CHAPTER VII

PATTERN MAKING: SKIRTS AND UNDER-GARMENTS

Skirt Patterns.—Various types of skirts may be called to mind, wide and narrow, plain and gored, plafted and gathered. The plain skirt is made up of several straight widths of material joined together, the fulness at the waist taken out in plafts or gathers. For this, no pattern is necessary. The gored skirt, of whatever type, may be developed from a circular foundation pattern, the drafting of which is to be the first problem in skirt pattern making.

Circular Foundation Skirt Pattern.—In Fig. 33 is shown a form upon which lines are drawn to illustrate some points which need to be fully understood at the outset, and never lost sight of in working with skirt patterns.

1. The tape drawn around the waist indicates the normal waist line. (Tape must always be so placed around the figure when taking measures.) It also indicates a measure to be taken, the waist, a snug measure.

2. The tape below this drawn round the fullest part of the form, indicates the hip line. The point at which this measure is taken varies with different figures. On very slight ones it may be only five inches below waist, on others as much as seven inches. An easy measure should be taken here, so that skirt will be large enough to meet around the figure.

3. Notice that the hip line runs parallel to the floor, but is not the same distance from the waist line at all points. Note the point at which it is farthest from the waist line, just over the round part of the hip. A measure should be taken here from the bottom of waist tape to bottom of hip tape. This is called the hip depth.

4. Three other lines are shown, these extending from the bottom of the waist tape to the floor, one in center front, one over the highest part of the hip, the other in the center back. These indicate that three length measures must be taken. In taking these measures, they will be found to vary, the center front being shorter than the hip length, and the center back either longer or shorter than the hip length.

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Remember this point, and also that the hip line runs parallel to the floor. These will be of service later on. One other measure not indicated in the illustration is the width around the bottom of the skirt. It is not necessary to take this measure. It is determined by individual taste as that is affected by the prevailing style. It is well, however, to base it upon some proportion of the hip measure. This varies from one and a half to three or more times the hip measure. One must judge by the average skirt of the time. For drafting purposes at present it will be considered two and one-quarter times the hip.

Review the measures needed to draft a circular foundation skirt.
1. Waist (snug).
2. Hip (4\(\frac{1}{2}\)–7 inches below waist around fullest part, over bone in hip easy measure).
3. Hip depth (bottom waist tape to bottom hip tape).
4. Length; front, hip, back.
5. Width around bottom.

Draft a circular skirt pattern from standard measure, according to the directions given below, using diagram, Fig. 51, as guide for drafting.

**Circular Foundation Skirt (Fig. 51)**

<table>
<thead>
<tr>
<th>Measures Required</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Waist</td>
<td>26 inches</td>
</tr>
<tr>
<td>Hip</td>
<td>40 inches</td>
</tr>
<tr>
<td>Hip depth</td>
<td>6(\frac{1}{2}) inches</td>
</tr>
<tr>
<td>Length front</td>
<td>40 inches</td>
</tr>
<tr>
<td>Length over hip</td>
<td>41(\frac{1}{2}) inches</td>
</tr>
<tr>
<td>Length back</td>
<td>41(\frac{1}{2}) inches</td>
</tr>
<tr>
<td>Width around bottom</td>
<td></td>
</tr>
</tbody>
</table>

**TO DRAFT SKIRT**

\(AB\) equals one-half hip measure minus one-eighth of one-half width around bottom.

\(AC\) equals one-tenth of one-half width around bottom.

\(CD\) equals one-half of \(AB\).

\(DE\) equals the difference between center front length and length over hip, straight up from \(D\).

\(CEB\) equals waist line.

\(EF\) equals hip depth at right angle to waist line minus one-half inch.

**NOTE.**—If there is much difference between the center front and hip lengths, deduct three-quarter to one inch from hip depth.

\(CG\) equals hip depth marked on center front minus the difference between front and hip lengths of skirt.

