June 21, 1960 L. S. MICHAEL 2,941,214

GLOVE DEVICE USABLE WITH ARCTIC TYPE HANDWEAR FOR HANDLING TOOLS

Filed July 23, 1959

Fig. 1.

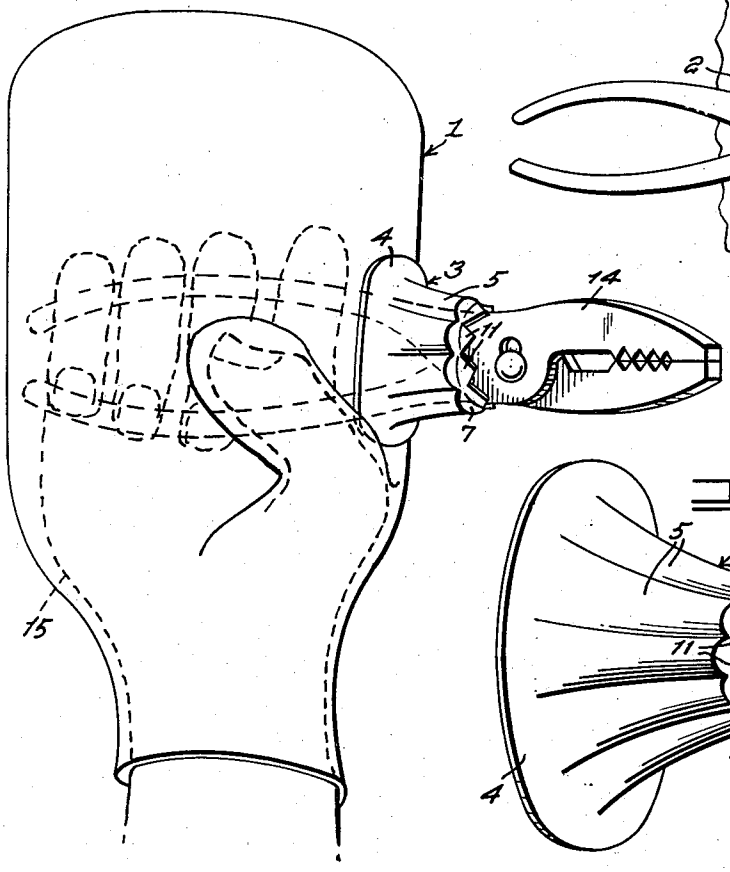


Fig. 2.

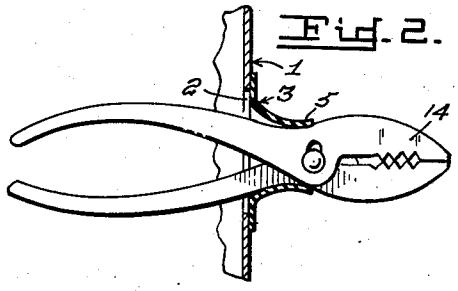


Fig. 3.

Fig. 5.

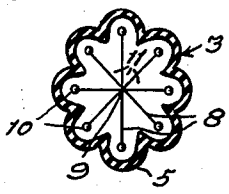


Fig. 4.

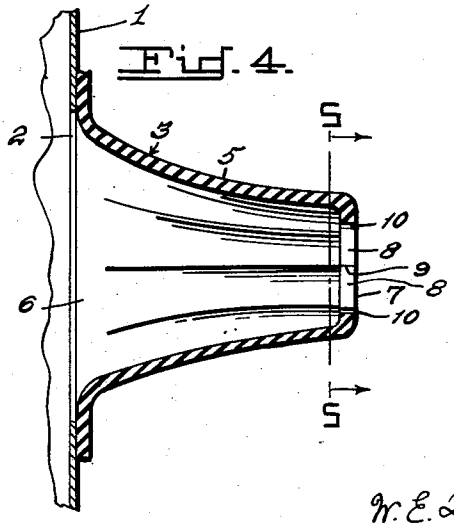
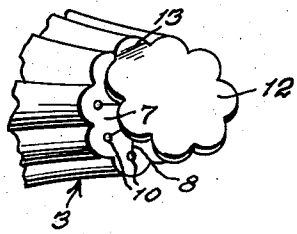


Fig. 6.



