A. KAISERMAN.

WINDOW SHADE ROLLER FITTING.

APPLICATION FILED AUG. 3, 1911.

1,019,654. Patented Mar. 5, 1912.

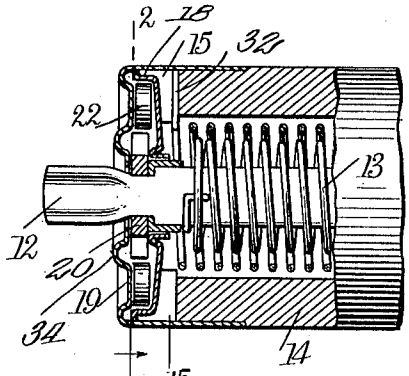

FIG. 1.

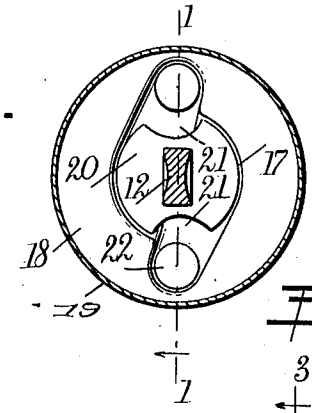

FIG. 2.

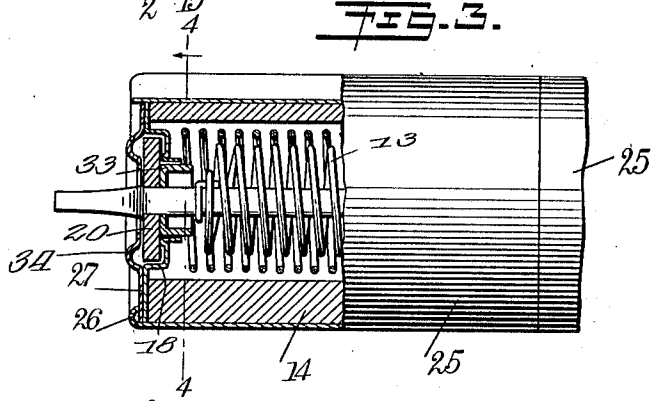

FIG. 3.

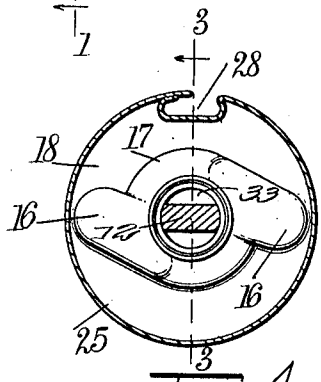

FIG. 4.

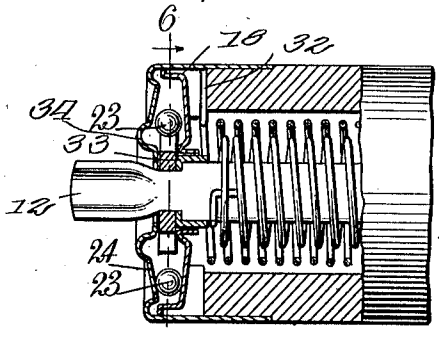

FIG. 5.

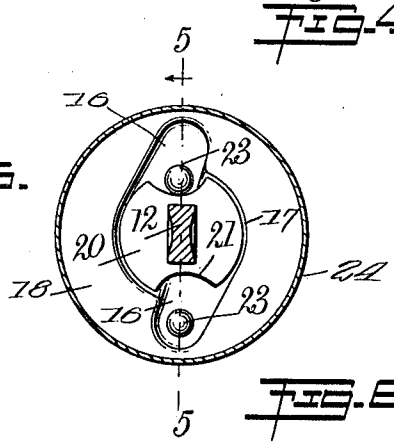

FIG. 6.

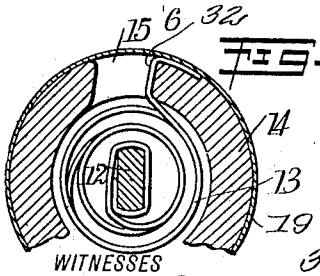

FIG. 8.

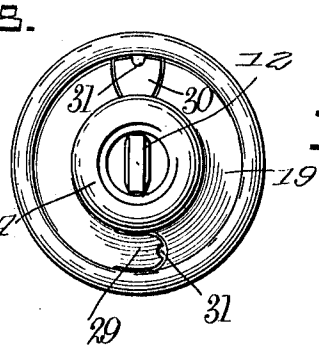

FIG. 7.

WITNESSES

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UNITED STATES PATENT OFFICE.

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WINDOW-SHADE-ROLLER FITTING.

1,019,654. Specification of Letters Patent. Patented Mar. 5, 1912.

Application filed August 3, 1911. Serial No. 642,150.

