April 7, 1936. W. HERBRUCK 2,036,413

FORMED GLOVES

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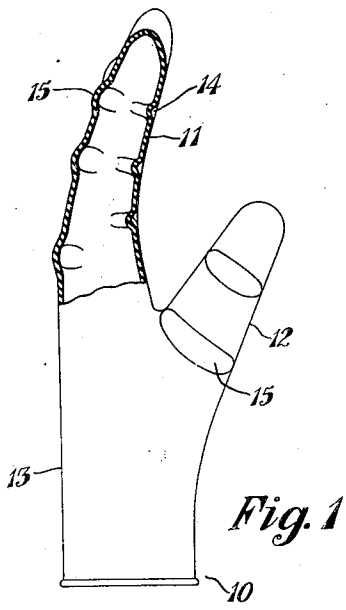


Fig. 1

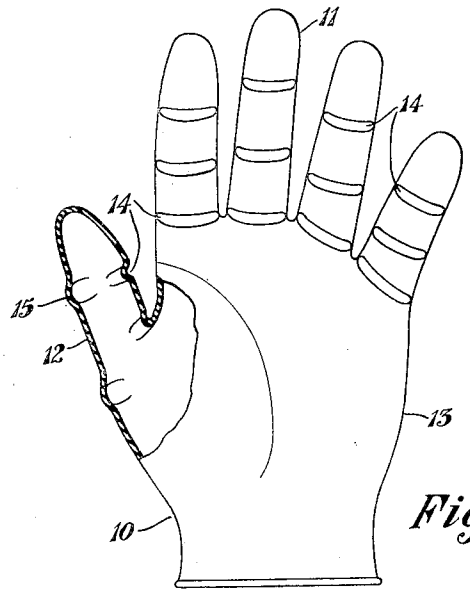


Fig. 2

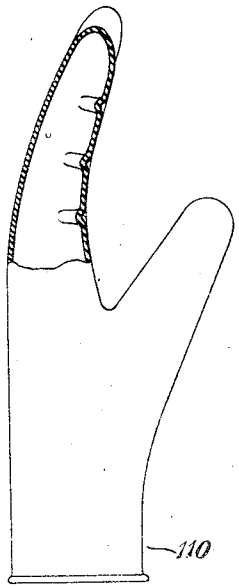


Fig. 3

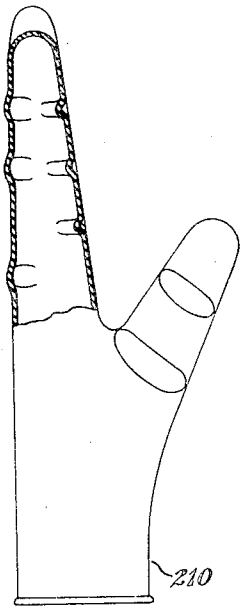


Fig. 4

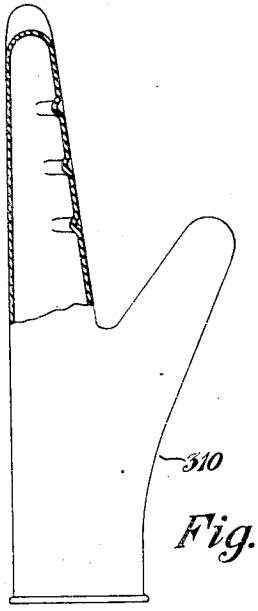


Fig. 5

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FORMED GLOVES

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2 Claims. (Cl. 2—168)

My invention relates generally to formed gloves, and more particularly to formed preferably one-piece gloves which are made of rubber which has been processed either from the solid or latex state, or of a compound or compounds including rubber, or which are made of any rubber-like or elastic composition, or of rubber or elastic cloth.

Gloves made of the foregoing materials are used for many purposes, including among others: for insulating the hands of the wearer from electric currents, particularly high voltage currents; for protecting the hands of the wearer from tissue destroying solutions, such as acids; for protecting the hands of the wearer engaged in occupations requiring the grasping and manipulating of tools, utensils and other objects; and more generally for protecting the hands of the wearer wherever desirable for practical or other reasons when the hands must be introduced into gaseous atmospheres, and/or liquid bodies, and/or when the hands must handle or manipulate solid substances or elements.

In using or manipulating a hand protected by a usual glove made of rubber or other similar material as aforesaid, which may be generically termed an elastic glove, there is not only a pressure or strain set up in the material of the glove in the act of bending the fingers or thumb of the hand and thus of the glove, but there is also a continued strain in holding the fingers or thumb in any bent or curved position, after such position has once been attained.

Consequently in the use of usual elastic rubber gloves, one of the greatest disadvantages is the fact that the continued use thereof causes great fatigue in the fingers and hands of the user.

Moreover, in an ordinary elastic rubber glove, the fingers and thumb at the palm side of the glove are straight tapered or uniformly curved, and when any finger or thumb is bent, there is a compression or irregular folding of excess rubber on the palm side of the finger or thumb, particularly in a glove of the heavier weights, and the rubber of the glove wears more quickly at the irregular folds, and it is not only dangerous for wear or weakness to occur at these irregular folds on the palm or grasping surface of the glove, but the life of the glove is also limited because of the creation of the compressed irregular folds.

Accordingly, the objects of the present invention include the provision of an improved formed elastic glove particularly adapted to be made of rubber preferably in one piece, and in which strains in the material of the formed glove itself are minimized during the manipulation or use thereof, and also which minimizes strains upon the hand of the user without in any way impairing the sensitiveness of the fingers in a glove of any particular wall thickness, and with a consequent increased life of the glove.

The foregoing and other objects are attained by the gloves, parts, improvements, combinations, and sub-combinations, which comprise the present invention and which are particularly and distinctly pointed out and set forth in the appended claims forming part hereof.

