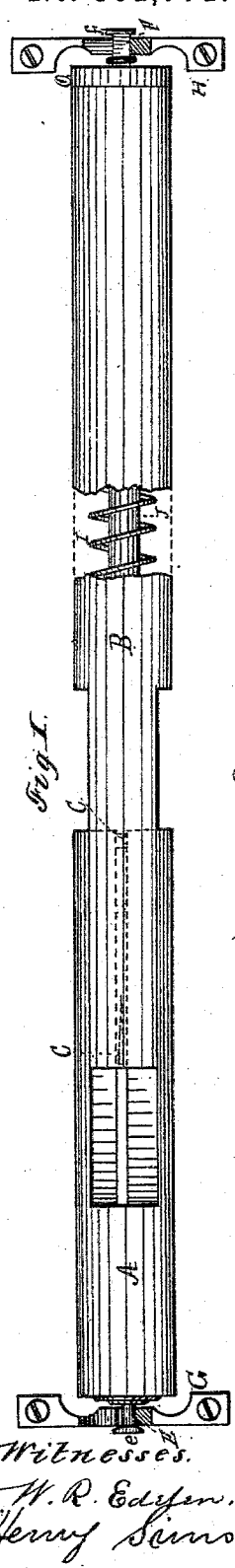
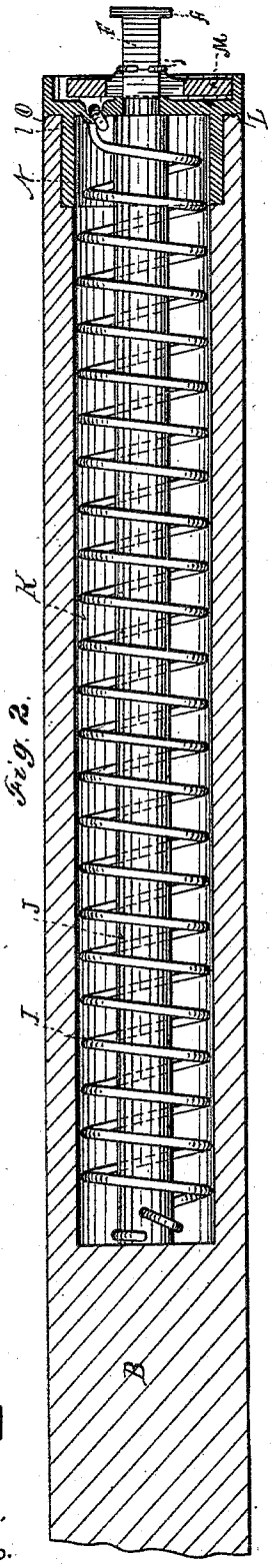
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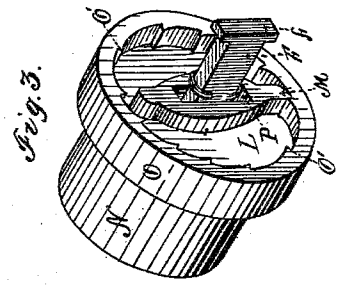
J. C. STURGEON.

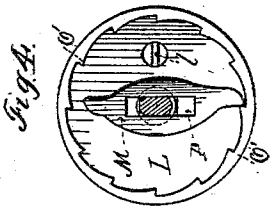
SHADE ROLLER.

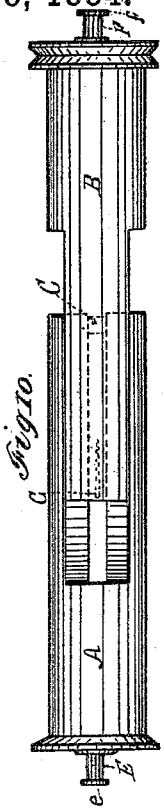
No. 301,771. Patented July 8, 1884.

