Jewelry Illustration

Dominique Audette

Translated by Daniel Feldstein

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— Dominique Audette

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Foreword to the French Language Edition

The Line of Apelles and the "O" of Giotto

Many are the artistic legends recounted by the chroniclers of classical antiquity and the renaissance. Pliny the Elder, for example, told of the challenge issued by the Greek painter Apelles to his rival Protogenes. Apelles, visiting Protogenes's studio and finding him away, picked up a brush and drew an extremely fine line across a panel. On his return, Protogenes realized that such perfection could only be the work of Apelles, and in answer, drew an even finer line over the first in another colour. Finally, Apelles, using another colour, split both of the previous lines by drawing a line so fine that it precluded any further attempts by Protogenes, who was forced to concede defeat. Writing more than one thousand years later, Giorgio Vasari recounted how the painter Giotto, responding to a request from the Pope's messenger for a sample of his work, «took a sheet of paper and a brush dipped in red, closed his arm to his side, so as to make a sort of compass of it, and then with a twist of his hand drew such a perfect circle that it was a marvel to see.» The messenger asked if this was the only drawing he was to be given, to which Giotto declared: «it's more than enough.» When the Pope was told of the circumstances under which the drawing was executed, he was struck with amazement.

Both of these stories attest to the precision of a drawing as a manifestation of talent. Ultimately, the line circumscribes the form, while at the same time, it is light and incorporeal, and therefore, borders on invisible. It is also captivating in its perfection. The line is also the architectonic principle in painting, as formulated by Leon Battista Alberti in his Della pittura (1436). Alberti, endeavouring to explain how objects are represented, postulated that circumscription registers the outline of the form in space, composition shows how its surfaces and planes are combined to create a structure, and the reception of light, defines the qualities given to the drawing through the addition of lights and shadows.

In this masterly treatise on jewelry illustration, Dominique Audette follows this same path. And to call it a treatise is no exaggeration, since it systematically covers all aspects of the discipline, from the basic concepts of technical drawing, to their application to various types of jewelry through selected examples, to a series of exercises designed to reinforce the subject matter. While not a substitute for your own inspiration or creative spark, this book is a remarkable and powerful tool that will help you express your ideas on paper. To borrow from Boileau, we might say: what is clearly conceived can be clearly drawn, and the lines with which to describe it come with ease.

As a teacher of jewelry making, and particulry jewelry illustration for over twenty years, Dominique Audette was quick to realize that a manual of this type was long overdue. It re-elevates technique to its noble status as a revealer of knowledge, reminding us of the true meaning of the Greek *techne*. And while some of its plates reflect the art of the geometer, others are clearly the province of the painter. Bridging the gap between them, Dominique Audette retraces the path forged by the humanists of the Renaissance.

Paul Bourassa
Curator of Exhibitions and Director of Development
Architecture, Decorative Arts, Design and Fine Crafts
Musée national des beaux-arts du Québec

Foreword to the English Language Edition

In the Renaissance, it was typical for an artist's training to include goldsmithing. Cellini, Donatello, Brunelleschi, and Ghiberti all used the compact realm of jewelry and ceremonial objects to develop their understanding of structure, harmony, and ornament. We know this because of the drawings they left behind—luscious complicated designs of vines and goddesses, far removed from our modern tastes but wonderful to see all the same.

Even with the advent of computer rendering technology and 500 years of industrial development, the wisdom of the Renaissance remains. There is something special, something important and potent that happens when a human hand moves a pencil across a paper. This book celebrates the timeless magic of illustration as it generously yields its techniques.

There are people who have a natural ability to draw "so things look real." They will find in these pages the geometric logic that lifts their intuitive skills to new levels of precision. And there are those whose boxes fall flat and whose spheres refuse to fill a genuine space. They will be thrilled with the systematic instruction found here. It can be said with confidence that nothing in this book is beyond the reach of a dedicated student. The instructions are that good.

Turn the pages and you will see lovely drawings. Rings take shape and lift off the pages; gems sparkle, and necklaces lay gracefully around a neck. As wonderful as these drawings are, the importance of this book lies in the power it offers to breathe life into designs of your own imagination. Magic indeed!

