

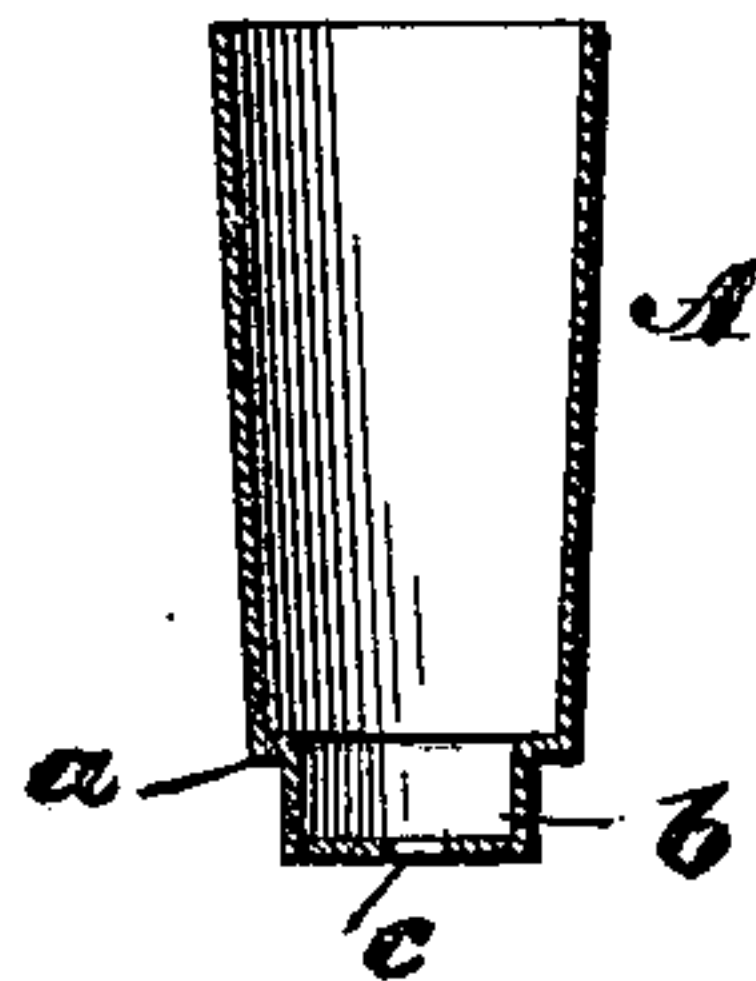
(No Model.)

O. M. SMITH.  
FERRULE.

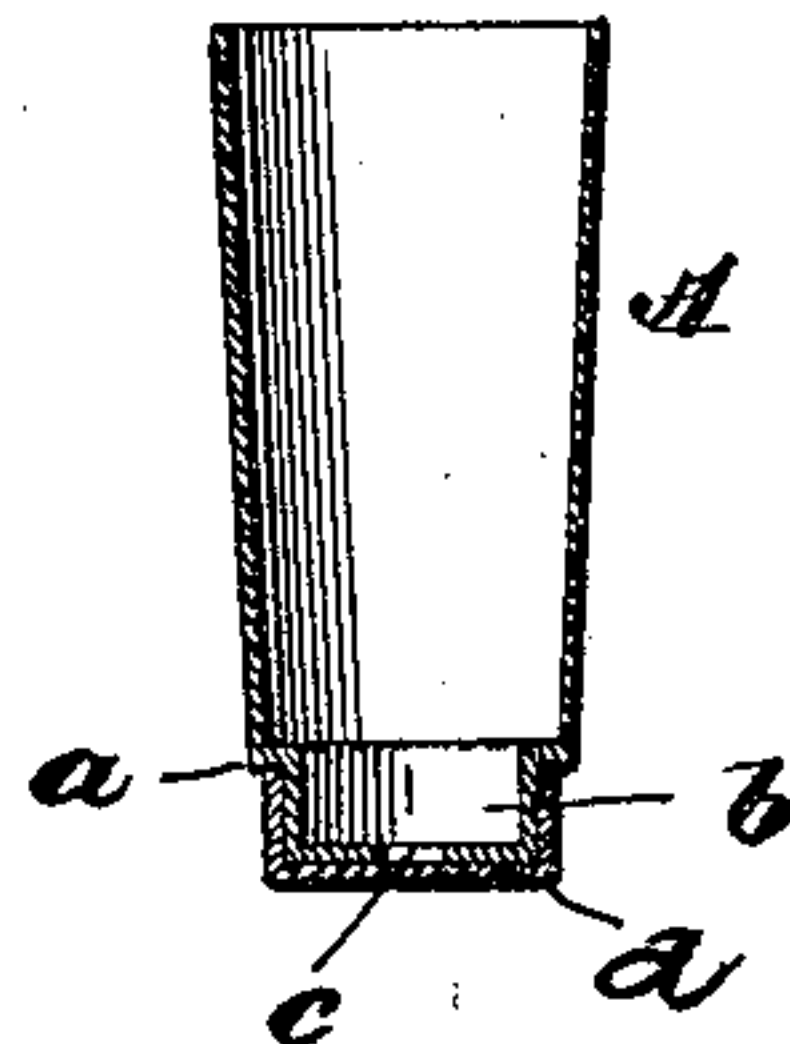
No. 438,497.

