

(No Model.)

A. E. DENNIS.
SPRING SHADE ROLLER.

No. 504,970.

Patented Sept. 12, 1893.

Fig. 1.

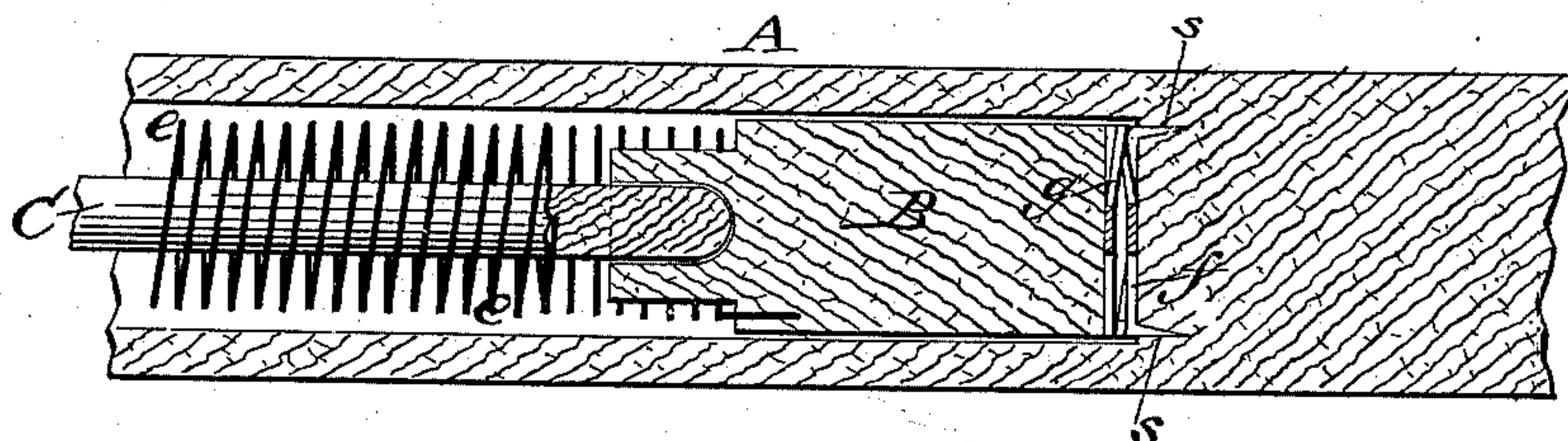


Fig. 2.

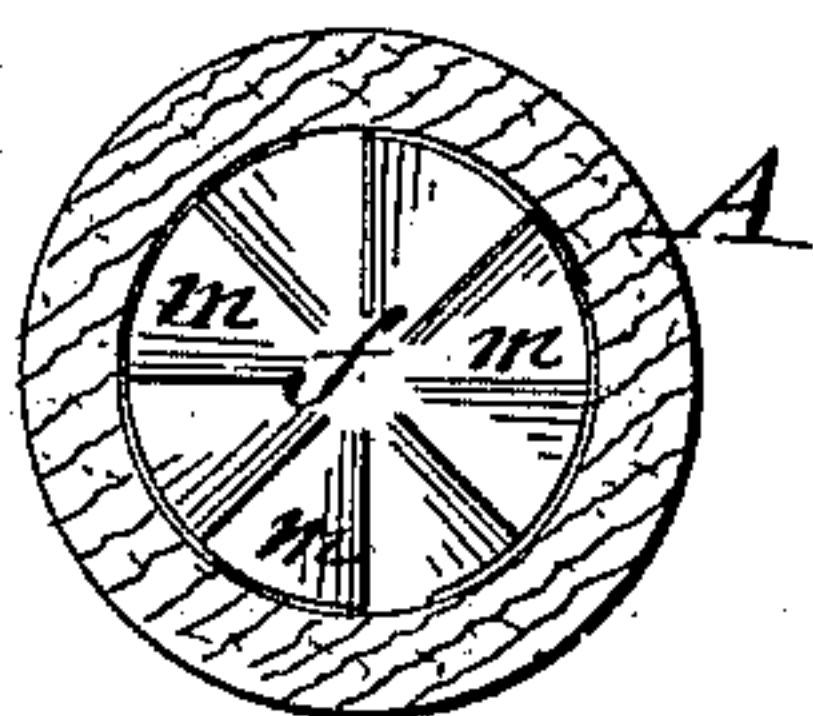


Fig. 3.