Tim McCreight
Teacher, designer, jeweler

Introduction

The drawing method I teach consists of a collection of recognized techniques adapted to the illustration of jewelry. Whether applied to technical drawing with instruments, orthographic projection, two-point perspective, freehand drawing, the use of light and shadow or rendering gemstones, it can be reduced to a logically presented series of three-dimensional geometric figures.

It is up to each reader to make decisions about which technique to use, and whether to use instruments or to opt for freehand work based on the purpose of the drawing. These purposes could include developing original designs, preparing an object for production, or creating a file of ideas, sharing them with a colleague or presenting them to a client.

Each chapter presents fundamental concepts and applies them to jewelry illustration through a series of drawing exercises that exemplify particular design challenges. These examples constitute a selection of basic structures and finishes that can be modified, combined, enhanced or elaborated to create original pieces.

I begin with a presentation of technical drawing, essential here since the concepts it covers will be revisited in every chapter. This is followed by a discussion of sketching, in which the concepts of technical drawing are adapted to quick, freehand rendering. Light and shadow will then be used to help suggest volume, relief, and finishes. I then turn to the illustration of gemstones, initially alone, and then as part of rings. In the next section, I examine the illustration of pieces other than rings, viewed from both front and top, and we conclude with a brief survey of the media used to display the jewelry piece.

We place particular emphasis on rings, since the pronounced camber of the shank (i.e., its curves and arches) significantly alters the decorative pattern, making rings the most difficult type of jewelry to draw. Once the illustration of rings is mastered, it is a simple matter to draw any other type of jewelry.

The illustration of each model is explained in a detailed, step-by-step procedure. Because of the increasing difficulty of the exercises and the frequent references to concepts presented earlier in the book, I suggest covering the chapters in the order they appear.

A list of materials required to create the drawings is provided at the beginning of each chapter, with a complete list as an appendix.

CHAPTER ONE

Technical Drawing

This chapter is divided into three sections. The first, which will be revisited in every later chapter, covers orthographic projection. The second deals with perspective drawing, and the third covers the perspective drawing developed from the orthographic projection.

Certain aspects of conventional orthographic projection are used to isolate the views of an object and will be adapted to suit the type of perspective used in this book. The discussion of perspective drawing will introduce vanishing lines and our perception of the object's location in space and lay the foundation for sketching in Chapter 2. The process of developing the perspective drawing from the orthographic projection will also be adapted to the requirements specific to this field, and shortcuts will be introduced to streamline the procedures.

Materials

White multi-purpose paper
Tracing paper
2H and 4H graphite pencils
Drawing instruments

1.1 ORTHOGRAPHIC PROJECTION

Orthographic projection (from the Greek orthos, meaning straight, and graphia, meaning writing) is a method of technical drawing by means of which an exact reproduction of any object can be created. In this method, the object is depicted in separate views in different orientations, the number varying with the object's complexity, including the top view, front view, and side view. The object is depicted using its actual dimensions and it may – and under some circumstances must – be drawn to scale.

The orthographic projection of a jewelry piece helps to evaluate the workability of the object by conveying the forms of the components and their precise dimensions. This technique is also an essential basis for technical drawing in two-point perspective. Moreover, the orthographic projection is a valuable tool for creating a freehand drawing, providing information about the design, and, regarding the application of lights and shadows, helping to visualize how the light rays strike.

This method is governed by strict conventions regarding aspects such as the layout of the views on the page, the depiction of dimensions, and line appearance. For example, dimensioning data are displayed adjacent to each view and a title box is placed at the edge of the page. These concepts, while important to the draftsman, are beyond the scope of this book because for our purposes, the orthographic views will only be used as reference drawings in order to develop a model in adapted, two-point perspective. While these conventions are not important here, precision and accuracy are.

