

(No Model.)

2 Sheets—Sheet 1.

S. HARTSHORN.  
SHADE ROLLER.

No. 424,198.

Patented Mar. 25, 1890.

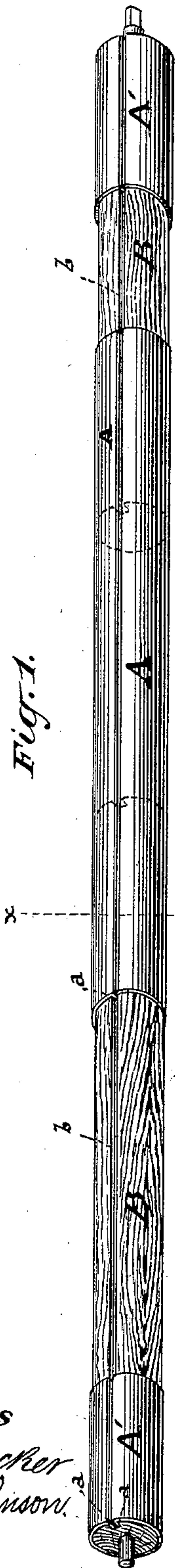


Fig. 1.

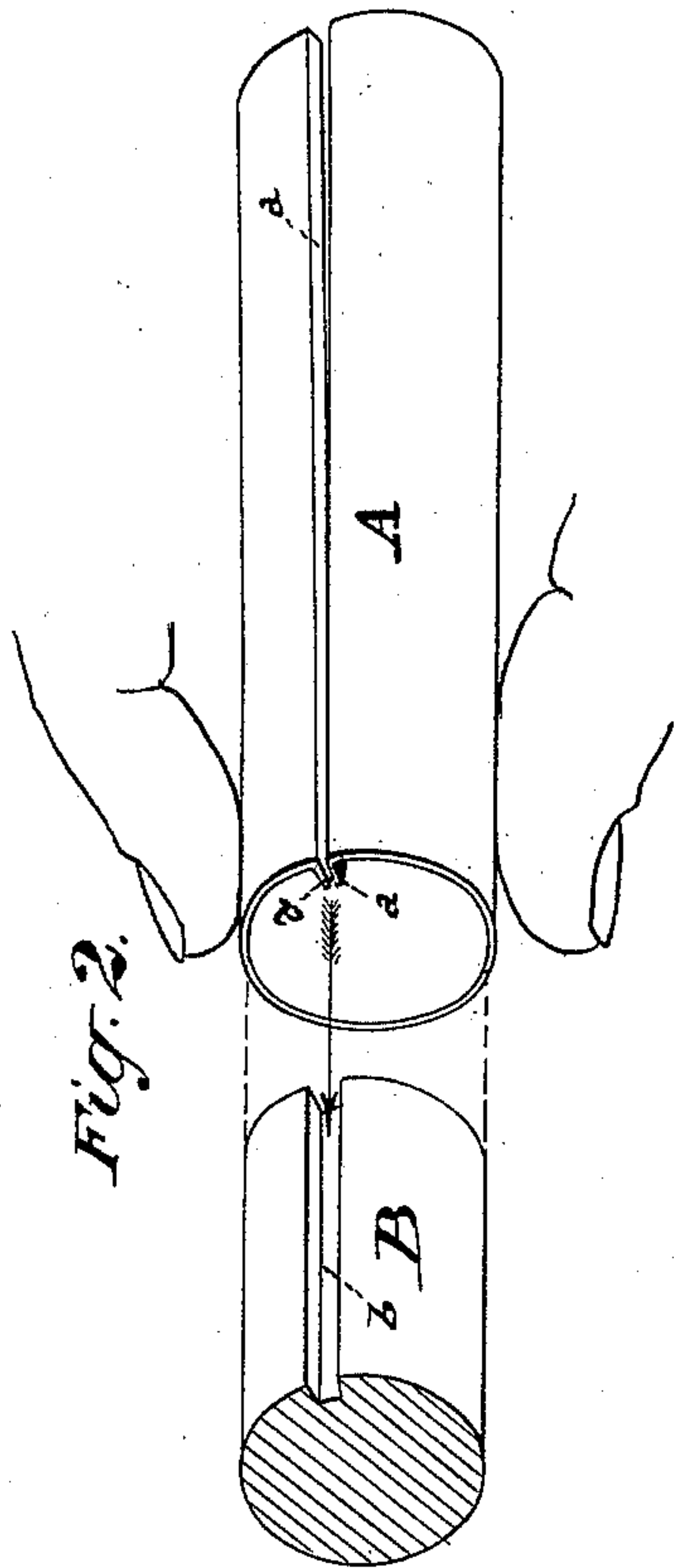


Fig. 2.

