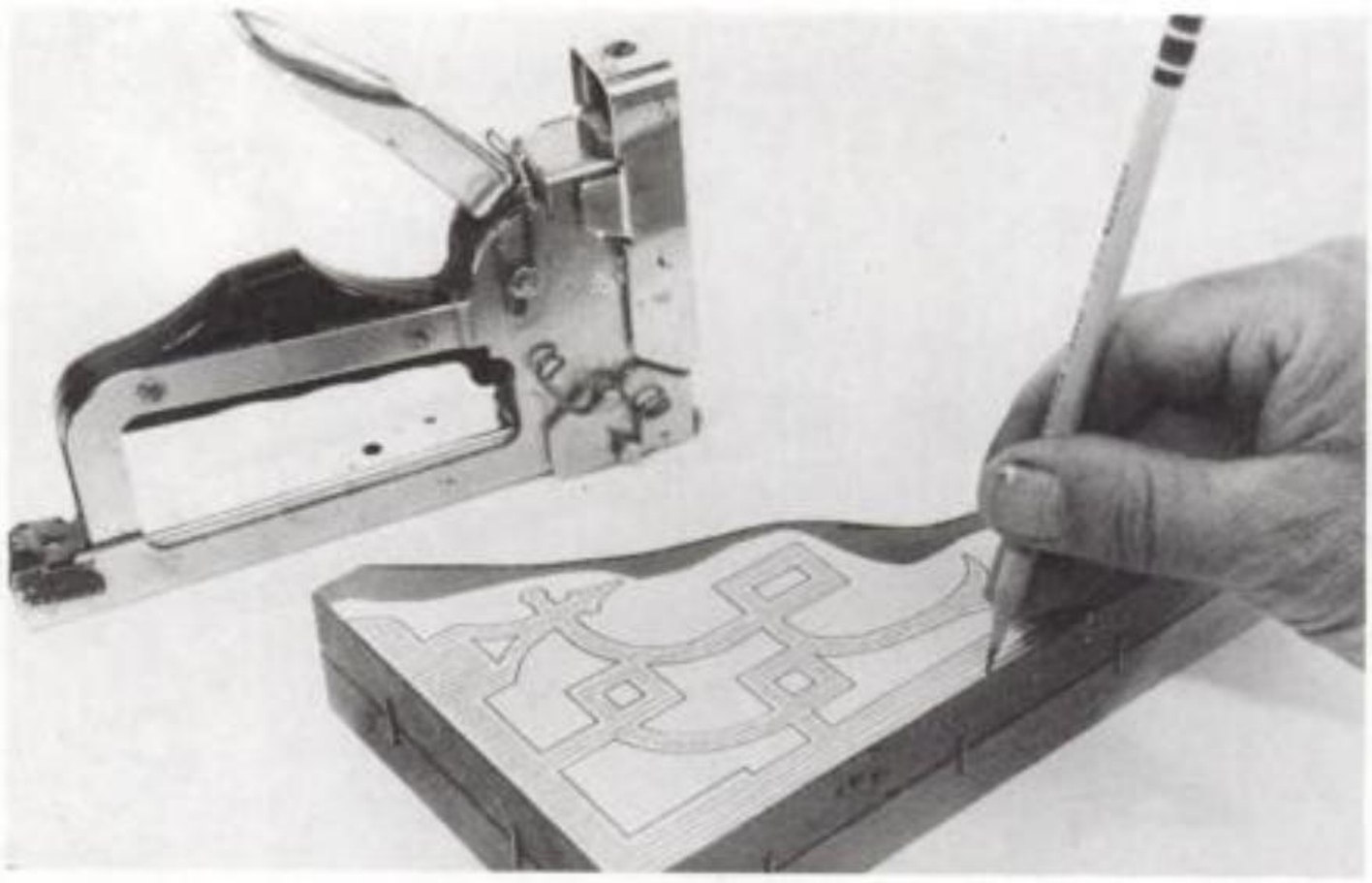
Illus. 139. Shelf pattern.

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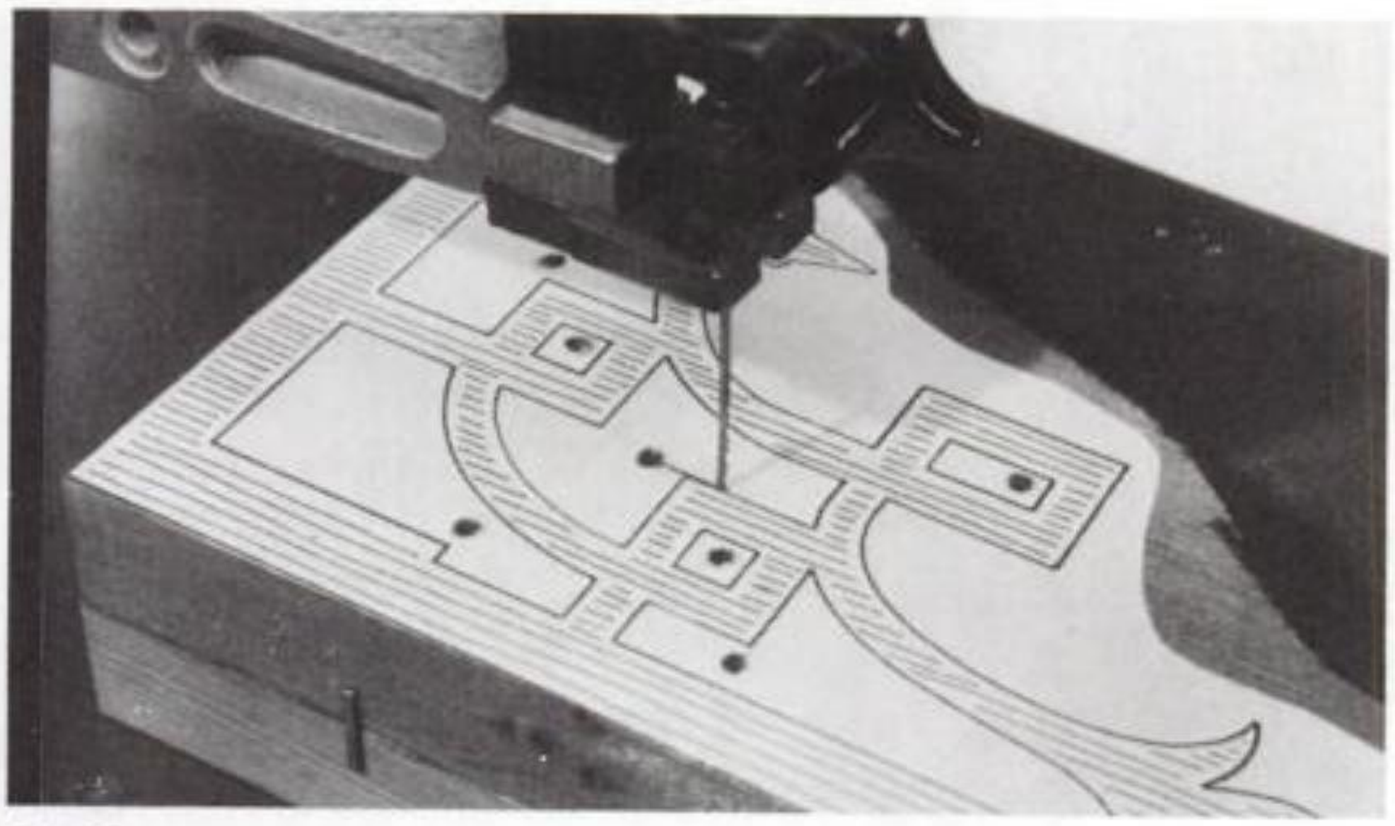
Delicate Brackets



Illus. 140. Preparing brackets for sawing. Note that the straight edges are cut square to each other and the pattern is applied to these presawn straight edges. Also, note how brackets can be laid out to conserve stock.

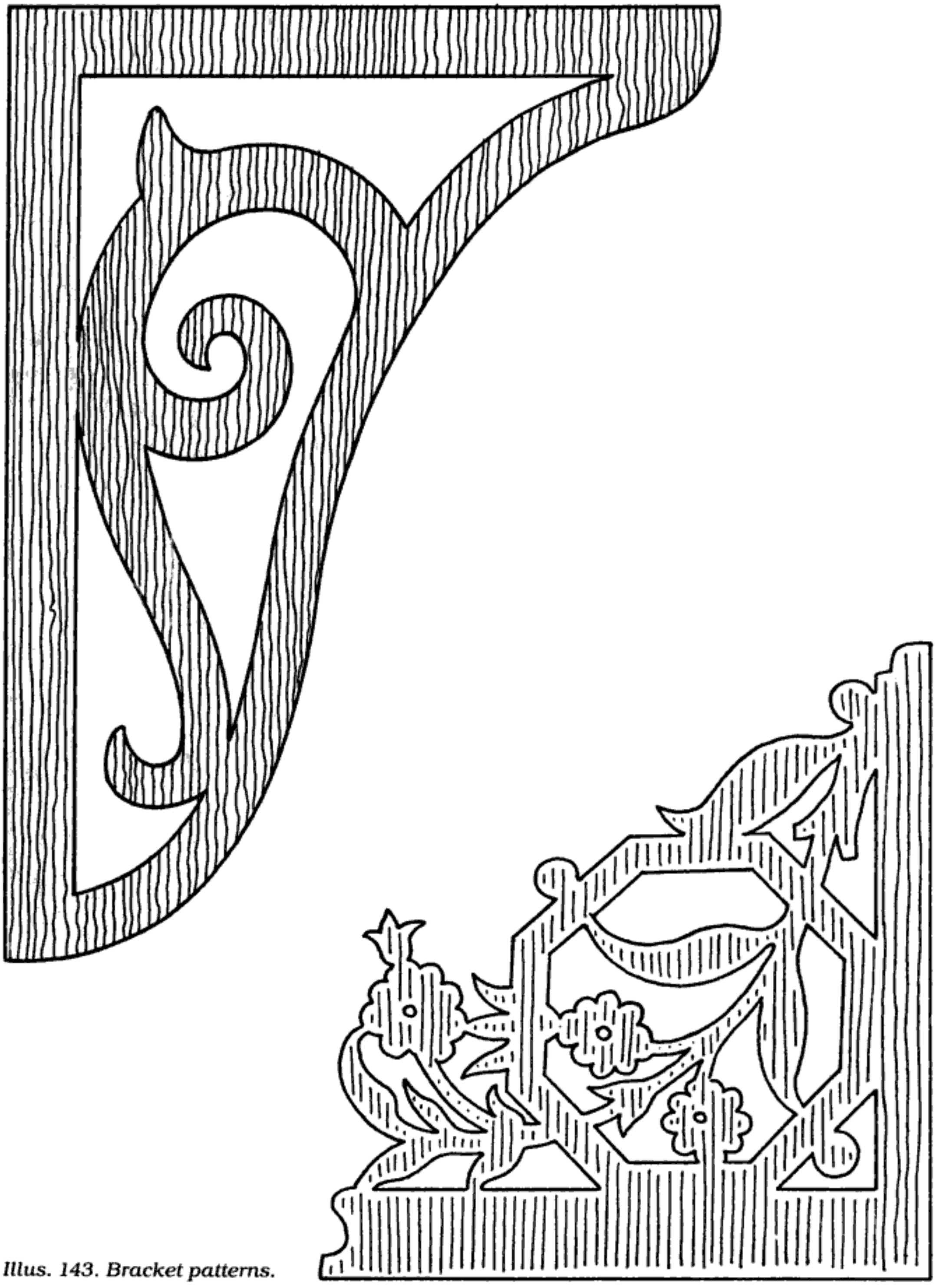


Illus. 141. Here, the stock is rough-sawn, aligned, stacked, and stapled along the edges for sawing one pair of identical brackets at once.



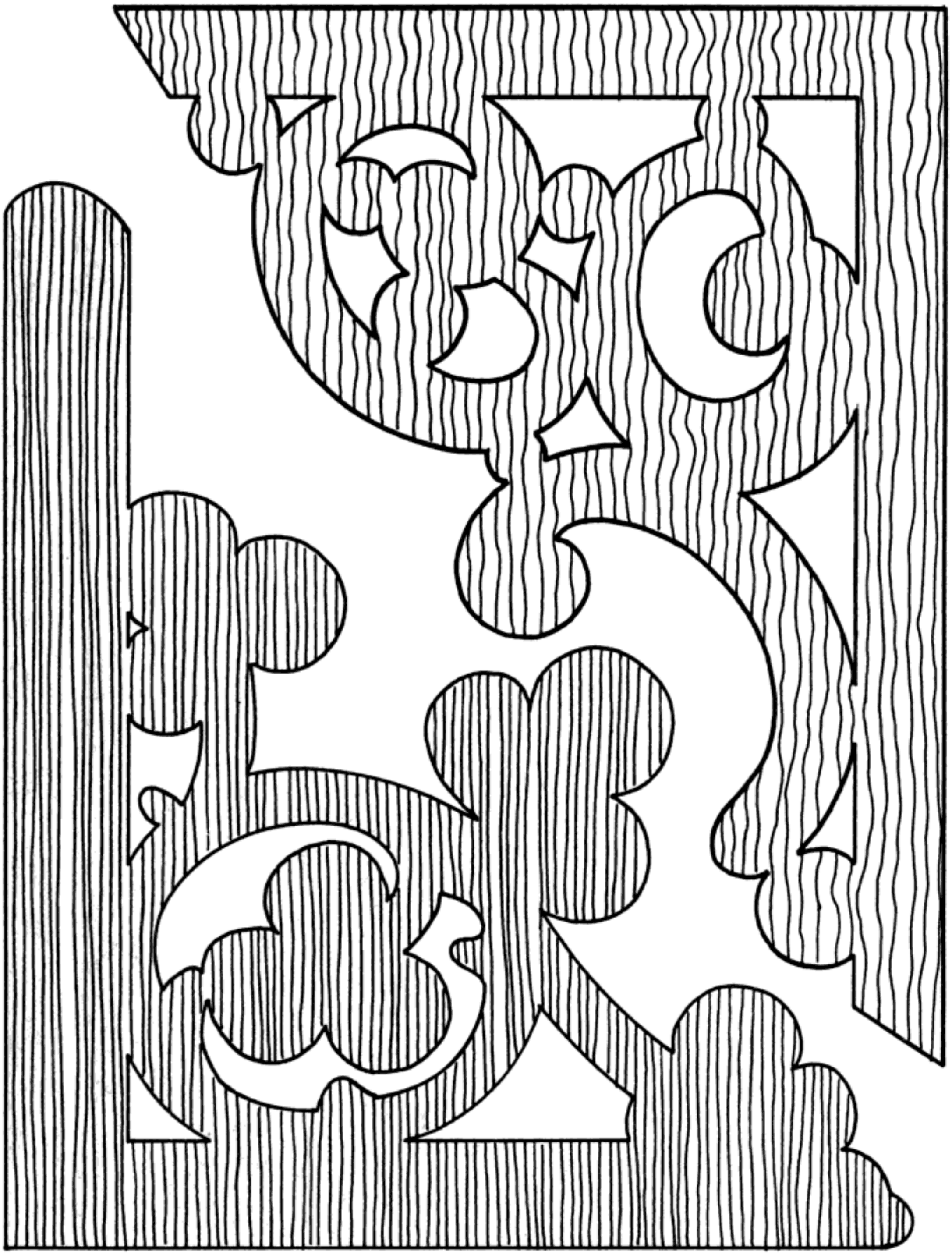
Illus. 142. Starting the inside cuts. Note the hole locations so that the cut can quickly proceed into a starting corner.

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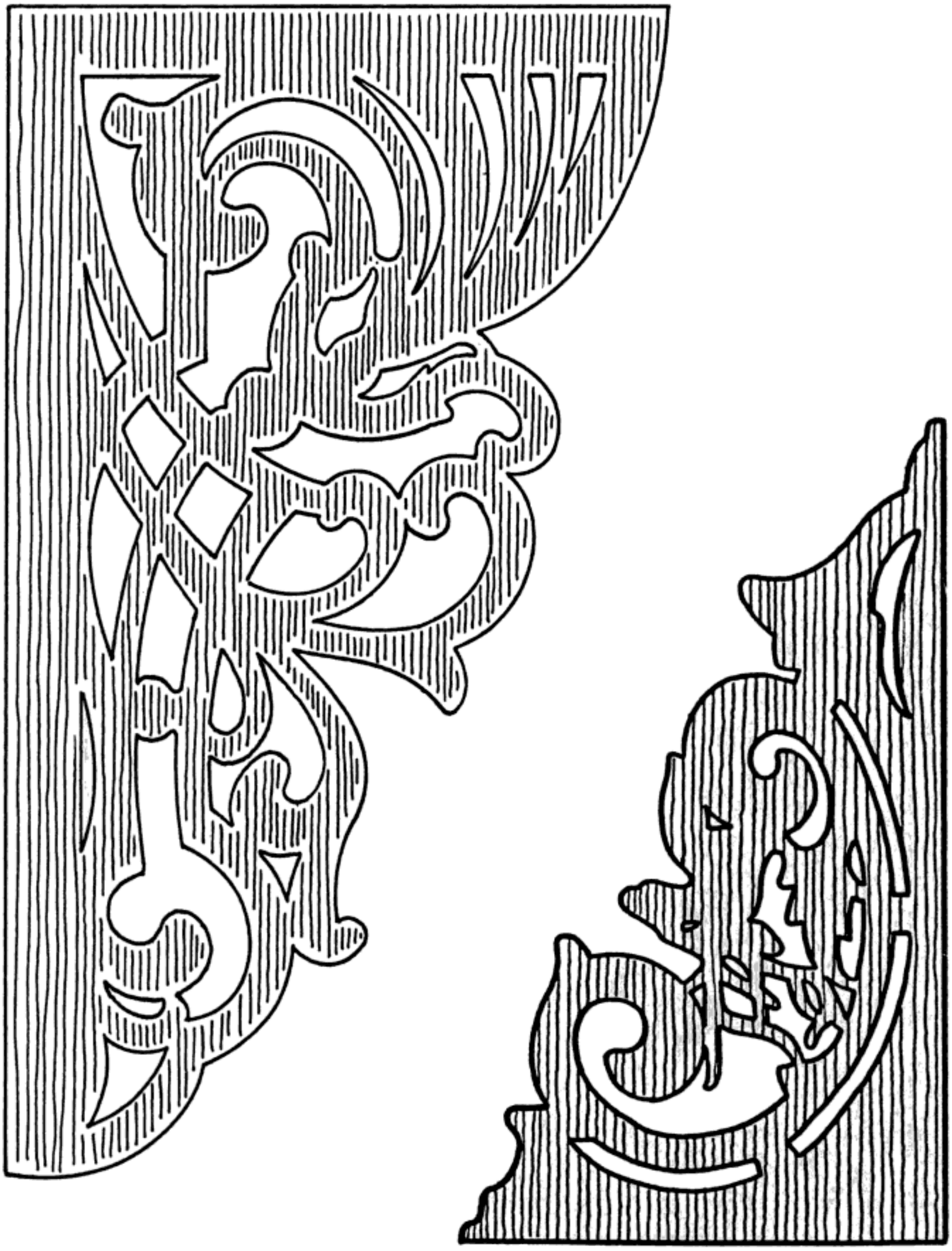
Illus. 143. Bracket patterns.

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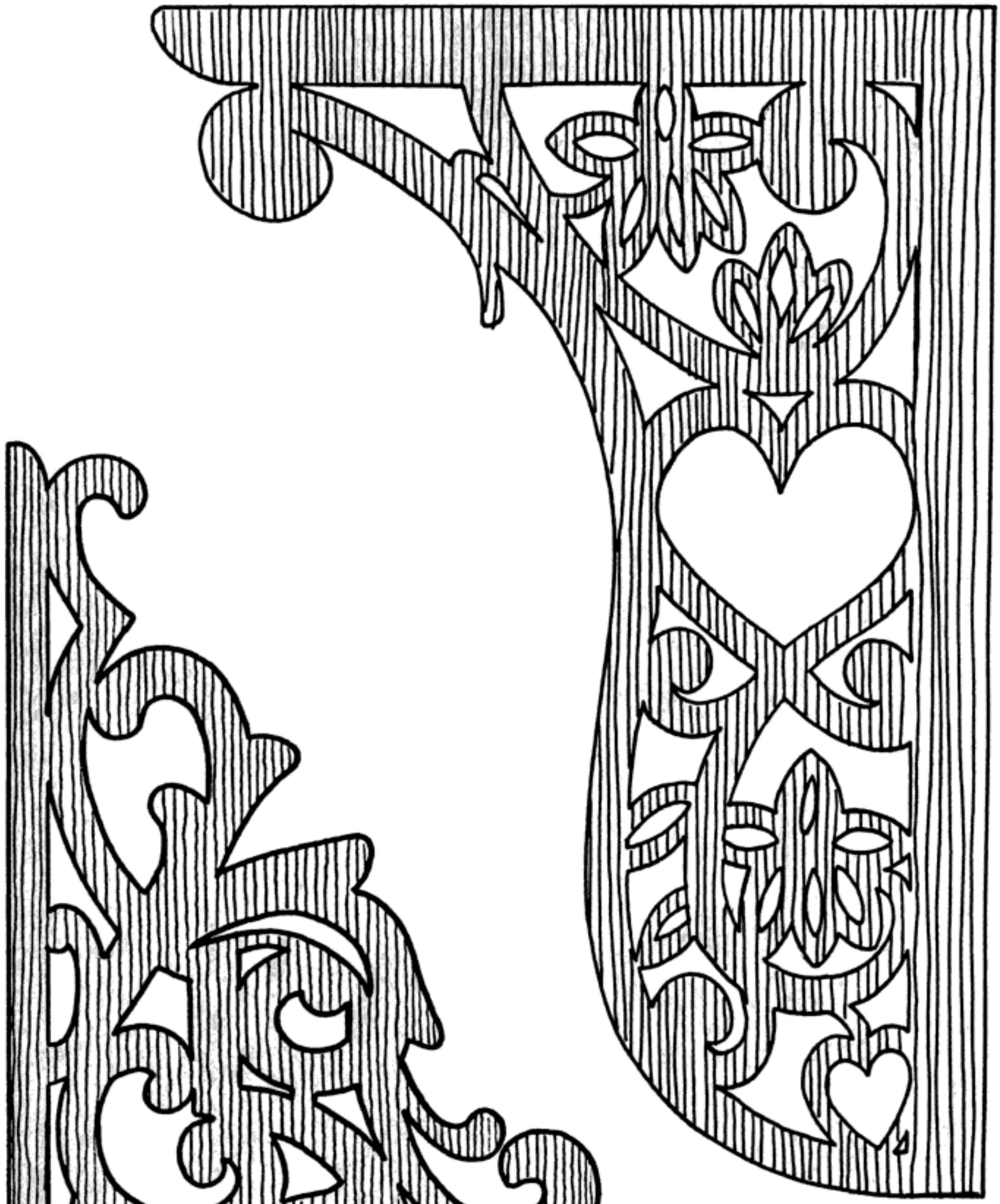
Illus. 144. Bracket patterns.

Copyrighted material



Illus. 145. Bracket patterns.

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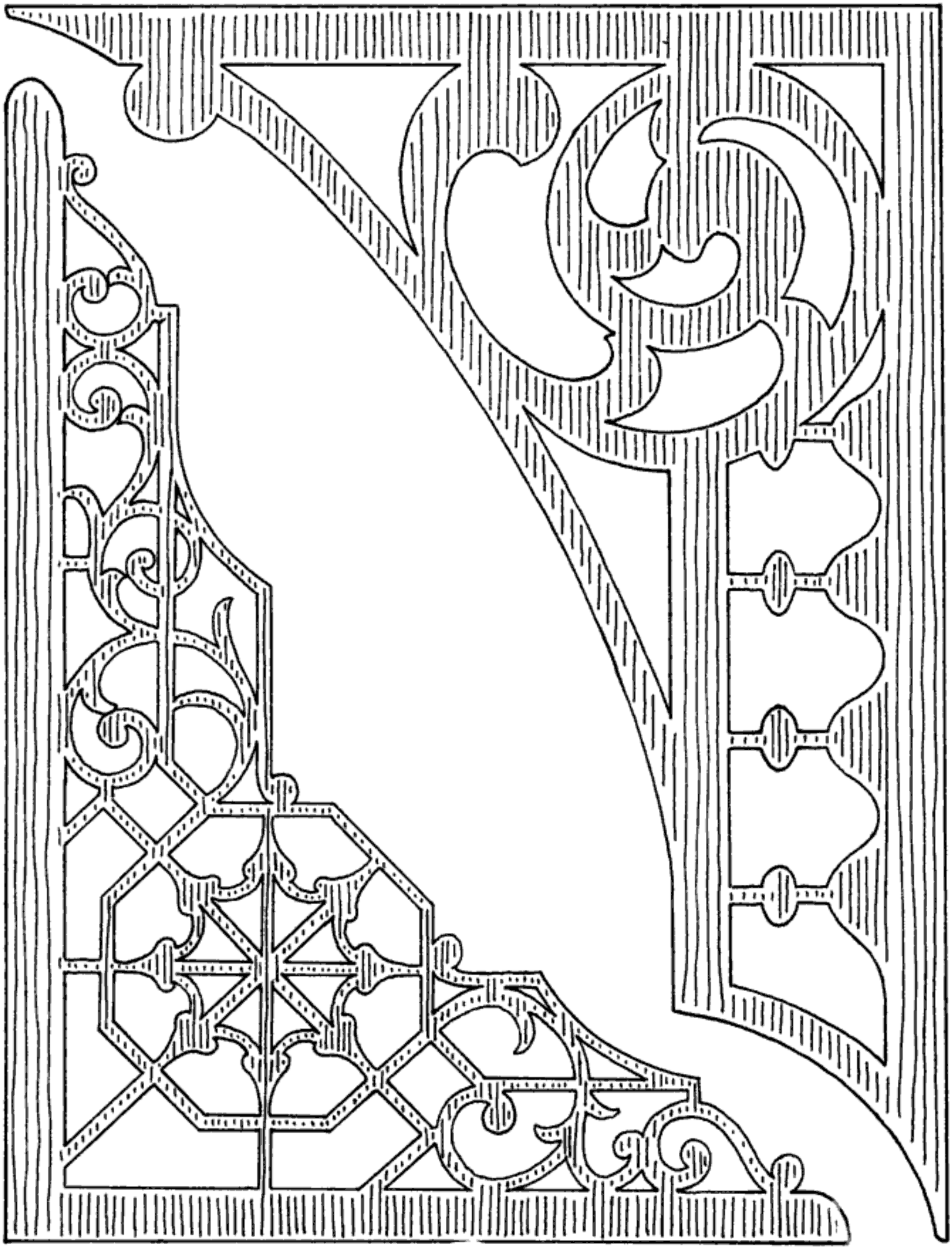
Illus. 146. Bracket patterns.

Copyrighted material



Illus. 147. Bracket patterns.

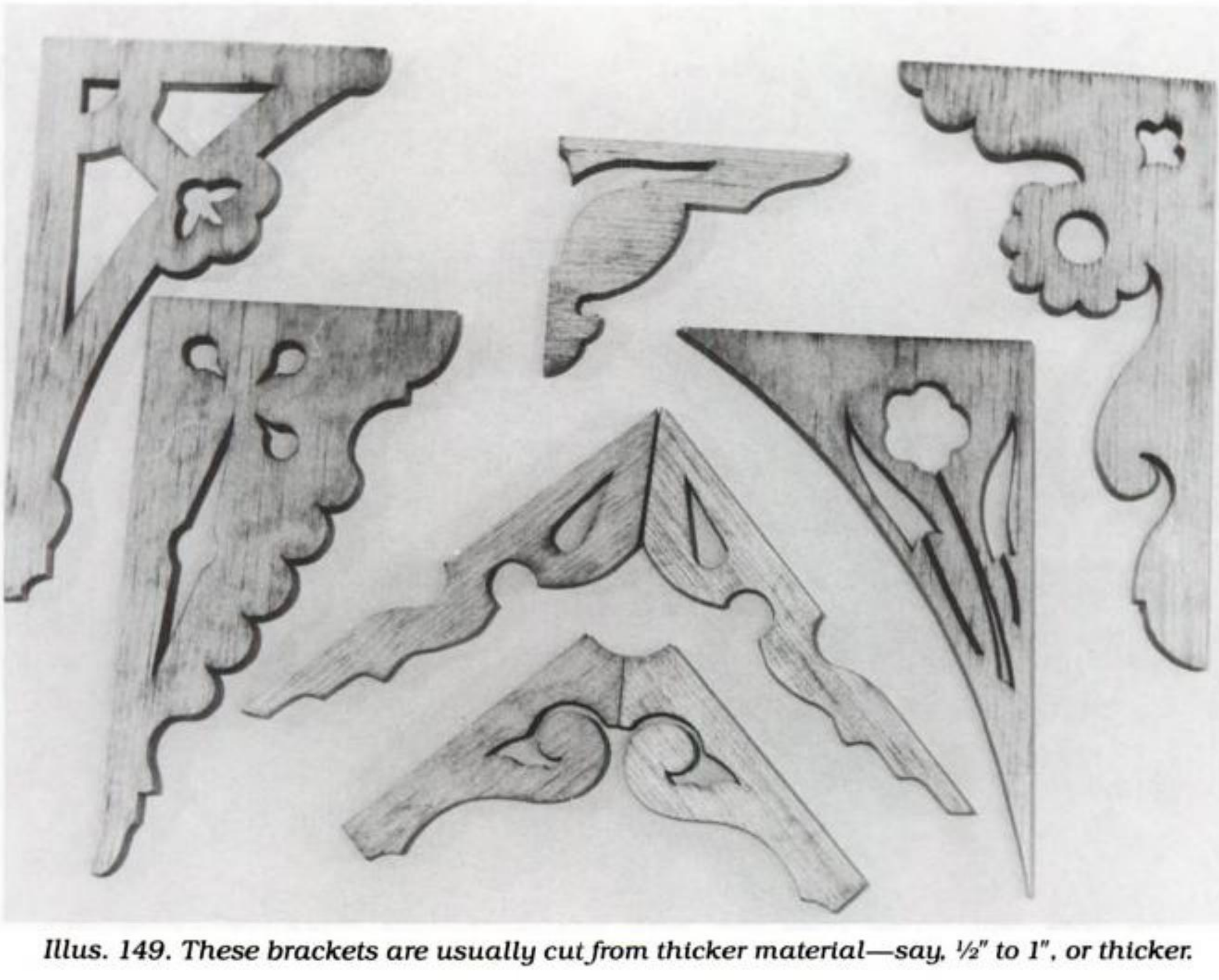
Copyrighted material



Illus. 148. Bracket patterns.

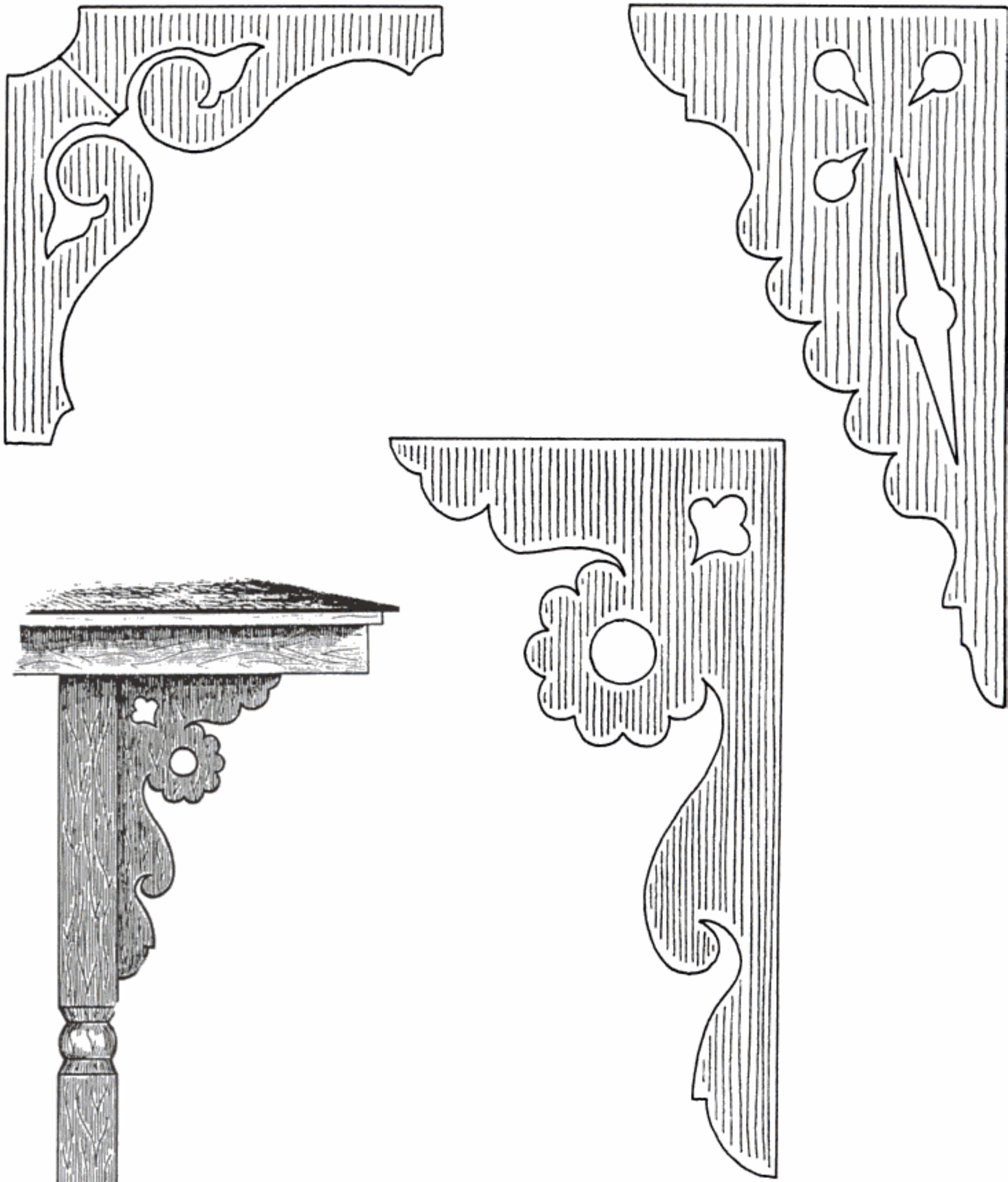
Copyrighted material

Architectural Brackets



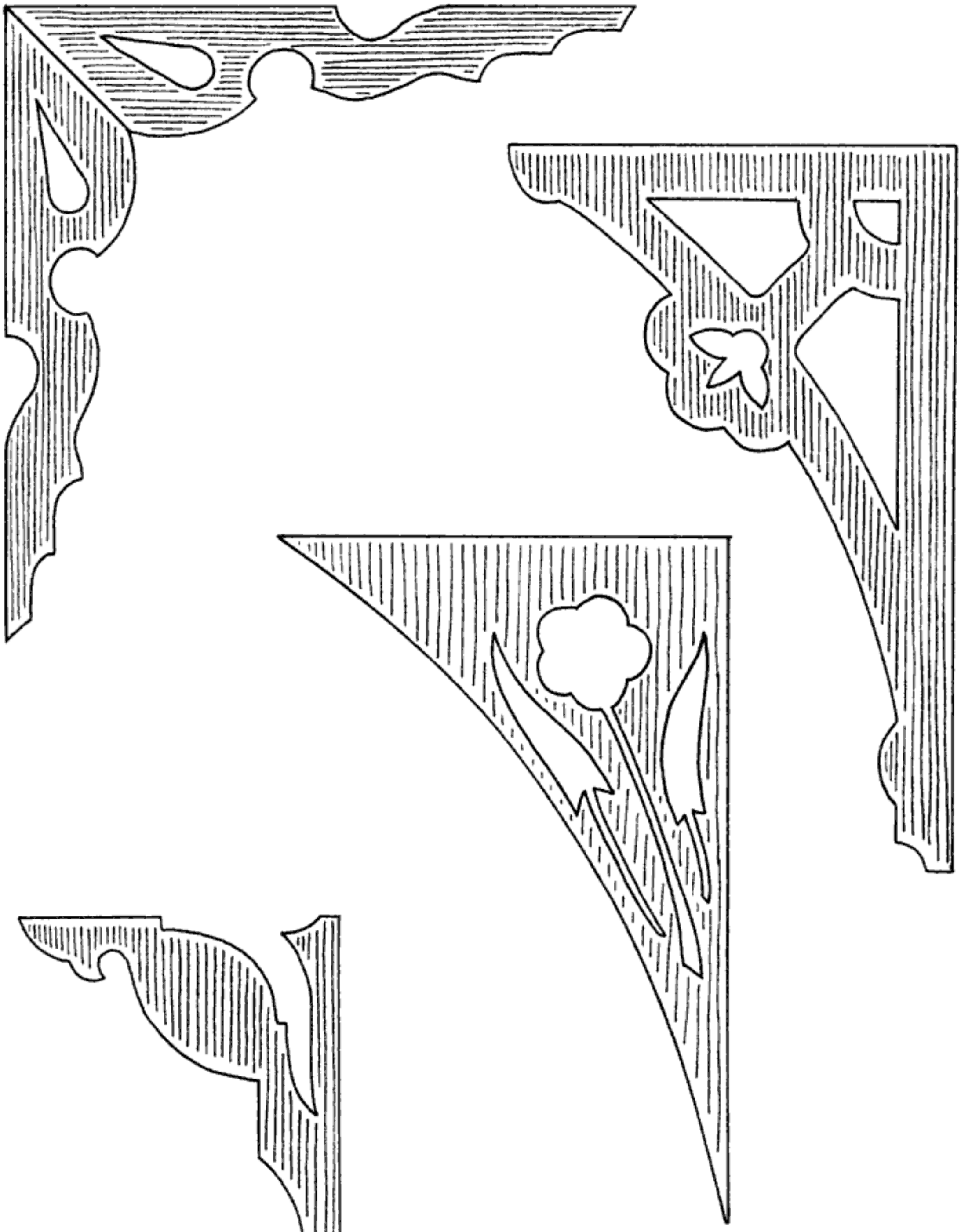
Illus. 149. These brackets are usually cut from thicker material—say. ½" to 1", or thicker.

