

(No Model.)

S. HARTSHORN.
SHADE ROLLER.

No. 422,938.

Patented Mar. 11, 1890.

Fig. 1.

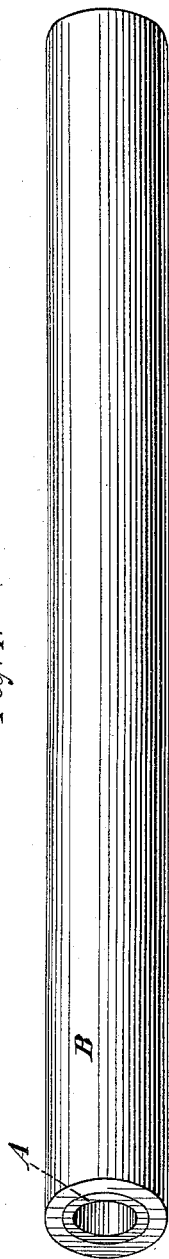


Fig. 2.

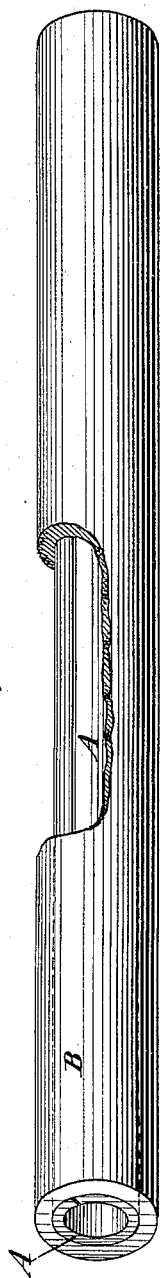


Fig. 3.

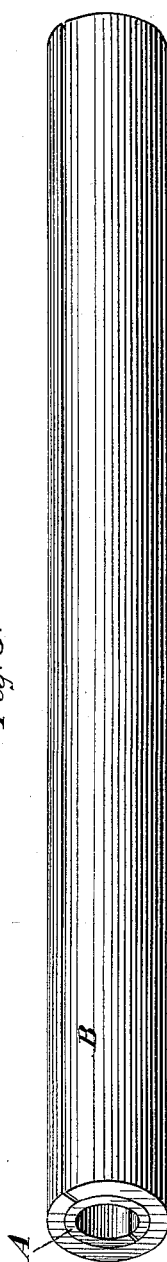


Fig. 5.

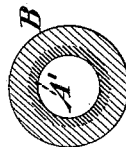
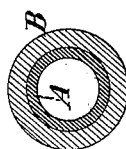


Fig. 4.



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STEWART HARTSHORN, OF SHORT HILLS, NEW JERSEY.

SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 422,938, dated March 11, 1890.

Application filed April 13, 1889. Serial No. 307,172. (No model.)

To all whom it may concern:

Be it known that I, STEWART HARTSHORN, a citizen of the United States, and a resident of Short Hills, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Shade-Rollers, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification.

My invention relates to rollers for window-shades formed of paper or similar fibrous material; and it consists of a novel construction of the roller by which it is better adapted for the purpose desired.

Much difficulty has been experienced heretofore in the use of paper shade-rollers, in making the roller strong and firm, and in attaching the shade to the roller. On account of the nature of the paper or other fibrous material of which the roller is formed it has been impossible to fasten the shade by tacks or pointed clasps, as in the case of wooden rollers, and particularly when the paper is very hard and firm, and at the same time it has not been possible to fasten the shade by a groove in the side of the roller, as in the case of a tin or metallic roller.

In my improved construction I form the inner and outer surfaces of the paper roller of different degrees of hardness, by reason of which the interior of the roller is very hard and firm, thus insuring strength and stiffness to the roller, and the outer surface or exterior is soft and penetrable, as in the case of a wooden roller, thus permitting the easy attachment of the shade to the roller.

