

No. 670,587.

Patented Mar. 26, 1901.

E. F. HARTSHORN.

SHADE ROLLER.

(Application filed Mar. 11, 1899.)

(No Model.)

Fig. 1

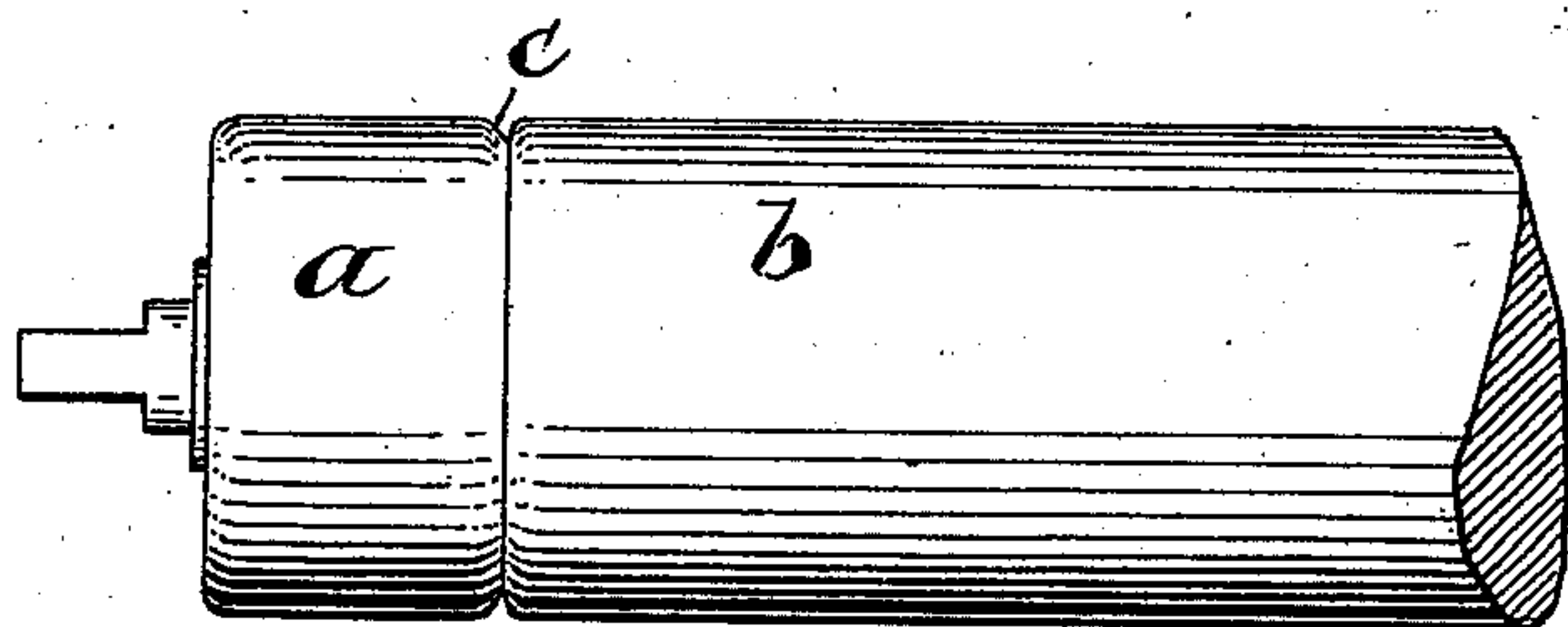
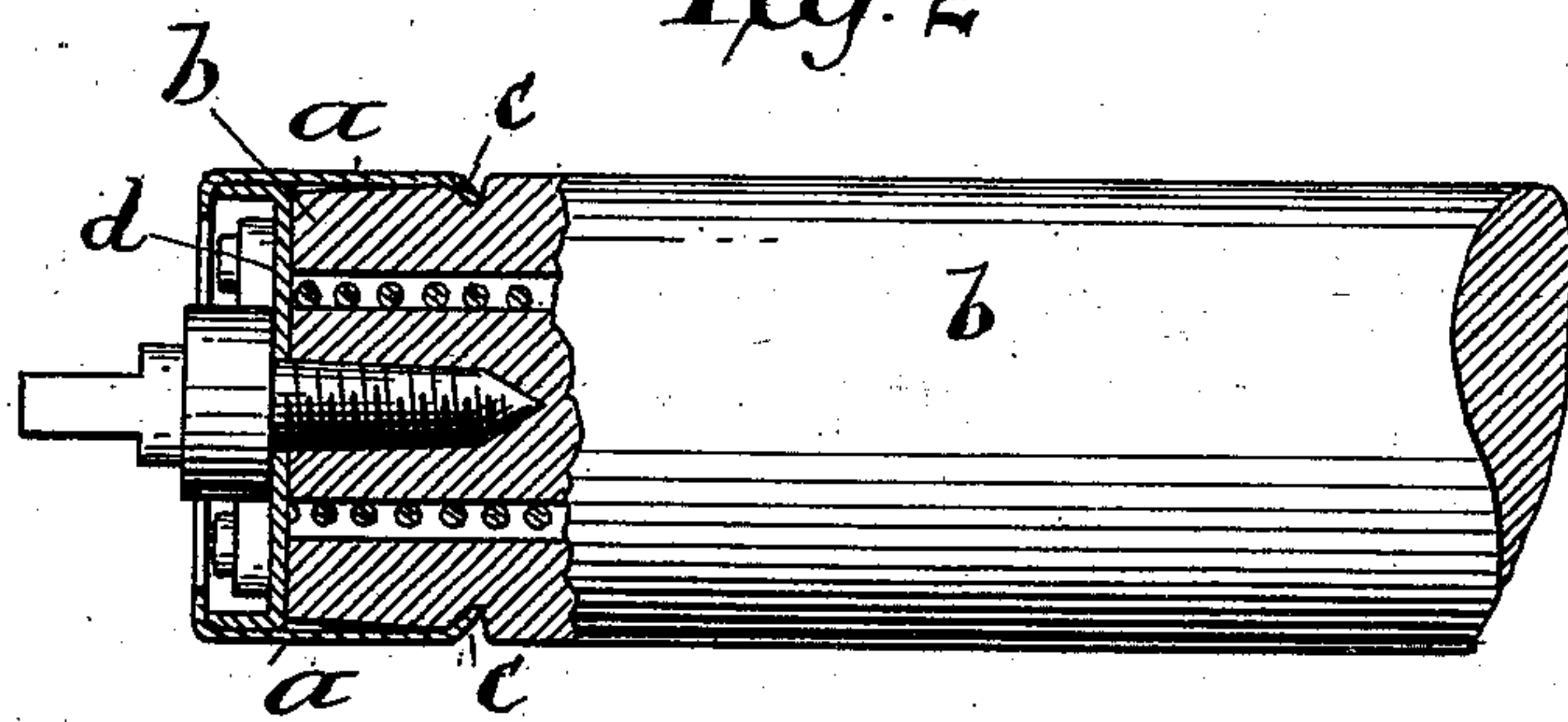


