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3,290,695

SAFETY GLOVES

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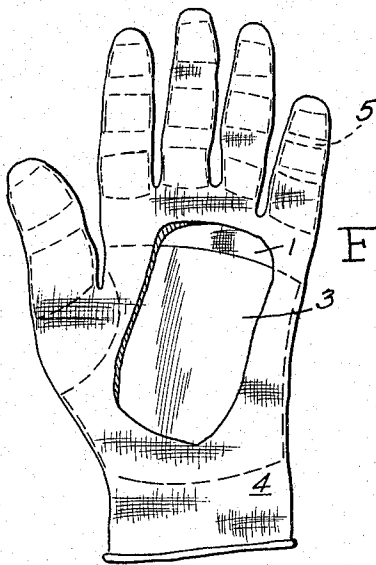


Fig. 1

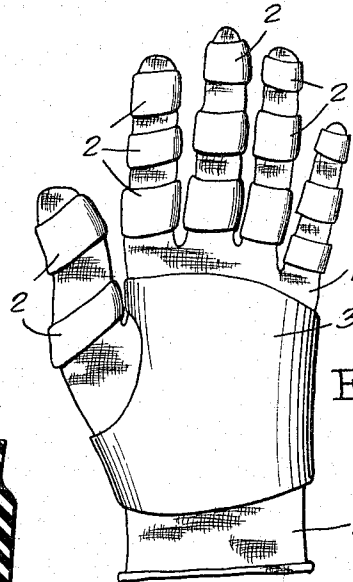


Fig. 2

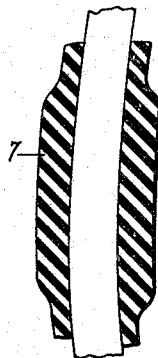


Fig. 8

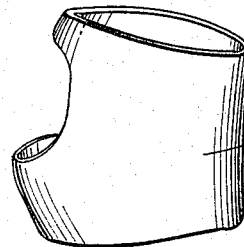


Fig. 3

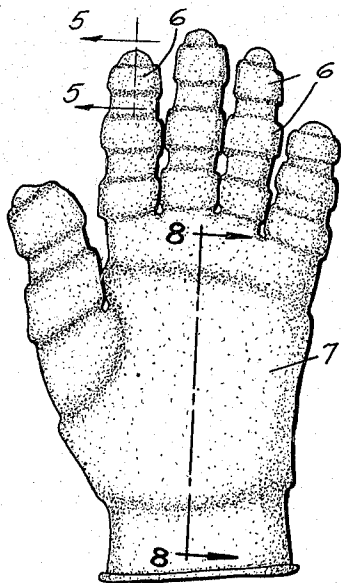


Fig. 4

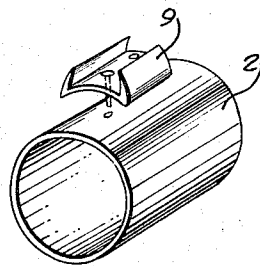


Fig. 6

Fig. 5

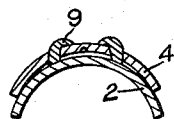


Fig. 7

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## SAFETY GLOVES

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2 Claims. (Cl. 2-161)

The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment to me of any royalty thereon.

This application is a continuation-in-part of copending application for "Safety Gloves," Serial No. 324,148, filed November 15, 1963, and now issued as Patent No. 3,164,841.

This invention relates to gloves and, more particularly, to gloves worn to protect the hands while engaged in work. The glove provided by this invention is designed to reduce injury to the hands caused by the impact of blows to the hand as may occur, for example, when a heavy object falls upon the hand or the hand is struck by a hammer while holding a nail.

A principal object of this invention is to minimize the injury to the hand caused by blows to the hand.

Another object is to reduce such injuries as may occur when the hand becomes engaged in machinery or is caught under a heavy weight or other compressive force.

With the foregoing objects in view, together with others which will appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts, as will be described hereinafter, illustrated in the drawings, and particularly pointed out in the claims.

FIG. 1 illustrates the construction of the glove fitted to a hand with part of the outer covering cut away to reveal the protective piece covering the back of the hand and part of the inner covering;

FIG. 2 illustrates the glove with an embodiment of the glove having no outer covering, showing the placement of the protective sections about the inter-jointal areas of the fingers and the protective piece about the palm, and the hand covering;

FIG. 3 is a view of the protective piece which protects the palm and back of the hand;

FIG. 4 illustrates an embodiment of the glove fitted to a hand wherein the glove is one piece with integral thickened protective sections about the finger and thumb stalls and integral thickened protective pieces about the palm and back of the hand, both of the same material as the glove;

FIG. 5 is a cross sectional view taken on line 5-5 of FIG. 4 showing the construction of the thickened, integral protective sections;

FIG. 6 is a detailed, exploded view of the protective sections shown in FIGS. 1 and 2, further provided with a clenching means for securing the protective section to the hand covering member;

FIG. 7 illustrates the manner of employing the clenching means of FIG. 6 to join a protective section to the hand covering member; and,

FIG. 8 is a cross-sectional view taken on line 8-8 of FIG. 4 showing the construction of the thickened integral protective piece.