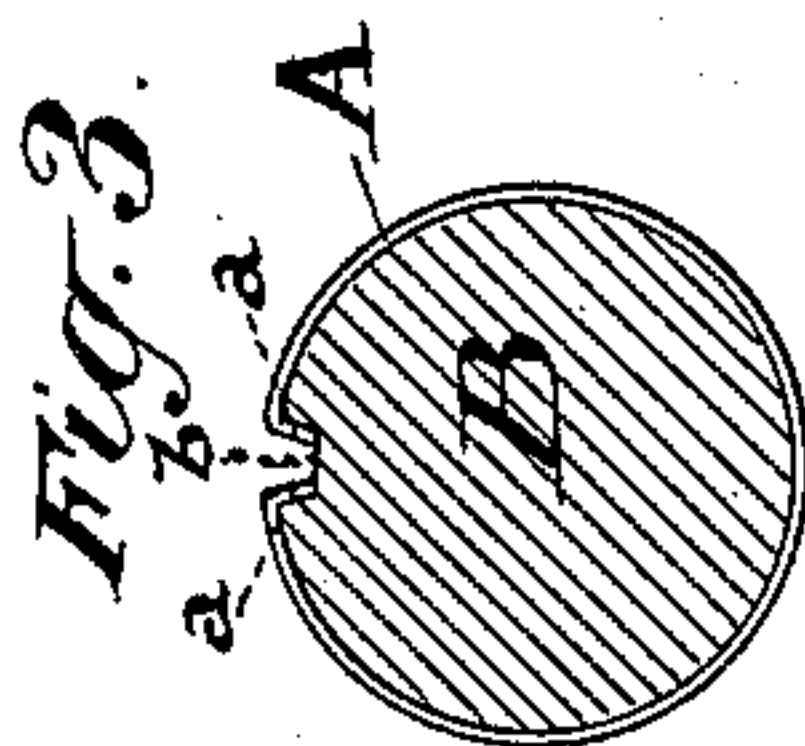


Fig. 3.

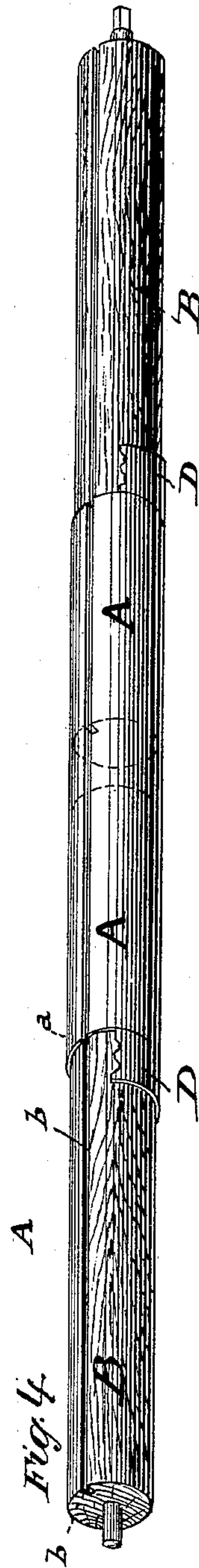


Fig. 4.

Witnesses  
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Charles Johnson.

Inventor  
Stewart Hartshorn  
by James Law.  
Attorney.