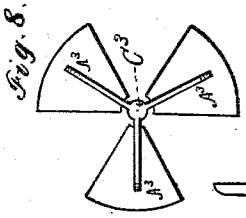


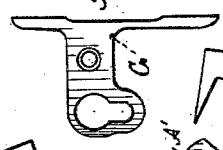


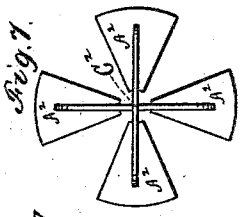


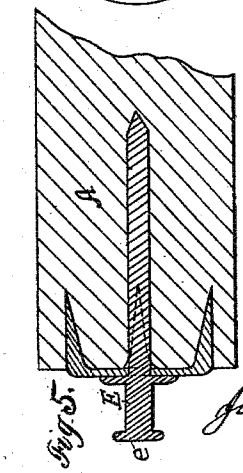


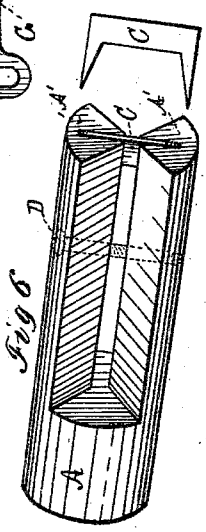












Witnesses.
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Henry Sims.

Inventor.
John C. Sturgeon.

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UNITED STATES PATENT OFFICE.

JOHN C. STURGEON, OF ERIE, PENNSYLVANIA.

SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 301,771, dated July 8, 1884.

Application filed November 2, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. STURGEON, a citizen of the United States, residing at Erie, in the county of Erie and State of Pennsylvania, have invented certain new and useful Improvements in Shade-Rollers; and I do hereby 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, reference being had to the accompanying drawings, and to the letters of reference marked thereon, forming part of this specification.

My invention relates to improvements in shade-rollers, and also to that class of shade-rollers which are adjustable in length, and in the journals and spring mechanism of shade-rollers.

The objects of my invention are, first, to construct a shade-roller having an extension-joint therein, whereby the length of such roller is adjustable; second, to construct such extension-joint in a wooden shade-roller by cutting away alternate longitudinal portions thereof, so that two sections of a roller so cut away will slide one upon the other telescopically, and the fastening of the ends of the remaining longitudinal portions of each section of such roller together, with staples or other suitable means, so that when two sections of a shade-roller are prepared and slipped together and fastened as aforesaid the result is a complete shade-roller of equal circumference at all points, ready for its journals and other appliances belonging thereto; third, to construct the journals of an extension shade-roller with heads or other suitable means interlocking with the supporting-brackets of such roller, so that there is substantially no lateral movement of such roller or either section thereof; fourth, to construct a gravity-ratchet in a spring shade-roller which slips over and operates on the flattened end of the spring-rod of such roller, and engages with ratchet-teeth constructed on the inner periphery of the head of such roller; fifth, to construct a metal head for the spring end of a shade-roller, having means provided for attaching the same to the roller, and also an opening therein to receive and retain the end of the spiral spring which actuates such roller, without nailing, riveting, or clamping the same. I attain these objects in the manner and by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a view of a shade-roller embodying my improvements, with parts broken away, showing the roller-spring therein, and a sectional view of the supporting-brackets thereof. Fig. 2 shows a sectional view of the spring end of my improved shade-roller and the mechanism therof. Fig. 3 shows in perspective a view of the spring end of my improved shade-roller and its mechanism. Fig. 4 shows an end elevation of the spring end of said roller with the end of the spring-rod cut off close to the ratchet. Fig. 5 shows a sectional view of the opposite end of a shade-roller and one form of my improved journal therefor. Fig. 6 shows in perspective a view of one section of my improved shade-roller and the construction of the adjustable joint thereof, and means for securing the ends of such section together. Figs. 7 and 8 show end views of modified forms of the adjustable joint of my improved shade-roller and means for securing the ends of the parts together. Fig. 9 shows a form of bracket for supporting one end of my improved shade-roller. Fig. 10 shows a roller constructed without a spring, having my adjustable joint therein.

Similar letters refer to like parts of my devices in all the figures.

