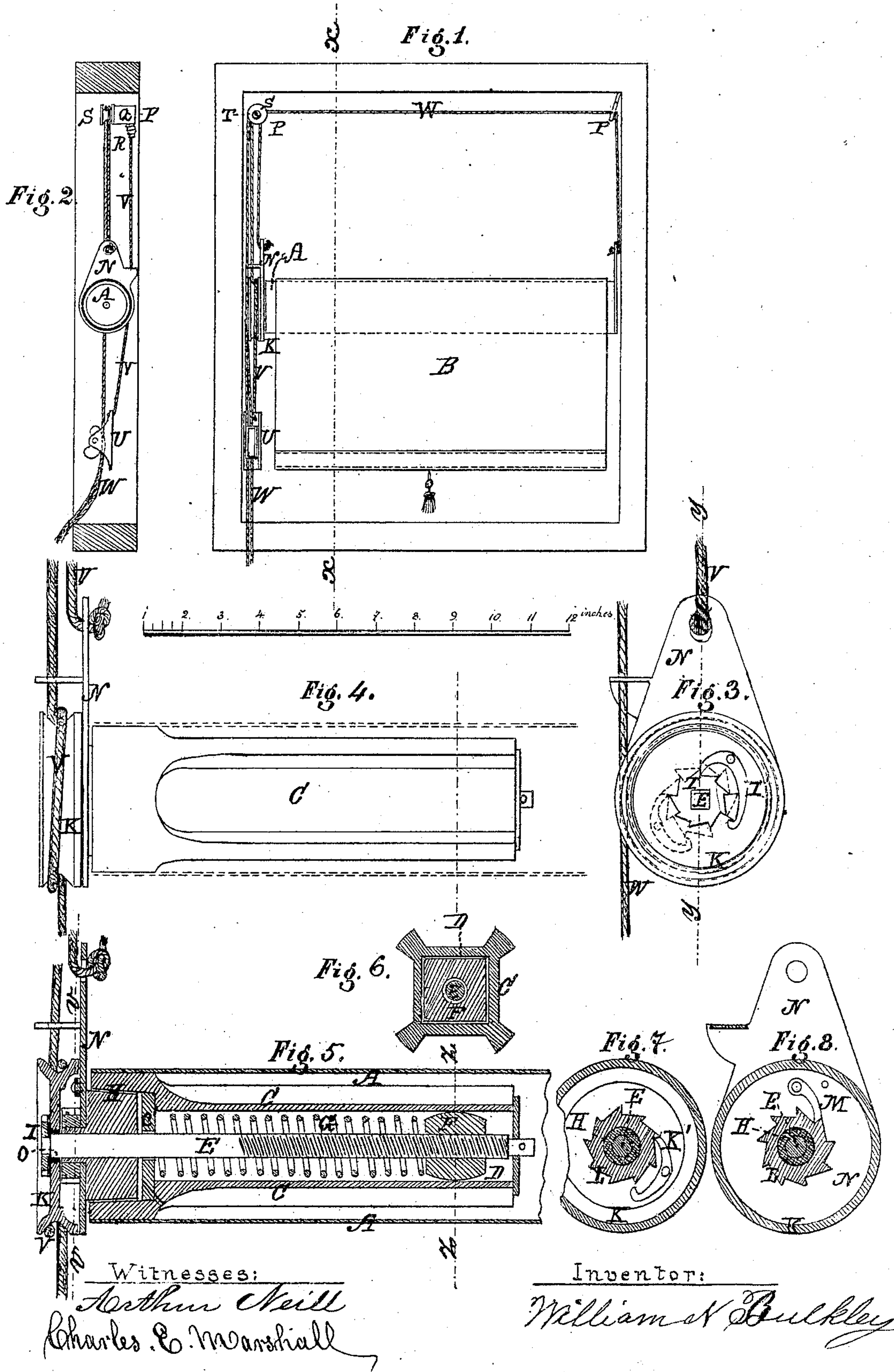


WILLIAM N. BULKLEY.

Improvement in Curtain Fixtures.

No. 119,568.

