G. D. HILL.

SHADE, CURTAIN, OR AWNING ROLLER.

APPLICATION FILED JAN. 4, 1915.

1,166,683.

Patented Jan. 4, 1916.

Fig. 1.

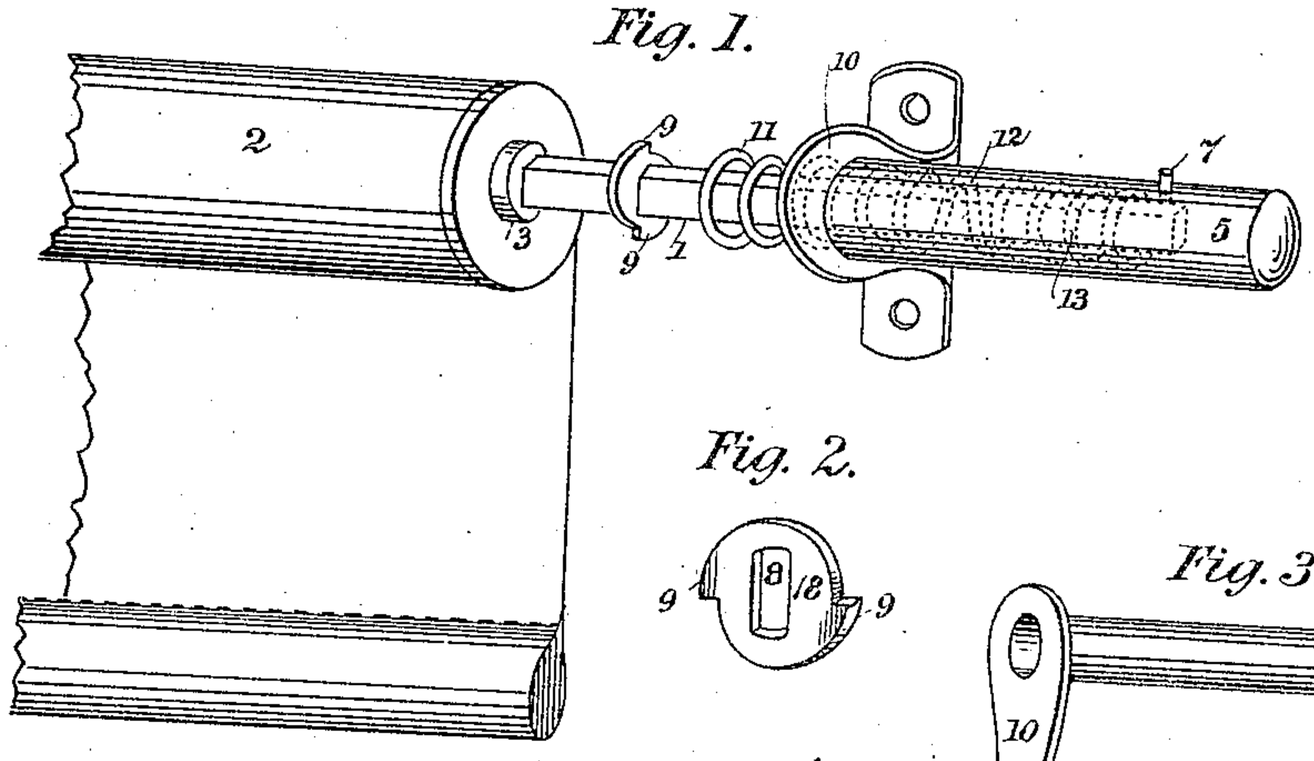


Fig. 2.

Fig. 3.

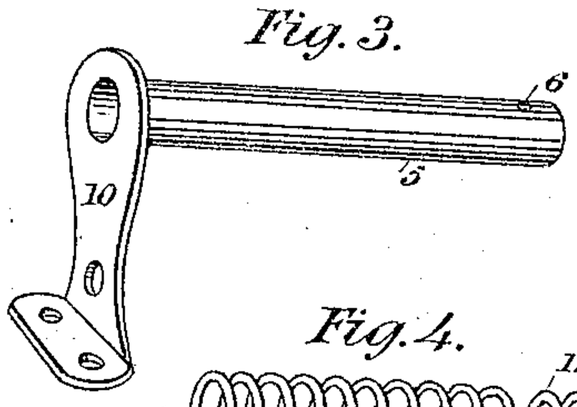


Fig. 4.