1.1.1 The Glass Box

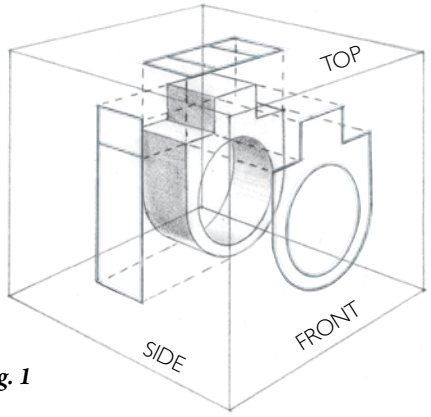

Fig. 1

To show how the object is projected onto different planes, we use a concept known as the glass box (Figure 1). Imagine the object inside a transparent cube, with its main faces parallel to the cube's faces. With each of the faces visible through the cube, the object's contours can be replicated on the corresponding cube faces by projecting them outward at 90°. This cube can then be folded out flat along its edges, revealing the individual basic views of the object. This is an orthographic projection.

In jewelry illustration, three regular views – the top view, the front view and the side view—are generally used. For our purposes, they are used to develop the design into a two-point perspective drawing, to obtain information as a prelude to the sketch, or to position lights and shadows. Therefore, the process of constructing the views and the relationships between them must be clearly understood. The correct positioning of the object (here, the ring) in the cube is important, since the faces that will constitute the orthographic projection must be visible.

1.1.2 Regular Views of the Object

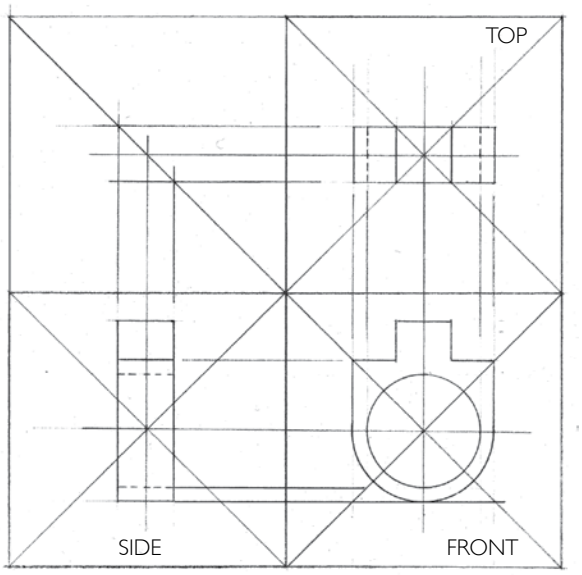

Fig.2

The three most common views are known as the regular views. They are shown here in on the cube faces to clearly convey the relationships between them (Figure 2). This practice will be omitted from this point on.

TOP VIEW

The top view is the depiction of the object (in this illustration, a ring) as it appears from above. As with all views, it must be drawn to exact proportions.

FRONT VIEW

The front view or elevation of the object.

SIDE VIEW

The side view can depict the object's left side, its right side, or both. The outlines of all three views are interrelated.

1.1.3 Construction of an Orthographic Projection

To ensure a high level of precision in this method, all lines should be created using drawing instruments such as a ruler and compass.

Before beginning to draw the ring, all of its dimensions must be determined, including:

– The finger diameter, which corresponds to the inside diameter of the shank.
– The thickness of the shank, which, combined with the finger diameter, equals the shank's outside diameter.
– The width of the ring. This corresponds to the width of the shank, and, if any, the ornamental elements.
– The dimensions of the ornamental elements or gemstones (height, length, width).
– The scale of the drawing. The object can be drawn to actual size or to a reduced or enlarged scale. For two-point perspective, we advise not exceeding a scale of two-to-one (written as 2:1). This means that the ring may be depicted at up to twice its actual size.

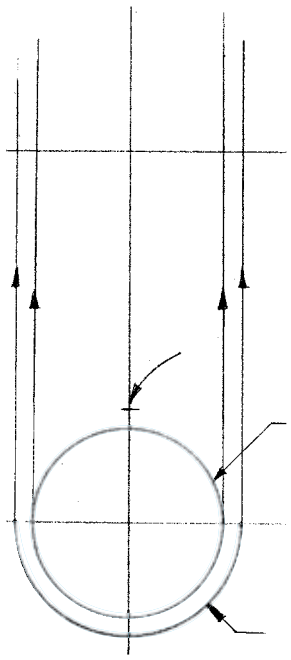

Fig. 3

The three views will be drawn concurrently and will be interconnected by lines known as projectors. These lines show the relationships between the faces in the different views. The projectors are always perpendicular to the projection faces and parallel to one another. For the sake of efficiency and clarity, all construction lines, including centerlines and projectors, will be drawn lightly using the 4H pencil, while the model itself will be rendered in a darker line with the 2H pencil.

