March 24, 1936. H. L. REDMOND 2,035,377

SHOULDER SUPPORTED GARMENT

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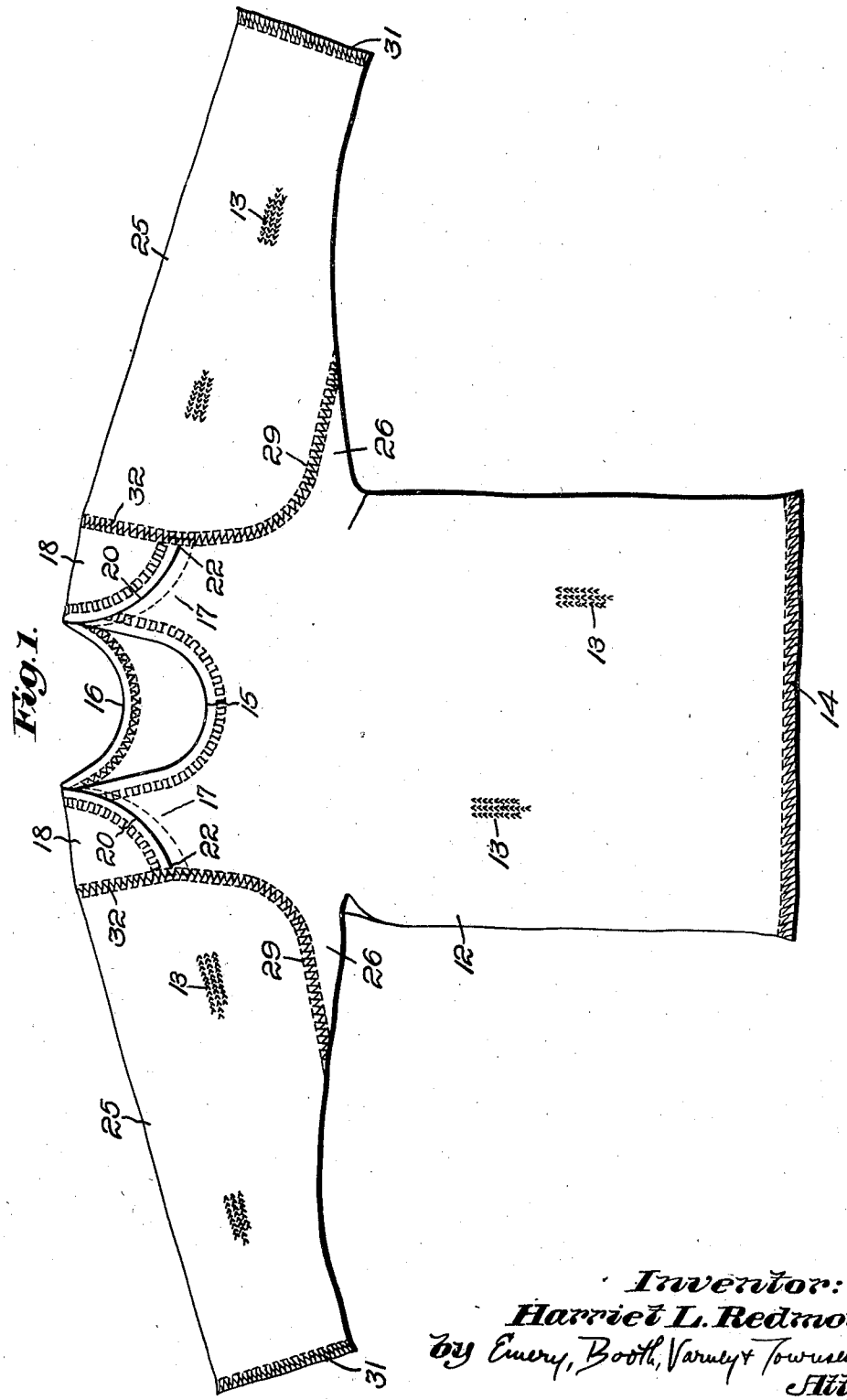


Fig. 1.

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Fig. 2.

