

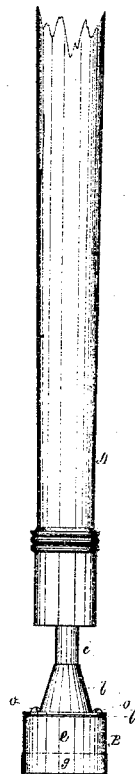
*J. W. Tuttle,*

*Crutch.*

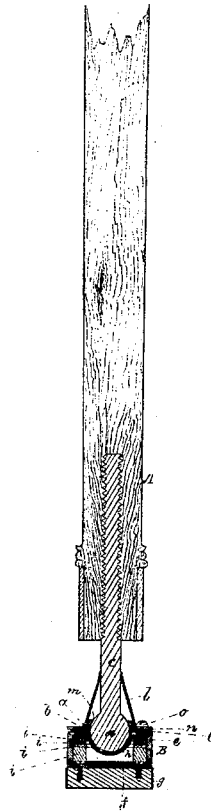
*No. 108303.*

*Patented Oct. 11. 1870.*

*Fig. 1.*



*Fig. 2.*



Witnesses.

*S. W. Piper*

*L. N. Miller*

*J. W. Tuttle.*

*by his attorney.*

*R. H. Eddy*

# United States Patent Office.

JOHN WENTWORTH TUTTLE, OF NEWTON, MASSACHUSETTS.

Letters Patent No. 108,303, dated October 11, 1870.

## IMPROVEMENT IN CRUTCHES.

The Schedule referred to in these Letters Patent and making part of the same.

*To all persons to whom these presents may come:*

Be it known that I, JOHN WENTWORTH TUTTLE, of Newton, of the county of Middlesex and State of Massachusetts, have invented an Improved Crutch-Foot; and do hereby declare the same to be fully described in the following specification and represented in the accompanying drawing, of which—

Figure 1 is a front elevation of part of a crutch with my improved ball-and-socket foot applied thereto.

Figure 2 is a vertical section of the same.

In such drawing—

A denotes the lower portion of a crutch, such as is commonly used by an invalid or lame person.

B is the foot, which is connected to the crutch by a ball-and-socket joint, the ball of which is shown at *a*, and its socket at *b*, the ball being fixed to a shank, *c*, which screws up into the crutch.

The body of the foot is a cylindrical metallic case, *e*, open at bottom, and there having an annulus or metallic disk, *f*, screwed into it, the case being formed with a female screw to receive a corresponding male screw cut on the periphery of the annulus or disk.

To the said annulus or disk there is fastened, by screws or other proper means, a cylindrical sole, *g*, of leather or other suitable material, having a diameter greater than that of the disk or annulus, the same being so as to cause the sole to project beyond the disk all around the latter, and where projecting to constitute a shoulder to bear against the lower edge of the case, and there make a close or tight joint when screwed up against it.

The socket *b* is made in or constitutes part of a cup, *h*, which is of metal and separate from and arranged within the case *e*.

Between the said cup and the annulus or disk *f* is one or a series of India-rubber rings or springs, *i*, which serve to sustain the cup and as a cushion to relieve the crutch or the user from concussion or jar resulting from the blow of the foot on the ground or a floor while the crutch may be in use.

An elastic bow, *l*, made of India rubber encompasses the shank of the ball, and covers the ball and

the opening *m* in the top of the case, and is confined to the case by a flat annulus, *n*, and a series of screws, *o*, going through the latter and being screwed into the top of the case.

The elastic band, while admitting the necessary lateral and up-and-down movements of the crutch relatively to the foot, protects the ball and its socket from dust and water, which otherwise would be liable to work thereon during use of the crutch.

From the above it will be seen that the ball-socket is completely protected from the entrance of water or dirt at either end of the foot or its case.

The foot, while the crutch may be in use, will readily adapt itself to the surface on which it may be pressed, whether such may be horizontal or more or less inclined. The sole being of a yielding material will prevent the crutch from slipping on an icy or wet surface.

I claim—

1. The combination and arrangement of the screw, disk, or annulus *f*, with the sole *g*, the case *e*, and ball *a* and socket *b*, thereof.

2. The combination of the elastic hood *l* and its fastenings *n o* with the ball *a* and its shank *c*, the case *e*, and the socket or cup *h*, for supporting the ball.

3. The arrangement and combination of the annular spring or springs *i*, the disk or annulus *f*, the sole *g*, the cup *h*, the ball *a*, and its shank *c*, and the case *e*, all as described.

4. The combination and arrangement of the sole *g*, the annulus *f*, the cup *h*, the case *e*, the ball *a*, and its shank *c*, and the elastic head *l*, all made as explained.

5. The sole *g*, the annulus *f*, the case *e*, the spring or springs *i*, the cup *h*, the ball *a*, and its shank *c*, and the elastic hood *l*, all constructed, combined, and arranged substantially as and to operate as described.

JOHN WENTWORTH TUTTLE.

Witnesses:

R. H. EDDY,

J. R. SNOW.