PREPARATORY STEPS

- Visualize the ring inside a glass box, positioned according to the desired angle. For our purposes, the left face should be visible. A quick sketch may be required to do this.
- Determine the scale of the drawing.
- Calculate the scale dimensions.
- Affix the page horizontally to the drawing table, using the parallel rule or T-square to align it.
- Evaluate the combined dimensions of the views and lay them out correctly on the page using vertical and horizontal centerlines. The intersections of the centerlines serve as references for positioning the views and, in the case of a ring, centering the finger hole on the front view. We suggest a distance of four to five centimeters between the centerlines. This distance leaves enough space to depict the ring at a 2:1 scale, at which the piece's decorative elements are clearly discernable.

1.1.3.1 Front View (Fig. 3)

– Draw the inner shank. Using a compass with its point at the intersection of the centerlines on the lower right, draw a full circle that is the diameter of the finger. In this illustration, the vertical centerline on the left is not yet present.
– Draw the outside curve of the shank. With the compass point on the same intersection, draw a semicircle below the horizontal centerline and place a mark on the vertical centerline at the same distance above the horizontal centerline as the semicircle travels below it. The diameter of the semicircle is equal to the finger diameter plus twice the thickness of the shank (the left and right sides).
– Construct the sides of the ring using two verticals that extend from the meeting points of the semicircle and the horizontal centerline on the front view to where they meet the horizontal centerline on the top view.
– Project the diameter of the inner shank in similar fashion.

1.1.3.2 Top View (Fig. 4)

The projectors from the shank's outside and inside curves on the front view govern the placement of its corresponding edges on the top view.
The outside edges are illustrated using a solid line, while the edges of the inside curve are illustrated using a dashed line. By convention, all invisible lines in an orthographic projection are depicted in this manner. They play a valuable role in conveying the relationships between the figures in the different views. Note, however, that these hidden lines depict different elements from one view to another.

– Define the width of the ring using two horizontals placed equidistantly from the horizontal centerline on opposite sides.
– Define the edges of the ornamental element using two verticals equidistant from the vertical centerline on opposite sides of it.

ON THE FRONT VIEW

– Define the height of the ring's flat top with a horizontal line. Here, its height is established by the mark previously placed on the vertical centerline. This mark was created in the same step as the semicircle depicting the outside of the shank.
– Project the edges of the ornamental element from the top view down.
– Define the height of the ornament and draw a horizontal line for its top.

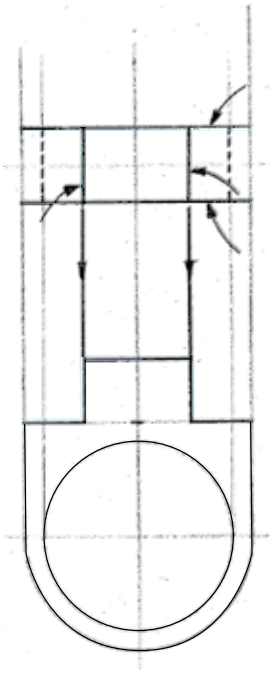

Fig. 4

1.1.3.3 Side View

Often, the layout of the side view stems directly from those of the other two views. The projectors from the top view intersect those from the front view to define the contours of the side view, as shown in Figure 5.

In this case, the side view is constructed on the left vertical centerline, meaning the illustration will show the left side of the ring. This is preferable to the right side, since, when illustrating a ring in perspective, the piece is most often shown with its left side visible, allowing for a dynamic movement toward the upper right.

– Draw a 45° segment through the meeting point of the left vertical centerline and the top horizontal centerline.
– From the top view, project horizontals from each of the elements. These horizontal projectors pivot at the 45° segment and drop as verticals to the side view. Using this method, the projectors from the top view can be redirected 90° toward the side view with no need to change the spacing between them.
– From the front view, project horizontals to the side view from each of the elements, including hidden lines. The meeting points of the horizontals from the front view and the verticals from the top view define the side view. The three views are very closely interrelated. To define a side view, projectors from the top view and the front view must be projected together. In some cases, elements from the side view can also be projected to the other views to obtain missing information.
– Redraw the contours using a darker line.