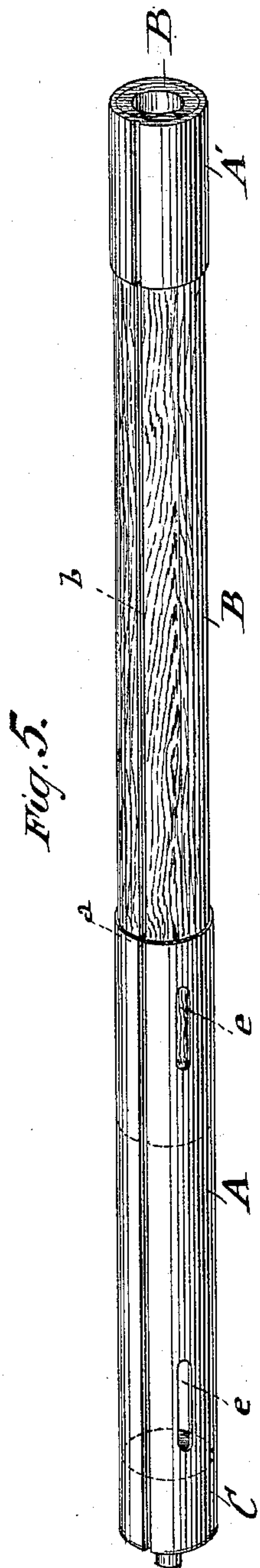
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2 Sheets—Sheet 2.

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WITNESSES:

*John Becker*  
*Charles E. Johnson.*

INVENTOR

*Stewart Hartshorn*  
BY *James H. Saw.*

ATTORNEY



# UNITED STATES PATENT OFFICE.

STEWART HARTSHORN, OF SHORT HILLS, NEW JERSEY.

## SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 424,198, dated March 25, 1890.

Application filed February 28, 1889. Serial No. 301,579. (No model.)

*To all whom it may concern:*

Be it known that I, STEWART HARTSHORN, 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 part of this specification.

My invention refers to shade-rollers formed of two or more parts or sections sliding within an outer tube; and it consists, essentially, of a novel construction of the outer tube and arrangement of the several parts by which the outer tube is rendered elastic and expansible, thereby being capable of fitting over parts of the roller of varying diameters, and, moreover, accommodating itself to the swelling and shrinking of the wooden sections, and is intended to produce a roller in which wooden sections or parts of different diameters may be united to form the roller, and in which the several sections of the roller, when made of wood, may freely slide or move toward or away from each other to vary the length of the roller under all circumstances.

In the drawings illustrating my improvement, in which like letters indicate like parts, Figure 1 is a side view of a complete roller, showing the wooden portions united by the metallic sections. Fig. 2 is a detached view of a part of the roller, showing the construction of the metallic section and the method of placing it over the wooden portion of the roller. Fig. 3 is a sectional view of the roller through the line *x x*, Fig. 1, showing the metallic section surrounding the inner wooden portion. Fig. 4 shows the wooden portions of the roller united by my improved metallic section, held in place by metal clasps or clips. Fig. 5 shows an extensible roller formed with my expansible metallic section.

In the manufacture of rollers it is often desirable to utilize small pieces of wood which are in themselves too short to form the entire length of the roller. These short pieces are united or joined by metallic sections or bands, which are placed between the wooden portions and over the ends of the same, and the several parts are generally arranged so they can move over each other in order to vary the

length of the roller to suit different sized windows. As the wooden portions are apt to vary slightly in diameter, it is sometimes difficult to insert the ends of the same in the metallic sections; and, moreover, as the wood is affected by the atmosphere, and is caused to shrink and swell, the metallic sections frequently bind so tightly on the wood that the parts cannot freely slide over each other when it is desired to make the roller longer or shorter, or the wooden portions become so loose in the metallic sections that the parts slide too freely in the latter, and are therefore not held in place.

My improvement consists in constructing the metallic section which unites the wooden portions, and which is placed on or over the wooden roller, with a longitudinal slot extending the entire length of the section, so that it is capable of varying in diameter and may contract and expand to receive wooden rollers of different diameters and to accommodate itself to the swelling and shrinking of the wood, and thus allow the metallic piece to be readily placed over the wooden portion and enable the parts of the roller at all times to slide freely over each other and yet bind sufficiently to remain fixed in the desired position.

In the construction shown in the drawings, which illustrates the form of my improvement I deem most preferable, the metallic section A, which unites the wooden parts B of the roller, instead of being soldered or fastened at its lap or joint so as to form a complete barrel or tube, is left open at this point along its whole length, and the edges *a a* are turned down or at right angles to the circumference, as will be seen particularly from Fig. 2. Hence, when the section A is detached a wide open space is left between the two edges *a a*. As the tin or metal composing the section is flexible and elastic, these edges may be brought close together or spread farther apart by contracting or expanding the section A. Along the surface of the wooden portions B is formed a groove *b*, of a size and shape to receive and accommodate the turned-down edges *a a* of the section A. When it is desired to connect the metallic section to the wooden portion, the edges of the former are pressed together and the turned-down edges



*a a* inserted in the groove *b*, as is shown in Fig. 2. The pressure on the part A then being removed, the elasticity of the metal causes the edges *a a* to press against the sides of the groove and thus hold the wooden portion B within the metallic section, and at the same time permit the latter to slide freely over the former.

