

Aug. 25, 1925.

1,550,701

D. HOYT
SHADE ROLLER

Filed April 12, 1924

Fig. 1.

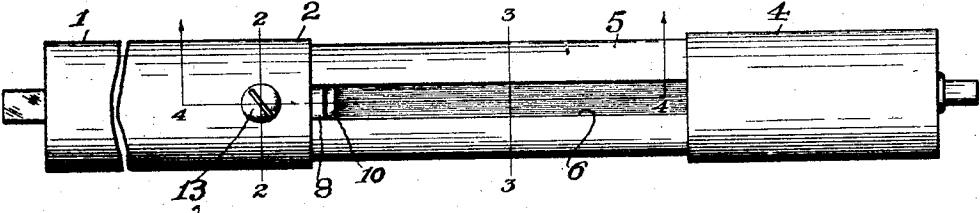


Fig. 2. Fig. 3.

Fig. 4.

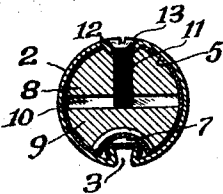
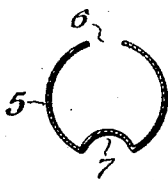
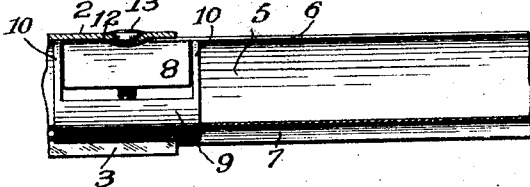


Fig. 5.

Fig. 6.

Fig. 7.

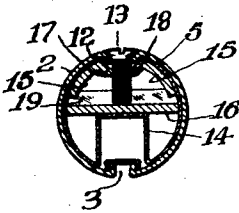
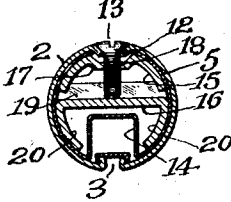
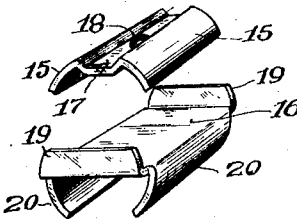
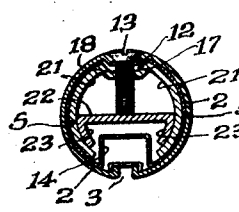
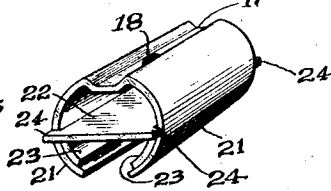


Fig. 8.

Fig. 9.



Inventor
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by

[Signature]
Attorney

Patented Aug. 25, 1925.

1,550,701

UNITED STATES PATENT OFFICE.

DANIEL HOYT, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO THE NATIONAL LOCK
WASHER COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

SHADE ROLLER.

Application filed April 12, 1924. Serial No. 705,986.

To all whom it may concern:

Be it known that I, DANIEL HOYT, a citizen of the United States, residing at East Orange, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Shade Rollers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to extensible metal rollers such as are generally used for shades of railroad car windows.

These rollers are usually made of thin tin and in two sections, namely, a main section which carries a pintle at one end and has an open socket at the other end, and a plug section which also has a pintle at one end and an open resilient socket at the other end, the plug socket being telescoped within the socket of the main section so that the distance between the pintles may be lengthened or shortened.

The plug socket is open on one side so that it may be slightly collapsed to readily enter the socket of the main section, and some sort of a device is employed to secure the two telescoping parts at any adjusted position so as to effect the desired length of roller.

In the past it has been found difficult to hold these telescoping sections so that the roller as a whole would not be weak and wobbly, particularly when the roller is extended more than an inch.

The object of this invention is to provide means which will securely lock these telescoping sockets together, even when they are engaged for a short distance only, so that the roller as a whole will be rigid and will not be deformed in the slightest degree.

Referring to the accompanying drawing

Figure 1 is an elevation of a shade roller, as it appears when the telescoping parts are secured together according to this improvement—

Figure 2 is a section at the line 2—2 of Figure 1—

Figure 3 is a detail cross section through the socket portion of the plug and taken at the line 3—3 of Figure 1—

Figure 4 is a longitudinal section at the line 4—4 of Figure 1—

Figure 5 is a section similar to Figure 2 but showing a modified form of the improvement such as would be employed in the instance of some curtain rollers—

Figure 6 is a view similar to Figure 5 but showing a slight modification in the adaptation of the locking means—

Figure 7 is a perspective view of the locking means employed in the construction shown at Figure 6, the elements of the locking means being separated and in the position assumed immediately before assembly—

Figure 8 is a view similar to Figure 6 but showing a slight modification in the manner of assembly of the locking parts, and

Figure 9 is a detail perspective view of the assembled locking parts utilized in the construction shown at Figure 8.

Similar numerals of reference denote like parts in the several figures of the drawing.

Referring to Figures 1, 2, 3 and 4, 1 designates the main roller section which terminates at its inner end in an open socket 2 and is provided with the usual shade groove 3, and 4 is the plug section which terminates at its inner end in an open socket 5 which is formed with a slot or cut away portion 6 that opens out through the end of the socket 5, the latter being formed with the usual groove 7 that straddles the groove 3 when the socket portions are assembled.

