

1,139,974.

Fig. 1.

Fig.3.



WITNESSES

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2 SHEETS—SHEET 2.



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CHARLES N. HINER, OF STAUNTON, VIRGINIA, ASSIGNOR TO THE HINER SPECIALTY AND MANUFACTURING CO., INC., OF STAUNTON, VIRGINIA, A CORPORATION OF VIRGINIA.

WINDOW-SHADE HANGER.

1,139,974.

Specification of Letters Patent.

Patented May 18, 1915.

Application filed April 24, 1914. Serial No. 834,197.

To all whom it may concern:

Be it known that I, CHARLES N. HINER, a citizen of the United States, residing at Staunton, in the county of Augusta and State of Virginia, have invented a new and useful Window-Shade Hanger, of which the following is a specification.

The invention relates to improvements in window shade hangers.

The object of the present invention is to improve the construction of window shade hangers, more especially that shown and described in Patent No. 1,094,070, granted to me April 21, 1914, the application of which was pending concurrently with the present application, and to enable the same to be mounted within a window frame in a simple, practical, and efficient manner when a house or other building is constructed, without materially increasing the cost of the same.

With these and other objects in view the invention consists in the construction and novel combination of parts hereinafter fully described, illustrated in the accompanying drawing, and pointed out in the claims hereto appended, it being understood that various changes in the form, proportion, size, and minor details of construction, within the scope of the claims, may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings: Figure 1 is a perspective view of the upper portion of a window provided with a window shade hanger constructed in accordance with this invention. Fig. 2 is an enlarged vertical sectional view of the upper portion of the same. Fig. 3 is a vertical sectional view on the line 3—3 of Fig. 2. Fig. 4 is a detail horizontal sectional view on the line 4—4 of Fig. 2. Fig. 5 is a detail horizontal sectional view on the line 5—5 of Fig. 2. Fig. 6 is an elevation of one of the tubular guides and the slidable bracket, the tubular member of the transverse connection being in section. Figs. 7 and 8 are detail perspective views of the slidable brackets. Fig. 9 is a detail perspective view of the bearing plate.

Like numerals of reference designate corresponding parts in all the figures of the drawings.

In the accompanying drawings, in which is illustrated the preferred embodiment of the invention, the window shade hanger

comprises, in its construction, a shade supporting spring roller 1 mounted in a horizontal position within a top transverse chamber 2 of a window frame or casing 3 in fixed side brackets 4 and 5, and composed of telescopic tubular sections 6 and 7 capable of adjustment to vary the size of the window shade hanger and adapt the same to windows of different widths, but the shade supporting spring roller may, of course, be constructed of a non-adjustable, rigid character for use on windows of a particular width. The outer end of the tubular section 6 is equipped with a round journal 9, having a shank portion extending through the center of an end cap 10 and secured at its inner end in a block or piece 11. The block or piece 11, which is circular in cross section to conform to the configuration of the tubular or hollow spring roller, is arranged within and fits the outer end of the said section 6, as clearly illustrated in Fig. 2 of the drawings. The inner end of the tubular section 6 telescopes within the inner end of the section 7 of the spring roller 1, and it is provided with a circular block or member 12 into which is embedded a screw 13 for securing the sections 6 and 7 in their adjustment. The screw 13 extends through a perforation in the section 7, and the other section 6 is provided with a longitudinal slot 14, through which the screw passes. The slot permits the screw to engage the block or member 12 at different points, and vary the length of the spring roller.

The inner portion of the section 7 receives a bearing block or member 16, located a sufficient distance from the inner end of the said section 7 to permit the telescopic adjustment of the section 6, and having one end 17 of a coiled spring 18 attached to it. The bearing block or member 16 is provided at its inner side with a tubular extension 19, constituting a bearing for an interiorly arranged, longitudinally disposed rod 20 housed within the spring roller 1 and preferably constructed of wood, as explained in the aforesaid patent. The rod 20 has a rounded shank 21 of a journal 22 embedded in it at its outer end, and the coiled spring 18, which is housed within the roller 1, surrounds the rod 20 and has its outer end 24 secured in a transverse perforation of the journal 22. The spring 18 actuates the roller 1 to wind thereon metallic strips or ribbons 26, and

serves to hold the inner end of the rod 20 in the bearing block or member 16. The wooden rod 20 is preferably reinforced at its outer end by a metallic sleeve or ferrule 27, but said rod may, of course, be constructed of any other suitable material.

