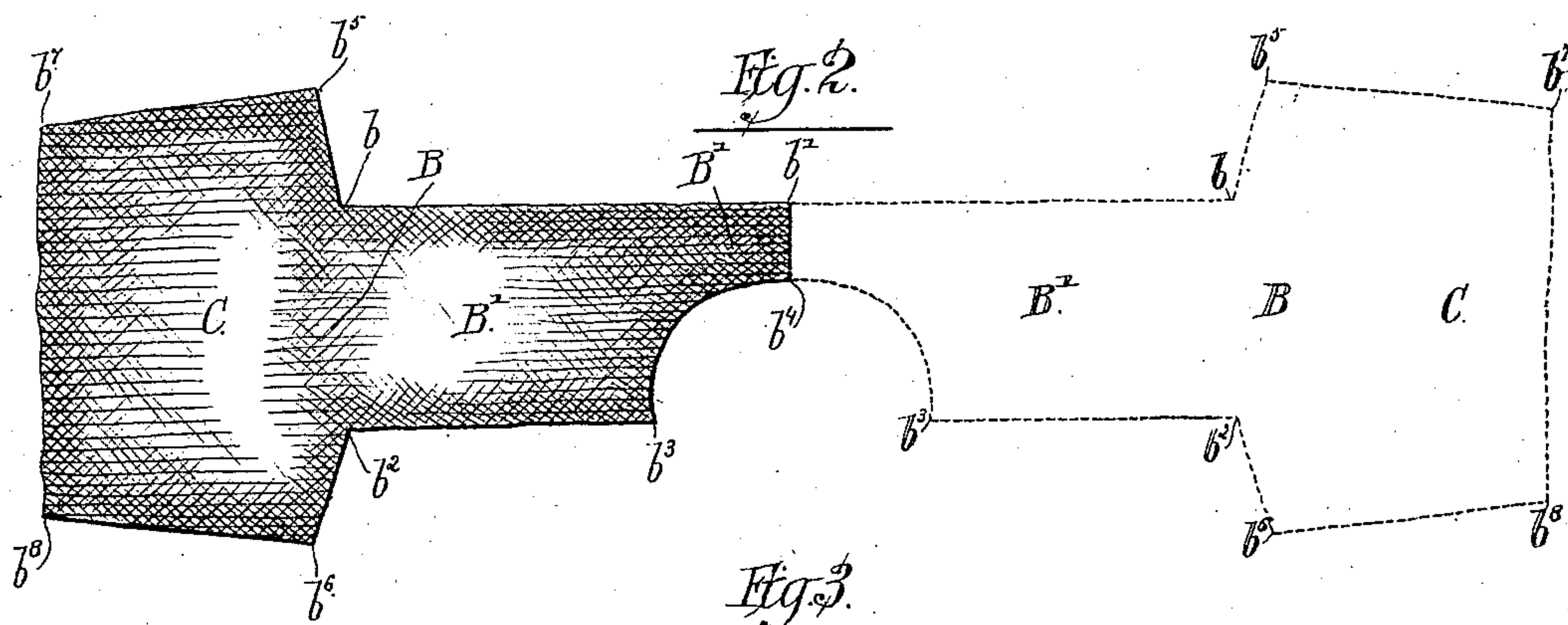