Copyrighted material



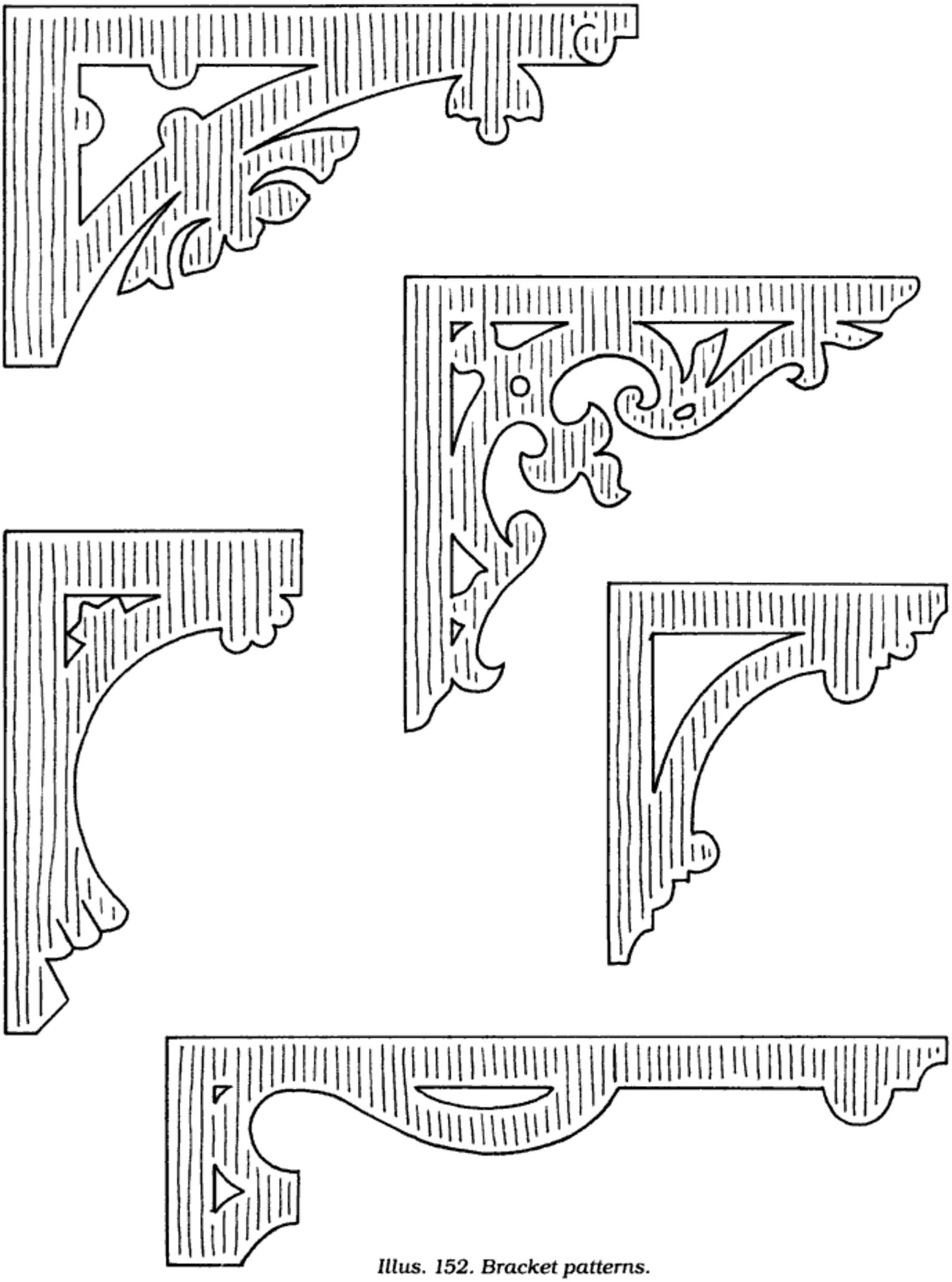
Illus. 150. Bracket patterns.

Copyrighted material



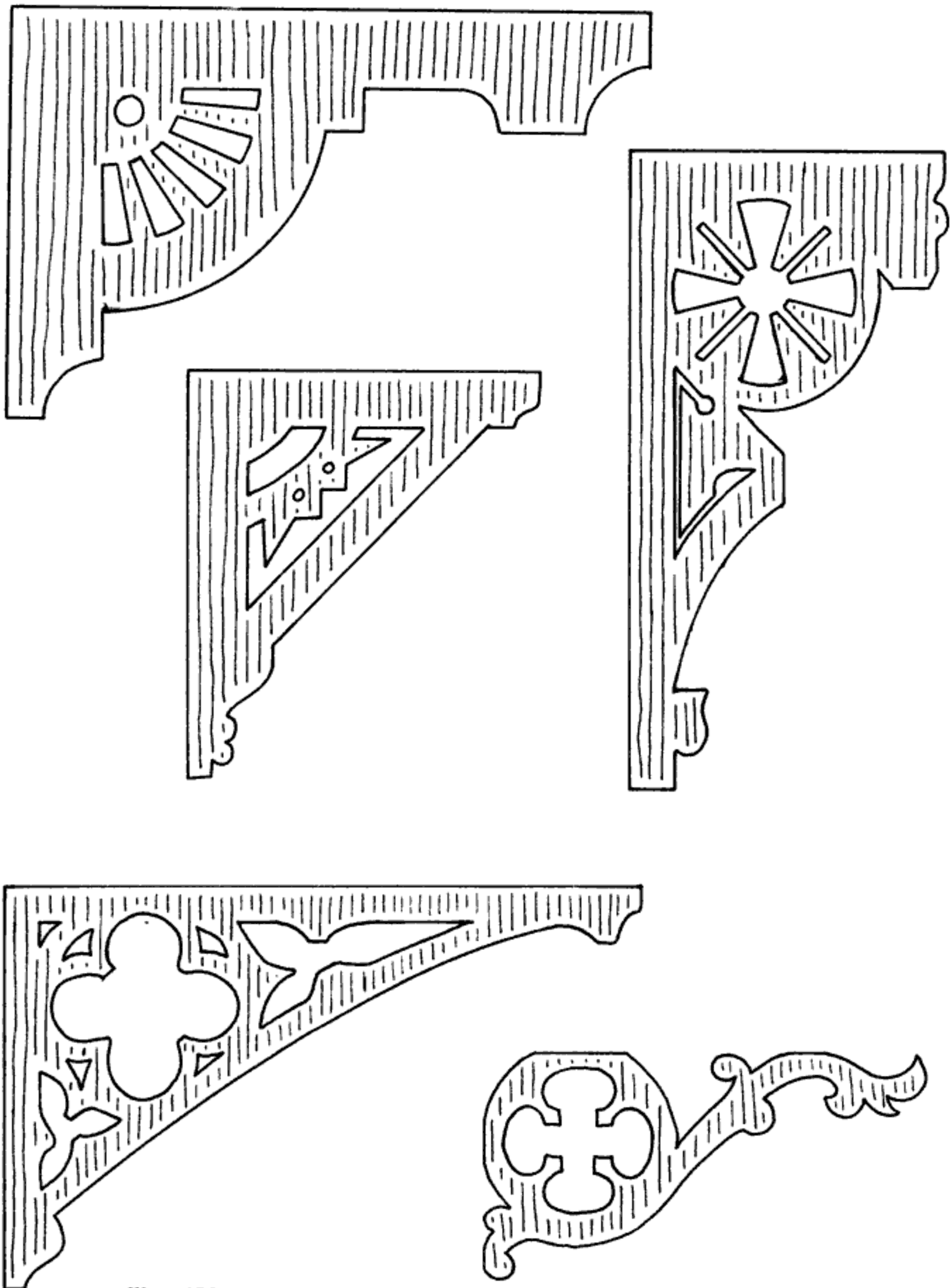
Illus. 151. Bracket patterns.

Copyrighted material



Illus. 152. Bracket patterns.

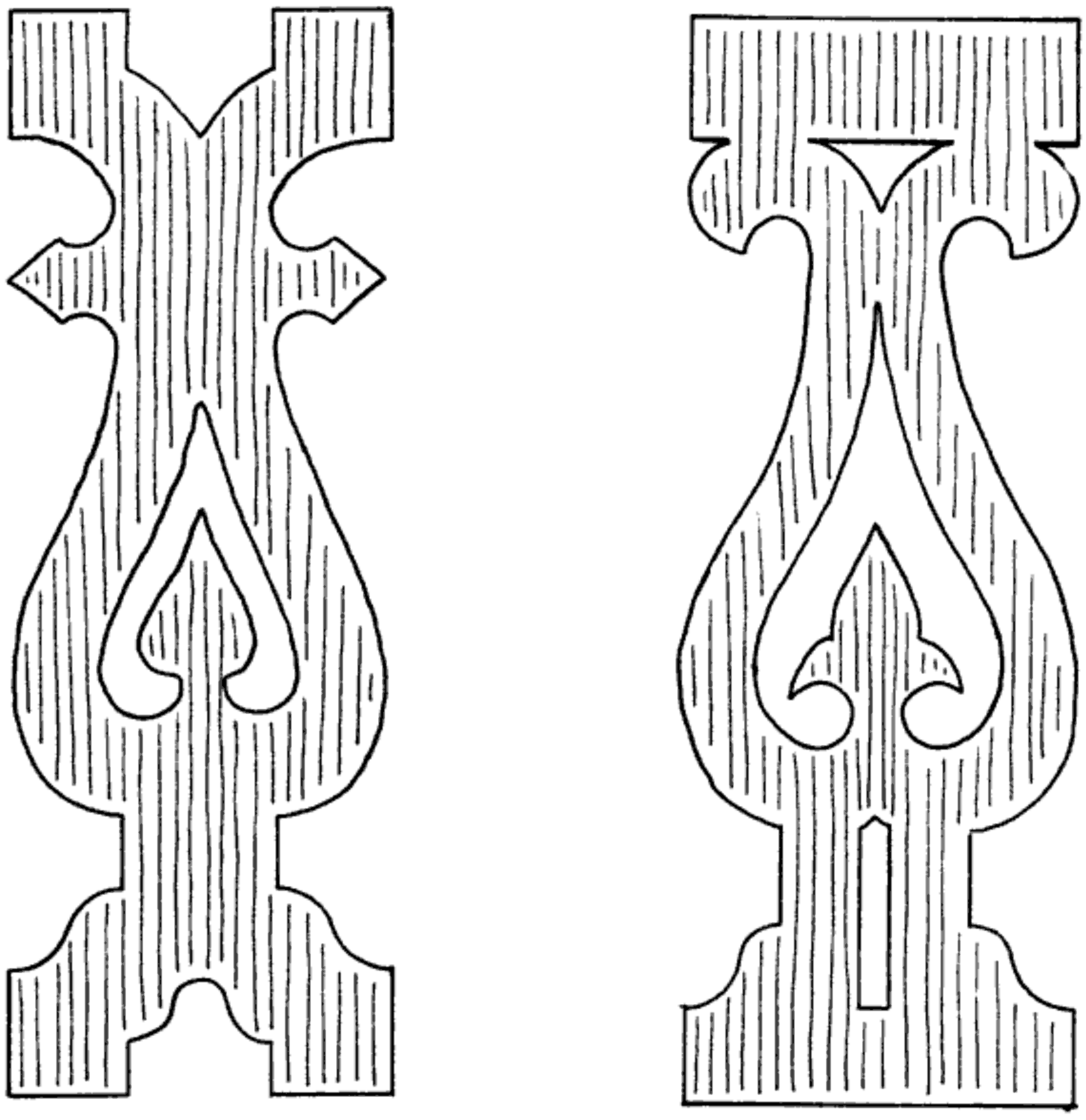
Copyrighted material



Illus. 153. Bracket patterns.

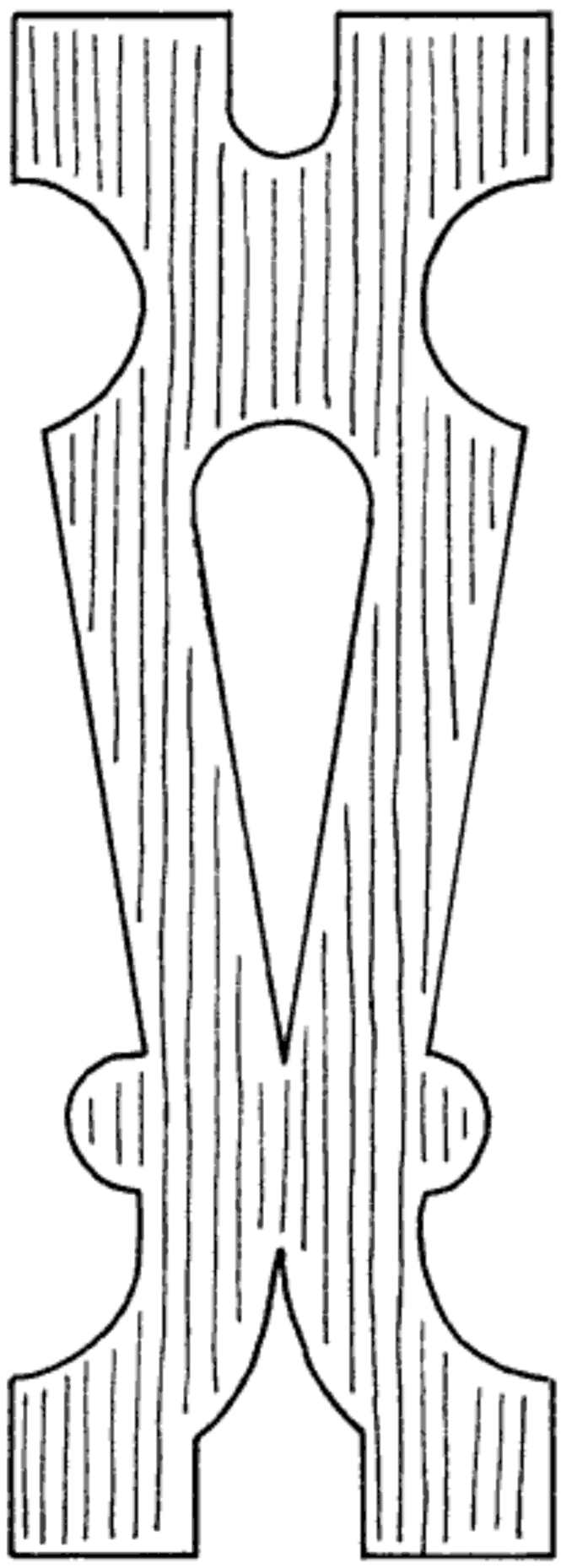
Copyrighted material

Balusters



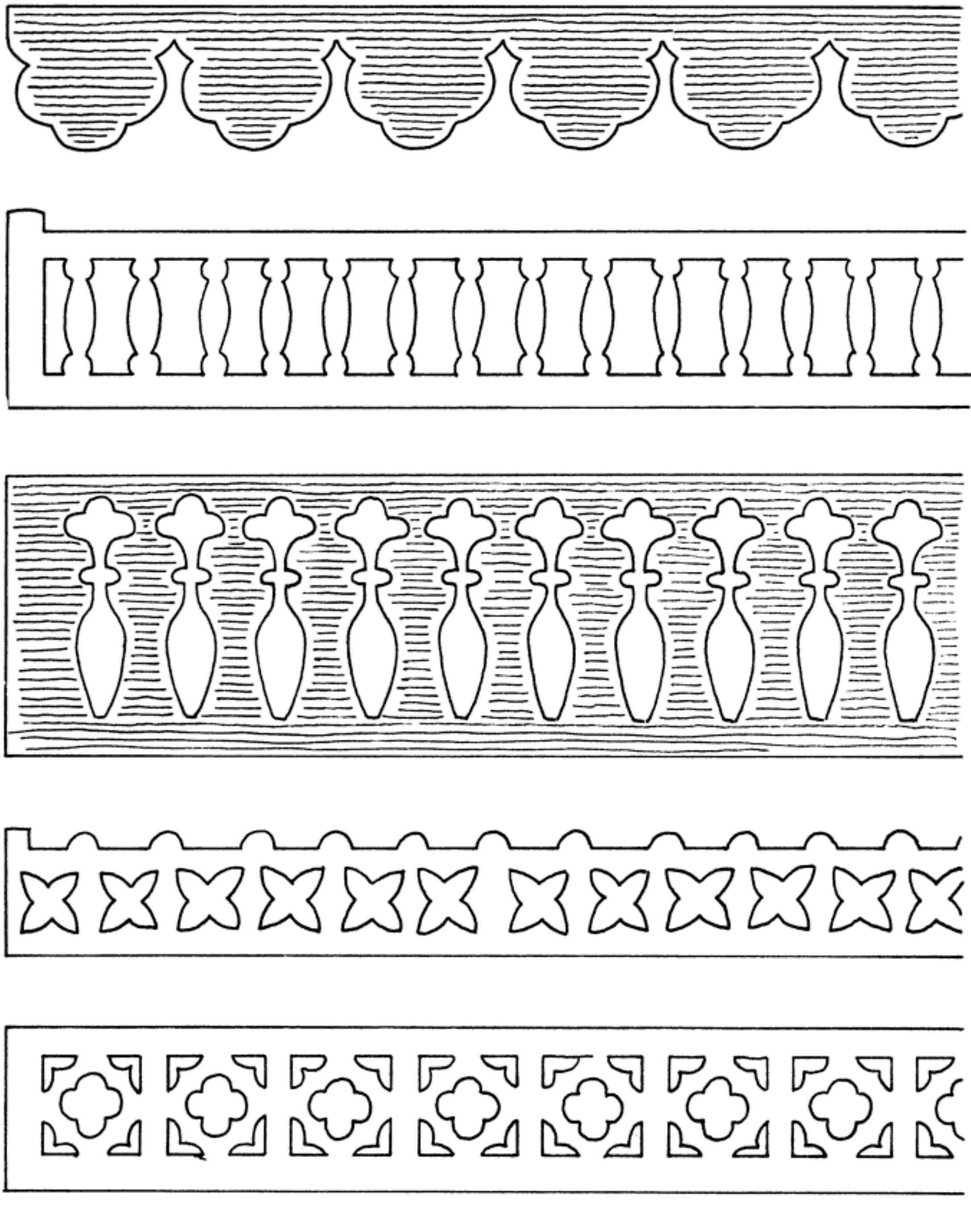
Illus. 154. Baluster patterns.

Copyrighted material



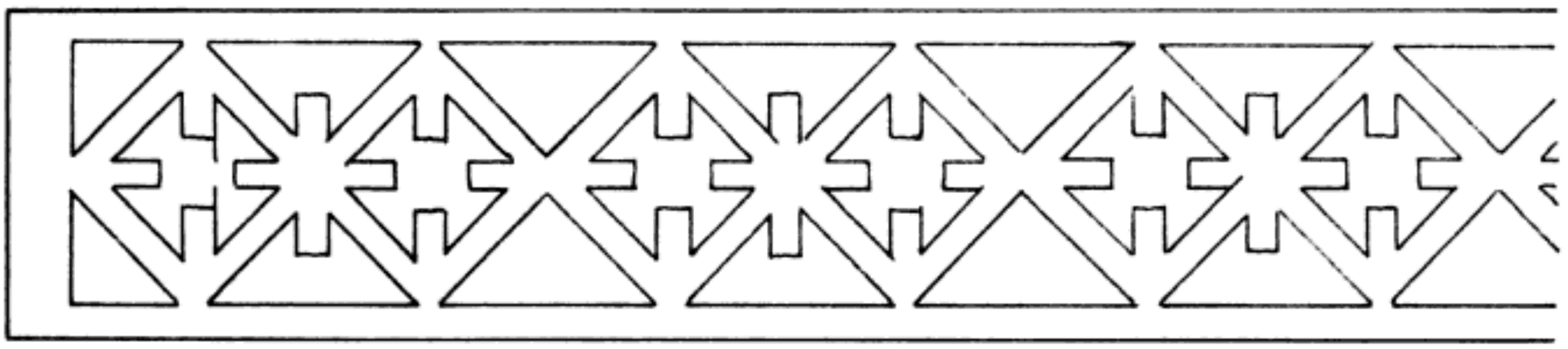
Copyrighted material

Running Trim



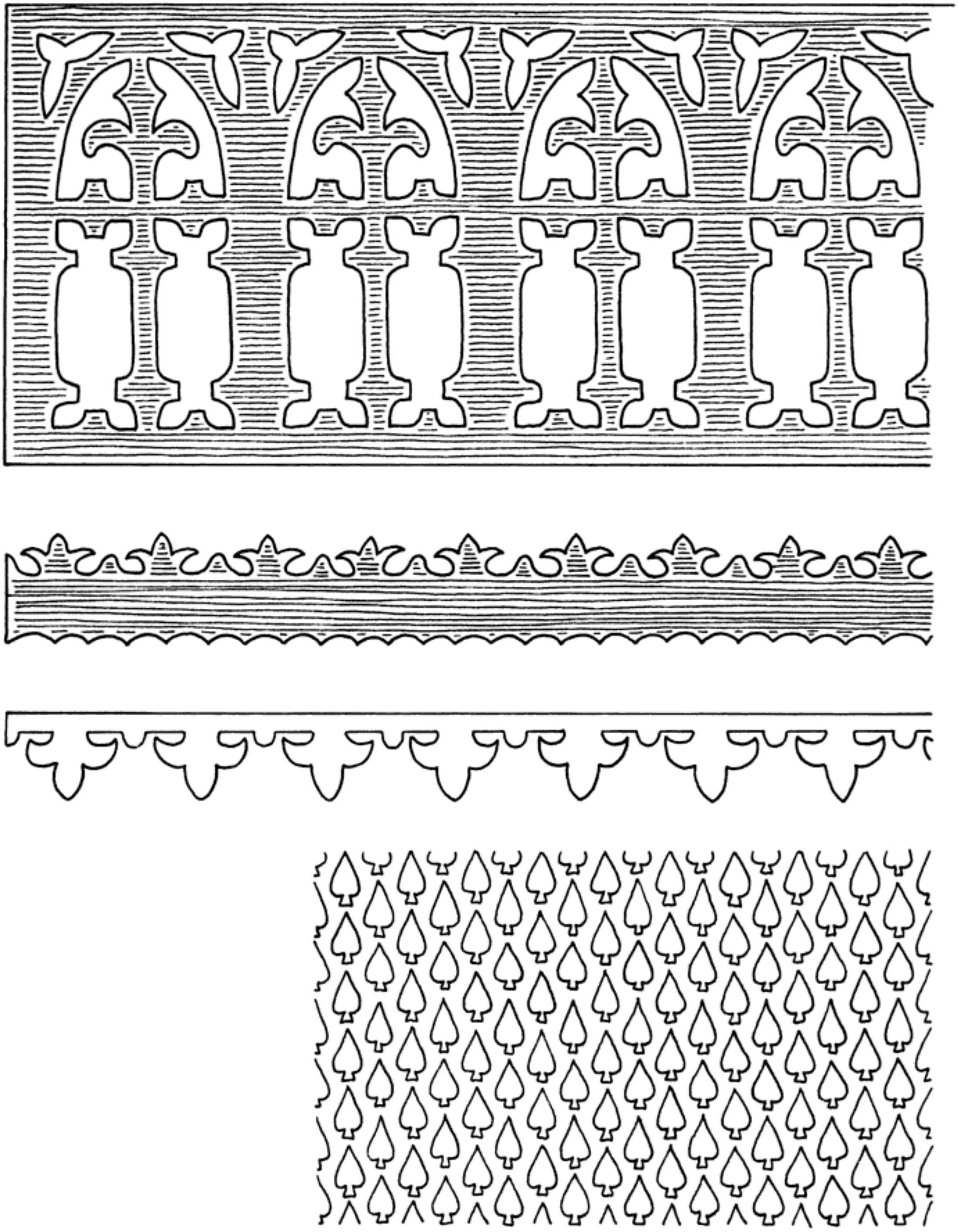
Illus. 155. Trim patterns.

Copyrighted material



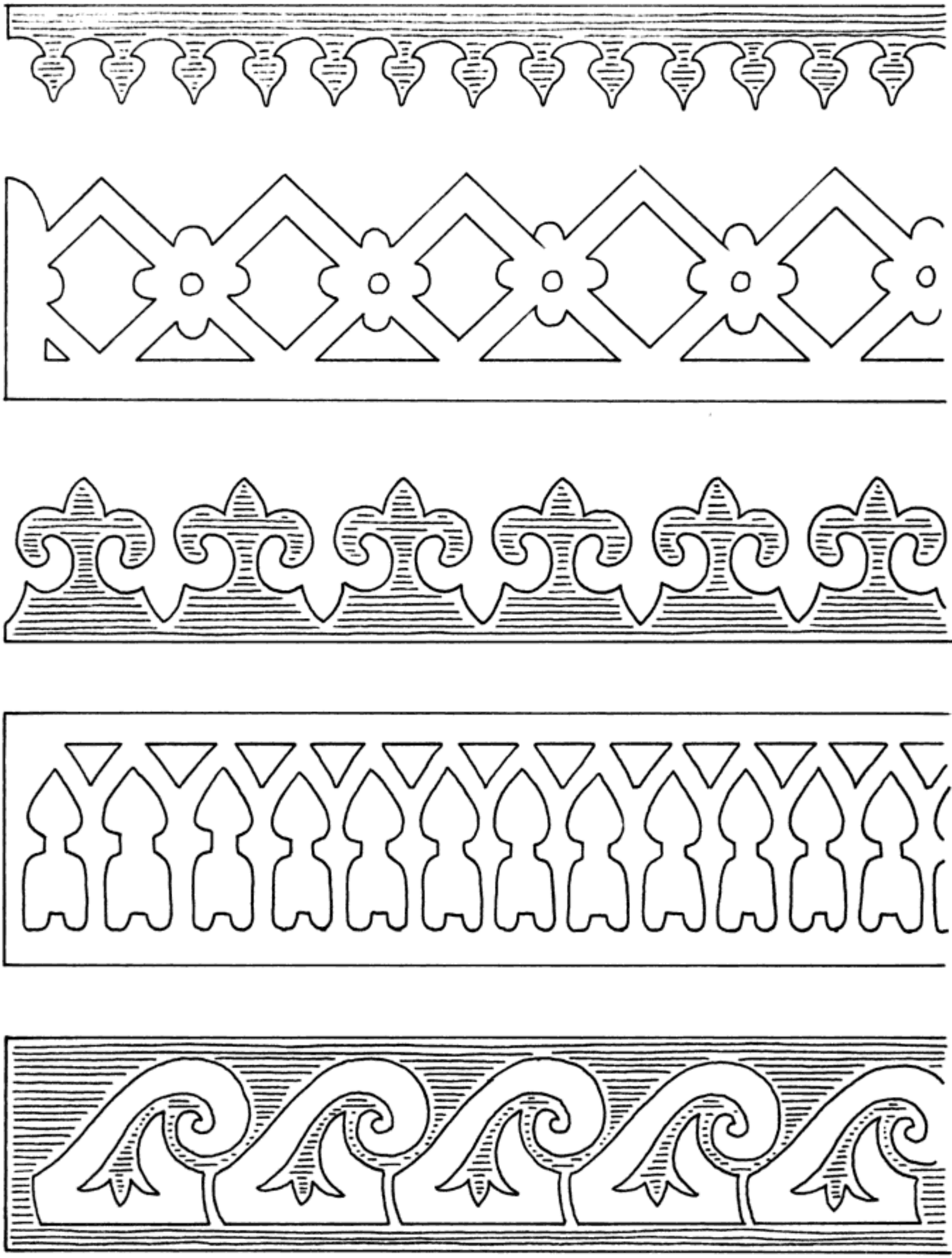
Illus. 156. Trim patterns.

Copyrighted material



Illus. 157. Trim patterns.

Copyrighted material



Illus. 158. Trim patterns.

Copyright material

Victorian Arches

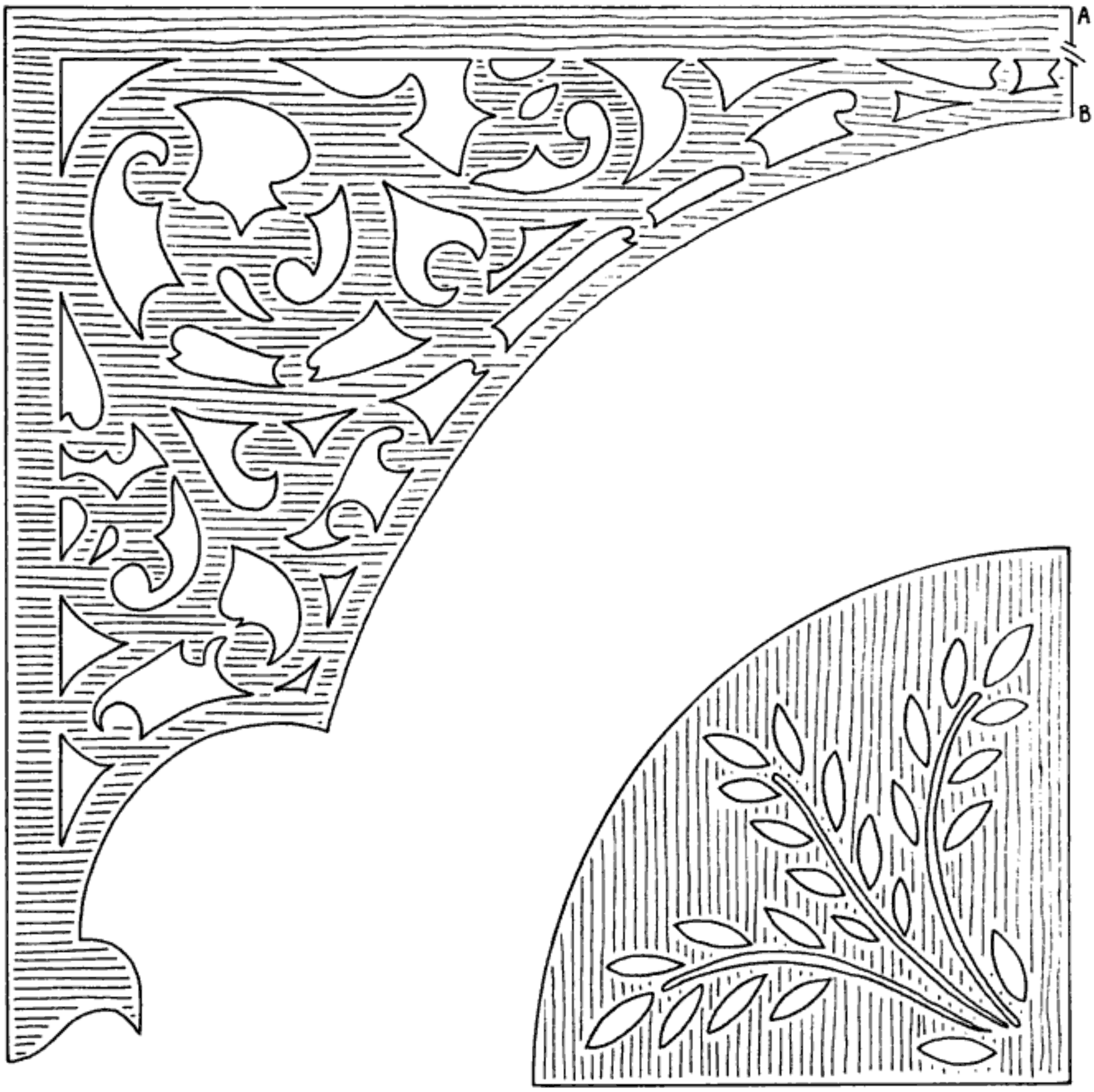


Illus. 159. Victorian arch.



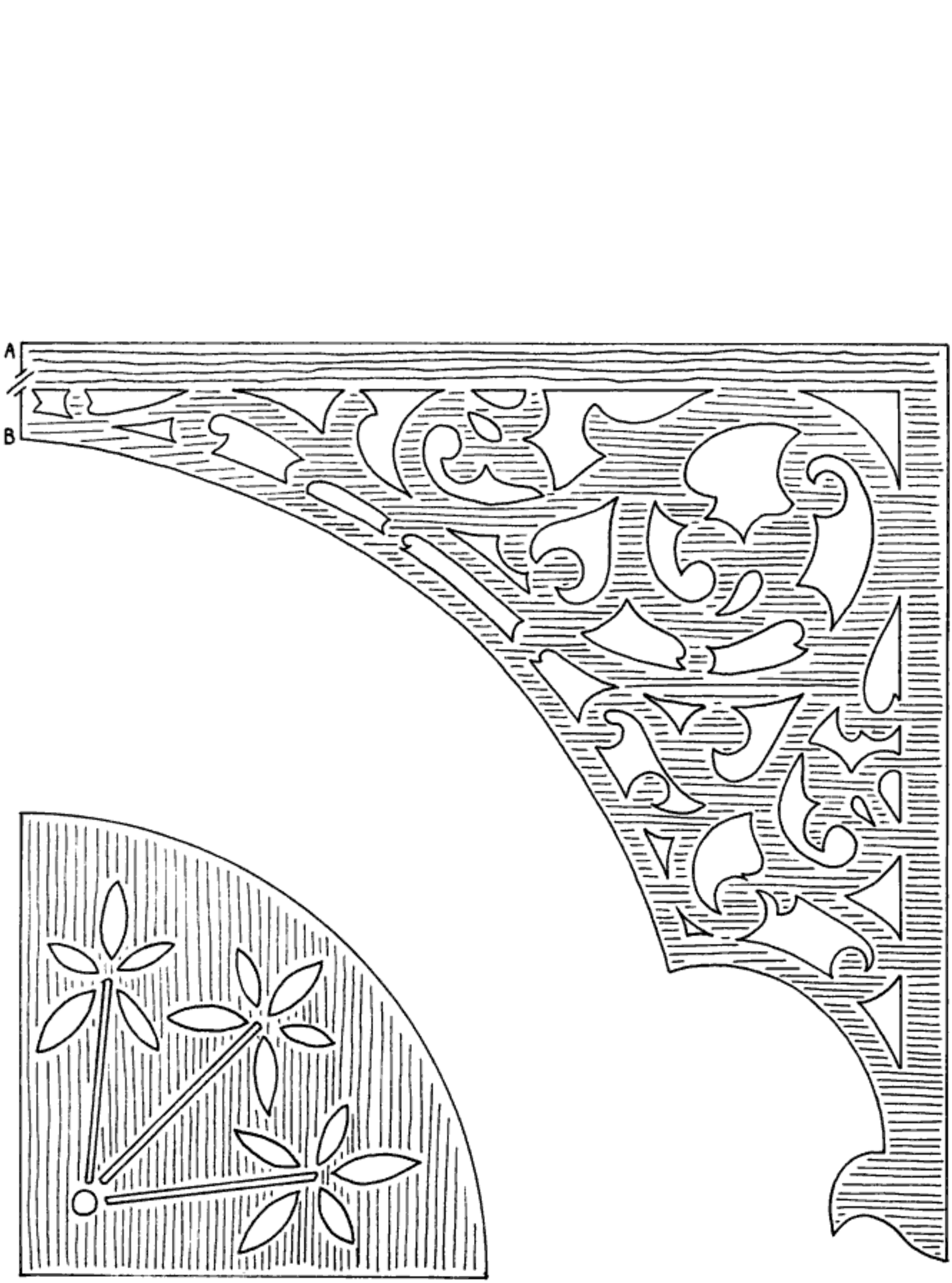
Illus. 160. Victorian arch application.

Copyrighted material

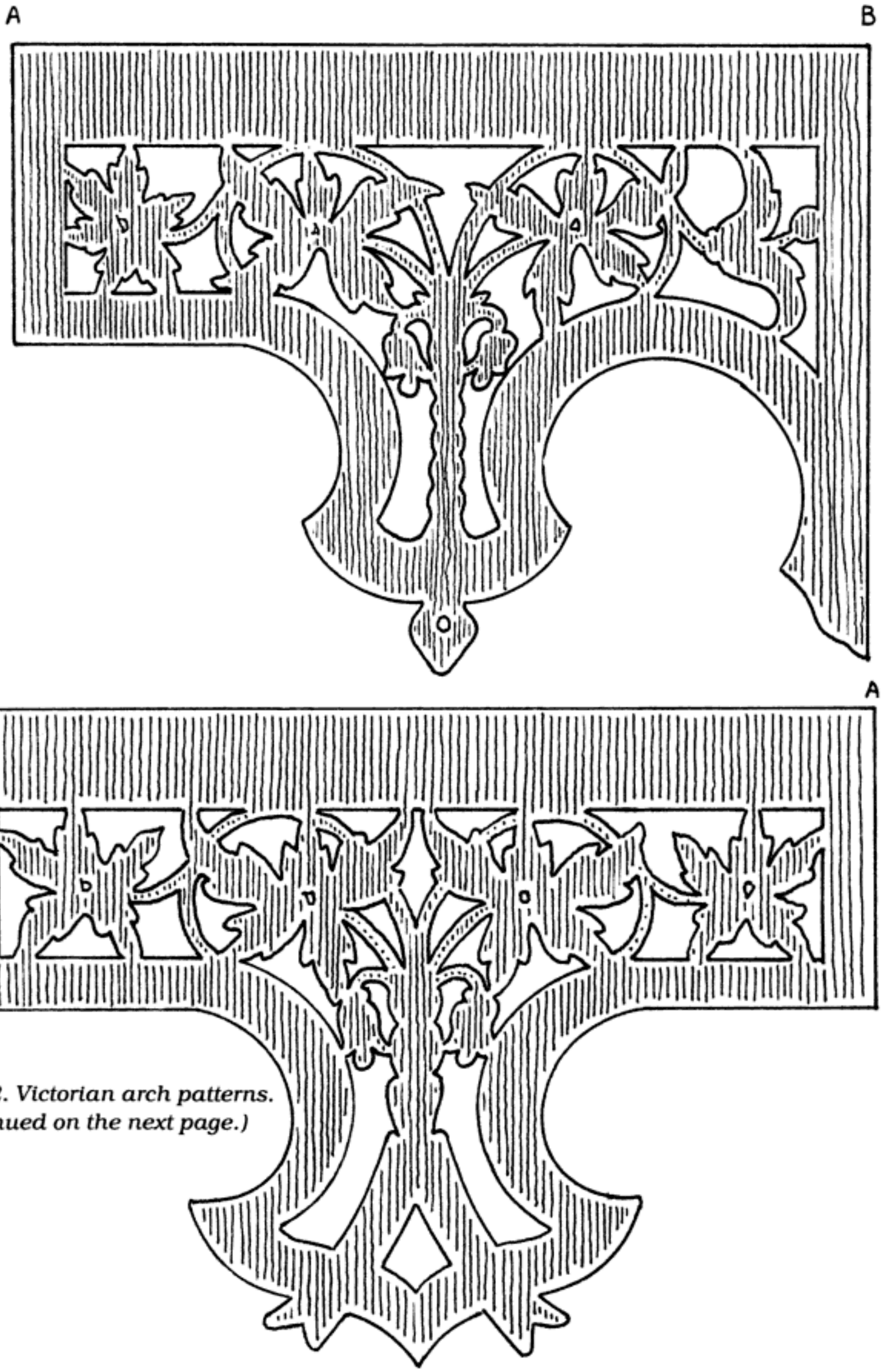


Illus. 161. Victorian arch pattern. (Continued on the next page.)

Copyrighted material



Copyrighted material



Illus. 162. Victorian arch patterns.
(Continued on the next page.)

