# D. Bickford,

## Sash Holder.

No. 27,032. Patented Feb. 7, 1860.

Fig 1.

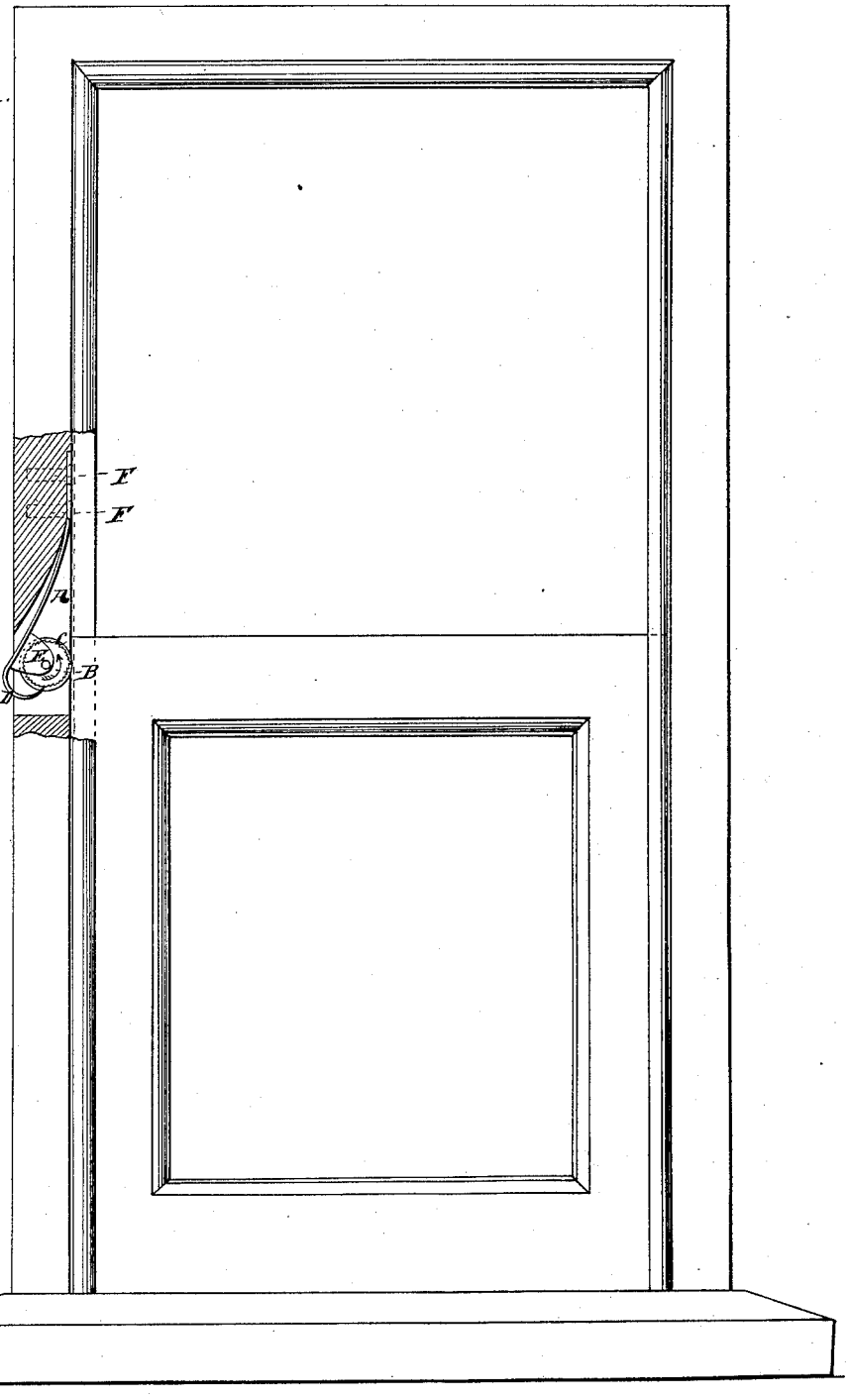
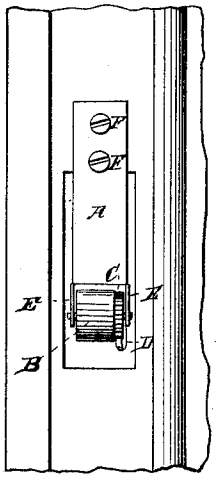



Fig 2.




AM. PHOTO-LITHO. CO. N.Y. (OSBORNE'S PROCESS.)

# UNITED STATES PATENT OFFICE.

D. BICKFORD, OF WESTERLY, RHODE ISLAND.

## WINDOW-SASH SUPPORTER.

Specification of Letters Patent No. 27,032, dated February 7, 1860.

*To all whom it may concern:*

Be it known that I, DANA BICKFORD, of Westerly, in the county of Washington and State of Rhode Island, have invented a new and useful Improvement in Friction-Roller Balances for Window-Sash; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a front elevation of a window frame and sash with my improvement, and Fig. 2, a front view of the friction roller.

Similar letters of reference indicate corresponding parts in each figure.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

A is a short spring.

B is a friction roller.

C is a ratchet wheel connected with the roller.

D is a ratchet.

E E are bearings connected with the point of the spring and supporting the friction roller and ratchet wheel.

F F are screws that connect the spring with the window casing.

The arrangement of the friction roller with the ratchet and ratchet wheel allows the roller to turn freely, as shown by the red arrow in Fig. 1, when the sash is being raised, and holds it firmly when the sash is stationary, and being lowered, thus producing sufficient friction to balance the sash.

The improvement of this over other side frictions is, that only the weight of the sash has to be raised while in other side frictions the weight of the sash and the strength of the friction spring have to be raised at the same time.

I do not claim combining the spring actuating rollers with the edge of the window sash as in the case of Charles H. Dana, nor do I claim hanging the friction roller in a box or bearing, having a horizontal shank which works horizontally, back and forth through a barrel and has a spiral spring wound round it for operating the box as in Benj. H. Bradley's case; nor do I claim the arrangement of the helical spring brake or its mechanical equivalent within the friction roller and on the shaft thereof, as in the case of Amos Sevey, nor do I claim the spiral spring in any form for it will lose its strength in a short time, but

What I do claim and wish to secure by Letters Patent is—

The combination of the flat or sheet spring in combination with the bearings and friction roller arranged so as to turn freely or stationary one way as described in my specification.

DANA BICKFORD.

Witnesses:

JAMES G. HILL,

EDWIN LEE BROWN.