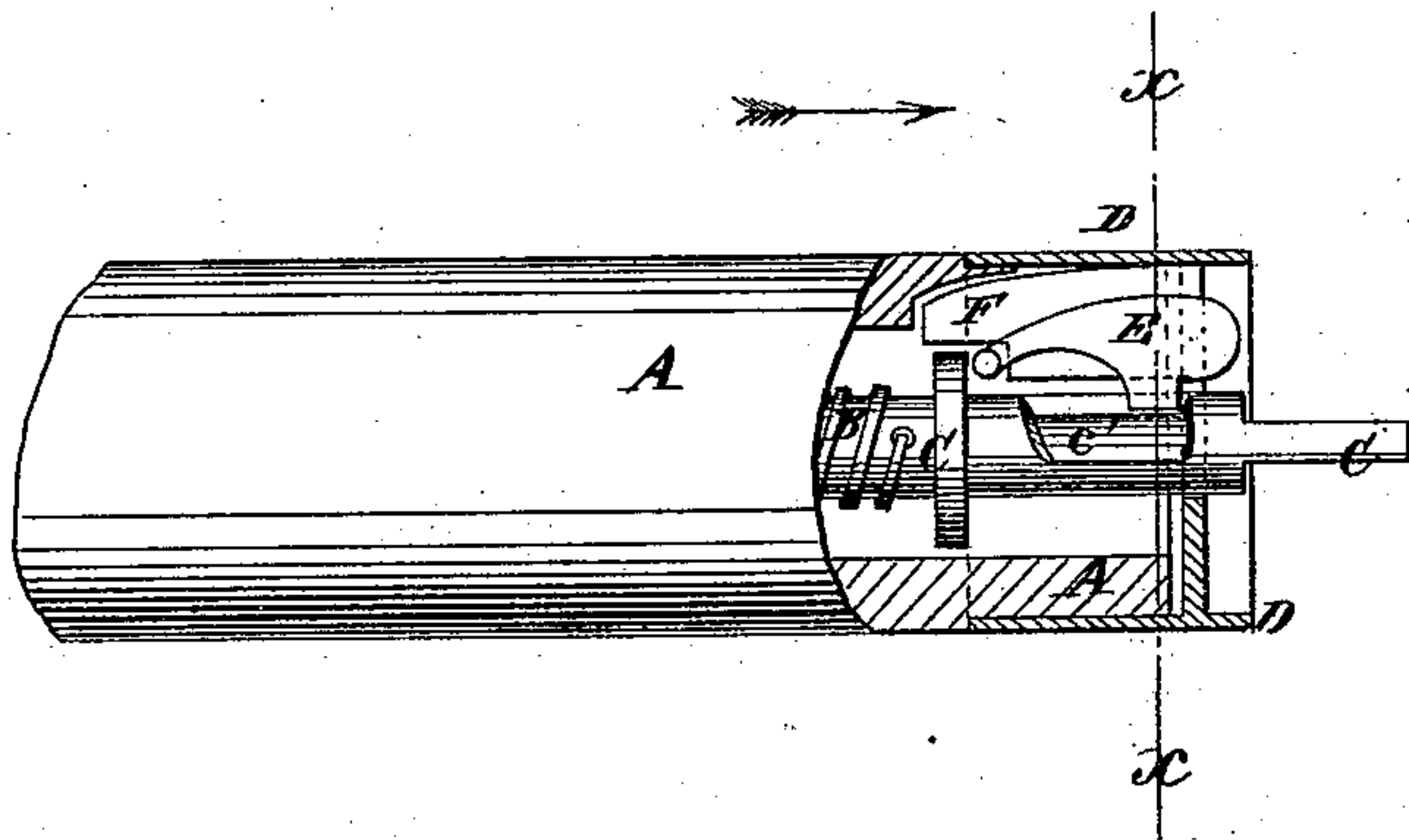


D. WILLIS.  
WINDOW-SHADE ROLLERS.

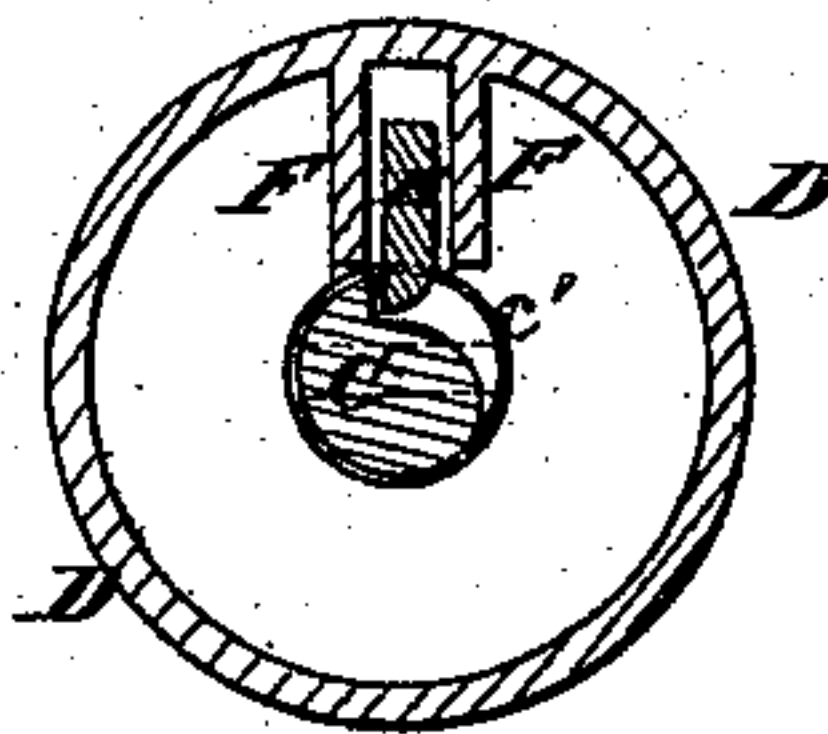
No. 184,811.

Patented Nov. 28, 1876.

*Fig. 1*



*Fig. 2*



WITNESSES:

*A. W. Almquist*  
*John Goethals*

INVENTOR:

*D. Willis*

BY

*mmu*

ATTORNEYS.

# UNITED STATES PATENT OFFICE.

DANIEL WILLIS, OF HARRISON, NEW JERSEY.

## IMPROVEMENT IN WINDOW-SHADE ROLLERS.

Specification forming part of Letters Patent No. **184,811**, dated November 28, 1876; application filed March 25, 1876.

*To all whom it may concern:*

Be it known that I, DANIEL WILLIS, of Harrison, in the county of Hudson and State of New Jersey, have invented a new and useful Improvement in Shade-Rollers, of which the following is a specification:

Figure 1 is a longitudinal section of the end of a shade-roller to which my improvement has been applied. Fig. 2 is a cross-section of the same.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of spring shade-rollers, so as to make them more durable, less liable to get out of order, and more reliable in operation than when constructed in the ordinary way.

The invention will first be described in connection with drawing, and then pointed out in the claim.

A represents the roller, which is perforated from one end to receive the spiral spring B and the shaft C, which parts are connected in the usual way. D is the cap, through the end plate of which the end of the shaft C projects. In the end plate of the cap D is formed a radial slot, extending outward from the central hole, to receive a catch, E, which passes inward between two parallel guide plates or flanges, F. The plates F are notched upon the lower side of their inner ends, to form a seat for the cross-head formed upon the inner end of the catch E. Upon the lower edge of the outer part of the catch E is formed a toe or projection to rest upon the shaft C, and drop into a notch, *c'*, formed in one side of the said shaft C. One side of the notch *c'* is made with a square shoulder, and its other side is rounded off, giving it a cam form, as shown in Fig. 2.