Copyrighted material

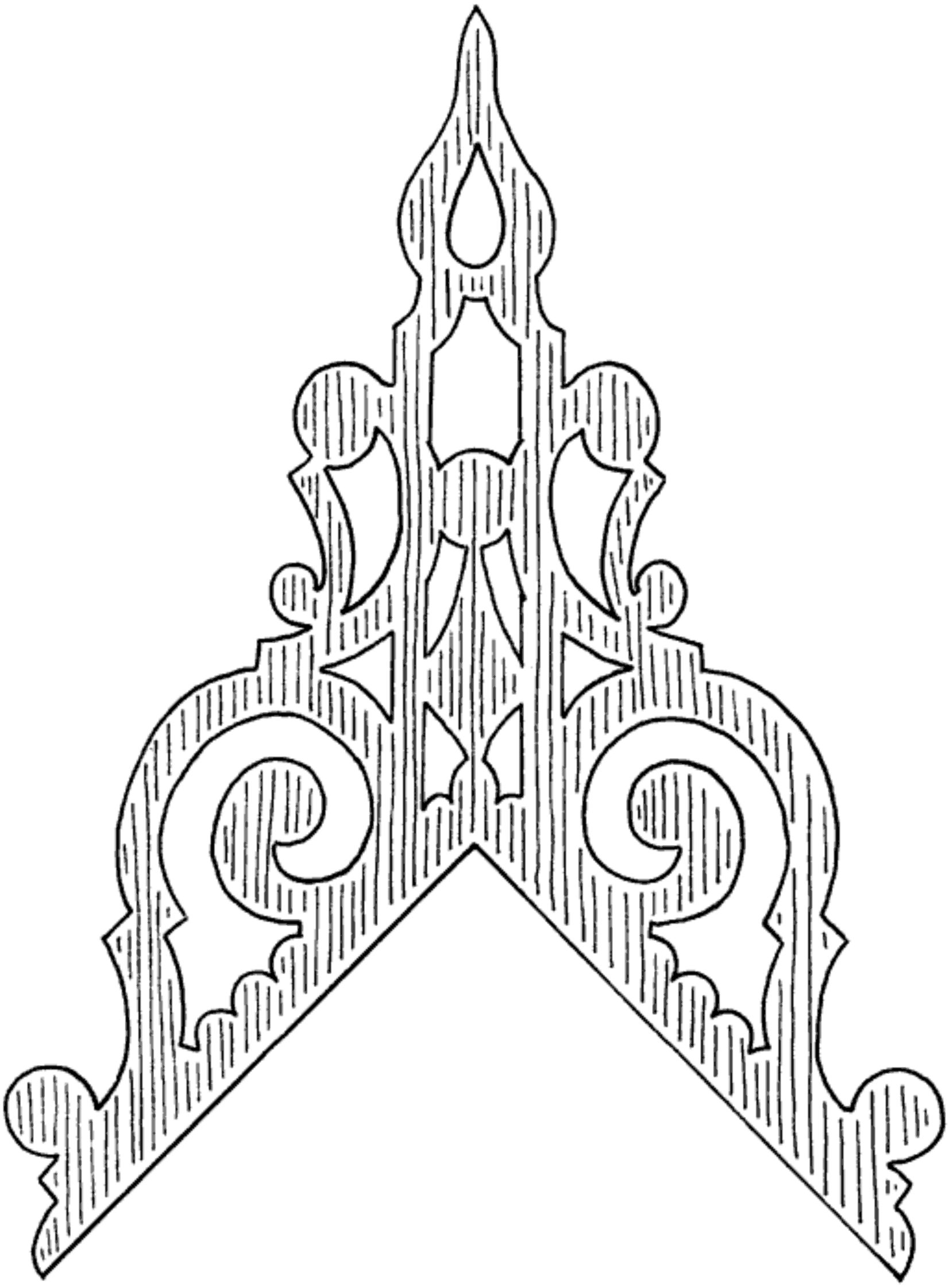
B



A B

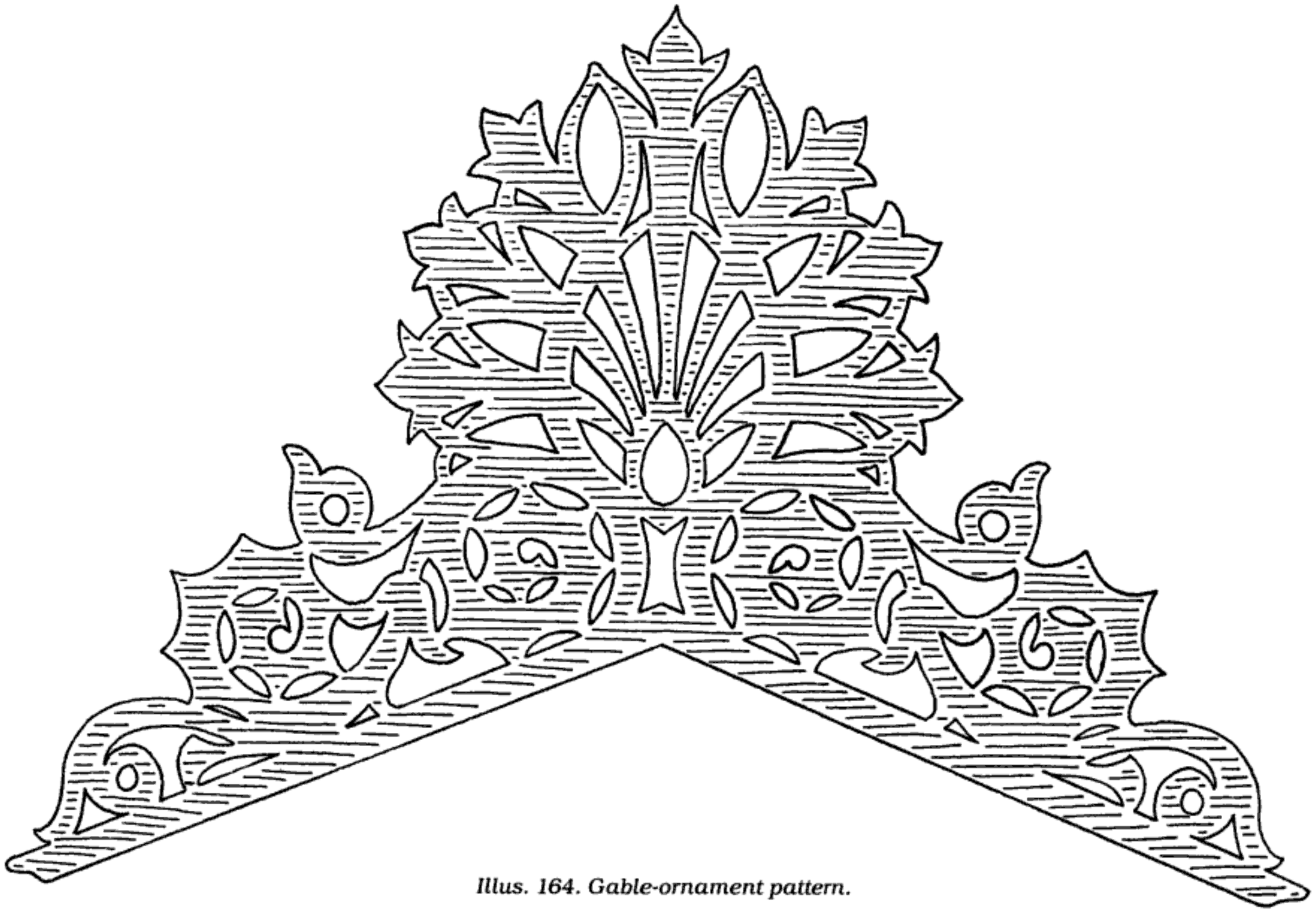
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Gable Ornaments



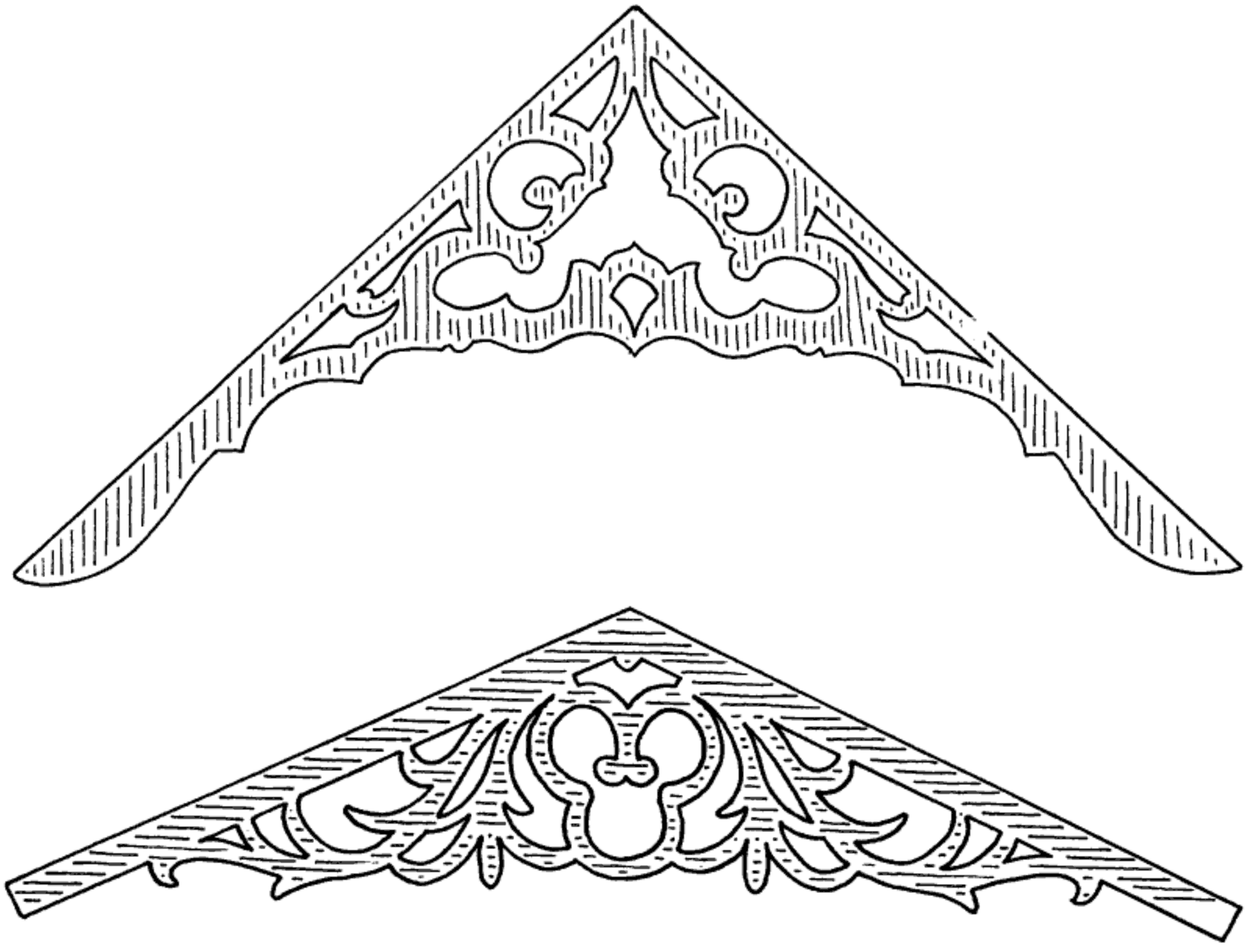
Illus. 163. Gable-ornament pattern.

Copyrighted material



Illus. 164. Gable-ornament pattern.

Copyrighted material



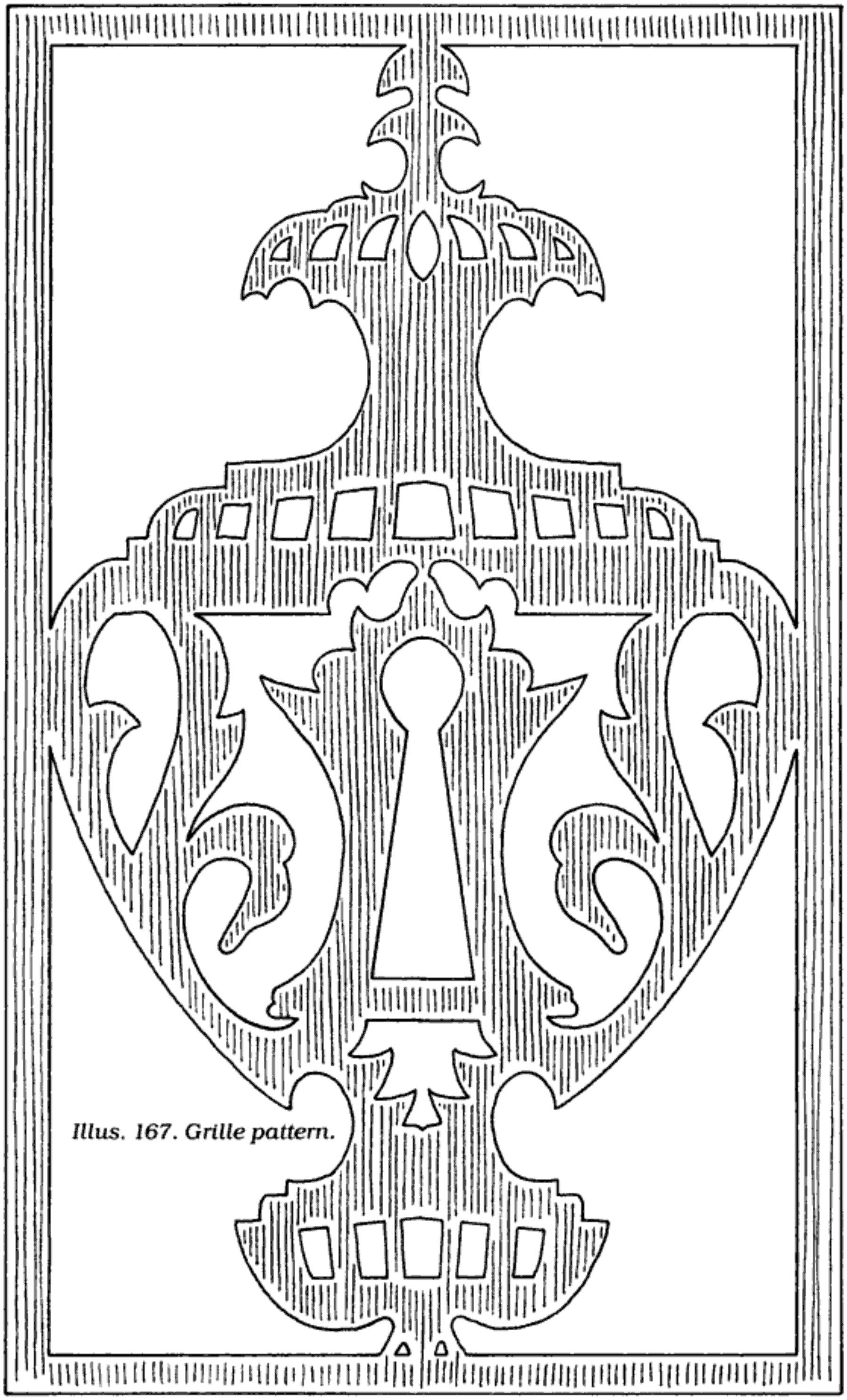
Illus. 165. Gable-ornament pattern.

Copyrighted material

Grilles

Illus. 166. Grille pattern.

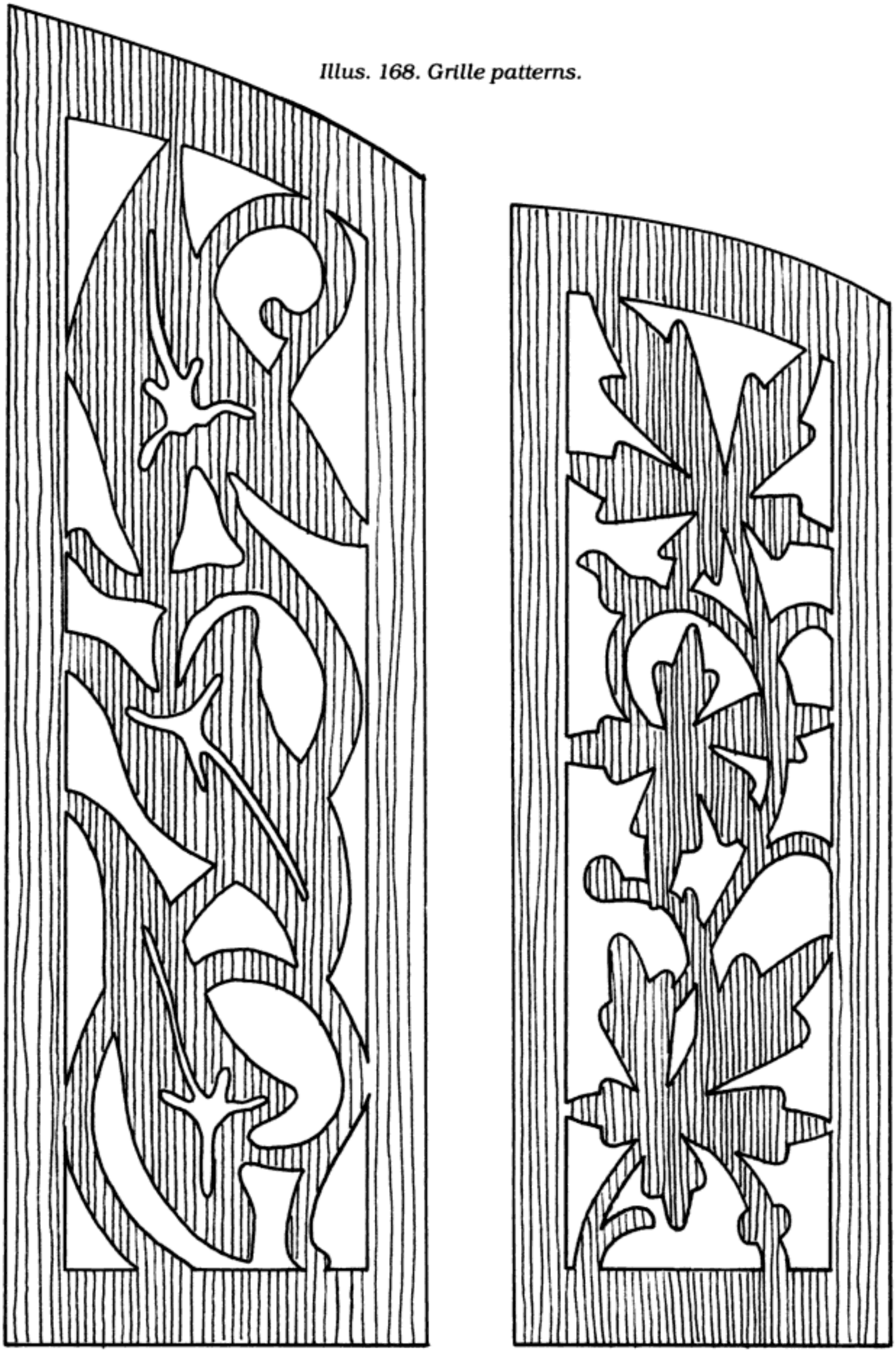
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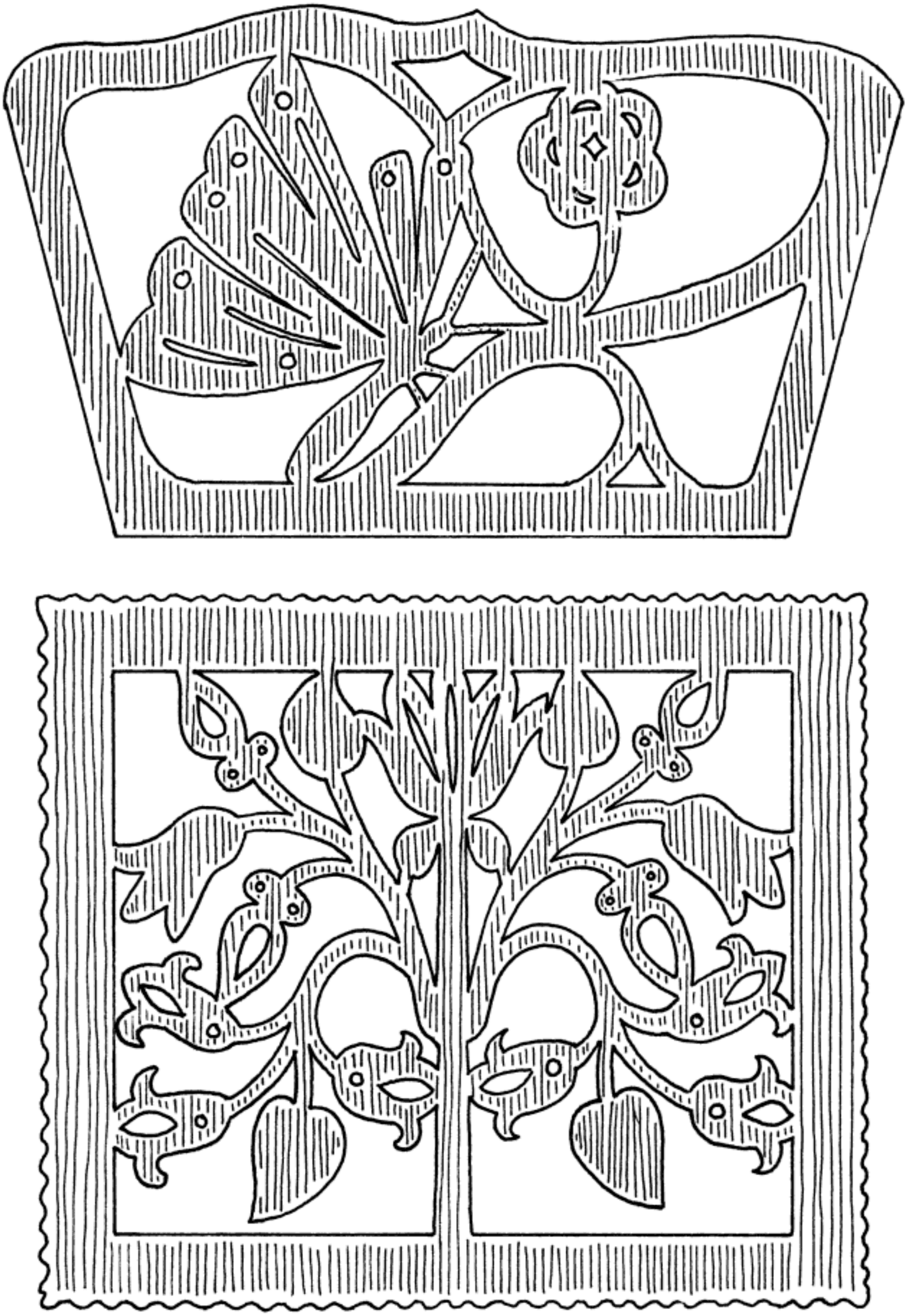
Illus. 167. Grille pattern.

Copyrighted material

Illus. 168. Grille patterns.



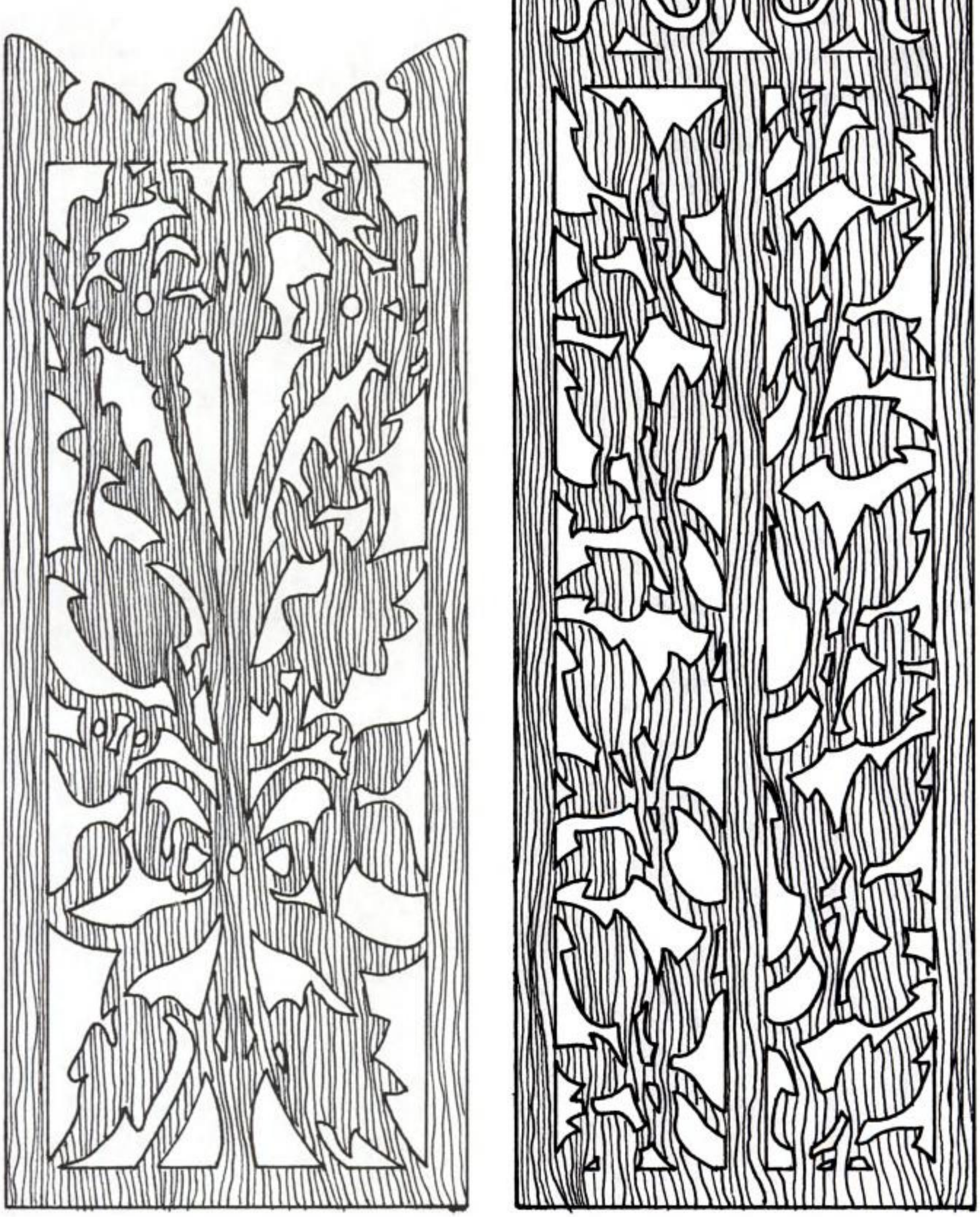
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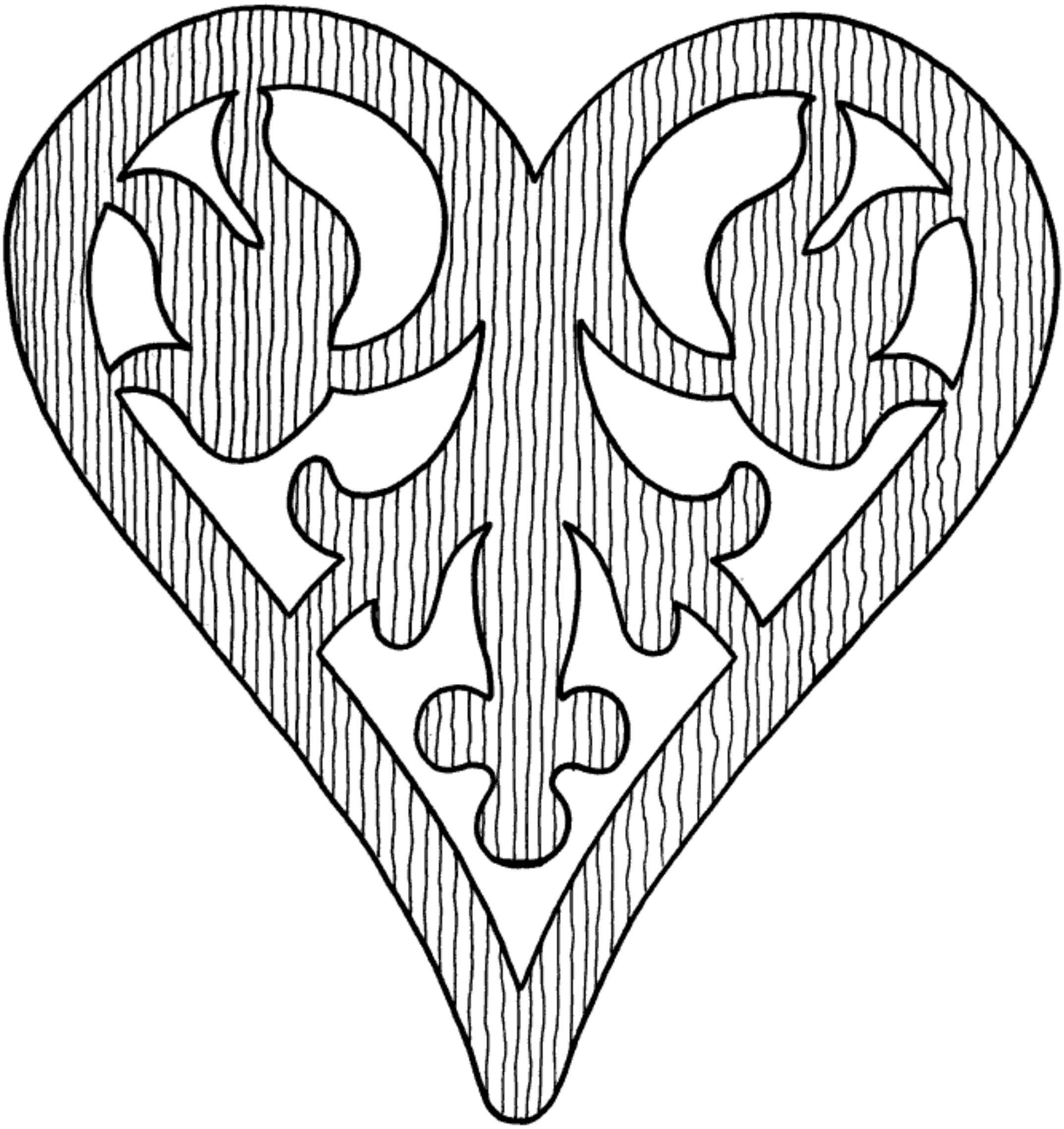
Illus. 169. Grille patterns.

Copyrighted material

Illus. 170. Grille pattern.

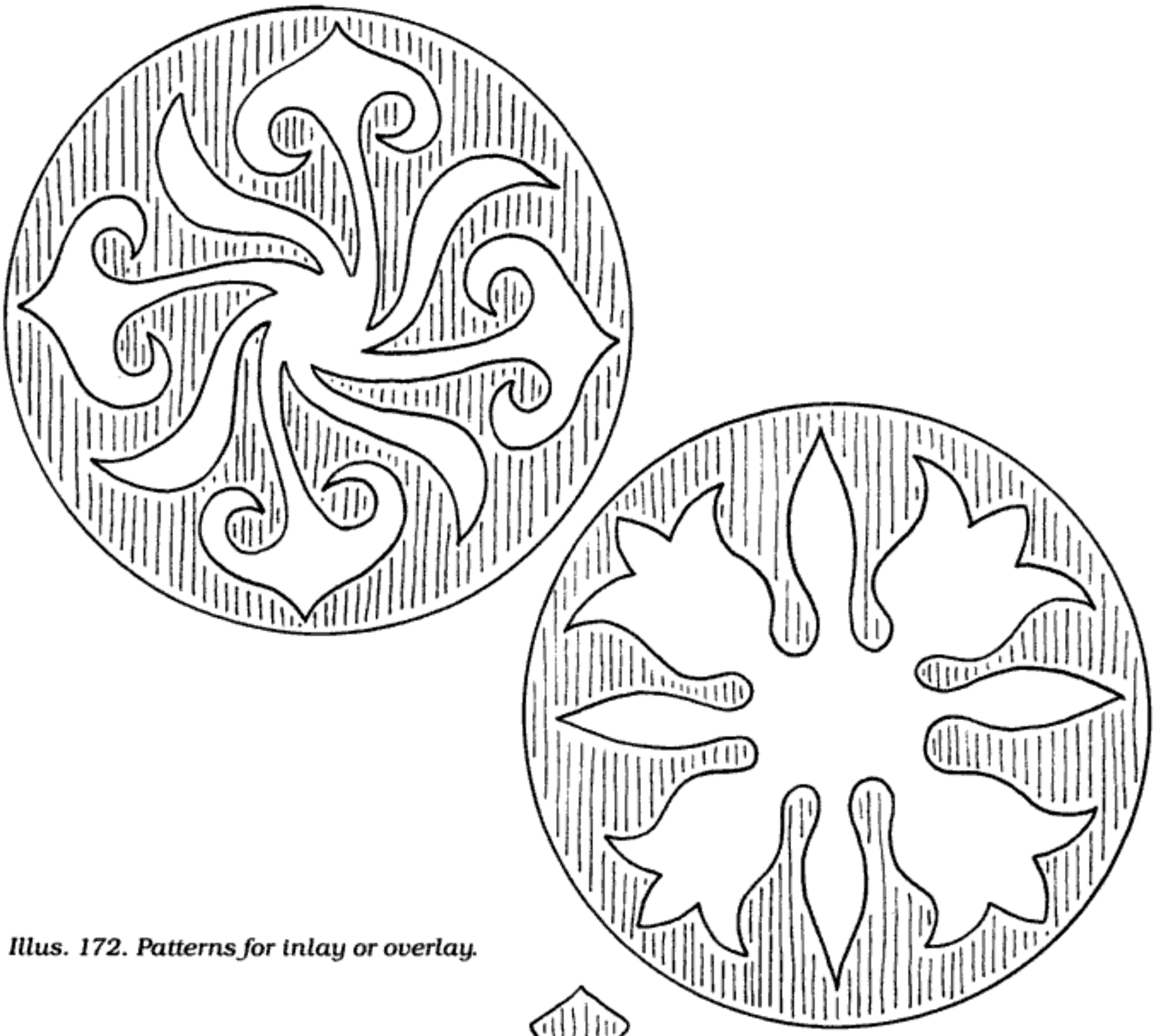


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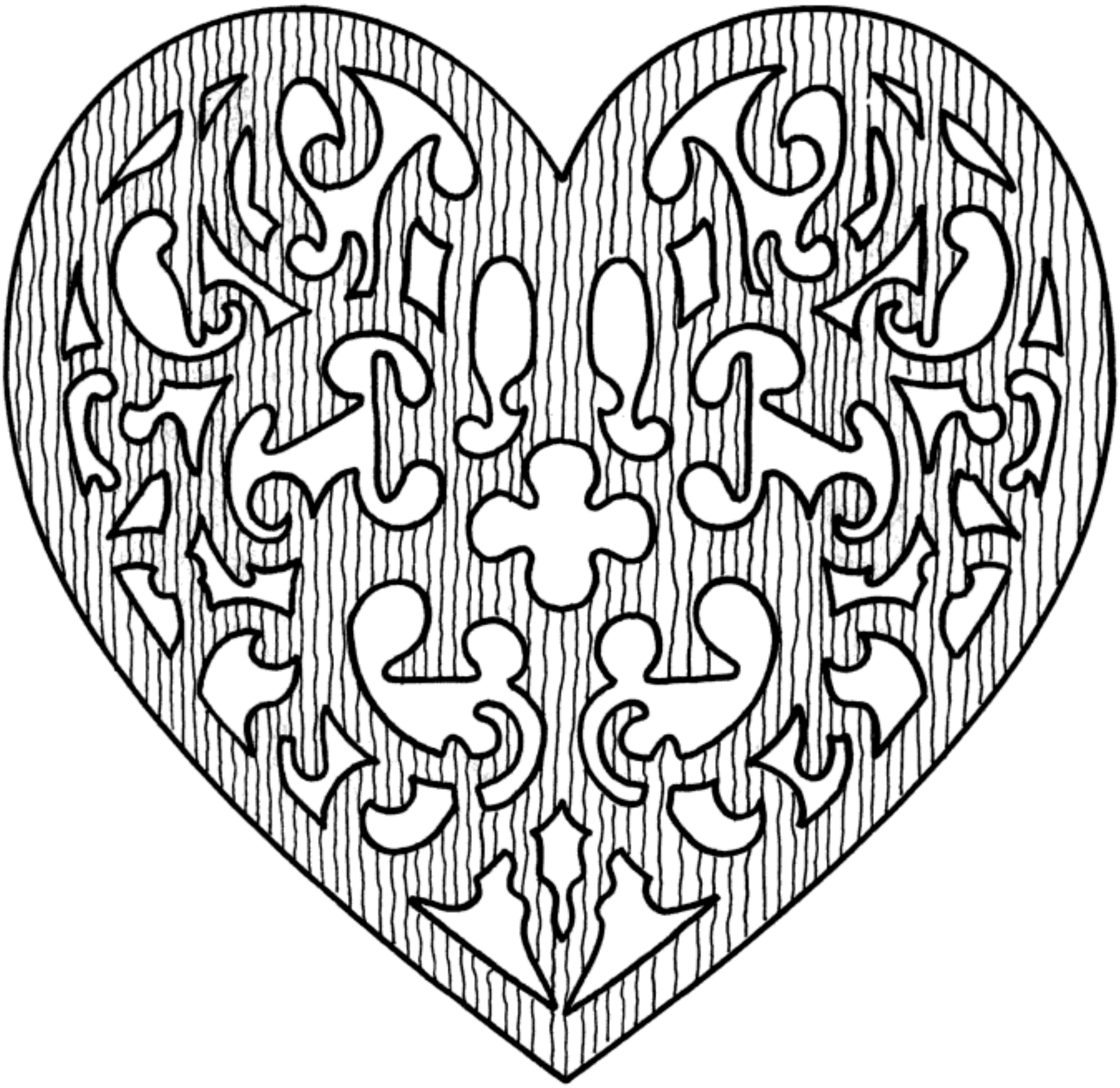
Illus. 171. Heart-shaped pattern for inlay or overlay.

Copyrighted material



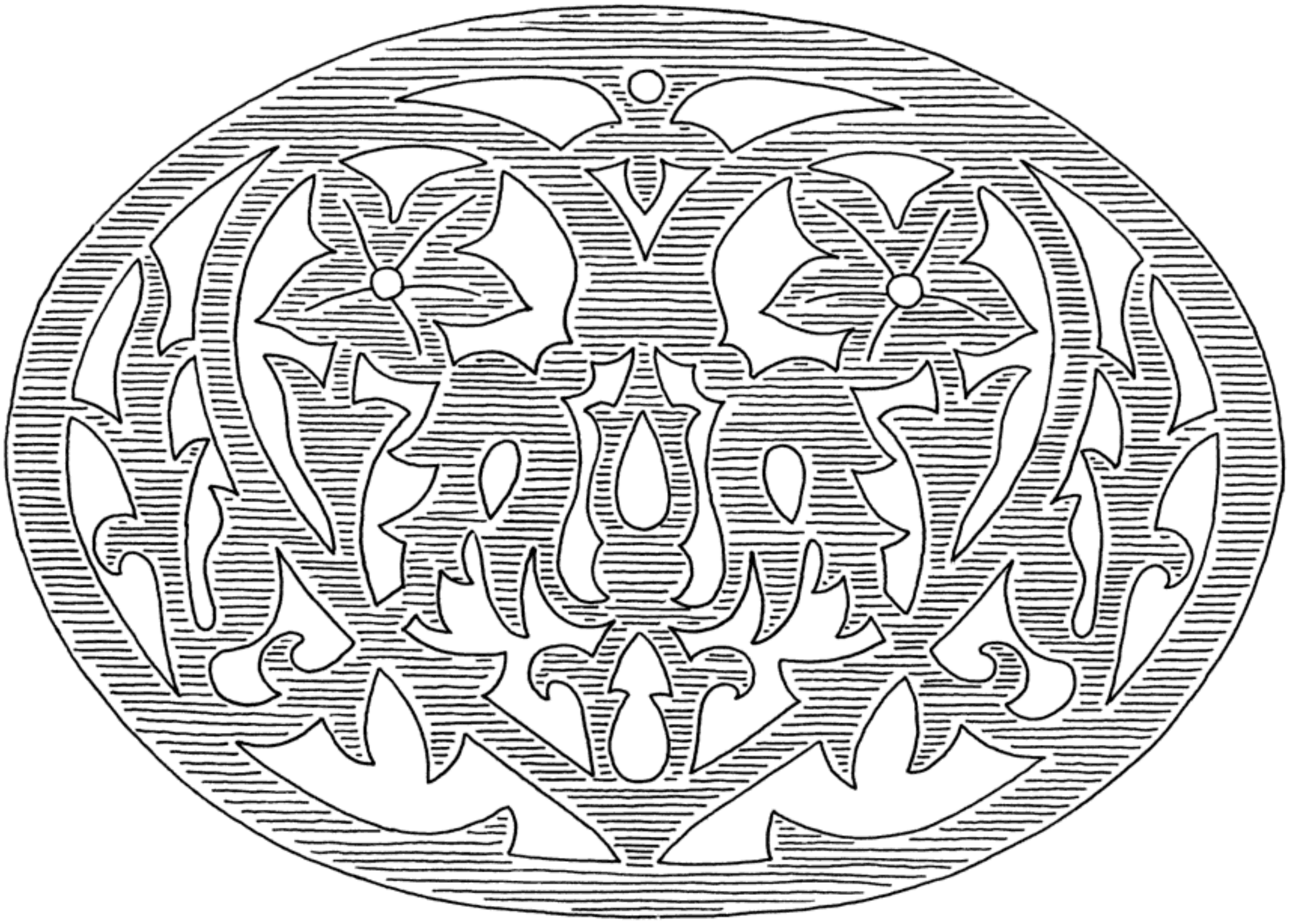
Illus. 172. Patterns for inlay or overlay.

