

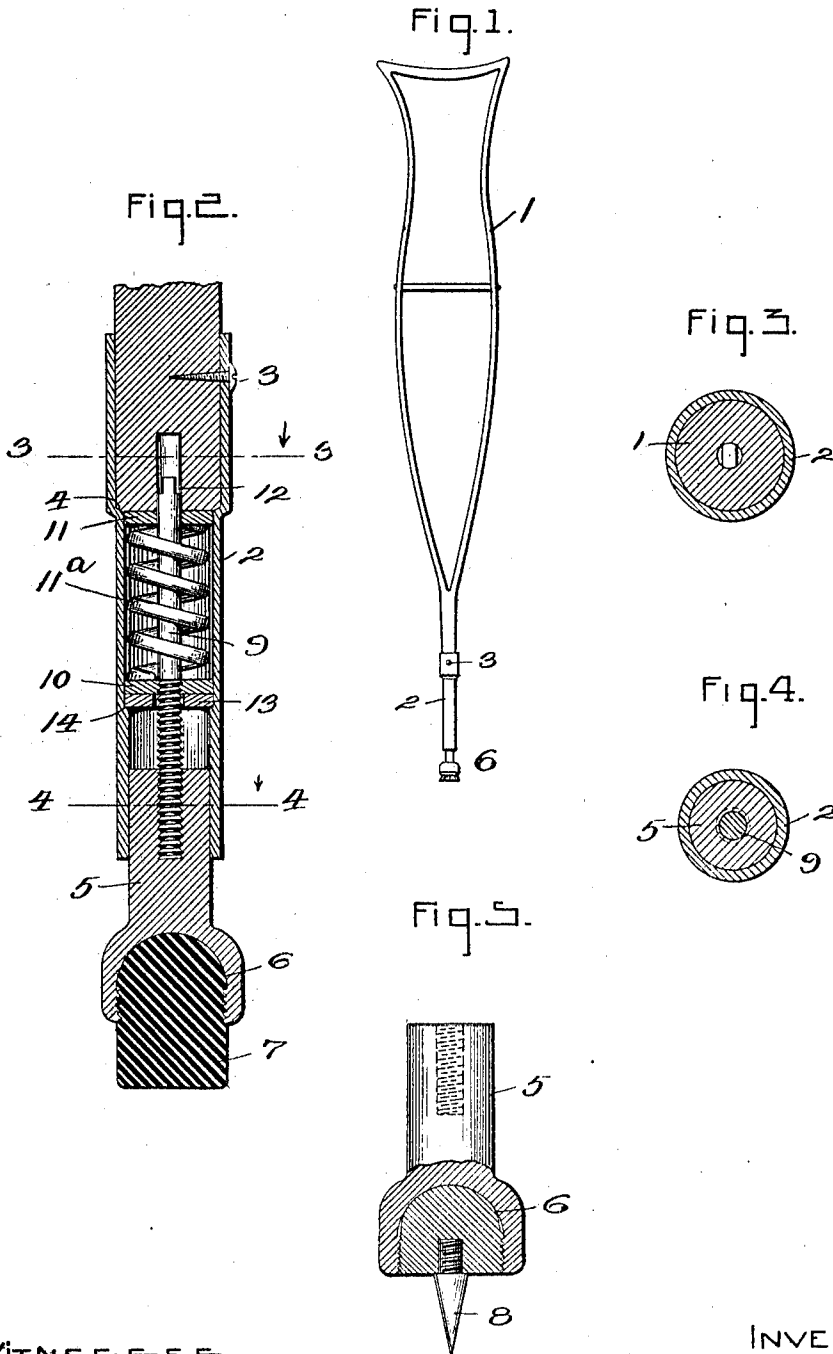
G. A. NEWELL.

CRUTCH.

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1,061,397.

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CRUTCH.

1,061,397.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, GEORGE A. NEWELL, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Crutches, of which the following is a specification.

This invention relates to the class of crutches in which a cushioning spring is interposed between the body of the crutch and the usual non-slipping tip of rubber or other suitable material, in order to render the crutch more comfortable to the user.

The object of the invention is the provision of reliable means for preventing withdrawal or accidental separation of the tip-holder and other parts from the ferrule containing the same.

In the accompanying drawings: Figure 1 is a side elevation of a crutch embodying my invention. Fig. 2 is an enlarged sectional elevation of the lower portion of the crutch. Figs. 3 and 4 are cross sections on the correspondingly-numbered lines in Fig. 1. Fig. 5 is a vertical section of the tip-holder and the tip, showing a modified construction of the latter.