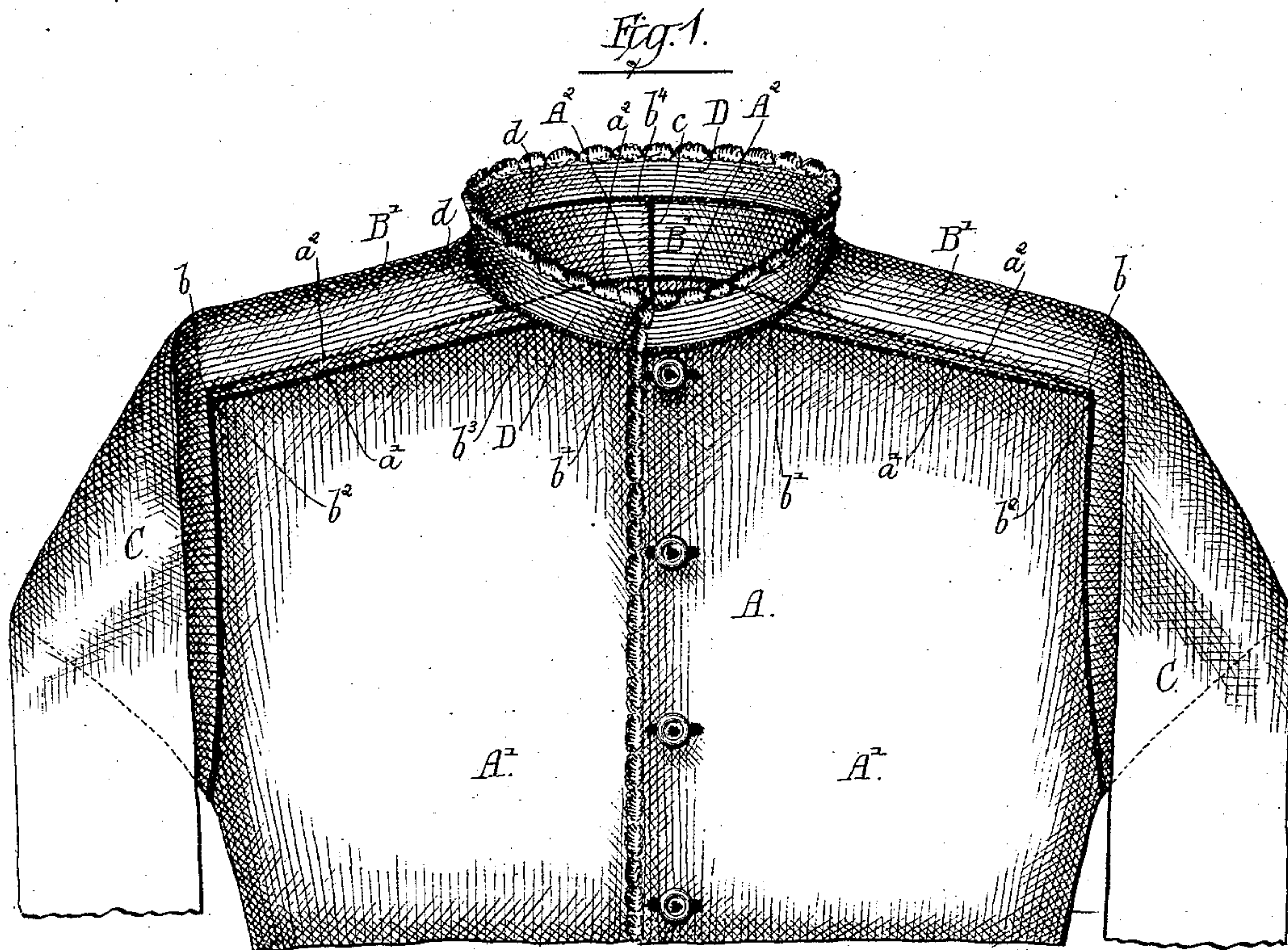