Patented Oct. 3, 1871.



UNITED STATES PATENT OFFICE.

WILLIAM N. BULKLEY, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN CURTAIN-FIXTURES.

Specification forming part of Letters Patent No. 119,568, dated October 3, 1871.

To all whom it may concern:

Be it known that I, WILLIAM N. BULKLEY, of Brooklyn, in the county of Kings and State of New York, have invented certain Improvements in Automatic Drop-Rollers for Window-Shades, of which the following specification is a description.

The object of my invention is to construct a window shade in such manner that it will be self-acting (by means of a self-governing friction pressure) in covering any desired portion of, or the whole of, a window, and remain in any desired position, as represented in the accompanying drawing, of which—

Figure 1 is a front elevation of my invention; Fig. 2, vertical section on line *xx*, Fig. 1; Fig. 3, an end view of shade-roller, showing pulley-ratchet and pawl; Fig. 4, a detached view of hollow cylinder-head and pulley. Fig. 5, a section on *yy* of Fig. 3, showing conical pulley, rotating screw, traveling nut, and pressure-spring; Fig. 6, a section on *zz* of Fig. 5; Fig. 7, a section on *vv*, Fig. 5, looking toward the left; and Fig. 8, a section on said line looking toward the right hand.

In the said drawing, A is a metallic or other cylindrical roller, to which the end of the window-shade B is attached, said cylinder receiving in one or both of its ends a hollow cylinder-head, C, which rotates with the shade-cylinder. The interior of the cylinder-head is a hollow square, D, extending nearly its whole length, and receives a rotating screw-shaft, E, traveling-nut F, spiral pressure-spring G, and in its outer end a fixed partition, *c'*, and conical friction-pulley H. On the outer end of said screw-shaft is a ratchet-wheel, I, and also the loose driving-pulley K, while on the end of the cone-pulley is another ratchet-wheel, L, one being set reverse to the other. The pawl K' on the loose driving-pulley acts on the friction-ratchet L, attached to the cone friction-pulley, to roll the shade while the roll is descending. The pawl M on the suspension guide-plate N acts on the same ratchet L to assist in preventing rotation of the friction-pulley while the shade is being unrolled by hand. The reverse-ratchet I on the outer end of the shaft E, together with the reversed double pawl I', is employed to revolve the screw-shaft with-

in the spring-compressing nut F, for the purpose of easing the pressure of the spring on the conical friction-pulley while the shade is being raised to any desired position, said friction being only requisite to hold the weight of the shade while it is unrolled, the maximum pressure of the spring being at this point, while the minimum pressure of said spring acts only when the shade is all rolled up, thus creating a self-regulating friction-pressure on the conical friction-pulley by means of the pressure of the ratchet-wheel I against the sleeve or bushing O on the end of the screw-shaft, for the purpose of easily operating the shade and obviating friction when not required. The pulley-brackets for suspending the window-shade roller (by the double suspension-cord W) are so constructed as to be applicable to the inside of the window-casing, as shown in the drawing, and are composed of swing-brackets P P, each having a cylinder, Q, for reception of a spiral tension-spring, R, for the driving-cord and a cord-pulley, S, the parts being held together by a screw-journal, T, the cord-holder U or catch to which the other end of the driving-cord V is attached (having one whole turn around the driving-pulley) being also adapted to the inside casing of the window-frame, with no interfering projection, the construction of said fixtures throughout preventing contact of the edge of the shade with any of the working parts.

What I claim is—

1. The double pawl K', single pawl M, ratchet L, and loose pulley K, in combination with the conical friction-pulley H and partition-plate *c'*, arranged and operating substantially as and for the purposes described.

2. The rotary screw-shaft E, traveling-nut F, spiral pressure-spring G, reversed ratchet I, double pawl K', and reversible double pawl I', in combination with the hollow conical cylinder-head C and partition-plate *c'*, substantially as described.

3. The swing-bracket P and cord-catch U, constructed as described, in combination with the double suspension-cord W, substantially as described and set forth.

WILLIAM N. BULKLEY.

Witnesses:

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