As shown in the drawings, this invention comprises the use of protective sections about the fingers and a protective piece about the hand which are secured to a covering member of the glove or sewn between the inner and outer covering members of the glove, affording protection to the hand and fingers from crushing impacts and blows.

With reference to the drawings and particularly FIGS. 1-3, the invention includes the use of an inner protective covering 1 made of a flexible material such as cloth or pliable plastic which is shaped to conform to the hand and

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fingers. A series of protective sections 2 made from a rather inflexible material, such as a rigid plastic or metal, is placed over the inner covering around the fingers in the inter-jointal areas. A protective hand piece 3, made of the same relatively inflexible material, conforming to the palm and back of the hand with holes for the wrist, thumb, and fingers is placed over the inner covering around the palm and hand. An outer covering 4 made in a manner similar to the inner protective covering 1 to conform to the fingers and hand is placed over the sections 2, the protective hand piece 3, and the inner protective covering 4. The protective sections 2 and protective hand piece 3 may be sewn between the inner 1 and outer 4 covering by sewing the inner covering to the outer covering along lines extending laterally around the fingers and hand just above and below the sections and protective piece, as shown at 5 in FIG. 1. The inner and outer glove covering may be constructed in any of several conventional ways.

To illustrate the embodiment of this invention shown in FIG. 2 the protective sections 2 may be secured to a hand covering member by a clenching means as shown in FIGS. 6 and 7, having protrusions, 9, attached to section, 2, by any suitable means. Protective piece, 3, is secured to the hand covering member in a like manner. Protrusions, 9, may also be attached to piece, 3, by any suitable means. Protrusions, 9, extend through the hand covering and are then bent over to clench the hand covering. The protective section in FIG. 6 is shown with protrusion, 9, affixed to the outer edge thereof. Either half of the section can be used alone, or, if the protective section is to completely surround the finger, the section is made as an integral cylinder. A cylindrical piece would preferably have two or more protrusions, 9. Sections, 2, may surround only the top or bottom portions of the fingers, only certain fingers, or sections, 2, may be used without piece, 3, if palm protection is not desired. Piece, 3, may surround only the palm or only the back of the hand, or it may be used independently of sections, 2, if protection is desired for the palm area only. Piece, 3, may be secured to the hand covering through the clenching action of a plurality of protrusions, 9, said protrusions having been attached to the surface of piece, 3. Sections, 2, and piece, 3, may be secured externally to the hand covering member, 1, through the clenching action of a plurality of protrusions, 9, attached to the internal surfaces of the piece and sections, and clenched to the hand covering member, 1.

It can be seen that the structure of this glove affords protection to the hands and fingers of the wearer from injury resulting from blows to the hand and compression of the hand.

Another embodiment of my invention is shown in FIG. 4. In this embodiment the glove is one piece and made of rubber or rubber-like material. The protective finger sections 6 and hand piece 7 are similar to sections 2 and piece 3, but actually constitute integral thickened areas of a homogeneous glove. The thickened areas are located at the inter-jointal areas and at the tips of the finger stalls, and around the palm and back of the hand. The thickened areas provide protection against blows to the hand.

The homogeneous glove of FIG. 4, having protective sections, 6, and protective pieces, 7, may be constructed through the use of a conventional molding process.

If desired the thickened areas may be internally reinforced with metal pieces. The use of reinforcing metal pieces is optional. When internal reinforcing is desired the glove may be constructed through successive dipping of the hand covering with reinforcing plates secured thereto in a conventional manner.

Molding processes adaptable to producing the homogeneous glove described are also well known in the art. The processes, therefore, do not constitute part of this in-

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vention. Conventional processes may include adapting a model to the particular configuration desired, constructing a mold therefrom, and forming the gloves herein described from said mold according to the methods of U.S. Patents Numbers 2,810,161 and 2,599,573.

It will be apparent that other adaptations and modifications may be made without departing from the scope of my invention.

I claim:

1. A safety glove comprising a homogeneous hand covering member, said hand covering member having stalls for the fingers and thumb of a wearer, and having a plurality of relatively thickened, inflexible, integral, protective sections of like material surrounding all the inter-jointal areas and the tips of said finger stalls for protecting the fingers and thumb of the wearer, and said hand covering member further including a protective piece integral with said hand covering member and constructed of the same inflexible material as said protective sections, said protective piece surrounding the palm and back of the hand covering member with the protective piece constituting an additional thickened part of the entire hand covering member.

2. A safety glove comprising:

(a) a hand covering member having stalls for the fingers and thumb of a wearer;

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(b) a plurality of relatively inflexible, protective sections surrounding all the inter-jointal areas and the tips of said finger stalls for protecting the fingers and thumb of the wearer;

(c) a protective piece constructed of the same inflexible material as said protective sections, said protective piece surrounding the palm and back of the hand covering member;

(d) clenching means separately securing said protective sections and said protective piece to said hand covering member comprising a plurality of protrusions, said protrusions being separately attached to said protective sections and to said protective piece, and clenched to said hand covering member.

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