March 13, 1951 G. W. GEISSMANN 2,545,272

GLOVE

Filed July 31, 1947 2 Sheets-Sheet 1

FIG 1

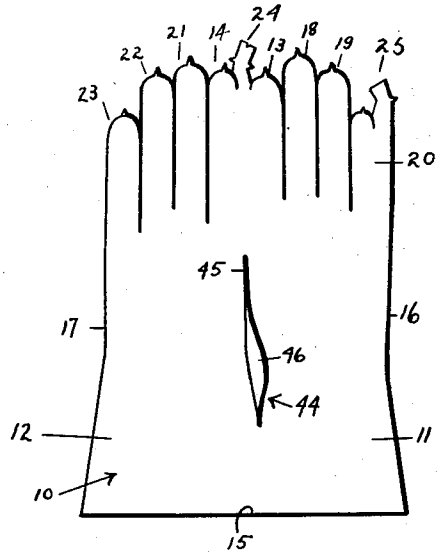


FIG 7

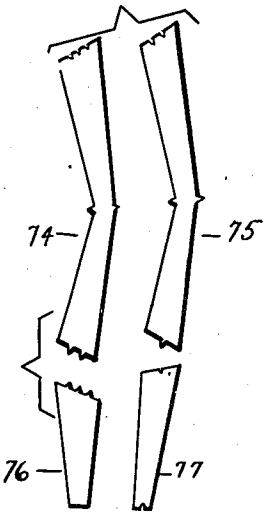


FIG 10

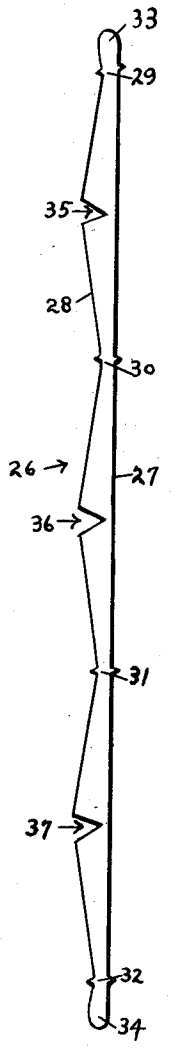


FIG 8

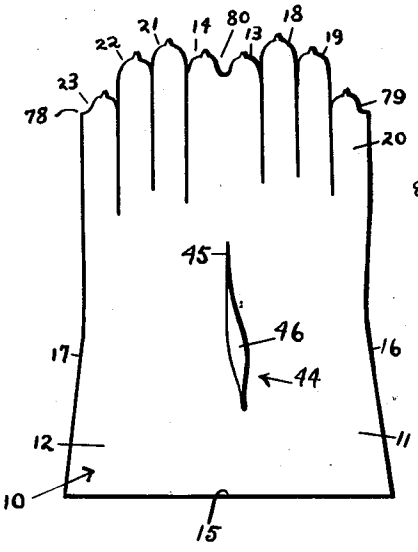
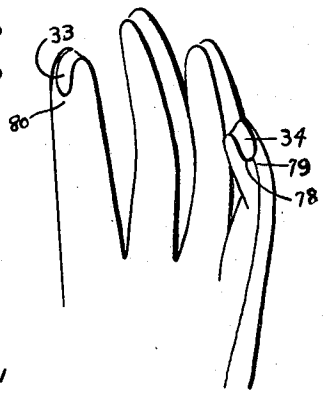


FIG 9



INVENTOR
Gladys Whitcomb Geissmann
BY
Campbell, Brumbaugh & Free
ATTORNEYS

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GLOVE

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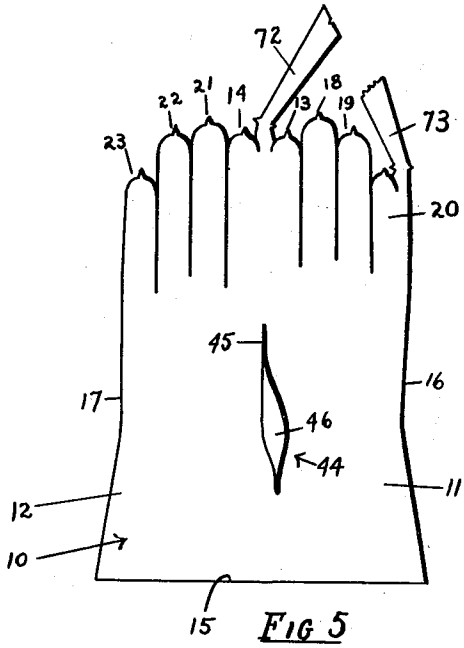