Patented Oct. 14, 1890.

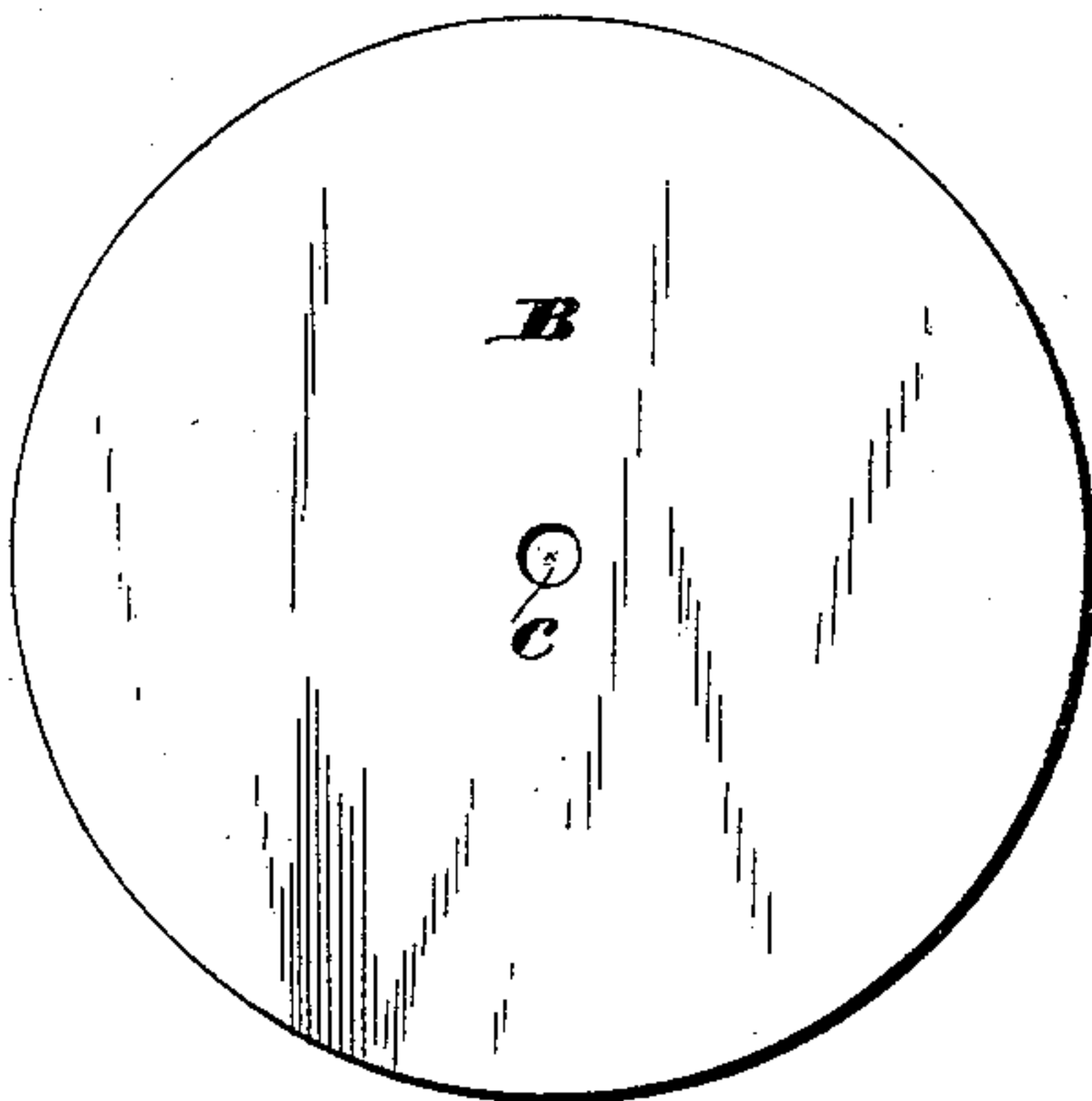
*Fig.1.*



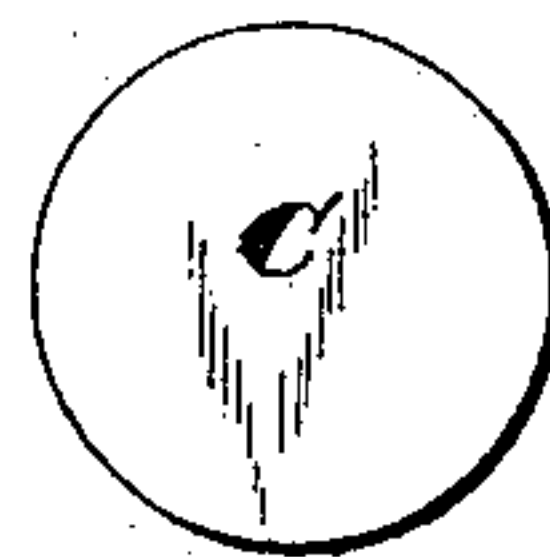
*Fig.2.*