(No Model.)

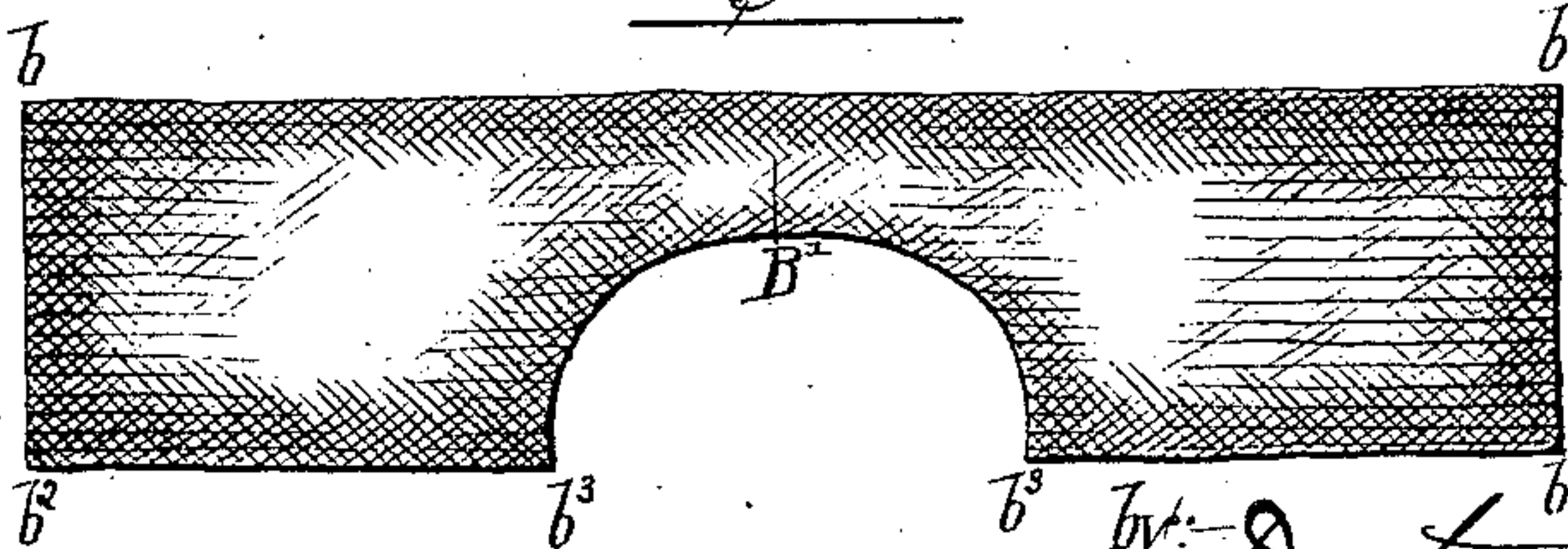
W. F. KNEIP.
UNDERSHIRT.

No. 472,672.

Patented Apr. 12, 1892.



Witnesses:-
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UNITED STATES PATENT OFFICE.

WILLIAM F. KNEIP, OF YPSILANTI, MICHIGAN.

UNDERSHIRT.

SPECIFICATION forming part of Letters Patent No. 472,672, dated April 12, 1892.

Application filed October 11, 1890. Serial No. 367,804. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM F. KNEIP, a resident of Ypsilanti, in the county of Washtenaw and State of Michigan, have invented certain new and useful Improvements in Undergarments; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to improvements in undergarments, and more particularly to that class of garments which are made from elastic or ribbed knit or woven fabric. Undergarments of this class have commonly been made of front and rear body-pieces suitably joined at their side and top margins to form the body portion of the garment. In garments thus constructed the sleeve has been made of a piece of fabric having its edges joined together at their side margins and attached at one end to the main body portion of the garment. In this prior construction the pieces of knit ribbed fabric forming the body portion of the garment are made with the ribs or rows of stitches extending lengthwise of said pieces, so that when said pieces are joined together the ribs extend vertically from the top to the bottom of the garment. It has been found that in the use of the garments thus made the portions of said body-pieces which form the shoulders of the garment are very liable to stretch and pull out of shape, so as to render the garment loose and ill fitting at the shoulders, it being a well-known characteristic of ribbed knit goods that its elasticity in a direction at right angles to the ribs or rows of stitches is much greater than in a direction lengthwise of said ribs.

It is found necessary in order to produce a close-fitting and comfortable garment to form the pieces which compose the main body portion with these ribs or rows of stitches arranged vertically, and in all such garments as heretofore made these body-pieces have been carried up over the shoulder and joined at their upper margins along the top thereof but a great objection to the use of such goods has heretofore existed from the fact that by

this form of construction the fabric is left free to stretch, and is therefore liable to stretch and become loose at the shoulders, while it fails to keep the sleeves properly in place, inasmuch as the elasticity of the fabric across the top of the shoulder allows the seams at the upper ends of the sleeves to fall from the shoulders downwardly over the arms.