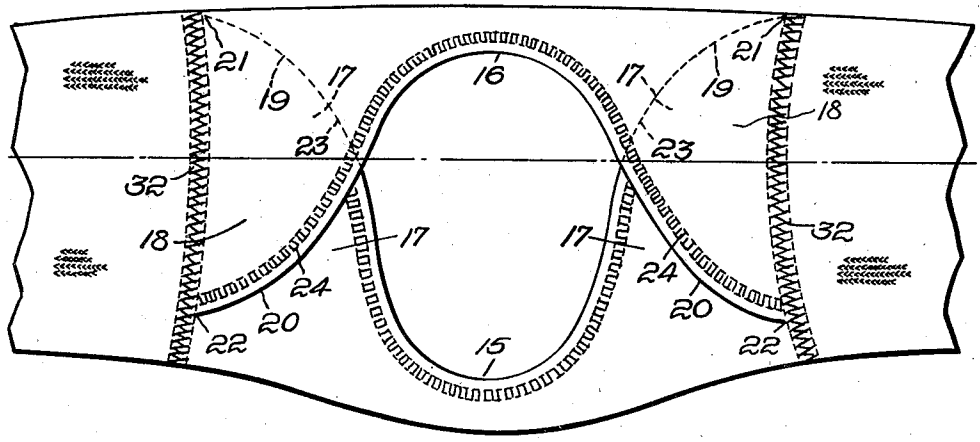
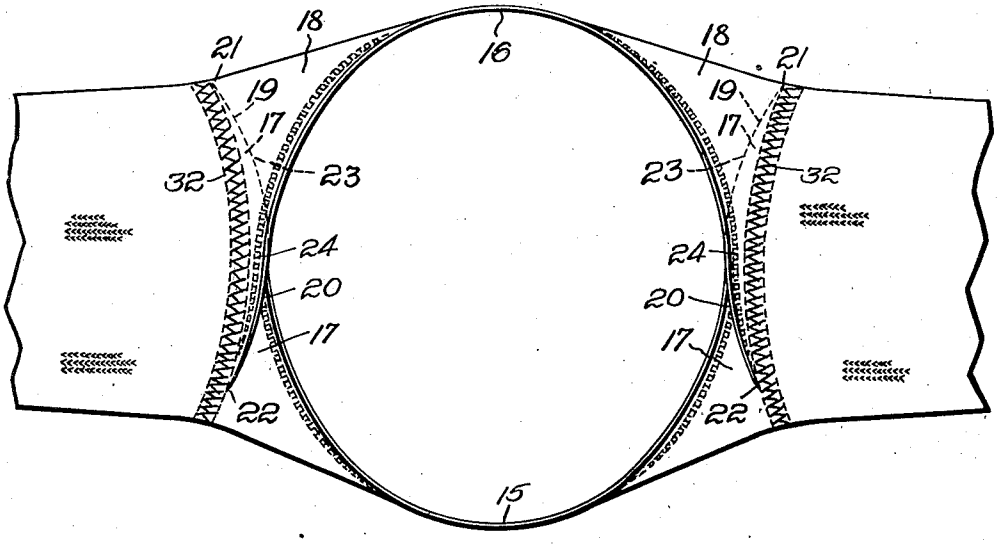


Fig. 3.



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Fig. 4.

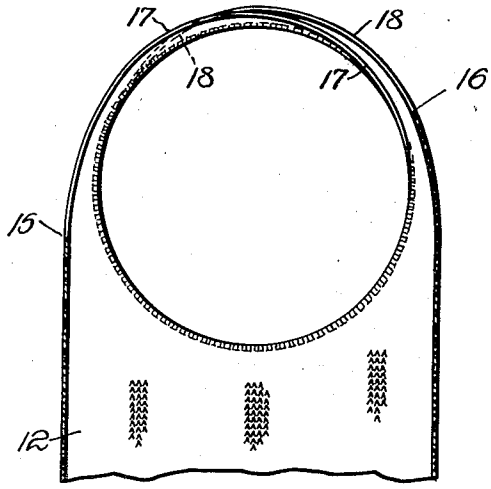


Fig. 6.

