J. C. HOVER.

CRUTCH.

APPLICATION FILED APR. 30, 1914.

1,127,893. Patented Feb. 9, 1915.

Fig. 1.

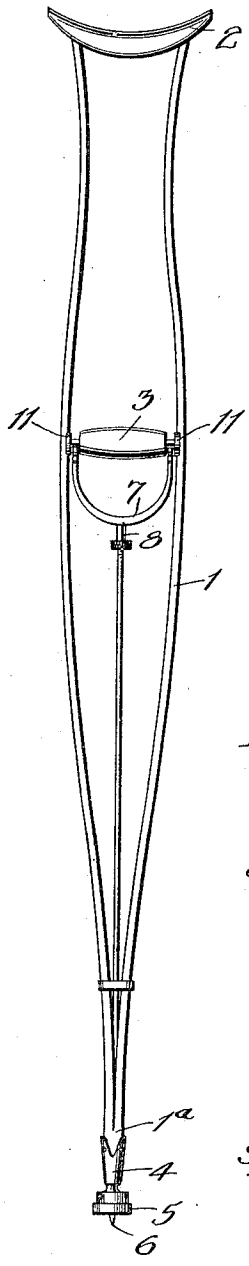


Fig. 2.

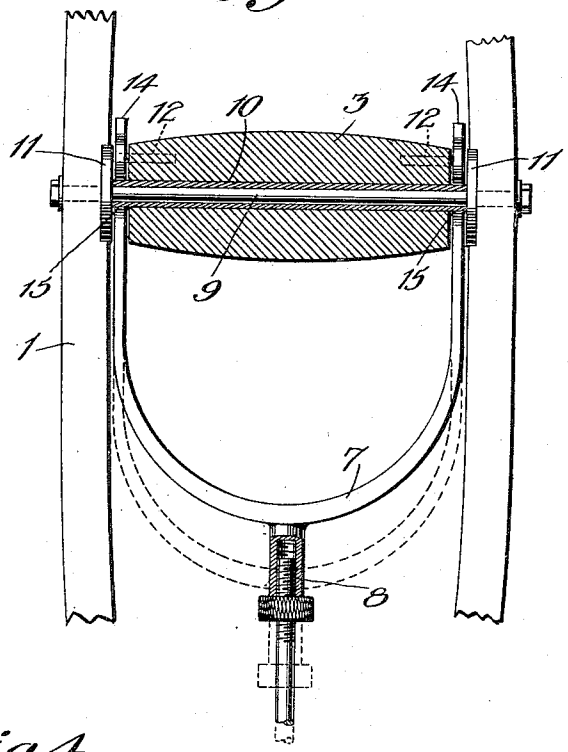


Fig. 4.

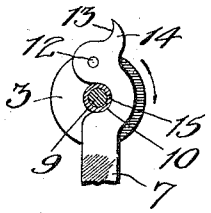


Fig. 5

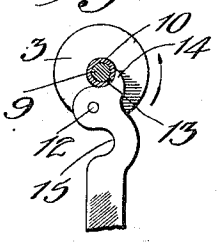
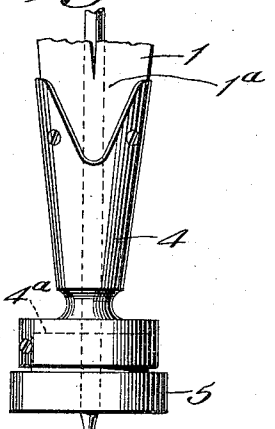


Fig. 3.



Witnesses

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CRUTCH.

1,127,893. Specification of Letters Patent. Patented Feb. 9, 1915.

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To all whom it may concern:

Be it known that I, JOHN C. HOVER, a citizen of the United States of America, and resident of Bellefontaine, in the county of Logan and State of Ohio, have invented certain new and useful Improvements in Crutches, of which the following is a specification.

This invention relates to crutches having prods or spikes adapted to be protruded beyond the end of the crutch when necessary to prevent slipping and to be retracted within the crutch when not needed, or when desired to avoid injury to a surface upon which the crutch is used.

The object of the invention is to provide an improved construction of crutch of this type.

One feature of the invention consists in providing means for protruding and retracting the prod, combined with a seat or rest through which the load is transmitted directly from the handhold to the prod when the latter is in use; such means also embodying an attachment for limiting the movement of the handhold which protrudes the prod.

The invention will be fully understood upon reference to the accompanying drawing, in which—

Figure 1 is a side elevation of a complete crutch embodying the several features of the present invention; Fig. 2 is a detail view of the handhold and coöperating parts on an enlarged scale; Fig. 3 is a detail view of the lower end of the crutch, with the prod, the ferrule and the elastic foot piece; Figs. 4 and 5 are detail views showing two positions of the actuating connection through which the handhold projects and retracts the prod.

