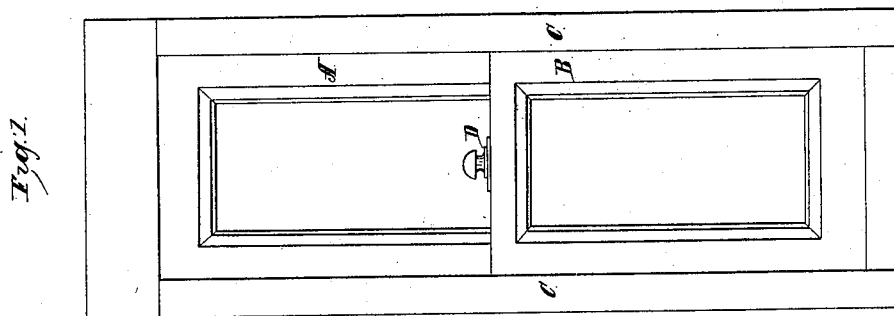
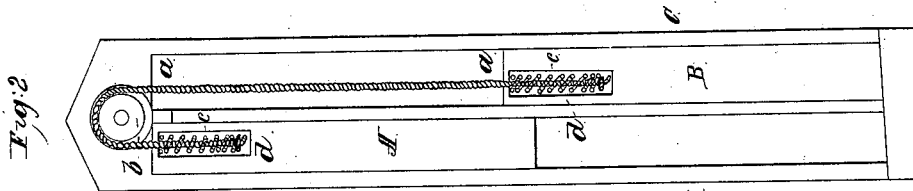


*S. Boyer,*  
*Sash Balance.*

*N<sup>o</sup> 52,955.*

*Patented Mar. 6, 1866.*



*Witnesses:*  
*F. P. Hale Jr.*  
*C. L. Soudkins*

*Inventor:*  
*Samuel Boyer.*  
*By his attorney,*  
*R. W. Ledy*

# UNITED STATES PATENT OFFICE.

SAMUEL BOYER, OF CHARLESTOWN, MASSACHUSETTS.

## IMPROVEMENT IN WINDOWS.

Specification forming part of Letters Patent No. 52,955, dated March 6, 1866.

*To all whom it may concern:*

Be it known that I, SAMUEL BOYER, of Charlestown, in the county of Middlesex and State of Massachusetts, have invented a new and useful Improvement in Windows; and I do hereby declare the same to be fully described in the following specification and represented in the accompanying drawings, of which—

Figure 1 denotes a front elevation of a window-frame and two sashes as provided with my invention. Fig. 2 is a vertical and transverse section of the same, it being taken through one of the cords connecting the sashes.

The improvement has reference to the hanging of the sashes, they being connected in such manner, by cords passing over pulleys and joined with springs, that one sash will counterbalance the others.

In the drawings, A and B are the upper and lower sashes. C is the frame of an ordinary window.

Instead of constructing such frame with boxes or weight-chambers, I make it without any such, and I connect each sash with the other by means of two suspending-ropes, *a a*, going over pulleys *b b*, arranged in or at the upper part of the window-frame, their arrangement being such as to cause them to stand transversely of the frame. Each rope, at one end, is fastened to one of the sashes. Near its other end the rope passes through a helical spring, *c*, placed within a recess, *d*, made

in the edge of the sash, such rope being attached to the lower end of the spring, or having a knot to act against such end, the whole being so arranged as to cause the two sashes to balance one another in any positions in which they may be within the window-frame.

The purpose of the spring to each rope is not only to compensate for the expansion or contraction of the rope, occasioned either by usual atmospheric action or from use, but to enable the upper sash to be fully elevated and the lower sash to be fully depressed. Without the springs to the rope it would be difficult, if not impossible, to accomplish from time to time the proper closing of the two sashes.

A spring bolt, D, or any other proper fastener, may be applied to the upper bar of the lower sash and the lower bar of the upper sash, the same being for holding the sashes duly closed.

My invention dispenses with the usual balancing-weights and the receiving-channels made therefor in the window-frame.

What I claim as my invention, is—

The balancing of one sash by the other by means substantially as described—viz., the cords, pulleys, and springs, arranged and applied to the sashes and window-frame, as explained.

SAMUEL BOYER.

Witnesses:

C. A. SWADKINS,  
F. P. HALE, Jr.