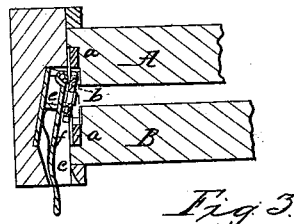
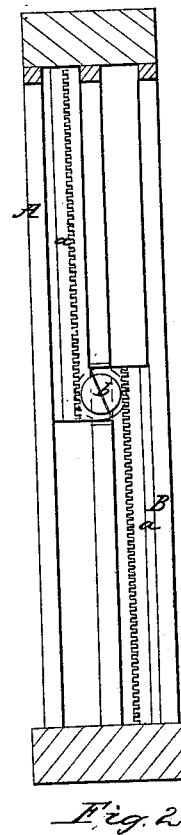
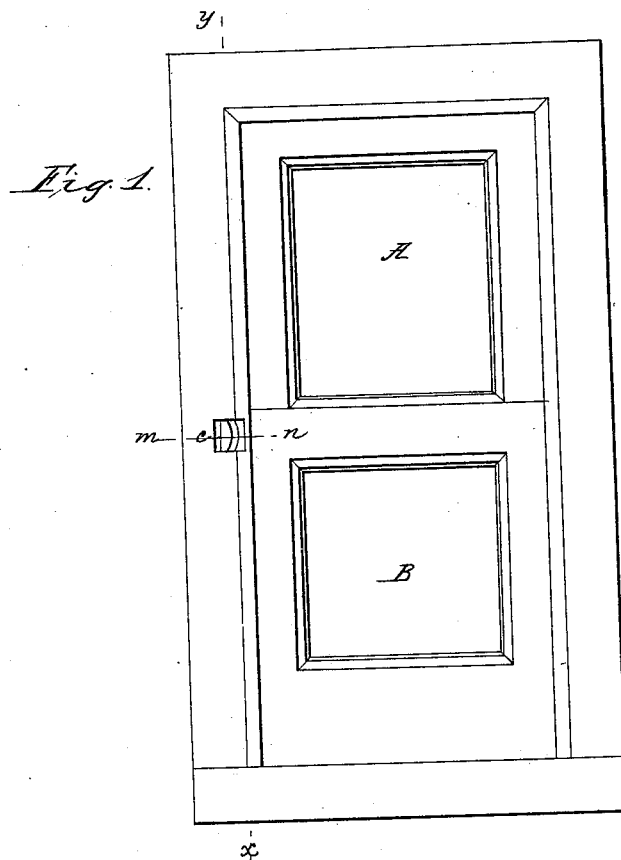


W. T. Barnes,
 Sash Balance.
 N^o 6,917. Patented Dec. 4, 1849.



UNITED STATES PATENT OFFICE.

WM. T. BARNES, OF BUFFALO, NEW YORK, ASSIGNOR TO WESLEY CHASE.

METHOD OF COUNTERBALANCING WINDOW-SASH.

Specification of Letters Patent No. 6,917, dated December 4, 1849.

To all whom it may concern:

Be it known that I, WILLIAM T. BARNES, of Buffalo, in the county of Erie and State of New York, have invented a new and useful
5 Method of Balancing Window-Sashes and Securing Them in Any Position in which They may be Placed; and I do hereby declare that the following is a full, clear, and exact description of my invention, reference
10 being had to the accompanying drawing, which forms part of this specification and in which—

Figure 1 represents a front elevation of a window with my sash balance applied to
15 it. Fig. 2 is a vertical section through the line *x y* of Fig. 1, and Fig. 3 is a horizontal section through the line *m n* of Fig. 1.

My invention consists in attaching a rack to each sash, the teeth of which gear into
20 those on the opposite sides of the same pinion. The axle of the pinion being attached to a hinged spring lever, so that it can be thrown out of gear with the rack of one sash, and at the same time locked in such a
25 manner that it is prevented from being turned by the weight of the other sash.

In the drawing A is the upper and B the lower sash. A rack *a* is attached to the inner face of the former and a similar rack
30 (*a'*) is secured to the outer face of the latter, the two gear into the opposite sides of the same pinion *b*. The latter turns on an axle projecting from a spring lever *c* one of whose extremities is secured to the window
35 and the other projects through the sash frame and within the house. It will now be perceived that when the one sash is raised the other will be correspondingly lowered, and if the two be made of equal weight they
40 will counterbalance each other and remain in any position in which they may be placed, but if the inner alone is to be raised without lowering the outer the pinion *b* must first be disengaged from the rack *a*; this is effect-
45 ed by applying the hand to the spring lever *c* and pressing it toward the wall, the rack of the lower sash being then released, the latter can be raised to any required posi-

tion and secured there by releasing the spring lever, and allowing the teeth of the
50 pinion to engage with those of the rack. As the upper sash is held in its position by the counterbalancing weight of the lower, it would tend to descend as soon as the
55 pinion was disengaged from the rack of the lower, but this tendency is obviated by a pin *e* projecting from the window casing through the spring lever immediately opposite the teeth of the pinion, as then the
60 spring lever is pressed toward the wall this pin entering between the teeth of the pinion prevents it from turning by the weight of the upper sash which is thus securely locked
65 until the pinion is again thrown into gear with the rack of the lower sash, when the two sashes will again counterbalance each other. If it be necessary to lower the upper
70 sash and to keep the lower in its place, the former is first shoved down and the lower of course correspondingly raised by the pinion acting on its rack, the pinion is then dis-
75 engaged by the application of the hand to the spring lever and the lower sash is allowed to descend to its first position. Thus the two sashes are made to counterbalance
80 each other, and either or both may be raised or lowered and secured in any desired position by this simple and efficient device which is applicable to all windows whether new or
85 old and recommends itself as well by the simplicity of its several parts as by its cheapness and durability.

What I claim as my invention and desire to secure by Letters Patent is—

The arrangement herein described of the
85 hinged lever, pinion and racks with respect to a couple of window sashes, whereby the sashes can be connected and disconnected, adjusted and counterbalanced as herein set
90 forth. But I make no claim to the mere counterbalancing of the sashes by this de-
vice.

WILLIAM T. BARNES.

In presence of—

GEO. B. HIBBARD,
L. L. CHASE.