1 represents the branched staff of a crutch of standard construction having the usual shoulder piece 2, together with a handhold 3, ferrule 4 and elastic foot piece 5.

6 represents a prod mounted to move longitudinally in the crutch so as to protrude or retract its lower end relatively to the end of the crutch; and 7 a yoke or stirrup adjustably connected to the prod in any suitable manner, as for instance by threaded end and socket connection 8, and adapted to transmit movement from the handhold to the prod.

No novelty is claimed in the parts thus far described, broadly considered.

The handhold 3 is mounted upon a pintle with freedom of rotation; said pintle preferably comprising a through-rod 9, and a sleeve 10 drawn tightly into abutment against the washers 11, so as to permanently space the branches of the staff and leave the handhold without undue friction in turning. The yoke 7 is connected to the ends of the handhold 3 through the medium of eccentric pins 12, so that the rotation of the handhold develops movement in the yoke and in the prod. The ends of the yoke are further provided with thrust bearings 13, which are brought immediately beneath the pintle of the handhold, when the latter is rotated to project the prod; said yoke being also provided at least at one end, and preferably at each end with an arresting finger 14 that brings up against the pintle when the prod is extended, so as to retain the bearing 13 in position to receive the load directly from the handhold when the prod is in use. The yoke ends are further provided with recesses 15 to receive the pintle and permit the handhold to rotate upward a full half-circle and leave the yoke and prod in the intermediate plane of the crutch when the prod is withdrawn.

The prod, as well as its connection with the yoke, is rigid except for the inherent resiliency of the metal so that there is some flexing in moving it from one position to the other, and it still exerts some elasticity when at either limit of its movement, so that it retains the handhold in either position to which it may be moved and assists in keeping the thrust bearing 13 beneath the pintle.

The lower end of the prod preferably has an accurately fitting elongated bearing in the end 1^a of the staff, as well as in the ferrule 4 and foot piece 5; moreover the foot piece is preferably entered into its seat 4^a of the ferrule under some compression, so that it fits tightly around the prod and provides an effective packing against the entrance of water or moist dirt, which would interfere by freezing or otherwise with the free operation of the prod. It is very important to avoid such interference, because of the frequent desirability of shifting the position of the prod so as to

avoid using it when not needed, and the necessity of withdrawing it when using the crutch upon indoor surfaces where it is important to avoid injury to the surface.

I claim:—

1. In a crutch, a protruded and retracted prod, a handhold, a pintle upon which said handhold is mounted to rotate and through which load imposed upon the handhold is supported, and a member connecting the handhold with the prod having an eccentric pivotal connection with the handhold, and having an upwardly presented thrust bearing independent of said pivotal connection, which, by the rotary movement of the handhold, is moved to a position beneath and in bearing with the pintle when the prod is projected, and to a position above the pintle when the prod is retracted.

2. In a crutch, a protruded and retracted prod, a handhold, a pintle upon which said handhold is mounted to rotate and through which load imposed upon the handhold is supported, and a member connecting the handhold with the prod, eccentrically pivoted to the handhold, and a thrust bearing carried by said connecting member and movable to a position beneath the pintle by the rotation of the handhold which projects the prod, and to a position above the pintle by the rotation which retracts the prod; said bearing being provided with a stop finger which bears laterally against the pintle when the thrust bearing is beneath the same, to arrest the bearing in position to receive the load from the handhold.

3. In a crutch, a protruded and retracted prod, a handhold, a pintle upon which said handhold is mounted to rotate and through which load imposed upon the handhold is supported, and a member connecting the handhold with the prod comprising a yoke having each of its arms eccentrically pivoted to the handhold, and a thrust bearing carried by each of said arms and movable to a position beneath the pintle by the rotation of the handhold which projects the prod, and to a position above the pintle by the rotation which retracts the prod; each of said thrust bearings being provided with a stop finger which bears laterally against the pintle when the thrust bearing is beneath the same, to arrest the bearing in position to receive the load from the handhold.

4. In a crutch, a protruded and retracted prod, a handhold, a pintle upon which said handhold is mounted to rotate and through which load imposed upon the handhold is supported, said pintle comprising a through-rod and a spacing sleeve against which parts of the crutch are drawn, and a member connecting the handhold with the prod comprising a yoke having each of its arms eccentrically pivoted to the handhold, and a thrust bearing carried by each of said arms and movable to a position beneath the pintle by the rotation of the handhold which projects the prod, and to a position above the pintle by the rotation which retracts the prod; each of said thrust bearings being provided with a stop finger which bears laterally against the pintle when the thrust bearing is beneath the same, to arrest the bearing in position to receive the load from the handhold.

The foregoing specification signed at Bellefontaine, Ohio, this 9th day of April, 1914.

JOHN C. HOVER.

In presences of—
HENRY KEMPER,
DOW A. DETRICH.

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