By this construction, when the shade is

drawn down slowly the catch E, at each revolution of the roller A, drops into the cam-notch *c'*, and, when the shade is released, holds the roller A from being drawn back by the tension of the spring B.

If the shade is drawn down a little and then released quickly, the quick motion of the roller throws the catch E outward, so that it will pass over the shoulder of the notch *c'*, and when the motion is checked the catch E will again drop into the notch *c'* and hold the roller in place.

I am aware that a catch has been made by pivoting a bar at one end, so as to serve the purpose of a lateral pawl; but I use a falling slide, that acts on the inside of a chamber prepared with smooth walls. This catch is loose in every part, and set in a frame peculiarly constructed to hold it in place. It is intended to have a sliding motion up and down throughout its whole extent, but less at the rear than at the front. Thus it will be seen, also, that the several parts of my roller require but little work after leaving the hands of the iron-molder, while others require to be drilled and then riveted together, which adds greatly to the cost of manufacture.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

The combination, with roll A, spring B, and cam-notched shaft C, of the cap D, having radial slot and guide-plates F F, notched on lower side of inner ends, and the catch E, having a cross-head on inner and a toe on outer part, substantially as and for the purpose specified.

DANIEL WILLIS.

Witnesses:

JOHN GAMBLE,  
THOMAS JONES.