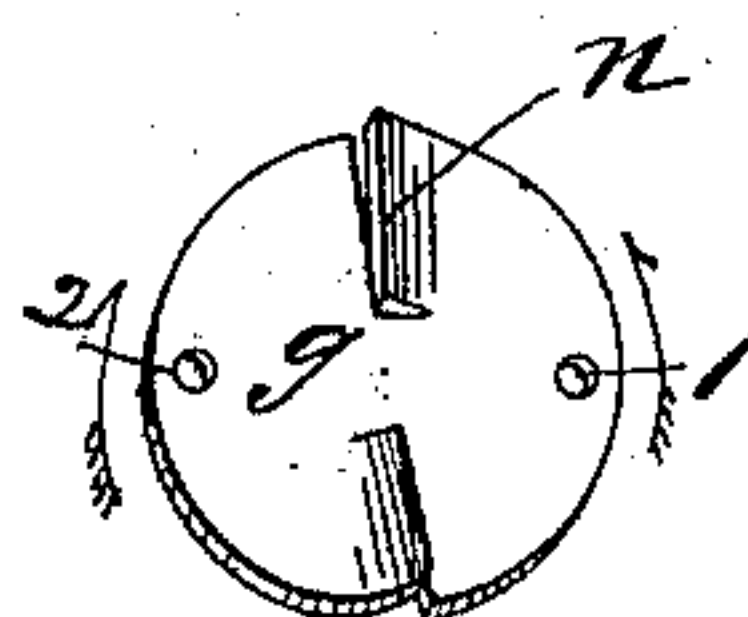
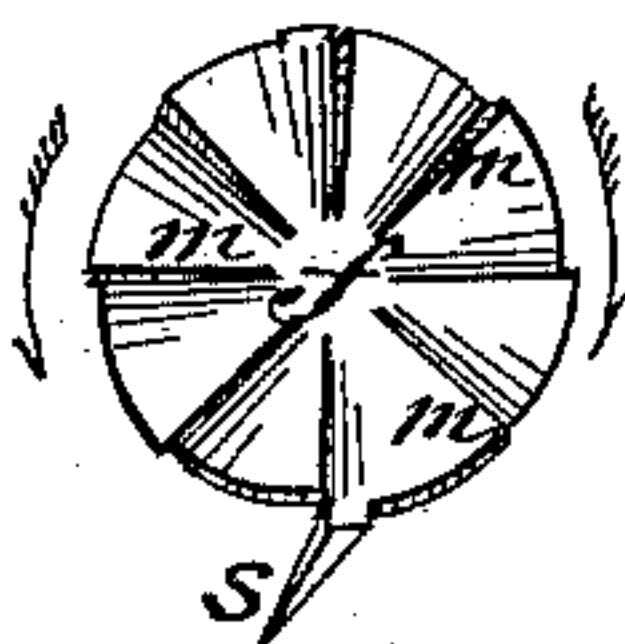


Fig. 4.



ATTEST:

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UNITED STATES PATENT OFFICE.

ALEXANDER E. DENNIS, OF NEWARK, NEW JERSEY, ASSIGNOR, BY MESNE ASSIGNMENTS, TO THE MERIDEN CURTAIN FIXTURE COMPANY, OF CONNECTICUT.

SPRING SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 504,970, dated September 12, 1893.

Application filed August 25, 1892. Serial No. 444,099. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER E. DENNIS, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented a new and useful Improvement in Spring Shade-Rollers, of which the following is a specification.

My invention relates to that species of spring shade roller in which, while one end of the actuating spring is securely fastened either to the roller, or to the spindle-tip, the other end is connected to the roller, through the medium of an automatic engaging, or locking, device, which operates to render said end of the spring capable of turning independently of the roller, under certain well-known conditions; and my said invention consists of a novel combination of devices, in this kind of spring shade roller, as will be hereinafter more fully described, and as will be most particularly pointed out in the claim of this specification.

To enable those skilled in the art to make and use shade rollers containing my invention, I will now proceed to more fully describe the same, referring by letters and figures to the accompanying drawings which form part of this specification, and in which I have shown my invention carried out in that precise form in which I have so far practiced it.