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GLOVE DEVICE USABLE WITH ARCTIC TYPE HANDWEAR FOR HANDLING TOOLS

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4 Claims. (Cl. 2—161)

(Granted under Title 35, U.S. Code (1952), sec. 266)

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

This invention relates to a device for facilitating the manipulations of tools by personnel wearing arctic-type handwear and more particularly to a mitten in which is inserted a grommet that will retain its elasticity under extreme low temperature conditions such as is experienced in the arctic climes.

Arctic mittens are clumsy at best and are not adapted for handling small tools with dexterity and it is more often necessary to remove the mitten before handling a tool, thus exposing the hand to frostbite, not to mention the agony of placing the bare hand on cold steel handles at very low temperatures.

Many mittens have been heretofore designed to enable the wearer to use a small tool without the removal of a mitten. Such mittens either employ slots or have extra strips of material sewn on the outside of the mitten to hold a tool. Neither of these methods were practical. The slots allowed cold air to enter the mitten or else a part of the hand was exposed on the outside of the mitten, while extra strips sewn on the mitten did not allow the wearer to grasp the tool with the bare hand, and was about as clumsy a means as without their dubious aid.

The present invention is intended to overcome the disadvantages heretofore experienced with mittens or similar handwear for using small tools in cold climes and to provide a mitten that will keep the hand warm at all times, and employs the use of a grommet which is attached to the wall of the mitten at an expedient location and through which a small tool may be inserted and will stretch snugly around the tool to keep out cold air and close upon withdrawal of the same.

The grommet per se may be fabricated from a material possessing sufficient elasticity at extremely low temperatures such as is found in many types of silicone rubbers.

It is therefore a primary object of this invention to provide an article of handwear having an elastic grommet attached to the wall thereof to facilitate the manipulation of small tools without removal of the handwear.

It is another object of the invention to provide an elastic grommet adapted to stretch snugly about the inserted tool yet to snap back to its original shape upon the removal of the tool therefrom.

It is a further object to provide a means to keep cold air from entering the handwear while using a small tool inserted through the wall thereof.

It is a still further object to provide a grommet that will stretch to snugly fit about a variety of small tools as screw drivers, pliers, etc.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawing, it being understood, however, that the invention is not limited by the specific illustration or description but that such illustration and description constitutes a preferred embodiment of the invention.

In the drawing:

Fig. 1 illustrates an arctic mitten with a grommet of the invention and a pair of pliers inserted therethrough to show the manner in which the tool may be used without removal of the mitten from the hand of the wearer,

Fig. 2 is a cross section taken through the grommet and pliers,

Fig. 3 is a perspective view of the grommet per se,

Fig. 4 is an enlarged cross section taken through the grommet, the tool being removed,

Fig. 5 is a cross section taken along line 5—5 of Fig. 4 and looking in the direction of the arrows, and,

Fig. 6 is a fragmentary view in perspective of the forward portion of a modified form of grommet having a flap for further exclusion of cold air.

Referring more particularly to the drawing, 1 indicates generally a mitten of the arctic type in which there is an opening 2. An elastic grommet indicated generally by 3 is applied over opening 2 and may be cemented to the mitten fabric or attached by any suitable means such as stitching, etc. Grommet 3 is of a generally frusto conical shape and defines a flanged rearward portion 4 and a forwardly tapering fluted portion 5. Grommet 3 is hollow and is provided with an open rearward end 6 and a closed front planar wall 7 which is provided with radial slots 8 which radiate from a centrally located point 9 and terminate in relief openings 10, forming triangular tongues 11.