\(BH\) equals hip depth, center back, point of square at \(B\).
$GFH$ equals hip line one-half hip measure passing through $H$.
$CJ$ equals length of front, draw line.
$JKL$ equals line of indefinite length, for bottom of skirt, secured by placing end of tape measure at hip line and measuring down at frequent intervals, the same distance as $GJ$.
$JM$ equals one-half width around bottom.
$MIN$ equals center back line, ruler touching $M$ and $I$. (If there is a difference in the length over hip and center back, raise or lower $N$ to account for the difference.)

Fig. 51.—Draft of pattern for circular foundation skirt.

$JO$ equals two to four inches.
$KP$ equals two to four inches.
$MR$ equals two to four inches.
$OPR$ equals finishing line of skirt (desired distance from floor).

Note.—When drafting narrow skirts (two yards or less), take an easy measure around the fullest part of the thigh, twelve inches below waist. Use this to test the pattern at points four to six inches below the hip line. If the width of the skirt falls short at this point, it must be corrected by increasing hip measure.

When pattern has been corrected, practice taking someone else's
measures, and when these have been verified, draft to your own measures, a full size circular skirt pattern.

**Gored Skirt Patterns Designed on Circular Foundation.**—
The circular skirt pattern which you have learned to draft may be divided into as many parts or gores as desired, two to fifteen, as the case may be. Naturally, narrow skirts will not admit of as many divisions as wide ones. The method of developing numerous types of plain gored skirts from the circular pattern is fully explained.

**Divisions Are Not Arbitrary.**—As the width of the bottom of the circular skirt may be as flexible as you wish, so may the division of the gores vary with the changing fashions. One needs only to study the mode of the day, and build the skirt accordingly, as wide or narrow as may conform to the lines of one's figure.

Directions follow for making a number of divisions into gores. **Two-gore Skirt** (Fig. 52).—The simplest division of a circular
skirt would make of it a two-piece skirt, with seams over the hip, the center front and back placed on a lengthwise fold of the goods when cutting.

To Make Divisions.—Measure on hip lines from center front, one-quarter hip measure minus one inch.

At bottom, from center front, one-quarter width at bottom, minus one to two inches. Connect points just made with straight line, extending it to waist line. This becomes line for hip seam.

Dart.—Measure waist line. Deduct one-half waist measure from this amount, the remainder to be taken out in a dart over the hip. Take part from each side of the hip seam at the waist line, taking more from the back of the front piece than from the back.

Trace guide lines for joining seams together; also indicate how pattern is to be placed on material, i.e., mark center front, on lengthwise fold; also center back.

Three-gore Skirt (Fig. 52).—Division as Follows.—Same as for two-piece skirt, but which allows two ways of cutting.

1. Center front on fold, and front edge of back lengthwise of material, having bias seam in the center back.

2. Center back on fold and center front with tuck opening or slot seam.

Darts.—Remove fulness at waist line same as two-piece skirt.

Mark guide lines for seam joining and correct placing on material.

Finishing Line.—Mark same as circular skirt, any desired height from floor.

Four-gore Skirt.—Divisions as Follows: 1. Four-gore, Fig. 52, which allows for cutting with seams (straight or bias) in center front and centre back, as well as on hips.

2. Panel Front and Back (Fig. 53).—Measure from center front on hip line, one-twelfth of hip measure; at the bottom, twice the amount at hip. Connect these points with straight line, letting it extend to waist line. Measure from center back on hip line and at bottom in the same way and connect points with straight line to form panel. The side gore is the remaining space between the panels.

Darts.—Remove extra fullness at waist, taking darts from panels and side gore in the following way:

Back of front panel, one-quarter inch.

Front of side gore, one-quarter to three-quarter inch.
Front of back panel, one-quarter inch.
Back of side gore, three-quarter to one inch.
Subtract amount taken in these darts from amount to be taken out of waist measure of pattern. Take the remainder out of center of side gore at waist line, sloping to center of hip line.
Mark guide lines for seam joining and directions for correct placing on material.

![Diagram of four-gore skirt pattern]

*Fig. 53.*—Four-gore skirt pattern, having panel front and back, developed from a circular foundation pattern.

*Finishing Line.*—Same as in circular skirt, any desired height from floor.