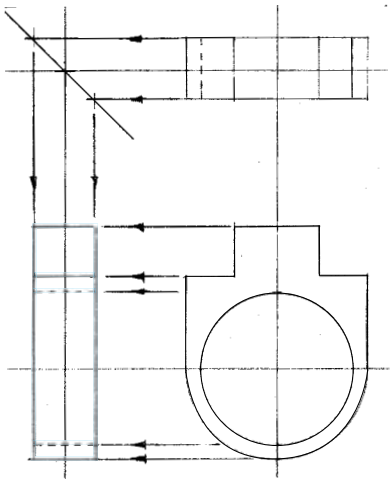

Fig. 5

1.1.4 Illustration of Basic Designs

In the illustrations that follow, you will see that orthographic projections are created to assist in creating the perspective view. This is why the top, front and side views, as well as any form other than square or rectangular, are always inscribed in quadrilaterals. Moreover, the square isolating the outer shank on the front view is subdivided by diagonals. Later, these diagonals will be used to position the circle in perspective. This step is not necessary when the aim is to create an orthographic projection and nothing more. Here, however, the three views are not an end in themselves, but rather a tool used to illustrate an object in two-point perspective. Therefore, these construction lines must be added.

1.1.4.1 Ring with Geometric Pattern

Draw the vertical and horizontal centerlines as seen in Figure 6. To simplify the illustration, some have been omitted, as will be the case in subsequent examples.

A. FRONT VIEW

- Draw a complete circle to depict the inner shank.
- Draw a semi-circle below the horizontal centerline to create the outer shank. At the meeting points of the semi-circle and the horizontal centerline, draw upward verticals for the sides of the ring.
- Draw the lines constituting the decorative pattern. Include the hidden lines, which here form the 90° recess on the left slope.
- Inscribe the shank's outer contours in a square. Add the square's diagonals.
- Enclose the entire view within a rectangle.

B. TOP VIEW

- Define the width of the ring with two horizontals placed equidistant from the horizontal centerline on opposite sides.
- Project all information up from the front view, using a dashed line to depict hidden features.
- Define the width of the square recess. In this case, it is fully visible so it is depicted by a solid line.

C. SIDE VIEW

- Project all information from the front view, including the outer and inner edges of the shank, all plateaus, the base of the recessed section, and—using a dashed line—its right edges.
- From the top view, project the ring's total width and the width of the recess. Redirect the projectors vertically, using the 45° segment as before.

