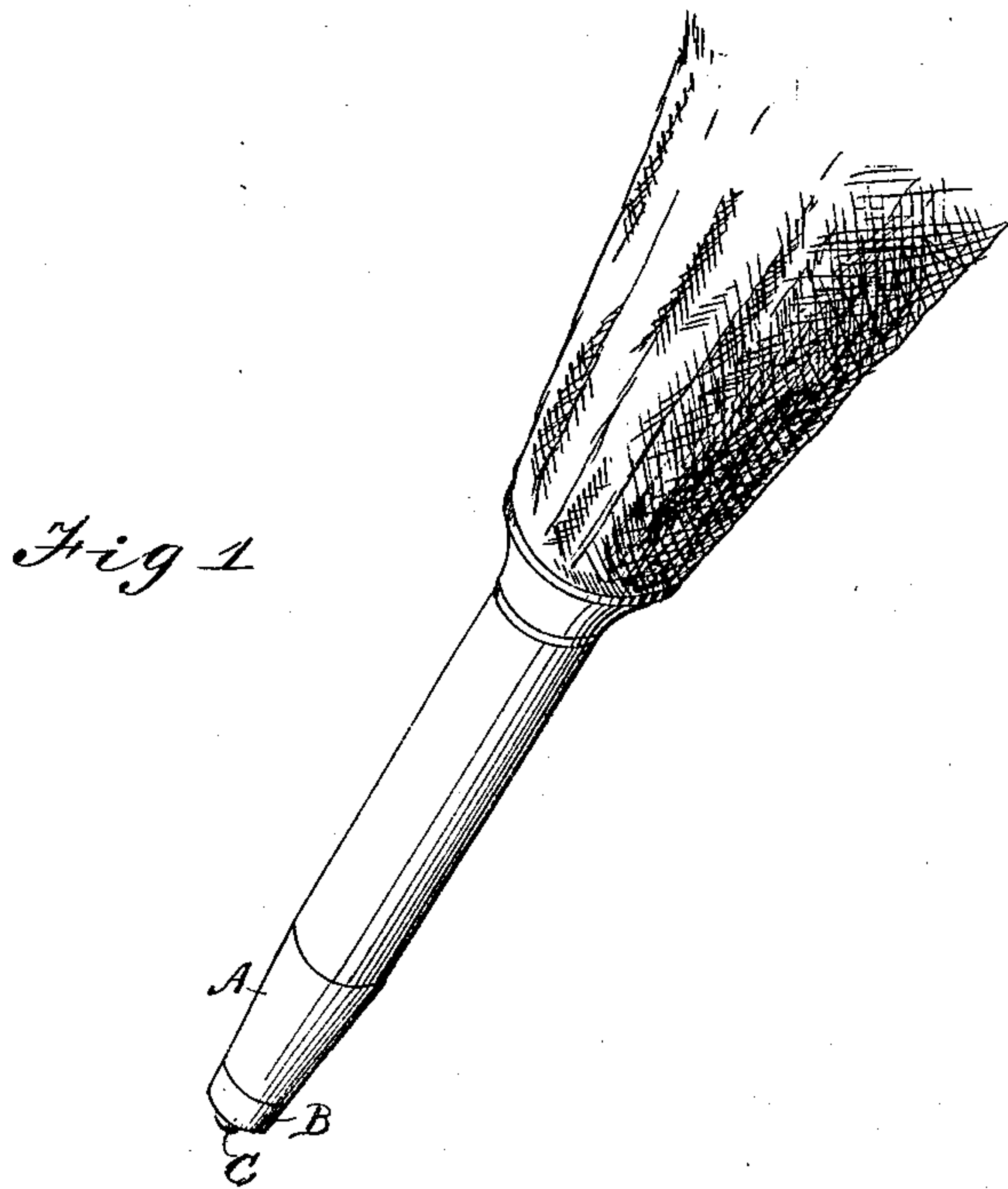


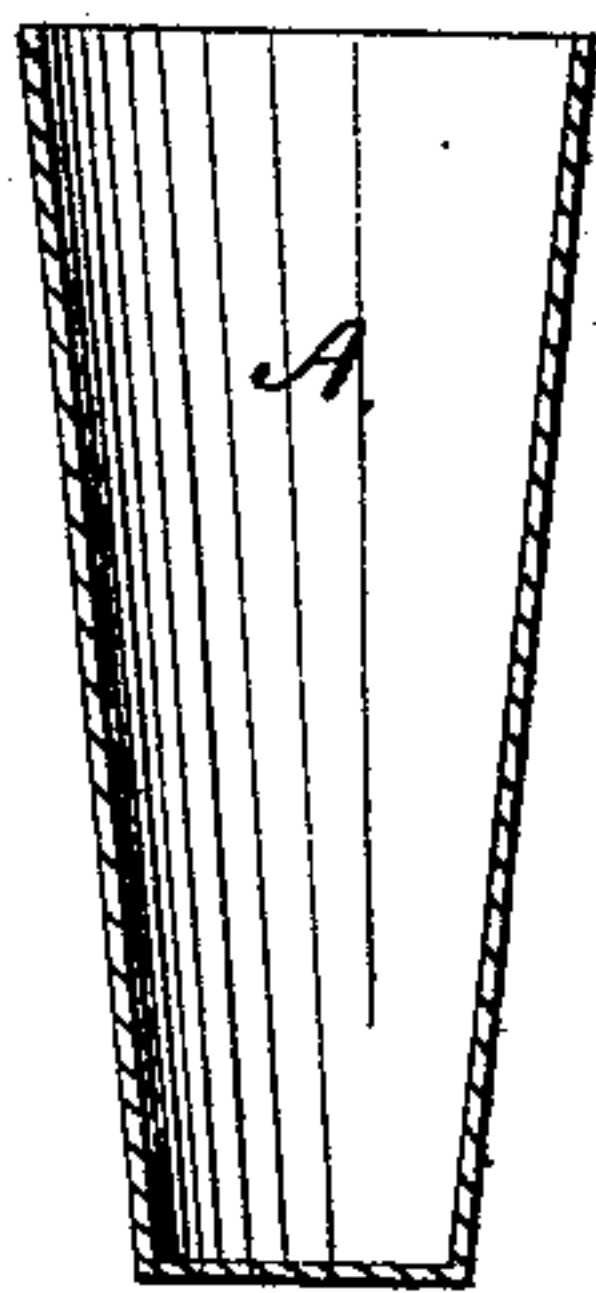
H. S. FROST.  
FERRULE FOR UMBRELLAS.

No. 180,709.