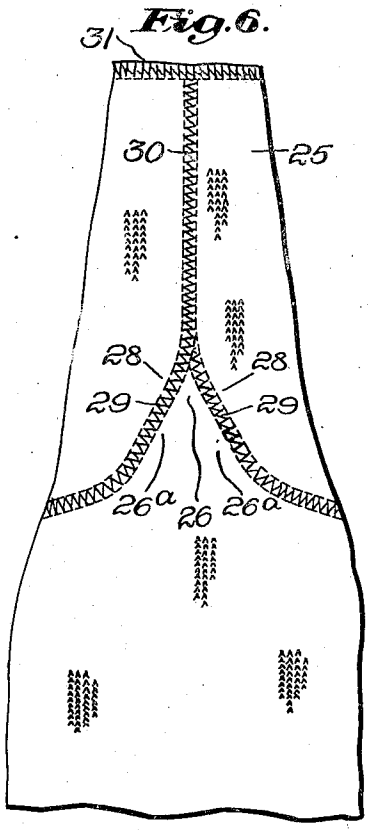
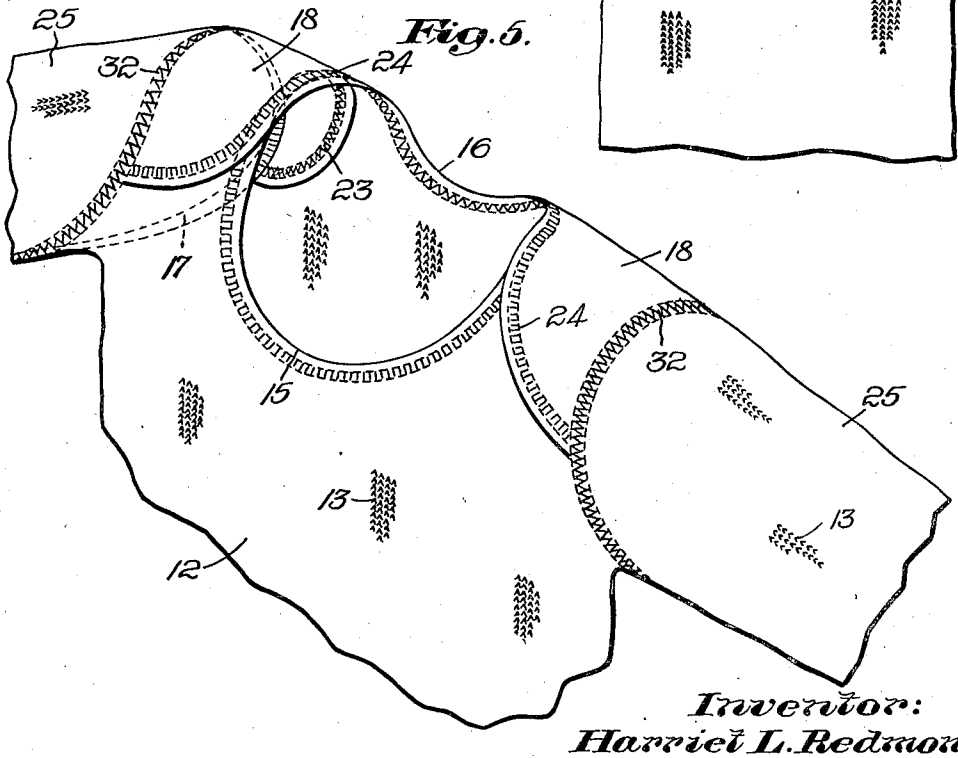


Fig. 5.



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Fig. 9.

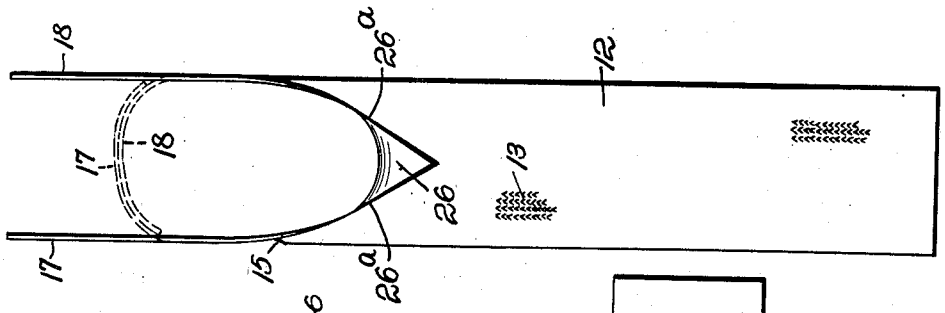


Fig. 8.

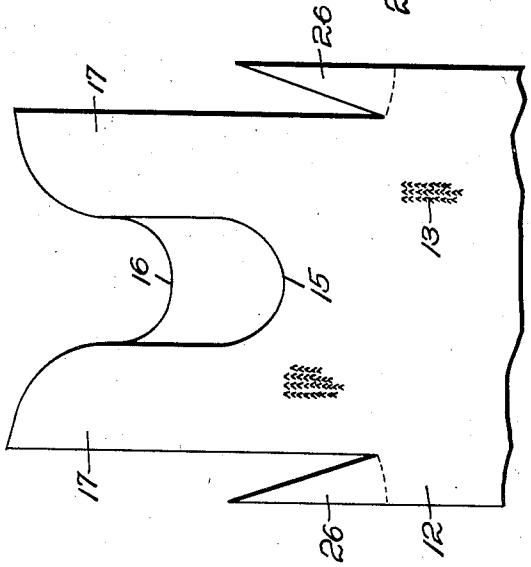


Fig. 10.