**Five-gore Skirt** (Figs. 54 and 55).—Either of two divisions may be made for this skirt, as follows:

To Make Divisions (Fig. 54).—1. *Skirt with Panel Back and Front Opening Under a Tuck.* Back, measure one-tenth of hip from center back, on hip line, and twice this amount at bottom.
Side and Front Gore.—Find center of whole hip, move point forward three-quarter inch; at bottom, find one-half remainder of bottom line after taking panel off. Connect these points with straight line, continuing to waist line.

High Waist Line.—Fig. 5 shows method of allowing for high waist line, drawing lines straight up from waist line unless more than two inches, when they should curve out slightly to allow for

size of figure. Take one-quarter inch from front edge of tuck at top and run to nothing at hip line. This keeps edge of tuck straight. Dotted line in center of tuck allowance at top and bottom marks line for fold of tuck.

Darts.—Remove fulness at waist from front of panel, back of side gore and the balance from hip seam.

Mark guide lines for joining seams; place pattern on material as
follows: center front on selvedge allowing for tuck, front of side
gore on lengthwise thread, and center of back on lengthwise fold.

*Finishing Line.*—Mark as far from floor as desired.

2. *Petticoat* (Fig. 55).—Panel: front, two side gores and two
narrow back gores. Four or six gores are sometimes used.

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*Fig. 55.*—Five-gore skirt pattern, panel front, two side- and two back-gores, developed from
circular foundation skirt pattern (petticoat).

*To Draft Petticoat.*—Draft circular skirt in usual way.

*Gore Divisions: Front Panel.*—Measure from center front on
hip line one-tenth of hip measure, and at the bottom twice the
measurement at the hip.

*Back Gores.*—Measure from center back, one-eighth the hip
measure on hip line, and twice this amount at the bottom.

*Side Gore.*—Remainder after panel and back gore are taken off.
Darts.—Take extra fulness from front of back gore, both sides of side gore, and back of front gore.

DRAFT OF CIRCULAR FLOUNCE FOR PETTICOAT (Fig. 56)

Measures Required

1. Depth of flounce ........................................ 12 inches
2. Width at top .................................................. 72 inches
3. Width at bottom ............................................. 112 inches
4. Radius for curve at top of flounce.

Depth of Flounce.—Decide on the best depth for the height of the figure.

Width at Top.—Fold petticoat through the center front and centre back; measure up from the bottom at several points, and mark with pins, the desired depth of the flounce. Measure from center front to center back, through these marks, to ascertain the width for top of flounce.

Width at Bottom.—Narrow dress skirts necessitate narrow petticoats, and vice versa, so the width of the flounce at the bottom will depend upon the prevailing fashion. It may vary from a few inches more than the bottom of the skirt to a half yard or more.

Radius (Rule for Finding).—Multiply the width of the flounce at the top by the depth; divide the product by the difference between the width at the top and bottom, the result being the radius for curve at top.

To Draft Flounce.—Draft perpendicular line of indefinite length.

\[ AB \text{ equals radius plus depth of flounce (on perpendicular line).} \]
\[ BC \text{ equals depth of flounce.} \]
\[ AC \text{ equals radius.} \]

With A as radius swing curve from C for top of flounce; another curve from B for bottom of flounce.

\[ CD \text{ equals width at top.} \]
\[ BE \text{ equals width at bottom.} \]
Sections.—The flounce may be broken up into as many sections as desired and joined with insertion or beading. The sides of these should radiate regularly from the top. The center of each section should be marked for placing on the lengthwise of the material.

Six-gore Skirt (Fig. 57).—Panel, front and back, and two side gores. This is one of the most useful and adaptable divisions of the circular skirt.

![Figure 57](image)

To Make Divisions.—Front Panel, measure from center front one-twelfth hip measure on hip line. At the bottom, twice the amount at hip.

Back Gore or Panel, same as front.

Draw lines through points just measured, letting them extend to waist line. These form the seam lines of the panel or gores.
Side Gores.—At Hip, divide the remainder of the hip measure in half. At bottom, divide the remainder of the bottom in half. Connect these points, letting the line extend to the waist line.

Darts.—Measure waist line of pattern. Subtract one-half waist measure from this to find how much must be taken out in darts. Remove fulness at waist as follows:

Back of front gore, one-quarter inch.