Copyrighted material



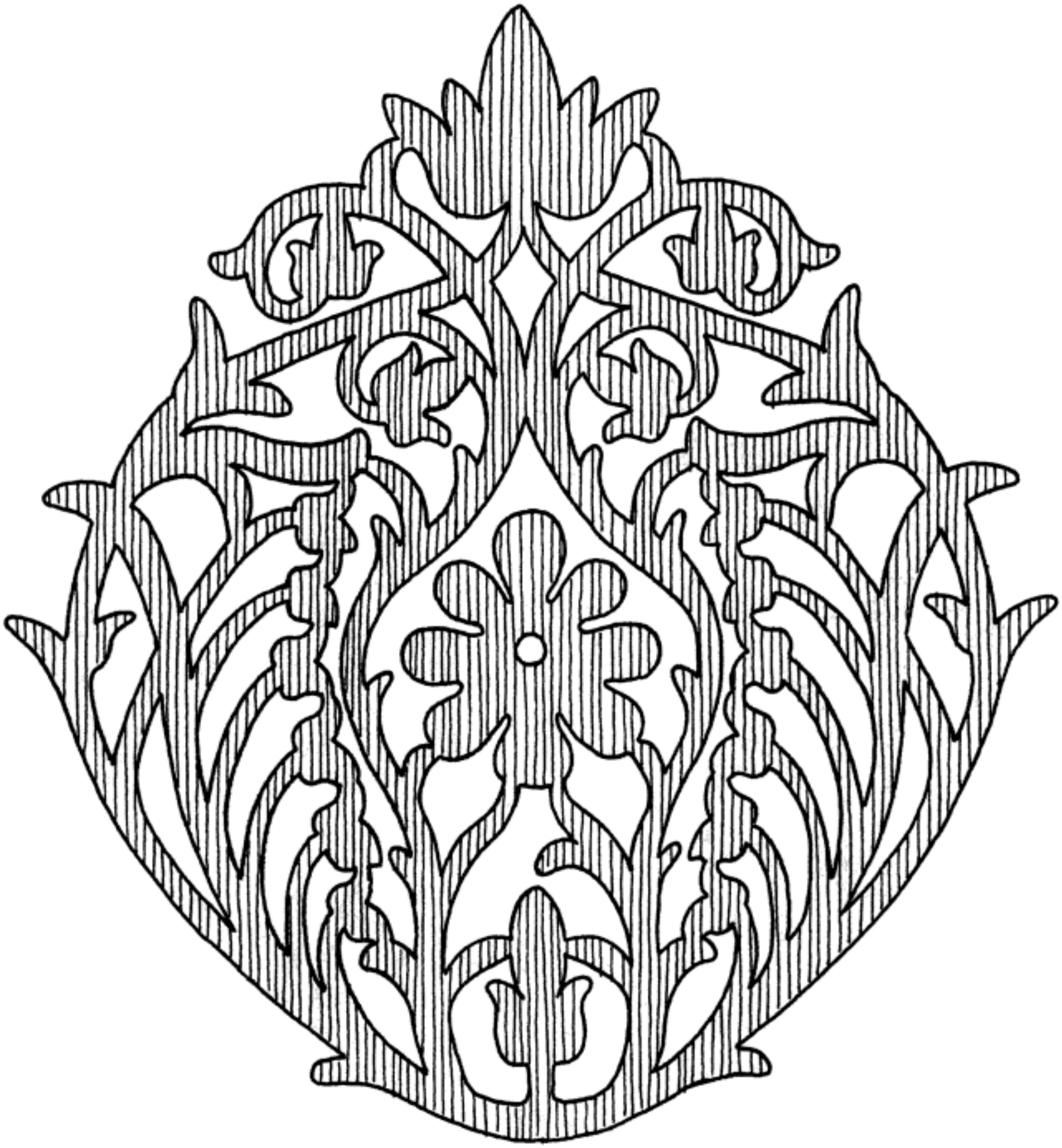
Illus. 173. Heart-shaped pattern for inlay or overlay.

Copyrighted material



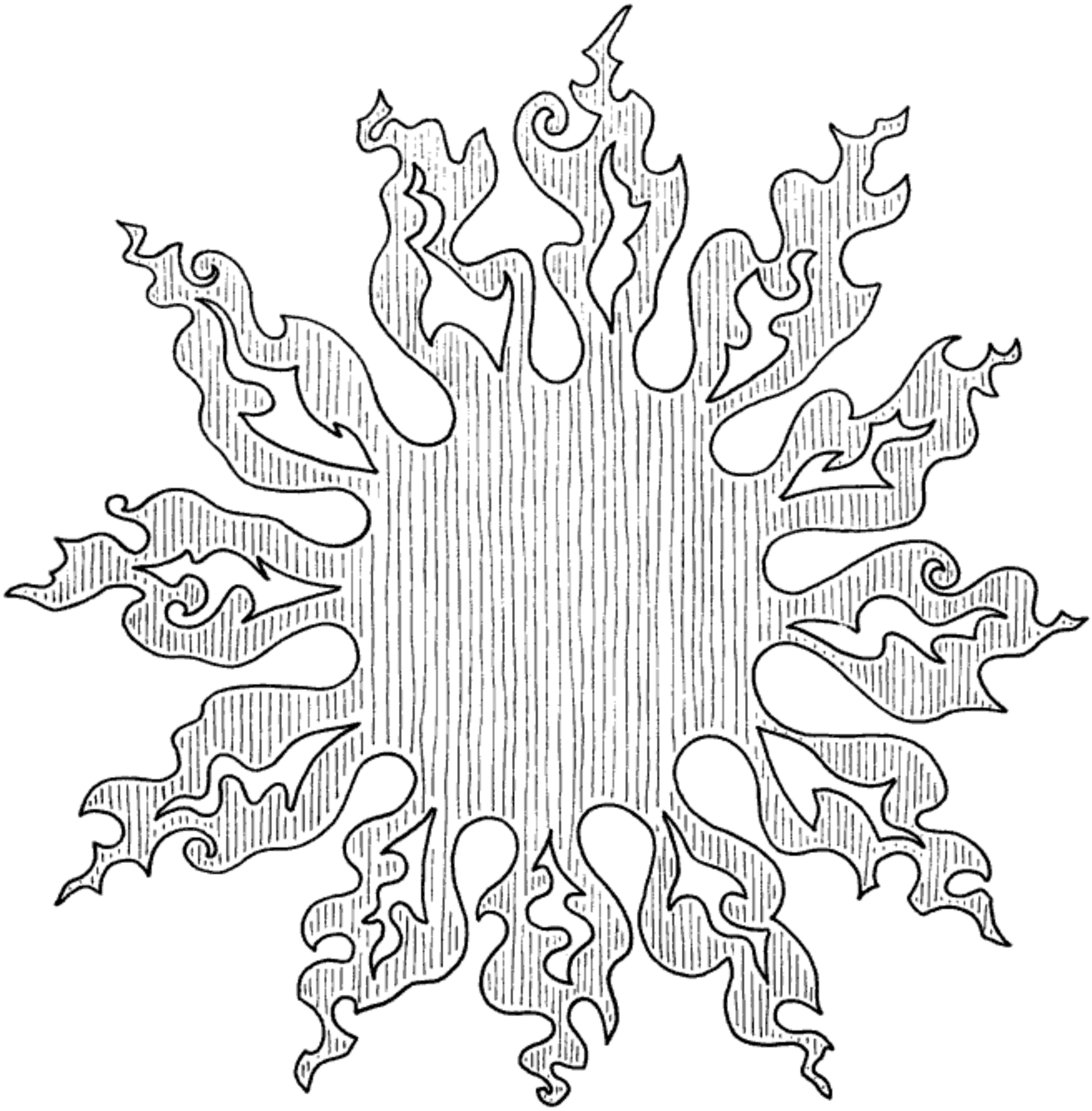
Illus. 174. Oval floral pattern for inlay or overlay.

Copyrighted material



Illus. 175. Floral pattern for inlay or overlay.

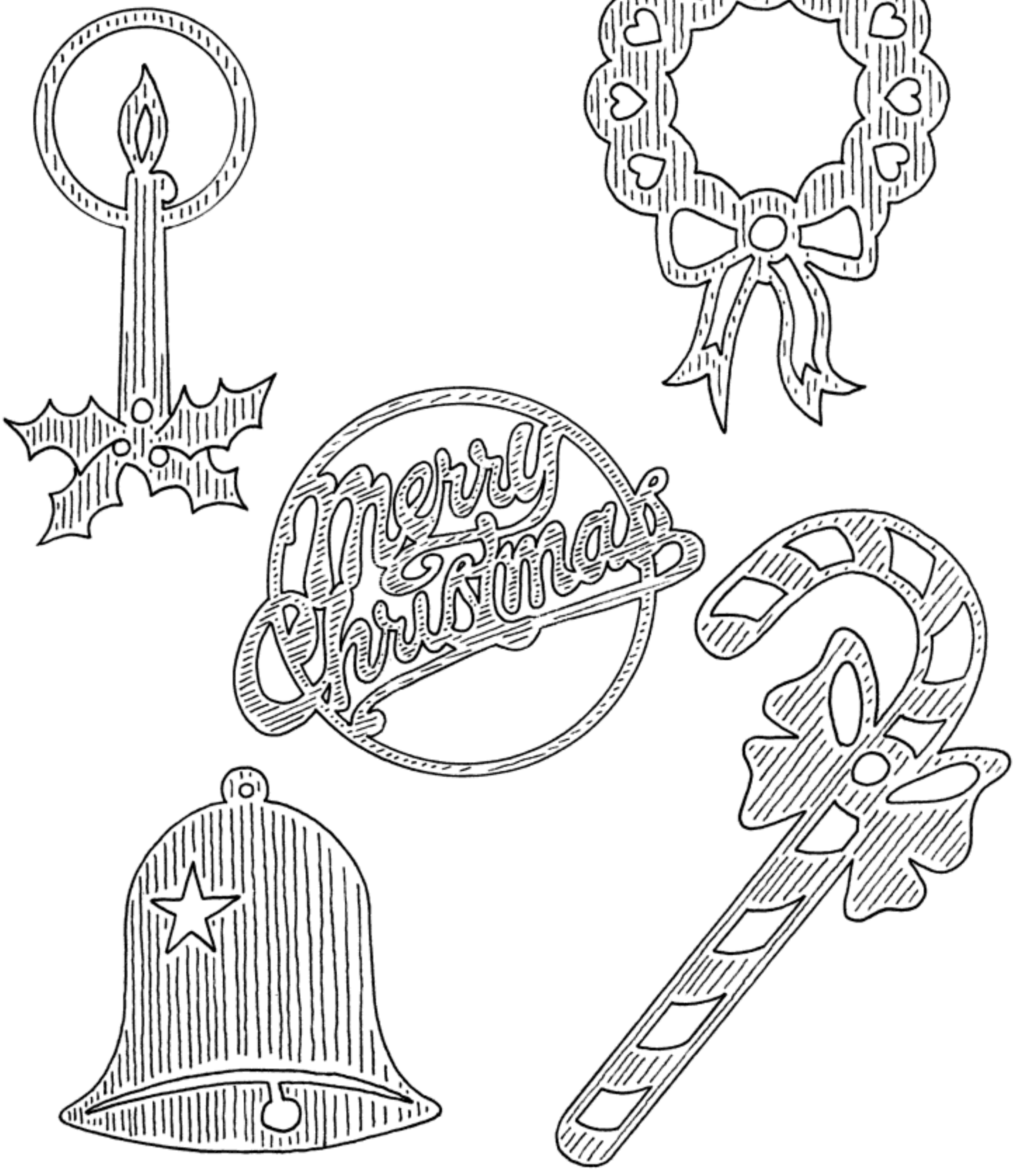
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Illus. 176. Pattern for inlay or overlay.

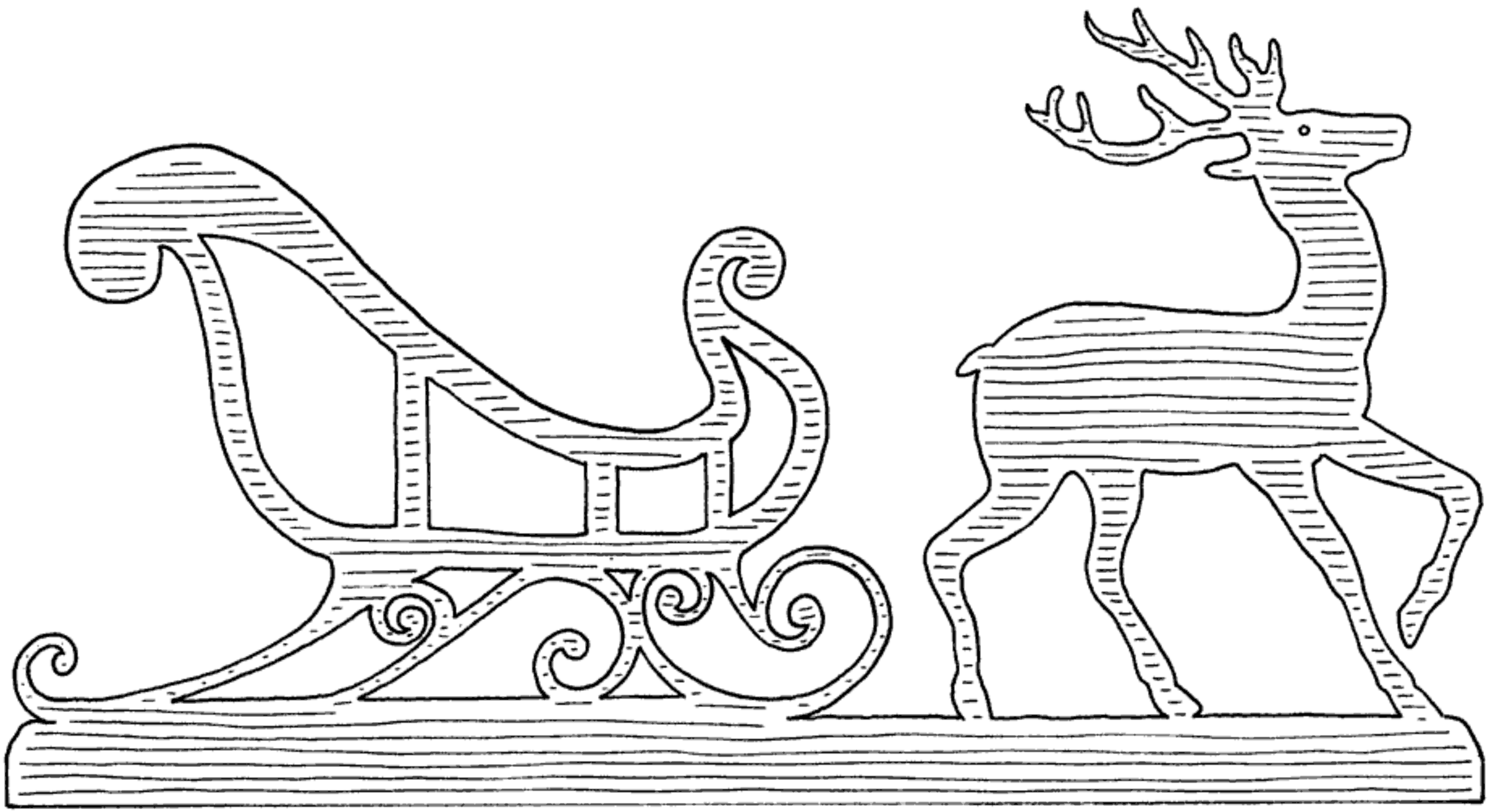
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Christmas Ornaments



Illus. 177. Christmas ornament patterns.

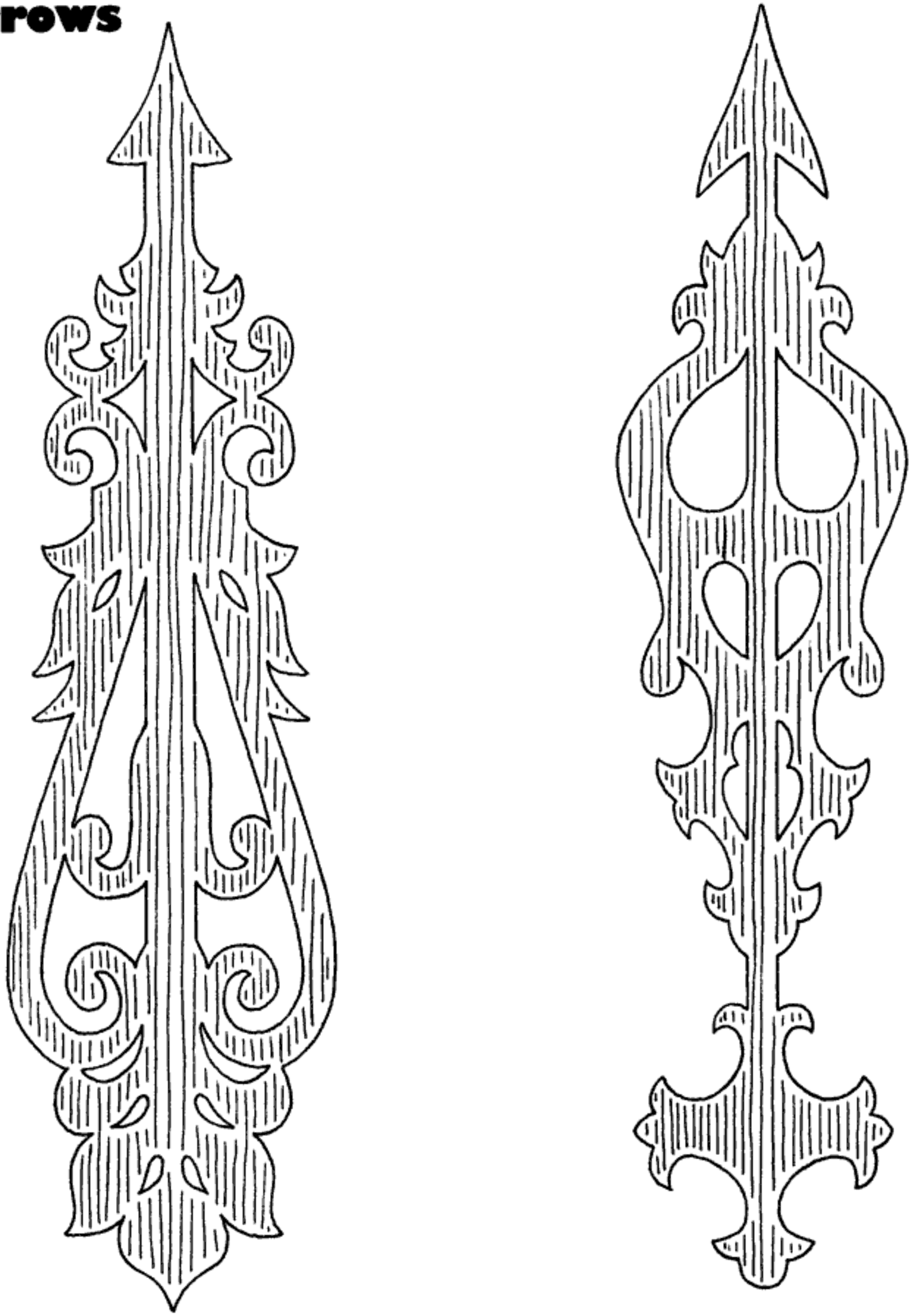
Copyrighted material



Illus. 178. Pattern for reindeer and sleigh.

Copyrighted material

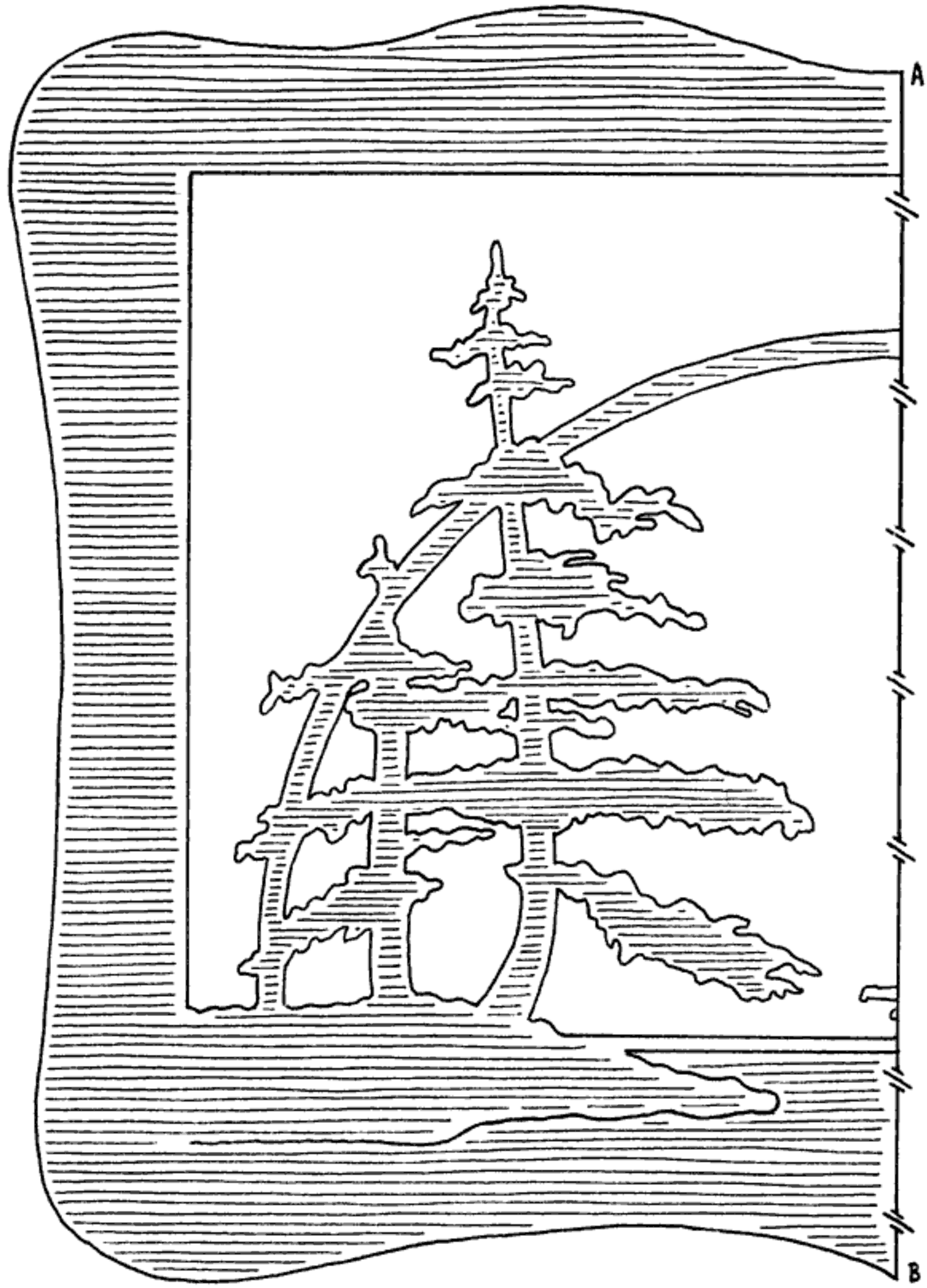
Arrows



Illus. 179. Arrow patterns.

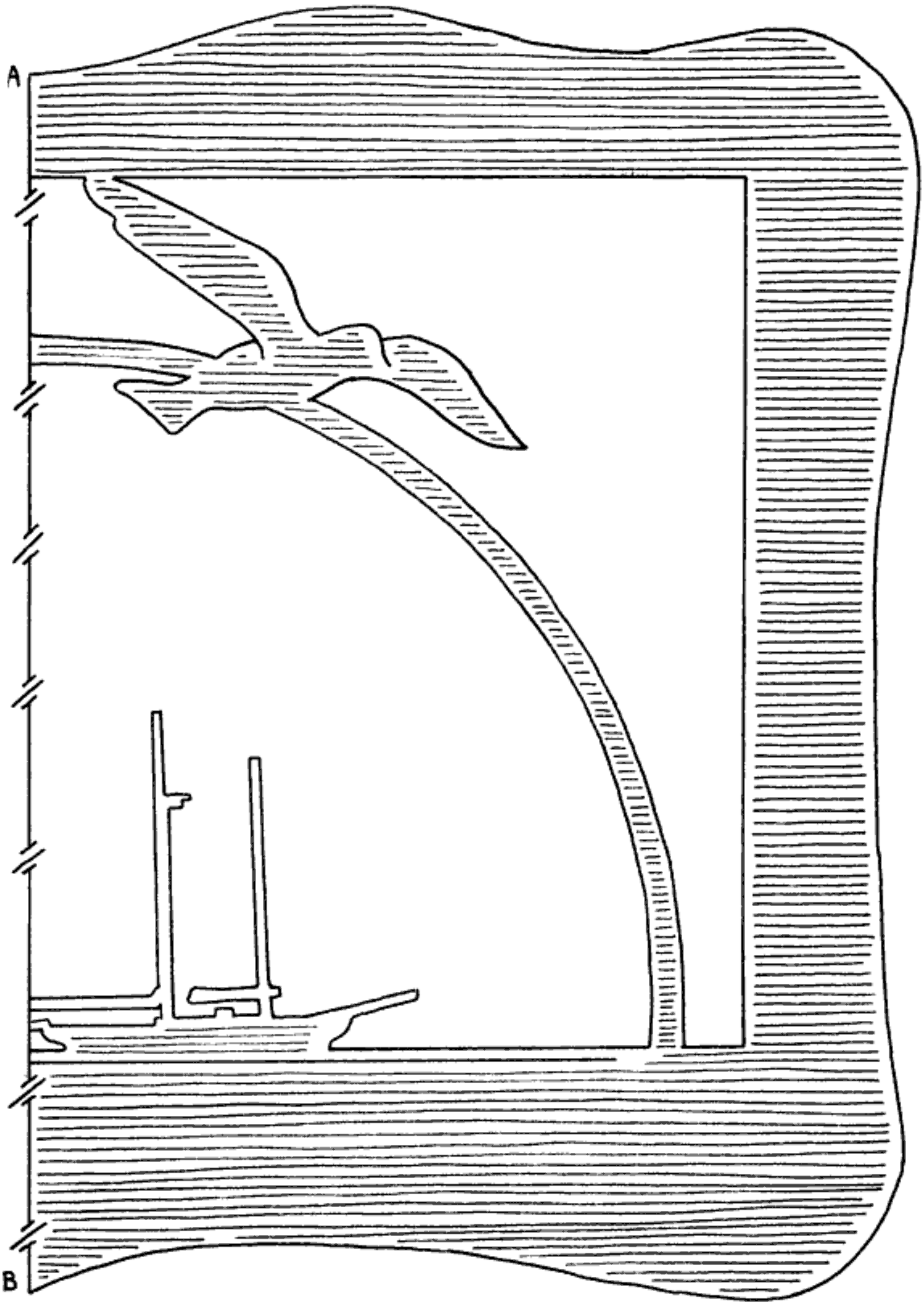
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Nautical Silhouettes

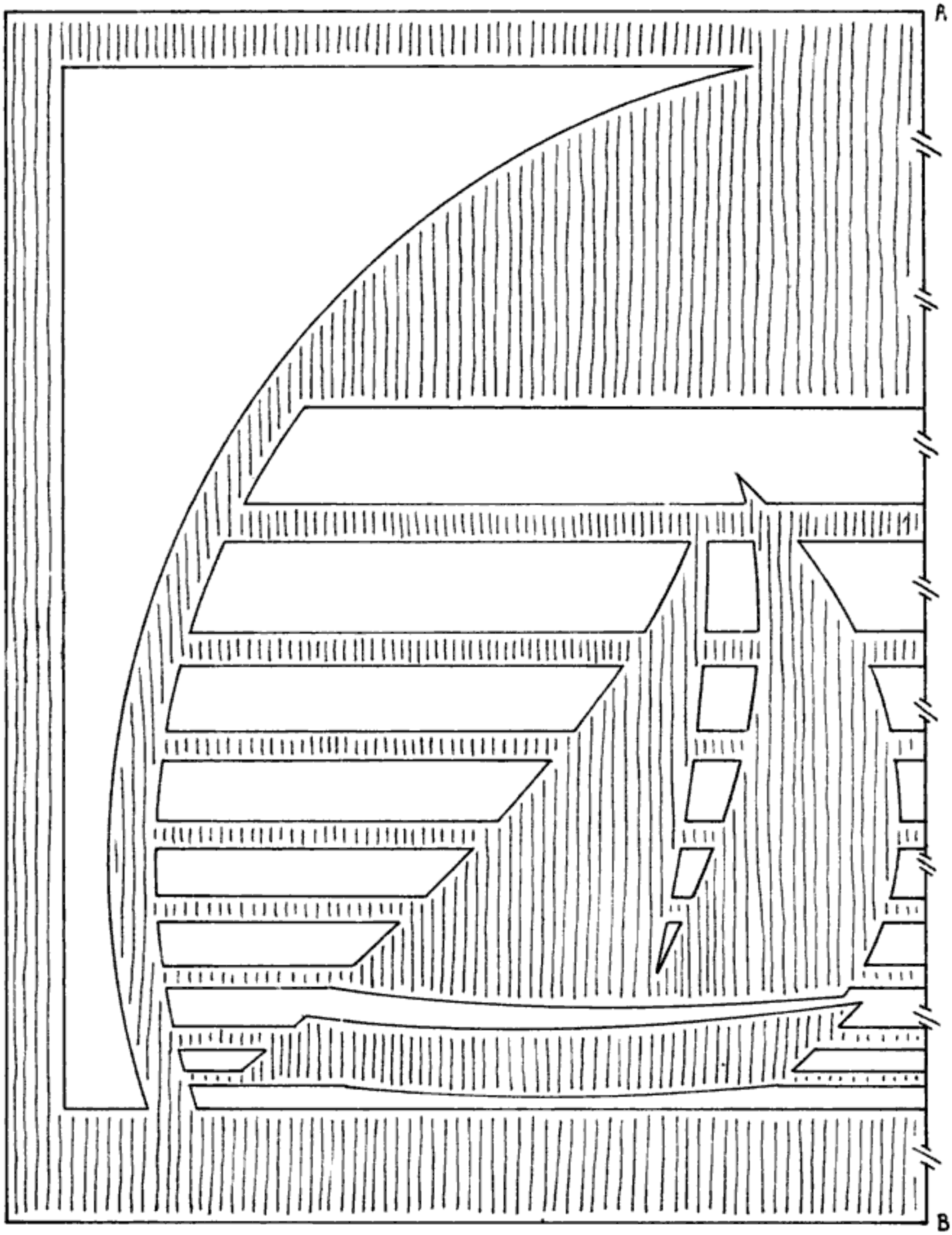


Illus. 180. Nautical silhouette pattern.

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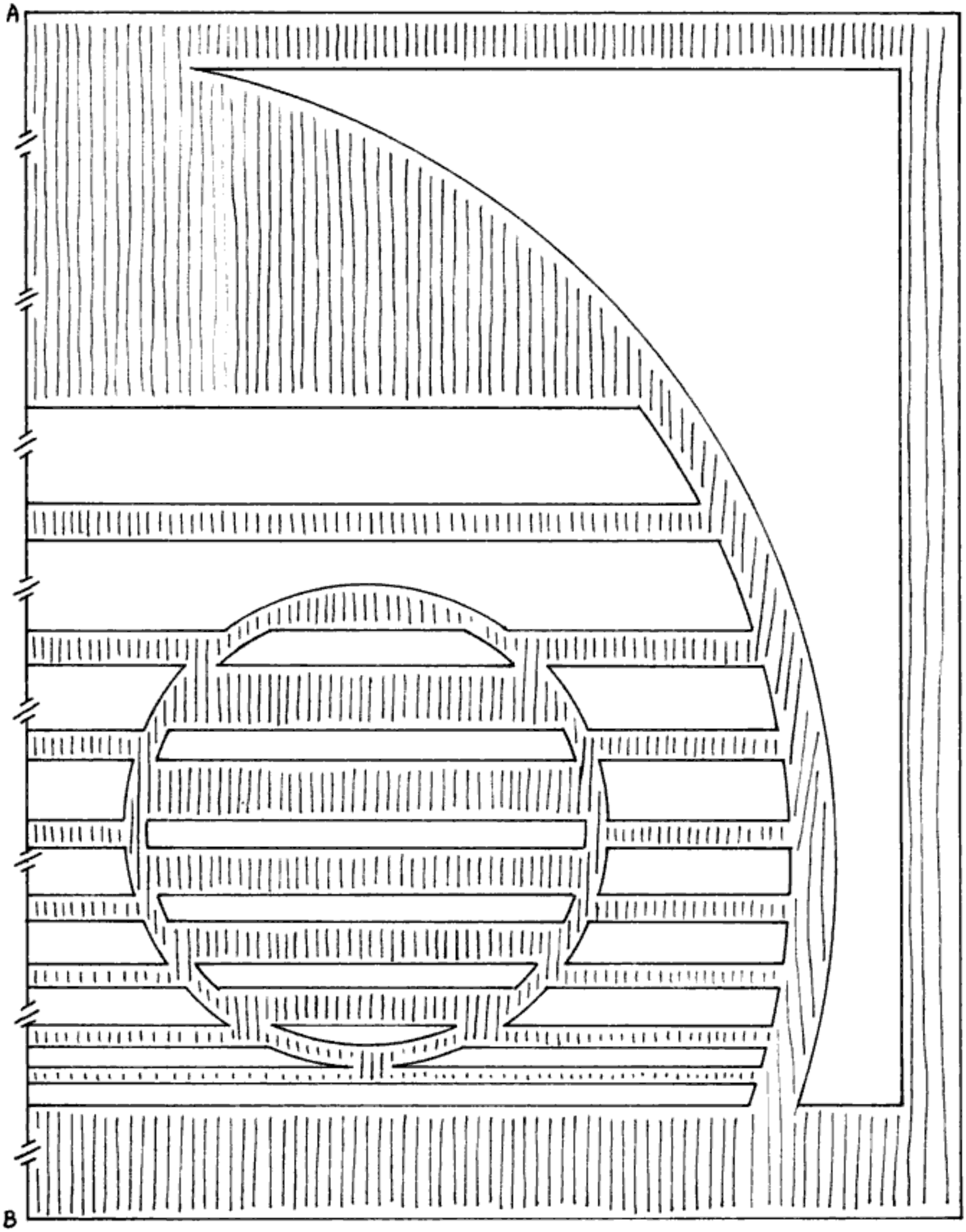


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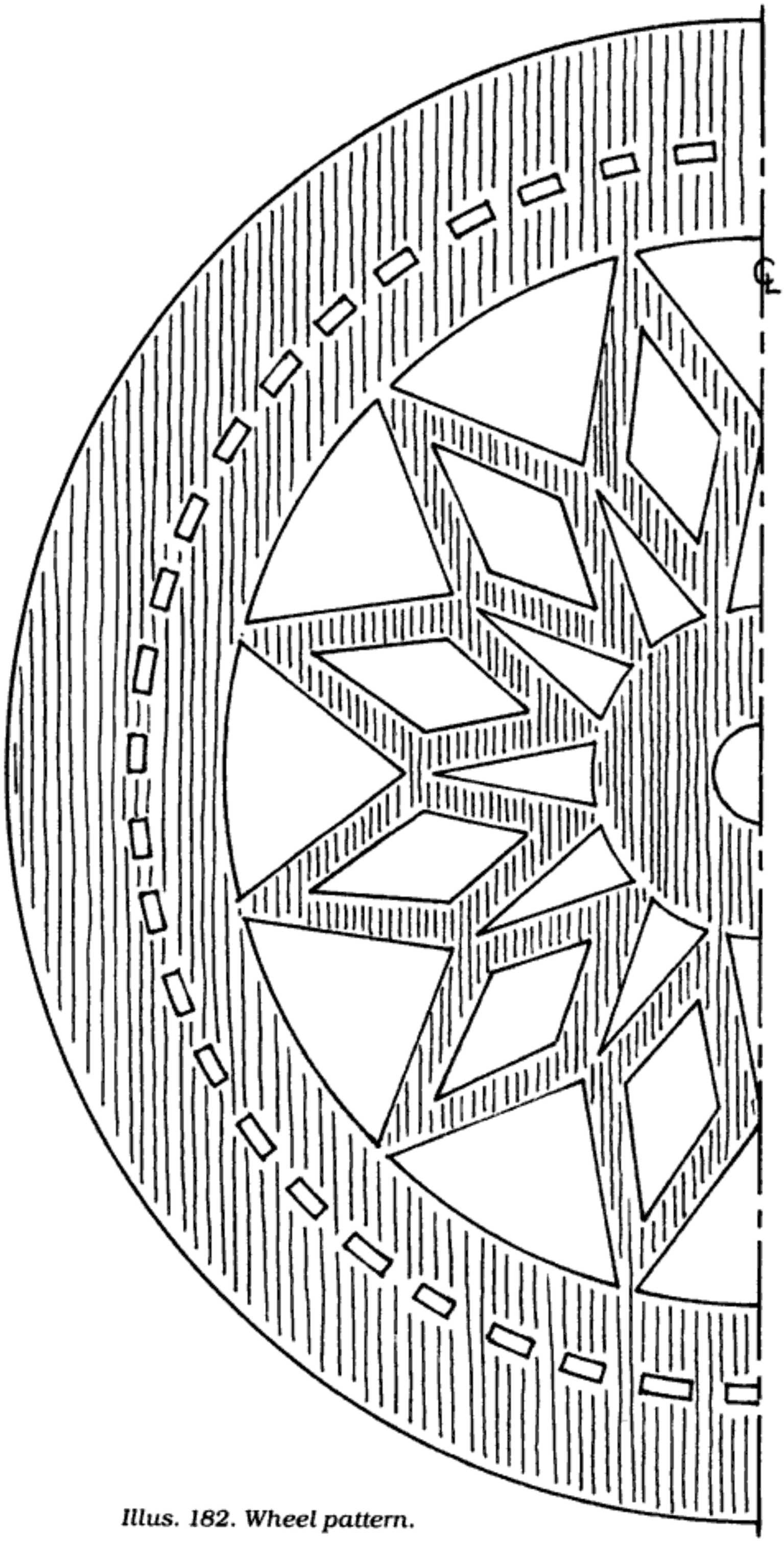
Illus. 181. Nautical silhouette pattern.

