

(No Model.)

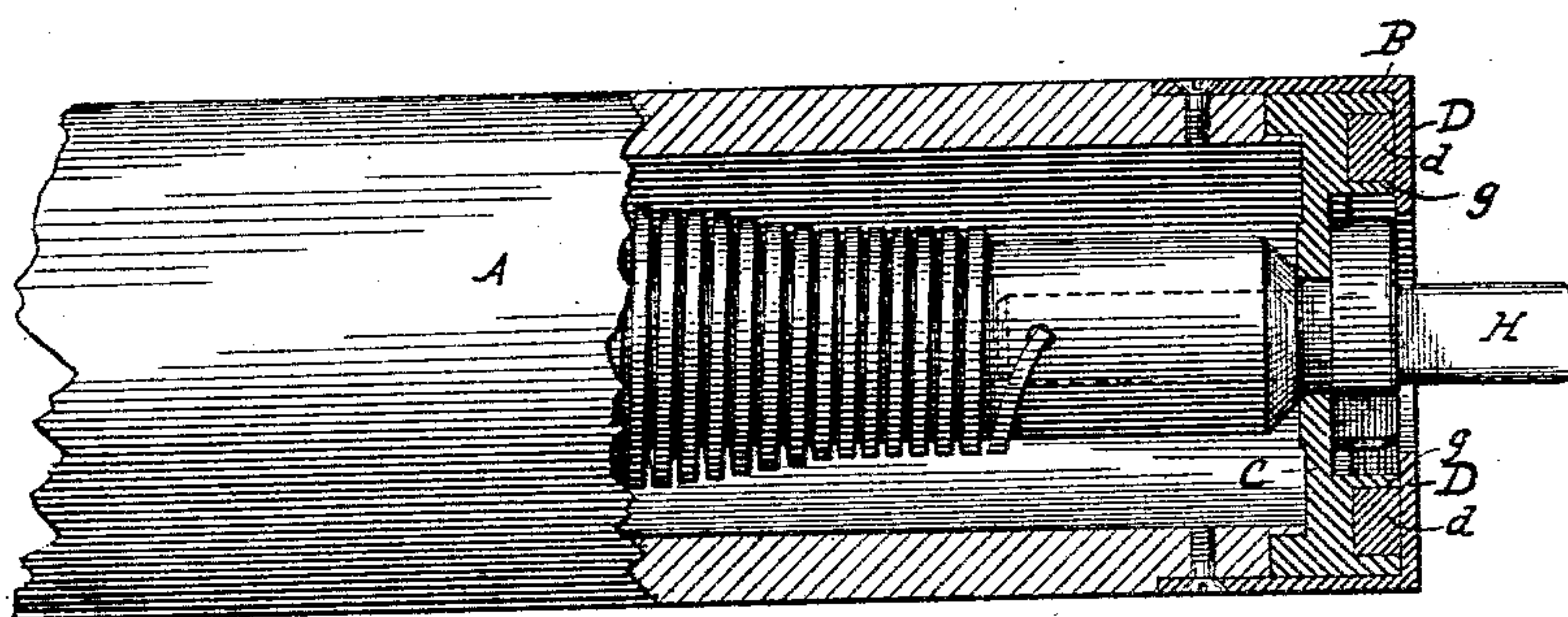
J. J. ADGATE & F. HICKMAN.

AUTOMATIC SPRING SHADE ROLLER.

