

T. C. ALLEN.

FERRULES.

No. 184,687.

Patented Nov. 28, 1876.

Fig. 1.

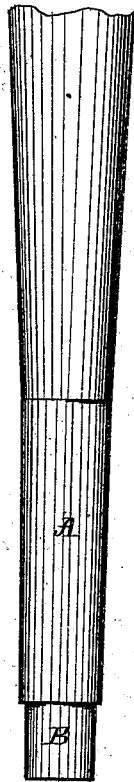


Fig. 2.

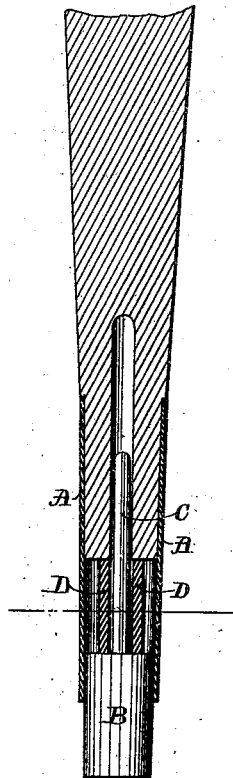
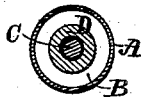


Fig. 3.



Witnesses:

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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN FERRULES.

Specification forming part of Letters Patent No. 184,687, dated November 28, 1876; application filed September 16, 1876.

*To all whom it may concern:*

Be it known that I, THOMAS C. ALLEN, of city, county, and State of New York, have invented a new and Improved Spring-Ferrule for Crutches, Canes, and Umbrellas, of which the following is a specification:

The figure marked A in the annexed drawing is a tube or ferrule of brass, iron, or other metal.

The figure marked B in said drawing is a plug of metal or other sufficiently hard material, which is inserted into the tube or ferrule A, and projected from the lower end thereof.

This plug may be made in any suitable form, and may be held in the ferrule A, either by a taper corresponding to a similar taper in said ferrule, or by a shoulder, or in any other suitable manner. The plug is also so constructed that it can turn freely in the ferrule A from right to left, or left to right, if desired, and also up and down; but not so that it can pass through the tube or ferrule at its lower extremity.

The figure marked C in the said drawing is a spur of metal or other sufficiently hard material attached to, or springing from, the center of the upper end of the plug B. The upper end of the spur is intended to enter a corresponding cavity in the crutch, cane, or umbrella, and to turn or play freely in the cavity.

The figure marked D in said drawing is a spring of suitable material, which rests on the top of the plug B, and around the spur C. The lower end of the crutch, cane, or umbrella rests upon the upper end of the spring D.

The spring may be a tube of india-rubber, as in the drawing, or a spiral spring—metal.

When the parts of the improved ferrule are in place, and in operation or use, any pressure upon the end of the plug B is resisted by the spring D, thereby saving the wear and strain of the cane, crutch, or umbrella, and cutting off, and, in part, neutralizing the effect of the pressure upon the hand or arm.

The turning of the plug B from right to left, or left to right, causes it to wear equally at its lower extremity.

The annexed drawings are intended as an illustration of the mode of constructing the spring-ferrule.

I claim as my invention—

The combination of the tube A, the plug B, the spur C, and the spring D, constructed and arranged to operate as above set forth, for the purposes herein described.

THOMAS C. ALLEN.

Witnesses:

T. H. RODMAN, Jr.,  
NATHL. B. COOKE.