G. HIPWOOD.

CRUTCH TIP.

APPLICATION FILED FEB. 21, 1921.

1,429,428. Patented Sept. 19, 1922.

Fig. 3.

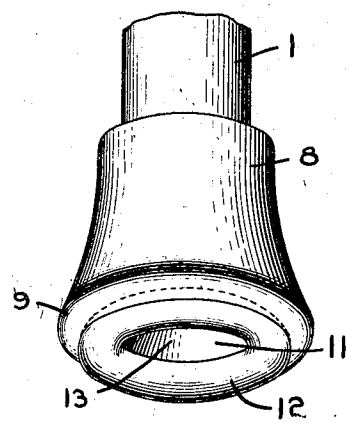


Fig. 1.

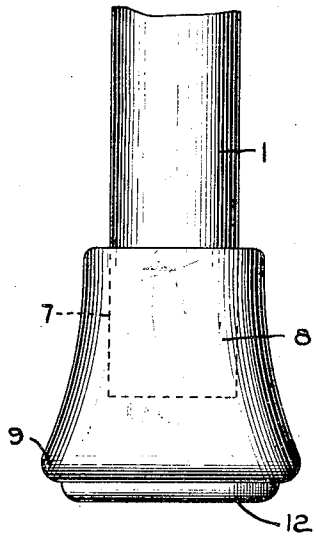
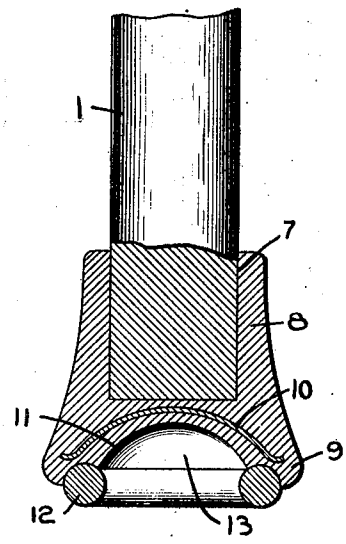


Fig. 2.



Inventor.
George Hipwood
by Heard Smith & Kinnard
Attys.

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UNITED STATES PATENT OFFICE.

GEORGE HIPWOOD, OF NEW YORK, N. Y.

CRUTCH TIP.

Application filed February 21, 1921. Serial No. 446,660.

To all whom it may concern:

Be it known that I, GEORGE HIPWOOD, a citizen of the United States, and resident of New York, county of New York, State of New York, have invented an Improvement in Crutch Tips, of which the following description, in connection with the accompanying drawing, is a specification, like characters on the drawing representing like parts.

This invention relates to crutches and particularly to the tip which is used at the bottom of the crutch body. The object of the invention is to provide an improved crutch tip which will be durable, which is resilient and will therefore absorb the shock resulting from the contact of the crutch with the floor or ground when the crutch is in use, and which is constructed so that it has non-slipping qualities, thereby reducing the danger of slipping when the crutch is used on wet or icy pavements.

These various objects are obtained by making the tip with a hard rubber body having a concave under face and also having a bead of soft rubber secured to its under side and surrounding the concave face. The soft rubber bead constitutes the surface of the tip which comes in contact with the floor, pavement or other support, and the resiliency of this bead not only absorbs the shock but also co-operates with the concavity in the under side of the body to form a vacuum chamber which develops a suction action against the pavement, floor or other support as the crutch is used, thus producing the non-slipping quality.

In order to give an understanding of my invention, I have illustrated in the drawings a selected embodiment thereof, which will now be described after which the novel features will be pointed out in the appended claims.

Fig. 1 of the drawings is a side view of a crutch tip embodying my invention.

Fig. 2 is a vertical sectional view.

Fig. 3 is a perspective view of the tip.

In the drawings 1 indicates the lower end of the crutch body. The tip of the crutch is indicated generally at 8 and it is provided with the usual recess 7 in which the end of the crutch body is received. The body portion of the tip 8 is made of hard rubber and the tip is shown as flared outwardly slightly at its lower end as shown at 9. The under face 11 of the body 8 is concaved as shown and said body has a curved metal plate 10 embedded therein at its lower end and slightly above its concaved under face. The recess 7 which receives the crutch body extends nearly to the curved plate and the later constitutes a reinforcing member which reinforces and strengthens the tip and also distributes the load to the peripheral portion thereof.

The tip is formed on its under side with a bead 12 of soft rubber which extends around the periphery of the tip. The soft rubber portion 12 extends somewhat below the hard rubber portion so that when the crutch is used the soft rubber portion 12 is that which contacts with the floor or pavement. The concave under face 11 and the bead 12 together produce a cavity 13. When the crutch is used and is placed on a floor, pavement or other support and weight is applied, such weight will flatten out the soft rubber bead 12 more or less thus reducing the capacity of the cavity 13 and causing the air to be partially expelled therefrom. The soft rubber bead 12 will accurately fit the surface on which the crutch is received and thus a suction action will be produced in the cavity 13 which will tend to hold the crutch tip firmly to the floor, pavement or other support, thus preventing it from slipping. The bead portion 12 may be secured to the hard rubber body in any suitable way, as for instance by vulcanizing it thereto.

A crutch tip made in this way is durable and the bead 12 furnishes all the necessary resiliency required in a crutch tip. Furthermore the suction action produced is of great advantage as it prevents the crutch from slipping.

The presence of the reinforcing plate 10 is important because it strengthens the rubber body and obviates any danger of the body breaking down at the center above the high point of the cavity 13 where the material is relatively thin.

I claim:

1. A tip element for a crutch comprising a body portion of hard rubber having a shape to fit over the end of a crutch body, said body portion having a concave under face and having a bead of soft resilient rubber permanently secured thereto surrounding the concavity and projecting below the hard rubber body a sufficient distance so that when the tip is supporting a load the bead may give or yield to a considerable extent

before the hard rubber meets the surface on which the tip is supported, whereby the cavity operates as a suction chamber.

2. A tip element for a crutch comprising a body portion of hard rubber having a shape to fit over the end of a crutch body, said body portion having a concave under face and provided at the periphery of the concavity with an annular bead of soft resilient rubber which is permanently secured to the hard body and which projects below the latter for a distance, whereby the cavity functions as a suction chamber.

3. A tip element for a crutch comprising a body portion of hard rubber having a shape to fit over the end of a crutch body, said body portion having a concave under face and provided at the periphery of the concavity with an annular bead of soft resilient rubber which is permanently secured to the hard body and which projects below the latter for a distance, whereby the cavity functions as a suction chamber, said hard rubber body having embedded therein above the cavity a concavo-convex plate.

In testimony whereof, I have signed my name to this specification.

GEORGE HIPWOOD.