

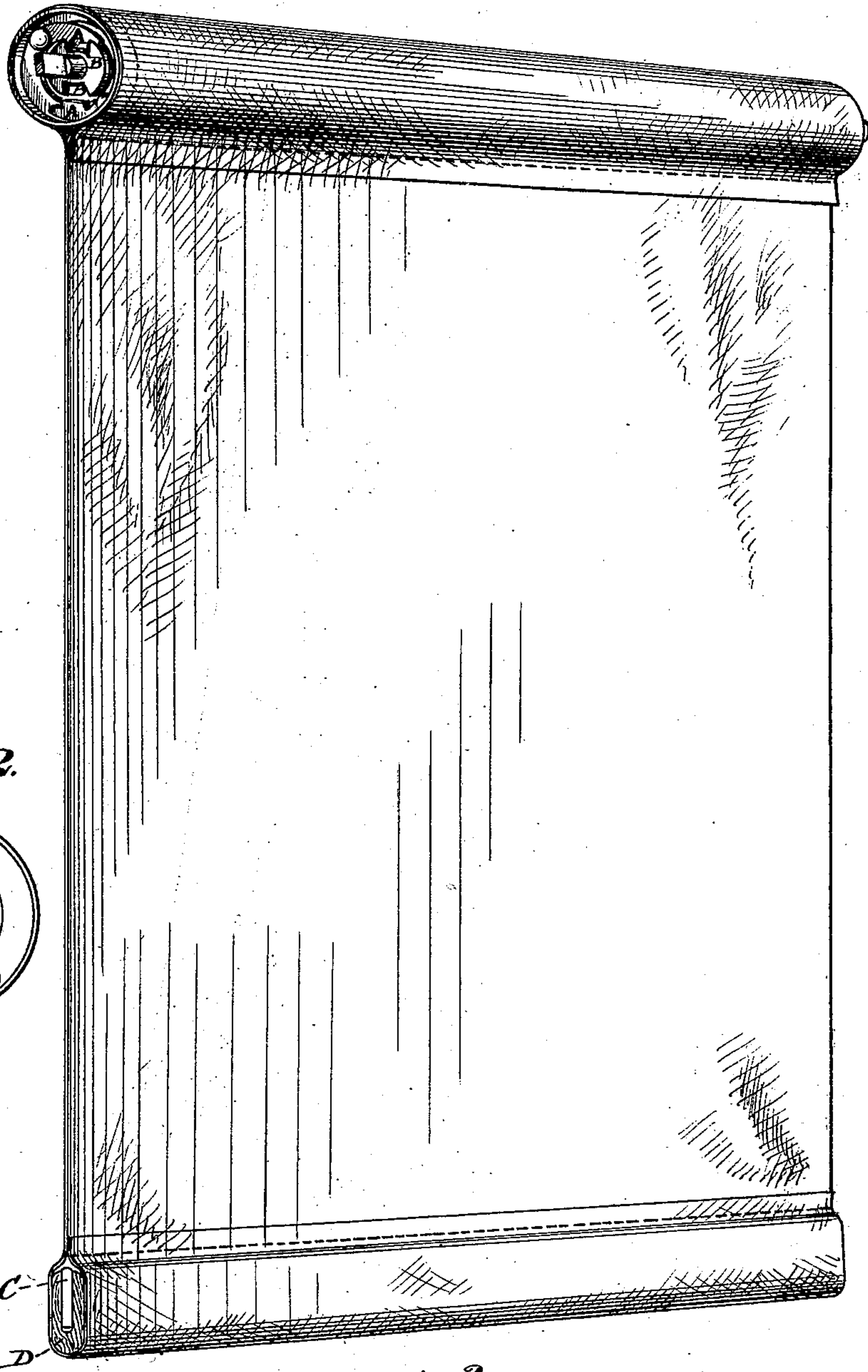
(No Model.)

