(No Model.) 2 Sheets—Sheet 1.

S. HARTSHORN.

SPRING SHADE ROLLER.

No. 417,783 Patented Dec. 24, 1889.

Fig. 1.

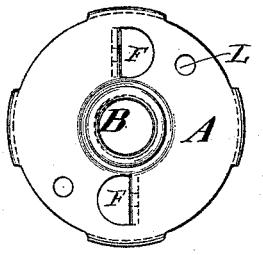


Fig. 2.

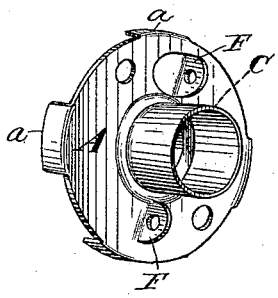


Fig. 3.

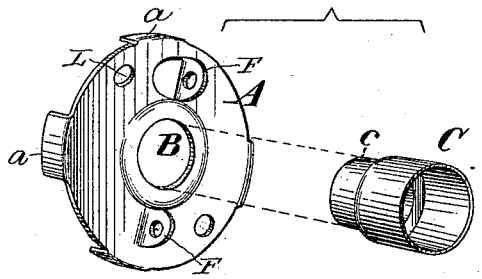
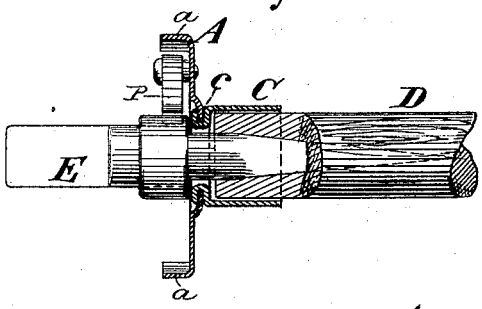


Fig. 4.



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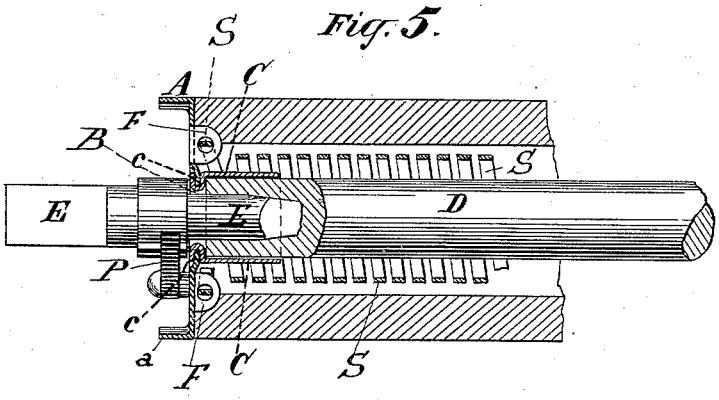
(No Model.) 2 Sheets—Sheet 2.

S. HARTSHORN.

SPRING SHADE ROLLER.

No. 417,783. Patented Dec. 24, 1889.

Fig. 5.



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UNITED STATES PATENT OFFICE.

STEWART HARTSHORN, OF SHORT HILLS, NEW JERSEY.

SPRING SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 417,783, dated December 24, 1889.

Application filed November 8, 1888. Serial No. 290,305. (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 certain new and useful Improvements in Spring 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 improvement relates to the end cup or plate on the end of the roller, which supports the outer end of the spindle and forms the bearing of the roller on the spindle when the roller is operated; and it consists in a novel construction of the end plate and manner of supporting the spindle by the same, and of forming the bearing of the roller on the end of the spindle; and it also consists in a cheap and simple manner of constructing the end plate itself.

In the drawings illustrating my improvement, in which like letters indicate like parts, Figure 1 is a view of the outer face or front side of my improved disk. Fig. 2 is a view of the inner face or back of my improved disk, showing the cup or ferrule in which the end of the spindle rests. Fig. 3 is a detached view of the disk and spindle cup or ferrule. Fig. 4 is a sectional view of the disk or plate, showing the outer end of the spindle in position in the cup or ferrule. Fig. 5 is a sectional view of the end of the complete roller, showing the spindle with the spring mounted on the same resting in or supported by the cup or ferrule on the end plate.