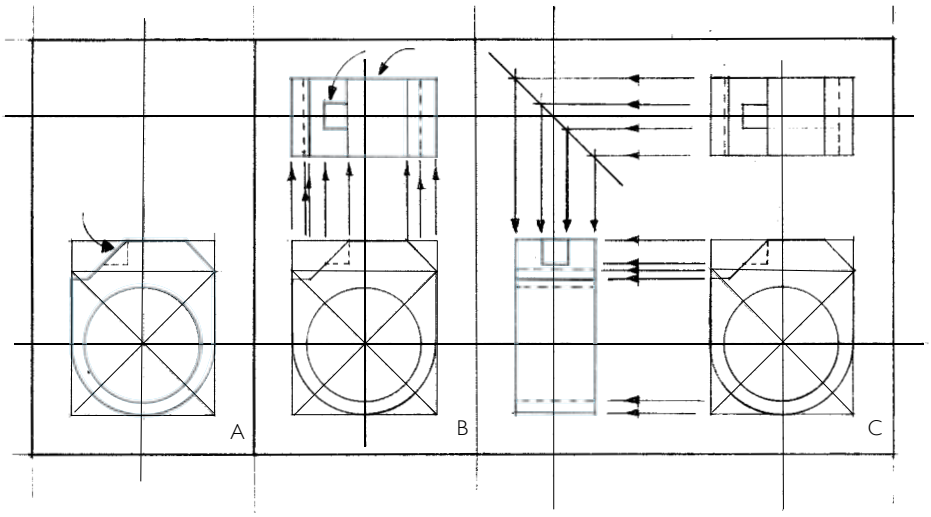

Fig. 6

1.1.4.2 Ring with Oval Ornament

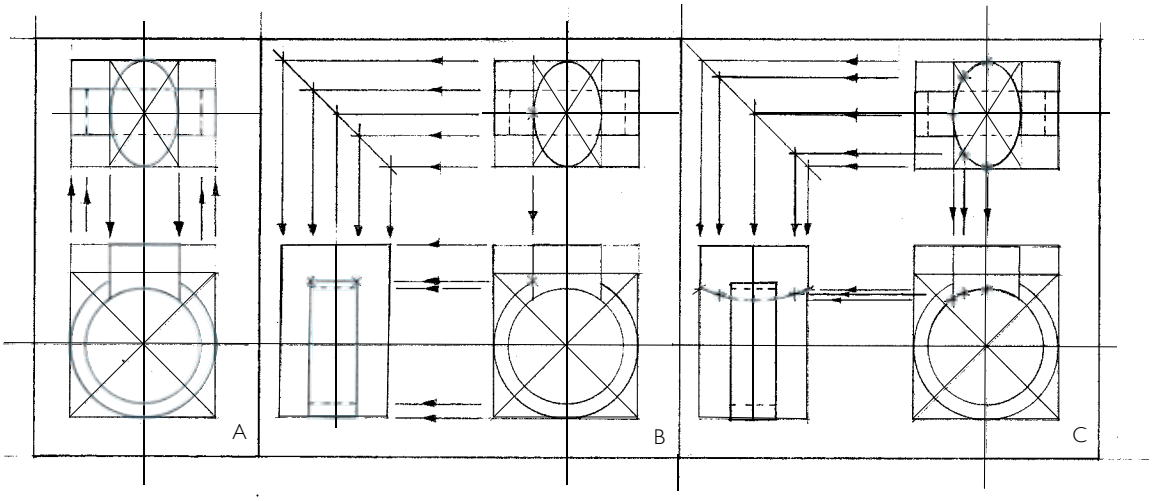

Fig. 7

Draw the centerlines.

A. FRONT AND TOP VIEWS

- On the front view, draw the two concentric circles that depict the shank.
- Project their dimensions to the top view.
- On the top view, define the width of the shank with two horizontals located on opposite sides of the horizontal centerline and equidistant to it.
- Draw the oval. Because it is centered, the centerlines coincide with the existing lines.
- Project the left and right ends of the oval's horizontal diameter to meet the inside curve on the front view.
- On the front view, define the height of the ornament with a horizontal.

B. SIDE VIEW

- From the top view, project the points representing the width of the shank and the length of the oval.
- From the front view, project the elevations of the shank and ornament.
- Draw the side view, but leave the lower curve of the ornament undefined until the next step.

C. SIDE VIEW – CURVE

- Define the lower curve of the ornament. This is the curve that rests on the finger.
- Mark a series of reference points along the perimeter of the oval in the top view. One point lies at each end of the vertical diameter, one at the left end of the horizontal diameter, and two others along a single imaginary vertical placed in between. The precise placement of these last two points is not critical.
- Project these points from the top view to the side view, redirecting them using a 45° angle.
- Extend these same points from the top view to the inside curve of the shank on the front view.
- From the front view, project these points individually to the side view to meet their corresponding verticals from the top view. These meeting points indicate the path of the curve.
- Draw the curve. If the oval ornament is made from a material other than that of the shank, the portion crossing the shank is depicted using a dashed line. Otherwise, the line there is omitted.

