

June 5, 1956

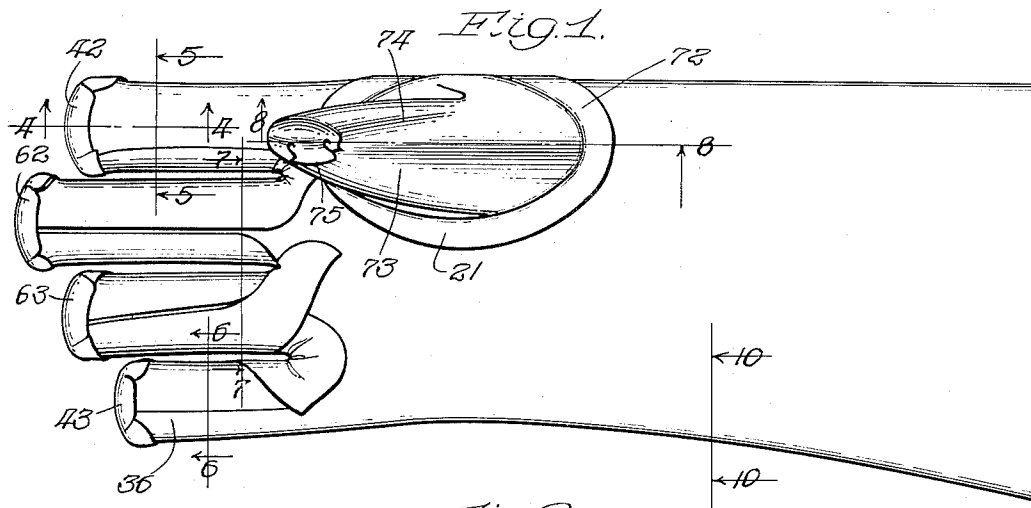
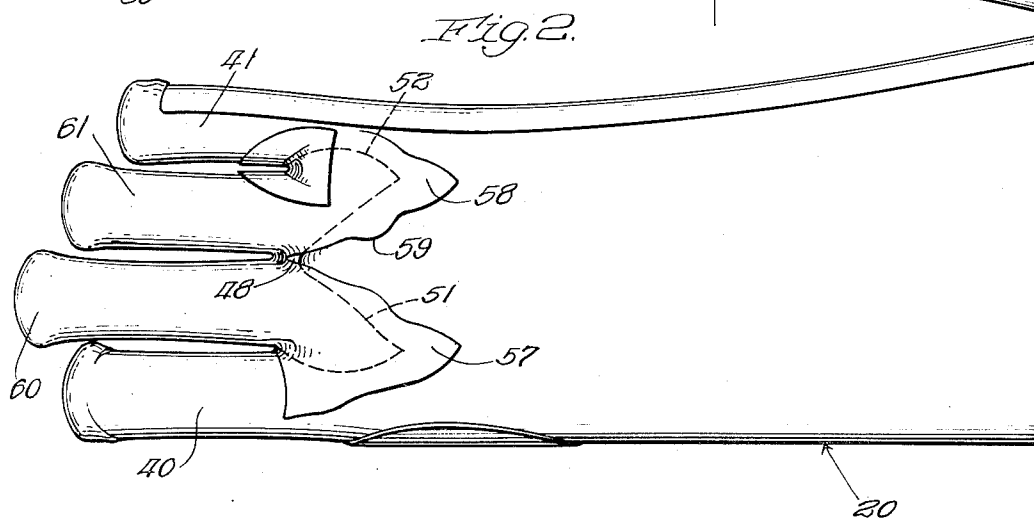
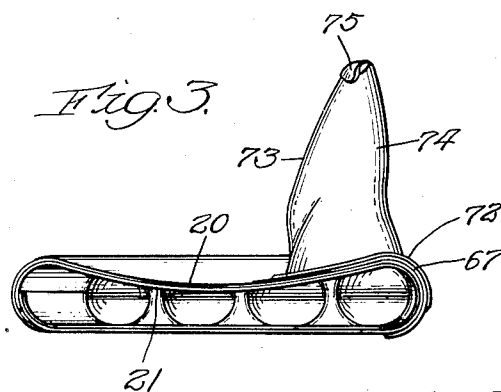
S. APPELBAUM ET AL