FIG 5

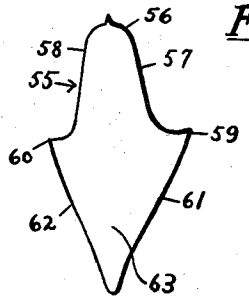

FIG 2

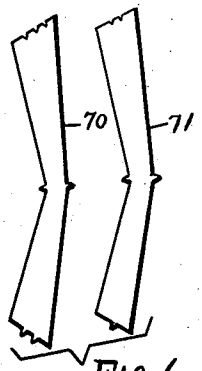

FIG 6

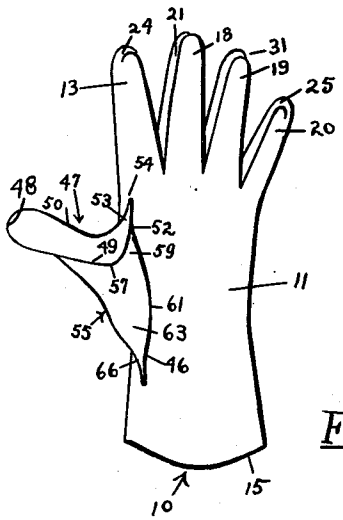

FIG 4

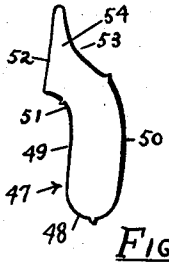

FIG. 3

INVENTOR.
Gladys Whitcomb Geissmann

BY
Campbell, Brumbaugh & Free

ATTORNEYS

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UNITED STATES PATENT OFFICE

2,545,272

GLOVE

Gladys Whitcomb Geissmann, New York, N. Y., assignor to Merry Hull & Company, New York, N. Y., a copartnership

Application July 31, 1947, Serial No. 764,954

3 Claims. (Cl. 2—169)

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This invention relates to improvements in gloves and it relates particularly to novel thumb and finger constructions for gloves.

Most of the gloves manufactured at the present time are provided with an inserted thumb-covering portion, that is, the thumb-covering portion is formed of one or more separate pieces of material that must be stitched to the edges of an opening in the palm portion of the glove. Usually the back-portion of the thumb is provided with an arcuate edge which is secured to a curved edge of the opening in the palm by means of a seam. The curved seam extends around beneath the thumb and thus a portion of the seam is generally parallel to the cuff edge of the glove.

The above-described construction has several practical disadvantages. In the first place, the position of the seam below the thumb is such that any stresses applied at the cuff edge, as for example when pulling the glove on the hand, are transmitted at a right angle to the seam and in the direction of least strength of the seam. As a result, the seam may be, and often is, ripped loose. Moreover, this type of thumb construction is not too well designed from the standpoint of the anatomy of the human hand and for that reason, it sometimes does not afford adequate fullness to accommodate the base of the thumb. Such lack of fullness tends to bind the thumb and cause the seam to ride up on the thumb.

Another disadvantage of such prior thumb constructions is that the thumb blanks are difficult to stitch to the palm of the glove. The thumb blank is provided with a sharp point that extends toward the base of the forefinger. The palm portion is provided with a short square tongue which extends downward and only halfway into the crotch of the thumb portion. The attachment of the end of this square tongue to the thumb portion extension results in a seam at right angles to the extensible length of the thumb and restricts the flexibility thereof, causing general discomfort and difficulty in proper fitting. It also adds another habitual ripping point, resulting in a great loss to the manufacturer in returns and in dissatisfaction of the wearers. In order to stitch the thumb blank to the palm portion, the position of the glove must be shifted several times during the sewing operation. Inasmuch as the appearance and fit of the thumb is, in part, dependent upon the neatness and accuracy of the position of the seam, only skilled seamstresses or operators having long training or experience in this operation can be used.

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An object of the invention, therefore, is to provide an improved thumb construction for gloves in which the thumb-covering portion can be more easily secured to the glove by relatively unskilled operators.

Another object of the invention is to provide an improved thumb construction for gloves which provides increased thumb freedom or flexibility and a distinctive appearance.

Another object of the invention is to provide a novel thumb construction for gloves which provides an increased amount of fullness in the glove above and below the thumb portion to provide increased flexibility and roominess in the glove.

A further object of the invention is to provide a novel thumb construction, in which any tendency of the thumb portion to tear loose along the seam between the thumb and the remainder of the glove is reduced to a minimum.

Another object of the invention is to provide a novel first and little finger construction for gloves in which a third-dimensional effect is obtained without the necessity of providing double seams along the outside of the little finger of the glove.