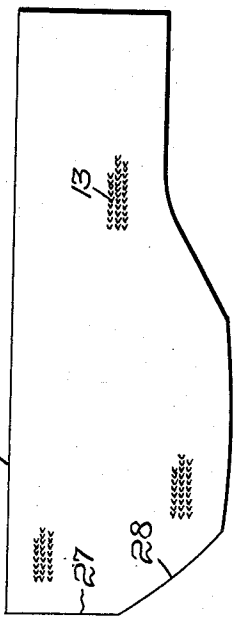
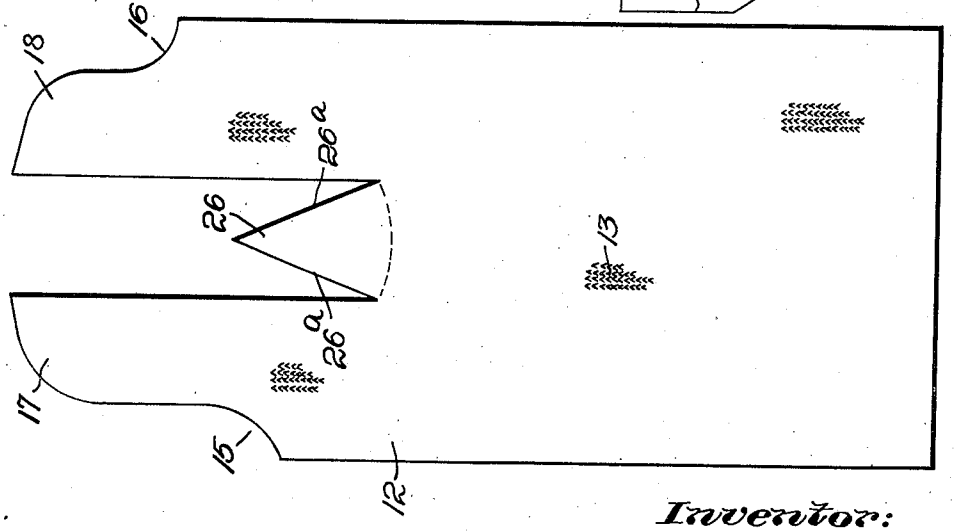


Fig. 2.



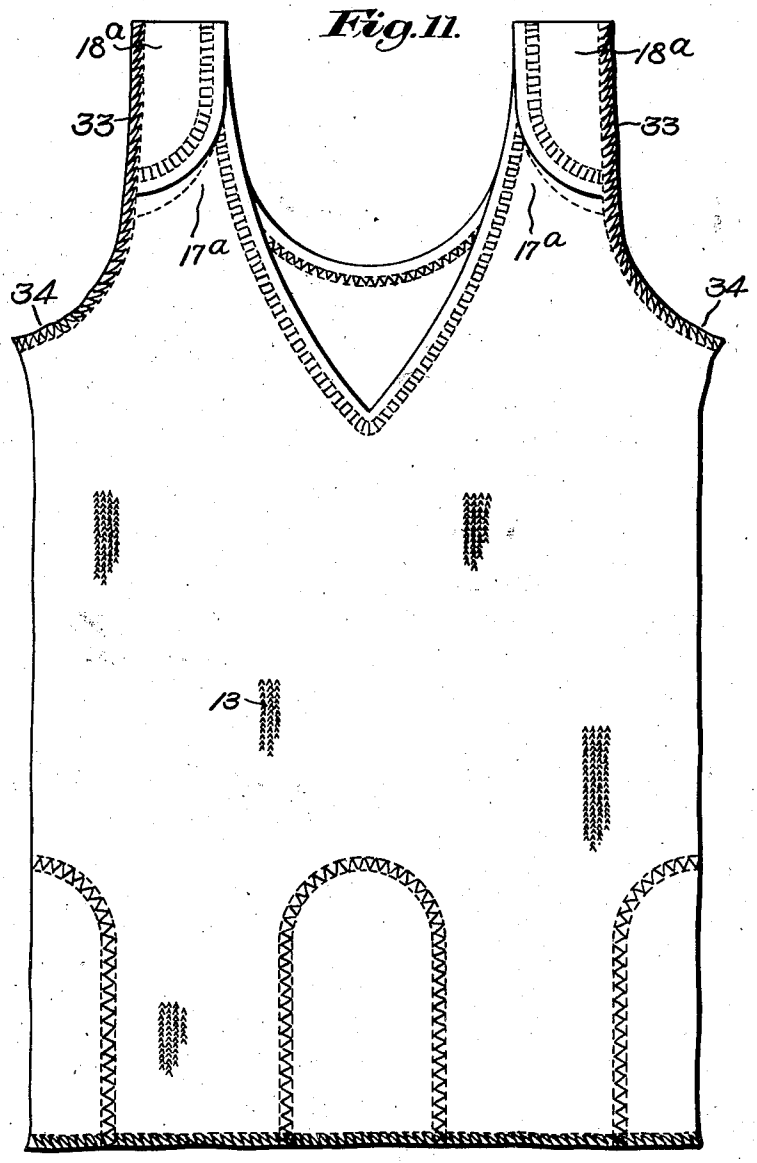
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Fig. 11.