2,749,448

GLOVE CONSTRUCTION

Filed July 30, 1952

3 Sheets-Sheet 1



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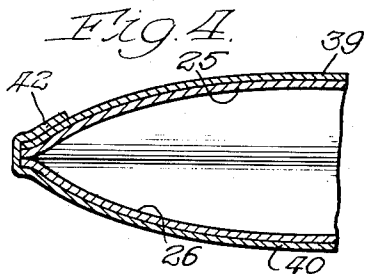
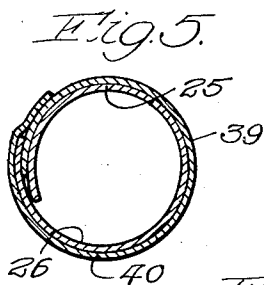
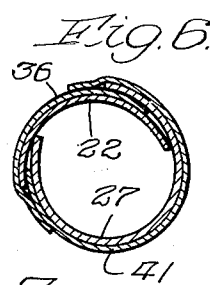
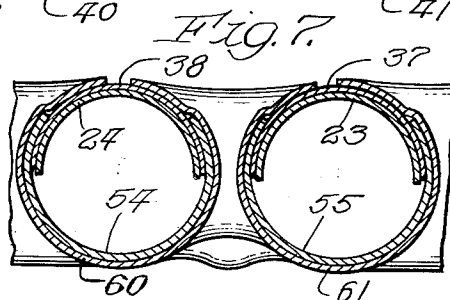
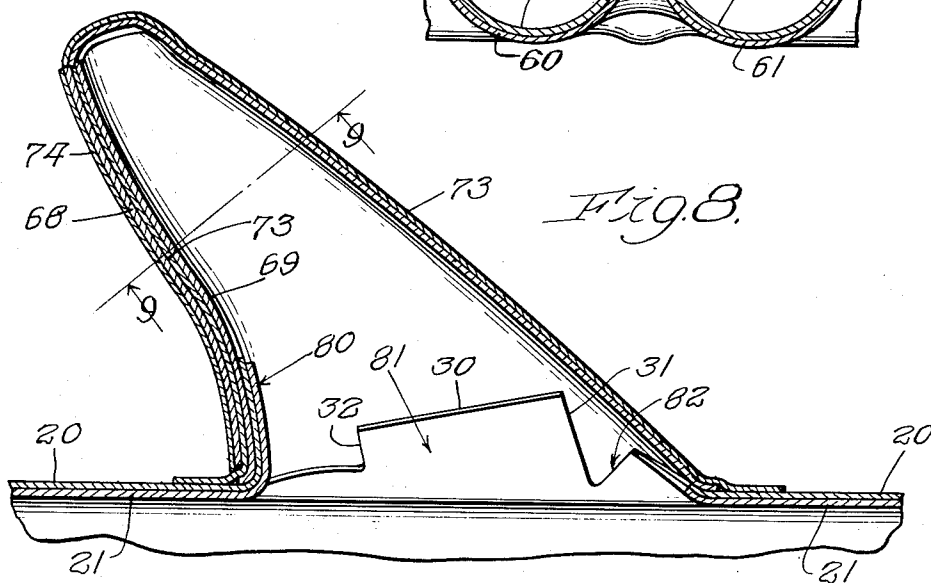
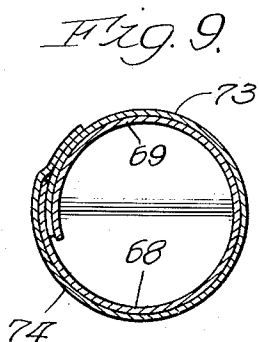
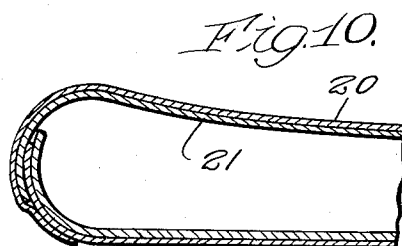
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GLOVE CONSTRUCTION