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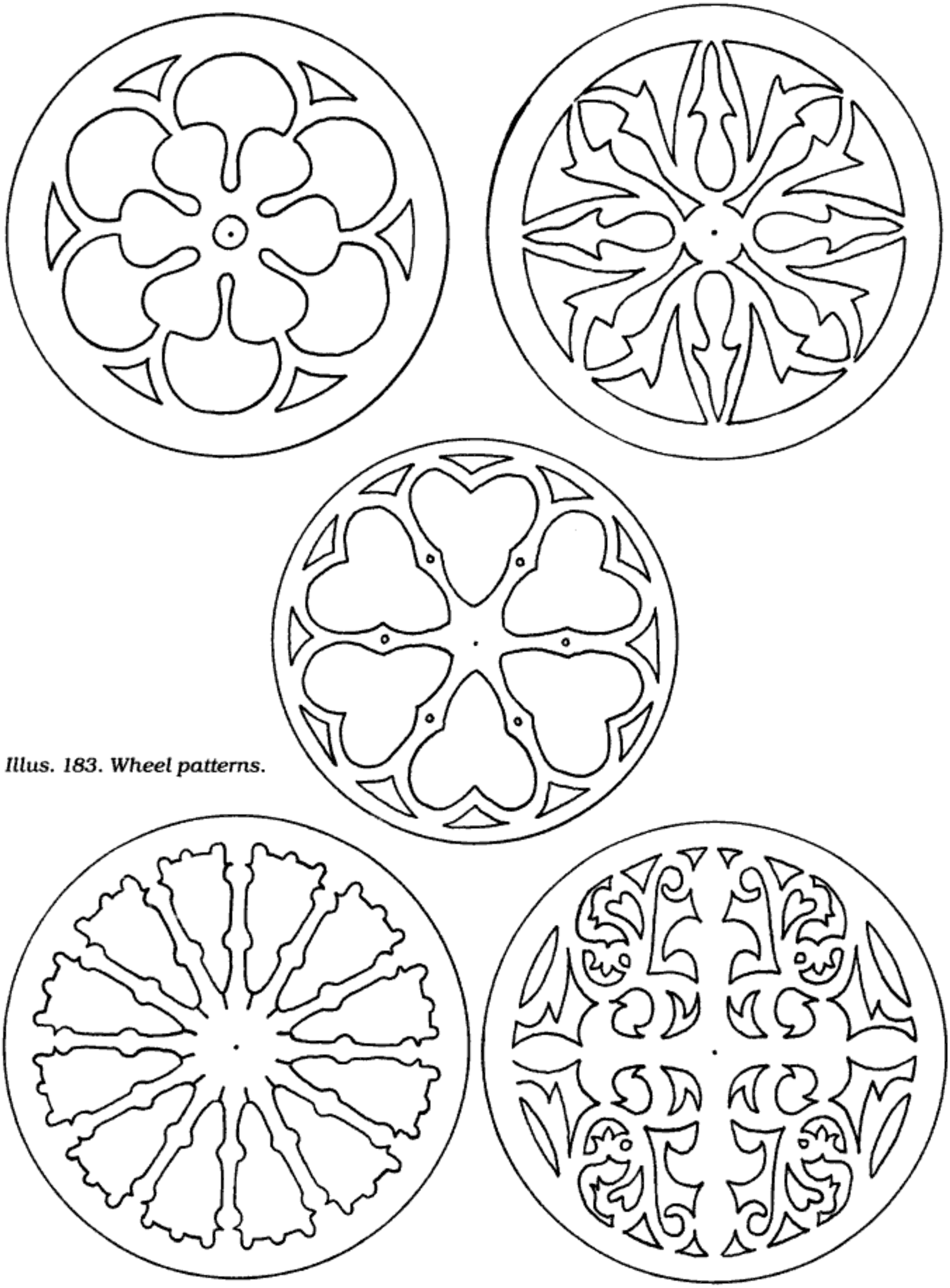
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Wheels



Illus. 182. Wheel pattern.

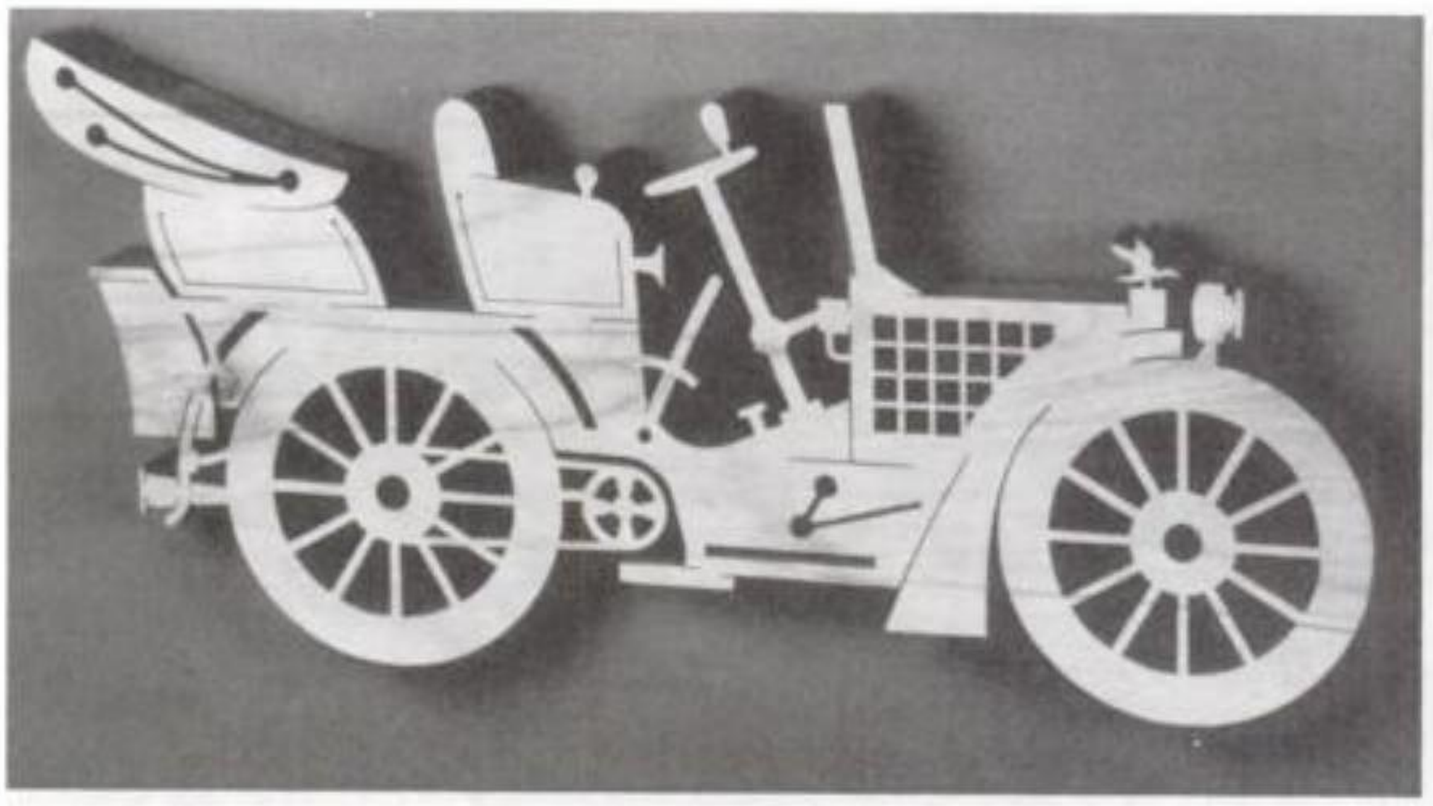
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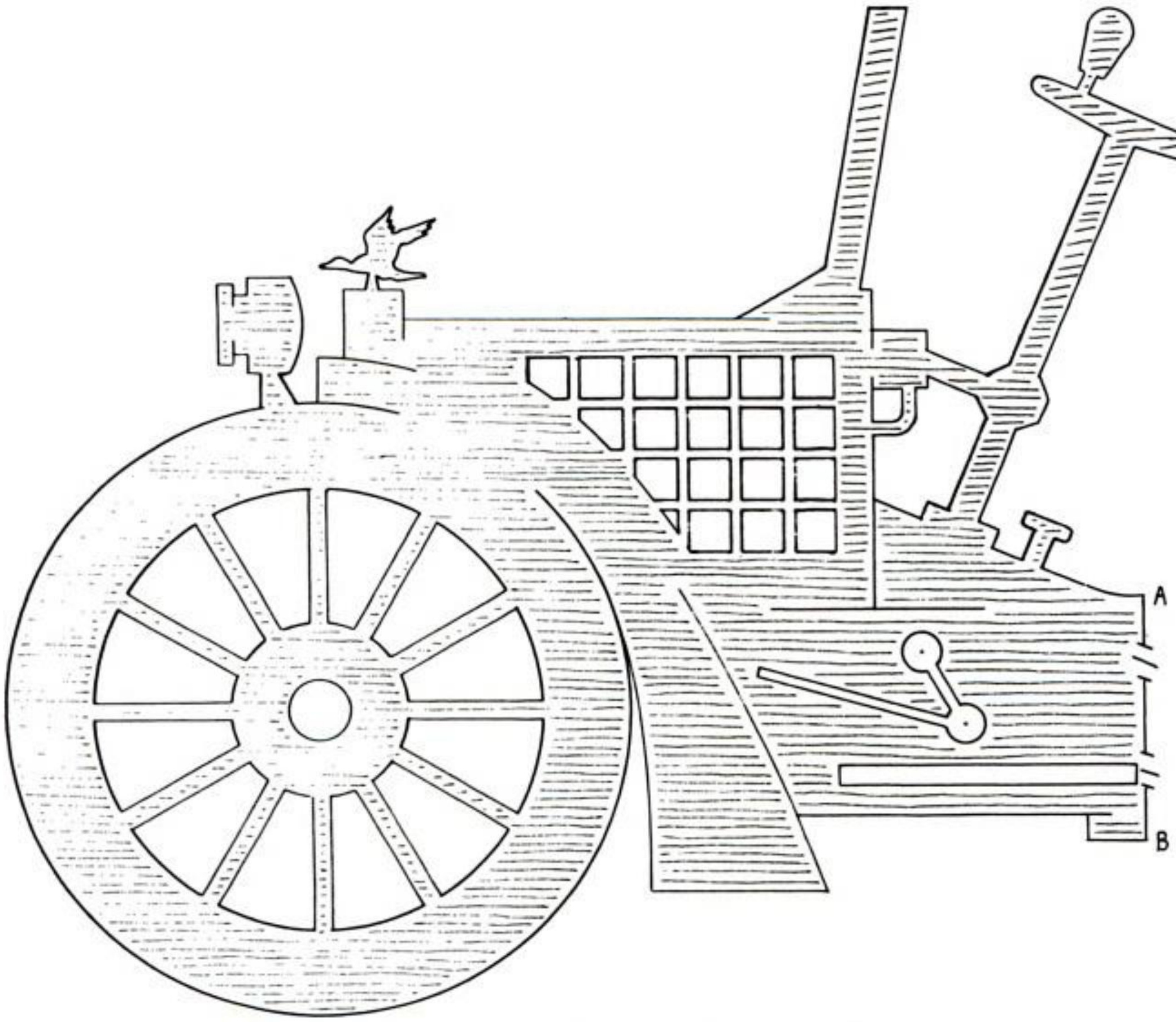
Illus. 183. Wheel patterns.

Copyright material

Vehicles

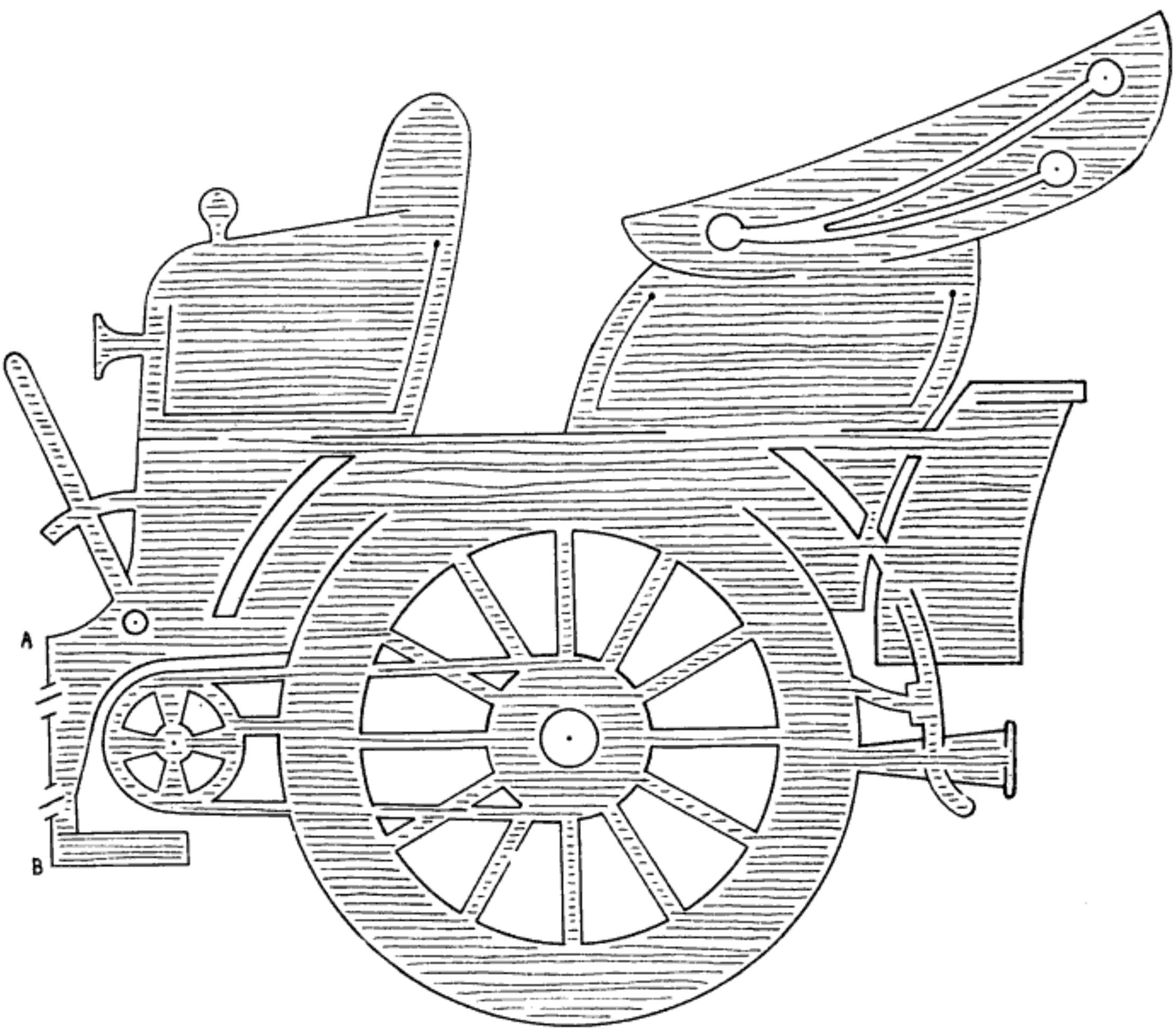


Illus. 184. Old-fashioned touring car, courtesy of AMI Limited.

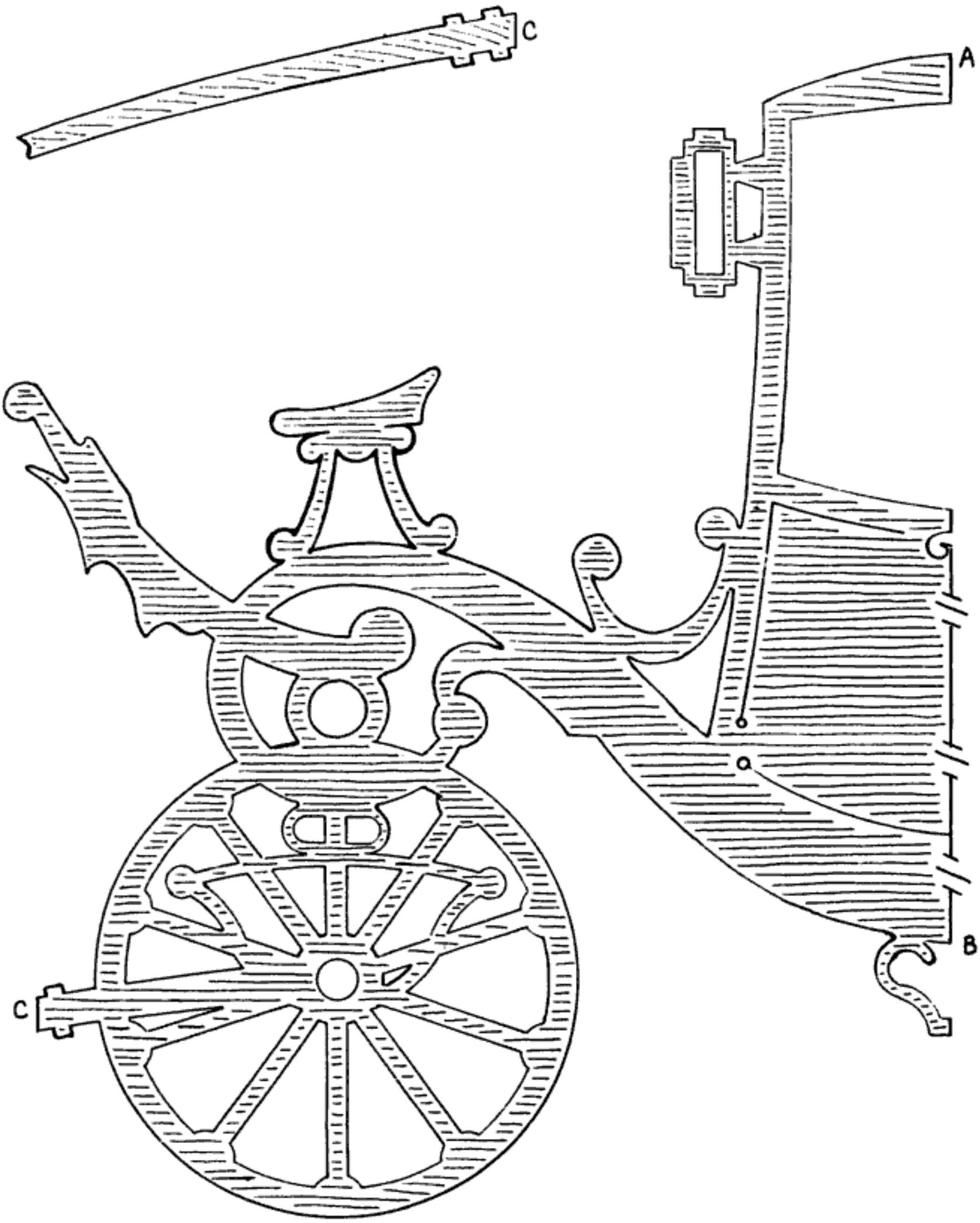


Illus. 185. Touring-car pattern. Adapted from AMI Pattern Book #1, *copyright Advanced Machinery Imports Ltd.*

Copyrighted material

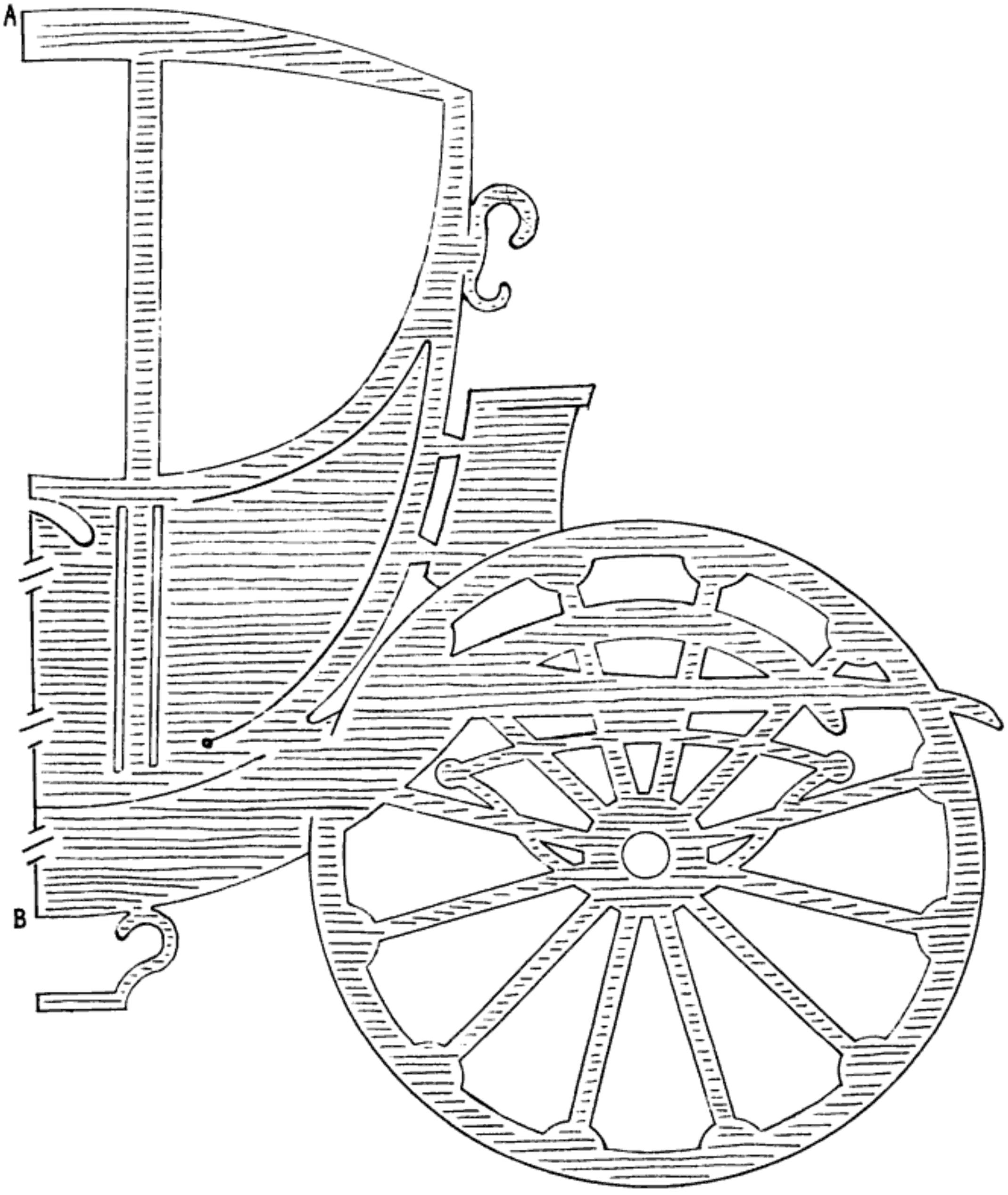


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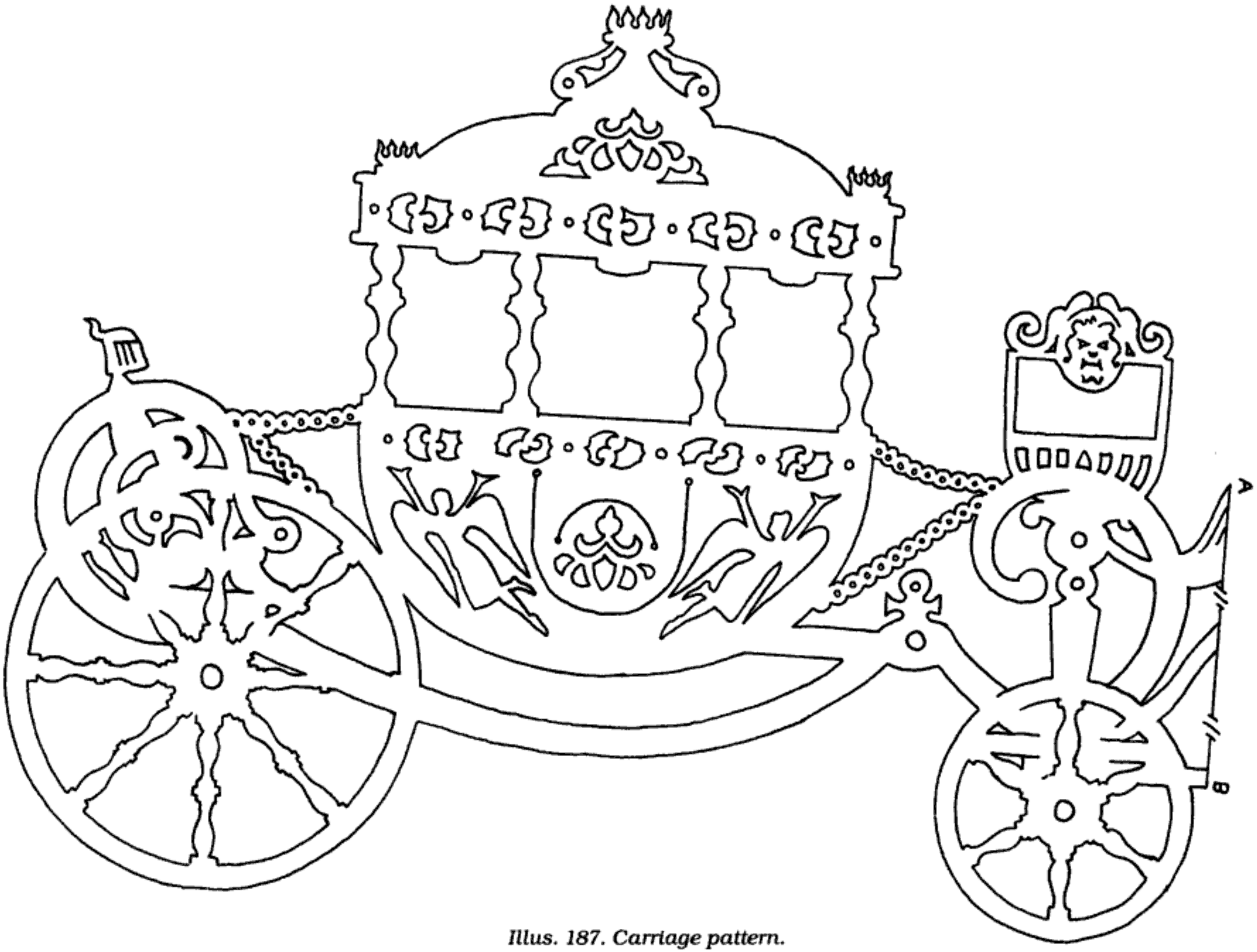


Illus. 186. Carriage pattern. Adapted from AMI Pattern Book #1, *copyright Advanced Machinery Imports Ltd.*

Copyrighted material

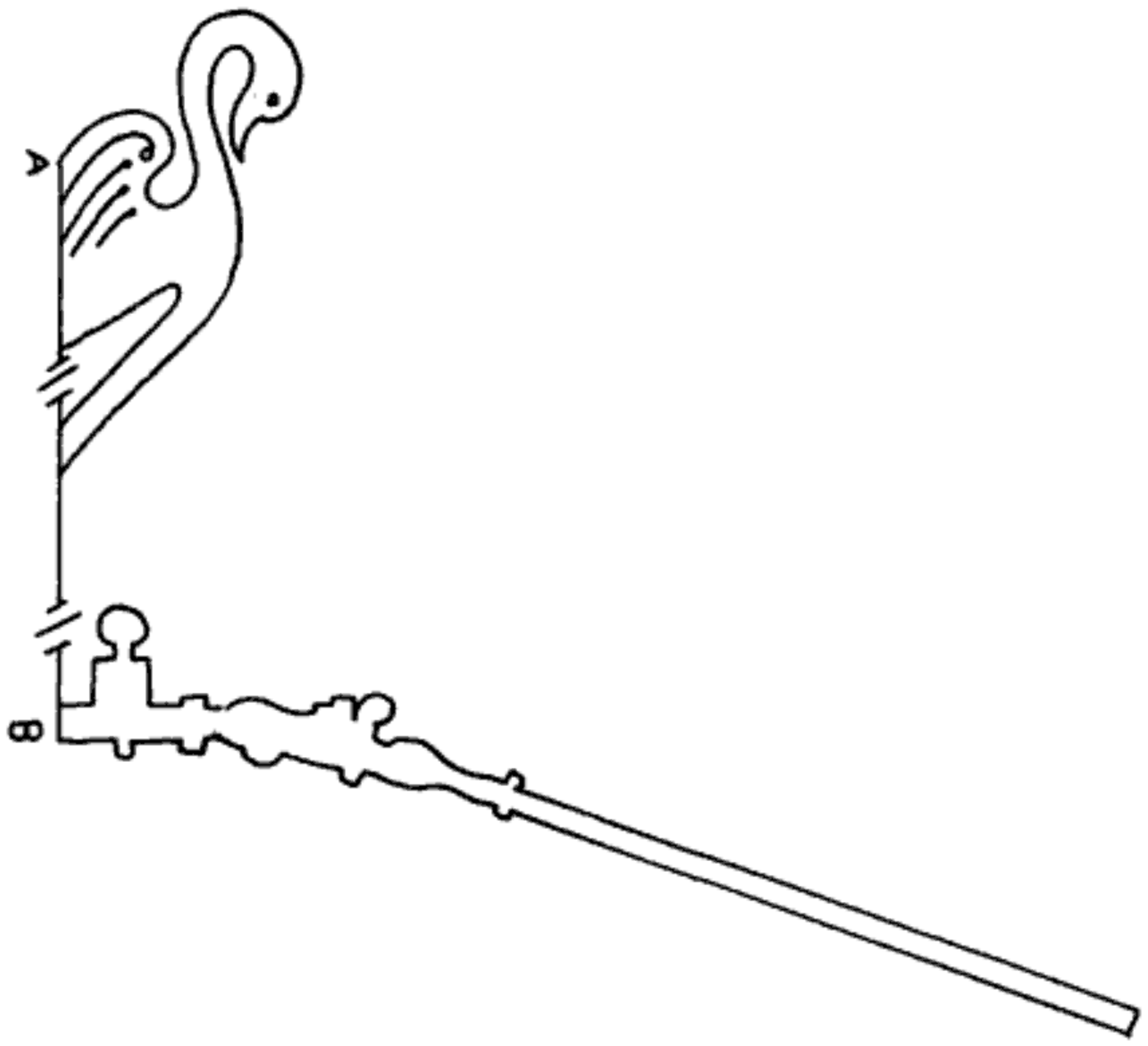


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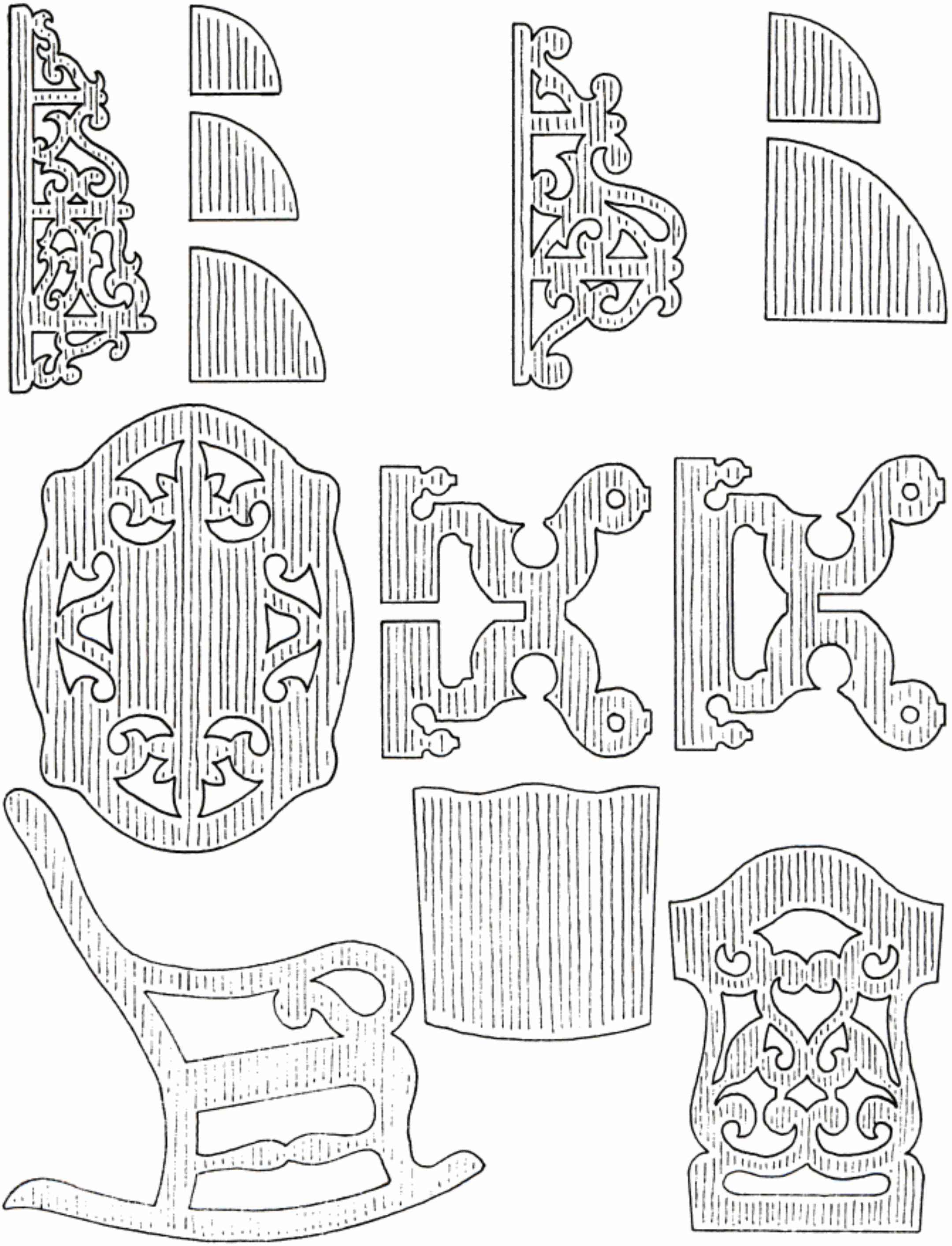
Illus. 187. Carriage pattern.

Copyrighted material

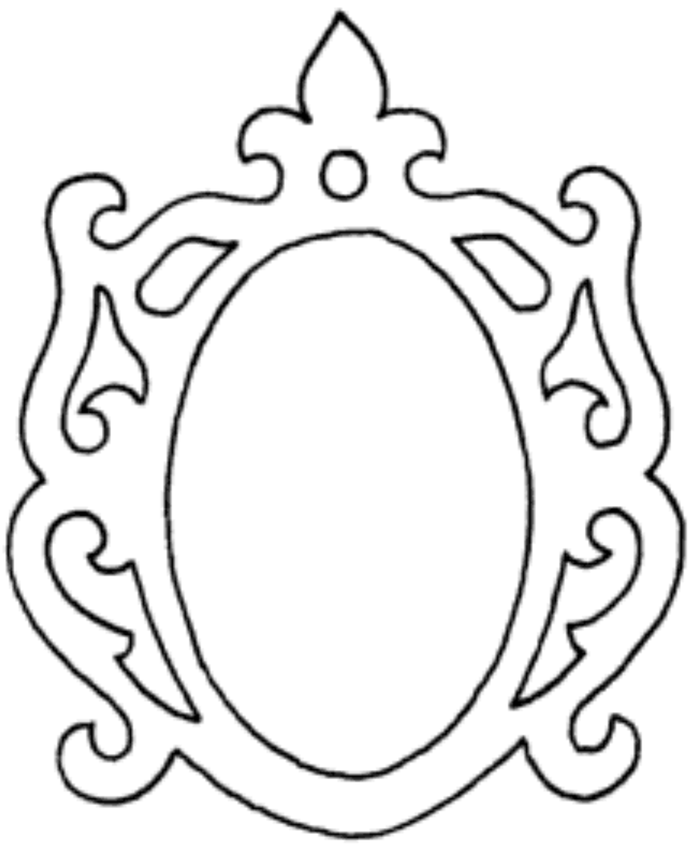


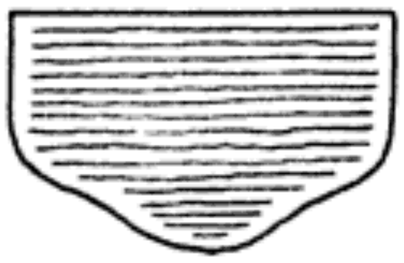
Copyrighted material

Illus. 188. Patterns for miniature fret furniture.
(Continued on the next two pages.)