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Patented Mar. 24, 1936

2,035,377

UNITED STATES PATENT OFFICE

2,035,377

SHOULDER-SUPPORTED GARMENT

Harriet L. Redmond, Needham, Mass., assignor to The William Carter Company, Needham Heights, Mass., a corporation of Massachusetts

Application January 27, 1934, Serial No. 708,613

4 Claims. (Cl. 2—111)

My present invention relates to shoulder-supported garments and more particularly aims to provide improved and simplified constructions for and methods of making such garments, including a novel shoulder and neck portion or closure which is self-adjusting and does not require the use of fastening means such as ties or tapes, pins, buttons, snap fasteners, or the like.

In the drawings, illustrating by way of example certain embodiments of my invention and showing exemplary means for practising the methods thereof,

Fig. 1 is a front view of one form of shoulder-supported garment, in this instance a shirt, embodying the invention, the garment being laid out substantially flat;

Fig. 2 is a top view of the shoulder and neck portions of the garment of Fig. 1, showing the same as viewed from above substantially in its position as worn or as when said portions are positioned flatwise;

Fig. 3 is a view corresponding to Fig. 2 but illustrating the position assumed by the parts as when the garment is being put on or removed, either over the head or over the feet of the wearer;

Fig. 4 is a vertical section through a shoulder portion of the garment, looking outwardly;

Fig. 5 is a perspective of the upper portion of the garment as worn;

Fig. 6 is a view of the under side of one of the sleeves, the sleeve being raised or extended;

Figs. 7, 8 and 9 showing in successive stages a blank from which the main portions of the garment of Figs. 1 to 6 may be formed;

Fig. 10 illustrates a sleeve blank for said garment; and

Fig. 11 is a front view of another form of garment also embodying my invention, namely, an infant's so-called band.

Referring first to Figs. 1 to 10, the garment there illustrated for the purposes of description is an infant's shirt of undershirt, in connection with which the invention is of particular utility. It comprises a main or body portion 12 having front and back sections, formed in this instance of a tubular knitted fabric in which the wales 13 preferably extend vertically, affording greater elasticity in the direction transversely of the garment. The bottom of the shirt is suitably finished, as by an elastic seaming 14. While I am here illustrating and describing the invention as embodied in a child's or infant's shirt, it will be understood that it is not limited in its use to a particular type of shoulder-supported garment but is also applicable in connection with other forms of garment and in garments formed of materials other than knitted fabric, including both outer and under garments and those having attached lower portions, such as union undergarments, and also in connection with garments which are not permanently closed but may have front or other opening provisions.

At its upper front portion the fabric of the garment body is shaped centrally as at 15 to provide the front portion of the neck aperture, and the back upper central portion is correspondingly formed as at 16. The general configuration of these neck portions may be varied as desired, to afford the various neck styles as preferred, such as the square, the V-shaped or the rounded forms, and the depth of the openings may be varied. In some instances they may be the same at both front and back or, as generally preferable, the front portion of the neck aperture may be somewhat lower than at the back, as illustrated.

In accordance with my invention one or both of the over-shoulder portions or shoulder straps comprised in the neck closure are formed of a plurality of overlapping members, extensions or strap-like elements 17 and 18 extending respectively from the upper portions of the front and back sections of the main body portion 12.

