

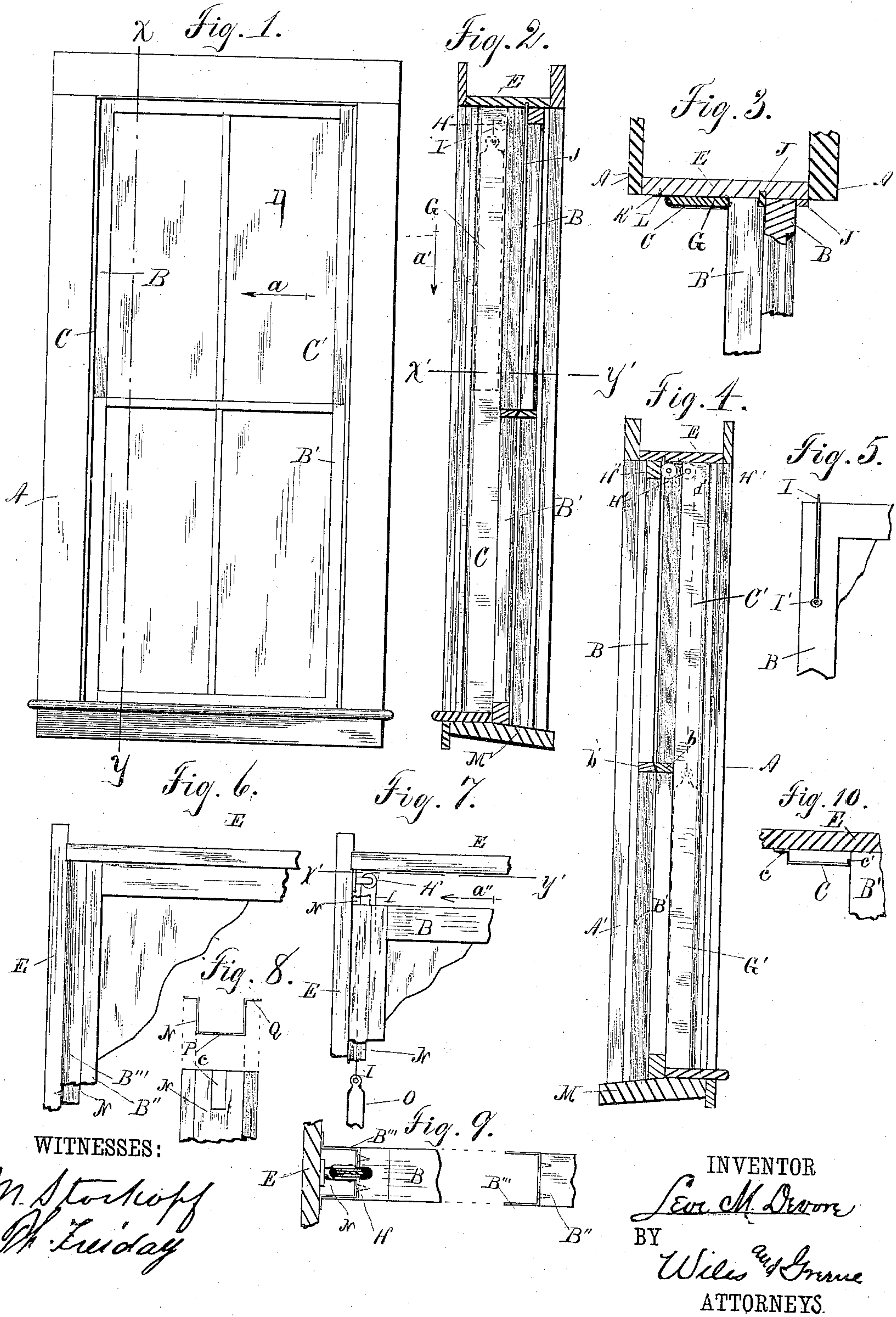
(No Model.)

L. M. DEVORE.

SASH BALANCE.

No. 324,819.

Patented Aug. 25, 1885.



UNITED STATES PATENT OFFICE.

LEVI M. DEVORE, OF FREEPORT, ILLINOIS.

SASH-BALANCE.

SPECIFICATION forming part of Letters Patent No. 324,819, dated August 25, 1885.

Application filed March 5, 1885. (No model.)

To all whom it may concern:

Be it known that I, LEVI M. DEVORE, a resident of Freeport, in the county of Stephenson and State of Illinois, have invented certain new and useful Improvements in Window-Weight Hangings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use the same.

