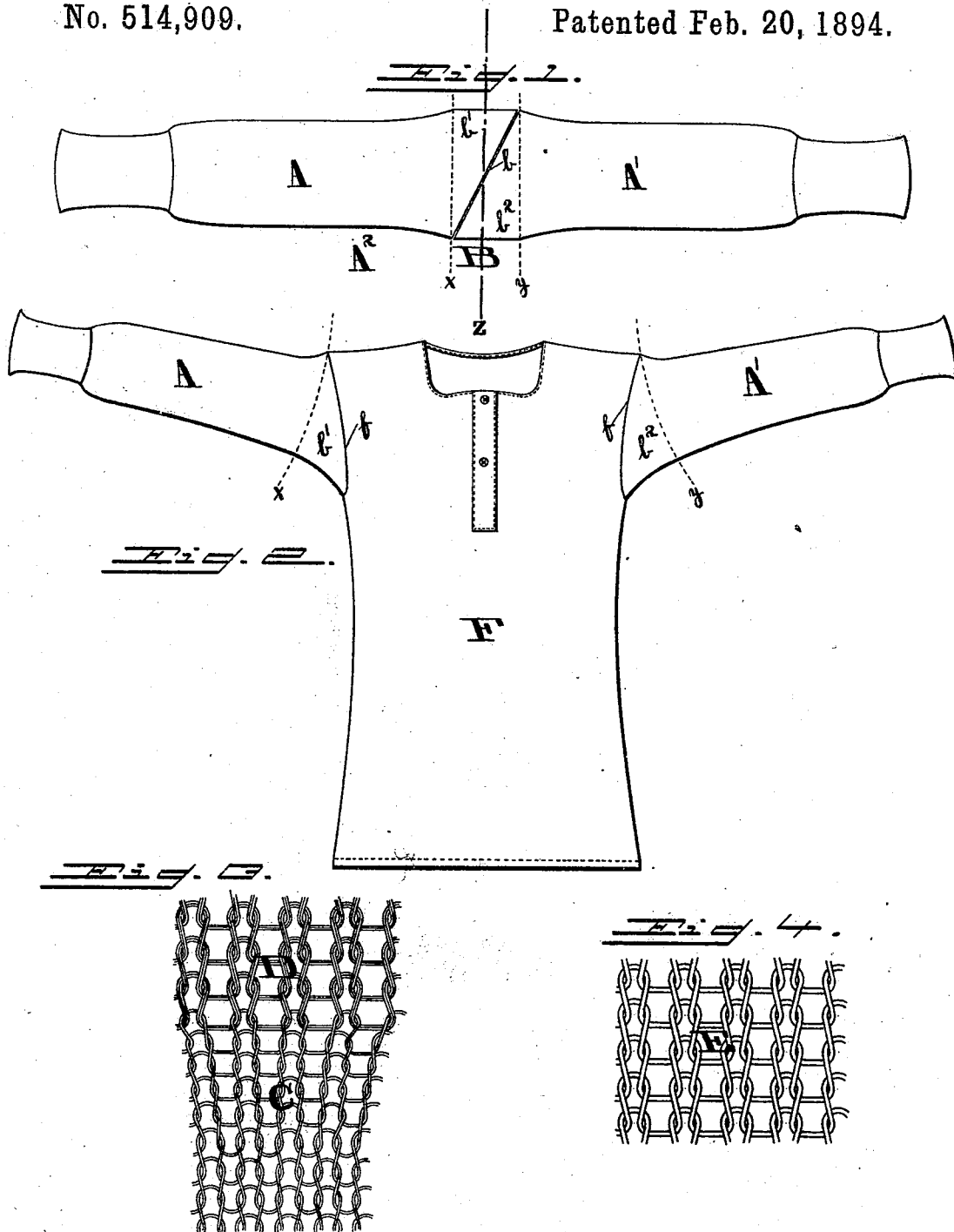


(No Model.)