The locking device consists of two separate members 8, 9, which are inserted within the socket 5 so as to be wholly enclosed thereby, these members having curved outer faces that conform to the inner wall of this socket, and the member 9 is preferably formed with ears 10 between which the member 8 is assembled prior to insertion of the locking device as a whole within the socket 5, the object of this construction being to prevent any independent lengthwise sliding movements of these locking members, and while this particular construction is advisable, nevertheless it will be readily understood that it is not absolutely necessary.

In utilizing this locking member the locking members are first inserted within the socket 5 and the latter then inserted within the socket 2, the telescoping of these sockets being greatly facilitated by reason of the fact that the socket 5 may be slightly col-

lapsed manually. The member 8 has a threaded opening 11 therethrough, and the socket 2 has a circular countersunk opening 12, and when the two sockets have been telescoped, the clamping members are moved until the threaded opening 11 registers with the countersunk opening 12 whereupon the screw 13 is inserted through the opening 12 and driven partway through the opening 11; the sockets then are telescoped to a sufficient degree to effect the desired length of the roller as a whole, and the screw is then driven through the opening 11 and impinged against the member 9, and this will cause both of the locking members to separate and to thereby be forced against the wall of the socket 5 so as to bind the latter firmly to the wall of the socket 2 throughout the length of the locking members. The screw is of such a length that when the locking members have been forced to locking position, as above set forth, the head of the screw will be within the countersunk opening 12 so that it will not present any objectionable protuberance beyond the socket 2.

The above form of the approved locking device is preferably employed in the style of shade roller illustrated at Figures 1, 2, 3, and 4, but various makes of shade rollers differ in the formation of that part of the socket 5 which straddles the shade groove of the socket 2, and therefore the drawings illustrate several modifications in the construction of the locking members which construction, while it could readily be employed with that form of shade roller heretofore described, is preferably utilized in connection with a well known form of shade roller wherein a rectangular shaped grooved portion 14 is formed in the socket 5 which grooved portion straddles the shade groove 3 in the main socket portion as hereinbefore described.

Referring to Figure 5, which illustrates the form of shade roller last described, the locking members are designated by the numerals 15 and 16, and the member 16 rests directly upon the upper wall of the rectangular groove 14, while the member 15 has its outer surface conformed to the inner wall of the socket 5 and has a channel 17 lengthwise of its upper surface to accommodate the countersunk opening 12 in the socket 2, and there is a threaded perforation 18 extending through this channel portion, and the member 16 is preferably formed with ears 19 at each end so that the clamping members will be incapable of independent sliding movements. When these locking members illustrated at Figure 5 have been inserted within the open socket 5 of the plug and the threaded perforation 18 aligned with the opening 12, the screw 13 is inserted through this opening 12 and partly driven

through the perforation 18, and the telescoping parts then adjusted to effect the desired length of the roller as a whole, whereupon the screw is driven firmly against the member 16 which will cause the portions of the socket 5 that flank the rectangular groove 14 to be driven firmly against the inner wall of the socket 2, while at the same time the curved surfaces of the member 15 will be forced against the wall of the socket 5 thereby effecting the firm locking of the two telescoping members throughout the length of the clamping members.

It is not necessary that the member 16 should rest upon the top of the grooved portion 14, since this member can be provided with extensions 20 whose outer surfaces are curved and conform to the wall of the socket 5 as shown at Figure 6, so that when the screw is driven against this member 16, these extensions 20 will be impinged firmly against the wall of the socket 5, and the parts locked together, as before described.

Referring to Figures 8 and 9 of the drawing, one locking member 21 is precisely like the corresponding locking member illustrated at Figures 5, 6, and 7, with the exception that the sides of this member are extended throughout a more complete arc of a circle while the locking member 22 is telescopically assembled within the member 21 and has extensions 23 whose outer surfaces are curved to closely conform to the inner wall of the member 21, this member 22 being formed with ears 24 at each end between which the member 21 is assembled prior to the insertion of the locking members within the socket 5, so that when the screw 13 is driven against the member 22 the extended curved surfaces of the member 21 will be forced against the wall of the socket 5 and thereby bind the telescoping sockets firmly together.

The constructions of the locking members shown at Figures 5, 6, 7, 8, and 9, all operate on precisely the same principle as that which characterizes the construction shown at Figures 1, 2, 3, and 4, and all of these locking member constructions shown at Figures 5, 6, 7, 8, and 9, are preferably made of sheet metal.

Therefore, it will be understood that this invention is not limited to any special shape of the locking members, so long as the latter are forced by the action of the screw into firm clamping contact in the manner above described.

What is claimed is:—

1. A clamp for tubular telescoping elements, comprising complementary elongated separate members having their lengthwise movements in unison and wholly enclosed within the smaller of said elements and having curved outer surfaces that respectively conform to the inner face of said smaller

element at opposed locations, and means for spreading said members whereby the inner element is firmly bound to the outer element at opposed points.

- 5 2. In an extension shade roller formed of separate sections whose inner ends terminate in thin metal tubes capable of telescoping one within the other, the hereindescribed means for locking these tubes in telescoped
10 relation, comprising two elongated and separate clamping members held together as to lengthwise movements and slidably contained within the smaller tube and each having curved outer surfaces that conform to

the inner wall of said smaller tube in op- 15
posed relation, the smaller tube having an elongated slot which opens out through its end, and a screw passed through said tubes and slot and threaded into one clamping member and impinged against the other 20
clamping member whereby said members are spread apart, thereby causing the inner tube to bind against the outer tube through-
out the area of said curved surfaces.

In testimony whereof I affix my signature 25
hereto.

DANIEL HOYT.