My invention is an improvement in the hanging of window-weights, its object being to provide a means whereby sash may be counterbalanced without the necessity of forming pockets or weight-spaces outside the jambs of the window-frame in which the sash are hung. The invention is described and explained in the following specification, and shown in the accompanying drawings, in which—

Figure 1 is a front elevation of a window provided with the hollow stops which constitute a part of my invention; Fig. 2, a vertical section of said window, looking in the direction indicated by the arrow *a*, Fig. 1, the plane of section passing through the line *xy*, Fig. 1; Fig. 3, a horizontal section of the parts shown in Fig. 2, the plane of section passing through the line *x'y'*, Fig. 2; Fig. 4, a vertical section of the window shown in Fig. 1, looking in the direction opposite to that indicated by the arrow *a* in said Fig. 1, the plane of section being the same as in Fig. 2; Fig. 5, a front elevation of one of the upper corners of the upper sash, B, shown in Fig. 1, showing the manner of attaching the weight-cord thereto; Fig. 6, a front elevation of one of the upper corners of a frame and upper sash provided with a hollow stop somewhat different in form from that shown in the preceding figures; Fig. 7, a front elevation of same parts shown in Fig. 6, the sash being partly lowered, however, to show construction, and the hollow stop broken away to show position of pulley; Fig. 8, a top plan and a side elevation, looking in the direction indicated by the arrow *a''*, Fig. 7, of the hollow stop shown in Figs. 6, 7; Fig. 9, a top plan of same with sash connected therewith, and a separate top plan showing construction of sash; Fig. 10, a top plan of the hollow stop C, shown in connection with other parts in Figs. 1, 2, 3.

In Figs. 1, 2, 3, 4, 5, A is a window-frame of ordinary construction. B is the upper sash, set in said frame, and B' the lower sash, forming, with the upper sash, a complete window. An ordinary parting-strip, J, is set in each of the side jambs of the frame, and separates the two sash as they slide upward or downward from their respective positions. On each of the side jambs is fastened a hollow stop of any suitable material, reaching preferably from top to bottom of the jamb, and having any desired form in cross-section. This stop, which is intended to serve as a box to receive and conceal a sash-balancing weight, should have as thin a shell as is consistent with necessary strength, and I prefer, therefore, to make it of sheet metal; and in Fig. 10 I have shown a form of cross-section of the stop which answers the purpose perfectly, at the same time that it is easily made and inexpensive. As shown in said Fig. 10, C is the rectangular box or stop, having one side parallel to the jamb A and the other parallel to the sash B'. *c* is a flange formed integrally with the stop and fastened to the jamb, and *c'* is a narrow flange turned inward at the opposite edge of the stop and impinging upon the face of the sash.

The lower sash, B', is counterbalanced by means of a single weight, G, Fig. 2, suspended and moving freely up and down in the hollow stop C. This weight, as well as the weight which balances the upper sash, B, may be of any desired form and material, though I prefer to make it of lead or other dense metal, and to give it substantially the same form of cross-section as the interior of the stop in which it moves.

A small (preferably grooved) pulley, H, is fastened to the jamb, and is preferably of a diameter equal to about half the width of the stop, as this diameter brings the inner edge of the pulley at the center of the stop, while the outer edge of the pulley is in the plane of the flange *c'* at the margin of the stop. A cord, I, one end of which is fastened to the weight G, passes over the pulley H, and thence downward to the sash, to which it is fastened, as shown in Fig. 5, the cord lying in a groove in the face of the sash. By means of this construction the lift of the cord is practically ver-

tical from its point of attachment on the sash to the margin of the pulley over which it passes.

The lower sash, B', is counterbalanced by means of a weight, G', suspended by a cord, I', in the stop C'. The cord passes upward from the weight over two small pulleys, H' H'', and thence downward to the top rail of the lower sash. Both the pulleys H' H'' are pivoted to the jamb, and they are so placed that one fold of the cord shall be as near as possible at the center of the stop C', while the other fold drops vertically from the pulley H'' to its point of attachment to the sash. The proportions and arrangement of the pulleys H' H' H'' are by no means invariable; but I have shown what I think the most satisfactory, both as to simplicity and ease of operation.

It is evident that instead of using a single weight to counterbalance each sash, two weights may be used for each; but that arrangement requires either a double space in each of the stops or the placing of two sets of pulleys, one set at the top of the frame and the other set midway between the top and bottom thereof. The single-weight arrangement shown is perfectly practical and satisfactory, and I prefer it to the other.

The method of counterbalancing each sash by a single weight may be applied to windows having the ordinary pocket-frames, and I do not therefore limit my invention thereof to its use, in combination with the hollow stops shown and described.

Figs. 6, 7, 8, 9 show a modified form of my invention, the hollow stop being fastened to the jamb in the plane of the sash which it engages, and between said sash and the jamb, and the sash and stop being connected by some means adapted to hold the sash in line.

In these figures E is the jamb, N the hollow stop, B the stile of the sash and B''' a flanged plate fastened to the stile and embracing the hollow stop. This is as convenient a form of connection as any I have devised; but the mere form is immaterial, since the stop and sash may be provided with any sort of interlocking devices adapted to hold the sash in line with the stop. The sash is supported or balanced by a weight, O, suspended by a cord, I, which passes over a pulley, H, fastened to the side or head jamb. Since each sash has two stops, one on each jamb, I consider it best to use two weights for each sash, each weight being applied in substantially the form shown in Fig. 7.

Having now described and explained my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a window-frame and a sash hung therein, of a hollow stop attached to said frame, a suitable pulley attached to the frame, a weight-cord attached to the sash and passing over said pulley, and a weight within said stop and attached to said cord.

2. The combination of the frame A, the sash B B', the hollow stops C C', formed substantially as shown and described, the weights G G', lying within said stops, respectively, the pulleys H H' H'', and the cords I I', substantially as shown and described, and for the purpose set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LEVI M. DEVORE.

Witnesses:

M. STOSKOPF,
PH. FREIDAY.