The outer portion of the journal 22 is provided at one side with a flat face 28 to cooperate with inner and outer ratchets 29 and 30 constructed substantially the same as shown and described in Patent No. 866,200, granted to me Sept. 17, 1907. Each of the ratchets consists of a disk provided with a central opening 31 and having an angularly disposed branch or recess 32 receiving a ball 33 which, when at the limit of its inward movement, is adapted to engage with the flat face of the journal 22 to lock the ratchet disk rigid therewith. The inner ratchet disk is secured within the outer portion of the tubular section 7 in spaced relation with the outer end thereof, and the ball 33 of the inner ratchet device is retained in the branch slot or recess 32 of the ratchet disk by side closure disks 34. The outer ratchet disk is pressed into a circular recess 35 of the fixed side bracket 5, which forms a closure for the outer side of the branch slot or recess 32. The circular socket or recess 35 also receives a closure disk 36 similar to the closure disks 34 and arranged at the inner face of the ratchet disk or the outer ratchet to confine the ball 33 in the branch slot or recess 32. The operation of the ratchets in the action of the spring roller 1 is the same as described in the aforesaid patent, and further description of the same or the particular construction of the ratchet mechanism is deemed unnecessary. The fixed side brackets 4 and 5, which may be made of any suitable material, are constructed substantially as shown and described in the aforesaid patent, and they consist of vertically disposed body portions and outwardly extending supporting portions. The body portions are provided with attaching flanges which are secured to the outer or rear wall of the top chamber 2 of the window frame or casing 3. The chamber 2 extends entirely across the top of the window frame or casing, and has a removable front wall 37 secured by screws or other suitable fastening devices to the top and bottom walls of the top chamber, and adapted to be readily removed to afford access to the spring roller 1.

The strips or ribbons 26 are preferably constructed of metal, but any other suitable flexible connection may, of course, be employed, and as the tubular section 6 is of slightly less diameter than the section 5, in order to telescope within the latter, the cap 10 has its sleeve portion 42 extended to provide a ribbon receiving portion of the same diameter as the ribbon receiving portion of the tubular section 7. The upper ends 43

of the metallic strips or ribbons 26 are passed through slots 44 in the end portions of the roller. These slots are arranged in pairs and the upper terminal portion of the metallic ribbon 26, after being passed through the slots 44, has its end arranged against the exterior of the roller and held against the same by the coiling of the metallic ribbon thereon. As the metallic ribbon is of sufficient length to permit a full operation of the hanger without entirely uncoiling it from the roller 1, the terminal 43 is securely fastened to the roller 1 and effectually prevented from becoming accidentally detached. The lower ends of the strips or ribbons 26 are secured to slidable brackets 45 and 46 of a slidable support, movable vertically along the window frame or casing, and carrying a window shade 41 to arrange the same in the desired position. The slidable support comprises, in its construction, side brackets 45 and 46 and an adjustable transversely disposed connection composed of telescopic sections 47 and 48, preferably constructed of tubular metal. Each side bracket is preferably stamped from sheet metal, but may be constructed in any other suitable manner, and it is composed of an inner narrow vertically disposed slide 49 and an outwardly extending supporting portion which is cut to form an integral, laterally projecting approximately rectangular ear 51 bent into the plane of the slide 49 and secured by riveting, electric welding, or any other suitable means to the outer end of one of the adjustable transverse sections 47 and 48 of the transverse connection. The telescopic sections or members 47 and 48, which have flattened outer ends to facilitate their attachment to the ears or lugs 51, are adapted to adjust themselves automatically to the adjustment of the spring roller 1 to arrange the device to suit the width of the window frame or casing to which it is to be applied. As the slidable brackets 45 and 46 are mounted in vertical hollow or tubular guides 53, the tubular sections may or may not be provided with means for securing them in their adjustment, but it is preferable to employ a set screw 52, mounted in a threaded perforation of a boss or enlargement of the tubular section 47 and engaging the other tubular section 48.

The supporting portion of the bracket 45 is provided with a plurality of circular bearing openings 54 arranged in an inclined series and adapted to receive the round journal 55 of the spring roller of the window shade 41, and permitting an adjustment of the window shade toward and from the adjustable transverse connection of the slidable support to adapt the window shade hanger for the reception of window shades of different lengths and of varying the diameters when rolled up. This adjustment

also enables a window shade to be placed so that in rolling up, the stick, at its free edge, will contact with the adjustable transverse connection and form a stop for limiting the rotary movement of the spring roller to prevent the same from flying around and lessening the tension of the actuating spring should the window shade, while being adjusted, accidentally slip out of the hand of the operator. The other slidable bracket is provided with a plurality of substantially rectangular openings 56 arranged in an inclined series to permit the aforesaid adjustment of the window shade, and connected by a narrow slot 57 and having an entrance slot 58. The upper walls of the openings are inclined as shown at 59, and the said openings are separated at the bottom by a rounded projection 60 and a tapered projection 61 at the top. These cut away portions permit the rectangular or flattened journal 62, which is connected with the spring of the roller of the window shade, to be readily passed into either of the openings 56, and the top walls of the openings avoid any liability of the shade roller being accidentally thrown out of the bearing recesses should the window shade support come to an abrupt stop.

The upper and lower terminals of the slide portions 49 of the side brackets are provided with extensions which are adapted to be bent upon themselves to form a hook or loop 63, set at a slight inclination and having a downwardly tapered opening adapted to receive a loop 64 formed in the lower end of each metallic strip or ribbon and retained in the loop 63 by a key 65 or other suitable fastening device, which maintains the loop of the strip or ribbon in an expanded condition within the said loop 63. The strip or ribbon is doubled to form the loop, and the tension on it maintains the lower terminal of the said strip or ribbon against the hook or loop 63 of the slidable bracket. By extending the terminals of the slides so that either one may be bent to form a loop or hook 63, it is unnecessary to provide separate dies for the right and left hand bracket, as a bracket stamped from a single die may be made into either a right or left hand bracket.