As clearly seen in Figs. 2, 4 and 5, and as also will readily be understood in connection with the illustrations of the fabric blank in Figs. 7 to 9, the shoulder parts 17 for the garment front are of sufficient longitudinal extent to pass upwardly over the shoulders and rearwardly or downwardly toward the back. Similarly the shoulder parts 18 associated with the upper rear portion of the garment are shaped and proportioned to extend upwardly over the shoulders and forwardly and downwardly toward the front. That is, both the front and the rear shoulder and elements or strap forming members 17 and 18 extend, from the main portions of the garment to which they are attached, upwardly and either forwardly or rearwardly, preferably to substantially the same extent, across and beyond the top central cross-shoulder line indicated by the dot-and-dash line in Fig. 2 and which corresponds approximately to the top lines across the shoulders as seen in Fig. 1.

The inner side portions or edges of the shoulder extensions 17 and 18 are preferably but not necessarily inclined or rounded, as indicated at 19 and 20 respectively (see particularly Fig. 2), from a point at or adjacent the medial cross-

shoulder line referred to, to the outer side portion or edge of said parts, at or near the points indicated by the numerals 21 and 22 respectively.

At least the inner edge portions of the shoulder elements 17 and 18 are left free, being unattached either to each other or otherwise. They are suitably finished along their free portions as by the edge bindings 23 and 24 respectively. The edge bindings 24 for the rear extensions 18 desirably are carried continuously along and about the edge of the rear portion 16 of the neck aperture, merging into each other, while the corresponding edge bindings 23 of the forward extensions 17 are similarly continued and merged together about the edge of the front portion 15 of the neck opening.

Thus it will be seen, particularly with reference to Figs. 2, 3 and 5, that there are continuous formations about the garment neck aperture, from the outer side of one shoulder element to the outer side of the shoulder at the opposite side of the garment. For example, from the point 21 at one side of the garment, there is a continuous line or formation along the inner portion of the strap member 17, continuously around the front of the neck and along the inner free portion of the corresponding strap member 17 at the other side of the garment, and to the outer side of said strap member, at the other point 21. Similarly for the free portions of the rear extensions 18 and the rear neck portion 16 there is a continuous fabric formation and structure line from the point 22 at one side of the garment, along the free portion of the adjacent member 18, around the back of the neck, and along the inner portion of the corresponding member 18 at the other side of the garment, to the other point 22. In the form illustrated the shoulder members 17 which extend from the upper front of the garment underlie the corresponding parts 18 coming from the rear of the garment, see also Fig. 4, but it will be understood that this arrangement may be reversed, and that either the front or the back elements 17 or 18 may be underneath.

The described neck closure and shoulder construction is applicable to garments of a type having sleeves or to sleeveless garments. The infant's shirt of Figs. 1 to 10 is provided with sleeves, each indicated as a whole by the numeral 25, and in connection therewith and with the described neck formation I have devised a novel construction which avoids under-arm seams adjacent the body. For this purpose the main portion 12 of the garment is formed with integral under-arm extensions 26, preferably of the generally tapered form seen in Fig. 6 and one-half portion of which is apparent in Fig. 1 and also in connection with the blank, Fig. 8.

A blank for one of the sleeves is illustrated in Fig. 10. Each such blank has an end portion 27 for attachment to the shoulder portions of the garment across the top of the arms, and with inclined portions 28, one only of which is seen in the doubled form of the blank as in Fig. 10, in which the upper line 27^a is a fold line. The two inclined portions 28 of the sleeve blank are respectively attached as by seaming 29 along the corresponding inclined sides 26^a, 26^a of the under-arm extensions 26. The remaining under portion of the sleeves, beginning with the peak of the under-arm extension 26, at a point well away from the body, are seamed together as along the line 30, Fig. 6. The outer ends of the sleeves may be provided with a cuff or with any suitable finishing formation such as the elastic seaming 31.

Referring again to Figs. 1, 2 and 5, the upper inner end portions 27 of the sleeves are secured to the outer side edge portions of the shoulder elements 17 and 18, as indicated by the lines of flatlock or other seaming 32, 32 in said figures. From the foregoing description it will be understood that said shoulder members, extensions or strap elements 17 and 18 are secured only along their said outer edges, herein by said seam lines 32, and that otherwise, aside from their attachment to the main body portions from which they originate, they remain in free overlapping relation one upon another over the shoulders.