F. A. BYRAM.
GARMENT SLEEVE AND ART OF KNITTING AND ADAPTING SAME
FOR ATTACHMENT TO KNIT GARMENTS

No. 514,909.

Patented Feb. 20, 1894.



WITNESSES

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FRANK A. BYRAM, OF PHILADELPHIA, PENNSYLVANIA.

GARMENT-SLEEVE AND THE ART OF KNITTING AND ADAPTING SAME FOR ATTACHMENT TO KNIT GARMENTS.

SPECIFICATION forming part of Letters Patent No. 514,909, dated February 20, 1894.

Application filed June 14, 1893. Serial No. 477,543. (No specimens.)

To all whom it may concern:

Be it known that I, FRANK A. BYRAM, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Garment-Sleeves and the Art of Knitting and Adapting the Same for Attachment to Knit Garments, of which the following is a specification.

My invention has relation to the manufacture of knit-garments generally, though having reference more particularly to undershirts, and has for its object to provide a novel, simple and efficient method whereby the sleeves of the same may be fitted or adapted for attachment to the arm-holes thereof. Heretofore, this end has been accomplished in various ways, as for example, by the insertion of a triangular piece or gusset in a corresponding opening in the under side of each sleeve, thus widening the inner end of the latter to conform to the size of the arm-holes in the body of the garment, resulting in the formation of a pair of seams in each sleeve, adjacent to the lower part of the arm-holes, the same adding to the bulk beneath the arms of the wearer, causing considerable discomfort, producing heat and increasing the liability to chafing, while, at the same time, entailing unnecessary expense in the production and detracting from the appearance of the finished garment. Also, the expedient of laterally stretching the inner ends of the sleeves until they equal the width of the arm-holes, has been resorted to but found objectionable, for the reason that the sleeves are thereby rendered inelastic and apt to bind on the arms of the wearer, while the constant strain on the fabric detracts from its durability, rendering the garment weakest at the points where it should be as strong, if not stronger than, any other part.

My invention consists in knitting both sleeves of the garment continuous, with the central portion or junction thereof of increased width or diameter, then separating them by a diagonal or straight cut, according to the size of the arm-holes, through the enlarged portion, said sleeves being thereby adapted for attachment to the body of the

garment without further preparation or the addition of any part or parts, effecting an economy of material, a saving of labor, avoiding all waste and reducing the cost of manufacture, while dispensing with the necessity for the insertion of gussets and the resultant bulk or gathering under the arms of the wearer, conducing to nicety of fit and grace of outline of the finished garment.

In the accompanying drawings, Figure 1 is a plan view, in outline, of a pair of sleeves having my improvement applied thereto, illustrating their line of separation. Fig. 2 is a plan view, in outline, of an undershirt with such sleeves secured to the arm-holes thereof. Fig. 3 is a diagram, enlarged, showing the preferred manner of widening the central portion of the sleeves prior to their separation, and Fig. 4 a diagram, enlarged, showing the attainment of the same end in a slightly different way.

Referring to said drawings, in said Fig. 1, the sleeves A A', prior to their attachment to the body of the garment, are knit in one piece, practically end to end, in the form of a seamless tube or cylinder A², the latter being distended or widened at its center, or at the junction of said sleeves, as at B. Such widening is capable of accomplishment in various ways, for instance, through knitting more loosely or slacker between the lines *x* and *y*, as at D in Fig. 3, than are the stitches lettered C which compose the main portions of said sleeves, and splicing an extra thread to each of those in such main portions, beginning at either of said lines, or the introduction of a heavier thread instead, as at E in Fig. 4; such extra or heavier threads making up for the lengthening or widening of the loops consequent upon the loose or slack knitting aforesaid and preserving a uniformity of openness and effecting the widening of the fabric of which said sleeves are composed, without increasing the number of stitches in the courses which form the widened portion or detracting from the continuity of the knitted ribs or wales. Then follows the separation of the sleeves, which is, preferably, attained by diagonally cutting through the widened part B of the cylinder, as shown at *b*, dividing said