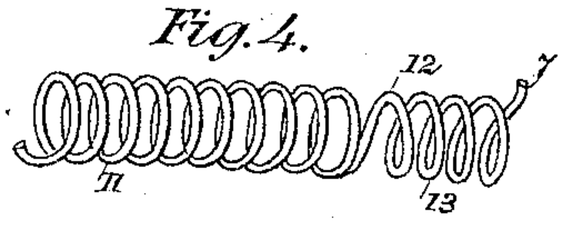


Fig. 5.

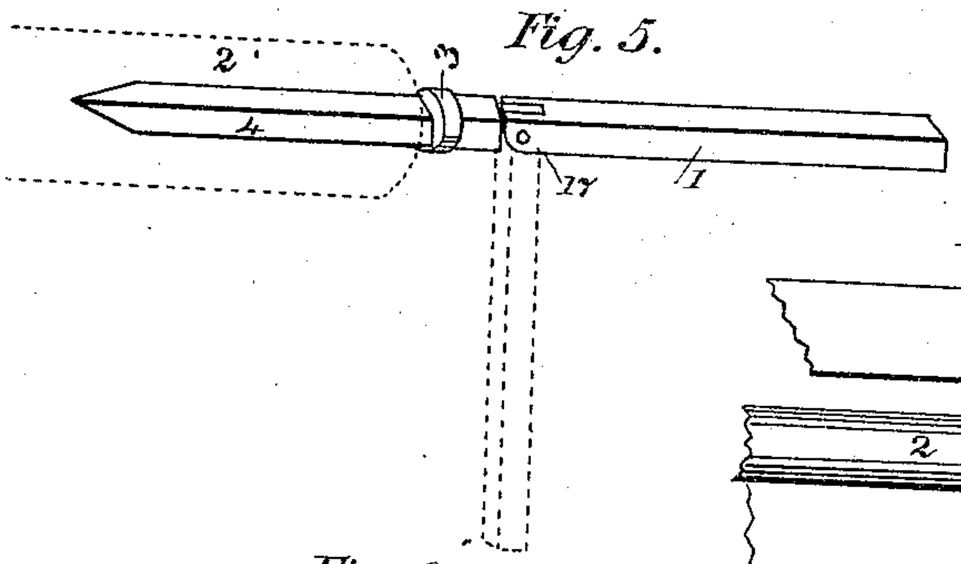


Fig. 6.

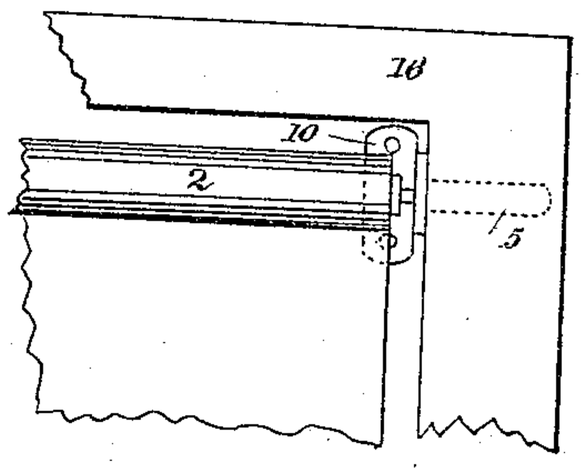


Fig. 7.

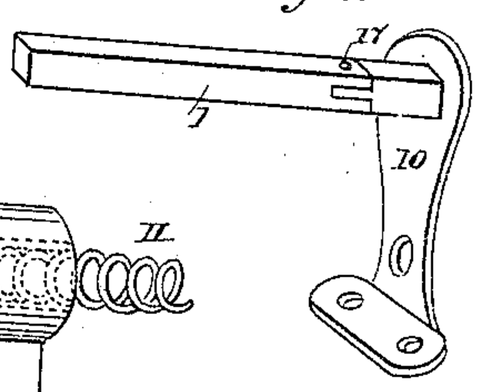


Fig. 8.