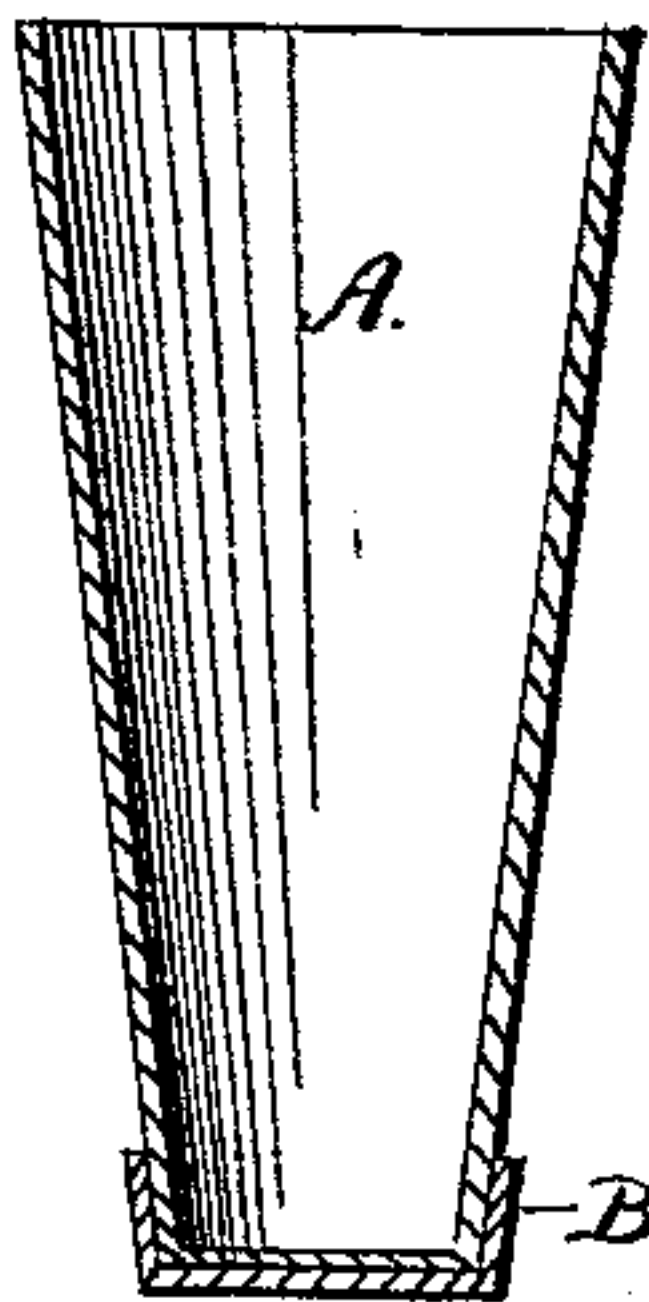
Patented Aug. 8, 1876.