S. HARTSHORN.  
SPRING SHADE FIXTURE.

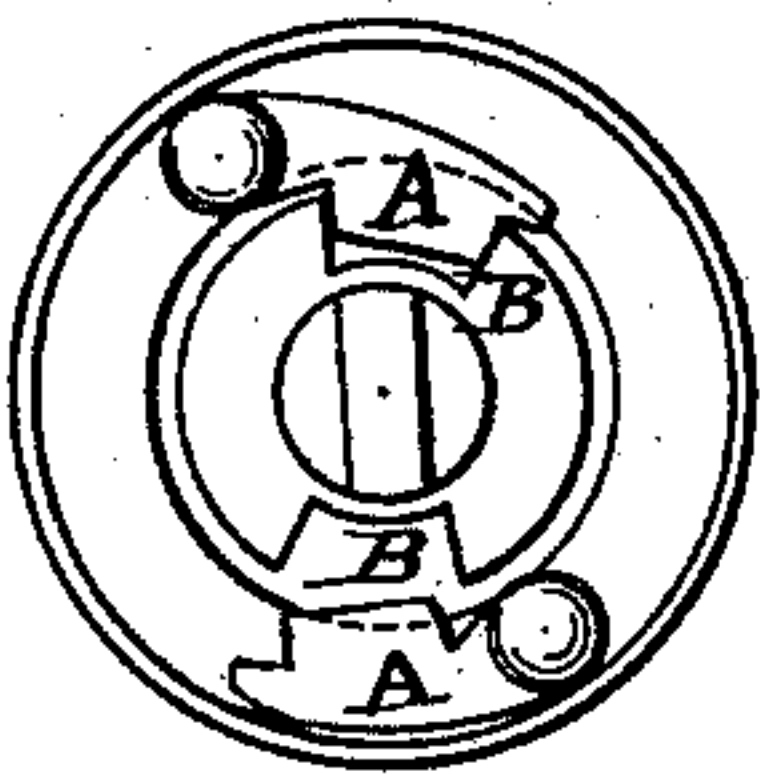
No. 299,782.

Patented June 3, 1884.

*Fig. 1.*



*Fig. 2.*



*Fig. 3.*



WITNESSES

Samuel Lea  
Charles L. Gross

INVENTOR

Stewart Hartshorn  
per S. L. J. Saw.  
Attorneys.



# UNITED STATES PATENT OFFICE.

STEWART HARTSHORN, OF MILLBURN, NEW JERSEY.

## SPRING-SHADE FIXTURE.

SPECIFICATION forming part of Letters Patent No. 299,782, dated June 3, 1884.

Application filed April 1, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, STEWART HARTSHORN, residing in Millburn, in the county of Essex and State of New Jersey, have invented a certain new and useful Improvement in Spring-Shade Fixtures, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, making a part of this specification.

10 My invention is an improvement in spring shade-rollers, and is designed to produce a shade-roller which will combine the advantages now to be found in stop-rollers and balance-rollers.

15 In the drawings illustrating my improvement, in which like letters indicate like parts, Figure 1 is a view of a window-shade complete, in perspective, showing the pawl and ratchet on the end of the roller. Fig. 2 is an enlarged view of the end of the roller, showing the pawl A and ratchet B. Fig. 3 is a view of the weighted stick D in the bottom of the shade.

25 Spring shade-rollers as heretofore constructed have been of two kinds or varieties known as "stop-rollers" and "balance-rollers." In the former a pawl and ratchet are arranged upon the roller in such a manner that when the upward movement of the shade is checked, or when the shade is made to move slowly, the pawl will automatically engage with the ratchet, and thus stop and hold the shade at any desired points, and when the shade is permitted to run up more rapidly the pawl will not engage with the ratchet or the movement of the shade be interfered with. In this construction of roller there is nothing to check or counteract the force of the spring in the roller except the pawl and ratchet, and as these cannot engage under a more rapid revolution of the roller, if the shade should escape from the hands of the operator, it would run up until it had wound itself entirely around the roller, and the roller would, unless stopped by the tassel, continue to revolve until the spring was so much uncoiled as to require the removal of the roller from the brackets and the winding up of the spring. To prevent such action it has been usual to connect a cord with the slat in the bottom of the shade, and with the casing at the bottom of the window, to