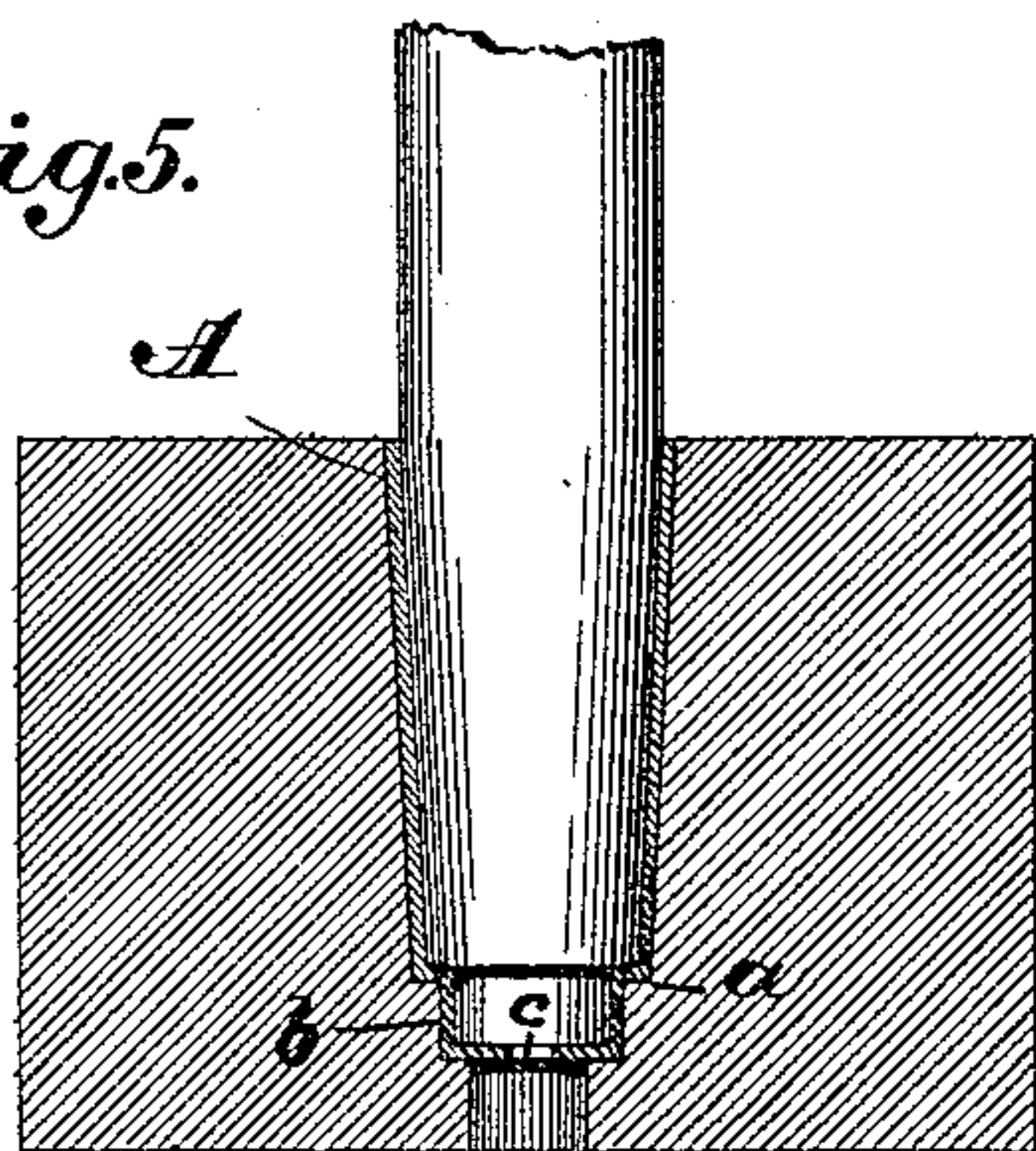
*Fig.3.*



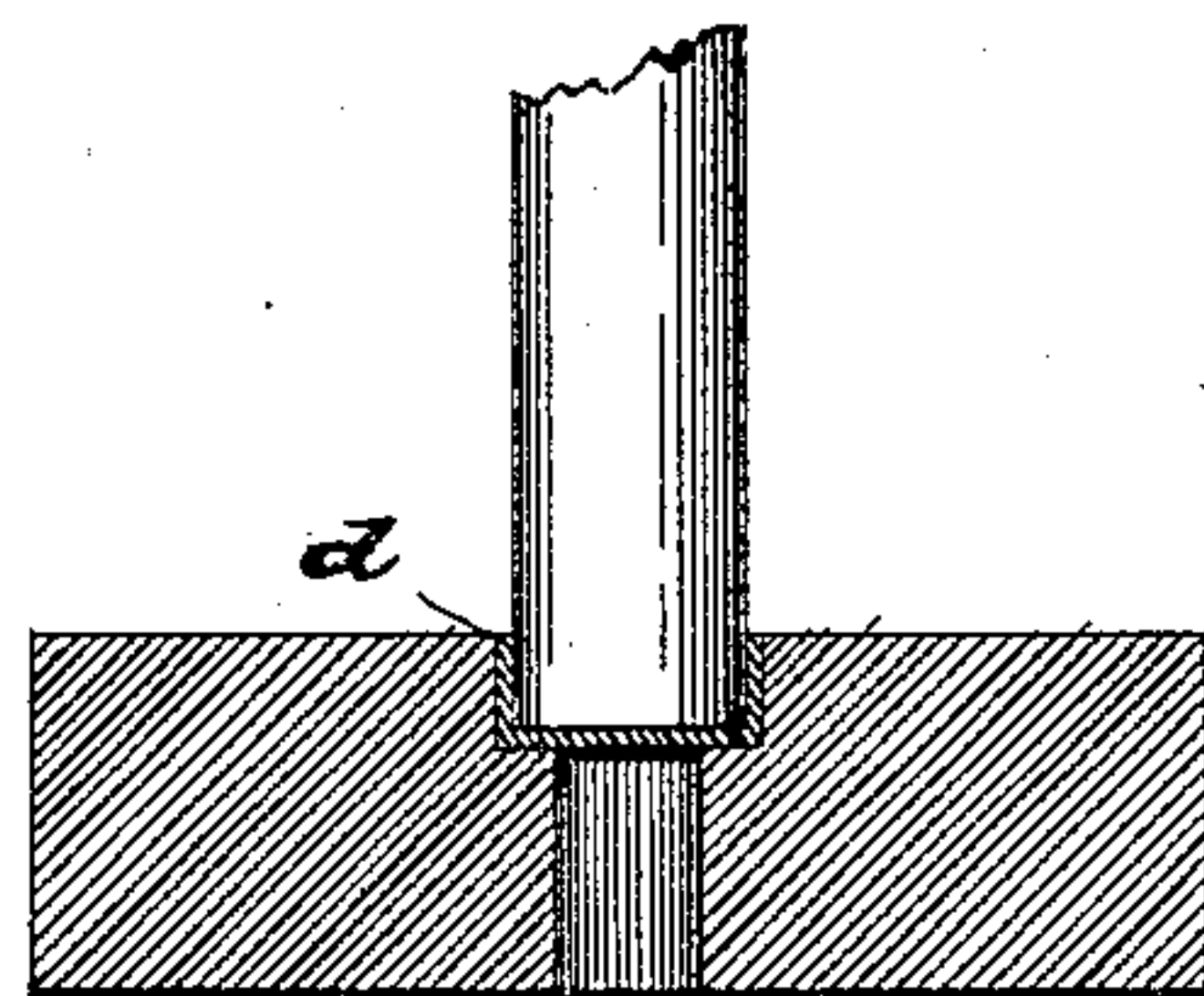
*Fig.4.*



*Fig.5.*



*Fig.6.*