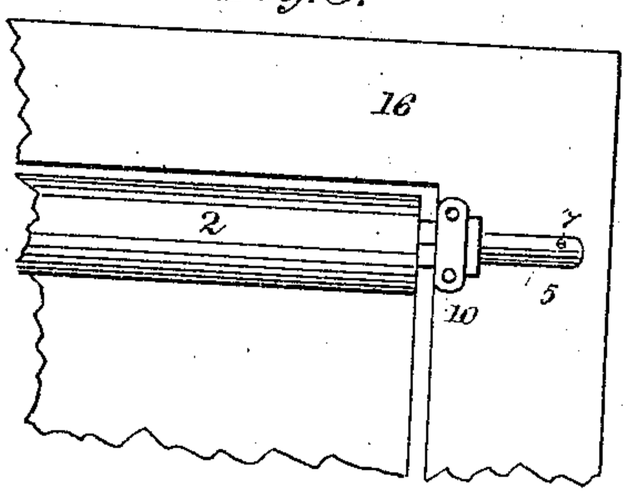
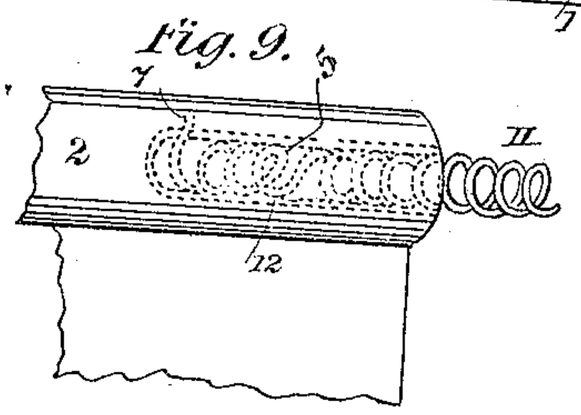


Fig. 9.



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GEORGE D. HILL, OF LOUISVILLE, KENTUCKY.

SHADE, CURTAIN, OR AWNING ROLLER.

1,166,683. Specification of Letters Patent. Patented Jan. 4, 1916.

Application filed January 4, 1915. Serial No. 442.

To all whom it may concern:

Be it known that I, GEORGE D. HILL, a citizen of the United States of America, and a resident of Louisville, county of Jefferson, State of Kentucky, have invented certain new and useful Improvements in Shade, Curtain, or Awning Rollers, of which the following is a specification.

This invention relates to new, novel, and useful improvements in shade roller, curtain or awning fixtures of all classes whatsoever, in which a roller and brackets are provided, by means of which the rotation of the roller with its shade, curtain or awning attached, is checked or stopped from unwinding, at a fixed position which is selected in the scope of the movement of the shade, curtain or awning upon the roller to which it is attached. The fixed point or position may be selected within one or more revolutions of the fabric of the shade, curtain or awning, upon the roller, near the end where the fabric is attached to the roller, thus preventing the detachment of the fabric from the roller when the shade, curtain or awning is pulled down its entire length as now often happens.

In the present invention the fabric attached to shade, curtain or awning rollers having bracket supports is prevented from becoming detached or torn loose from its fastenings to its roller, by means of the novel construction of the journal, which is sometimes called "spindle," and bracket of the roller fixture, in such a manner that the fabric of the shade, curtain or awning roller is automatically checked or stopped and retained at a fixed point or position selected in its revolution on its roller so as to prevent the fabric from tearing from its fastenings, and also permitting a shade, curtain or awning of longer length to be used where a shade, curtain or awning of shorter length is desired, without cutting the length of the fabric to do so. Such an arrangement of the parts, journal and bracket of the shade, curtain or awning fixtures to which this invention relates, does not in any way interfere with the unwinding or winding up in the usual manner of the shade, curtain or awning through the unchecked scope of its movement on its roller nor with the removal of the shade, curtain or awning roller from its brackets in making adjustments.

