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CRUTCH AND CRUTCH ATTACHMENT

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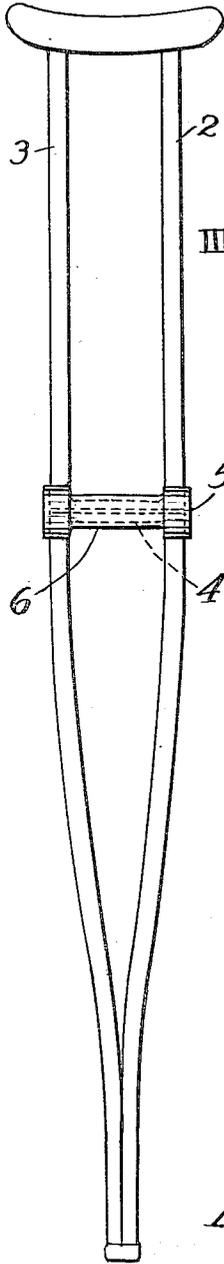


Fig. 1.

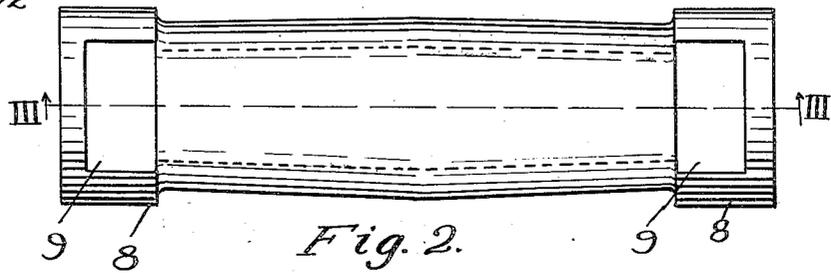


Fig. 2.

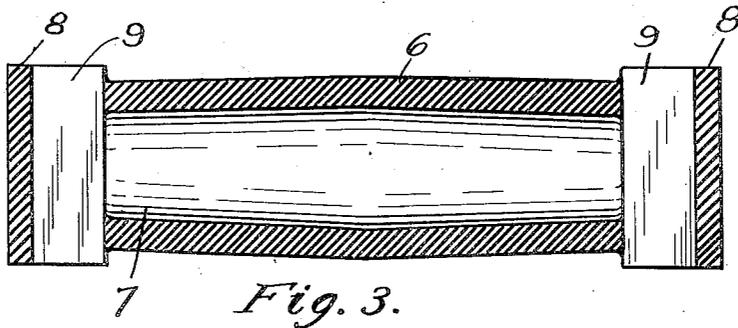


Fig. 3.

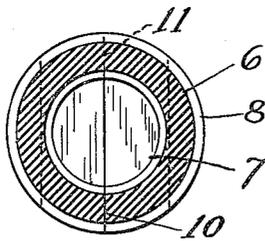


Fig. 4.

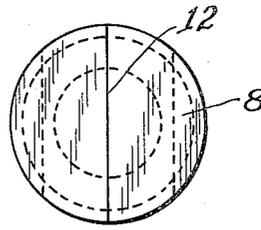


Fig. 5.

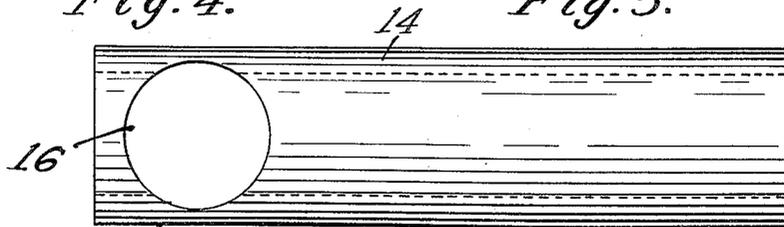


Fig. 6.

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UNITED STATES PATENT OFFICE

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CRUTCH AND CRUTCH ATTACHMENT

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6 Claims. (Cl. 135—51)

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This invention relates to crutches and more specifically to crutch handles and an attachment for crutch handles.