limit the upward movement of the shade; but the cord is apt to get disconnected, or to wear and break, and the annoyance of the shade rising beyond reach and the spring uncoiling is of frequent occurrence. In the balance-roller a weight is placed at the bottom of the shade to balance or counteract the force of the spring, so that the shade will remain in any desired position. These rollers are open to the serious defect that it is impossible to adjust the weight so as to balance the force of the spring at different positions of the shade. It will readily be seen that the force or power of the spring is a varying quantity, and increases and diminishes as the shade is lowered or raised. When the shade is pulled down, the spring is wound up and its force increased, and when the shade is run up the spring uncoils and its force decreases. The weight in the bottom of the shade is a fixed unvarying quantity, the same for all positions of the shade, and does not change to suit the change of the spring; consequently the weight can only counteract or balance the spring at one point or one position of the shade, and at all other positions must be too heavy or too light. If the weight is adjusted so as to balance the spring when the shade is drawn down and the tension of the spring is greatest, it follows that when the shade is run up and the force of the spring diminished the weight will be too great and overcome the spring and pull the shade down. On the other hand, if the weight is adjusted to the spring when the shade is part way up, it will be too light to balance the spring when the shade is pulled down, and the force of the spring overcoming the weight will roll the shade up again. Hence it is very difficult to adjust the weight and spring to suit all positions of the shade. Moreover, the force of the spring is apt to change with continued use, it may become weaker, and the weight adjusted to the roller when first put up may not suit when the roller has been in operation some years.

The object of my invention is to produce a shade-fixture which shall be free from the defects existing in the stop and balance rollers; that will prevent the shade running all the way up, should it slip from the hands of the operator, and in which the adjustment of the



weight and spring can be easily and simply arranged.

In my improved roller I place upon or connect with the roller an automatically-acting pawl and ratchet, substantially as in the ordinary stop-rollers, and also, in combination therewith, attach a weight to the bottom of the shade, substantially as in the usual balance-rollers. The pawl and ratchet may be of any construction desired; but should be so arranged and adjusted that they will not engage except when the motion of the shade is very slow. I prefer, however, to use the pawl and ratchet shown in the drawings, in which, as will be seen from Fig. 2, the pawl A is made so large that it will not drop into and engage with the ratchet B, except when the roller is revolving very slowly.

The weight at the bottom of the shade may be of any kind or shape desired, as a strip of metal, C, inserted in the stick D in the bottom of the shade, as is shown in Fig. 3, or a weighted tassel; or a metalli strip, struck up in any design preferred, fixed to the shade; or a stick sufficiently heavy without extra weight, for the purposes required.

With the roller as thus constructed the adjustment of the weight and spring can be much more simply and less nicely arranged, as it is only necessary to provide that the weight shall not exceed the force of the spring, so as to pull the shade down, any tendency of the spring to overcome the weight and wind up the shade being checked by the pawl and ratchet.

In my improved roller I prefer to adjust the

weight so that it will balance the force of the spring when the shade is raised near the top of the window. By this arrangement the weight cannot overcome the spring and pull down the shade, and when the shade is drawn down, although the force of the spring is greater than the weight, the pawl engaging with the ratchet prevents the shade running up; and, moreover, in my construction of roller, should the shade slip from the hand of the operator and run up rapidly by itself, at a certain point the weight would balance the spring and check the motion of the shade and allow the pawl to engage with the ratchet, and thus prevent the shade from running all the way up, as is the case with the stop-rollers now in use.

As will thus be seen, my improved roller combines the advantages of both the balance-roller and the stop-roller. By combining the pawl and ratchet with the weight the necessity and difficulty of nicely adjusting the latter, so as to balance the spring is done away with, and by uniting a weight with the pawl and ratchet the shade is prevented from running all the way up, so as to get beyond the reach of the operator.

What is claimed as new is—

A shade-fixture consisting of a spring shade-roller having a weighted shade and an automatically-acting pawl and ratchet, all arranged and operating substantially as and for the purposes set forth.

STEWART HARTSHORN.

Witnesses:

S. P. KITTLE,  
SAMUEL LEA.