In constructing the roller portion of my improvement I make it in two sections, A and B, and join these two sections together by an extensible or adjustable joint, substantially in the manner following, to wit: I cut away alternate longitudinal portions of each of the sections A and B, as illustrated by Fig. 6, or as illustrated by the end views shown as Figs. 7 and 8. The parts cut away in one of the sections correspond in size to the parts remaining in the other section, so that by sliding the sections A and B together after being so cut away they fit together, as illustrated by Figs. 1 and 10, forming a complete roller of like diameter in every part, so as to present a substantially continuous surface to the shade to be rolled upon it. In order to secure the sections firmly together so that they will not spring apart, I fasten the ends of the remain-

ing portions of each section by means of a staple, C, (or by means of a nail or screw, D, shown by dotted lines in Fig. 6,) or in the forms shown in Figs. 7 and 8 by means of spider-staples C^2 and C^3, or other suitable means therefor, the fastenings of the ends of one or both of said sections being inserted after the parts are put together, so that they will not pull apart. The parts being so secured prevents any and all springing of the roller, and when so constructed it is substantially as rigid and free from spring as a solid roller, while it possesses the advantage of being readily adjusted in its supporting-brackets and to any width of window without any cutting or fitting whatever. To provide against the sections of said roller closing together and pulling the journals out of their supporting-brackets, the journals E and F are constructed with heads or collars *e* and *f*, so that when placed in their supporting-brackets G and H there can be no lateral movement thereof or of the sections of the roller. The bracket G is shown at Fig. 9, the upper portion of the opening therein being of sufficient size to admit the collar *e*. The bracket H is of ordinary construction, the opening for the journal F being open on the upper side, so that it can be dropped into place. F in the spring-roller is flattened where it passes through the bracket, and the roller turns upon it instead of its turning in its bracket. In the ordinary roller shown as Fig. 10, however, both ends of the roller revolve in its supporting-brackets.

The journal E may either be attached to the roller as shown in Fig. 5, or by means of the ordinary face-plate now in common use, if so desired. The spring I is of the ordinary construction used in spring shade-rollers, and the tubular opening therefor, K, is made in the end of one section, B, of the roller, in the usual manner. The inner end of the spring I is attached to the inner end of the spring-rod J, and the outer end thereof to the inner side of the head L (shown as Fig. 3) by passing the end of the spring I through the eye *l* and securing it by bending the end of the spring about it, substantially as shown in Fig. 2.

The spring-rod J is in the main of ordinary construction, except that portion of it which extends outwardly from the face of the head L, that portion of the rod J being flattened, as shown in Figs. 2, 3, and 4, the flattened portion thereof next to the face of L receiving the ratchet M, hereinafter described. This ratchet M being secured in place by a cold-shut ring, *j*, set into a groove around the rod J and outside of the ring *j*, the spring-rod J is continued in a flattened shape until it passes through the opening in its supporting-bracket, when it terminates in the head *f*.

The head of the roller L (see Figs. 4 and 5) is constructed substantially in the shape shown, and secured to the wooden portion B of the roller by means of the flange thereof, N, and the outer flange thereof, O, N fitting into a suitable spring therefor, and O into a groove around the outside of B, substantially as shown in Fig. 2, the same being secured therein by gluing or by other suitable means. The flange O also extends over the outer face of L, and has formed on its inner periphery a series of ratchet-teeth, O′ O′, &c., into which the ratchet M works. The ratchet M is of such shape that either end thereof will operate in the teeth O′ O′, &c., and has through it an oblong opening, P, which fits loosely over the flattened portion of the spring-rod J, hereinbefore referred to, so that while it will slide freely across said rod J it will not turn around it, as illustrated in Figs. 3 and 4. In operating this ratchet, when the shade attached to the roller is being pulled down, the ratchet M passes freely over the sloping portion of the teeth O′ O′, &c., and when the shade is released, so that the tension of the spring winds it up rapidly, the ratchet will not engage the teeth O′ O′, &c., but when moved slowly either up or down the ratchet M will engage one of the teeth O′ and retain the shade at any point desired, the large numbers of the teeth O′ O′, &c., enabling the shade to be stopped and retained at any desired point.

It is obvious that in constructing the sections A and B of my roller, in lieu of cutting away the longitudinal portions of the extension-joint, either one or both of said sections A and B can be made of triangular strips of different lengths, glued or otherwise fastened together, such number being used, and of such shape on the outer surfaces thereof, that when placed together they will form the completed sections of such roller of proper outside shape ready to be slipped together and fastened, thus forming a completed roller, as hereinbefore described, ready for the spring or other appliances belonging to the complete shade-roller.