Persons who are required to use crutches need stability in the handles. Any give or movement in the handles is likely to result in a fall or accident. At the same time, their hands are likely to become very sore, blistered and calloused.

The present invention has for its object to provide a crutch handle, or crutch handle attachment which will cushion the strain on the hands, but which will not introduce hazards to the use of the crutch.

To this end the invention provides a sleeve of rubber or like material, such as the so-called synthetic rubbers, which envelopes the cross bar or handle of the crutch, but which is so fixed that it may not rotate and hence lack the expected stability on which the user relies.

My invention may be more fully understood by reference to the accompanying drawings, in which:

Fig. 1 is a side elevation of an otherwise conventional crutch with my invention applied thereto;

Fig. 2 is a top plan view on a larger scale of the sleeve element, per se;

Fig. 3 is a longitudinal section through the sleeve shown in Fig. 2;

Fig. 4 is a transverse vertical section taken substantially centrally of the structure shown in Fig. 2, but showing a slight modification;

Fig. 5 is an end view of the structure shown in Fig. 2 showing another slightly modified form; and

Fig. 6 is a modification of a cushion unit for the handle of a metal crutch of the type where the handle is supported at only one end.

Referring to the drawings, 2 and 3 designate the side bars of a conventional crutch, and 4 is the cross handle, while 5 is the usual rivet or bolt that passes through the handle and side bars, and which holds the cross bar or handle in place. The handle is round in transverse section, and it generally tapers from the ends toward the center, so that the middle is approximately one-eighth inch greater in diameter than the ends.

According to the present invention, the handle is enveloped in a resilient sleeve of a yieldable and compressible material having a thickness sufficient to give an appreciable cushion effect, but not of such thickness as to increase the bulk or diameter too greatly. Material that may be used is soft rubber, or sponge rubber, or resilient and compressible plastic such as is generally

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called synthetic rubber. I shall designate materials of this character as resilient and compressible materials. They must be elastic, so as to stretch and to yield under pressure. A sleeve thickness of the order of from about a quarter to about three-eighths of an inch is preferable.

This rubber sleeve, which is designated generally as 6, has an internal contour corresponding to that of the handle. It is round in cross section and the opening through it tapers from the ends to the middle, so that the internal diameter of the hole is slightly greater at the center than at the ends. However, the hole has a normal opening through it, which while corresponding to the contour of the handle, is slightly smaller in diameter than the corresponding part of the handle, so that the sleeve must be stretched to place it over the handle. This restrains the sleeve from rotation. The hole through the sleeve to receive the handle is designated 7.

Preferably the sleeve has a terminal 8 at each end thereof of slightly increased diameter, and there is a transversely extending oblong hole 9 through this portion, this hole conforming to the shape of the leg portions of the crutch. These legs 2 and 3 are passed through these holes when the crutch is assembled. This further holds the sleeve positively against rotation in the handle, and even holds the handle from turning on the pin 5 as it may sometimes do after the crutches have been in use for a time.

The outside of the sleeve may be contoured to conform to the inside, or it may be cylindrical. I have shown it as being tapered from the terminal portions to the middle.

In applying the sleeve to crutches that are being made new, or which are being repaired, the sleeve is applied to the handle, then the legs or uprights 2 and 3 are slipped through the holes 9 and the handle secured in place. To secure the handle in position on the uprights 2 and 3, it is necessary to pierce the end walls of the terminals 8 for the insertion of the rivet 5, or if desired, preformed openings (not shown) may be provided therein for this purpose. Where it is practical to remove only the handles, the terminal parts may be slit vertically as shown in Fig. 5. When applying the sleeve, the handle is removed from the crutch and the sleeve is slipped onto the handle. Then the handle is replaced and the slit terminals, slit on the vertical line 12, are spread apart so as to embrace and close around the uprights 2 and 3 of the crutch.

If it is not desired to remove the handles at all, the arrangement shown in Fig. 4 may be used.