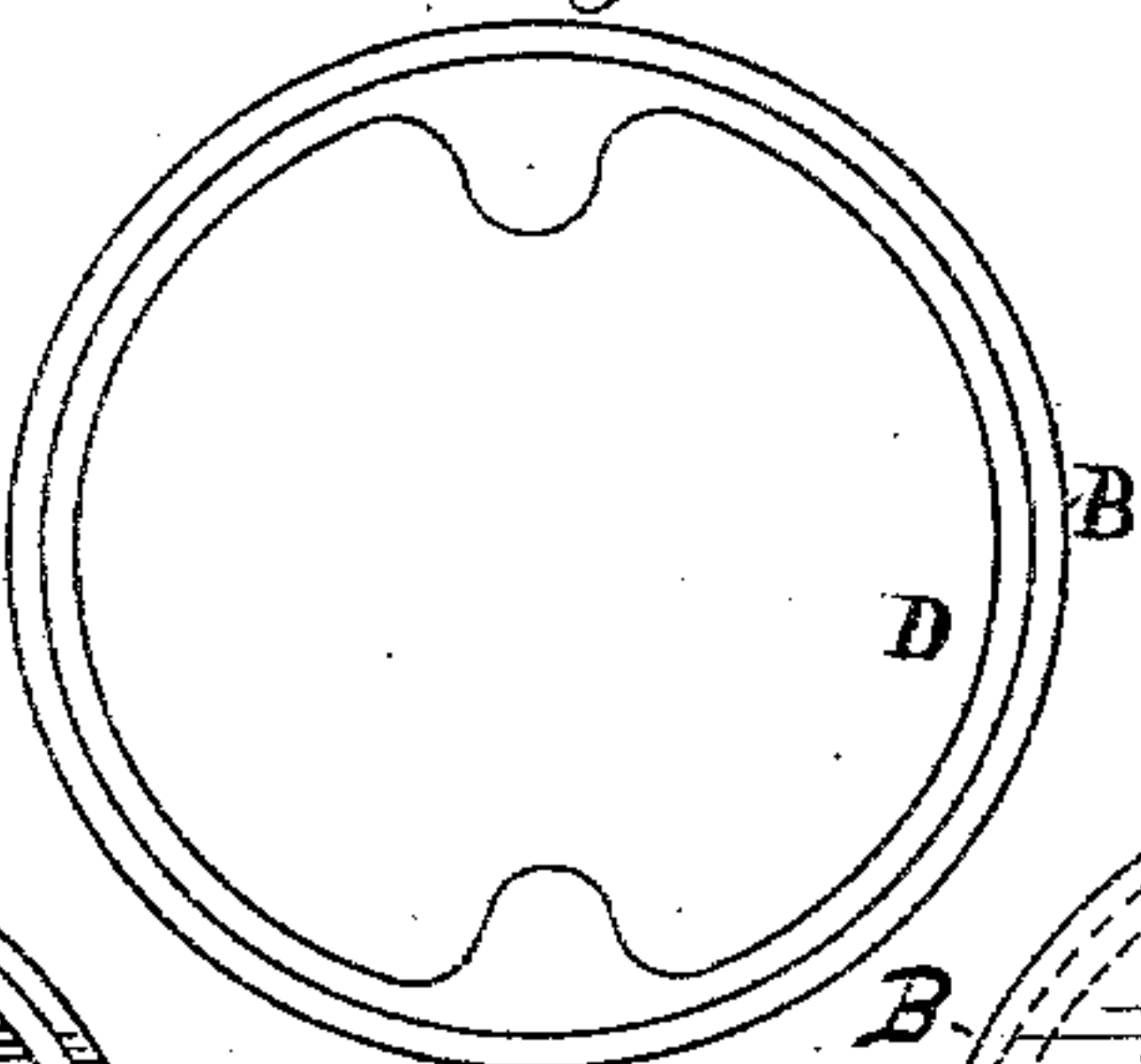
No. 300,297.

Patented June 10, 1884.