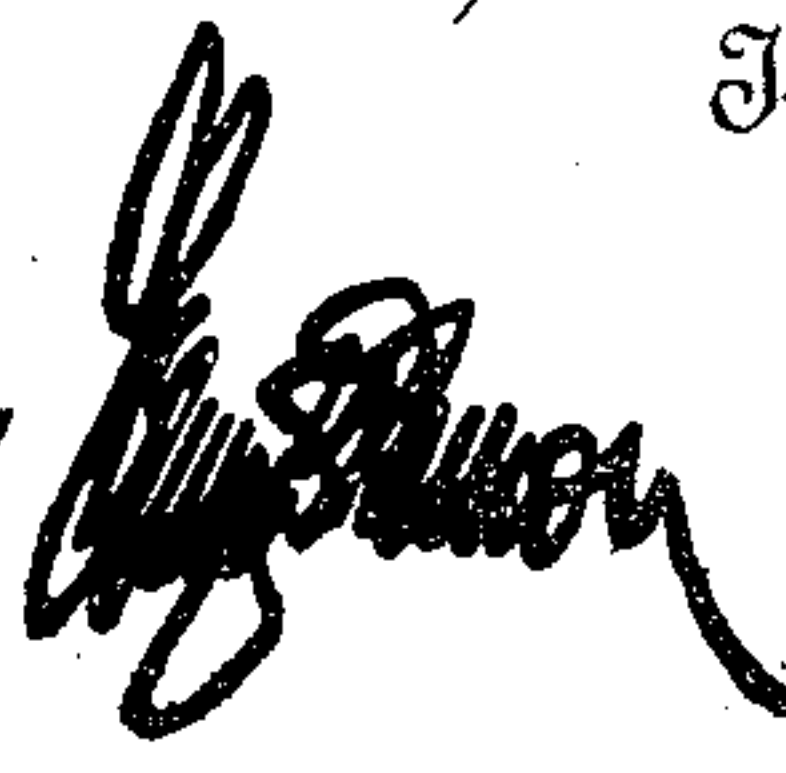


Orrin M. Smith.

Inventor

Witnesses

G. S. Elliott.  
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by  Attorney



# UNITED STATES PATENT OFFICE.

ORREN M. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO JOHN W. GRANGE, OF SAME PLACE.