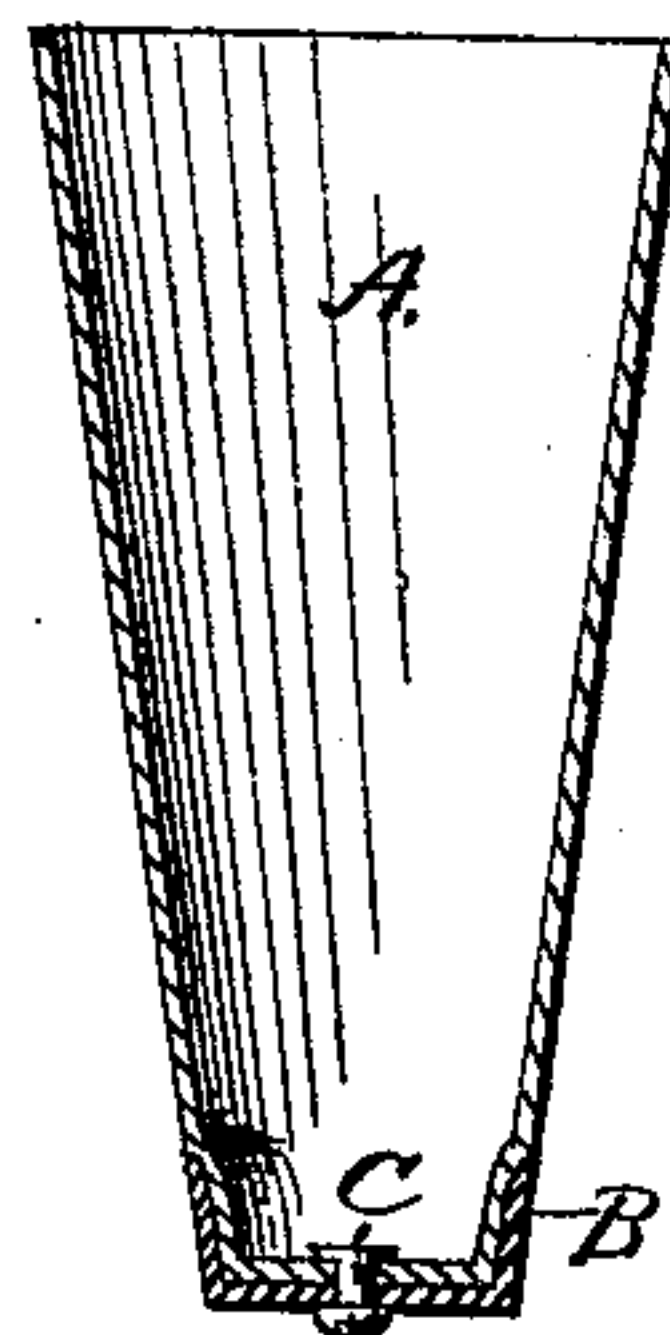
*Fig 2*



*Fig 3.*



*Fig 4*



*Witnesses;*

*Harry B. Clark*  
*Chas A. Brainerd*

*Inventor*

*Henry S. Frost.*

*by H. W. Beadle dec.*  
*his Atty.*

# UNITED STATES PATENT OFFICE.

HENRY S. FROST, OF WATERTOWN, CONNECTICUT, ASSIGNOR TO A. N. WOOLSON, OF SAME PLACE.

## IMPROVEMENT IN FERRULES FOR UMBRELLAS.

Specification forming part of Letters Patent No. **180,709**, dated August 8, 1876; application filed September 17, 1875.

*To all whom it may concern:*

Be it known that I, HENRY S. FROST, of Watertown, in the county of Litchfield, and State of Connecticut, have invented a new and useful Improvement in Ferrules for Umbrellas, &c.; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention is an improved ferrule, constructed with an auxiliary shell or cap at the point, which is united to the main shell, by swaging, in such manner as to re-enforce the same, and give it increased durability. It consists, further, in the employment of a rivet in the end of the ferrule, as a further means of increasing its durability, all of which will be fully described hereinafter.

In the drawings, Figure 1 represents a perspective view of the ferrule complete applied to an umbrella-stick; Figs. 2, 3, and 4, sectional views, representing the method of making my improved ferrule.

To enable others skilled in the art to make and use my invention, I will now proceed to describe fully its construction and manner of operation.

A represents a ferrule of the ordinary form, consisting of a plain metal thimble of any suitable material and size. B represents an auxiliary cap or shell, consisting of a flanged disk of any suitable metal, which is adapted in size to fit over the end of the ferrule, as shown in Fig. 3. The two parts are then united to form a single structure by swaging them in a power-press, the metal being so upset by the operation that the external shell is sunk into the main ferrule, and caused to form a part of the same, the exterior of the ferrule being of the same shape and dimen-

sions as before. By this means the ferrule is strongly re-enforced, and its durability consequently increased. C represents a rivet, which may be, if desired, inserted in a suitable opening in the end of the ferrule for the purpose of giving it increased durability. To retain it securely in place the end projecting within the ferrule is upset in any proper manner. The auxiliary cap may be united to the main shell without interfering with its finish, so that lips of one kind of finish may be united to shells of another kind without unfavorably affecting the appearance of either.

The ferrule described constitutes an article of manufacture which is made and sold to umbrella-makers. The rivet is not employed for the purpose of uniting the cap to the shell, as these parts are so thoroughly incorporated by the action of swaging as to form a single structure, but it is employed for the purpose of receiving, by means of its projecting head, the blows that would otherwise strike the ferrule.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. As a new article of manufacture, the ferrule described, consisting of a main shell or thimble, A, and auxiliary cap B, so united as to make the surfaces flush with each other, as described and shown.

2. In combination with the shell A the rivet C, having the projecting head, as and for the purpose described.

This specification signed and witnessed this 11th day of September, A. D. 1875.

HENRY S. FROST.

Witnesses:

TRUMAN P. BALDWIN,  
LEMAN W. CUTLER.