Front of side gore, one-quarter to three-quarter inch.
Front of back gore, one-quarter inch.
Back of side gore, three-quarter to one inch.

Subtract from the amount on waist line of pattern what has already been taken out in darts. The remainder should be taken from the hip seam of the side gores, taking more from the back of the first gore than from the front of the second gore.
Mark guide lines for joining gores and directions for correct placing on material.

*Finishing Line,* as far from floor as desired.

**Seven-gore Skirt** (Fig. 58).—*Division for Gores: Front Panel.*—Measure on hip line from center front one-twelfth hip measure; at bottom, one and a half times the amount at hip.

**Back Gore** equals one inch more than front gore at hip, and at bottom one-third of the remainder minus two inches.

**Side Gores.**—Divide remainder of hip in half. Divide bottom in half. Connect points marked for seam lines, letting them extend to waist line.

**Darts.**—Remove fulness as in six-gored skirt.

Mark guide lines for joining gores and directions for correct placing on material.

*Finishing Line.*—Mark desired distance from floor.

*Inverted Plait.*—This plait is frequently added to a skirt having bias seam in center back. Add two to three inches at top of skirt, in center back, and twice that amount at the bottom. Fold plait to place and then cut top like top of skirt, to prevent its falling short at the top when garment is being made.

**Godet, Organ-pipe, or Cartridge Plaits.**—These are gores quite wide at the bottom and narrow at the top. Fig. 59A, cut with the center of the gore on the straight of the material. Sometimes two or more are set in the back of a skirt having a wide circular front or having a wide side gore. They add length to the figure as well as fulness at the foot. The seams are usually unpressed to make the plait seem round. They are only used when skirts are wide. The plait may be from two to four inches at top, and twelve to fifteen inches at bottom.

**Umbrella Skirt.**—Another treatment of gores which keeps the skirt close about the knees, but flaring around the feet, is shown in Fig. 59B. It is used in skirts having as many as seven or more gores. To secure this effect, measure in one-half to one inch at the knee length on each side of the gores, and draw line from the hip line, through this point, passing through another point twelve to fifteen inches from the bottom, and extend line to a point two to three inches beyond the side of the gore at the bottom.

*Problem.*—Correct circular skirt pattern already drafted to your own measure. Mark on it a six-gored division. Cut out all around
the outside of the pattern, ready for testing in cambric or muslin.

*Testing Skirt Pattern.*—Before cutting paper pattern apart on the gore lines, cut it out in cambric or muslin as a circular skirt, tracing the gores and marking them with colored thread. In this way, you can test several skirts on the one foundation, simply ripping out the darts, removing bastings and tracing other lines.

*To Cut Cambric Skirt.*—Lay two cut ends of cambric together.

![Fig. 59. A, Godet or organ-pipe plait; B, gore of umbrella skirt.](image)

Pin selvedge. Place broad end of the pattern to cut ends of the goods, center front three-quarters of an inch from selvedge. If cloth is narrow, piece on selvedge at back (Fig. 192). Allow two-inch center back, one-half inch at waist; nothing at bottom.

*Cut out* on seam allowance at top and center back and on edge of pattern at bottom.

*Trace* waist, hip and finishing lines, darts, seams and gores.
Mark waist, hip, finishing line and gores with colored thread.

To Baste for Fitting.—Pin seams, keeping traced lines together, hip and waist lines meeting. Baste darts with small stitches, beginning at point and continuing to waist line. Leave back seam open twelve to thirteen inches from top. Fold right hand side under, and baste. Mark with colored thread, line of seam on under side. Turn cloth up on finishing line and pin to skirt, with pins at right angles to edge.

To Fit Skirt.—Prepare belt of one-inch soft belting. Sew two hooks and eyes securely, so the ends of belt just come together. Have belt correct waist measure. Place belt on figure, fastening in center back. Put skirt on, seams inside, and pin at hip, center front, center back and sides to keep it in place. Then pin skirt to belt, easing it sufficiently to make it set smoothly at the hips. Pin placket together. Look skirt over carefully. Fit right hand side only. If the general width of the skirt pleases, notice the trend of the gore lines. See if the width of front gore or panel meets with your approval. If it seems too wide at the bottom in proportion to the hip, indicate by pins (stretching tape line from hip to bottom) just how much you would increase or decrease the width. Do the same with other gores and panel, until you are satisfied with the proportion. If too full at the waist, pin out in the darts, being careful to end dart well.