In the normal position of the neck closure, as in Figs. 1, 2 and 5, the garment is closed about the base of the wearer's neck, and this entirely without the necessary provision of special fastening means, whether tapes, pins, buttons, or other type. By reason of the described construction there is an inherent automatic tendency for the neck parts to remain in said closing position, and in addition they also naturally and automatically tend to hold their desired position across the wearer's shoulders, rather than to slip down over the arms as has been the tendency in prior garments of the shoulder-supported type. This is largely due to the described shoulder construction with its diagonally crossing edge lines at the tops of its front and rear portions. By reference to Fig. 2, for example, it will be seen that there is a continuous fabric formation or structural line extending diagonally, say from the outer point of attachment 22 for the shoulder element 18 at one side of the garment, diagonally across to the other side of the garment and to the corresponding member 18 at said other garment side. Hence, any down pull or other strain at one side of the garment has a diagonally effective component which is transferred across to a shoulder portion at the other side of the garment and tends to draw the latter inwardly toward the wearer's neck. Due to these crossing neck lines and the overlapping shoulder parts and the manner in which the strain is transmitted and distributed from one side to the other, the action is to draw the opposing shoulder and neck portions inwardly toward each other, keeping them up in place.

But despite the closure thus automatically afforded for the neck and shoulder portions of the garment, the garment neck and upper portion is at all times free for opening to the full extent necessary for putting on or removing the garment either over the head or over the feet of the wearer. The manner of opening is illustrated in Fig. 3 in which it may be assumed that the garment is being slipped down over the infant's head or is being brought up about its body. Because of the free arrangement of the inner portions of the overlapping shoulder members, they may be turned or opened to afford an opening having substantially the full width of the distance between the secured outer portions of said members, that is, viewing Figs. 2 and 3, substantially the full width between the seam lines 32. Where the garment is of a knitted fabric as illustrated, and with the knitting wales extending vertically, the degree of opening afforded is still further enhanced by reason of the transverse stretch inherent in the knitted fabric. It will be understood, however, that my invention is not confined to the use of knitted fabric but may be embodied in garments formed of woven or other material.

One method of forming a garment embodying

the described invention is illustrated in Figs. 7, 8 and 9, in connection with a tubular fabric blank. As an initial step the tubular fabric is laid out flatwise as indicated in said figures, the direction of the knitting wales being indicated as at 13. It will be understood that there are two superposed thicknesses of fabric in each blank, and if desired a plurality of similar tubular fabric blanks may be superposed for simultaneous cutting. The blank is cut to provide the front shoulder straps or extensions 17, the rear extensions or shoulder straps 18, and the intermediate wedge-like under-arm extensions 26. During such cutting the blank is folded along what corresponds to the front and rear vertical median lines rather than along the side vertical median lines, since the lower portions 15 and 16 of the neck openings are in this instance made of different depths at the front and the rear. In Fig. 8 the cut-out blank of Fig. 7 is illustrated in its condition as when folded flat along the side median lines. In other words, the fold lines in Fig. 8 are carried around ninety degrees from their position as in Fig. 7. It will be noted in Fig. 8 that the side folds now bisect the under-arm extensions 26 and that the vertical outer side lines of the shoulder parts 17 and 18 are substantially set in from the sides of the blank as a whole; see also Fig. 1 in said connection. Hence, in addition to avoiding the usual under-arm seam, by the provision of the integral under-arm extensions 26, the seams 32 forming the sleeve ends to the shoulder and neck members 17, 18 are brought inwardly of and away from the juncture of the wearer's arms and body, with further avoidance of chafing or binding.

In Fig. 9 I have illustrated the cut blank as if viewed from the side in Fig. 8, but somewhat opened up and with the under-arm extension 26 moved downwardly and outwardly in readiness for attachment of the inclined portions 28 of a sleeve blank. The manner in which the front and rear shoulder extensions 17, 18 are subsequently folded down into mutual overlapping relation, preparatory to seaming along their outer portions only, is illustrated by the dotted lines.