It has been proposed to construct a knitted shirt having its upper part formed by a piece made integral with the sleeves, and which extends below the armholes both at the front and rear of the garment, the ribs in such piece being arranged longitudinally and continuous with those of the sleeves, so that the elasticity of said piece is mainly transverse or such as to allow the piece to stretch vertically. In a construction of this kind the fabric at the front and rear of the garment, from the neck opening downwardly to a horizontal line passing below the sleeves, will stretch much more easily in a vertical than in a horizontal direction, so that the upper front and rear parts of the garment are not adapted by their elasticity to make the garment fit closely around the body, as is the case with the lower vertically-ribbed part of the garment, but, on the contrary, are elastic in a direction which will tend to allow the upper part of the garment to become unnecessarily elongated under the weight of the lower part, so that the garment is liable to soon lose its proper shape and fit poorly in its upper part.

To avoid the objections above stated, I make the garment as follows: The pieces forming the main body portion of the garment are made with the ribs extending lengthwise or vertically and as heretofore, and said pieces are extended upwardly to the neck-opening in front and nearly to the neck-opening behind and are attached at their side edges to the sleeves. Between the upper ends of the said main pieces is inserted a transverse strip of fabric which extends from shoulder to shoulder across the back of the neck and is curved or shaped to form the rear parts of the latter opening, and is attached at its ends to or made integral with the sleeves, the ribs in said transverse strip being arranged horizontally to the strip, or transversely with reference to the main parts of the garment, so

that the strip is relatively non-elastic longitudinally, and by its attachment to the sleeves holds the latter in place and keeps the shoulders of the garment in proper shape. At the same time, the said transverse strip being of a width only sufficient to extend at its rear margin past the neck-opening and to be properly secured at its ends to the top of the sleeve, said strip is not so wide as to afford an undesirable degree of elasticity therein in a direction to allow an undue stretching of the shoulder part of the garment. This construction, therefore, while affording a desirable cross-stay or non-elastic connection between the upper ends of the sleeves across the shoulders of the garment, at the same time provides for the necessary elasticity in and close fit of the other parts of the garment adjacent to the shoulders.

In the accompanying drawings, illustrating my invention, Figure 1 is a front view of an undergarment embodying my invention. Fig. 2 is a plan view of a transverse piece of fabric extending across the shoulder and made continuous with the sleeves of the garment. Fig. 3 is a plan view of a modified form of the said transverse piece.

In said drawings, A indicates the body portion of the garment, composed, as herein shown, of front pieces $A' A'$ and rear pieces $A^2 A^2$.

B B indicate pieces of fabric which in this instance form both the transverse shoulder-pieces B' and the sleeves C C of the garment.

D indicates the neckband or collar. As more clearly shown in Fig. 2, each piece B is made of a narrow strip B' of ribbed knit fabric, made integral with one of the sleeves and formed with its sides substantially parallel, as shown at $b b'$ and $b^2 b^3$. At the inner end of the piece B' , or the end of the same adjacent to the neck of the garment, said piece is properly shaped to fit around the neck, as shown at $b^3 b^4$.

The pieces $B' B'$ are united at their inner ends and together constitute a transverse shoulder-strip, which extends from sleeve to sleeve, and having little longitudinal elasticity from the fact that the ribs therein run lengthwise thereof, serve to keep the shoulder parts of the garment from stretching and to hold the same in shape. The opposite or outer end of each of said pieces B B is widened, as shown at $b b^5$ and $b^2 b^6$, to form the sleeve C and the margins $b b^5$ and $b^2 b^6$, suitably inclined or curved to adapt them for joining the upper side margins of the main body portions $A' A^2$ where the sleeve is joined to the body of the garment. The side margins $b^5 b^7$ and $b^6 b^8$ of the pieces B B are properly narrowed to give the desired form to the sleeves when said margins are joined. The margins $b b'$ of the shoulder portions B' of the pieces B B are joined to the upper edges of the rear body-pieces $A^2 A^2$, so as to form a seam a^2 , extending across the back of the garment from shoulder to shoulder. Similarly the

front margins $b^2 b^3$ of said pieces $B' B'$ are joined to the upper edges of the front body portions $A' A'$, forming the seams a' and a' .