Hip Line.—Should the hip line not be parallel with the floor at all points, draw a tape around the figure, in even line, and re-draw hip line from center front to back on the side upon which alterations have been made. Glance at the bottom of the skirt; if the hip line was irregular, this will also need changing, but can be corrected by measuring from the new hip line when correcting the pattern. Never keep anyone standing for work that can be done in the hand.

These general rules for fitting, with a few additions, will apply to almost any type of skirt.

Fitting Gored Skirts.—Seam lines should be at right angles to the waist line, sloping slightly toward front, so as to give appearance of straight lines. In fitting it is sometimes necessary to take more from one gore than another. When possible, pin without ripping seam. Again it may be necessary to open seam, and re-pin to change the direction of the grain of the cloth. This occurs some-
times in a two-piece skirt. It may push toward the front too much, and if simply raised at the waist line in the back to correct this, will poke out at the bottom in the back. In this case, rip hip seam, raise front enough to bring grain into position, re-pin seam, keeping back gore on original line, and if necessary, take out fulness in seam below hip. Correct waist and hip lines. Strive for firm, unbroken seam lines, when fitting. Remember never to fit skirts close. There must be chance for working with the garment and stitching, and ease of fit after completion. Skirts that are good in line, but too tight all through, may be stitched outside bastings to give greater ease.

Circular Skirts.—Should there be a tendency to push forward in the front, raise the skirt at the waist line in the back. This may necessitate a change in the seam line of the centre back. In testing circular pattern if there is too much flare, it may be reduced by laying a plait below the hip. The reverse can be done if skirt is not full enough. Slash it and set a piece in the slash.

Alterations.—Trace alterations; open seam or darts and trace opposite side of skirt. Re-mark with colored cotton new waist, hip, or finishing lines. Correct paper pattern according to the alterations made.

PATTERNS FOR UNDERGARMENTS

Kimono Night-gown.—The draft of a kimono night-gown is here explained and illustrated (Fig. 60). The break in the illustration is made for the same reason explained on p. 102. This type of gown can be cut directly from the material if desired.

Measures Required

<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length of gown (from highest point of shoulder to floor)</td>
<td>60 inches</td>
</tr>
<tr>
<td>Width of front plus length of sleeve</td>
<td>18 inches</td>
</tr>
<tr>
<td>Width at bottom (desired width)</td>
<td>90 inches</td>
</tr>
</tbody>
</table>

Kimono Night-gown

TO DRAFT GOWN (Fig. 60A)

$AB$ equals length of gown (from highest point of shoulder to floor).
$AC$ equals one-half armhole plus two inches.
$AD$ equals four to five inches.
$AE$ equals three to four inches.
Fig. 60.—Draft of pattern for a kimono night-gown; A, gown; B, gusset.
AF equals five to six inches.
DF equals line for front neck.
EF equals line for back neck.
AG equals width of front plus desired length of sleeve.
CH equals one-quarter bust measure plus two inches.
HI equals desired depth of sleeve on inside.
BJ equals one-quarter width at bottom.
HJ equals underarm seam of gown.
HK equals CB.
HL equals four-inch line for setting gusset in.
HM equals four-inch line for setting gusset in.

Gusset (Fig. 60b)

$AB$ equals four inches.
$AC$ equals four inches.
$ABCD$ equals square.

Drawers Patterns.—Directions for drafting patterns for straight and circular drawers are here given. Diagrams accompany both types of drafts; also an illustration of a straight drawers pattern, opened for cutting.

