(Model.)

E. BRADSHAW.

SASH BALANCE.

No. 285,216. Patented Sept. 18, 1883.

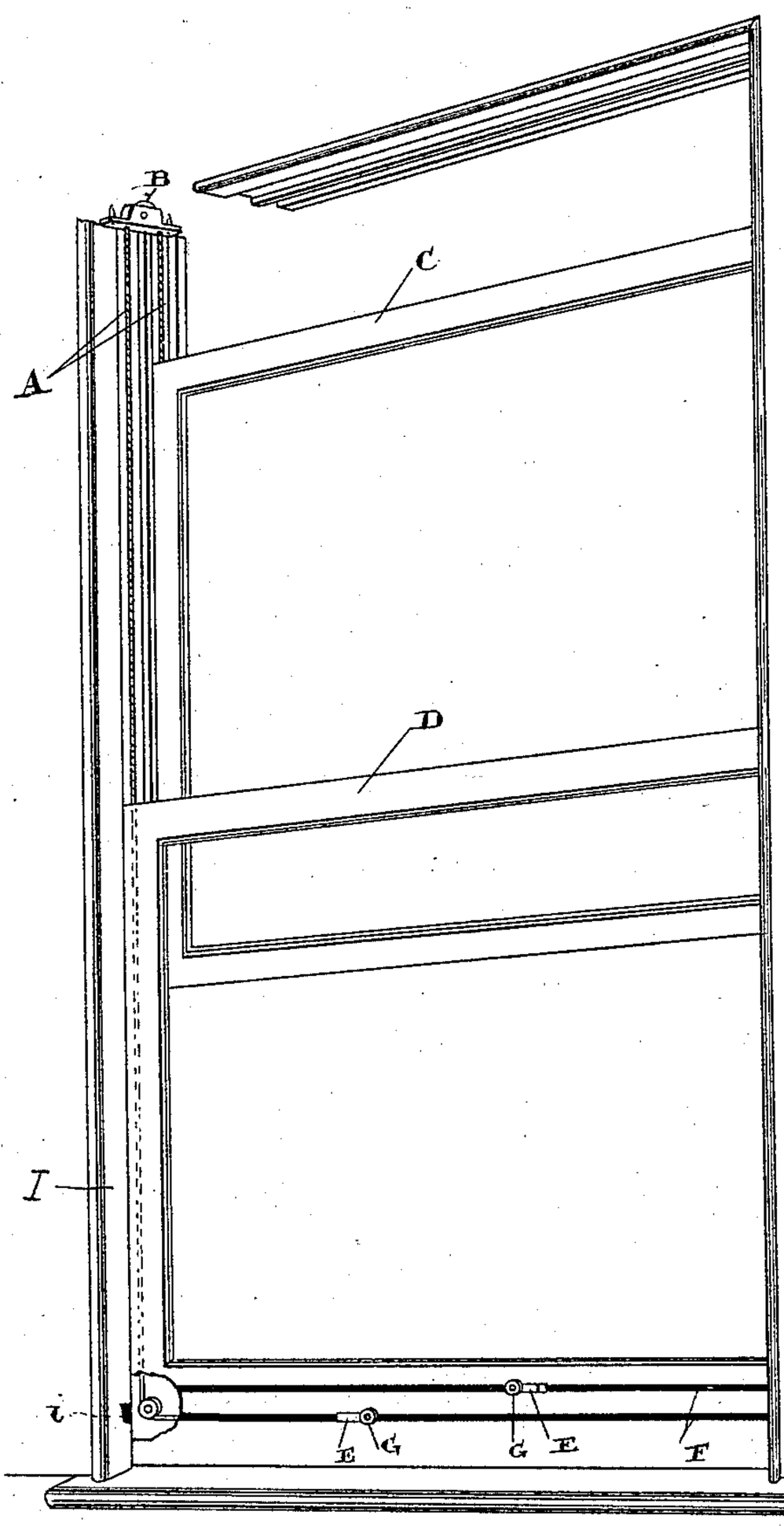


Fig. 1.