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In this case the sleeve is made in the same manner as previously described, but it is slit at the bottom throughout its length as indicated at 10, and the terminal portions are slit vertically as indicated at 11. To put the sleeve on the handle, the edges along the slit are spread apart, and the slit terminals all opened out. This enables the sleeve to be fitted over the handle and the uprights of the crutch. The natural resilience of the rubber will close it around the parts which the hand so embraces. Here, as in the other forms, the terminals will aid in holding the cushioned sleeve from rotating. In any of the forms previously described, adhesive may be used to more firmly cement the handles in place. Likewise one or more metal clamping rings may be used around the sleeve near its ends to make it more firm.

In the construction shown in Fig. 6, the arrangement is essentially similar to that hereinbefore described, except that metal crutches are sometimes made with a single round upright post and a handle projecting laterally therefrom and supported at only one end on the post. For this purpose I provide a sleeve such as the sleeve 14, having a terminal portion 15 with a transverse opening 16 therethrough to fit around or embrace the upright post of the crutches. This construction, like the others, is preferably formed as a solid sleeve for use in manufacturing new crutches, but for use on existing crutches, where the user does not want to disassemble the structure, the post-engaging terminal 15 may be slit vertically as explained above in connection with the sleeve 6, or the sleeve can be slit vertically at this terminal, and also lengthwise.

Also while it is preferable to make the handle for a conventional crutch as shown in Fig. 2, the terminal portion for embracing the upright post of the crutch may be provided at only one end, as this will serve to restrain the handle from rotating, although it is less desirable than having such terminal arrangement at both ends.

The relatively thick resilient sleeve, when so immovably fitted to the handle of the crutch, can be grasped with a feeling of security. At the same time it will yield sufficiently so that the hands of the wearer will not become blistered and calloused from using the crutches, and the physical torture which is often noticeable with conventional crutches will be eliminated.

While I have shown and described certain present preferred modifications of my invention, it will be understood that the sleeve may be constructed in various other ways, and that various changes and modifications may be made within the contemplation of my invention.

I claim:

1. A cushion for crutch handles comprising a resilient sleeve of flexible and compressible material having a thickness sufficient to constitute a yieldable pad, the sleeve having an opening therethrough into which the handle of a crutch

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may be fitted, the sleeve having transverse openings at each end through which the side bars of a crutch may pass.

2. A cushion for crutch handles comprising a resilient sleeve of flexible and compressible material having a thickness sufficient to constitute a yieldable pad, the sleeve having an opening therethrough into which the handle of a crutch may be fitted, the sleeve having transverse openings at each end through which the side bars of a crutch may pass, the sleeve being slit longitudinally and the ends of the sleeve being slit vertically.

3. A cushion for crutch handles comprising a resilient sleeve of flexible and compressible material having a thickness sufficient to constitute a yieldable pad, the sleeve having an opening therethrough into which the handle of a crutch may be fitted, the sleeve having transverse openings at each end through which the side bars of a crutch may pass, the ends of the sleeve being slit vertically to enable them to be spread to fit around the uprights of the crutch.

4. A cushion for crutch handles comprising a resilient sleeve of flexible and compressible material having a thickness sufficient to constitute a yieldable pad, the sleeve having an opening therethrough into which the handle of a crutch may be fitted, the sleeve having a transverse opening at one end through which the vertical post of a crutch may pass to hold the sleeve from rotating on the handle.

5. A cushion for crutch handles comprising a resilient sleeve of flexible and compressible material having a thickness sufficient to constitute a yieldable pad, the sleeve having an opening therethrough into which the handle of a crutch may be fitted, the sleeve having a transverse opening at one end through which the vertical post of a crutch may pass to hold the sleeve from rotating on the handle, said terminal being slit vertically to enable it to be fitted about the upright post of a crutch.

6. A cushion for crutch handles comprising a flexible and compressible rubber sleeve adapted to surround the full length of the handle of a crutch, said sleeve having an integral rubber terminal portion shaped to provide spaced side pieces for embracing engagement with opposite sides of the upright post of a crutch to restrain the sleeve from turning on the handle.

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The following references are of record in the file of this patent:

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