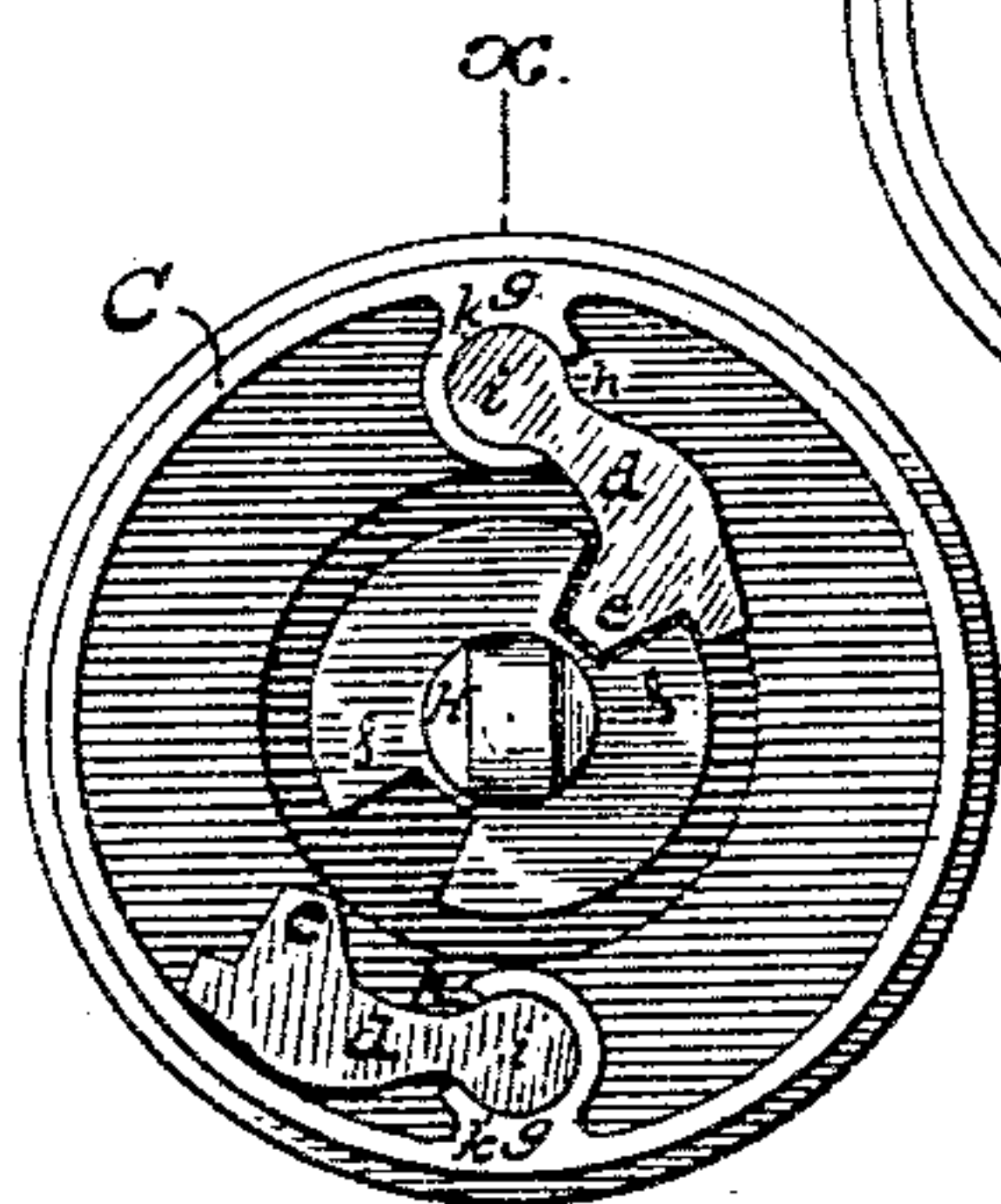
*Fig. 1.*



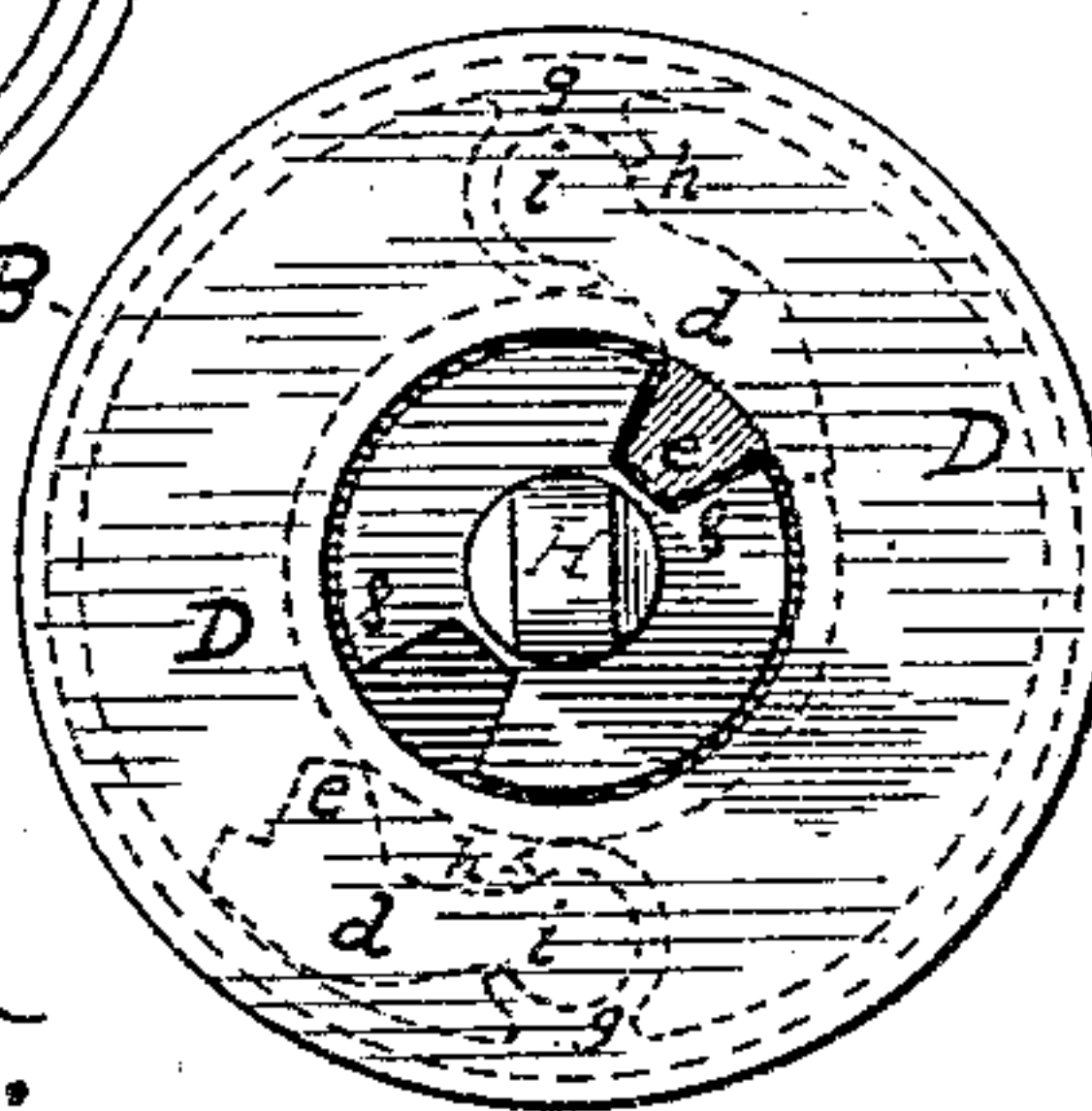
*Fig. 4.*



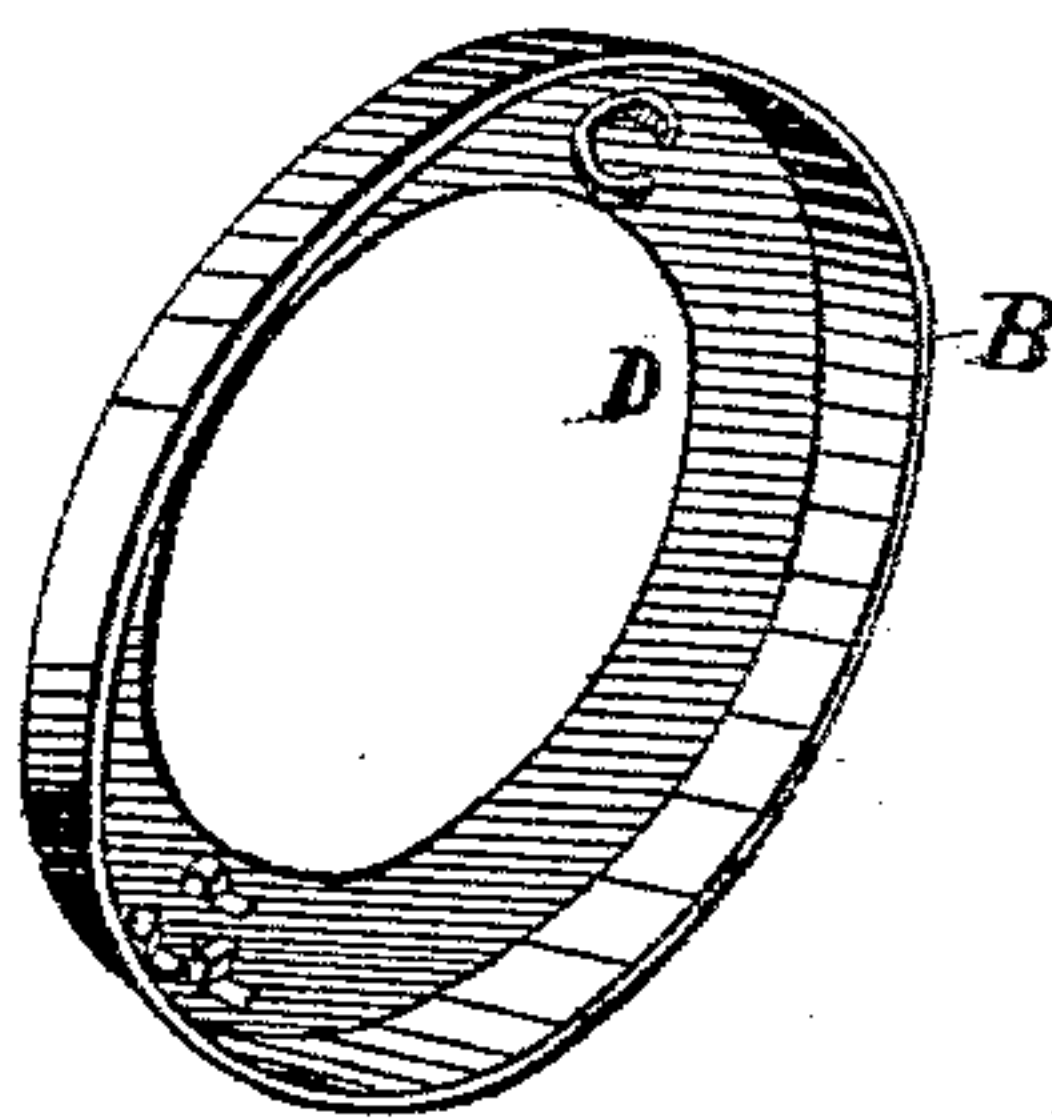
*Fig. 2.*



*Fig. 3.*



*Fig. 5.*



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# UNITED STATES PATENT OFFICE.

JOSEPH J. ADGATE AND FRANCIS HICKMAN, OF NEW YORK, N. Y., ASSIGN-  
ORS TO STEWART HARTSHORN, OF MILLBURN, NEW JERSEY.

## AUTOMATIC SPRING SHADE-ROLLER.

SPECIFICATION forming part of Letters Patent No. 300,297, dated June 10, 1884.

Application filed March 13, 1884. (No model.)

*To all whom it may concern:*

Be it known that we, JOSEPH J. ADGATE and FRANCIS HICKMAN, both of the city, county, and State of New York, have invented new and useful Improvements in Automatic Spring Shade-Rollers, of which the following is a specification.

Our invention relates to that class of automatic spring shade-rollers in which a pawl and ratchet are employed to lock the roller and spindle in and out of the brackets. As heretofore constructed, it has been necessary to drill a hole through the pawl, and also through the end plate of the roller, and hold the pawl in place by means of a pivot passed through such holes in the pawl and plate and then riveted. This form of construction has been objectionable for many reasons. It requires considerable care and labor to drill the pawl and plate properly, the plate usually being made of chilled metal and very hard, and, owing to the smallness of the parts a high degree of skill and nicety of execution are necessary to properly adjust and rivet the parts. In our invention we dispense with the use of pivots, and the necessity of drilling either the pawl or plate, by casting in and with the plate a recess or recesses adapted to loosely embrace the heel of the pawl, while the pawl is prevented from escaping laterally by a concentric overlapping rim on the end cap. This construction allows the pawl to oscillate freely and properly perform its functions of locking and unlocking the roller and spindle, while at the same time the pawl is securely held and prevented from becoming disarranged or out of order. Our invention also has other details of improvement, which we will more fully describe. Aside from the parts hereinafter particularly described, we employ the usual mechanism for uniting and operating the spring, spindle, and roller of automatic spring shade-rollers.