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3 Sheets-Sheet 2



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S. APPELBAUM ET AL
GLOVE CONSTRUCTION

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Fig. 11.

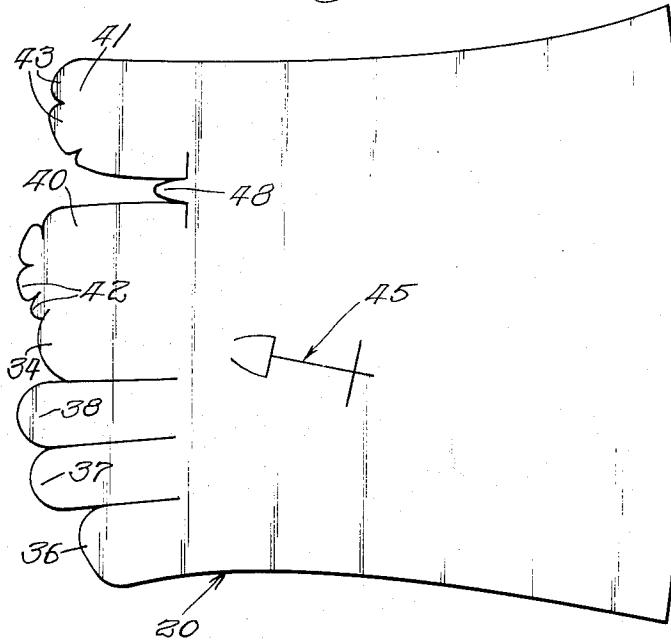


Fig. 12.

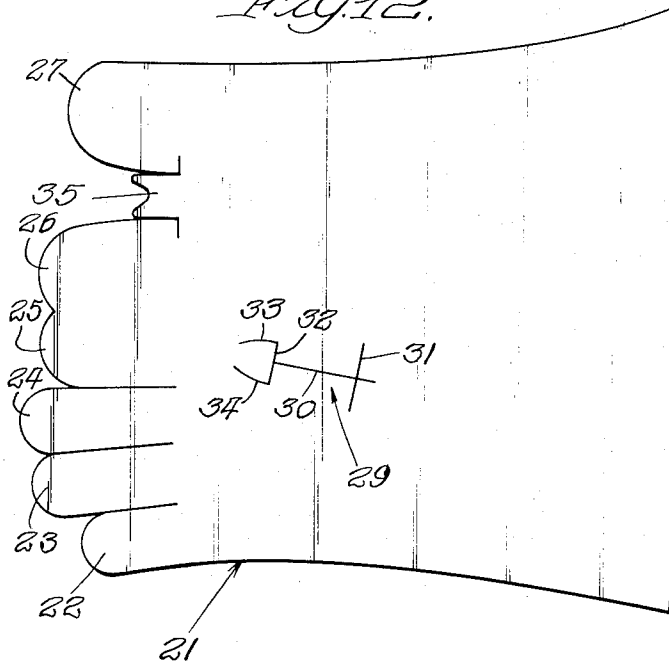


Fig. 13.

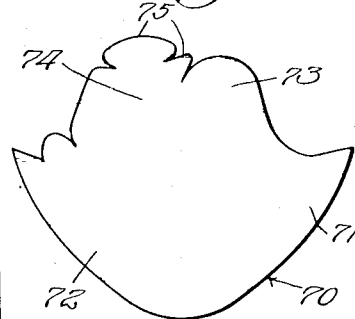


Fig. 14.