My invention has primarily for its object the lengthening of the usefulness and life of the fabric and fixtures, used in shade, curtain or awning fixtures of this class, by preventing the shade, curtain or awning fabric from becoming detached or torn loose from its roller at its fastenings, thus providing an economical benefit to the public using roller fixtures of this class.

The invention will be best understood by a consideration of the detailed description taken in connection with the accompanying drawing forming a part of the specification, in which drawing,—

Figure 1 is a plan view of one end of a shade, curtain or awning attached to its roller. Fig. 2 is an enlarged view of a thin circular metallic disk. Fig. 3 is a detached view of a curtain bracket. Fig. 4 is an enlarged detached view of the coil shaped spring. Fig. 5 is a view showing a modified construction of the journal. Fig. 6 is a view of one end of a shade, curtain or awning attached to its roller. Fig. 7 is a view showing a modified construction of the bracket to which is fastened the journal. Fig. 8 is a view of one end of a shade, curtain or awning attached to its roller. Fig. 9 is a view of one end of a shade, curtain or awning attached to its roller.

Referring to the figures by characters of reference, in which similar characters refer to similar parts throughout the several views, 1 is a journal, sometimes called "spindle," of any transverse cross-section other than cylindrical, but preferably rectangular in transverse cross-section, as shown in Figs. 1, 5 and 7, fastened to a roller 2, by any suitable or usual means, but preferably by being inserted or driven into one end of the roller 2, in its longitudinal axis, by means of the pointed end 4, Fig. 5.

3 is a shoulder on journal 1, for preventing its being driven too far into the material of roller 2. The pointed end 4, Fig. 5, of the journal 1, is of such cross-section transversely, preferably of triangular transverse cross-section, as to allow itself to turn with its roller 2 when the shade, curtain or awning attached to roller 2 is pulled down or wound up. I do not, however, confine myself to this particular way of fastening journal or spindle 1 to its roller 2 for accomplishing the purpose of my invention, for the journal 1 may be fastened to bracket 10 or be an integral part thereof, as in Fig. 7, which shows another or modified form of construction of the parts involving the same

principles in either case, all of which will be more fully explained hereafter. The journal 1, Fig. 1, revolves within the coils of the coil-shaped spring 13, Fig. 4, placed within the tubular portion, or boxing 5 of bracket 10, and fastened thereto, by any suitable means but preferably by having the inner end 7, of the coil shaped spring, Fig. 4, inserted through the hole 6 in the side of and near the inner end of tubular portion or boxing 5 of bracket 10, supporting the roller fixture. However, I do not confine myself to this method alone for providing a place for the boxing 5 retaining the coil-shaped spring shown in Fig. 4, but the tubular portion or boxing 5 shown by dotted lines in Fig. 9 may be placed and fixed within the bore of one end of the roller 2 and made to turn with same as shown, this being another or modified form of construction of the parts involving the same principles in either case.

18 is a thin circular metallic disk with central hole 8, shown in Fig. 2, preferably rectangular in cross-section but in all cases of a cross-section corresponding to the transverse cross-section adopted for the journal 1, on which it fits, with which it turns and moves longitudinally.

9, 9, are external projections, of the shape shown, on the circumference of the thin circular metallic disk 18, Fig. 2. Either one of these external projections 9, 9 engages itself with the loop 12 of the coil-shaped spring, Fig. 4, when coming in contact therewith, as will be more fully explained in assembling the parts of my invention. The external projections, 9, 9 also act as means for allowing the thin circular metallic disk, Fig. 2, to revolve within the coils 11 of the coil shaped spring 13, Fig. 4, when revolving with and longitudinally on the journal or spindle 1, in its tubular boxing 5, before coming in contact with part 12 of the coil-shaped spring, Fig. 4.

10 is a bracket with tubular boxing 5 attached to or made an integral part thereof, with hole 6 in the side of and near its inner end, for receiving and fastening the inner end 7 of coil-shaped spring for supporting the roller, with the shade, curtain or awning attached, as shown in Fig. 3.