As will be understood from the above description, on account of the flexibility and elasticity of the metal the section A will readily contract and expand to accommodate itself to wooden rollers of different diameters, so that if the parts B vary slightly in size they may yet be connected together to form the roller, and, moreover, as the wood swells the section A yields and expands with the wooden portions B, and as it shrinks the section A contracts and the elasticity of the metal causes the edges *a a* to always remain against the sides of the groove, and thus holds the wooden portions B of the roller in place within the metallic section. Hence with my improvement the roller may be quickly and readily put together and even when the wooden portions vary slightly in diameter, and the parts slide freely in and on each other at all times whether the wood shrinks or swells, and do not become too loose in or bind on each other.

My improved metallic section may be used where it is designed to form merely an extension-roller, or one that can be varied in length to accommodate windows of different widths, as is shown in Fig. 5. As is there seen, the metallic section A slides over the wooden part B of the roller, which permits the roller to be extended or contracted at pleasure by merely sliding the parts in each other, and the metallic piece or section accommodates itself at all times to the state of the wood, as above described, and the parts never bind or become too loose. A small block of wood, indicated at C, may be fastened in the end of the joint A, so as not to slide in or out of the same, but not so as to interfere with the expansion and contraction of the metallic section. This adjustable metallic section may also be used to form the end caps of the roller, as shown at A' in Figs. 1 and 5, and as the metal band or section accommodates itself to the diameter of the roller and to the state of the wood it may be placed directly on the end of the roller without previously preparing the latter.

If it should be desired to secure the wooden portions so they cannot move in the metallic section, this may be done in any convenient manner, as by driving a small tack at the proper place in the wood or by the metal clasps shown at D in Fig. 4, which are secured in the wood on each side of the metallic section A.

The groove *b* in the wooden portion and the open space between the edges of the section A may be used for the purpose of attaching the shade to the roller in the same man-

ner as the groove in the ordinary metallic rollers; or, if it is desired, the shade may be nailed directly to the roller in the usual manner; and, to permit this, openings may be formed in the metal section, as shown at *e*, to enable the tack to be driven through the metal into the wood. These openings *e* also allow the shade to be fastened with clasps having points which enter the roller.

I do not wish to confine myself to the exact form of the metallic section shown in the drawings, as the particular form may be altered, so long as the section is made yielding and elastic or capable of varying in diameter along its whole length, and the edges *a a* may be varied to conform to any shaped groove in the wooden portion.

While my improvement is particularly designed to be used with a wooden roller, it may be used with rollers constructed of any material—as paper or other fibrous substance liable to be affected by the atmosphere—to form a combination or extension roller, the elasticity of the connecting-section A keeping the parts of the roller in position when once arranged.

I am aware extensible rollers have been made in which a metallic tube has been left unsoldered or open a certain distance from one end, and is soldered or closed the rest of its length, and that rollers formed of separate sections united by a closed metallic tube have been used, and I do not claim such constructions; but

What I claim is—

1. In a shade-roller, the combination of the sections B B with the metallic tube A, longitudinally slotted throughout its entire length and claspings said sections by the elasticity of the tube, whereby contraction and expansion may be evenly distributed, as and for the purpose set forth.

2. In an extension-roller, the combination, with the roller B, of the metallic tube A, longitudinally slotted throughout its entire length and claspings said sections by the elasticity of the tube, whereby contraction and expansion may be evenly distributed, substantially as described, and for the purpose set forth.

3. In a shade-roller, the combination of the sections B B, having the groove *b*, with the metallic tube A, longitudinally slotted throughout its entire length and claspings said sections by the elasticity of the tube, whereby contraction and expansion may be evenly distributed, and provided with the turned-down edges *a a*, substantially as described, and for the purpose set forth.

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:

CHARLES E. JOHNSON,  
GUSTAVUS W. RAWSON.