In accordance with the present invention, I have provided a glove construction, in which a relatively narrow slot or opening is provided extending from adjacent the base of the forefinger portion on the palm portion of the glove toward the cuff edge for receiving an inserted thumb. The thumb or thumb portion preferably is formed of two pieces of material one of which is shaped into substantial conformity with the front of the normal human thumb, that is, it has a rounded outer end and generally curved lateral edge portions. The thumb front is also provided with an offset portion which terminates in a generally triangular part having a point directed opposite to the rounded end portion.

The thumb back portion has a rounded outer end, curved diverging lateral edge portions which join with a generally triangular shaped portion having its apex or point directed opposite to the rounded end.

These two thumb portions may be joined by a suitable seam extending from about the bases of the triangular end portions along the lateral edges and around the rounded or curved ends of the thumb portions, thereby leaving the triangular portions unconnected with each other. This partially-completed thumb is then inserted

in the slit in the palm portion of the glove with the triangular portions extending in opposite directions, that is, with the pointed end of the thumb front portion extending in the direction of the forefinger portion and the pointed end of the thumb back portion pointing in the direction of the cuff edge of the blank. In this way, the base of the thumb-covering portion is of generally diamond or spear shape when affixed to the palm portion of the glove.

The diamond arrangement of the thumb has the advantage of providing increased fullness above and around the base of the thumb for the reason that less material is cut out of the palm portion to receive the set-in "diamond shaped" thumb than is usually cut out of gloves having conventional inserted thumbs. The pointed extremities of the "diamond thumb" act as gussets when inserted in the "slit-ended" gouge opening for the thumb, and thus increase the long-wearing qualities of the glove without making it too big for the hand. This greater fullness around the base of the thumb assures greater flexibility of the thumb and greater comfort of the glove as a whole. Moreover, inasmuch as the seams which attach the front portion of the thumb to the thumb back are parallel to all motion and all functions of the thumb and no seams therein are at right angles to said thumb action, there is maximum comfort and minimum tearing in the thumb crotch, and, since the pointed portion of the thumb back is joined by seams inclined with respect to the cuff edge of the glove, there is less danger of tearing this seam when the glove is pulled on. The reason for this is that the stresses are exerted at an acute angle to the seam rather than at a right angle to the seam.

The finger-covering portions of the glove may also be of novel construction utilizing fourchettes which extends around the ends and along both sides of all of the fingers except the little finger and the forefinger. The little finger and the forefinger are so designed that they appear to have fourchettes extending around their tips by providing tabs or flaps between the ends of the forefinger portions and between the little finger portions. These tabs or flaps are joined to the ends of the continuous fourchette which extends around the ends and into the crotches of all of the other finger portions.

The above-described finger construction thus gives the effect of three dimensional fingers on the gloves without the necessity of providing fourchettes which extend along the sides of the little finger and forefinger portions. This reduces the amount of work involved in assembling the glove inasmuch as it does away with at least one seam extending along the sides of each of the forefinger and little finger portions.

For a better understanding of the present invention, reference may be had to the accompanying drawings, in which:

Figure 1 is a plan view of a typical form of blank, from which a glove embodying the present invention may be made;

Figure 2 is a plan view of a blank adapted to form the back of the thumb of the glove;

Figure 3 is a plan view of a blank adapted to form the front of the thumb of the glove;

Figure 4 is a perspective view of an assembled glove embodying the present invention;

Figure 5 is a plan view of an alternate form of blank. It differs from the blank in Figure 1 only in that it has longer tabs;

Figure 6 is a plan view of the separate fourchettes to be used in the embodiment of the invention employing the blank of Figure 5;

Figure 7 is a plan view of the separate fourchettes to be used in the embodiment of the invention employing the blank of Figure 1;

Figure 8 is a plan view of still another form of blank;

Figure 9 is a perspective view of the finger of a glove made by employing the blank of Figure 8; and

Figure 10 is a plan view of a continuous fourchette to be used in conjunction with the blank of Figure 8 to produce the glove of Figure 9.

The glove shown in Figure 4 of the drawing and described hereinafter is typical of many different styles or types of gloves which may be manufactured in accordance with the present invention, and therefore, it should be considered only as illustrative of the invention.

A glove embodying the present invention may be formed of the blank 10 illustrated in Figure 1. This blank may be formed of leather, fabric or any other desired type of material. The blank 10 is provided with a palm portion 11 and a back portion 12 which are integrally united adjacent the forefinger portions 13 and 14, although the palm and back portions may be formed as separate elements, if desired. The blank 10 is provided with a cuff edge 15 which may be straight, curved, scalloped or provided with any other desired ornamental configuration. The blank 10 also is provided with lateral edges 16 and 17 which are adapted to be joined together by means of a seam extending along these edges.