As heretofore constructed and arranged, the spindle on which the spring is mounted is supported or held at its outer end by the spear or small section E, which passes through the end plate and is inserted into the spindle, and whose outer end engages with the bracket on which the roller is mounted. This spear or section E rests on the edge of the hole in the plate through which it passes. Hence, when the roller is mounted in the brackets and is operated, as the roller revolves around the fixed or stationary spindle, the point of bearing of the roller on the spindle is the narrow edge of the small hole in the plate and the spear or small section E of the spindle.

In my improvement the spindle is supported directly by its outer end, which rests in a projecting cup or ferrule on the inner face of the disk, and the spear, as it passes through the hole in the center of the disk, does not rest on or come in contact with the latter.

The nature of my improvement will be best understood by reference to the drawings, Figs. 4 and 5 of which show the position of the various parts when in place and connected together. As there seen, the end of the spindle D rests in and is supported by the cup or projecting ferrule C, which is connected to the back or inner face of the disk A, and the spear E as it passes through the hole B in the disk does not touch the edge of the latter. The diameter of the cup C is a little greater than that of the spindle, so that the latter rests loosely in the cup and yet does not have any play up or down as the roller revolves around it. The diameter of the cup is therefore greater than that of the hole B in the plate, as the latter must be smaller than the spindle in order to hold the spindle in the roller. The bearing-surface, therefore, is greater than where the spindle is supported by the spear on the hole in the plate; and, moreover, as the cup C projects inward some distance from the plate, it offers a much longer bearing-surface than where the spindle is supported by the thin narrow plate or disk itself.

When the roller is put together ready for use, as shown in Fig. 5, the outer end of the spindle D within the roller is placed in the cup or ferrule C, so that the end of the spindle itself rests in or is supported by the inner surface of the cup, and the spear E passes through the large hole B in the plate A, so as to clear the edges of same and not touch the plate. The spring S is mounted on the spindle in the usual manner, and is attached to the plate A by means of the lugs F, or in any other convenient manner. As the roller revolves in its brackets around the fixed or stationary spindle, as will be understood from the drawings, the bearing of the roller is on the inner surface of the revolving cup C and the end of the spindle, which presents a broad true bearing, insuring a perfect operation of

the roller. Moreover the bearing is on the spindle itself and not on the small outer section or spear E. Hence by my improved manner of supporting the outer end of the spindle or forming the bearing of the roller or the spindle a longer and more perfect bearing is formed, thus insuring a more even and true revolution of the roller, and all eccentricity of the roller caused by the spear or section E not being inserted in the center of the spindle is prevented, and all consequent wearing and rattling of the parts stopped.

My improved disk, with the cup C, may be constructed in any convenient manner, and the cup and disk may be cast in one piece, if desired; but I prefer the construction shown in the drawing. As there shown, and particularly in Figs. 1, 2, and 3, the disk or plate A and cup C are formed separately, and are stamped or struck up from suitable metal, and are then fastened together. The plate A is struck up from a thin disk of metal, as iron, complete, with the central hole B, the rim *a*, lugs F for attaching the ends of the spring, and small holes L, for mounting the pawls P or other locking device. The cup C is likewise stamped from a thin piece of brass or other suitable metal, and of the required size for the spindle. One end of the cup, as *c*, is made smaller to enter the hole B in the plate. The parts, having been thus formed separately, are united by inserting the small end *c* of the cup into the hole B in the plate and fastening it there by turning over the edges, as will be understood from Fig. 4. The end plate or disk thus constructed is readily and cheaply made, and once formed does not require any further manipulating to perfect it and adapt it for use.

What I claim as new is—

1. In spring shade-rollers, the combination, with the end plate or disk having a large hole in the center of the same and provided with a cup or ferrule rigidly attached to the disk, constructed to rest and revolve on the end of the spindle, of the spindle resting in the cup or ferrule and supporting the disk and roller, and having a spur passing freely through the hole in the plate or disk, substantially as and for the purposes set forth.

2. In spring shade-rollers, the end plate or disk, formed of the disk A, struck up from metal, and having the central hole B, holes L, and lugs F, and provided with the cup or ferrule C, adapted to be inserted in the hole B, and attached to the disk and constructed and arranged to receive the end of the spindle and rest and revolve on the same, substantially as and for the purpose set forth.

Signed at Milburn, in the county of Essex and State of New Jersey, this 29th day of June, A. D. 1888.

STEWART HARTSHORN.

Witnesses:

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