To all whom it may concern:

Be it known that I, ACHILLE KAISERMAN, a citizen of the United States, and a resident of Kankakee, in the county of Kankakee and State of Illinois, have invented a new and Improved Window-Shade-Roller Fitting, of which the following is a full, clear, and exact description.

Among the principal objects which the present invention has in view are: to provide means for a roller of the character mentioned operable by gravity when the roller is disposed in both the horizontal and vertical positions; to provide in fittings of the character described means for removing the locking devices therefrom without dismemberment of the fittings and roller; and to provide a construction for fittings of the character described which is simple, efficient and economical.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

Figure 1 is a longitudinal section of a shade roller provided with fittings constructed and arranged in accordance with the present invention, the section being taken on the line 1—1 in Fig. 2; Fig. 2 is a cross section taken on the line 2—2 in Fig. 1; Fig. 3 is a longitudinal section of a modified form of roller provided with fittings constructed and arranged in accordance with the present invention, the section being taken on the line 3—3 in Fig. 4; Fig. 4 is a cross section taken on the line 4—4 in Fig. 3; Fig. 5 shows a modified form of the invention, and is a longitudinal section taken on the line 5—5 in Fig. 6; Fig. 6 is a cross section of the modified form shown in Fig. 5, the section being taken on the line 6—6 in the said figure; Fig. 7 is a view of a roller equipped with fittings constructed and arranged in accordance with the present invention, and showing a modified form of ferrule adapted for the removal of the locking devices of said fittings; and Fig. 8 is a fragmentary cross section showing a detail of construction.

The present invention relates to improvements in the construction of shade rollers for which a Patent No. 953,842 was granted to me under date of April 5, 1910; and also as an improvement upon the construction disclosed in the application for Patent No. 611,548 filed by me under date of March 1, 1911, to which patent and application for patent cross reference is here made.

The present improvements are designed materially to adapt the roller when equipped with the present fittings for disposition in various arrangements with reference to the window. That is to say, the roller may be disposed in vertical arrangement at the side of the window and on either side thereof. It may also be hung, as is usual, at the head of the window; or at the sill thereof. In hanging at the sill the locking devices, which are not needed and in this position would prove inconvenient, may be extracted from the fittings without difficulty and without necessitating the separation of the fittings from the roller.

As shown in the accompanying drawings, the supporting shafts are provided with oblong ends 12, and are extended within and held by the double-wound spiral spring 13, as disclosed in the applications above referred to. The purpose of the construction producing the double-wound spring 13, having the circumfolded sections, is to economize in the space required for the disposition of a spring having sufficient length. Further, the relation thus established between the anchored ends operating in substantially the same plane on the roller and supporting shaft produces a more even rotation of the roller on the said shaft. When the fitting is applied to the window roller 14 the usual end recesses 15 are provided to engage the projections 16 of the circular cup 17. The construction of the cup 17 and projections 16 is best seen in Fig. 4 of the drawings. The said cup and projections are formed in a closure plate 18. The cup 17 and projections 16 are covered on the face by a ferrule 19 to form box-like recesses in which are mounted the loose locking devices. The cup 17 is circular in form and is provided to form a receptacle for the disk 20. The disk 20 is, on opposite sides, provided with recesses 21, 21. The disk 20 is fixedly mounted on the supporting shaft having the oblong end 12.

In the construction of the plate 18 as disclosed in the above referred to applications the wall thereof is vertical. In the present disclosure the bottom of the recesses formed by the projections 16 are inclined from the outer end to the inner end. The outer end is the end adjacent the periphery of the

plate 18, while the inner end is adjacent to the center of the said plate. This construction avoids, by the gradual enlargement toward the center of the plate, the separation between the wall of the ferrule 19 and of the plate 18 and insures the liberation of the locking device to permit it to drop in the recess 21 of the disk 20. The ferrule 19 constitutes a cover for the plate 18 to form a box-like inclosure. The ferrule is provided, adjacent the center thereof, with a reinforcing ridge 34.

As seen in the accompanying drawings, two forms of locking device are employed. In Figs. 1 and 2 are shown the circular disks 22 which rest in the recess of the projections 16 and are operated by gravity to fall into the recesses 21 when the roller is so disposed that one or the other of the two disks is superposed above the said recess and the disk 20 wherein the recess is formed. In Figs. 5 and 6 the locking devices are shown as the balls 23, 23. The operation of the balls and the disks are, as far as the locking is concerned, similar.