The palm portion 11 is provided with other finger portions 18, 19 and 20 and the back portion 12 is provided with corresponding finger portions 21, 22 and 23.

Between the forefinger portions 13 and 14 in the form of blank illustrated, a tab 24 is provided which forms a continuation of a narrow web that spaces the forefinger portions 13 and 14 apart to provide a third dimensional effect in the forefinger when it is completed. Also adjacent the end and projecting outwardly beyond the tip of the little finger portion 20 is another similar tab 25 which forms a continuation of a web or lateral extension terminating in the edge 16 to provide a third dimensional effect in the completed little finger of the glove.

The finger portions 18 and 21, 19 and 22, the inner edges of the little fingers 20 and 23, and the inner edges of the forefingers 13 and 14 may be joined by fourchettes 74, 75, 76 and 77, illustrated in Figure 7. Finger portions 18 and 21 are connected by fourchette 74, 19 and 22 are connected by fourchette 75, inner edges of the little fingers 20 and 23 are connected by fourchette 76, and inner edges of the forefingers 13 and 14 are connected by the shortest fourchette 76.

If the blank of Figure 5 is used, the inner edges of the little fingers 20 and 23 are connected by long tab 73, the inner edges of the forefingers 13 and 14 are connected by the long tab 72, finger portions 18 and 21 are connected by fourchette 70, and 19 and 22 are connected by fourchette 71.

If the blank of Figure 8 is used, the finger portions 18 and 21, 19 and 22, the inner edges of the little fingers 20 and 23, and the inner edges of the forefingers 13 and 14 may be joined by a suitable fourchette strip 26 illustrated in Figure 10. The strip 26 is provided with a straight edge 27 which is adapted to be connected to the edges

of the finger portions 14, 21, 22 and 23 and to extend down into the slots or slits between these finger portions. The opposite edge 28 of the fourchette 26 is of zigzag formation having narrow portions 29, 30, 31 and 32 adapted to be disposed respectively adjacent the ends of the finger portions. Little fingers 20 and 23 are curved in order to fit rounded end 34 of fourchette 26. The portion 80 between forefingers 13 and 14 is also curved to fit around rounded end 33.

A particularly novel feature of the glove is the construction of the thumb portion thereof. As shown in Figure 1, the blank is provided with a slit or opening 44 which varies in width from a cut 45 adjacent the base of the forefinger portion 13 to a wider portion 46 in a position corresponding to the heel or base of the thumb of the human hand. This slit or slot 44 is only about a half inch wide at its widest dimension, so that very little of the material is wasted in the formation of the slit 44 in the glove. The slit 44 is inclined at an acute angle to the axis of the forefinger to correspond to the placement of the thumb on the hand.

The extra leather or other material around the slit 44 which is normally removed to permit the insertion of the usual type of thumb therein, is used to impart fullness to the glove.

The thumb-covering portion of the glove consists of a thumb front portion 47 which has rounded tip 48, generally curved and parallel side edge portions 49 and 50, the inner end of the edge portion 49 being more sharply curved, as at 51, where it joins a straight edge 52. The edge 52 is substantially parallel to the axis of the thumb-covering portion between the edges 49 and 50 and is offset laterally from the edge 49.

The other lateral edge 53 of the thumb portion extends on a concave curve from the edge 50 down to form with the edge 52 a generally triangular or pointed portion 54.

The back portion 55 of the thumb has a rounded outer end 56, and diverging lateral edge portions 57 and 58, these edges curving relatively sharply at their inner ends to the points 59 and 60. The blank is further provided with converging lateral edges 61 and 62 extending downwardly from the points 59 and 60, respectively, to form a generally triangular portion 63.

The thumb-covering portion is assembled with the edge 49 of the thumb front against the edge 57 of the thumb back 55 and the edge 50 of the thumb front adjacent the edge 58 of the thumb back so that these two elements can be joined from the point 59 around the curved ends 48 and 56 of the elements and down to the point 60 by means of a single seam. The two triangular end portions 54 and 63 are left free. The triangular or pointed end 54 is then stitched to the edges of the narrow cut 45 while the edges 61 and 62 are stitched into the wider portion of the slot 46 so that the point of the triangular portion 63 is directed toward the cuff edge 15 of the gloove. As best shown in Figure 4, the base of the thumb-covering portion is of a diamond or spear shape when assembled in the glove. The stitching or sewing operation is facilitated by reason of the shape of the portions 54 and 63. These portions can be stitched around the edge of the slit 44, by a continuous seam of generally elliptical outline so that the glove has to be shifted only once during the sewing operation and even then the glove does not have to be turned quickly to change the direction of sewing to secure the assembled thumb portion to the palm of the glove.