Figure 1 is a partial central section, lengthwise, of a spring roller, made according to my invention. Fig. 2 is an end view of the parts seen at Fig. 1 but with the spindle, the spring and the step pulled out or removed and looking into the bore of the roller. Fig. 3 is a view of a spring pawl-plate of the step, detached, and Fig. 4 is a perspective view of what I call a ratchet disk, detached from the roller.

Similar letters and figures refer to similar parts throughout the several views.

A is the usual, wooden shade roller within the bore of which is placed (in about the usual relative positions), the spiral actuating-spring *e*; the wooden spindle *c*, and the step B. I have not shown the outer end portions of the roller, the spindle or the spring; but they are supposed to all be made and combined in the usual manner, so that the outer

end of the spring is permanently fastened to the spindle-tip which in turn is made fast to the outer end of the wooden spindle *c*. The inner end of spring *e* is made fast to the step B, as shown, and the spindle *c* is stepped in a socket, or depression in the step; all in the way usually adopted. I leave the step disconnected from the roller, but provide the inner end or head, of said step, B, with a pawl-plate *g*, that is in the form of a circular disk, that is made fast to the end of the wooden step B, preferably by means of two nails or long, small headed tacks that are driven through holes 1 and 2 of the pawl-plate *g*, into the stock of step B. Of course some other means of permanently fastening the device *g*, to the head of the step B, may be used. The plate or disk *g*, is formed, or cut, and struck up so as to present two (more or less) slightly projecting elastic, or springy, radial teeth *n*, which engage under certain conditions with some of the radial teeth *m*, of another metallic disk or circular plate *f*, that is securely fastened as shown to the stock of the wooden roller A, by the integral points *s*, of the former.

In assembling the parts the disk F, is placed in the bottom of the bore of the roller and by means of a blow imparted to it by a mandrel has its points *s* caused to penetrate the wood. The slightly thrown up elastic teeth *m*, of the disk F, engage with the teeth *n*, of the pawl-plate *g*, of the step B in the following manner and for the purpose I will now explain. When the parts are all properly assembled, as seen at Fig. 1, the elastic teeth *n*, of the pawl-plate *g*, that is made fast to the end of step B, lie in elastic contact with the spring teeth *m*, of the plate F, which is made fast to the roller A, and supposing the spring *e*, to be in its normal condition, *i. e.*, not under any tension the initial rotation of the roller A, (in the direction in which it would be turned to pull down a shade attached to it,) causing the ratchet plate F to rotate (relatively to the pawl-plate *g*), in the direction indicated by the arrow at the left hand side of Fig. 4, will cause the teeth *m*, to catch against the teeth *n*, of plate *g*, since the teeth *m*, would move over the surface of plate *g*, in the direction

indicated by the arrow at the left hand side of Fig. 3, and, hence, the teeth *m*, and *n* of the respective plates *f*, and *g*, would come to a positive engagement and the step be turned 5 with the roller to wind up the spring. And so long as the spring may be under more or less tension or be more or less wound up will this dead lock of the parts continue causing the roller and step to rotate in unison in either 10 direction. When however the roller and step, thus in engagement, shall have both rotated in one direction until the spring *e*, shall have been relieved of all tension any further rotation of the roller *A*, in the same direction 15 will cease to influence the spring any; since then the plate *f*, rotating in the relative direction indicated by the arrow at the right side of Fig. 4, will travel over the face of the plate *g*, in the relative direction indicated by 20 the arrow at the right hand side of Fig. 3, and the spring teeth *m*, and *n*, of the plates fastened, respectively, to the roller and the step, will slip over each other easily and so that the teeth of the plate *f*, will not act upon the

teeth *n*, of plate *g*, to turn the latter, and, with 25 it, the step *B*, to which the plate *g*, is fastened.

Having now so fully explained the construction and operation of my improved device that those skilled in the art can easily understand and practice my invention, what I claim 30 as new, and desire to secure by Letters Patent, is—

In combination with the usual roller; the actuating spring; and the step, an automatically acting device for effecting an engagement 35 between the step and the roller, composed of a toothed, or ratchet-like, device, permanently secured in the bottom of the bore of the roller, and a toothed device fastened to the adjacent end of the step; the whole constructed, arranged, and operating together, in 40 substantially the manner and for the purpose hereinbefore described.

A. E. DENNIS.

Witnesses:

S. P. HALL,
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