1.1.4.3 Ring in Round Wire

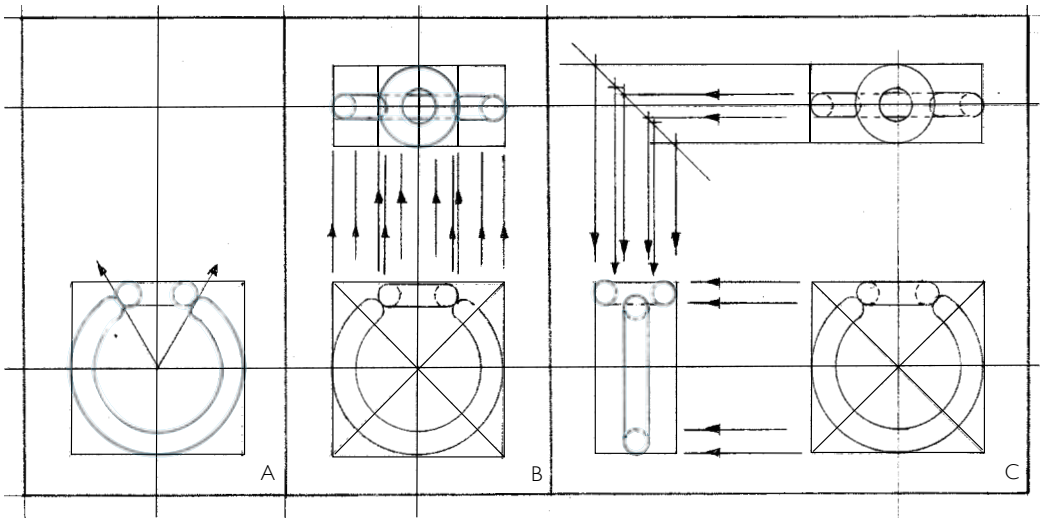

Fig. 8

A. FRONT VIEW

– Draw the centerlines.
– Draw the front view. Because the ring consists entirely of round wire, hidden wire ends and cross-sections are depicted by dashed lines. Here, the donut shown in the ring's top view occupies 60 degrees of the shank's circumference. It is defined by two segments originating at the intersection of the centerlines.

B. TOP VIEW

– Project all dimensions to the top view, using dashed lines to depict the portion of the shank covered by the donut. The shank's width is equal to the diameter of the round wire.

C. SIDE VIEW

– Project all dimensions from the top view to the side view, redirecting them at the 45° segment.
– Establish the meeting points of corresponding projectors from the top and front views in order to completely define the side view. Note that all ends are rounded.

1.1.4.4 Ring with Arrowhead Projection

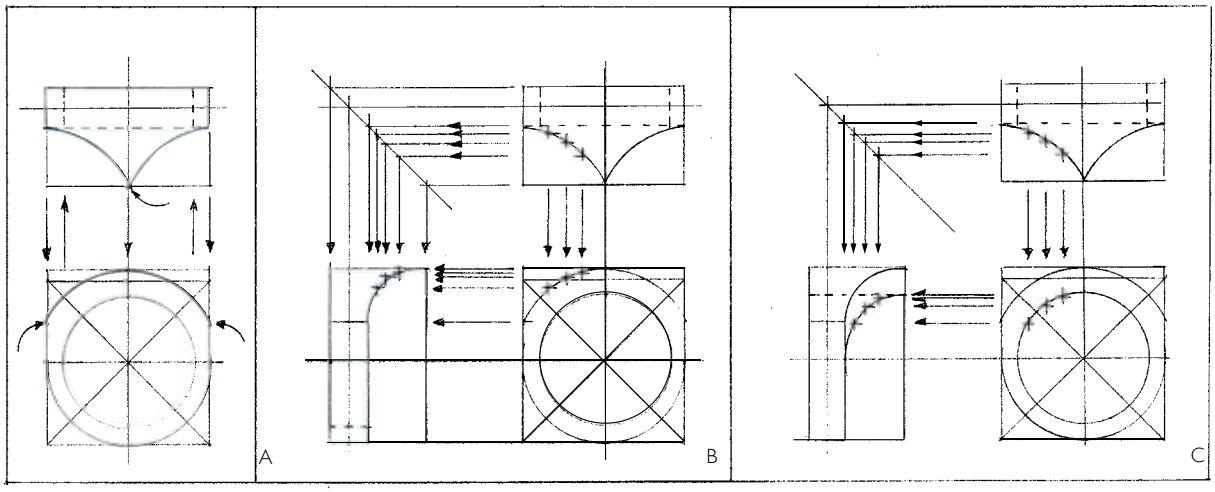

Fig. 9

A. TOP AND FRONT VIEWS

- Draw the centerlines.
- On the top view, establish the shank's width and outside diameter.
- Place a mark on the vertical centerline and connect it to the shank with two symmetrical curves.
- Project all dimensions, in this case the outside diameter and the tip of the arrowhead, to the front view.
- On the front view, draw the shank's inner circle and outer semi-circle.
- Define the height of the sides and connect their endpoints with the curve depicting the top of the ring.
- Project the dimensions of the inner circle to the top view.