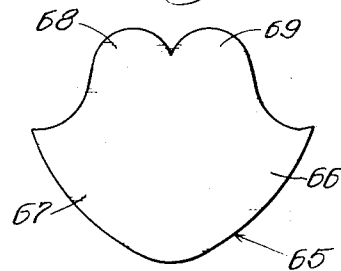


Fig. 15.

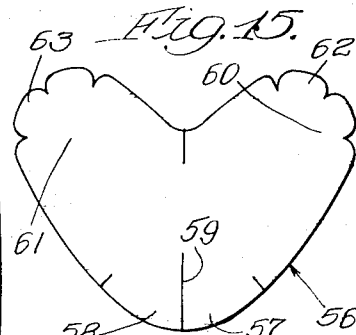
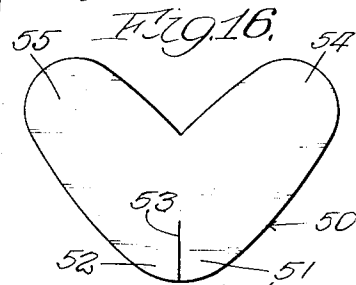


Fig. 16.



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GLOVE CONSTRUCTION

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Application July 30, 1952, Serial No. 301,759

4 Claims. (Cl. 250-108)

This invention relates to a glove construction and more particularly to a glove construction wherein the parts are secured together by means other than stitching.

It is the general object of this invention to produce a new and improved glove construction.

While it will be readily apparent to those skilled in the art that the glove construction of this invention may be employed in the manufacture of gloves of many types, it is particularly adaptable, however, for producing gloves which are to be used as a protective covering against light lying on the ultraviolet side of the spectrum such as X rays and the like. It will further be clear to those skilled in the art that the construction of this invention can also be used for forming mittens, finger gloves and other protective hand coverings; but for the purpose of simplifying the specification and claims, such protective hand coverings are herein referred to as "gloves" and hence the term "glove construction" as used throughout the specification and claims is intended to mean mittens, gloves and other forms of protective hand and arm coverings.

As previously pointed out the glove construction of this invention is particularly useful in the manufacture of X ray gloves for the purpose of protecting the hands of persons exposed to X rays, such as X ray technicians and the like, from the cumulative damaging effect of repeated exposure to X rays. One of the most suitable materials for providing the protection is lead impregnated rubber inasmuch as sufficient lead powder can be incorporated in the rubber so as to make the impregnated material substantially opaque to X rays. In the normal form of X ray glove made of this material various parts of the glove are held together by stitching. A glove of this nature constructed with stitching, however, is extremely dangerous to use inasmuch as it gives the wearer a false sense of security against the damaging effects of X rays for the fact is that a stitched glove is perforated at the location of each stitch, which perforations are not opaque to X rays and thus irreparable damage to the skin and tissues may occur from repeated exposures to X rays even though protective gloves were worn during each exposure.

Furthermore, where lead impregnated rubber is used as the protective material, the stitched glove has a further disadvantage for, as is well known, rubber so fabricated has very little resistance to tear and hence the holes formed by the stitching usually enlarge during use, thus increasing the area exposed to the X rays.

According to the present invention, however, there has been produced a glove construction in which no stitching is used, with the parts being secured together in overlapping relationship by the use of adhesives and the like. Furthermore, the glove of this invention is preferably constructed of two-ply material, one of which is rubber heavily impregnated with lead and serving as the principal protection against X rays, and the second ply being of a material more readily adaptable to adhesives. To provide further protection the second ply is preferably of a relatively thin sheet of lead impregnated rubber and thus while affording an additional protection against X rays

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provides in itself a material which may be adhesively secured together in order to complete the glove.