It is also obvious to those skilled in the art that the shape of many portions of my device may be varied without interfering with the operation of parts so changed—for example, the form of the ratchet and the number and shape of the teeth in which it engages; also, the form and manner of constructing the journals and their supporting-brackets, so that the journals may be interlocked therewith or otherwise retained therein. Therefore I do not confine my invention to the peculiar forms and constructions of parts shown and described, as many varied forms thereof will produce the same or equally as good results in operation as those I have shown.

Having thus described my invention, I do not claim, broadly, a spring shade-roller, as I am aware that many forms of spring shade-rollers have been and are now in general and common use. Neither do I claim, broadly, an extension shade-roller, as I am aware that extension shade-rollers have heretofore been made. For example, they have been constructed out of tubes sliding one within the

other, or out of a tube sliding over a portion of a wooden roller in the form of a sleeve; also, extension shade-rollers have been constructed by cutting away sections of the roller substantially as I do, the ends of the sections being secured and held in place by clips of metal overlapping portions of the surface of the roller, and secured in place by means of screws. Other forms of extension-joints have also been constructed, in all respects, however, differing from my joint in construction and operation. It is obvious that rollers constructed of tubes or partially of tubes are not only expensive, but that the roller, when extended to any distance, presents a considerable portion of surface, much smaller than the remainder of the roller, which forms no support at that point to the shade being rolled thereabout, leaving the shade liable to crinkle or break at such point, and in the case where metal clips are used to retain the sections of the roller in place it is equally manifest that they will so increase the diameter of the roller at the points where they are attached that a shade would not roll up on such roller straight; hence they could not be of any practical use as a shade-roller, and in no case am I aware that shade-rollers have been provided with means to prevent their journals from being drawn endwise out of their supporting-brackets, which in case of extension-rollers is very necessary. All of the difficulties hereinbefore referred to I overcome by my improvement. The joint in my roller is cheaply made, and the fastenings of the ends of the sections forming the joint are all below the surface of the roller, so that no portion of the joint or its fastenings are of a greater or less diameter than other portions of the roller. Thus I substantially retain the same diameter and size of roller throughout its entire length, making an extension-roller cheaply, and at the same time as effective in operation as a solid roller of the ordinary pattern. The journals or bearings of my roller I construct with means to prevent their being drawn endwise out of their supporting-brackets when in place, thus doing away with the necessity of springs or other devices to prevent the closing together of the joint, the roller being thereby retained at its proper extension while in use.

Having thus fully described my improvements so as to enable others skilled in the art to construct and operate the same, what I claim, and desire to secure by Letters Patent of the United States, is—

1. A shade-roller constructed of sections joined together by an extension joint or joints formed by cutting away alternate longitudinal portions of each section of the roller, so that the remaining longitudinal portions of the sections of the roller will slip together and form such joint or joints when the ends of said longitudinal portions are fastened and secured in place relatively to each other by fastenings which do not project above any part of the surface of the roller, by means of which joint or joints such roller is adaped to be adjusted to its supporting-brackets and to windows of different widths, substantially as set forth.

2. The combination, in a shade-roller, of the following elements: an extension-joint in the body of the roller, an automatic spring for raising or rolling up the shade, and a pawl or ratchet arranged to automatically stop and retain the shade at any height desired, all operating substantially as and for the purpose set forth.

3. A spring shade-roller having an extension-joint therein formed by cutting away alternate longitudinal portions of each of the sections of such roller, so that the sections of the roller will slip together and form the joint, by means whereof said spring-roller is adapted to be adjusted to its supporting-brackets and to windows of different widths, substantially as set forth.

4. A shade-roller having an extension-joint therein, by means whereof the length of said roller is adjustable, in combination with journals or bearings therefor provided with means to prevent their being withdrawn from their supporting-brackets by the closing together of the joint in said roller, substantially as set forth.

5. In combination with an extension shade-roller, journals or bearings E and F therefor, having heads or collars *e* and *f* thereon, constructed and operating substantially as set forth.

6. In the extension-joint of an adjustable shade-roller, means for fastening and retaining the ends of the sections of said joint in contact in their relative positions to each other, such fastenings not projecting above the surface of such roller, substantially as and for the purpose set forth.

7. In combination with the sections of the joint in an adjustable shade-roller, the staple C, operating substantially in the manner and for the purpose set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN C. STURGEON.

Witnesses:
N. J. CLARK,
JOS. R. STERRETT.