Straight Drawers (Fig. 61A and B)

<table>
<thead>
<tr>
<th>Measures Required</th>
<th>Standard</th>
</tr>
</thead>
<tbody>
<tr>
<td>Length (from waist to bend of knee)</td>
<td>24 inches</td>
</tr>
<tr>
<td>Waist (around waist)</td>
<td>26 inches</td>
</tr>
<tr>
<td>Hip (over bone in hip, easy measure, four to six inches below waist)</td>
<td>40 inches</td>
</tr>
</tbody>
</table>

TO DRAFT DRAWERS (Fig. 61A)

Fold paper lengthwise

$AB$ equals length to bend of knee (on fold).
$AC$ equals one-half $AB$ plus two and three-quarter inches.
$AD$ equals one-quarter waist measure plus one-half inch.
$DE$ equals two inches.
$AF$ equals one-quarter waist measure plus two inches.
$FG$ equals one-half inch.
$CH$ equals one-half hip measure.
$BI$ equals one-half waist measure plus two and one-half inches.

(This measure may vary according to individual preference.)

$GH$ equals dotted line.
$HJ$ equals two and one-half inches.
$JK$ equals three-quarter inch ($K$ at right angles to $J$).
$HL$ equals nine inches.
**HKL**E equals curve of back.
**HM** equals five inches.
**MN** equals three inches (N at right angles to M).

**HNG** equals curve of front.

**BO** equals desired depth of ruffle.

**IP** equals desired depth of ruffle.

**PO** equals line for bottom of drawers when ruffle is desired.

**To Cut Out Pattern.**—Trace lines **AG**, **GNH**, **HI** and **IB**. Open paper and cut on lines just traced; also **AE**, **ELH**, **HI** and **IB**.

Fulness at waist line may be fitted out in a dart over hip, as indicated by dotted line **RS**.

Fig. 61b shows pattern of drawers opened for cutting.

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Fig. 61.—Draft of pattern for straight drawers; A, draft; B, pattern opened out.
Circular Drawers (Fig. 62)

Measures Required

Length from waist to bend of knee .................. 24 inches
Waist—around waist .......................... 24 inches
Hip (over bone in hip, easy measure) ................. 38 inches

TO DRAFT DRAWERS

Fold paper lengthwise

$AB$ equals length to bend of knee.
$AC$ equals one-half $AB$ minus two and one-half inches.
$AD$ equals one-quarter waist measure plus two inches.

Fig. 62.—Draft of pattern for circular drawers.

$DE$ equals one-twelfth waist measure.
$AF$ equals one-quarter waist measure plus one-half inch.
$FG$ equals one-eighth waist measure.
$CH$ equals one-half hip measure plus one-half inch.
$BI$ equals waist measure.
$IJ$ equals line of indefinite length at right angles to $BI$.
$HK$ equals seven and one-half inches (use $H$ as a pivot to swing line, $K$ touching $IJ$).
$GH$ equals dotted line.
$LH$ equals five inches.
SKIRTS AND UNDERGARMENTS

LM equals one and one-half inches (M at right angle to L).
EMH equals curve for front.
HN equals four inches.
NO equals four inches (O at right angles to N).
GOM equals curve for back.
BK equals curve for lower edge of drawers.
AP equals two and three-quarter inches.
CR equals six inches.
PR equals line — . — . — . (line of direction for placing on the lengthwise thread of the material).
GS equals three and one-half inches.

Inverted Plait in Back
ST equals ruler at right angles to AG, draw line — . — . — . for fold of plait which is laid to center back of drawers.

Habit Back
GU equals two and one-half inches.
UO equals curve for habit back.

Ruffle
BV equals depth of ruffle minus seam.
KW equals depth of ruffle minus seam.
VW equals parallel to BK, line upon which pattern should be folded before cutting drawers from material, if a ruffle is to be used for trimming.

SUGGESTIVE QUESTIONS

1. Of what importance is the hip line in a skirt pattern?
2. State a general rule for designing gored skirts on a circular foundation. Is there a limit to the number ofgores? Show, by drawing, how to divide a circular foundation skirt into sixgores.
3. Why should you test a skirt pattern in cambric before cutting in cloth?
4. What measures are necessary to draft a skirt pattern?
5. State several rules for fitting skirts.
6. Can a kimono night-gown be cut without a pattern?
7. What is the difference between straight and circular drawers?
8. If a drawers pattern is drafted to the finished length, and you wish to add a ruffle to this, what change is necessary in the pattern before cutting material?

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