The nature of the improved formed glove of the present invention may be stated in general terms as including preferably a one piece formed elastic glove preferably made of rubber which has been processed either from the solid or latex state.

The improved formed glove may also be made of a compound or compounds including rubber, or of any rubber-like or elastic composition, or of rubber or elastic cloth, it being understood that the elasticity of the material of a glove made of rubber or similar material is the inherent cause of the above set forth objections to usual elastic gloves overcome by the present invention.

On the inner or palm side of the glove, preferably each finger thereof and the thumb is a one-piece portion of the preferably one-piece glove and is formed preferably at each joint with an outwardly opening transverse groove, and the fingers and thumb are preferably formed in a bent or longitudinally curved shape to simulate the natural unstrained position of the human hand.

Each outwardly opening transverse groove is formed in the preferably elastic material of the glove and has sides and ends.

If desired, however, the fingers and thumb may be formed longitudinally straight tapered and provided with the transverse grooves.

The fingers and thumb of the improved glove are also preferably provided on their outer or back sides with an outwardly protruding bulge at each knuckle of the fingers and thumb.

By providing the transverse grooves on the palm sides of the fingers and thumb of the glove as aforesaid, preferably with opposite bulges on the back sides thereof, the fingers and thumb of the improved glove are very easy to bend and manipulate because the rubber in the groove takes up when the fingers and thumb of the glove are bent in substantially the same manner as does the skin of the fingers and thumb of the

hand, the elastic material of the grooves uniformly folding upon itself.

The provision of the outer bulges further facilitates the bending of the fingers and thumb and makes it easier to maintain the same in a bent or curved position in use.

Several preferred embodiments of the improved formed elastic glove of the present invention are illustrated in the accompanying drawing forming part hereof, in which

Figure 1 is a side elevation view of one embodiment of the improved glove with curved fingers and thumb and with transverse grooves and bulges on each finger and thumb, portions of the index finger of the glove being broken away and illustrated in section to more clearly illustrate the formation of the same;

Fig. 2, a palm side view of the glove of Fig. 1, with portions of the thumb being broken away and illustrated in section to more clearly illustrate the formation thereof;

Fig. 3, a view similar to Fig. 1, illustrating another embodiment of the improved glove with curved fingers and thumb, and with transverse grooves only on the palm sides of the fingers and thumb, and without bulges;

Fig. 4, a view similar to Figs. 1 and 3, illustrating another embodiment of the improved glove hereof, in which the fingers and thumb are straight tapered, and in which the fingers and thumb are provided with transverse grooves and bulges; and

Fig. 5, a view similar to Figs. 1, 3 and 4, illustrating still another embodiment of the improved glove hereof, having straight tapered fingers and thumb, and transverse grooves on the fingers and thumb but without bulges.

Similar numerals refer to similar parts throughout the several views.

One embodiment of the improved formed elastic glove of the present invention is indicated generally by **10** in Figs. 1 and 2, and consists as illustrated of a one piece rubber glove having longitudinally curved finger members **11** and a thumb member **12**, whose shape closely approximates the natural position and conformation of the fingers and thumb of a relaxed hand.

The finger and thumb covering members **11** and **12**, which may otherwise be termed elongated covering members, extend from a body portion **13** of the glove which provides a covering for the palm proper, the back thereof, and usually for the wrist of the hand of the wearer.

On the palm side of each of the finger covering members **11** and of the thumb covering member **12** of the glove **10**, a plurality of outwardly opening transverse bending grooves **14** are formed, each bending groove **14** being positioned to overlay one of the bending creases normally occurring opposite each ojint on the palm side of each finger and thumb of the hand of the wearer of the glove. The bending grooves **14** being formed in the elastic material of the glove, each has sides and ends as best shown in Fig. 2.

The back side of each finger covering member **11** and thumb covering member **12** of the glove **10** is preferably provided with outwardly protruding knuckle bulges **15**, each knuckle bulge **15** being located opposite one of the bending grooves **14**.

The improved glove **10** having the curved finger covering members **11** and curved thumb covering member **12** with palm side bending grooves **14** and back side knuckle bulges **15**, may be bent and otherwise manipulated by the hand of the wearer with a minimum muscular force or strain, either in bending or manipulating the glove or maintaining the same in a bent position, the bending of the fingers and thumb occurring regularly on the grooves **14**, and the glove **10** as thus constructed is easy to manipulate even when the wall **16** thereof is relatively thick as in the case of an electrician's glove.

The improved glove **110** of Fig. 3 is generally similar to the glove **10**, but is not provided with knuckle bulges.

The glove **210** of Fig. 4 is provided both with bending grooves and knuckle bulges, but the finger and thumb covering members thereof are straight tapered.

The glove **310** of Fig. 5 has straight tapered finger and thumb covering members having bending grooves but without knuckle bulges.

The embodiment **10** of the improved glove is the preferred form, but any of the illustrated embodiments of the glove provide the advantage of the bending grooves in facilitating manipulation of the gloves and increasing the life thereof.

I claim:

1. A glove having formed elastic elongated covering members, one of the covering members having on the palm side thereof an outwardly opening transverse bending groove and having at the back side thereof an outwardly protruding knuckle bulge, the groove and the bulge being formed opposite each other in the material of the covering member and the groove having sides and ends.

2. A glove having formed elastic finger and thumb covering members, the covering members having on the palm sides thereof outwardly opening transverse bending grooves and having at the back sides thereof outwardly protruding knuckle bulges, the grooves and the bulges being formed in the material of the covering members, each groove being opposite one of the bulges, and each groove having sides and ends.

WENDELL HERBRUCK.