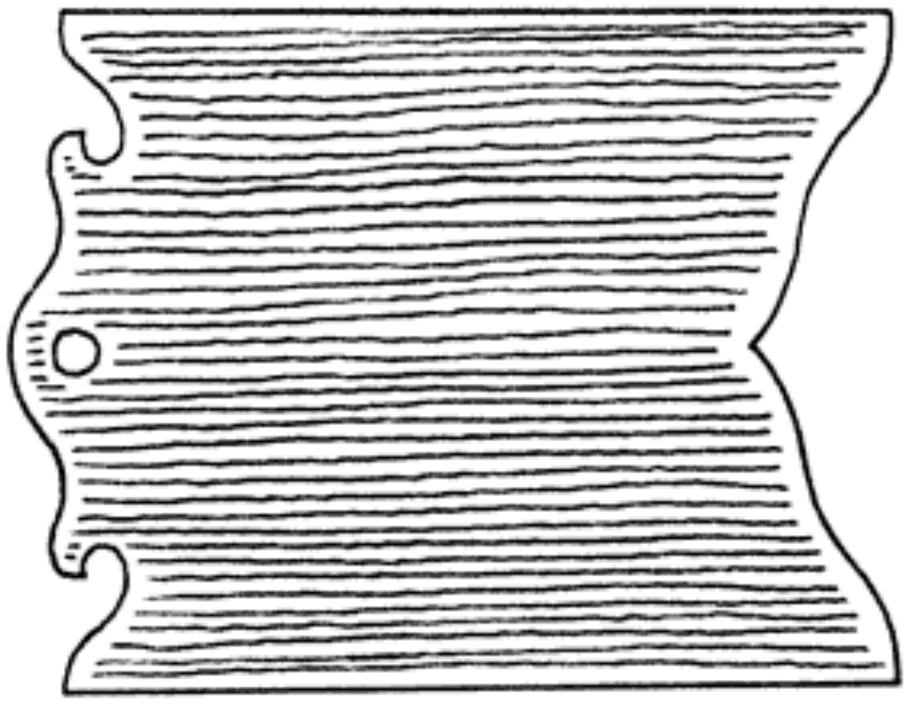
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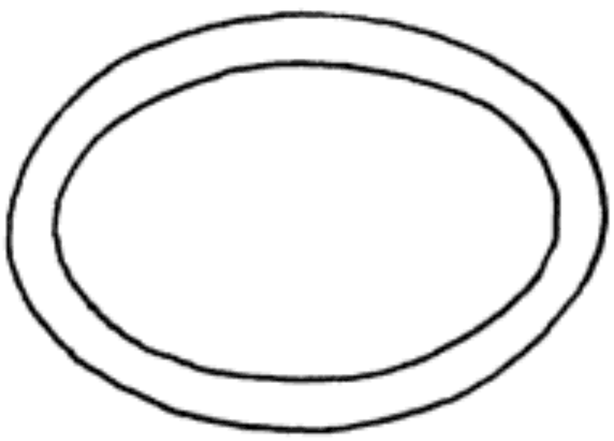


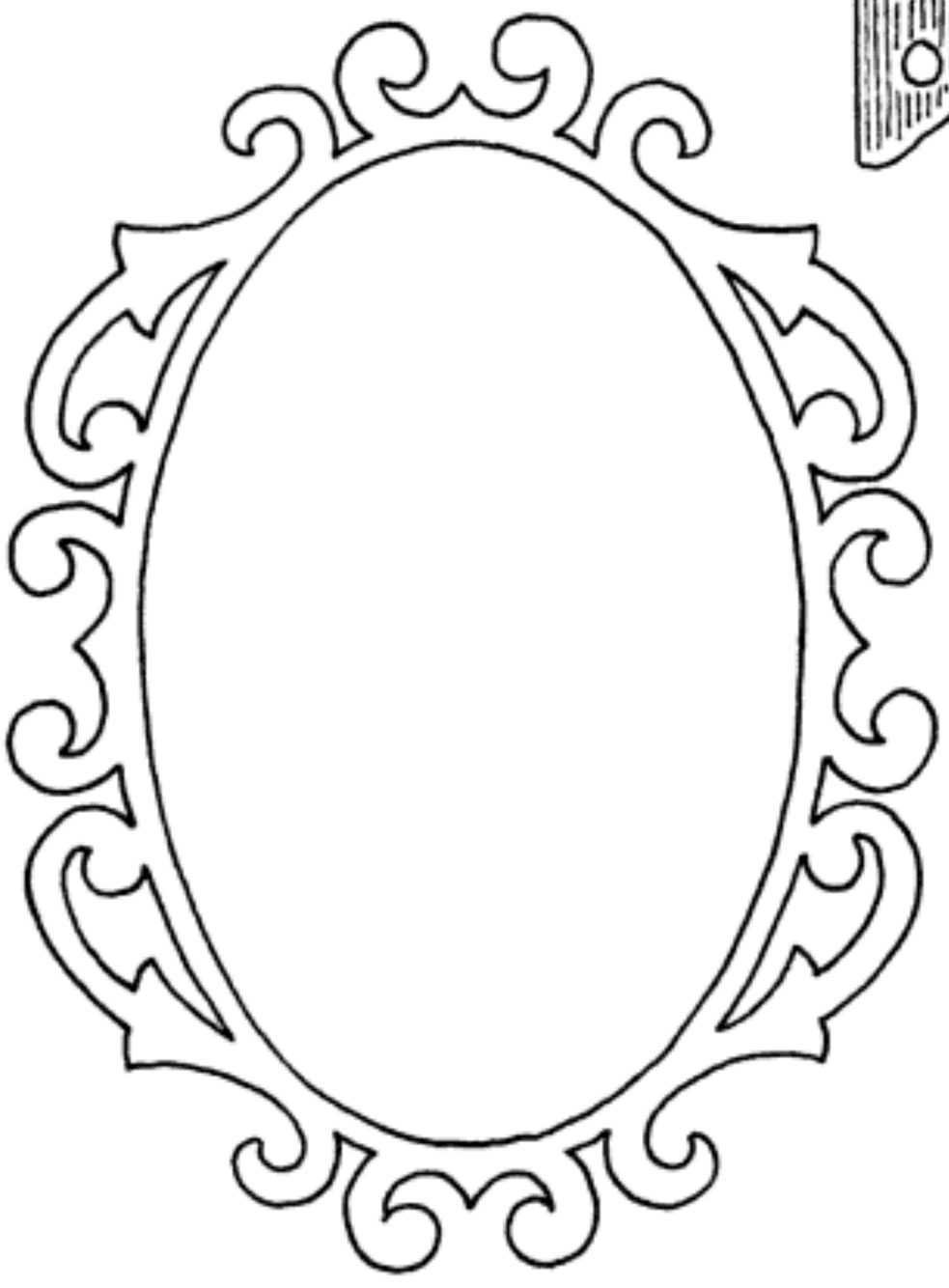


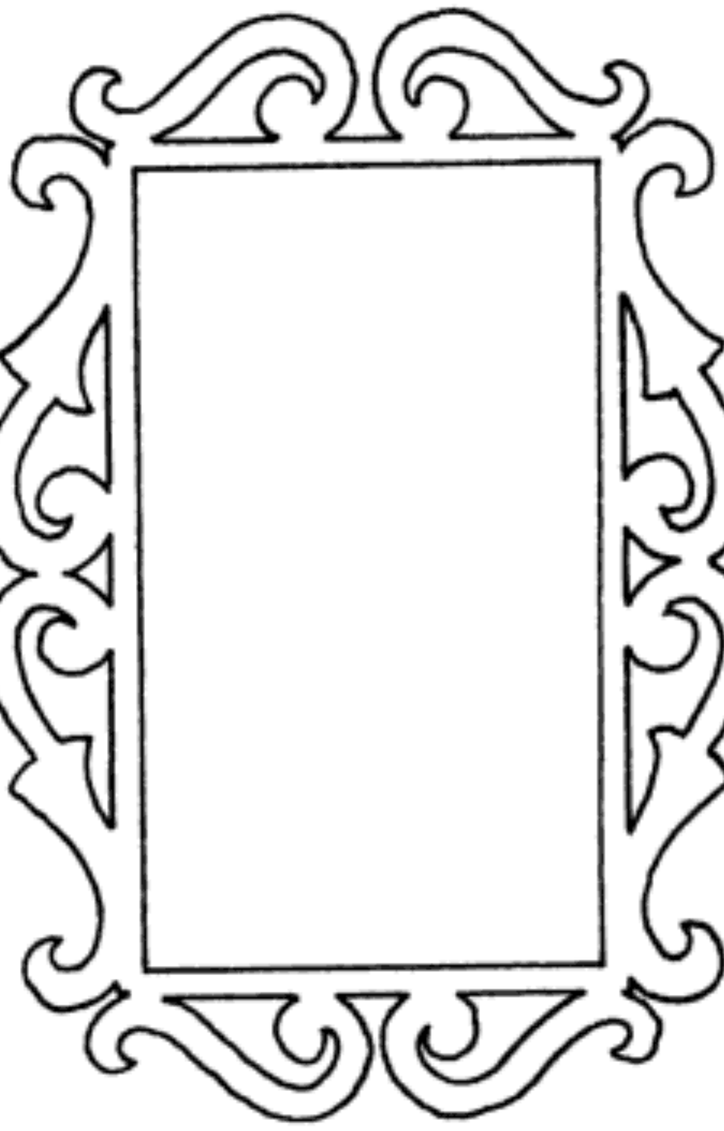


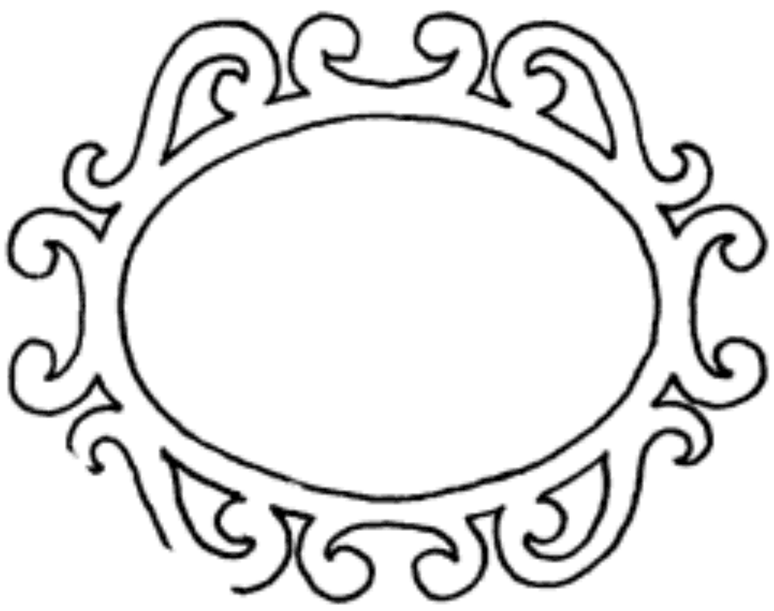




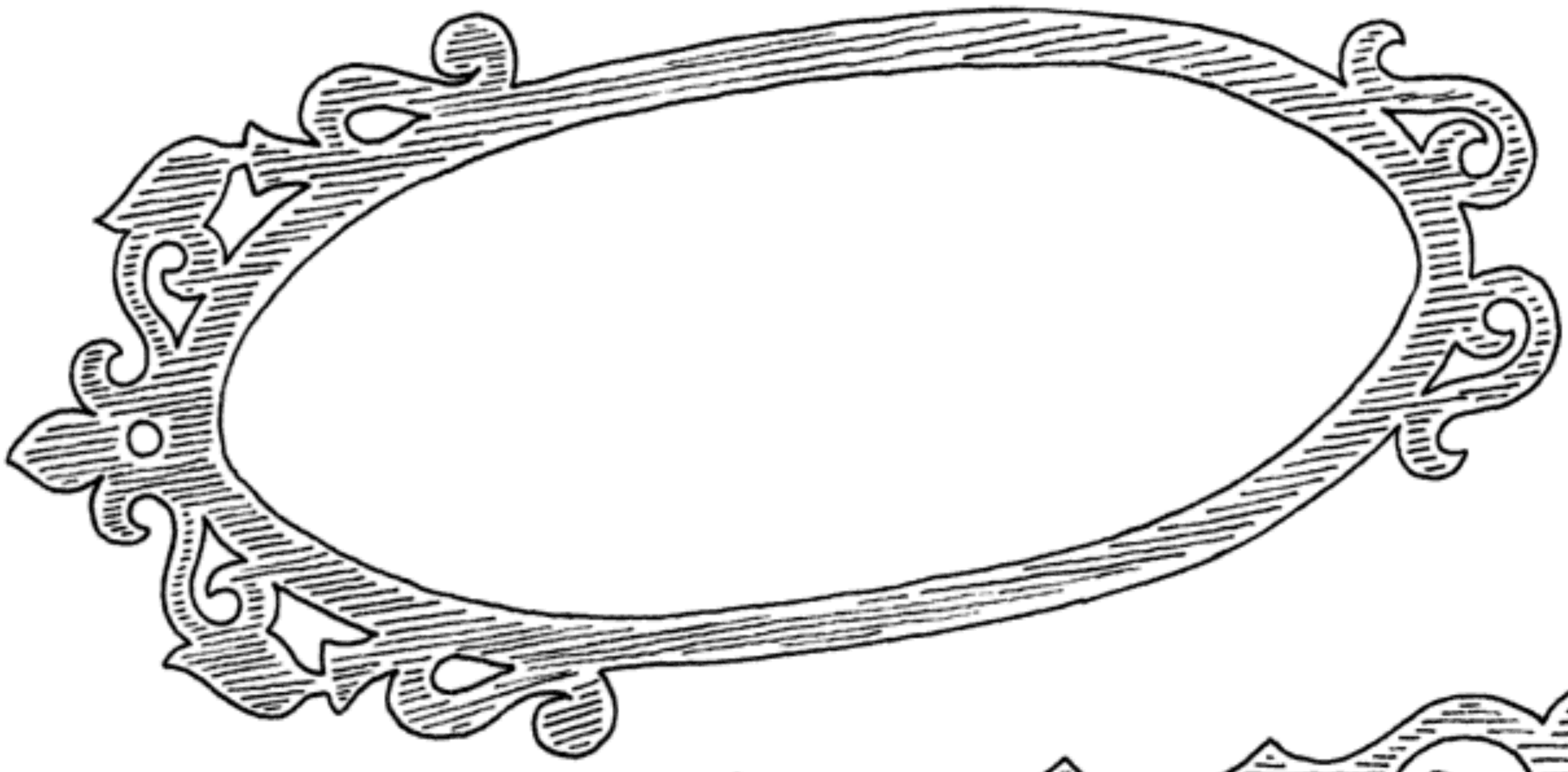






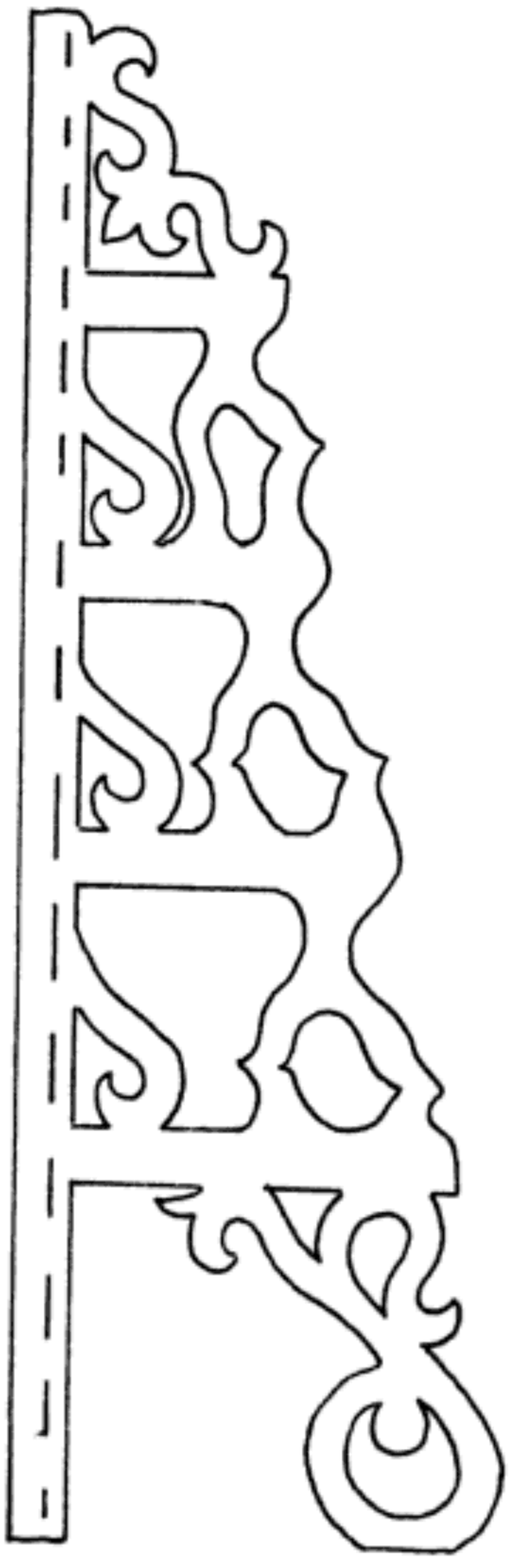


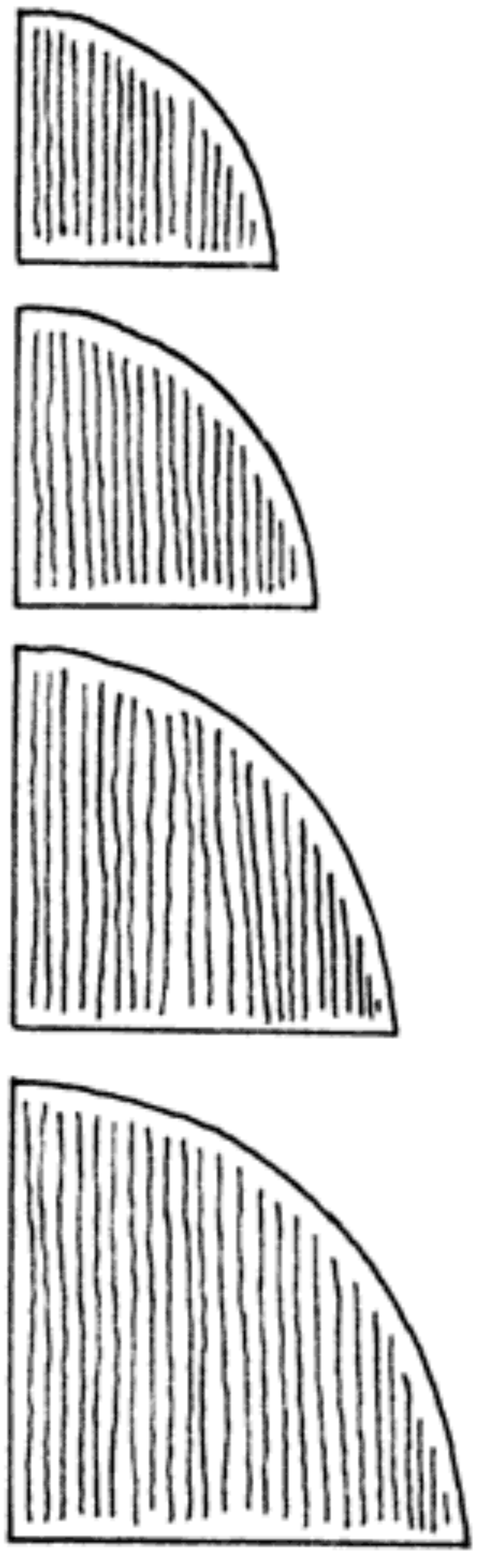
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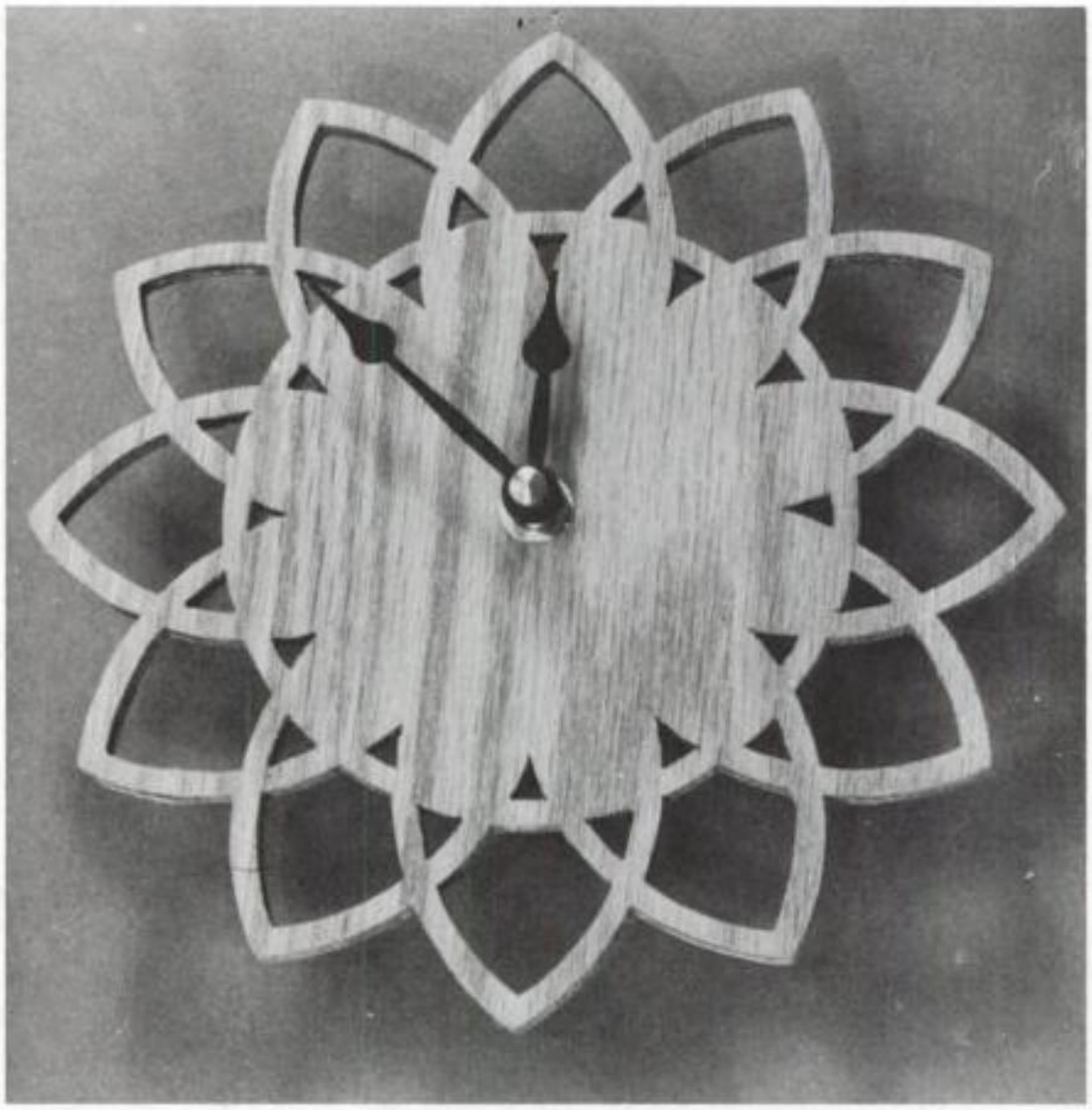




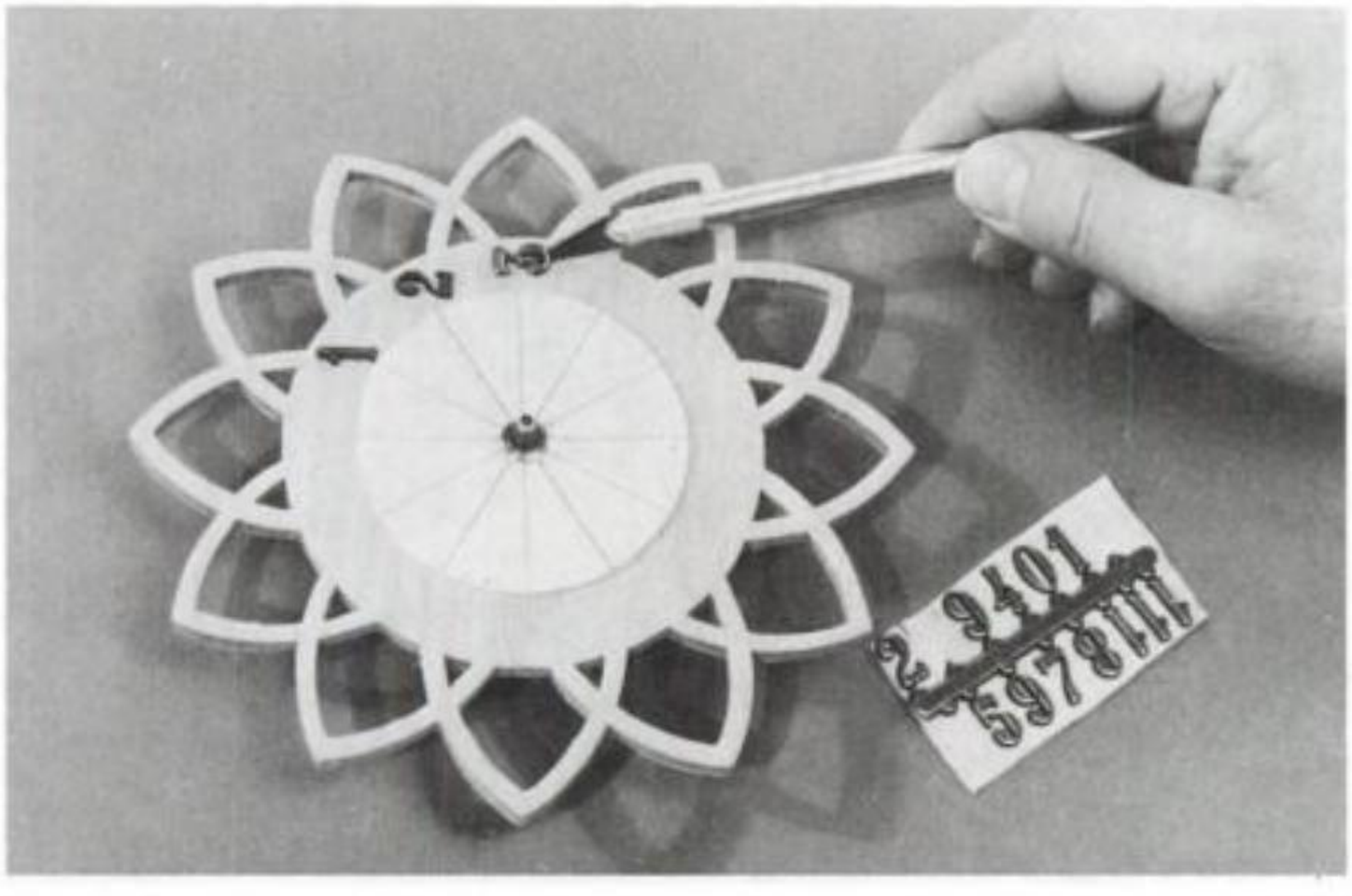


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Clocks

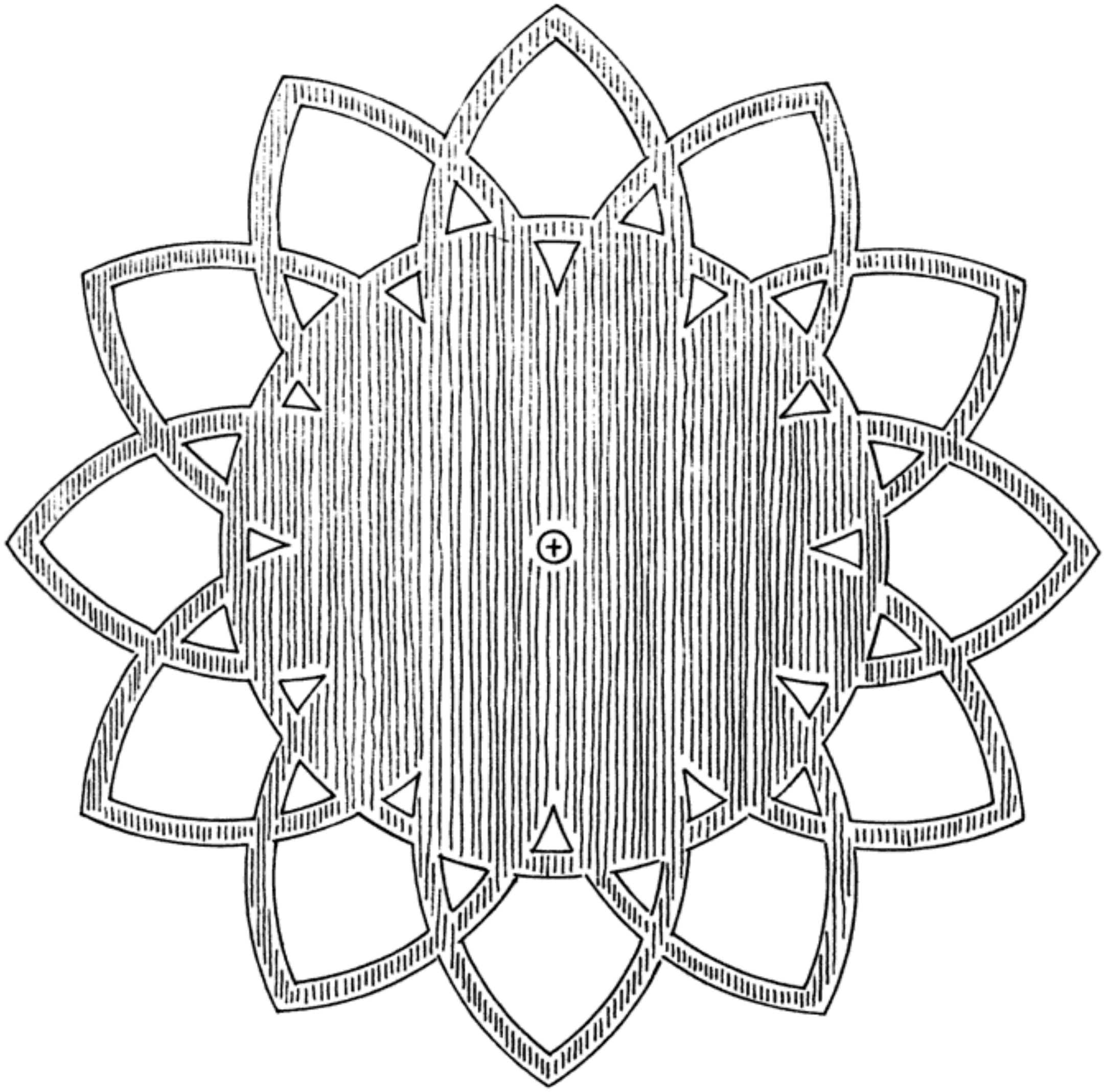


Illus. 189. This is a simple one-piece scroll-sawn clock-face cut from plywood. (The pattern is on the next page.)



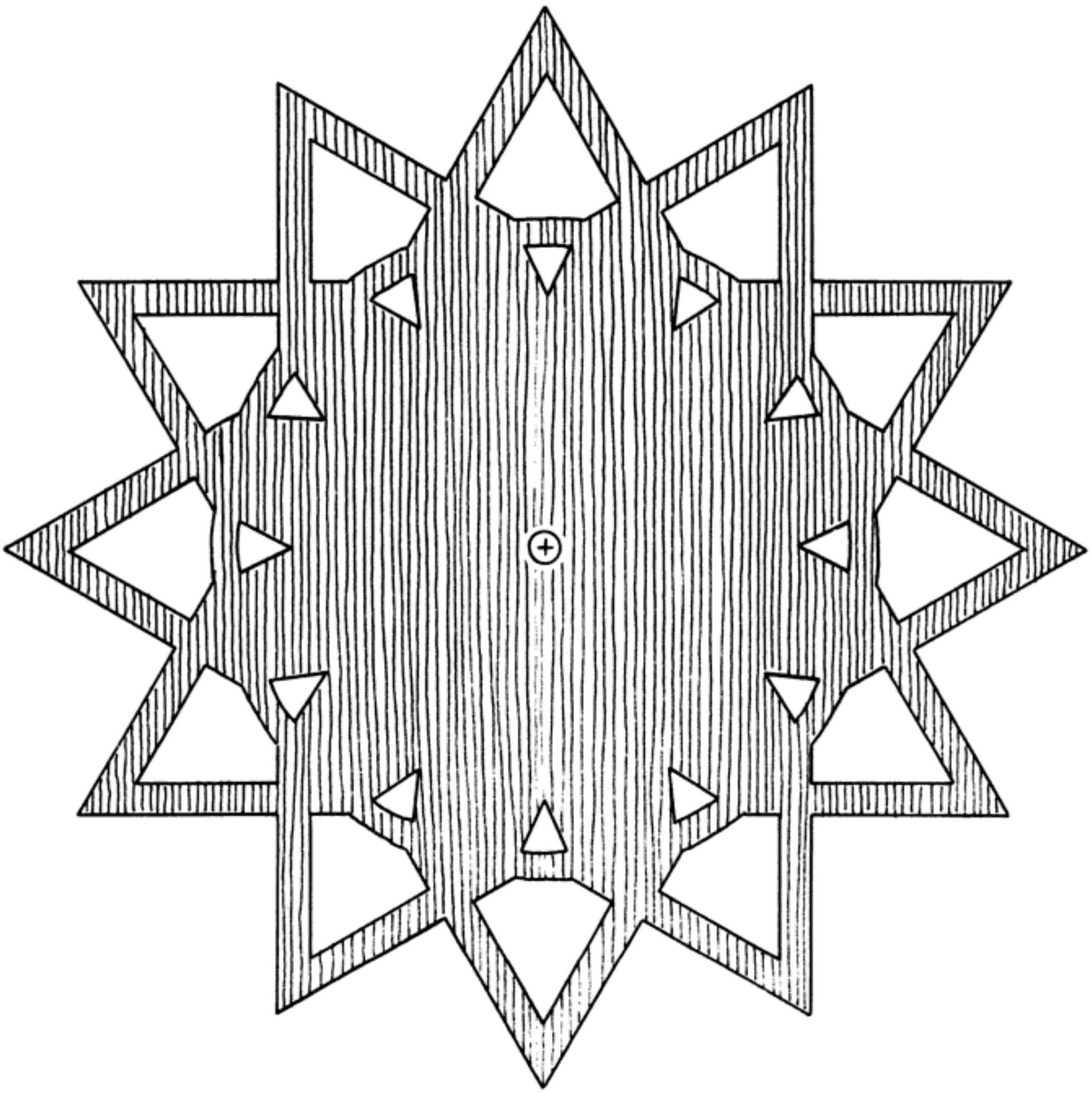
Illus. 190. Stick-on numbers are another option.

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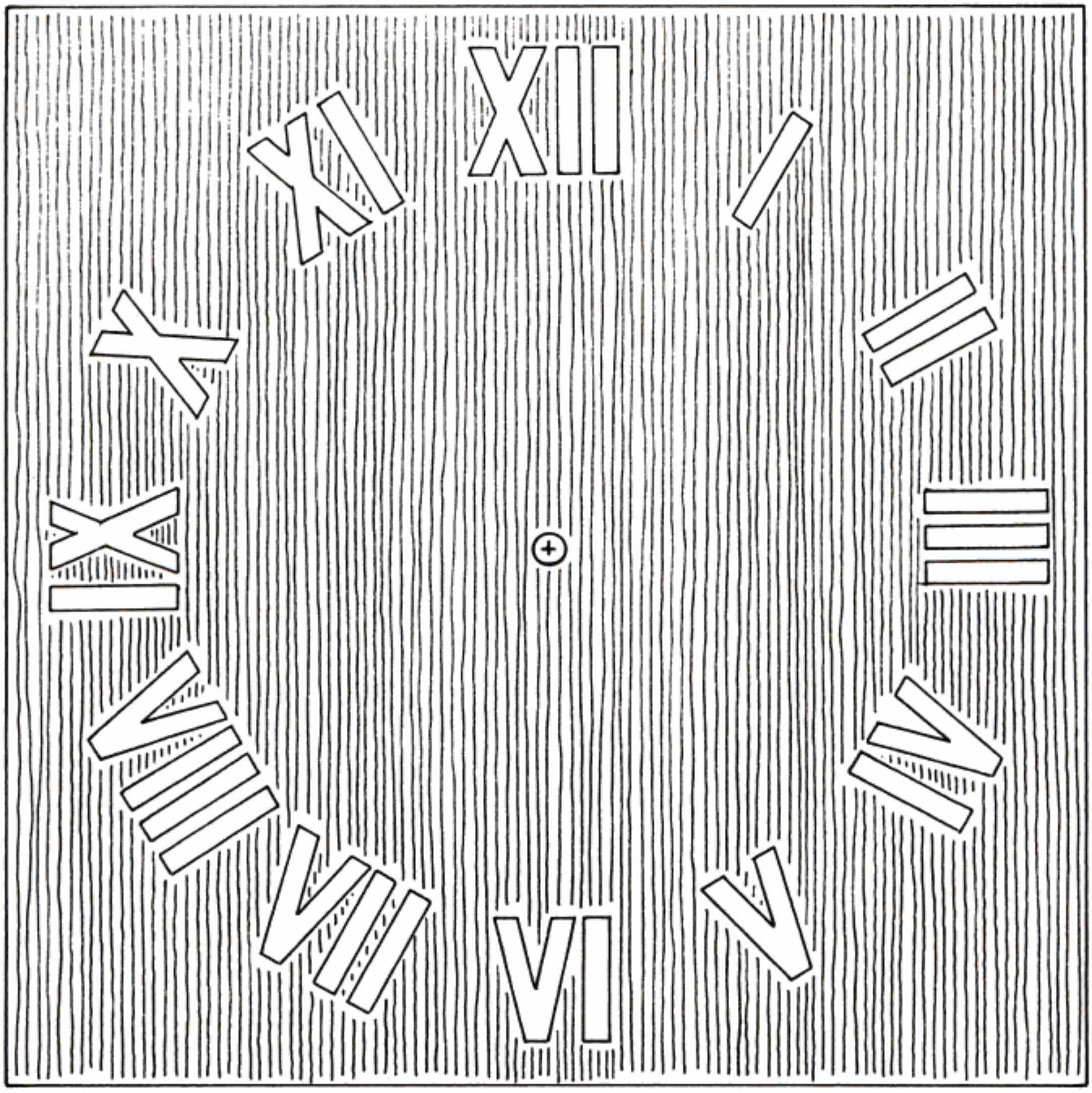
Illus. 191. Clock pattern.

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Illus. 192. Clock pattern.

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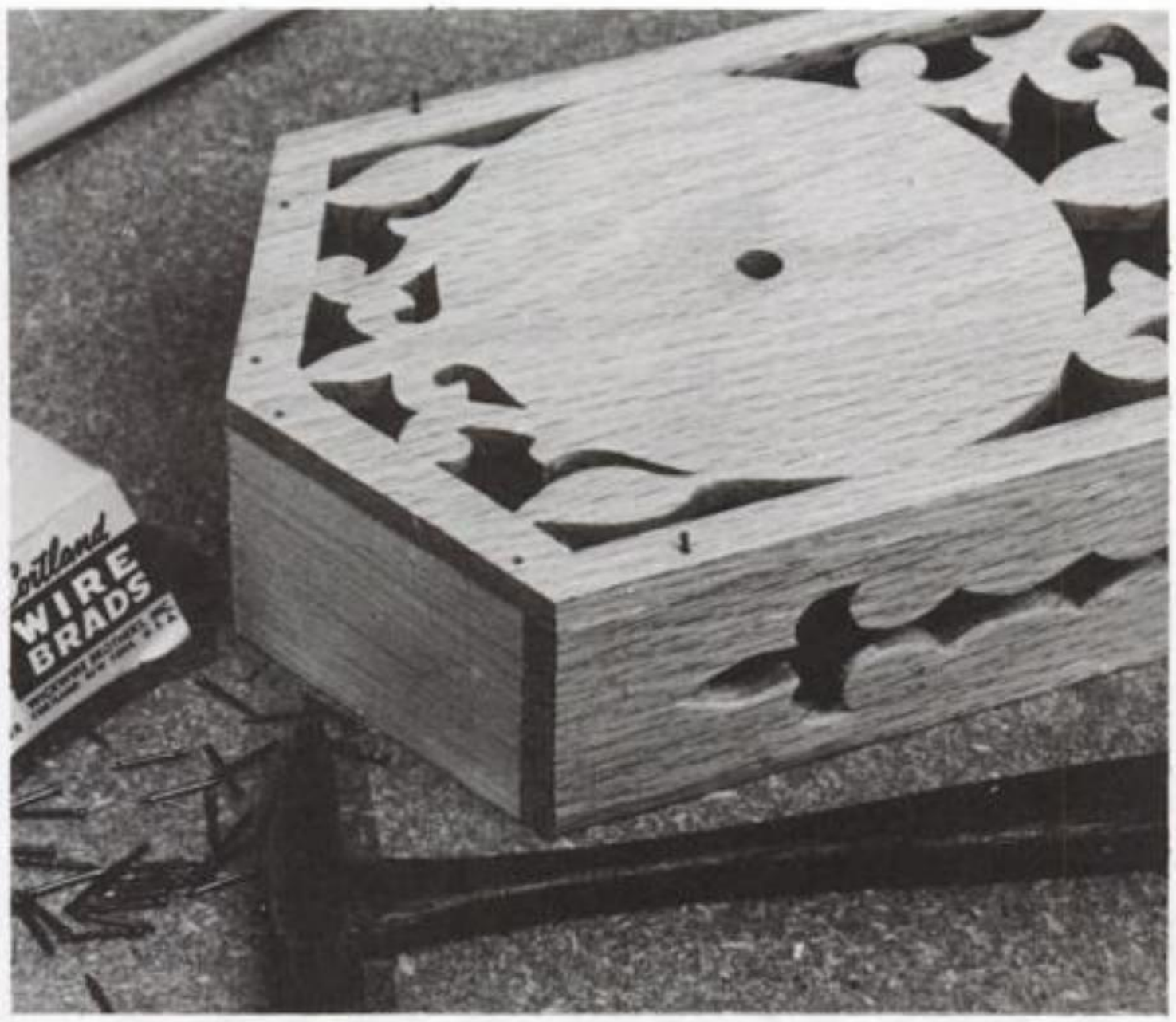
Illus. 193. Clock face pattern. Battery-operated movements (see Illus. 196), hands, dials, and so on, are available from many mail-order sources, including the Klockit Co., Inc., Box 629, Lake Geneva, WI 53147, and Reidle Products, Box 58, Yuba, WI 54634.