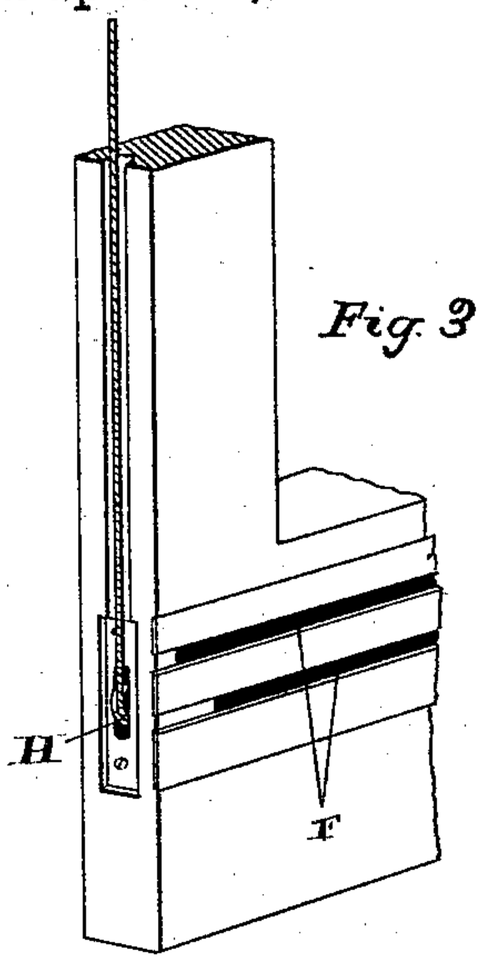
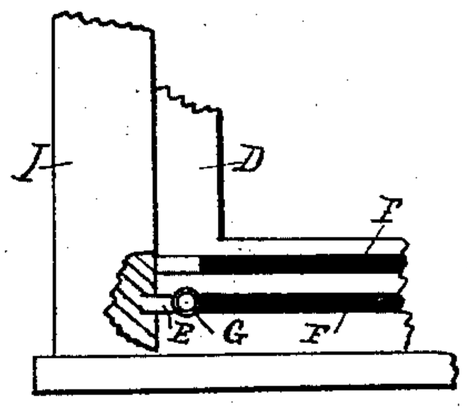


Fig. 3

Fig. 4.



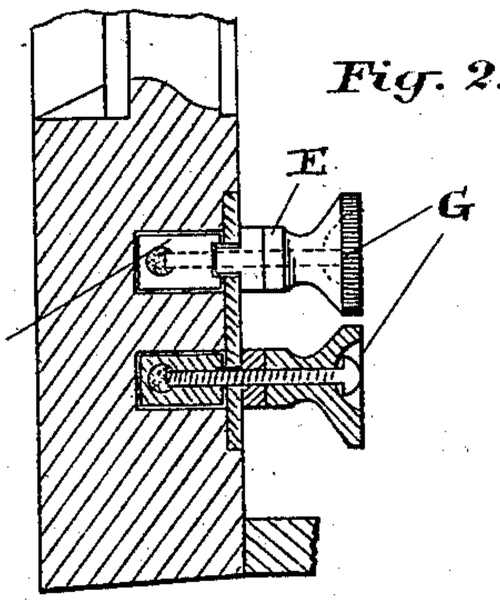


Fig. 2.

Witnesses.
Chas. C. Baldwin
"
F. B. Fetherstonhaugh

Inventor.
E. Bradshaw
by Donald C. Ridout & Co
Atty.

UNITED STATES PATENT OFFICE.

EDWIN BRADSHAW, OF TORONTO, ONTARIO, CANADA, ASSIGNOR OF ONE-HALF TO JOHN ANDERSON CARLAW, OF SAME PLACE.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 285,216, dated September 18, 1883.

Application filed April 27, 1883. (Model.)