Similar characters of reference indicate corresponding parts throughout the several views.

1 indicates the frame or body of the crutch which may be of any ordinary construction, and 2 is a sleeve or ferrule secured to the lower end of the body by a screw 3 of other fastening and extending a suitable distance below the same, as shown in Fig. 2. The lower portion of this ferrule is preferably reduced to form an internal shoulder 4 which bears against the lower end of the crutch-body, reliably holding the ferrule against upward displacement on the body under the weight of the user.

Fitted in the lower end of the ferrule is a plunger 5 having a socket or holder 6 which receives a suitable non-slipping tip. This tip may consist of the customary block 7 of rubber, as shown in Fig. 2, to be used under ordinary conditions; or a pointed pin or spur 8, as shown in Fig. 5, to be used in the winter season. The tip is removably arranged in the socket 6, so that either the rubber block or the spur may be used as required.

Extending upwardly from the plunger 5 is a screw stem 9 tightly screwed into a

longitudinal opening thereof. This stem carries a collar 10, preferably in the form of a nut which is tightly screwed upon the stem. Surrounding the stem between said nut and a washer 11 bearing against the lower end of the crutch body 1 is a cushion 11^a which preferably consists of a spiral spring, as shown. The screw stem 9 extends axially through this spring and the washer 11 and its upper end plays in a socket 12 in the lower end of the crutch body.

Arranged within the ferrule below the nut 10 is a suitable stop adapted to retain the plunger 5, nut 10 and spring 11^a in place. In its preferred embodiment this stop consists of a ring or washer 13 resting upon an internal upwardly-facing shoulder 14 of the ferrule. The central opening of this washer is large enough to allow the washer to play up and down on the screw stem 9 and without interfering with the vertical movements of the crutch body and the ferrule 2 relative to the plunger 5 and the tip.

In the use of the invention, when the user exerts his weight upon the crutch, the ferrule 2 slides downward on the relatively stationary plunger 5. As the nut or collar 10 is held against vertical movement on the plunger-stem 9, the cushioning spring 11^a is by this action compressed between the lower end of the crutch-body and said nut. The stop-washer 13 in no way interferes with this cushioning action; but being located underneath the nut of the screw stem 9, it prevents withdrawal or separation of the stem and the plunger 5 from the ferrule, thus reliably retaining these parts as well as the cushioning spring in the ferrule.

Obviously, the several parts are assembled within the ferrule before it is secured to the crutch-body. In doing this, the nut 10 is screwed upon the stem 9, to the upper extremity of its screw thread; the stem is next passed through the washer 13, previously placed in the ferrule, and the plunger is then tightly screwed upon the stem by turning the plunger and holding the stem against rotation by a wrench applied to its flat sided upper end. Finally the spring 11^a and the upper washer 11 are dropped into the ferrule over the stem and the ferrule is secured to the crutch.

The plunger together with its stem and

the screw nut or collar 10 are free to rotate independently of the ferrule and the crutch-body, and the tip 7 does not therefore take part in any turning or twisting movement of the crutch which may be given to it by the user. It follows that grinding of the tip by contact with the floor or walk is prevented, thus obviating unnecessary wear of the tip and prolonging its life.

10 I claim as my invention:

1. The combination of a crutch body, a ferrule secured to said body and extending below the same, a plunger fitted in the lower portion of the ferrule and having a screw threaded opening, a screw stem engaging said opening and having a flat-sided upper end, a collar secured to said stem, a cushioning spring interposed between said collar and the lower end of the crutch body, and means for limiting the downward movement of said collar in the ferrule.

2. The combination of a crutch-body, a ferrule secured to said body and extending below the same, a plunger fitted in the lower portion of the ferrule and having an upwardly-extending stem, a collar carried by

said stem and held against vertical movement thereon, a cushion interposed between said collar and the lower end of the crutch-body, the ferrule being provided between said collar and the upper end of said plunger with an internal upwardly-facing shoulder, and a stop-washer resting on said shoulder, said plunger-stem passing through said washer.

3. The combination of a crutch-body, a ferrule secured to said body and extending below the same, a plunger fitted in the lower portion of the ferrule and having an upwardly-extending screw stem, a nut applied to said stem, a cushion arranged in the ferrule between said nut and the lower end of the crutch-body, the ferrule being provided below said nut with an internal upwardly-facing shoulder, and a stop-washer resting on said shoulder.

Witness my hand this 4th day of November, 1912.

GEORGE A. NEWELL.

Witnesses:

C. F. GEYER,

E. M. GRAHAM.