The neckband or collar is attached to the margins $b^3 b^4$ and $b^3 b^4$ of the pieces $B' B'$, forming a continuous seam d , and to short curved margins at the upper portions of the front pieces $A' A'$, as shown in Fig. 1 of the drawings.

It is clearly obvious that the front and rear portions of the garment may each be made of a single piece of fabric, said pieces being properly shaped and joined together along their vertical side margins. It is furthermore obvious that both of the sleeves and both shoulder-pieces may be formed from a single piece of fabric, the same having both its end portions widened and properly shaped to form the sleeves when the side margins thereof are joined together and its middle portion narrowed to form the shoulder-pieces, and having its front margin properly curved to fit the neck. This form of construction is illustrated in dotted lines in Fig. 2, by which the continuation of said piece B in the manner set forth is clearly indicated.

Where the transverse shoulder-pieces are made separate from each other and each part made continuous with one sleeve, the short end margins $b' b^4$ of said pieces B B are joined together, forming the rear vertical seam c. Furthermore, it is obvious that the shoulder-pieces may be made integral with each other with the ribs or rows of stitches extending lengthwise thereof and the sleeves each made separate and attached in the ordinary manner. Such form of the shoulder-pieces is shown in Fig. 3. The shoulder-pieces may be made narrower than shown without departure from my invention. A main advantage gained by this construction is that by the employment of the transverse shoulder-pieces arranged with the ribs or rows of stitches extending lengthwise of said pieces or from the neckband to each shoulder the shoulder portions of the garment are rendered practically inelastic, while by reason of the formation of the front and rear body-pieces with the ribs or rows of stitches extending vertically, or from top to bottom of the garment, the necessary elasticity in the body portion of the garment is preserved and a comfortable and close fit insured, while there is no liability of the fabric pulling or stretching out of shape and becoming loose and ill-fitting at the shoulders.

Having described my invention, what I claim is—

1. The herein-described garment of elastic ribbed knit or woven fabric, the same consisting of front and rear vertically-ribbed body-pieces extending upwardly to the neck-opening in front and nearly to the neck-opening behind, a narrow transverse shoulder-strip located between the upper ends of the body-pieces and extending across the garment at the rear of the neck-opening, said

strip being cut away upon its forward margin to form the rear part of the latter, and sleeves attached to said body-pieces and to the ends of the said transverse strip, the ribs
5 in said transverse strip being arranged longitudinally or transverse to the ribs of the body-pieces, substantially as described.

2. The herein-described garment of elastic or ribbed knit or woven fabric, the same consisting of front and rear vertically-ribbed
10 body-pieces extending upwardly to the neck-opening in front and nearly to the neck-opening behind, a narrow transverse shoulder-strip located between the upper ends of the
15 body-pieces and extending across the garment at the rear of the neck-opening, said strip being cut away upon the forward margin to form the rear part of the neck-opening and having its ribs arranged longitudinally
20 or transverse to the ribs of the body-pieces,

and sleeves made integral with the said shoulder-strip and secured to the body-pieces below the said strip, substantially as described.

3. A shirt or like garment of elastic knitted material, the body whereof is highly elastic
25 across the bust portion from the neck-opening downward and is formed with a space upon the shoulders, said shirt being provided with knitted sleeves having formed in piece therewith extensions for the shoulders of the
30 shirt, said extensions being comparatively inelastic in the direction of their length and elastic in opposite direction.

In testimony that I claim the foregoing as my invention I affix my signature in presence
35 of two witnesses.

WILLIAM F. KNEIP.

Witnesses:

JNO. B. COLVAN,
W. L. PACK.