The guides 53, which are constructed of suitable metal, are rectangular in cross section and are mounted in vertical channels 66 formed in extensions 67 in the jamb portion 68 of the sides of the window frame or casing, and located at the upper half of the same. The guides 53 extend upward to and communicate with the top chamber 2 and they are provided at the front faces of the jamb portions with vertical slots 69 and have corresponding notches 70 at intervals along the slots to afford access to screws or other suitable fastening devices for securing

the guides in the channels of the window frame or casing. Also, the openings formed by the opposite notches or recesses 70 permit the loops or hooks 63 of the slidable brackets to be readily introduced into the tubular guides. The tubular guides are bent at their lower ends and the channel at one side, preferably the right hand side, of the window frame or casing is provided with a lower extension 71 over which is secured a bearing plate 72, and having inwardly extending parallel vertical flanges 74 located at opposite sides of the slot or opening 73 and having upper and lower bearings for the reception of journals of guide pulleys 75. The guide pulleys 75, which have concave peripheries, are spaced apart to receive an operating cord 76 passing over the lower one of the pulleys 75 and upwardly at the rear of the upper pulley, which has the rear portion of its periphery in spaced relation with the front and rear slots of the tubular or hollow guide. The operating cord extends upwardly within the vertical guide and is secured at its upper end in a perforation 77 in the lower extension of the slide of the bracket 45. The lower end of the operating cord 76 is preferably equipped with a ring or other suitable form of grip, and it is adapted to control the window shade hanger, the operating cord being pulled downwardly and released in a manner similar to operating a window shade having an ordinary spring roller.

What is claimed is:

1. In a device of the class described, the combination of a window frame provided at the top with a horizontal chamber extending entirely across the window frame and over the sides of the said frame and having a removable inner wall forming a closure, hollow guides located at opposite sides of the window frame and extending downwardly from the terminal portions of the top chamber and communicating therewith, said guides being open at the jambs of the window frame, bearing brackets mounted within the end portions of the chamber beyond the vertical guides, a spring roller supported by the bearing brackets, flexible connections wound on the spring roller and extending downwardly into the hollow guides, a window shade support extending across the window frame and slidable in the guides and connected with and supported by the said flexible connections, and operating means connected with the said supports.

2. In a device of the class described, the combination of a window frame provided at the top with a chamber extending entirely across the window frame and over the sides thereof, said sides being provided with extended jambs and having vertical channels therein and extending downwardly from said chamber, hollow guides arranged in the

channels and communicating at their upper ends with the said chamber, said guides being open at the jambs of the window frame, a spring roller arranged within the top chamber and supported at its terminals beyond the guides, flexible connections wound on the spring roller and extending into the hollow guides, a window shade support extending across the window frame between the sides thereof and slidable along the guides and having portions extending into the same and connected with and supported by the said flexible connections, and operating means connected with the shade support.

3. In a device of the class described, the combination of a window frame provided with a horizontal top chamber extending entirely across the window frame and over the sides thereof, said sides being provided with extended jamb portions provided with vertical channels extending downwardly from the terminal portions of the said chamber, one of the channels having a lower extension terminating at the face of the jamb, a spring roller arranged within the said chamber and supported beyond the said channels, hollow guides mounted in the said channels and communicating at their upper ends with the said chamber and open at the jambs of the window frame, flexible connections wound on the spring roller and extending into the hollow guides, a window shade support extending across the window between the sides thereof and having portions slidable in the hollow guides, said window shade support being connected with and supported by the said flexible connections, and an operating connection passing through the said channel extension and extending through the adjacent hollow guide to and connected at its upper end with the window shade support.

4. In a device of the class described, the combination of a window frame having a transverse chamber extending entirely across

the top of the frame and over the sides thereof, the latter being provided with channels extending downwardly from the terminal portions of the said chamber, one of the channels being provided at its lower end with an extension terminating at the face of the jamb, a spring roller arranged within the said chamber, hollow guides mounted in the channels and open at the jambs of the window frame, flexible connections wound around the spring roller and extending into the hollow guides, a window shade support extending across the window frame between the sides thereof and having portions slidable in the guides and connected with the said flexible connections, a bearing plate mounted in the channel extension and having an opening, guide pulleys carried by the bearing plate and arranged at the opening thereof, and a flexible operating connection passing between the guide pulleys and extending through the adjacent hollow guide to the shade support and connected with the same.

5. A device of the class described including a pair of window shade supporting brackets, one of the brackets being provided with a plurality of round openings arranged in an inclined series and the other bracket being provided with a plurality of rectangular openings also arranged in an inclined series and having a connecting slot and an entrance slot, said inclined series of openings permitting an inward and outward and an upward and downward adjustment of a window shade.

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

CHARLES N. HINER.

Witnesses:

J. N. MAXWELL,
J. M. PERRY.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."