In the drawings, Figure 1 is a longitudinal sectional view of a shade-roller, showing our improved locking device. Fig. 2 is an end view of our locking device with the end cap removed; and Fig. 3 is the same, with the cap applied. Figs. 4 and 5 are modifications hereinafter referred to.

Similar letters of reference designate similar parts in all the drawings.

A is the shade-roller. B is the end cap, and C is the end plate. *d* is the pawl, which engages with its toe *e* the ratchet *f* on the spindle H. *g* is a flange cast with and as a part of the end plate C, forming a recess, *k*, to loosely embrace the heel *i* of the pawl *d*, but having an opening, *h*, therein, to permit the passage and action of the pawl. The portion of the pawl which plays in the opening *h* is smaller than its heel *i*, so that the heel *i* of the pawl may oscillate in but not escape from the recess *k*. The form of the recess within the flange *g* may be somewhat varied, as may be also that of the pawl-heel, so long as the recess and heel are so constructed that the latter may turn in the former without escaping therefrom. The pawl is prevented from escaping in the line of the spindle by being held between the plate C and the overlapping rim D of the cap B, which rim D, when the cap is placed over the plate C and the end of the roller A, will rest upon or so near to the flange *g* as to prevent the pawl *d* from escaping from within the same. These caps are usually formed of a single piece of sheet-brass or similar metal, which is "spun up" into the form of a cap, and the central portion then punched or cut out, leaving the rim D. Heretofore this cap has been employed only to hold in place the plate C, and hence but a very narrow rim has been required to embrace the edges of the plate. By making the wider rim, D, as shown, the cap C is made to perform another and additional function by holding in place the pawl *d* also; and as the central part between the edges of the rim is cut or punched out in any case, no additional expense is incurred by cutting out a smaller portion of it, so as to form a wider rim, as shown; but it is not essential that the rim D should have an annular form, as shown, for all the portions of the rim not required to hold in place the pawl *d* and plate C may be cut away, and our invention may be further modified by forming the flange *g* on the inner side of such rim instead of on the plate C, and this could be done by striking or bending up the metal of the cap-rim, in lugs or otherwise, to form or serve the purposes of such flange; or, if the cap is cast, such flange or its equivalent can be cast thereupon, as shown in Figs. 4 and 5. When the pawl engages with the ratchet,



the jar caused by the stoppage of the roller is taken up by the pawl in a direction from its toe to its heel. If the pawl is hung upon a pivot, the pivot is of necessity small and liable to be loosened, bent, and broken by the frequent jars occurring in the operation of the roller. In our invention this jar or shock is delivered by the broad and rounded heel of the pawl against the corresponding bearing in the recess, and distributed over a much wider surface, and the danger of loosening, breaking, bending, or disarranging the bearings of the parts is entirely avoided.

In constructing our improved locking device the end plate, C, is cast with the flange *g* upon it, and applied in the usual way to the end of the roller. The pawl, having been made with a suitable heel, is dropped into its proper place. The end cap is placed over the plate and pawl and fastened to the roller, and thereby all the parts are permanently and securely held in their proper positions.

As is well known, the parts of our automatic locking device may be transposed, so as to lock the roller when in its brackets, by placing the

pawl on the spindle or bracket and the ratchet on the plate, cap, or roller, and this would be an obvious modification of our invention.

We have described our invention as constructed with a single pawl. When thus constructed, the roller can be stopped only once at each complete revolution, and it may be preferable to use two or more pawls, so as to stop it within a shorter distance, as shown in the drawings; but this modification is well understood in the art.

What we claim as new is—

The combination, with a shade-roller, of end plate, C, an end cap having a flange, D, the central spindle having ratchet *f*, and a pawl or pawls, *d*, held by its heel in a socket, and between plate C and flange D, and adapted to catch by its toe in the ratchet *f*, substantially as shown and described.

JOSEPH J. ADGATE.  
FRANCIS HICKMAN.

Witnesses:

ANDREW WILSON,  
WILLIAM D. NEILLEY.