The form of fitting shown in Figs. 1 and 3 of the drawings is more especially designed for rollers which are to be suspended in a horizontal position, and where the plate 18 is shaped to free the disks 22 from any engagement of the same between the sides of the said plate and the ferrule 19. In the form shown in Figs. 5 and 6, and where are employed as locking devices the balls 23, the roller is adapted for arrangement in vertical disposition. In this construction the ferrule 24 is used in lieu of the ferrule 19. The distinction between the two ferrules is that the face of the ferrule 24 is outwardly projected toward the center of the said ferrule. The extent of the projection of the face of the ferrule is equal to the cupping of the plate 18. It will now be seen that when the fitting having the ferrule 24 is placed with its axis in a vertical position the balls 23 will normally roll toward the center and rest in position to be engaged by the disk 20 and the recesses 21 thereof.

The operation of both styles of locking device, in conjunction with the disk 20, is the same. When the roller is rotated rapidly the centrifugal action operating upon the locking devices carries them to the outer ends of the recesses formed in the projections 16. When the rotation of the roller is slowed the locking devices are moved by gravity toward the center of the plates 18 into the path of the disks 20, and into the recesses 21 when presented. The continued movement of the roller after the locking devices are seated in the recesses 21 results in cramping the said locking devices between the side of the recess 21 in the disk 20 and the straight side of the recess in the projection 16 carrying the said locking device. In this position the roller is locked and the operation of the spring 13 is arrested.

As shown in Figs. 3 and 4 the wood roller 14 is provided with a metal casing 25. The end of the casing 25 is curled to form the inturned rim 26. The rim 26 operates to hold in position the plate 27, which, in this form of the invention, is modified to replace the center of the ferrule 19, the ferrule 19 not being used in this modified form of the invention. The casing 25 has formed therein a longitudinal groove or slot 28 provided to hold the window curtain. Any suitable device for fastening the cloth of the curtain permanently in the slot 28 may be employed. When using the modified form of the invention described the plates 18 are nicked out at the edge to pass the metal of the casing 25 forming the slot 28, as shown in Fig. 4 of the drawings. The metal forming the slot 28 in this event constitutes a holding member for the plates 18 and 27.

In Fig. 7 of the drawings a further modification of the invention is disclosed in that the ferrules 19 and 24 or the plate 27 are provided with closure sections 29 and 30. The sections 29 and 30 are partly cut from the said ferrules or plate, so that they may be bent back to open a recess beneath the said sections and replaced after the removal of the locking devices from the recesses formed by the projections 16. The closure sections 29 and 30 are disposed over the outer ends of the said recesses in the projections 16 of the form of plate 18. Each of the closure sections is provided with a nick 31 suitable for the insertion of a tool or instrument to lift the said closure sections. This operation is principally called into action when it is desired to place the rollers carrying the fittings adjacent the sill of the window. As is well known, when a shade roller is so positioned the operation of the roller is effected by a cord passing through and above an upper guide pulley. Means are furnished to hold the cord in any desired position to arrest the operation of the rewinding spring 13.

It will be noted that the end 32 of the spring 13 is bent to fit within the recesses 15 of the wooden roller, the end of the said spring being extended between the outer surfaces of the wooden roller and the ferrule 19. Where the tin casing 25 is employed having the slot 28 formed therein the bent end of the spring 13 is turned into the said slot. The opposite end of the inner portion of the spring 13 is provided with a square bend or loop through which is extended the supporting shaft much in the manner as set forth in the above mentioned application. It will also be noted in the present construction that for the plate 18 a bearing is formed in the shape of a small cylinder 33. The cylinder 33 is perforated

to receive the oblong ends 12 of the supporting shaft.

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

1. In a window shade roller, the combination with an end covering plate provided with radially disposed pocket sections; of a cover for said plate, the separation between the walls of said plate and said cover being gradually increased to the center of said plate and cover.

2. In a window shade roller, the combination with an end covering plate provided with radially disposed pocket sections; of a cover for said plate, the separation between the walls of said plate and said cover being gradually increased to the center of said plate and cover, and said plate and cover being provided with reinforcing ridges formed near the center of said plate and cover and concentric therewith.

3. In a window shade roller, the combination with an end covering plate provided with radially disposed pocket sections; of a cover for said plate, the separation between the walls of said plate and said cover being gradually increased to the center of said plate and cover, and the walls of said cover being perpendicular to the axis of said roller.

4. In a window shade roller, the combination with a supporting shaft oblong in cross section; of a bearing cylinder mounted on said shaft and provided with a central perforation shaped to conform with said shaft to hold said cylinder and shaft in non-rotative relation; a covering plate for the end of said roller centrally perforated to form a bearing on said cylinder, said plate having a circular centrally located bearing pocket and pocket projections extended therefrom tangential to said pocket; a cover for said plate and for said projections, the walls of said projections being extended outward and the extension thereof being gradually increased toward the center of said cover; and a plurality of loose rolling locking devices to move in said projections toward the center of said plate whereby the said roller may be disposed vertically.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ACHILLE KAISERMAN.

Witnesses:
J. F. GRANGER,
W. W. COBB.