B. SIDE VIEW – OUTER CURVE

- On the top view, mark a number of reference points on the curve to define its path.
- Project these points to the side view by means of the 45° segment.
- From the top view, extend these same points down to the outside curve on the front view.
- From the front view, project these points individually to the side view to meet their corresponding projectors from the top view. These meeting points indicate the path of the curve.

C. SIDE VIEW – INNER CURVE

- Repeat the above operation using the same points on the top view, but extend them down to the inside curve on the front view.
- Also define the tip of the arrowhead at the end of the curve.

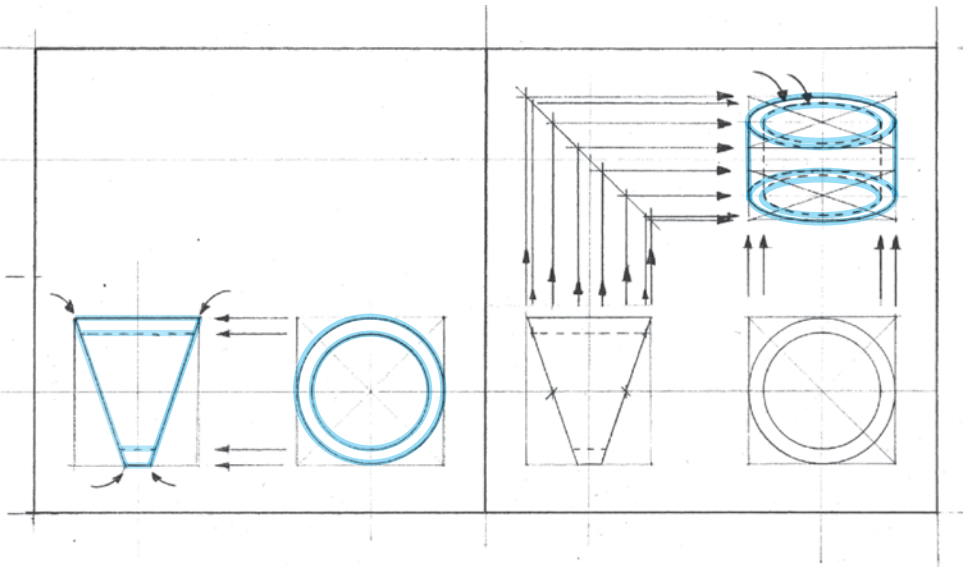

Fig. 10

1.1.4.5 Tapered Ring

In some cases, it may be preferable to construct the side view before constructing the top view. Because its sides are angled obliquely, on the top view the tapered shank appears as a series of ellipses. To determine the angle of these ellipses, the width of the ring at the top and base must first be determined. This information will be used to define rectangles which will frame the ellipses on the top view. Because the side view best reveals the width of the ring, it will be constructed first (Figure 10).

A. Front and Side Views

- Draw the centerlines.
- Begin by drawing the front view which will consist of two concentric circles.
- Draw the side view based on the dimensions projected from the front view. These consist of the ring's overall height and the inner diameter of the shank.
- Determine the width of the ring at the top and the base.

B. Top View

- Project the dimensions from the front view, in this case, the inner and outer curves of the shank.
- Project the dimensions from the side view, redirecting them at the 45° segment. Begin by projecting the width of the shank at the top and base. These lines create rectangles used to define two large ellipses on the top view. Since the lower half of each ellipse is hidden from view, it is depicted by a dashed line. Now project the shank's inner diameter at the top and base. These dimensions are entirely depicted by a dashed line.
- To properly orient the ellipses, it can be helpful to find their horizontal axes. To do this, run projectors to the top view from meeting points of the ring's sides and horizontal centerline on the side view. They also happen to coincide with the rectangles' horizontal centerlines on the top view.