Inasmuch as the triangular portions 54 and 63 of the thumb are of substantial width, they tend to spread the slot 44 in the palm portion of the glove into conformity with the shape of the base or heel of the thumb. Moreover, because of this substantial width and the amount of material left in the palm portion of the glove by the formation of the relatively narrow slit 44 therein, substantial additional fullness is provided so that there is no binding of the glove around the thumb. Therefore, the thumb is very flexible and graceful in appearance and is relieved of strains and stresses which might tend to rip the seam by means of which the thumb is secured to the palm portion of the glove.

The diagonal or diamond shaped arrangement of the seam has the further advantage of placing all of the seams at an angle to the direction of stresses which may occur by flexing of the thumb or when the glove is pulled on to the hand by gripping it at the cuff edge. This diagonal inclination of the seams with respect to the direction of the normal stresses exerted on the seams makes for a better distribution of the stresses with the result that the glove is less likely to be damaged, and will wear longer.

From the preceding description, it will be apparent that I have provided a glove construction which is advantageous from the standpoint of mechanical strength and flexibility and which presents a novel appearance. Moreover, the glove is very simple to assemble, as pointed out above.

While the glove has been described with reference to the use of fourchettes which extend around the ends of the tips of the fingers, it will be understood that the fingers may be of any other construction or they may have fourchettes which extend from the cuff edge around the end of the little finger portion and completely around the other finger portions back to the cuff edge below the forefinger portion. Therefore, it will be understood that gloves embodying the present invention are susceptible to considerable modification and that the form of the glove described herein should be considered as illustrative of the invention and not as limiting the scope of the following claims.

I claim:

1. A glove comprising joined palm and back portions having finger portions thereon, said palm portion having a slit therein extending downwardly at an acute angle to the axis of the forefinger portion thereon, from adjacent the inner end of the forefinger portion, a thumb-covering portion including a thumb-front portion having a rounded outer end portion corresponding in shape to the front of the end of the human thumb, opposite lateral edges and an inner triangular end, a thumb-back portion having a rounded outer end portion, diverging lateral edges adjacent to said outer end, and a triangular inner end portion, said rounded end portions and parts of said lateral edges of said thumb-front and thumb-back portions being joined, said triangular end of said thumb-front being secured to said palm portion with its apex extending toward the forefinger covering portion of said palm portion, and said triangular portion of said thumb-back portion being secured to said palm portion with its apex extending in the opposite direction from said forefinger portion.

2. A glove comprising palm and back portions having poined lateral edges, a cuff edge, and finger covering portions thereon, and a slit in said palm portion extending across said palm portion

at an acute angle to the axis of the forefinger covering portion thereon from adjacent the forefinger covering portion toward said cuff edge, and a thumb-covering portion joined to the palm portion at the edges of said slit, said thumb-covering portion including a thumb-front portion having a rounded outer end, curved generally parallel lateral edge portions and an offset triangular inner end, and a thumb-back portion having a rounded outer end, curved diverging lateral edge portions joined to a triangular inner end portion to form laterally extending points, said thumb-front and thumb-back portions being joined together by a seam extending from one of said points along said lateral edge portions of said thumb-front and thumb-back portions and around their outer rounded ends to the other of said points, leaving the offset triangular inner end portion separate from the triangular inner end portion of said thumb-back portion, and said triangular end portions being joined to the edges of a slit and extending in opposite directions.

3. A glove comprising palm and back portions having joined lateral edges, a cuff edge, and finger covering portions thereon, and a slit in said palm portion extending from adjacent the forefinger covering portion toward said cuff edge at an acute angle to the axis of said forefinger covering portion, and a thumb-covering portion joined to the palm portion at the edges of said slit, said thumb-covering portion including a thumb-front portion having a rounded outer end, curved generally parallel lateral edge portions and an offset triangular inner end, and a thumb-back portion having a rounded outer end, curved diverging lateral edge portions and a triangular inner end portion having a base substantially wider than the rounded outer end of said thumb-back portion and forming with said lateral edge portions outwardly directed points, said thumb-front and thumb-back portions being joined together by a seam extending from one of said points along said lateral edge portions of said thumb-front and thumb-back portions and around their rounded outer ends to the other of said points, leaving the offset triangular inner end portion separate from the triangular inner end portion of said thumb-back portion, and said triangular end portions being joined to the edges of a slit and extending in opposite directions.

GLADYS WHITCOMB GEISSMANN.

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