

(No Model.)

E. F. HARTSHORN.
SPRING SHADE ROLLER.

No. 483,553.

Patented Oct. 4, 1892.

Fig 1

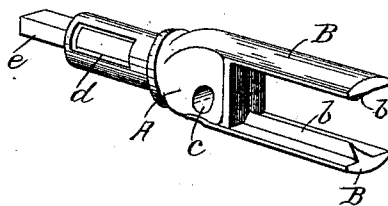


Fig 2

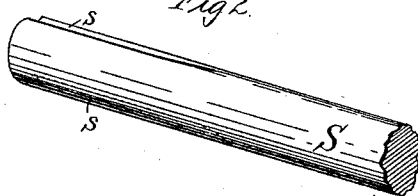
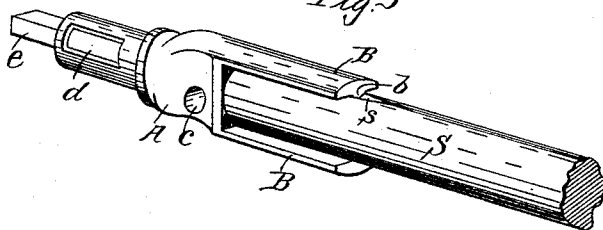


Fig 3



Witnesses
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SPRING SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 483,553, dated October 4, 1892.

Application filed June 26, 1891. Serial No. 397,598. (No model.)

To all whom it may concern:

Be it known that I, EDMUND F. HARTSHORN, of Newark, county of Essex, and State of New Jersey, have invented a new and useful Improvement in Spring Shade-Rollers, of which the following is a specification.

My improvement relates to the outer end of the central spindle or shaft on and around which the spring is coiled, and is intended to produce a spindle end that can be cast in one piece complete and ready to be connected to the spindle and is secured to the spindle without extra or separate fastenings.

In the accompanying drawings, Figure 1 is an isometric view of my improved spindle end. Fig. 2 is a view of a portion of the wooden shaft on which the end shown in Fig. 1 is placed, and Fig. 3 is a view of the shaft and outer end connected together.

The portion of the spindle lying within the roller consists of a small wooden shaft *s*, on the outer end of which is a metallic piece or end *A*, which passes out of the end of the roller and is arranged to lock into or engage with the bracket. As the spindle forms the bearing on which one end of the roller turns, it follows that it must be perfectly true and firm, and hence the connection between the shaft *s* and end piece *A* must be such that the two are held rigid and in a straight line and are prevented from turning or moving on each other in any direction. This metallic end piece *A* may be cast or may be constructed in any other suitable way. When cast heretofore in order to secure the same to the shaft *s* it has been necessary to ream or bore out the casting to receive the end of the shaft or to fasten the end piece to the shaft by separate outside means, as rivets, bands, &c., all of which increases the cost of construction. In my improvement the end piece *A* is cast in a single piece complete, ready to be connected to the shaft without further manipulation or finishing, and is adapted to be fastened to the end of the shaft and securely held on the same without any extra or separate fastening device. The outer end of the end piece is made in the usual manner, with the hole *c* for attaching the spring, the notch *d* in which the pawls on the roller engage, and the flat end *e*, which locks into the bracket. The inner end

is constructed with two forked extensions *B B*, which project some distance from the main body of the piece *A*. On the inner surfaces of these projections are ribs or flanges *bb*, the outer ends *b' b'* of which may be inclined and brought to a sharp edge, as shown in Fig. 1.

To attach the end piece to the shaft, it is only necessary to force the end of the shaft between the forked projections *B B*, in doing which the flanges or ribs *b b* will be driven into the wood, when the attachment is complete. When the shaft *S* is made of hard wood, it is desirable to form small grooves *ss* in the end in which the ribs *bb* fit. The distance between the inner surfaces of the projections *B B* should be the same as or a little less than the diameter of the shaft, so that the projections will hold and firmly press on the shaft and all movement or play between the two be prevented. As will thus be seen, the end piece *A* is attached to the shaft and securely held on the latter without any separate fastening devices, and on account of the flanges or ribs *b b* the shaft is kept from turning in the end piece under the action of the spring connected to its other end. Furthermore, all side movement of the shaft in the end piece is prevented in one direction by the forked projections *B B* and in the other direction by the ribs *bb*, and hence the two parts of the spindle are firmly held together and kept in a rigid straight line, and all wobbling between the two or movement of the one in the other is rendered impossible. In my improvement, therefore, the construction of the end piece is such that the same can be cast complete, ready to be at once connected to the spindle-shaft and applied to the roller, and the end is attached to the shaft without separate fastenings and held thereon, so that the shaft and end are perfectly firm and rigid and any movement between the two is prevented. In my improvement the attachment to the spindle is on the outside of the latter, and thus there is no liability of splitting the spindle as when a spur or pin is driven into the center of the spindle, and, moreover, it is not necessary to previously bore a hole in the spindle; but the end piece can be attached to the spindle without previously preparing the latter.

What I claim is—

1. As a new article, the spindle end A for shade-rollers, cast in one piece, having the flat end *e*, notch *d*, hole *c*, and the forked ends B B, provided with the ribs *b b*, substantially as described.

5 2. As a new article, the spindle end A for shade-rollers, cast in one piece, adapted to en-

gage with the bracket and with the stopping device on the roller and having the forked ends B B, provided with the ribs *b b*, substantially as described.

EDMUND F. HARTSHORN.

Witnesses:

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