An added advantage of the glove construction of this invention is the provision of a thumb construction wherein the palm of the glove is slit so as to define a plurality of flaps in the palm, which flaps are adhesively secured to the interior surfaces of a thumb which in turn is adhesively secured along its outer base edge to the palm of the glove. Thus a light source of X ray leakage along the base of the thumb is eliminated and in the particular embodiment of the invention chosen for illustration four plies of the material are provided at the base of the thumb.

Other and further features and advantages of the invention will be readily apparent from the following description and drawings, in which:

Fig. 1 is an elevational view of the palm portion of a glove constructed in accordance with the invention;

Fig. 2 is a view like Fig. 1 of the back of the glove;

Fig. 3 is an end view of the glove shown in Fig. 1;

Fig. 4 is a sectional view along line 4-4 of Fig. 1;

Fig. 5 is a sectional view along line 5-5 of Fig. 1;

Fig. 6 is a sectional view along line 6-6 of Fig. 1;

Fig. 7 is a sectional view along line 7-7 of Fig. 1;

Fig. 8 is a sectional view along line 8-8 of Fig. 1;

Fig. 9 is a sectional view along line 9-9 of Fig. 8;

Fig. 10 is a sectional view along line 10-10 of Fig. 1;

Fig. 11 is a plan view of the trunk forming the outer ply of the glove;

Fig. 12 is a view like Fig. 11 of the inner ply of the glove;

Fig. 13 is a plan view of the outer ply of material used to form the thumb;

Fig. 14 is a view like Fig. 13 of the inner ply;

Fig. 15 is a plan view of the outer ply used in forming a fourchette; and

Fig. 16 is a view like Fig. 15 showing the inner ply.

While this invention is susceptible of embodiments in many different forms, there is shown in the drawings and will herein be described in detail one specification embodiment, with the understanding that the present disclosure is to be considered as an exemplification of the principles of the invention and is not intended to limit the invention to the embodiment illustrated. The scope of the invention will be pointed out in the appended claims.

Referring now to the drawings, the trunk shown in Figs. 11 and 12 is formed in generally what is known as the Gunn Cut with some modification. Other patterns, such as the Clute or Montpellier may also be used. In making the trunk shown in Figs. 11 and 12 a pattern is used to cut the material. The trunk 20 of Fig. 11 forms the outer ply of the glove and is cut from a sheet of relatively thin rubber lightly impregnated with lead while the trunk 21 of Fig. 12, which forms the inner ply of the glove, is cut of relatively heavy rubber densely impregnated with lead so that the two trunks when superimposed form a complete protection against penetration by X rays.

The trunk 21 includes a portion 22 forming the palm side of the little finger, the portion 23 forming the palm side of the third finger, the portion 24 forming the palm side of the middle finger, portions 25 and 26 which form respectively the palm and back of the index finger, and portion 27 which forms the back side of the little finger. A plurality of slits, generally indicated at 29, are formed in the palm of the glove and include a relatively long slit 30, a bottom cross slit 31, a top cross slit 32, and a pair of arcuate slits 33 and 34 which join with the top cross slit 32. These slits define a plurality of flaps in the palm of the glove which, during the construction thereof, will be folded and adhesively secured to the inner surfaces of the thumb. A notched tongue

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35 is also cut in the trunk 21 which serves to close the space between adjoining fingers as the glove is molded.

The outer trunk 20 is constructed generally similarly to the inner trunk 21 and for this purpose has a portion 36 forming the palm side of the little finger, portion 37 forming the palm side of the third finger, portion 38 forming the palm side of the middle finger, portions 39 and 40 forming the palm and back respectively of the index finger, and portion 41 forming the back side of the little finger. The portion 40 is cut so as to provide a plurality of integral flaps 42 and the portion 41 is similarly formed to provide integral flaps 43. Formed in the palm of the trunk 20 is a plurality of slits 45 similar to the slits 49 and for the same purpose. The trunk 21 is also provided with a pointed tongue 48 which cooperates with the slotted tongue 35 to effect a complete closure between the middle finger and the third finger of the hand as will hereinafter be described.