For further protection of the hand of the mitten wearer, a flap 12 may be incorporated on the front planar wall 7 as is best seen in Fig. 6. Flap 12 is of the same material as the grommet 3 and may be formed by transversely slicing through a substantial portion of the forward end of the grommet 3 to a point leaving an integral uncut portion 13, so that it will normally lie over openings 10 and slots 8.

The grommet 3 is applied over an opening 2 formed at any expedient location in the wall of a mitten or similar handwear 1. The flange 4 may be cemented, stitched or secured to the fabric of the mitten 1 by any other suitable means (not shown). The assembly is now ready for use. When it is desired to use a small tool, (a pair of pliers 14 is illustrated in Figs. 1 and 2 by way of example) it is inserted through the opening 2 in the mitten and through the grommet 3 and then out through the front planar wall 7. As the tool is inserted through the grommet 3, and planar wall 7, the fluted portion 5 will expand and the tongues 11 formed by slots 8 will be pushed outwardly and forms a comparatively snug fit about the contour of the tool, as best seen in Fig. 1. The hand of the wearer can grip the handle of the tool 14 inside the mitten 1 as also seen in dotted lines in Fig. 1. Upon withdrawal of the tool 14, the entire grommet 3 will resume its original shape as is shown in Fig. 3. Relief openings 9 and 10 prevent tearing of the grommet material during stretching by the insertion of the tool therethrough.

It is to be understood that the form of the invention herewith shown and described, is to be taken as a preferred example of the same, and that various changes in the shape, size and arrangements of parts may be resorted to without departing from the spirit of the invention, or scope of the subjoined claims.

What is claimed is:

1. Means to facilitate manipulation of small tools, comprising a mitten having an opening therein, a hollow elastic grommet including a flanged rearward portion secured to said mitten and about said opening, and a generally frusto-conical fluted portion integral with and

extending forwardly from said flanged portion, and terminating in a planar wall, there being a series of radial slots piercing said planar wall, each said slot radiating from a common point located centrally of said planar wall and terminating in a relief opening and defining a series of triangular tongues having their apexes lying in said common point.

2. A device for permitting a wearer of an article of handwear to manipulate a tool without the removal of said handwear, there being an opening provided in said handwear and disposed at an expedient location with respect thereto, consisting of a hollow elastic grommet defining a generally frusto-conical fluted portion having a planar forward wall and a rearward integral flange, said flange adapted to be secured to the outer surface of said handwear and about said opening, said planar forward wall being pierced with a series of symmetrically disposed diametric slots, said slots intersecting one another at a common point disposed centrally on said planar forward wall and terminating at each of their ends in a relief opening, said opening at each end of said slots being disposed at a point substantially short of the periphery of said planar forward wall.

3. A device for facilitating the manipulation of a small tool by the wearer of a mitten without the removal of said mitten, there being an opening in said mitten disposed substantially adjacent the thumb portion thereof, said device consisting of a hollow elastic grommet defining a generally frusto-conical member having a longitudinally fluted portion terminating at its base in a flange and at its apex in a planar wall, said flange being secured to said mitten about said opening, said planar wall being pierced by a series of symmetrically arranged and diametrically disposed slots, each of said slots intersecting one another at a common point centrally located in said wall, the material between said slots forming equiangular tongues having their apexes lying in said common point.

4. Means for enabling manipulation of small tools, including a mitten having an opening therein, a resilient grommet to prevent entrance of cold air through said opening comprising a generally frusto-conical, longitudinally fluted member having a flaring base portion defining an annular flange adapted for securement to said mitten and about said opening, said fluted member having a planar wall at its apex, said planar wall lying in a plane disposed at right angles to the longitudinal axis of said fluted member, there being a series of symmetrically arranged slots piercing said planar wall and intersecting one another at a common point disposed centrally of said planar wall and a flap having an identical contour in cross section to said planar wall, said flap being integrally attached at one of its ends to said planar wall and normally adapted to cover said planar wall.

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