part into two equal, gusset-like, sections $b' b''$, each integral with a sleeve and having their edges of extent like unto that of the arm-holes in the shirt-body F, or approximately so. Obviously, by a diagonal cut a much larger opening in the sleeve is produced than by a straight one and variations in the angle of inclination thereof effect a corresponding difference in the size of such opening. Still, with the widening of the inner ends of the sleeves by the method herein described, even a straight cut, at right angles with the axis of the widened portion B, on the line z for instance, will result in the formation of an opening normally larger than the width of the sleeve proper, without resorting to the lateral stretching of the same. The sleeves A A' being now, through the simple severing of the part which united them, and without further operation entirely adapted for attachment to the shirt-body, are next secured to the edges f of the arm-holes in the shirt-body by stitching or otherwise as shown in Fig. 2, the widest portions of the sections $b' b''$ being lowermost, in place of the ordinary gussets, while the seams incident to the latter and their objectionable features are wholly dispensed with.

In Fig. 3 of the drawings the proportionate enlargement of the stitches D which form the widened portions of the sleeves appears somewhat exaggerated. In practice these stitches are only slackened an extent equal to the bulk of the extra thread, or to the difference between the lighter and heavier threads which form the main and widened portions respectively of the sleeves; attaining the widening of the wales of the fabric and a corresponding increase of width at the desired point, without rendering such fabric more open or the exertion of any strain on the threads thereof, thus preserving the full strength and elasticity of the same.

What I claim as my invention is as follows:

1. A sleeve for knit garments having the end which is united to the body of the garment widened and provided with diagonal edges, for the purpose specified.

2. A sleeve for knit garments having the end which is united to the body of the garment composed of wider wales than those which compose the rest of the sleeve and provided with diagonal edges, for the purpose specified.

3. A sleeve for knit garments having the end which is united to the body of the garment composed of loosely knit wales, the bulk of the threads which form such wales being increased, and provided with diagonal edges, for the purpose specified.

4. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous and severing them diagonally, for the purpose specified.

5. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves con-

tinuous, in tubular form, and severing them diagonally, for the purpose specified.

6. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, in seamless tubular form, and severing them diagonally, for the purpose specified.

7. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, with a widened intermediate portion, and severing them through the widened portion, for the purpose specified.

8. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, in tubular form, with a widened intermediate portion, and severing them through the widened portion, for the purpose specified.

9. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, in seamless tubular form, with a widened intermediate portion, and severing them diagonally through the widened portion, for the purpose specified.

10. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, with the intermediate portion widened by widening the wales of the fabric, and severing them through the widened portion, for the purpose specified.

11. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, in tubular form, with the intermediate portion widened by widening the wales of the fabric, and severing them through the widened portion, for the purpose specified.

12. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, in seamless tubular form, with the intermediate portion widened by widening the wales of the fabric, and severing them diagonally through the widened portion, for the purpose specified.

13. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, with the intermediate portion widened by knitting loosely and increasing the bulk of the threads which compose the stitches, and severing them through the widened portion, for the purpose specified.

14. The method of forming and adapting sleeves for attachment to knit garments consisting in knitting a pair of such sleeves continuous, in tubular form, with the intermediate portion widened by knitting loosely and increasing the bulk of the threads which compose the stitches, and severing them through the widened portion, for the purpose specified.

15. The method of forming and adapting sleeves for attachment to knit garments con-

sisting in knitting a pair of such sleeves continuous, in seamless tubular form, with the intermediate portion widened by knitting loosely and increasing the bulk of the threads
5 which compose the stitches, and severing them diagonally through the widened portion, for the purpose specified.

In testimony whereof I have hereunto set my hand this 10th day of June, A. D. 1893.

FRANK A. BYRAM.

Witnesses:

J. F. HARTMANN,
WM. H. POWELL.