In the drawings illustrating my improvement, in which like letters indicate like parts, Figure 1 is a view of the complete roller, showing the construction of the same. Fig. 2 is a view of the roller with a portion of the outer tube or section broken away to show the inner tube or part of the roller and the manner of constructing such inner part. Fig. 3 is a view of the roller, showing both the outer and inner sections formed open or with a slit or groove. Fig. 4 is a sectional view of the roller shown in Fig. 1. Fig. 5 is a sectional view of a roller, showing a modified construction of the same.

My improvement consists in a hollow roller

of paper or other similar material formed with a firm compact hard interior and a more soft yielding elastic exterior, or constructed in such a manner that the interior surface of the roller will be firm and hard and the exterior surface soft and yielding, so as to permit the insertion of a tack, pointed clip, or other fastening device for attaching the shade.

The nature of my improvement will be understood from the drawings, which illustrate the most convenient manner of constructing the roller; but the roller may be constructed according to my improvement in any suitable manner.

In the form shown in the drawings in Figs. 1, 2, 3, and 4 the roller is formed of two separate tubes or sections one within the other. The inner section or tube A, which forms the inside or inner surface of the roller, is constructed of paper, straw-board, or similar material of a very compact hard character, so as to present a firm smooth unyielding surface. The paper or other material forming this tube is preferably treated with tar or other water-proof compound, so as to render the tube water-proof and prevent the spring within the roller being affected by dampness, and also the roller itself being warped or twisted by reason of the inner surface or tube absorbing moisture. This tube may be constructed in any manner found desirable, and may be a closed complete tube of the desired thickness and of an inner diameter to form the interior or bore of the roller, as shown in Fig. 1, or it may be an open tube with a slit or narrow slot extending lengthwise of the same, as shown in Figs. 2 and 3.

The inner tube A, constructed of the character above described, is inserted or placed within the outer tube B, which forms the outside of the roller. This tube B is likewise formed of paper or similar material, but of a soft yielding nature or of a character to admit the insertion of a tack or the points of a spring-clasp. The tube B may have a greater thickness than the inner tube A; but the thickness and the degree of softness of this outer tube may vary and depends on the nature and use of the roller. The outer tube B may be constructed in any convenient or suitable manner, as the inner tube, and may be a

completed closed tube, as shown in Figs. 1 and 2, or may be an open tube with a narrow slot extending along its length, as shown in Fig. 3.

5 The two tubes A and B thus formed and placed one within the other are glued together or otherwise firmly attached to one another, so that they form a homogeneous roller having its interior formed of the hard un-
10 yielding tube A and its outer surface of the soft yielding tube B.

It will be evident that the outer tube or section B may be formed directly on the inner tube A in place of making the two sections of the roller separate and joining them
15 together, and the inner tube may be a mere lining for the outer tube. The entire roller may be formed from pulp of two degrees of density or hardness, or a single tube of the
20 character of the outer tube B may have its inner surface rendered hard and firm, as shown in Fig. 5, by any suitable process, so that the roller will have a hard inner and softer outer surface.

25 The paper roller thus formed has the advantages of both the metal and wooden roller, having the inner surface hard, smooth, and compact, as in the case of the metal roller, thus insuring the roller remaining straight
30 and true under all circumstances, and the outer surface to which the shade is fastened

soft and yielding, as in the wooden roller; and, moreover, the interior of the roller may be made water-proof, so as to protect the spring from dampness. The soft outer section of the roller protects the hard more brittle interior, and the two together form a strong firm roller capable of use in any place or under any circumstances. 35

I do not desire to claim in this patent a paper roller formed of separate tubes placed one within the other, or a roller formed of slotted paper tubes, as such constructions are claimed in my application for Letters Patent filed in the Patent Office April 9, 1889, Serial
40 No. 306,523; but

What I claim as new is—

1. A paper roller for shades, having its outer surface yielding and easily penetrable and its inner surface hard and compact, substantially as and for the purpose set forth. 50

2. A paper roller for shades, formed of the outer yielding tube B and the inner hard compact tube A, substantially as and for the purpose set forth. 55

Signed at New York, in the county of New York and State of New York, this 2d day of January, A. D. 1889.

STEWART HARTSHORN.

Witnesses:

GUSTAVUS W. RAWSON,
CHARLES E. JOHNSON.