13 is the coil-shaped spring, as shown in Fig. 4, the outer end of which is coiled around its mandrel a sufficient distance in a direction contrary to the direction in which roller 2 turns in winding up its attached shade, curtain or awning. After a sufficient length of coil-shaped spring is thus obtained a loop or bend 12 is made in the coil of the spring and the coiling of the spring is continued in the reverse direction from its initial direction for a sufficient length and ending to form its inner end 7.

11 is the coils of the outer or initial end of the spring which are left sufficiently apart to allow the external projections 9, 9 of the thin circular metallic disk 18, Fig. 2, to revolve within same in approaching the loop or bend 12. 12 acts as a stop or check to the further revolution of the thin circular metallic disk, Fig. 2, by engaging itself with one of the external projections 9, 9, likewise checking or stopping the further revolution of the journal or spindle 1, with its roller 2, and shade, curtain or awning attached.

In Fig. 5 there is shown a modified construction of the journal 1, with shoulder 3, pointed end 4 and hinged portion 17, the dotted lines indicating another position of this hinged portion 17 and also the position of roller 2. The hinged portion 17 of journal or spindle 1 is for facilitating the removal of the shade, curtain or awning roller from its tubular bracket support when fitted to the inside of a frame, as more particularly shown in Fig. 6. 2 is a roller.

Fig. 6 shows the end of a shade, curtain or awning attached to its roller 2. 10 is a bracket similar to bracket 10, Fig. 3. Dotted lines show tubular portion 5 of bracket 10 fastened to the inside face of a frame 16 by having the tubular portion 5 inserted into a suitable hole in the inside face of a frame and fastened thereto. Journal or spindle 1 is shown in Fig. 7 fastened to bracket 10, in such a way as to be an integral part of the metal forming bracket 10. 17 is the hinged portion of journal or spindle 1. This modified form of construction of the bracket is only used in connection with the use of the modified form of construction when the tubular boxing is placed or fixed within the bore of one end of the roller 2, as in Fig. 9.

Roller 2 is shown in Fig. 8 with one end of a shade, curtain or awning attached thereto, employing my invention. The bracket 10, similar to bracket 10 in Fig. 3, is fastened to the outside face of frame 16 by suitable means. 5 is the tubular portion of bracket 10. In the bore of roller 2, Fig. 9, is inserted and fastened tubular boxing 5 with coil-shaped spring 13 fitting and fastened by end 7 on the inside of said tubular boxing. 12 is a loop or bend in coil-shaped spring 13 for stopping or engaging with one of the external projections 9, 9 of thin metallic disk 18, Fig. 2, when in contact. 11 is the plane of the coil of the coil-shaped spring 13, Fig. 9, representing a modified form of construction of one of the parts of my invention in which the tubular boxing 5 is placed and fixed within one end of roller 2.

In assembling the parts, as in Fig. 1, the journal or spindle 1 is fastened by suitable means or inserted into the bore of the roller 2 by its pointed end 4, as in Fig. 5, until the shoulder 3 fits up against the end of roller