## FERRULE.

SPECIFICATION forming part of Letters Patent No. 438,497, dated October 14, 1890.

Application filed October 22, 1889. Serial No. 327,759. (No model.)

*To all whom it may concern:*

Be it known that I, ORREN M. SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Ferrules; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to umbrella-ferrules; and it consists in the improved construction hereinafter described and set forth, whereby an arrangement is provided wherein a hollow point is secured to the ferrule to impart the semblance of the ordinary solid point secured in the ferrule, the strain on the ferrule is distributed, and the section constituting the point securely connected with the ferrule.

In the accompanying drawings, forming part of this specification, and in which the several parts are shown on an enlarged scale, Figure 1 is a detail sectional view showing the construction of the ferrule prior to the application of the section forming the tip or point; Fig. 2, a like view showing the tip or point in position. Figs. 3 and 4 are plan views of the blanks from which the ferrule and tip or point are formed, and Figs. 5 and 6 are sectional detail views illustrating the operation of shaping the ferrule and tip or point.

The body of the ferrule A is formed from a circular blank B, Fig. 3, by being punched or stamped in a suitable die or dies, so that the lower portion of said ferrule is reduced to present an abrupt shoulder *a* and tenon *b*, having an end portion. The circular blank B has a small central perforation, so that when the ferrule is made up the tenon *b* has an opening *c* in the end. As will be well understood, the blank B is of sheet or ductile metal that will suitably serve when shaped as a ferrule. The small blank C is then subjected to a punching or shaping operation in a suitable die or dies to form it into a shell, the relative diameter of which is much smaller than that of the ferrule above the shoulder *a*, so that said shell can be fitted on over the tenon *b* to serve as a tip or point *d*, the upper edge of

which bears against the lower face of the shoulder *a*, while the inner bottom face of said shell bears against the end portion of the tenon. By this arrangement the strain exerted by the tip or point is distributed between two points—to wit, the shoulder *a* and end portion of the tenon. What is more, the external sides of the cap or tip by not being flush with the shoulder, but of smaller diameter, gives the appearance of a solid plug secured in the end of said ferrule, and thereby presents an article highly satisfactory for a cheap class of goods. The construction is comparatively durable, since I prefer to make the ferrule, as before stated, from a pliable metal, while the tip or point is struck up from a harder metal, and therefore better suited as a wearing portion. When the tip or point *d* is adjusted on the tenon, solder or equivalent securing medium is dropped down through the ferrule from the top thereof, and, passing through the perforation *c* in the end of the tenon, will lodge between the adjacent end of the shell and the inner bottom face of the cap or tip, so as to accommodate itself to all inequalities and fill up all interstices, to the end that the tip or point will have a solid bearing against the end of the tenon and be securely held in position.

By having the tip or point *d* of smaller diameter than the shouldered portion the upper edge of said tip or point bears against the shouldered portion in the manner that prevents the tip or point from crowding the adjacent metal of the ferrule to form a lateral bulge, which would otherwise be probable.

The device is simple, durable, and comparatively inexpensive, and is capable of being quickly and cheaply constructed.

I claim—

1. A ferrule having an end tenon presenting an annular shoulder and a tip or point fitting over said tenon and of less diameter than the annular shoulder, substantially as set forth.

2. A ferrule having an end tenon presenting an annular shoulder and having a terminal bearing portion and a tip or shell fitting over said tenon to have a bearing both at the end of said tenon and against the shouldered

portion thereof, said tip or shell having a less diameter than the shouldered portion, substantially as set forth.

5 3. A ferrule having an end tenon presenting an annular shoulder and a terminal perforated bearing portion and a tip or point fitting over said tenon, together with a securing medium, substantially as set forth.

10 4. A ferrule having an end tenon presenting an annular shoulder and a terminal perforated end portion and a tip or point fitting over said tenon and bearing both against the

end portion and shoulder and being of a less diameter than said shoulder, together with solder interposed between said end portion and tip or point to form a solid securing medium thereat, substantially as set forth. 15

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of October, 1889.

ORREN M. SMITH.

Witnesses:

WILLIAM GRANGE,  
S. A. LEWIS.