In Fig. 11 I have shown another embodiment of my invention, in this instance in a sleeveless garment, illustrated as a so-called band for an infant. Parts not otherwise referred to may be understood to be the same as in the preceding figures, and similar reference numerals are used for corresponding parts, with the addition of a reference letter. As in the previous figures it will be seen that the front shoulder extensions or straps 17a and the corresponding rear portions 18a are disposed flatwise one upon the other similarly and are left free of attachment along their inner portions. Along their outer side portions or edges they are seamed together as indicated by the seam lines 33, 33 which in this case are continued down about the arm opening as at 34. The shoulder portions or straps so formed normally lie closely and snugly about the wearer's neck, and, by reason of the diagonal distribution of the lines of strain as previously described, they tend to remain in supporting position upon the infant's shoulders, with the avoidance of the annoyance and irritation of slipping shoulder straps. As in the case of the sleeved garment or shirt of the previous figures, the garment is normally closed in about the wearer's neck but nevertheless is free to open at its neck portion, for the purposes of putting on or removing the garment, to the full extent of the distance between the outer edges of the shoulder members.

The garment of Fig. 11 may be made by a similar method as described in connection with the blank figures, Figs. 7 to 9, but in this instance the under-arm extensions 26 are not used, the blank being cut across between the strap and neck members 17 and 18, at their bases, as indicated by the dotted lines in Figs. 7 and 8, to form the bottoms of the arm scyes.

My invention, both as to articles and methods, is not limited to the particular embodiments or means herein shown and described, its scope being pointed out in the following claims.

What is claimed is:

1. The method of making a shoulder-supported garment which comprises forming a tubular fabric blank, extending the blank flatwise in folded condition, cutting out one corner portion of the blank to provide front-attached portions of shoulder straps, cutting out the opposite corner portion of the same end of the blank to provide rear-attached portions of shoulder straps, cutting the central portion of the blank inwardly from the border of said end of the blank and between said corner cut-out portions thereby to form the subsequently outer borders of said shoulder straps, opening the tubular blank and reflattening it after shifting the previous side-edge folds 90° circumferentially of the blank, overlapping the ends of one rear-attached and the then adjacent front-attached shoulder strap portion, and seaming together said overlapped portions at their then outer side portions only.

2. An infant's band, of tubular knitted fabric, comprising in combination a body portion including front and back sections, a pair of shoulder-strap-forming elements integral with and extending upwardly from the upper front section and of sufficient length to extend beyond the shoulder line of the wearer and downwardly at the rear, and a corresponding pair of shoulder-strap-forming elements projecting upwardly from the upper back section and of a length to extend across the wearer's shoulder line and downwardly at the front, the fabric being cut away between the members of each such pair of elements to provide a neck opening of a depth extending downwardly approximately to the level of the armpits of the wearer, said elements being relatively narrow as compared with the width of the neck opening and of substantially uniform width throughout the major portion of their extent but having their projecting end portions convexly curved from their inner side edges across to their longer and substantially straight outer side edges, and the outer side edges of said elements being set in from the sides of the garment as a whole, the adjacent front and rear elements at each side of the garment being superposed flatwise in the normal condition of the garment as worn and being secured together along their outer side portions only.

3. In a shoulder supported garment, in combination with a main or body element having front and back portions and a neck opening, oppositely disposed shoulder-strap members at the top of said front and back portions, at each side of the neck opening, said members being seamed together along their outer side edges only and normally lying in flatwise overlapping position one on the other, the inner edges of each pair of said members being continued inwardly and merged into the material of the body element bordering the neck opening, so that down strains on the garment have components effective transversely of the shoulder members and tending to

retain them in place adjacent the wearer's neck, wedge-shaped under-arm extensions at the sides of the body element between the front and back bases of the pairs of shoulder-strap members and extending outwardly beyond the wearer's armpits, and sleeve members having similarly shaped cut-out portions at their inner ends, the sides of said cut-out portions being seamed to the sides of said under-arm extensions by seams which diverge outwardly and upwardly and are continuous with the seaming along the outer side edges of the shoulder-strap members, whereby under-arm and sleeve strains are distributed divergently over the upper side parts of the garment body element and to relatively movable portions of the adjacent pair of overlapped shoulder-strap members.

4. A tubular knitted fabric blank for use in forming a shoulder-supported garment, comprising a main or body element having front and back portions in flatwise superposed relation in the folded or collapsed condition of the blank, said body element having one upper corner portion cut out to provide front-attached portions of shoulder-strap members, and having the opposite upper corner portion cut out to afford rear-attached portions of shoulder-strap members, and said blank further having its central portion cut out inwardly from the top edge of the blank and between said corner cut-out portions so as to define the subsequent outer side edges of the shoulder-strap members, said tubular blank adapted to be opened out and reflattened after shifting the previous side-edge folds 90° circumferentially of the blank thereby to bring one front-attached shoulder-strap member and one back-attached similar member into flatwise overlapping paired position for securing together along their then outer side portions.

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