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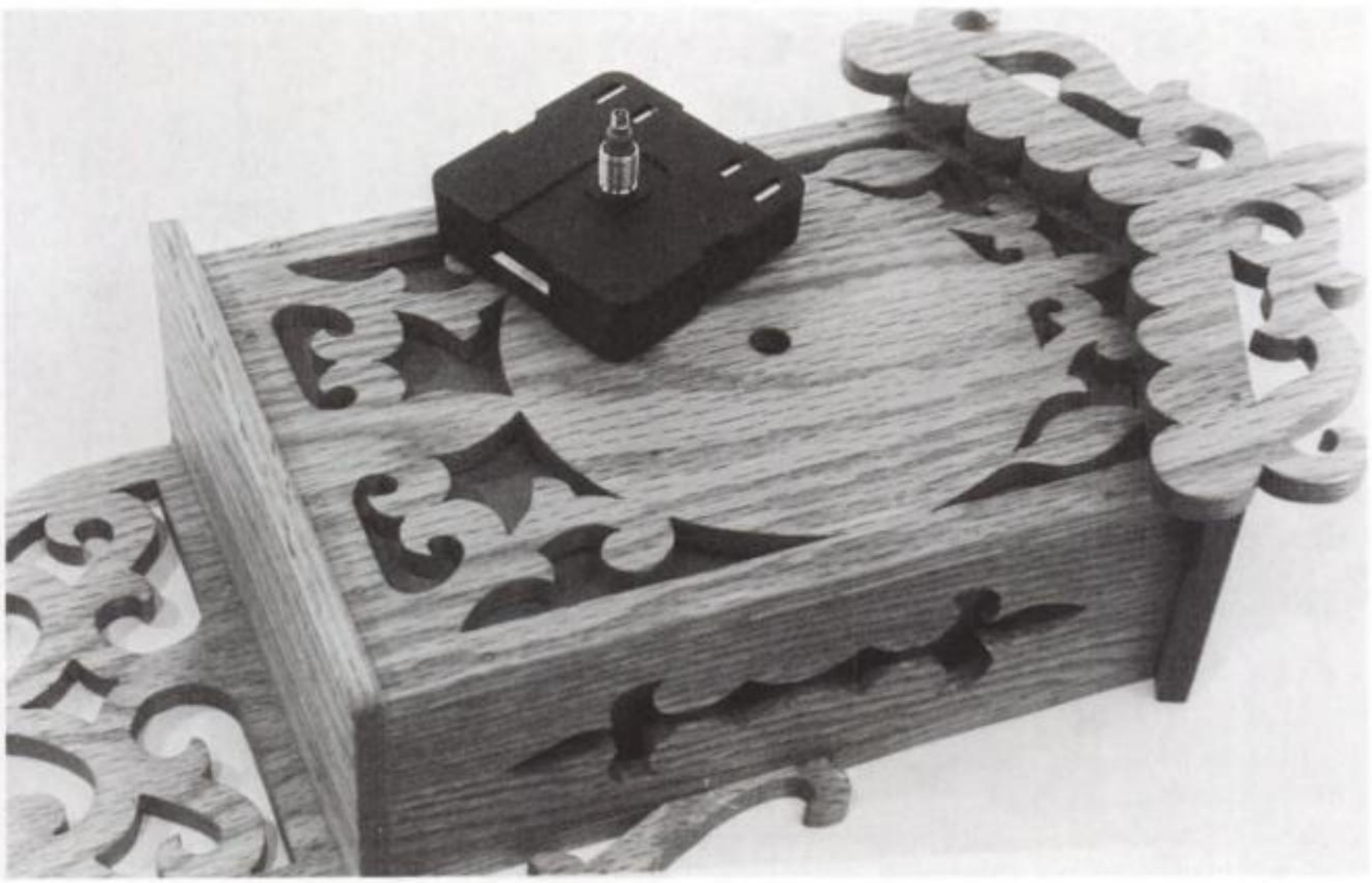


Illus. 194. Wall clock, designed by Kirk Ratajesak. *(Turn to pages 234–237 for the pattern.)*

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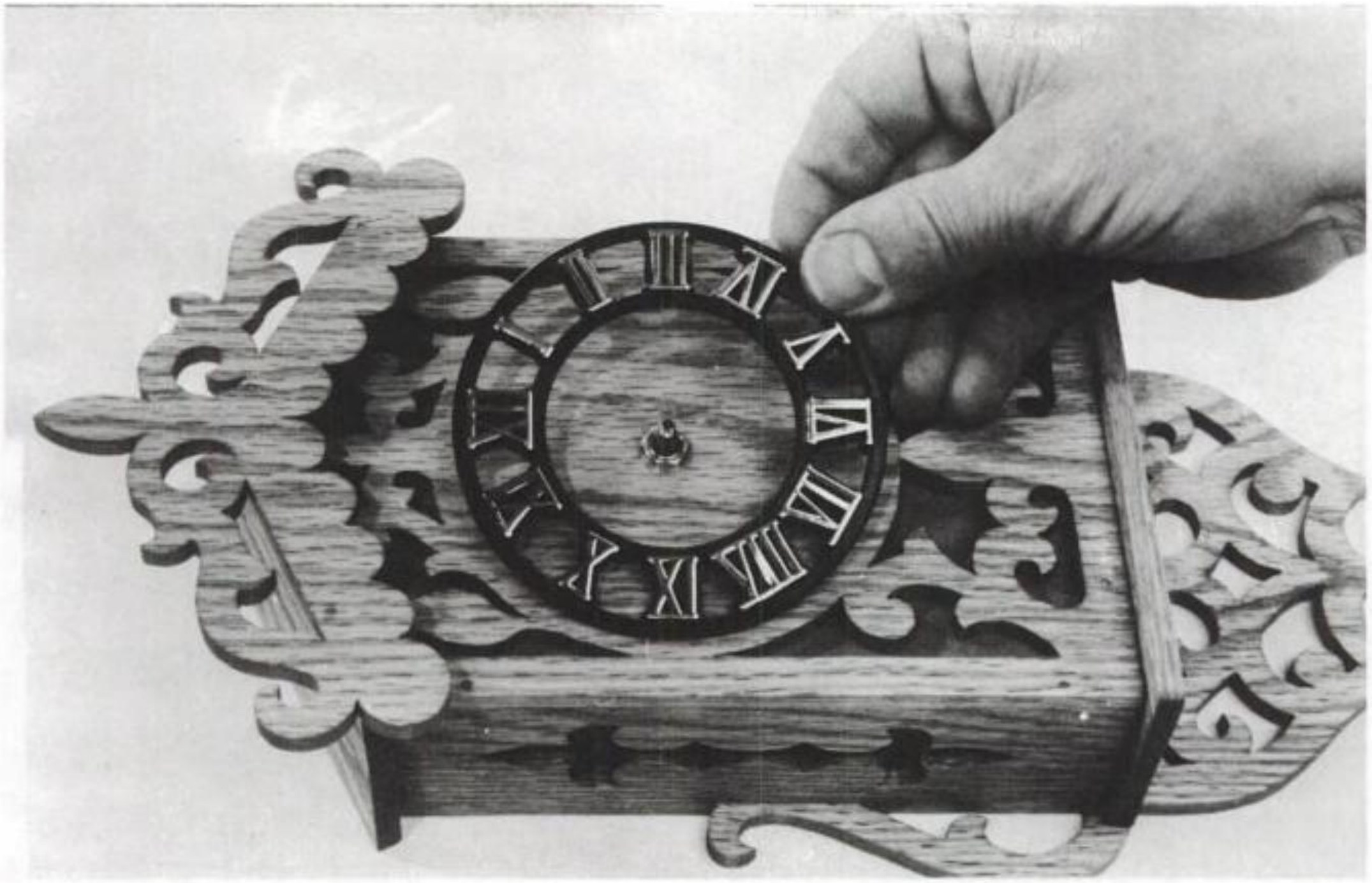


Illus. 195. Assemble the pieces with glue and brads.

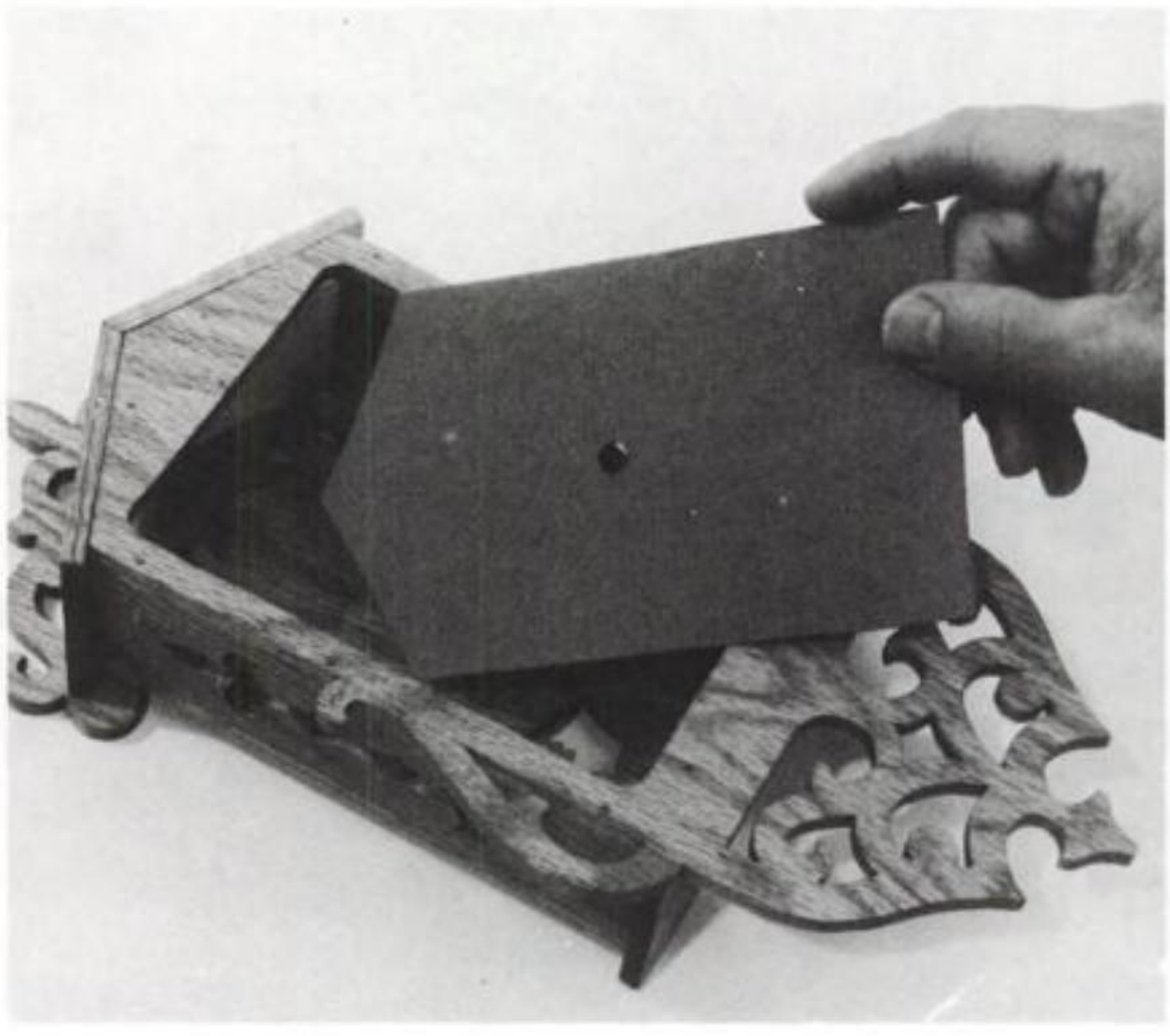


Illus. 196. A simple battery-operated movement is inexpensive and easy to install.

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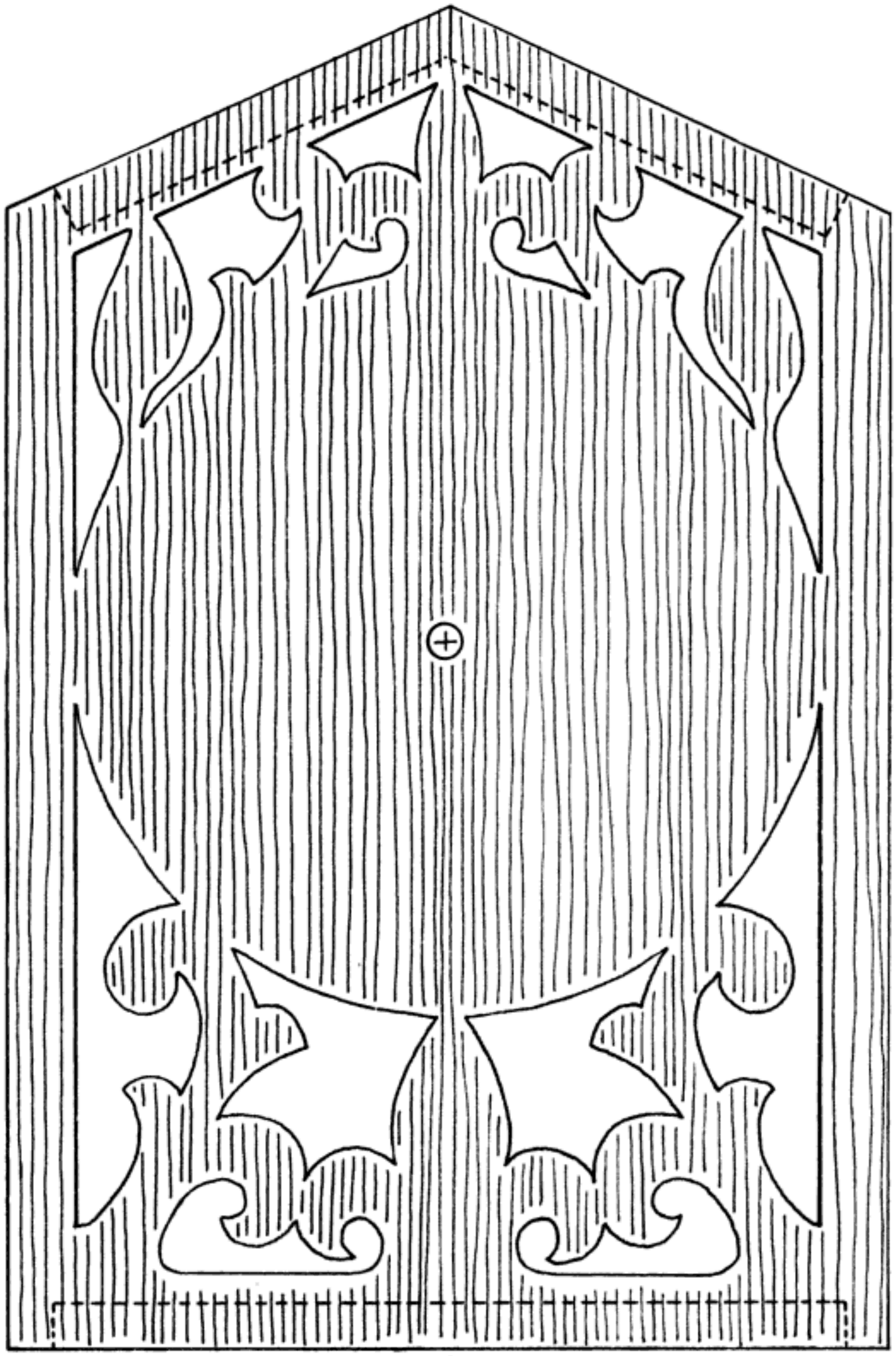


Illus. 197. Placing the time ring on the wall clock. This clock requires a 3¾"-diameter styrene time ring, available from the Klockit Co., Inc. and from Reidle Products.



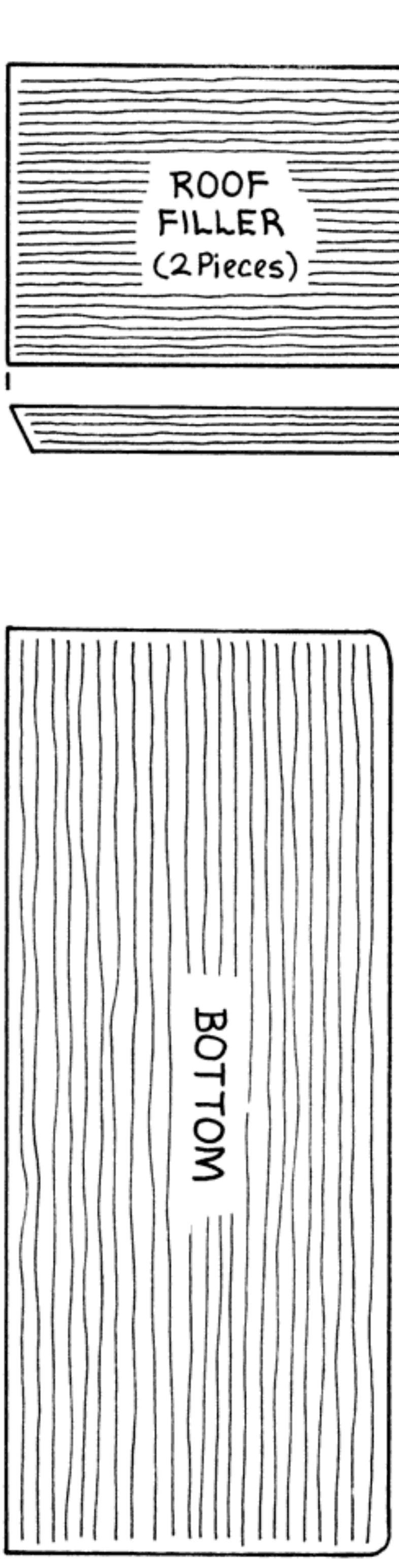
Illus. 198. Colored material, such as poster paper, placed behind a cutout area provides contrast to the wood. This idea can be applied to many other fretwork projects.

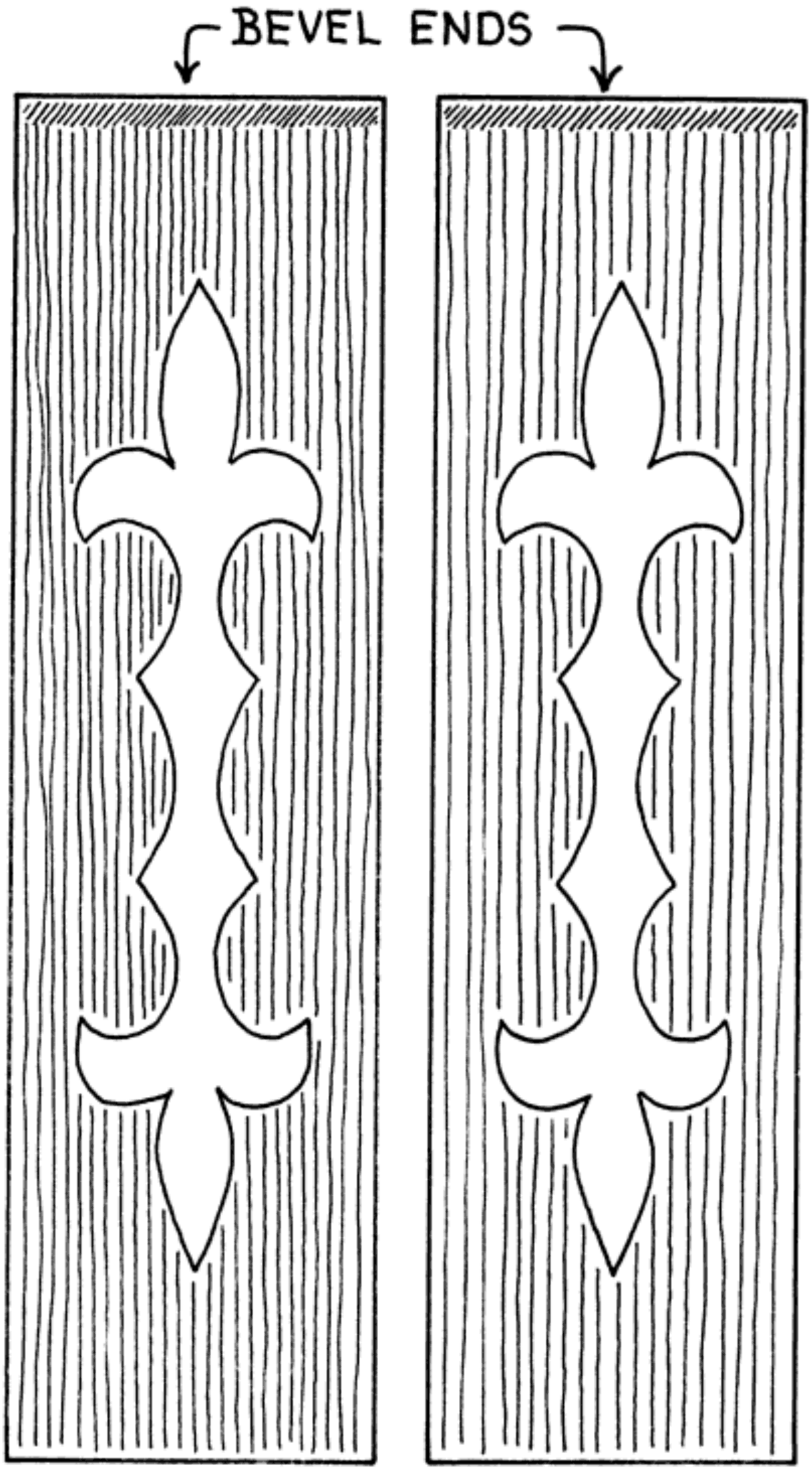
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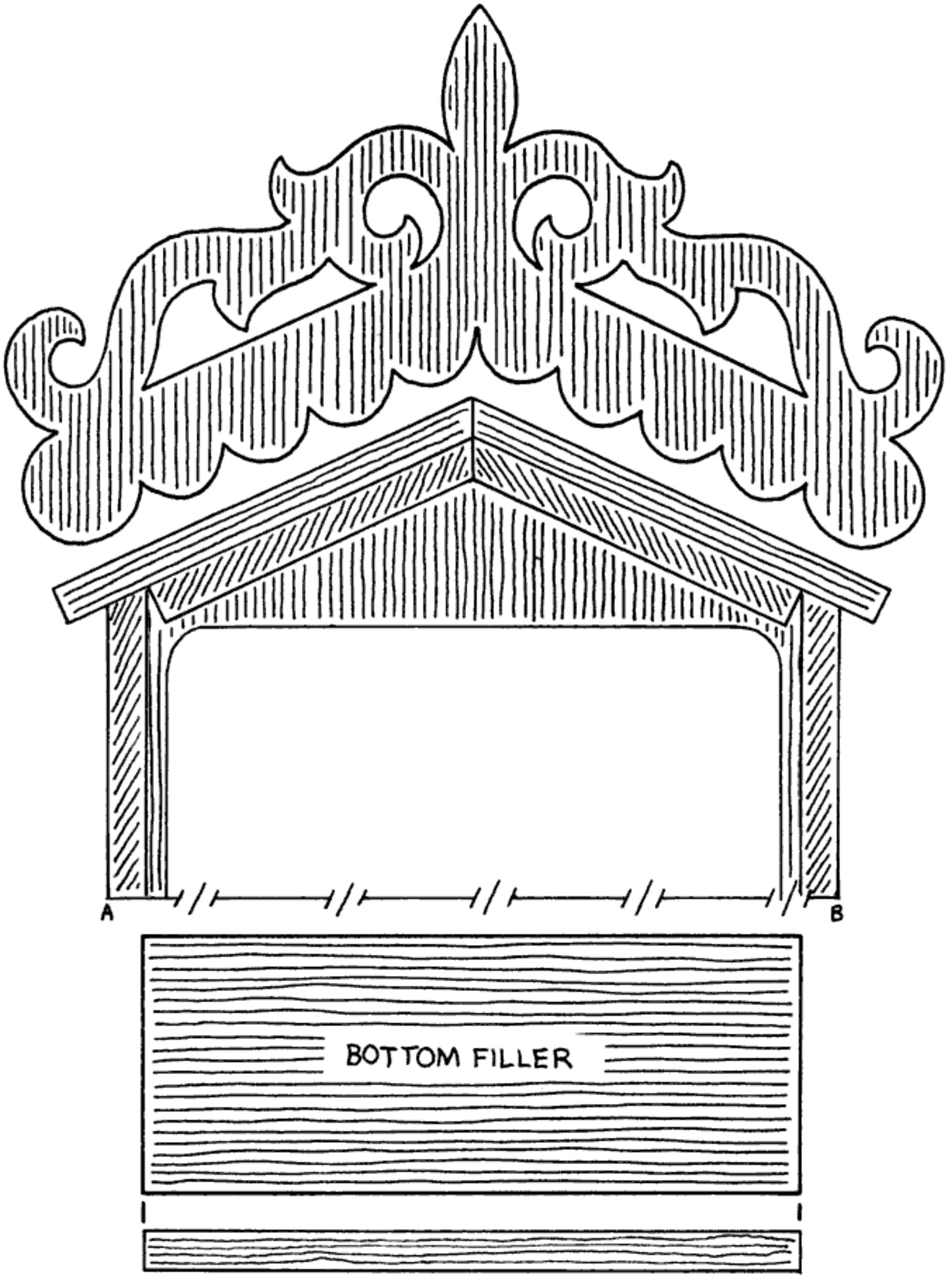
Illus. 199. Wall-clock pattern. (Continued on the next three pages.)

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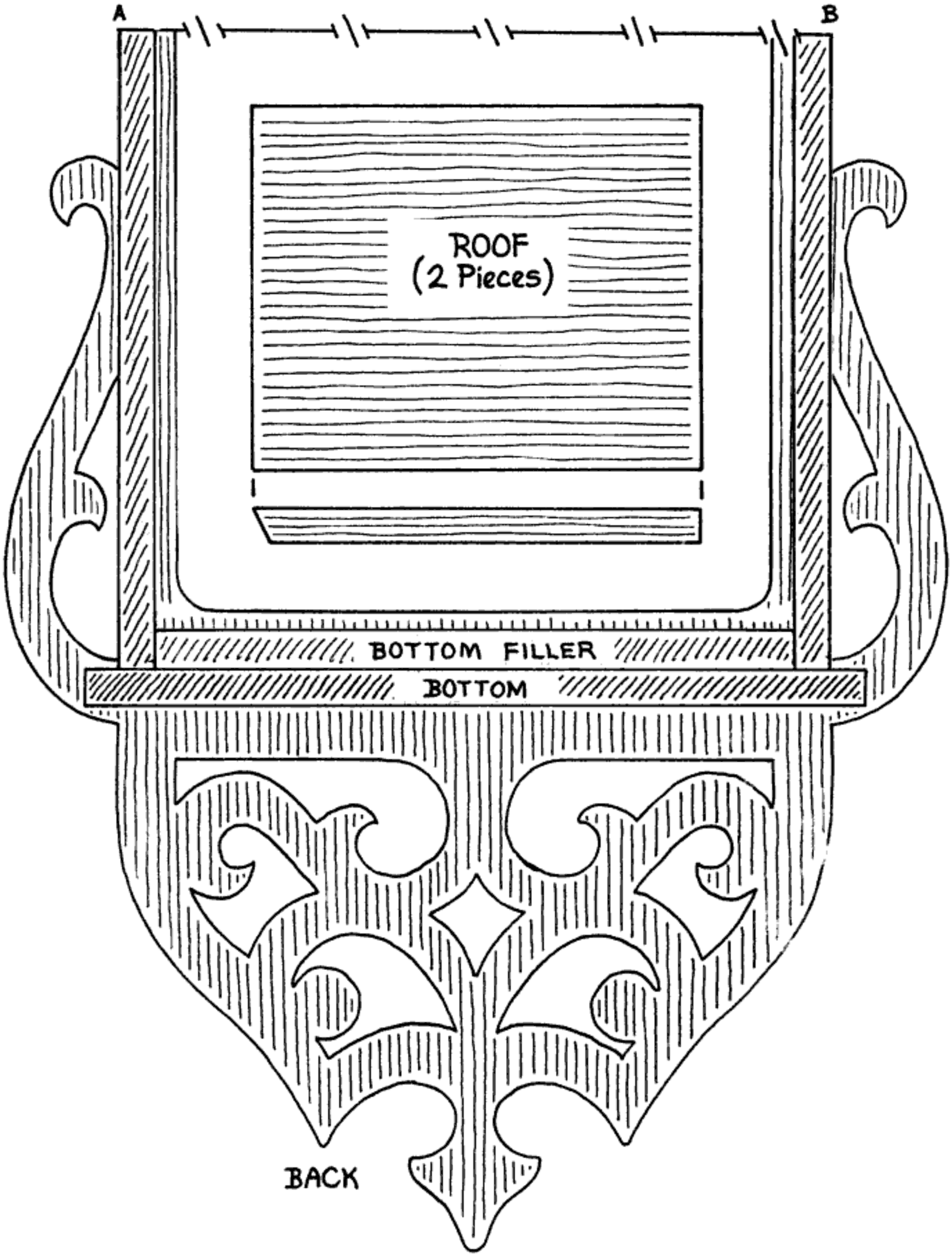




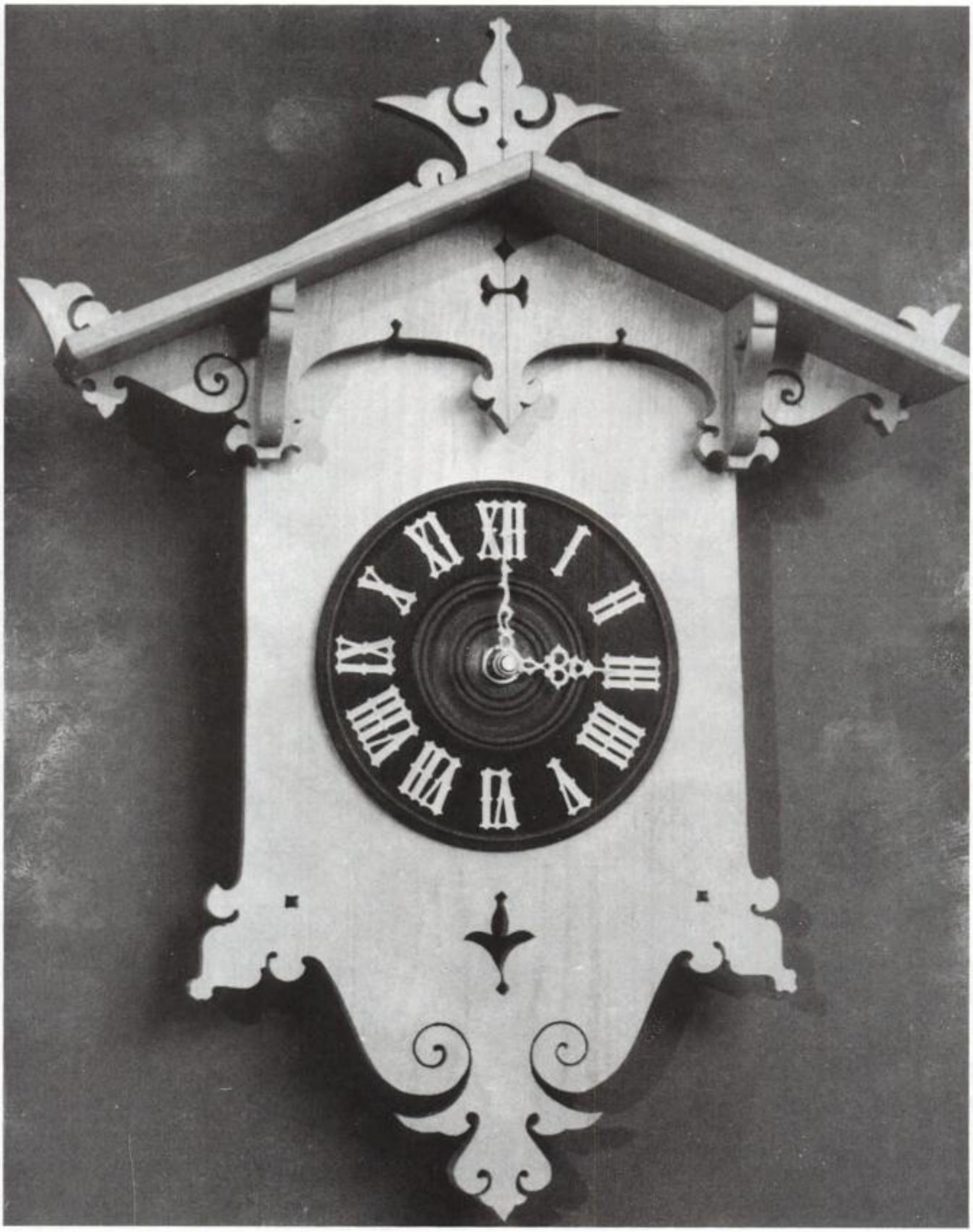
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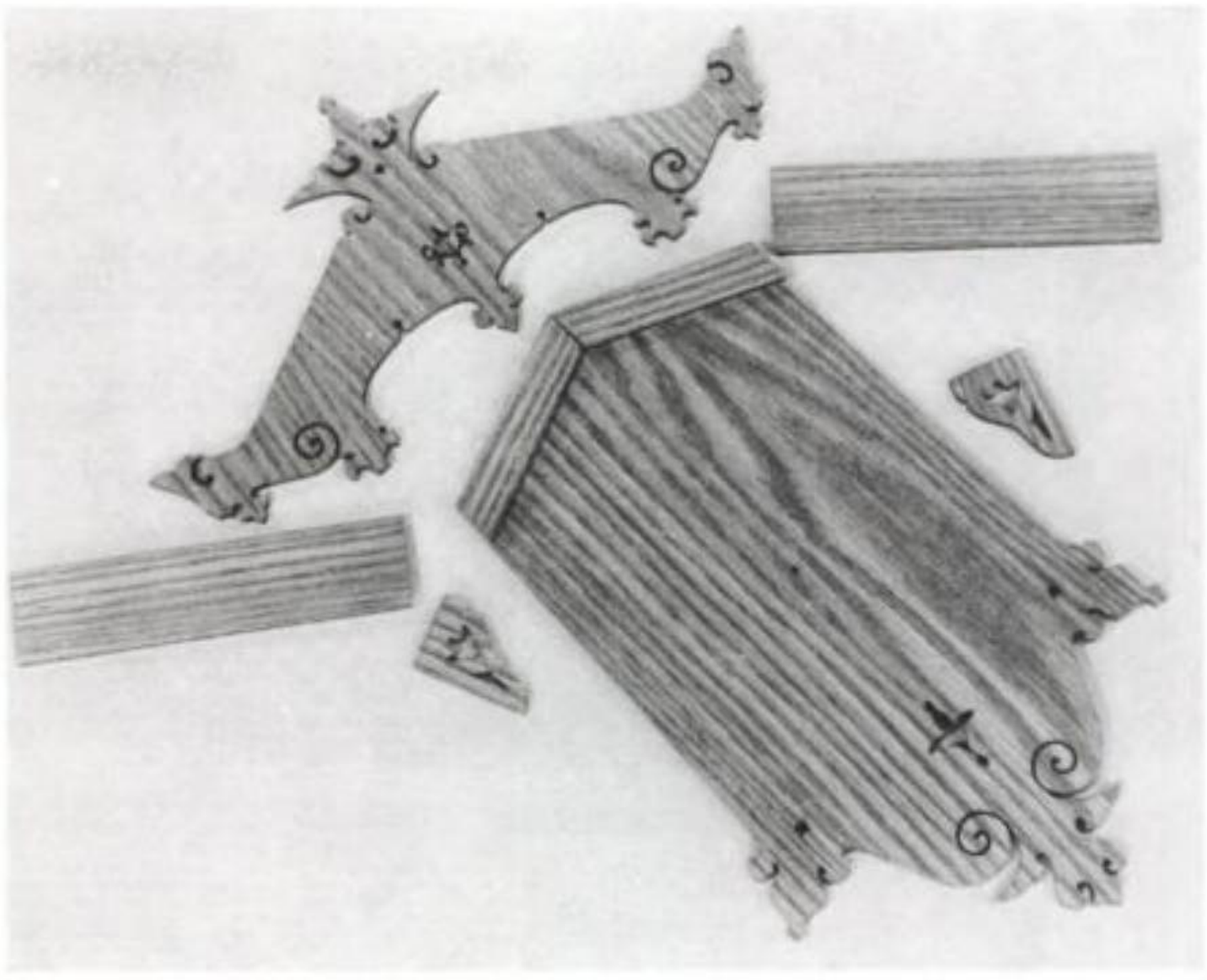


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Illus. 200. German-style wall clock. This clock requires a 4⅜"-diameter cuckoo-clock dial, available from Kienzle Time, Inc., P.O. Box 98, 100 Honing Rd., Fox Lake, IL 60020, or from Reidle Products. *(Turn to pages 240–243 for the pattern.)*

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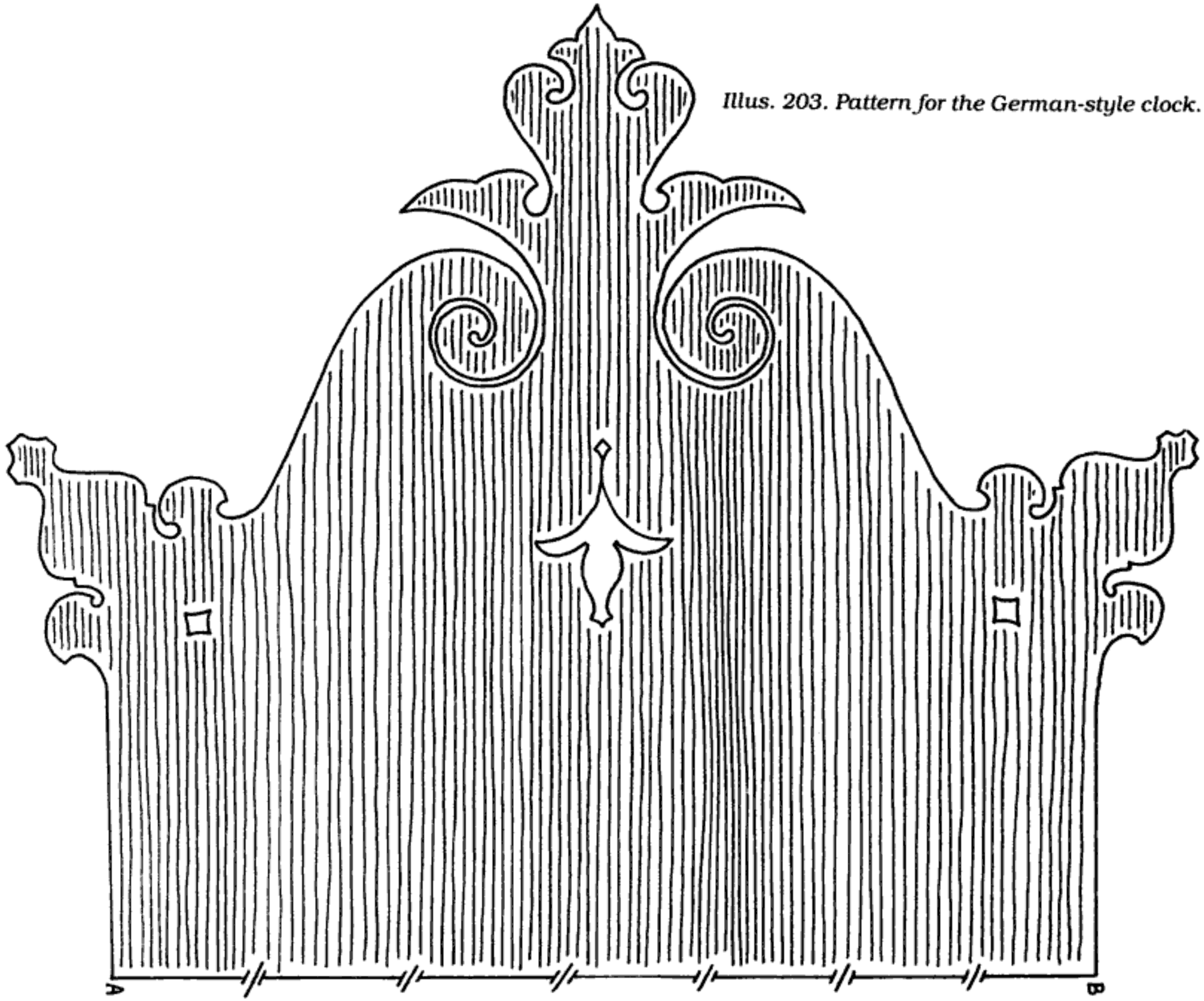
Illus. 201. All the pieces of the German-style wall clock. The starting assembly has the two upper filler boards glued in place.