Fig. 2



Witnesses.  
Geo. Wadman  
Charles J. Rathjen

Inventor:  
Edmund F. Hartshorn  
by James T. Saw.  
Attorney.

# UNITED STATES PATENT OFFICE.

EDMUND F. HARTSHORN, OF NEWARK, NEW JERSEY, ASSIGNOR TO  
STEWART HARTSHORN COMPANY, OF NEW JERSEY.

## SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 670,587, dated March 26, 1901.

Application filed March 11, 1899. Serial No. 708,667. (No model.)

*To all whom it may concern:*

Be it known that I, EDMUND F. HARTSHORN, a citizen of the United States of America, and a resident of Newark, county of Essex, State of New Jersey, have invented certain new and useful Improvements in Shade-Rollers, of which the following is a specification.

This improvement refers to the metallic end cap or shell which is placed over the end of wooden shade-rollers and serves to secure in place the end plate, against which the spring in the roller presses, and also to finish the end of the roller; and the improvement consists in a novel method of fastening the shell to the wooden roller.

In the accompanying drawings, illustrating my improvement, Figure 1 is a side view of a roller with the end cap *a* attached according to my improvement, and Fig. 2 is a sectional side view of the same.

Heretofore these shells or end caps have been secured to the roller by puncturing the sides of the shell and driving the broken edges of the metal into the wood of the roller, and it was necessary to make a number of these indentations or punctures in the shell to attach it firmly. This method of attachment, however, is very objectionable from the fact that the broken indentations or holes made in the metal of the shell cause the latter to crack and split open and the shell thereby to become loosened and detached from the roller, and, furthermore, the punctures produce a rough broken surface of the shell, and thus detract from the appearance of the roller. In this improvement I attach the shell to the roller by bending down and pressing in the inner edge of the shell into the wood of the roller entirely around its circumference.

As shown in Fig. 2 of the drawings, the end

of the roller *b* should slightly taper from the end outward or be of a slightly smaller diameter at its end to enable the cap *a* to be placed over it. When the cap is thus placed in position over the end of the roller, the inner edge *c* is turned down or inward by a suitable instrument in such a manner as to be pressed into the wood and penetrate the same. As the edge of the shell is thus turned inward, it follows that the shell is drawn more tightly over the end of the roller and made to fit more firmly on the latter and press more snugly against the end plate *d*. The shell is thus secured to the roller by its turned-in inner edge, whereby it is not only more firmly and snugly held in place on the roller, but the sides of the roller are not punctured or broken in any way, but remain whole and smooth, and, moreover, as the fastening of the shell is at the extreme edge and as this edge is turned in it fits closely around the roller and cannot be turned up and interfere with the smooth surface of the roller and shell. By this method of fastening all liability of the shell cracking and splitting is avoided, and the shell is not only caused to fit the end of the roller more securely, but the appearance of the roller is heightened by an unbroken smooth surface of the shell.

What I claim is—

A wooden shade-roller provided with a metal shell having its inner edge turned in and down to penetrate the wood of the roller around the circumference thereof, substantially as described.

Signed by me at E. Newark, New Jersey,  
this 21st day of February, A. D. 1899.

EDMUND F. HARTSHORN.

Witnesses:

E. L. DURGIN,  
GEO. GUNTHER.