While the two trunks 20 and 21 are generally similarly shaped, the outer trunk 20 is slightly larger than the inner trunk so that when superimposed over the inner trunk its margins extend beyond the margins of the inner trunk. Because of this construction the seams formed in the glove when it is molded may be adhesively secured together by adhesive extending between overlapped portions of the glove and thus will be between overlapped portions of the outer trunk 20 which, being of thinner material, may more readily be secured in this manner.

As shown in Figs. 15 and 16, the fourchette for the middle finger comprises an inner fourchette 50 having flap portions 51 and 52 defined in the fourchette by a slit 53 together with finger forming portions 54 and 55. The outer ply of the fourchette for the middle finger is indicated at 56 and includes a pair of flaps 57 and 58 defined by slit 59 and two finger forming portions 60 and 61 each provided with integral flaps 62 and 63 respectively. The inner ply for the thumb indicated at 65 in Fig. 14 is cut so as to provide marginal portions 66 and 67 and thumb forming portions 68 and 69 while the outer ply for the thumb 70 shown in Fig. 13 is provided with marginal portions 71 and 72 and thumb forming portions 73 and 74, with the latter portion being provided with flap 75.

It is to be understood that the inner and outer plies of the fourchette and thumb are constructed of the same material as the inner and outer trunks 20 and 21 and thus the inner plies 50 and 65 are of relatively thick heavily impregnated rubber while the outer plies 56 and 70 are of the thin rubber material.

In forming the glove the outer trunk 20 is placed over the inner trunk 21 and adhesively secured thereto, preferably by applying adhesive along the outer marginal edges of the trunk 21. The two-ply material is then folded upon itself so that the back portion 40 of the index finger is folded about the palm side 39 thereof and the portions are adhesively secured together along their edges with the flaps 42 being folded down over the palm side 39 as shown in Fig. 1. So folding the trunks positions the back side 41 of the little finger to the rear of the front side 36 thereof and the two sides are adhesively secured together along their margins with the flaps 43 overlapping the palm side of the portion 36 and adhesively secured thereto, again as shown in Fig. 1.

The inner and outer fourchettes 50 and 56 are then secured together to form a two-ply fourchette and folded so that the portion 61 may be adhesively secured to the back side of the third finger, that is to the portion 37, while the portion 60 of the two-ply fourchette is positioned to form the back side of the middle finger and thus is adhesively secured to the portion 38. The flaps 62 and 63 are folded respectively along the front sides of the middle and third fingers as shown in Fig. 1 to provide a complete closure for the end of the finger.

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The flaps 51 and 52 and 57 and 58, defined respectively by the slits 53 and 59, are interleaved between the inner and outer trunks so as to afford complete protection for the area of the hand covered thereby. For this purpose the flaps 52 and 51 are inserted between the trunks 20 and 21 while the outer flaps 57 and 58 are secured to the outer surface of the trunk 20. Thus even should the flaps 57 and 58 become loosened, the hand of the operator is still protected by the overlying material including the underlying flaps 51 and 52. The pointed tongue 48 is brought up through the apex of the notch 59 and bent back upon itself and adhesively secured to the outer surface of the fourchette at the apex of the notch adequately to close the space between the middle and third fingers of the glove.

As can be seen from Fig. 7, the fourchette 56 is somewhat larger than the fourchette 50 so that its margins overlap the margins of the smaller fourchette. Thus the portion 60 overlaps the portion 54 so that it may be adhesively secured to the outer trunk portion 38. Because of this arrangement the adhesion is between the outer or thin material wherein it is more effective.

In continuing the construction of the glove the inner thumb 65 is secured to the outer thumb 70, with the margins of the latter again overlapping the margins of the former, and the thumb is folded to bring the portions 73 and 75 together (with the portions 68 and 69 of the inner thumb being, of course, therebetween) and adhesively secured together with the flap 75 extending over and being secured to the portion 73. Again the adhesion is between the portions of the outer ply, that is between the portions of the thinner material. The base portions 71 and 72 of the outer thumb are then secured to the palm of the glove surrounding the slits 45 and the flaps, such as the flaps 80, 81 and 82 formed by those slits, are adhesively secured to the inner surface of the thumb. Thus a thorough protection of the thumb area is provided.