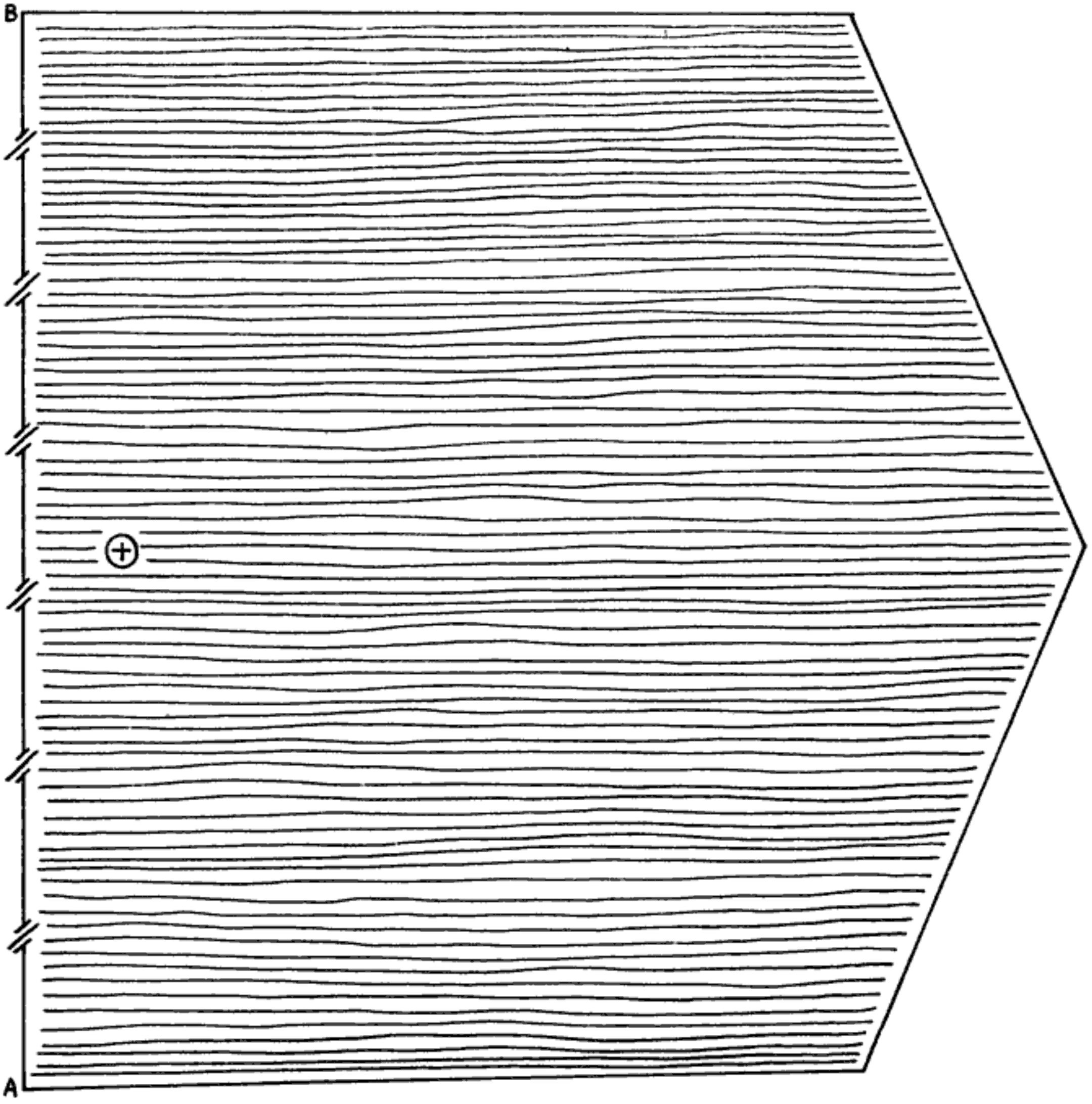
Illus. 202. Next, you attach the decorative scroll top onto the filler boards.

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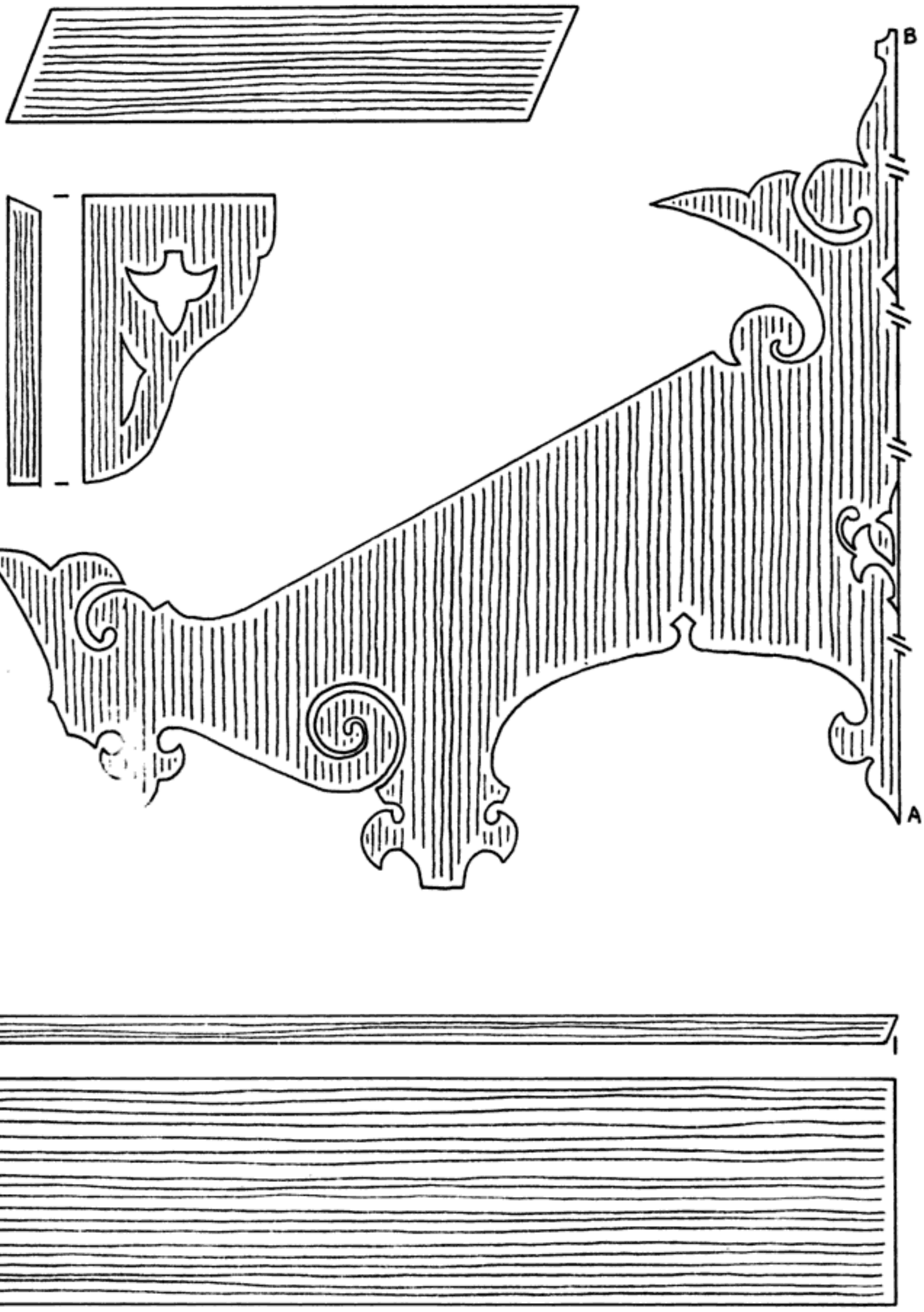
Illus. 203. Pattern for the German-style clock.



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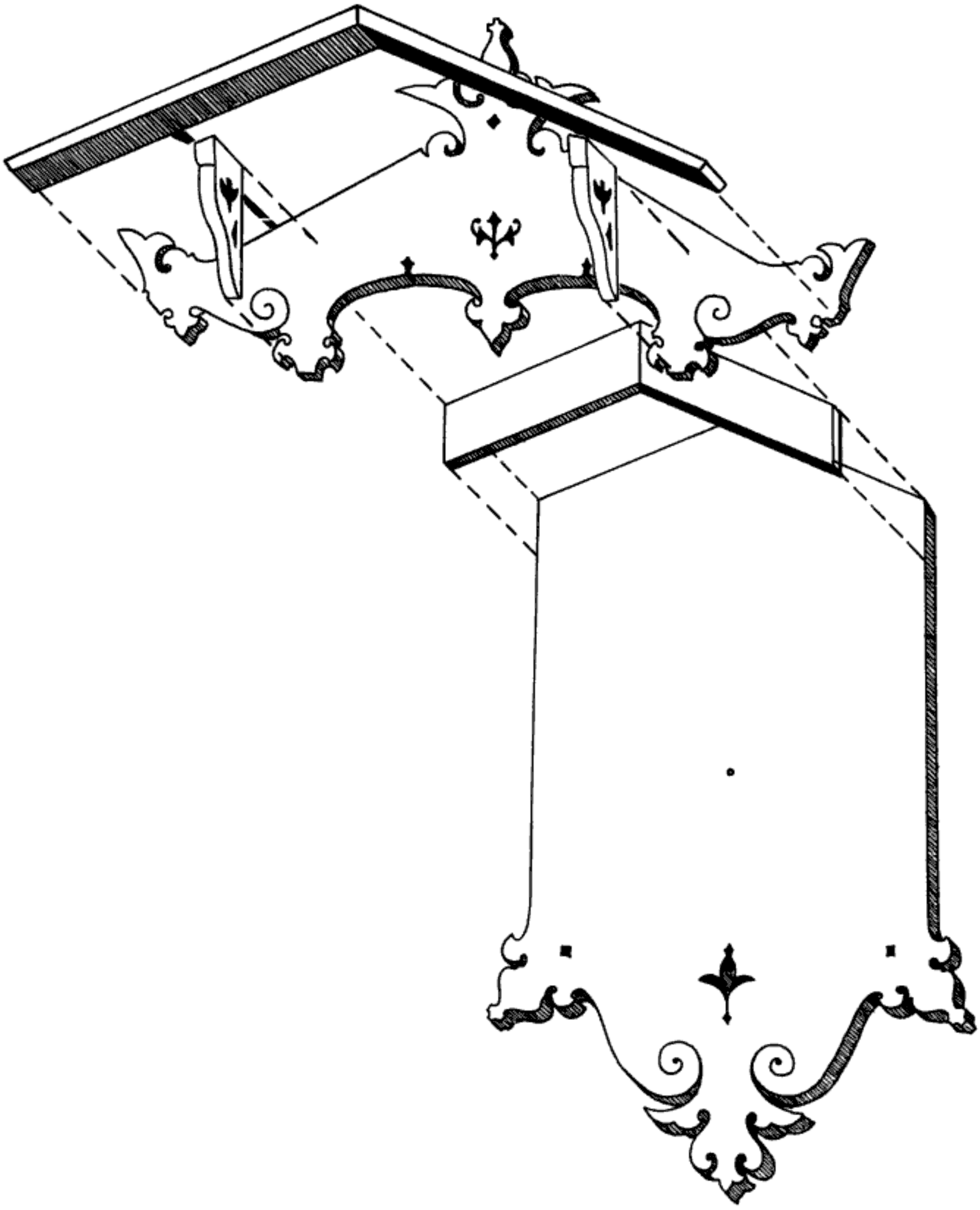
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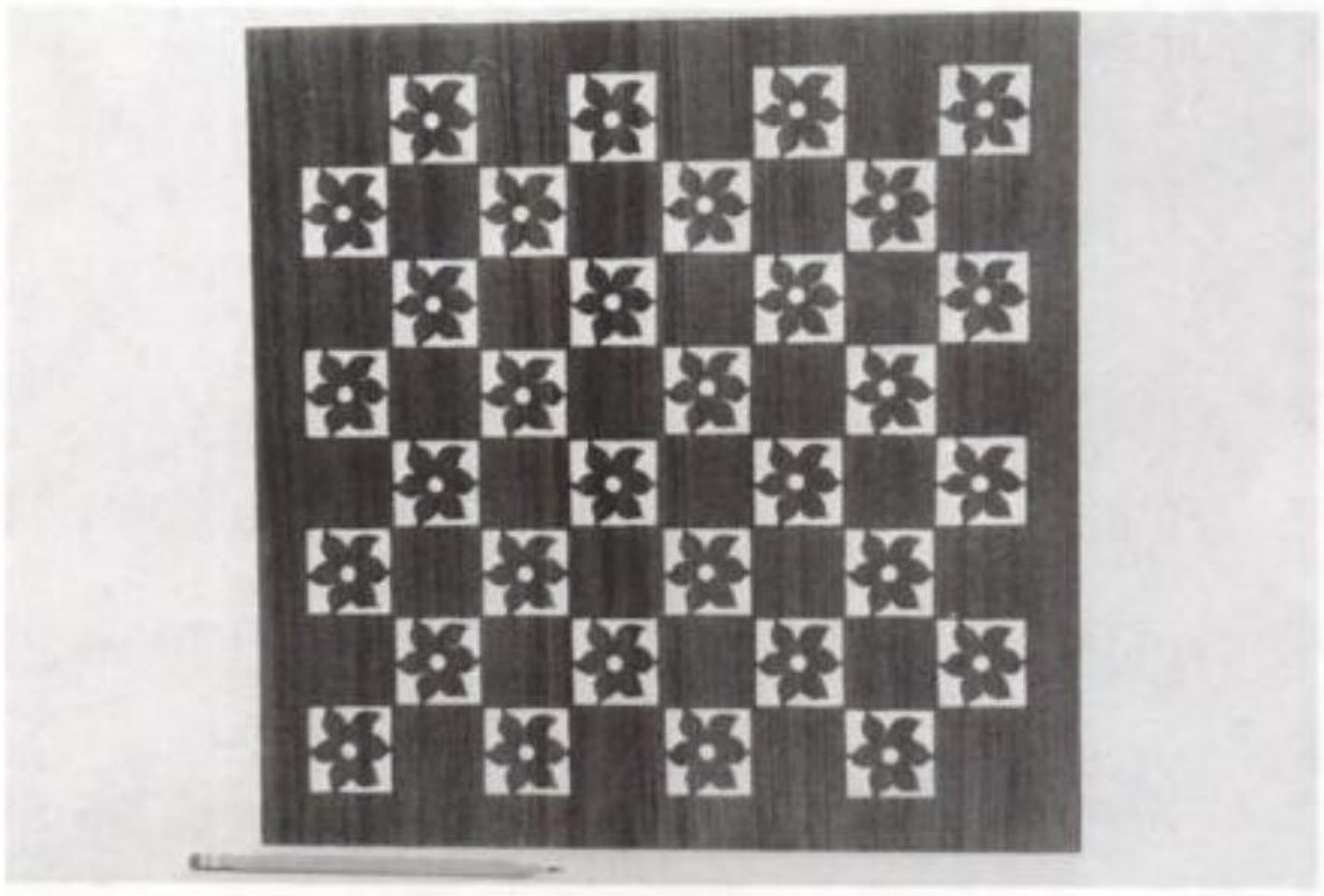


Illus. 204. Exploded view of the clock assembly.

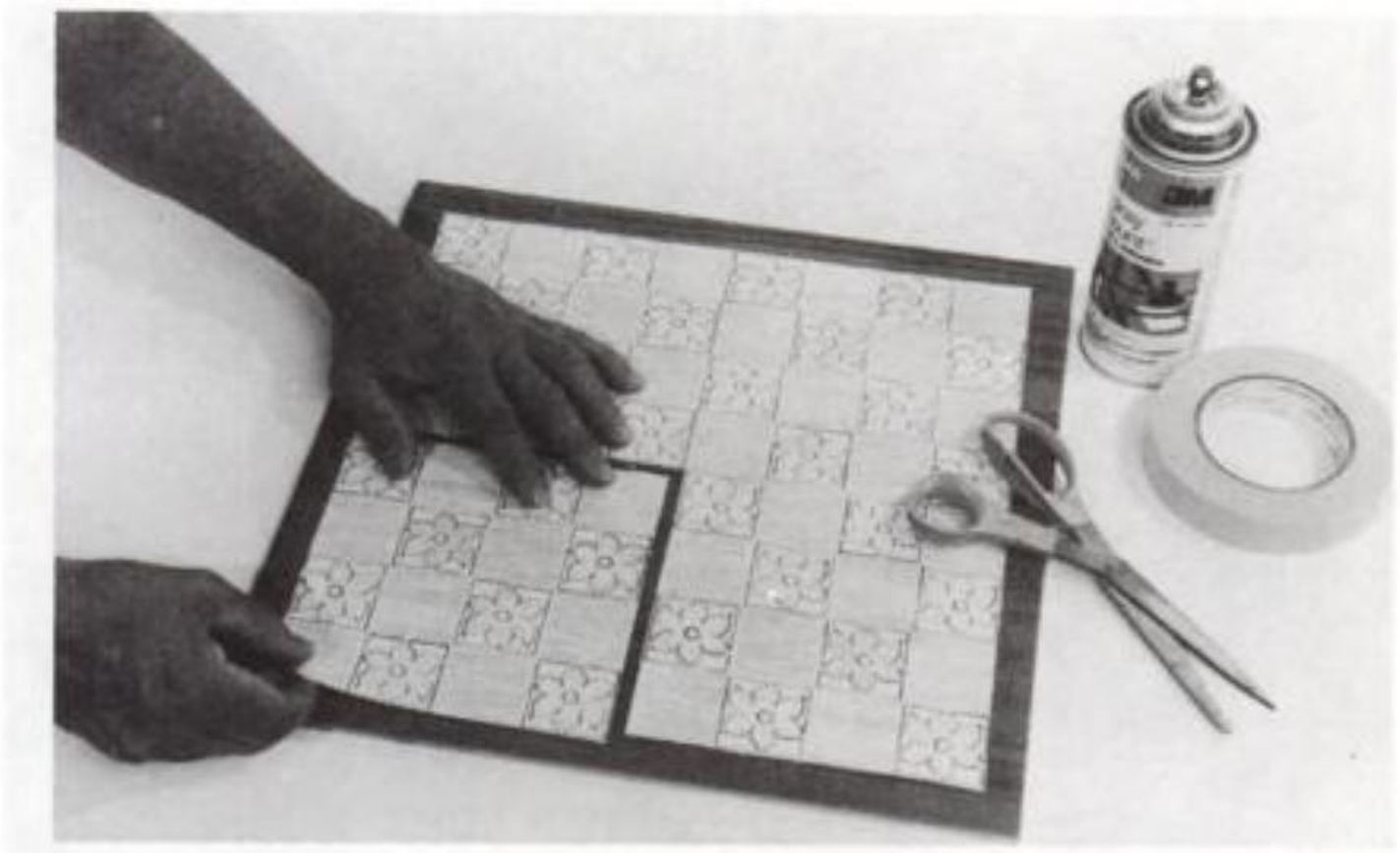
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Illus. 205. Circular rose pattern.

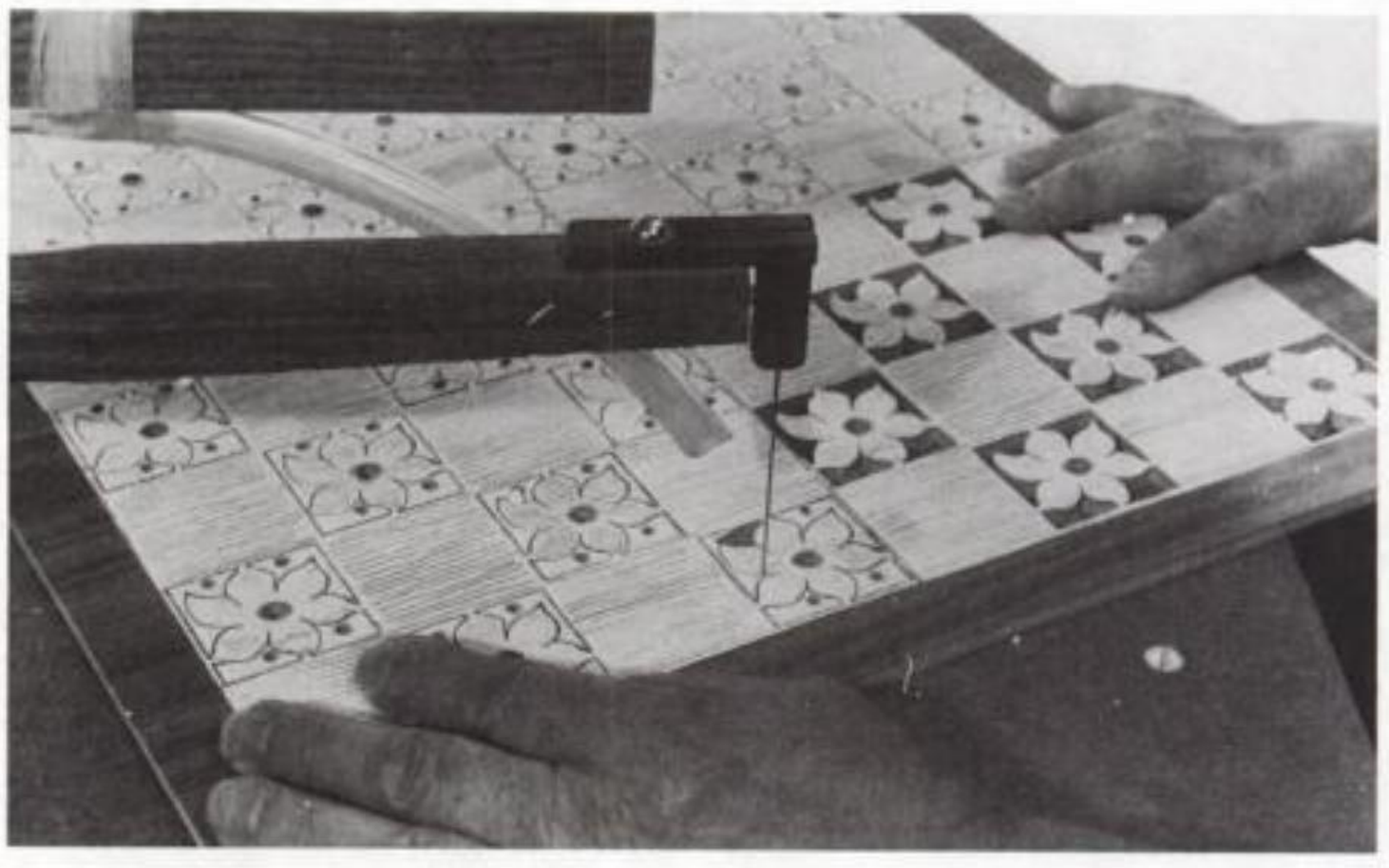
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Illus. 206. This repeating pattern makes an interesting chessboard or checkerboard. The board is made up of two layers. The top layer is fret-cut and glued onto a contrasting plain panel.

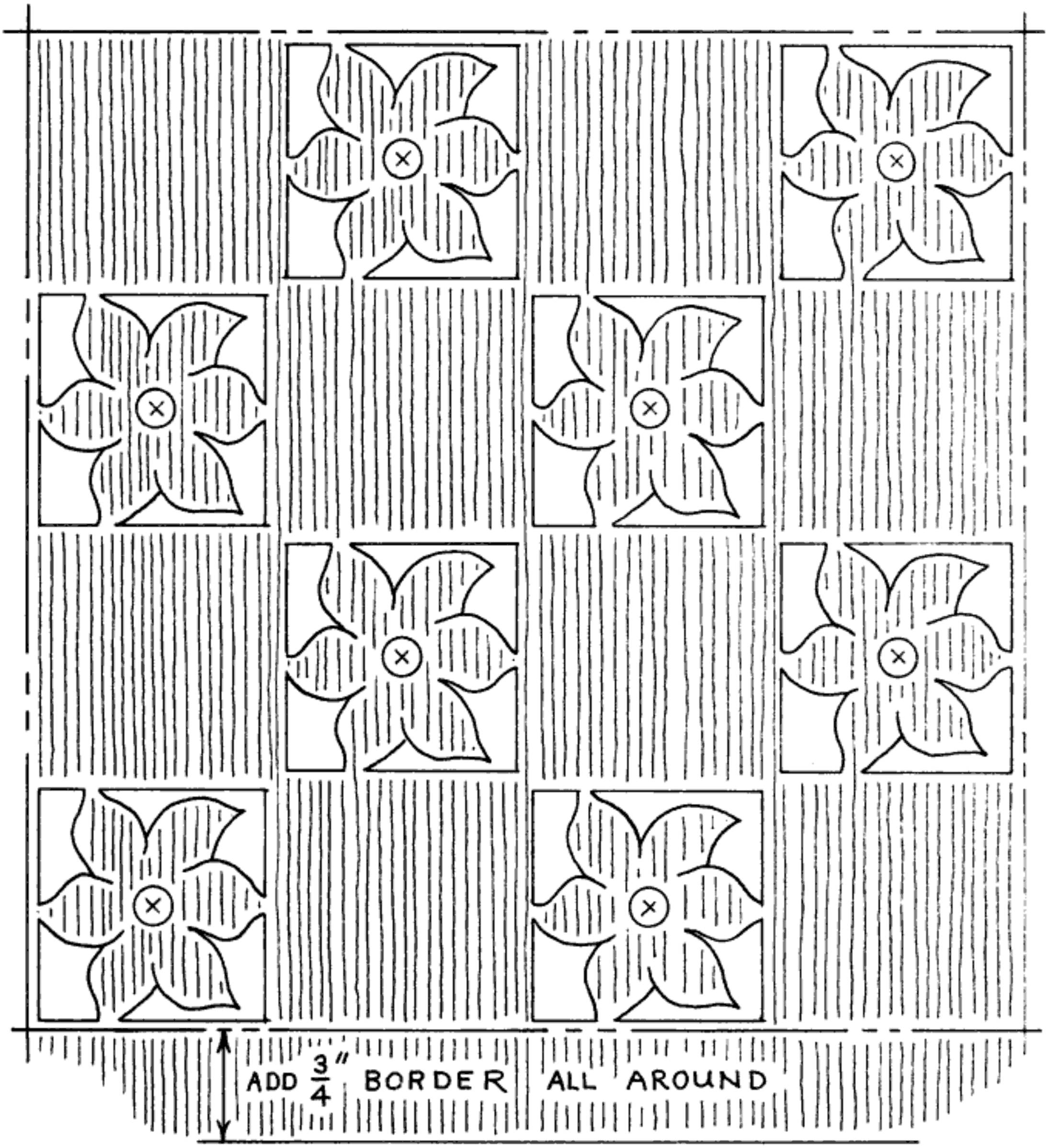


Illus. 207. Four identical patterns comprise the chess- or checkerboard layout.



Illus. 208. Cutting out the board.

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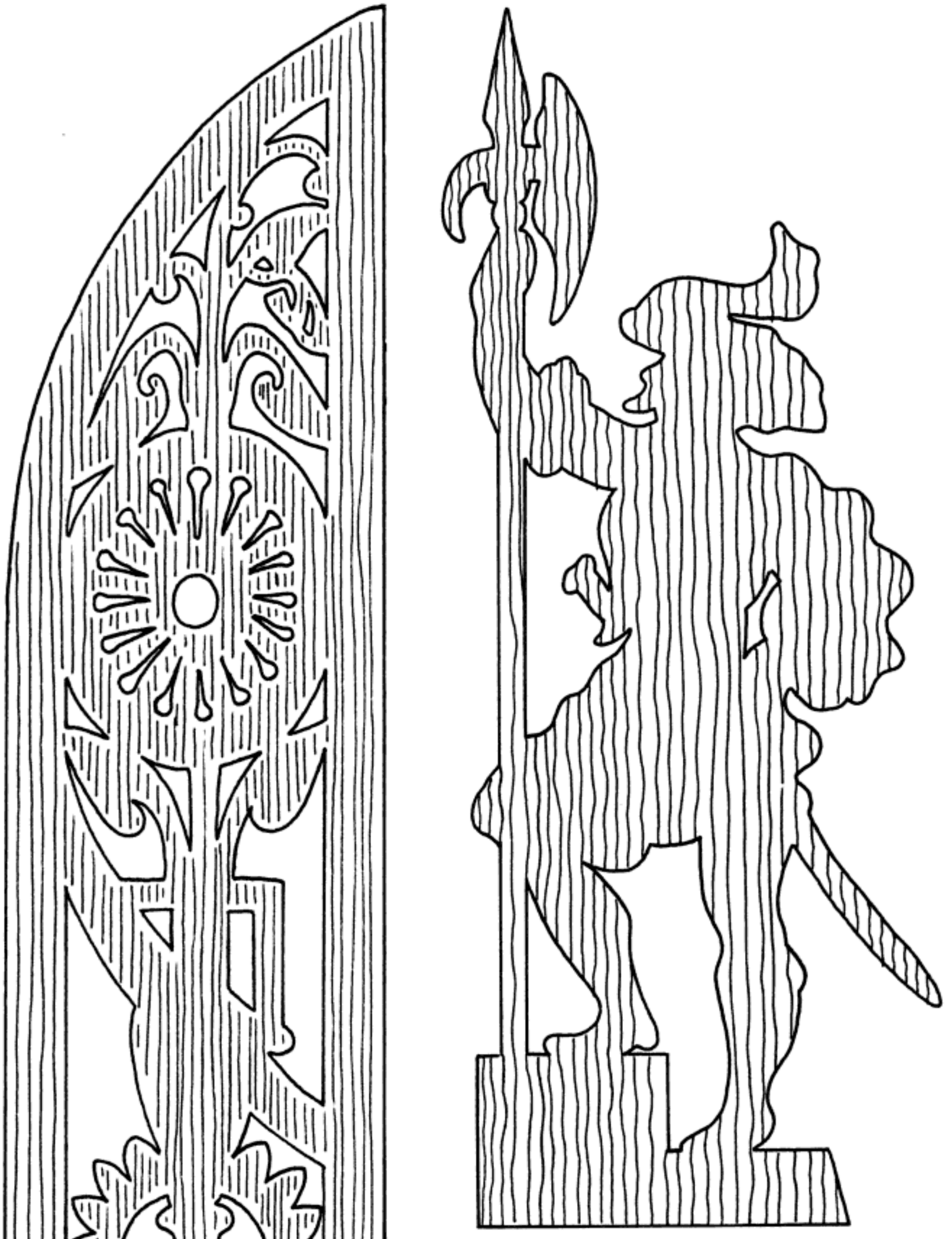
Illus. 209. One fourth of the pattern for the chess- or checkerboard project. Note the ¾" border all around. A 13¾" square of material is required.

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Illus. 210. Mandala-like patterns.

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Illus. 211. Grille pattern and pattern for a 16th-century explorer.

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METRIC EQUIVALENCY CHART

MM—MILLIMETRES CM—CENTIMETRES

INCHES TO MILLIMETRES AND CENTIMETRES

INCHES	MM	CM	INCHES	CM	INCHES	CM
⅛	3	0.3	9	22.9	30	76.2
¼	6	0.6	10	25.4	31	78.7
⅜	10	1.0	11	27.9	32	81.3
½	13	1.3	12	30.5	33	83.8
⅝	16	1.6	13	33.0	34	86.4
¾	19	1.9	14	35.6	35	88.9
⅞	22	2.2	15	38.1	36	91.4
1	25	2.5	16	40.6	37	94.0
1¼	32	3.2	17	43.2	38	96.5
1½	38	3.8	18	45.7	39	99.1
1¾	44	4.4	19	48.3	40	101.6
2	51	5.1	20	50.8	41	104.1
2½	64	6.4	21	53.3	42	106.7
3	76	7.6	22	55.9	43	109.2
3½	89	8.9	23	58.4	44	111.8
4	102	10.2	24	61.0	45	114.3
4½	114	11.4	25	63.5	46	116.8
5	127	12.7	26	66.0	47	119.4
6	152	15.2	27	68.6	48	121.9
7	178	17.8	28	71.1	49	124.5
8	203	20.3	29	73.7	50	127.0

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About the Authors

Patrick Spielman's love of wood began when, as a child, he transformed fruit crates into toys. Now this prolific and innovative woodworker is respected worldwide as a teacher and author.

His most famous contribution to the woodworking field has been his perfection of a method to season green wood with polyethylene glycol 1000 (PEG). He went on to invent, manufacture, and distribute the PEG-Thermovat chemical seasoning system.

During his many years as shop instructor in Wisconsin, Spielman published manuals, teaching guides, and more than 14 popular books, including *Modern Wood Technology*, a college text. He also wrote six educational series on wood technology, tool use, processing techniques, design, and wood-product planning.

Author of the best-selling *Router Handbook* (over 600,000 copies sold), Spielman has served as editorial consultant to a professional magazine, and his products, techniques, and many books have been featured in numerous periodicals.

This pioneer of new ideas and inventor of countless jigs, fixtures, and designs used throughout the world is a unique combination of expert woodworker and brilliant teacher—all of which have endeared him to his many readers and to his publisher.

At Spielmans Wood Works in the woods of northern Door County, Wisconsin, he and his family create and sell some of the most durable and popular furniture products and designs available.

Coauthor James Reidle has been doing fancy woodwork along with general carpentry work all his life. He grew up watching his father create magnificent pieces of scroll-saw fretwork on treadle-type scroll saws. Years later, he wanted to recapture the best features of the early scroll saws his father used, so he developed one of his own, which is especially designed for fretwork and fine-detail scroll sawing. In addition, Reidle developed the first mail-order business in a number of years that is mainly devoted to fretwork patterns and supplies.

Should you wish to contact Patrick Spielman or James Reidle, please send your letters to Sterling Publishing Company.

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Current Books by Patrick Spielman

Alphabets and Designs for Wood Signs. 50 alphabet patterns, plans for many decorative designs, the latest on hand carving, routing, cutouts, and sandblasting. Pricing data. Photo gallery (4 pages in color) of wood signs by professionals from across the U.S. Over 200 illustrations. 128 pages.

Carving Large Birds. Spielman and renowned woodcarver Bill Dehos show how to carve a fascinating array of large birds. All of the tools and basic techniques that are used are discussed in depth, and hundreds of photos, illustrations, and patterns are provided for carving graceful swans, majestic eagles, comical-looking penguins, a variety of owls, and scores of other birds. Oversized. 16 pages in full color. 192 pages.

Carving Wild Animals: Life-Size Wood Figures. Spielman and renowned woodcarver Bill Dehos show how to carve more than 20 magnificent creatures of the North American wild. A cougar, black bear, prairie dog, squirrel, raccoon, and fox are some of the life-size animals included. Step-by-step, photo-filled instructions and multiple-view patterns, plus tips on the use of tools, wood selection, finishing, and polishing help you bring each animal to life. Oversized. Over 300 photos; 16 pages in full color. 240 pages.

Gluing & Clamping. A thorough, up-to-date examination of one of the most critical steps in woodworking. Spielman explores the features of every type of glue—from traditional animal-hide glues to the newest epoxies—the clamps and tools needed, the bonding properties of different wood species, safety tips, and all techniques from edge-to-edge and end-to-end gluing to applying plastic laminates. Also included is a glossary of terms. Over 500 illustrations. 256 pages.

Making Country-Rustic Furniture. Hundreds of photos, patterns, and detailed scaled drawings reveal construction methods, woodworking techniques, and Spielman's professional secrets for making indoor and outdoor furniture in the dis-

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tinctly attractive Country-Rustic style. Covered are all aspects of furniture making from choosing the best wood for the job to texturing smooth boards. Among the dozens of projects are mailboxes, cabinets, shelves, coffee tables, weather vanes, doors, panelling, plant stands and many other durable and economical pieces. 400 illustrations. 4 pages in full color. 164 pages.

Making Wood Decoys. A clear step-by-step approach to the basics of decoy carving. This book is abundantly illustrated with closeup photos for designing, selecting, and obtaining woods; tools; feather detailing; painting; and finishing of decorative and working decoys. Six different professional decoy artists are featured. Photo gallery (4 pages in full color) along with numerous detailed plans for various popular decoys. 160 pages.

Making Wood Signs. Designing, selecting woods and tools, and every process through finishing are clearly covered. Hand-carved, power-carved, routed, and sandblasted processes in small to huge signs are presented. Foolproof guides for professional letters and ornaments. Hundreds of photos (4 pages in full color). Lists sources for supplies and special tooling. 144 pages.

Realistic Decoys. Spielman and master carver Keith Bridenhagen reveal their successful techniques for carving, feather-texturing, painting, and finishing wood decoys. Details that you can't find elsewhere—anatomy, attitudes, markings, and the easy step-by-step approach to perfect delicate procedures—make this book invaluable. Includes listings for contests, shows, and sources of tools and supplies. 274 closeup photos, 28 in color. 224 pages.

Router Handbook. With nearly 600 illustrations of every conceivable bit, attachment, jig, and fixture, plus every possible operation, this definitive guide has revolutionized router applications. It begins with safety and maintenance tips, then forges ahead into all aspects of dovetailing, freehanding, advanced duplication, and more. Details for over 50 projects are included. 224 pages.

Router Jigs & Techniques. A practical encyclopedia of information, covering the latest equipment to use with your router, it describes all the newest of commercial routing machines, along with jigs, bits, and other aids and devices. The book not only provides invaluable tips on how to determine the router and bits best suited to your needs, but tells you how to get the most out of your equipment once it is bought. Over 800 photos and illustrations. 384 pages.

Scroll Saw Handbook. This companion volume to *Scroll Saw Pattern Book* covers the essentials of this versatile tool, including the basics (how scroll saws work, blades to use, etc.) and the advantages and disadvantages of the general types and specific brand-name models available on the market. All cutting techniques are detailed, including compound and bevel sawing, making inlays, reliefs, and recesses, cutting metals and other non-woods, and marquetry. There's even a section on transferring patterns to wood! Over 500 illustrations. 256 pages.

Scroll Saw Pattern Book. This companion book to *Scroll Saw Handbook* contains over 450 workable patterns for making wall plaques, refrigerator magnets, candle holders, pegboards, jewelry, ornaments, shelves, brackets, picture frames, signboards, and many more projects. Be-

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ginners and experienced scroll saw users alike will find something to intrigue and challenge them. 256 pages.

Scroll Saw Puzzle Patterns. 80 full-size patterns for jigsaw puzzles, standup puzzles and inlay puzzles. With meticulous attention to detail, Patrick and Patricia Spielman provide instruction and step-by-step photos, along with tips on tools and wood selections, for making standup puzzles in the shape of dinosaurs, camels, hippopotamuses, alligators—even a family of elephants! Inlay puzzle patterns include basic shapes, numbers, an accurate piece-together map of the United States and a host of other colorful educational and enjoyable games for children. 8 pages of color. 256 pages.

Working Green Wood with PEG. Covers every process for making beautiful, inexpensive projects from green wood without cracking, splitting, or warping. Hundreds of clear photos and drawings show every step from obtaining the raw wood through shaping, treating, and finishing your PEG-treated projects. 175 unusual project ideas. Lists supply sources. 160 pages.

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