To all whom it may concern:

Be it known that I, EDWIN BRADSHAW, a subject of the Queen of Great Britain, residing at the city of Toronto, in the county of York, in the Province of Ontario, Dominion of Canada, have invented a certain new and useful Improved Window-Sash Balance, of which the following is a specification.

The object of the invention is to produce a simple device by which window-sashes may be balanced without the employment of weights, which necessitate a window-frame having boxes to receive the said weights; and it consists, essentially, in attaching the upper sash by ropes passing over suitable pulleys to sliding blocks designed to operate within grooves made to receive them in the lower sash, and in recesses formed in the side rails of the frame, to lock the lower sash in a closed condition with either of the blocks, while the other allows the adjustment of the upper sash at will.

Figure 1 is a perspective view of a window frame and sash, with portions broken away to show the arrangement of my invention, the upper sash being shown slightly open for the same purpose. Fig. 3 is an enlarged detail of the pulleys H and grooves F. Fig. 2 is a cross-section showing the grooves and blocks. Fig. 4 is an enlarged perspective of a portion of a sash and frame, showing one of the blocks engaged to lock the sash and frame together.

A are two ropes, situated one on each side of the window-frame, and after passing over the pulleys B, suitably connected to the top of the window-frame, are connected, as shown, to the top sash, C. The ropes A pass down on each side of the window-frame, between the lower sash, D, and the window-frame, grooves being made in the sides of the lower sash, D, to permit the ropes A to pass freely down without interfering with the movement of the said sash.

E are two sliding blocks, to which the lower ends of the ropes A are connected, one to each block. These blocks are fitted into grooves F, made, as shown, in the bottom rail of the lower sash, and are provided with suitable pinch-screws, G, by which the blocks E may be locked in any desired position in their respective grooves, or in the recesses *i* of the frame I. Before being connected to the blocks E, the ropes A pass over the pulleys B H, which are secured, as shown, to the lower part of the window-sash. It will thus be seen that the upper and lower sashes are so connected together that the one balances the other, and if the blocks are locked in position the raising of the lower sash will cause the upper sash to lower.

One of the features to which I attach importance is the provisions for locking the lower sash at the lowest point of its stroke to the frame by either of the blocks, while the other block is adapted to allow the manipulation of the upper sash. This is especially important in sleeping-apartments or store-rooms, allowing security against vicious persons, and also providing for ventilation. Either of the blocks may be employed to lock the lower sash, and the upper sash may be dropped more or less, according as the remaining block is adjusted toward the frame. If it is desired to raise the upper sash, in ordinary cases this may be done by forcing the latter block back in its groove; but if the sash should bind by reason of the force being applied to one side only, the block which is engaged with the frame may be forced inward to assist in such operation. When it is desired to lower the upper sash without raising the lower sash, the pinch-screws G are loosened and the blocks slid in their grooves, so as to pay out the ropes A, thereby permitting the upper sash to drop to any desired point, where it may be locked by tightening the pinch-screws G, and thereby locking the blocks. If it is desired to raise the lower sash without affecting the upper sash, the said screws G must be loosened and so held by the hands that the ropes A will be held sufficiently taut to hold the upper sash closed. The blocks are permitted to move in their slots, so as to allow of the raising of the lower sash. Although for wide windows it will be found preferable to form the slots in the lower rail of the sash, it will be understood that the same effect might be produced

by making one on each side rail of the lower sash.

What I claim as my invention is—

1. In combination with a window-frame having locking-recesses and independent sashes secured together by ropes, independent blocks, as E, operating in grooves in the lower sash and carrying one end of said ropes, the said blocks being adapted to independently lock the lower sash or adjust the upper sash at will, as specified.

2. In combination with the frame I, having locking-recesses *i*, the sashes C D, the latter having grooves F, the pulleys B H, the ropes A, and the adjusting and locking blocks E, having set-screws G, the whole arranged and adapted to serve as and for the purposes set forth.

E. BRADSHAW.

Witnesses:

CHAS. C. BALDWIN,

F. B. FETHERSTONHAUGH.