Preferably when the protective portion of the glove has been completed a cloth liner is inserted into the interior of the glove to provide a more comfortable hand covering and the entire glove may be inserted into an outer leather hand covering or glove so as to provide a neater appearance and to give added protection for the adhering seams of the protective covering and also to provide a wear surface which may be readily replaced by a new leather outer covering.

It will be noted that the glove has been constructed entirely in the absence of stitching which would create holes permitting leakage of X rays therethrough and no stitching need be employed during the construction of the glove. Furthermore, the principal parts of the glove are adhesively secured together, with the adhesion being between the outer ply of all parts of the glove which, as previously described, acts not only as a protective material but also is one which is more easily so secured together. Obviously the adhesion between overlapped portions of the glove may be by means of rubber cement, glue or any means other than stitching for securing the parts together.

While the invention has been shown and described in an exemplary embodiment, no undue limitations are to be construed from the specific description thereof but rather the invention is to be construed in accordance with the appended claims.

We claim:

1. A protective glove construction comprising an integral one piece two ply trunk of material opaque to X rays having opposed margins, said trunk being folded upon itself with one marginal edge of the trunk overlying the portion of the trunk adjacent but spaced from the other marginal edge of the trunk and with said other marginal edge overlying the portion of the trunk adjacent but spaced from said one marginal edge to form a portion of a glove having an overlapped multiple thickness seam along one edge thereof, with said portions of the trunk

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being adhesively secured together in the absence of stitching.

2. A protective glove construction comprising an integral one piece two ply trunk of material opaque to X rays having palm and back finger covering parts and provided along the margin of one of said parts with a plurality of integral flaps, said trunk being folded upon itself with one marginal edge of the trunk overlying the portion of the trunk adjacent but spaced from the other marginal edge of the trunk and with said other marginal edge overlying the portion of the trunk adjacent but spaced from said one marginal edge to form a portion of a glove having an overlapped multiple thickness seam along one edge thereof, with said portions of the trunk being adhesively secured together in the absence of stitching and with the flaps on said one part overlying and being adhesively secured to the corresponding opposite margin of the other part.

3. A protective glove construction comprising an integral one piece two ply trunk of material opaque to X rays having palm and back finger parts and provided along the margin of one of said parts with a plurality of integral flaps, said trunk being folded upon itself with one marginal edge of the trunk overlying the portion of the trunk adjacent but spaced from the other marginal edge of the trunk and with said other marginal edge overlying the portion of the trunk adjacent but spaced from said one marginal edge to form a portion of a glove having an overlapped multiple thickness seam along one edge thereof, with said portions of the trunk being adhesively se-

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cured together in the absence of stitching and with the flaps on said one part overlying and being adhesively secured to the corresponding opposite margin of the other part, a plurality of intersecting slits in the palm of the trunk and defining a plurality of flaps therein, and a thumb portion adhesively secured to the exterior surface of the portion of the palm surrounding the slits with the flaps defined thereby being adhesively secured to the interior surface of the thumb portion.

4. A protective glove construction comprising a trunk of material opaque to X rays having a palm portion, a plurality of intersecting slits in the palm portion and including a relatively long slit extending diagonally of the palm portion, a cross slit across and intersecting the bottom of the long slit, a second cross slit across and intersecting the top of the long slit, and a pair of arcuate slits intersecting and extending away from the second slit, said slits defining a plurality of flaps in said palm portion, and a thumb portion adhesively secured to the exterior surface of that part of the palm portion surrounding the slits with the flaps defined thereby being adhesively secured to the interior surface of the thumb portion.

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