G. HIPWOOD.

CRUTCH.

APPLICATION FILED JULY 17, 1916.

1,298,713. Patented Apr. 1, 1919.

Fig. 1.

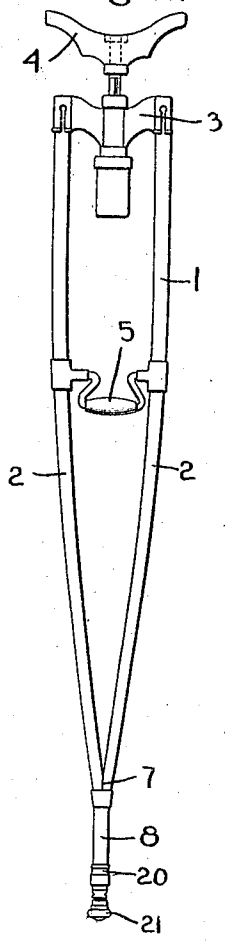
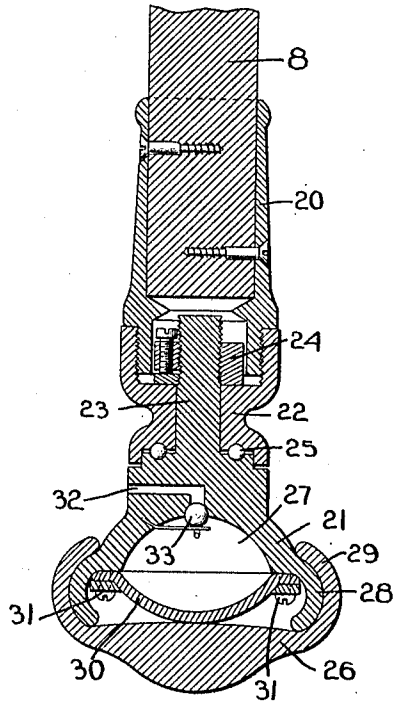


Fig. 2.



Inventor.
George Hipwood
by Heard Smith & Tennant.
Attys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

GEORGE HIPWOOD, OF BOSTON, MASSACHUSETTS.

CRUTCH.

1,298,713. Specification of Letters Patent. Patented Apr. 1, 1919.

Application filed July 17, 1916. Serial No. 109,634.

To all whom it may concern:

Be it known that I, GEORGE HIPWOOD, a citizen of the United States, residing at Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Crutches, 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 has for its object to provide a crutch with a novel foot portion which is swiveled to the crutch so as to permit the crutch to be readily turned and which is also provided with a pneumatic feature thus rendering it resilient.

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.

In the drawings Figure 1 is a view of a crutch embodying my invention;

Fig. 2 is an enlarged sectional view through the foot showing the novel features more in detail.

1 indicates the body of the crutch which may have any suitable or usual construction. It is herein shown as formed with the two side members 2 connected at their upper ends by a head 3 which supports the arm rest 4. 5 is the usual handle. These parts may have any suitable or usual construction. The two side members 2 are brought together at their lower ends, as at 7, as usual in crutches of this construction, and the lower end 8 of the crutch body is provided with a novel foot which is swiveled to the body so as to permit the crutch to be easily turned while it is supporting a weight and which is also pneumatic in its action, thus giving resilient or yielding qualities to the crutch. The lower end 8 of the body is provided with a ferrule 20 to which is swiveled a foot 21. This ferrule is shown as provided with a bearing portion 22 and the foot 21 is provided with a stem 23 which extends up through the bearing portion, said stem having a nut 24 screw-threaded thereto to hold the foot in position. A ball-bearing 25 is interposed between the bearing member and the foot so as to allow the foot to turn freely. The foot is provided with a tip 26 of rubber or similar material, and pneumatic means are interposed between the tip and the foot so as to give a yielding motion. As herein shown, the foot is shaped to present an air chamber 27 and a curved flange 28, and the tip 26 is provided with the rim portion 29 which is stretched over the flange 28. 30 is a diaphragm member, the edges of which are secured to the foot at 31, said diaphragm member forming with the under surface of the foot the closed air chamber 27. The foot is provided with a port 32 leading to the air chamber and which is normally closed by an inwardly-opening valve 33 that will preferably be spring-pressed, said valve preventing the escape of air through the port 32, but allowing air to be admitted. The tip 26 is thicker at its central portion, as shown, and is so constructed that when there is no weight on the crutch, it will be separated slightly from the diaphragm 30. When weight is applied to the crutch, the thickened central portion of the tip will be forced upwardly against the diaphragm 30, thus compressing the air in the chamber 27. The crutch is, therefore, sustained on an air cushion. As the weight is removed from the crutch, the elasticity of the tip 26 and the diaphragm 30 will return the parts to their normal position and the valve 33 will allow any necessary air to enter the chamber to make up for any air which may have escaped when the air was compressed.

The presence of the pneumatic chamber 27 not only provides a pneumatic cushion on which the crutch is supported, but also adds to the pliability of the tip so that the latter can easily accommodate itself to any shaped surface on which the crutch may be resting. The swivel connection between the foot and the crutch is of great advantage because it permits the user of the crutch to turn about the crutch while his weight is supported

thereon without twisting or turning the tip on the floor. This not only makes it easier for the user of the crutch, but also prevents wear on the tip which would necessarily occur by turning the crutch on the floor while it is supporting the weight.

I claim:

In a crutch the combination with a foot portion of a crutch body, of a tip secured to the foot, and a pneumatic cushion device separate from the tip and interposed between the tip and the foot.

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

GEORGE HIPWOOD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."