2. Upon the journal or spindle 1 is then placed the thin circular metallic disk 18 by means of the central hole 8, Fig. 2; then, with the shade, curtain or awning unwound upon its roller to any desired length but always leaving at least one or more revolutions of the fabric covering the fastenings holding the shade, curtain or awning to its roller, the bracket 10 with its tubular boxing 5 inclosing the coil-shaped spring 13, Fig. 4, is placed over the journal or spindle 1 and revolved in the same direction that the roller would take in winding up its shade, curtain or awning, and engaging the outer end of the coil-shaped spring, Fig. 4, with the external projections 9, 9 of the thin circular metallic disk, Fig. 2, so as to wind up the thin circular metallic disk, Fig. 2, within the planes of the coils of the coil-shaped spring until one of the external projections 9, 9 engages itself with the loop or bend 12 of the coil-shaped spring, Fig. 4, and is stopped from further revolving. When this movement ceases the bracket 10 is then fastened to its frame in the usual manner. The shade, curtain or awning is then ready to be operated in the usual manner. The immediate effect of such an arrangement of the parts of a shade, curtain or awning fixture to which my invention relates is to offer a positive stop or check to the unwinding of the shade, curtain or awning at any fixed or designated point within the scope of its movement upon its roller; this fixed point or position for checking or stopping the unwinding of the shade, curtain or awning, is never fixed less than one revolution of the fabric over the fastenings which fasten the shade, curtain or awning to its roller, and affords means whereby the fabric of the shade, curtain or awning is better enabled and adapted to withstand the tensile strain to which it is subjected in pulling down the shade, curtain or awning its full length, thereby preventing the fabric from easily becoming torn loose or detached from its roller as now often happens with shade, curtain or awning fixtures of this class. By fixing the point or position in the scope of the movement of a shade, curtain or awning on its roller where it is to be checked or stopped in unwinding so as to leave permanently wound up on its roller that part of the fabric not necessary to be used in operating a shade, curtain or awning of longer length where one of shorter length is desired, there is thus provided means for the novel construction of the parts of my invention.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In shade, curtain or awning fixtures, in combination, a roller, a roller bracket consisting of a tubular boxing within which is fitted and fastened by suitable means a coiled spring having near its inner end a loop or bend, a thin circular metallic disk with external projections and a central hole of other than cylindrical cross section, and a journal of similar transverse cross section to that adopted for the cross section of the central hole in the thin metallic disk fitted and fastened to one end of a roller, substantially as and for the purpose described.

2. In shade, curtain or awning fixtures, in combination, a roller, a roller bracket consisting of a tubular boxing in the side of which near its inner end is a hole adapted to receive and fasten the inner end of a suitably coiled spring, a coiled spring having near its inner end a loop or bend, the inner end being adapted to fasten and fit in said hole inside of the tubular boxing, a thin circular metallic disk with external projections and a central hole of other than cylindrical cross section, and a journal or spindle of similar transverse cross section to that adopted for the cross section of the central hole of the thin metallic disk, fitted and fastened to one end of a roller, substantially as and for the purpose described.

3. In shade, curtain or awning fixtures, in combination, a roller, a roller bracket having a tubular boxing, a coiled spring having near its inner end a loop or bend in the coil adapted to engage with one of the external projections on the circumference of a thin circular metallic disk having a central hole of other than cylindrical cross section, and a journal of transverse cross section similar to that adopted for the central hole in the thin circular metallic disk, fitted and fastened to one end of a roller and adapted to turn therewith, substantially as and for the purpose described.

4. In shade, curtain or awning fixtures, in combination, a roller, a roller bracket having a tubular boxing within which is mounted and fastened a coiled spring having near its inner end a loop or bend adapted to engage with the external projections on the circumference of a thin circular metallic disk and to stop said disk, a journal or spindle of other than cylindrical transverse cross section, a thin circular metallic disk with a central hole of cross section similar to the transverse cross section of the journal or spindle upon which the thin circular metallic disk is adapted to fit, revolve with and move upon longitudinally, substantially as and for the purpose described.

5. In shade, curtain or awning fixtures, in combination, a roller, a roller bracket having a tubular boxing within which is mounted and fastened a coiled spring having near its inner end a loop or bend adapted to engage with the external projections on the circumference of a thin circular metallic disk and to stop said disk, a journal or spindle of

other than cylindrical transverse cross section, a thin circular metallic disk with a central hole of cross section similar to the transverse cross section of the journal or spindle upon which the thin circular metallic disk is adapted to fit, revolve with and move upon longitudinally; said journal or spindle being provided with a hinged portion adjacent the roller, substantially as and for the purpose described.

6. In shade, curtain or awning fixtures, in combination, a roller, a roller bracket with a tubular boxing, a journal of other than cylindrical transverse cross section, a thin circular metallic disk with central hole adapted to loosely fit, revolve with and move longitudinally upon said journal and with external projections on its circumference, a coil shaped spring with a loop or bend in its coil near its inner end, with its inner end adapted to fasten and fit within the bore of the tubular boxing.

In testimony of the fact that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

GEORGE D. HILL.

Witnesses:
CHARLES OESTREICH.
LEWIS RYANS.