

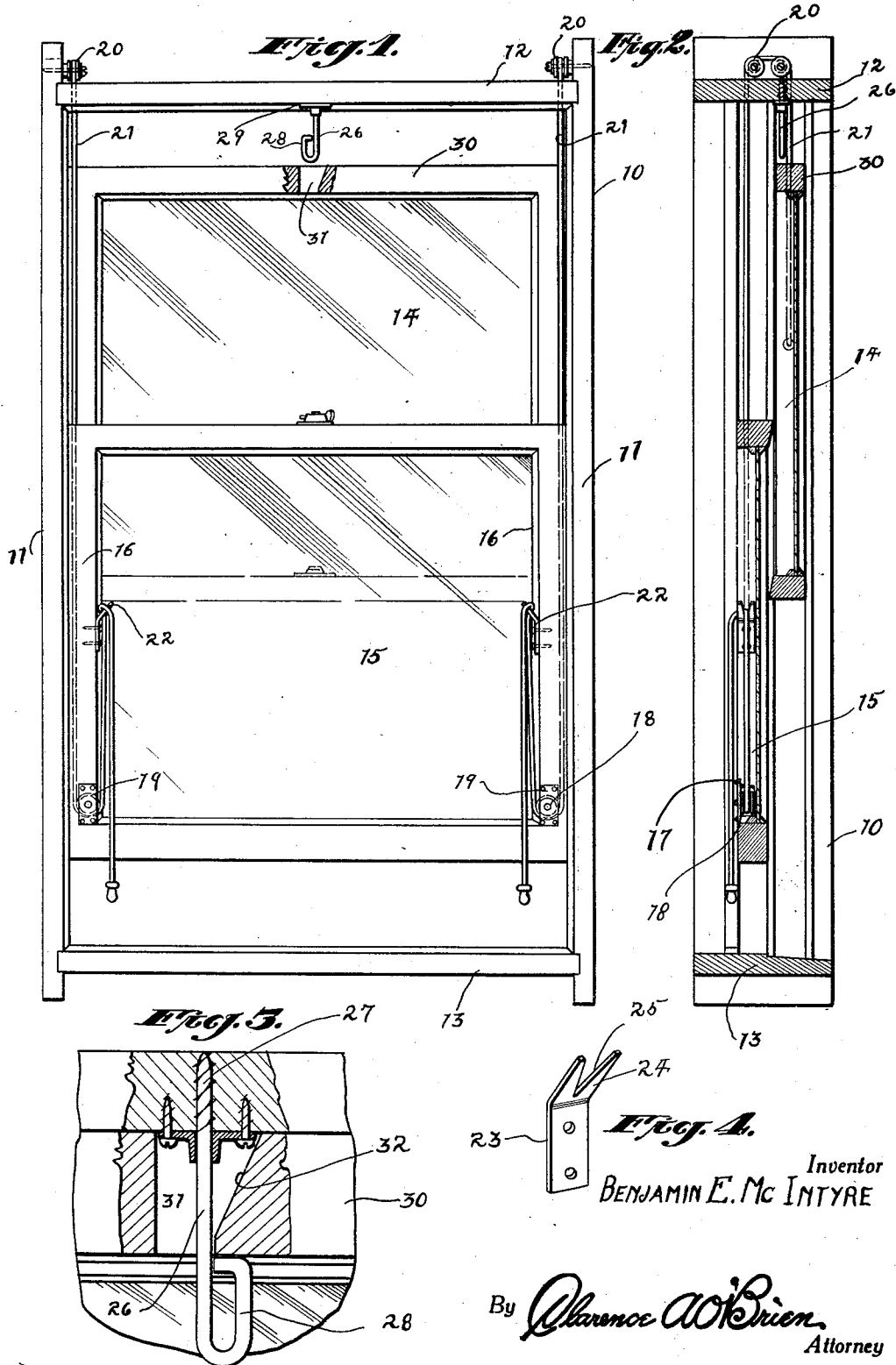
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B. E. MCINTYRE

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WINDOW SASH OPERATING DEVICE

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BENJAMIN E. MCINTYRE, OF WESTERLY, RHODE ISLAND

WINDOW SASH OPERATING DEVICE

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This invention relates to improvements in window sash operating devices.

The primary object of the invention resides in the window frame and sash structure in which the upper and lower sliding sashes are self balancing to dispense with the use of counterbalanced sash weights and costly structure required for such use.

Another object is to provide self balancing sashes in which the sashes may be independently or simultaneously moved to various open positions.

Another object of the invention is the provision of self balancing window sashes in which the upper sash may be held in a raised locked position against movement to allow for the raising of the lower sash without fear of the upper sash dropping.

A still further object is to provide a simple and inexpensive window sash operating means.

With these and other objects in view, the invention resides in the certain novel construction, combination and arrangement of parts, the essential features of which are hereinafter fully described, are particularly pointed out in the appended claim, and are illustrated in the accompanying drawing in which:

Figure 1 is a front elevational view of my window construction showing the upper and lower sashes in partially open position.

Figure 2 is a vertical transverse sectional view therethrough.

Figure 3 is a fragmentary sectional elevational view illustrating the manner in which the upper sash is held against movement.

Figure 4 is a detail perspective view of one of the cord fastening brackets.

Referring to the drawing, the numeral 10 designates a window frame structure which includes spaced vertical side bars 11—11, a top cross bar 12, and a bottom cross bar or sill 13. Slidable in the side bars 11—11 are the usual upper and lower sashes 14 and 15 respectively.

The vertical side rails 16—16 of the lower sash 15 are recessed on the inside thereof as at 17 for accommodating pulleys 18, the said recesses being covered by plates 19 which

are countersunk with respect to the inner face of the side rails so as to lie flush therewith. These plates also serve as one of the bearings for the pulley 18. The pulleys are mounted adjacent the bottom rail at the lower sash for a purpose to be hereinafter understood.

Rotatably mounted on the side bars 11—11 adjacent the top thereof are sets of pulleys 20—20, the same being in substantial alignment with respect to the runways for the respective upper and lower sashes. The sets of pulleys 20 are disposed on the inside of the side bars 11—11 and just above the top bar 12 so as not to interfere with the free sliding of the sashes for the length of the frame.

Fixed to the side rails of the upper sash 14 at a point intermediate the ends thereof is one end of pull cords or cables 21, the said cables rising upward from the upper sash and passing over the sets of pulleys 20 and thence downward along the inside of the side bars 11—11 and through vertical channels provided in the side rails of the lower sash 15 to enable the cables to be trained over or under the pulleys 18. After the cables pass around the pulley 18, the same may be connected with angle brackets 22 carried by the side rails of the lower sash. Each of the brackets 22 includes a flat attaching plate or portion 23 and an angularly disposed portion 24, the latter being provided with a V-shaped notch 25 therein.

From the description thus far, assume that the self balancing sashes 14 and 15 are in fully closed position and it is desired to slide them to partially open position as shown in Figure 1 of the drawing. With the free ends of the pull cords or cables wedged into the V-shaped notches 25 of the bracket 22, it will be seen that by lifting up upon the lower sash, the same will slide upwardly and due to the weight of the upper sash, the same will move to a lowered position a corresponding distance. With the position of the sashes as shown in Figure 1, it is only necessary to pull downward on the lower sash to close the same and which movement will simultaneously raise the upper sash to a closed position.

There may be times when it is desired to raise the lower sash independently of the upper sash and I provide a releasing means whereby the upper sash may be held against sliding movement when desired. This means embodies a stem 26 having its threaded end 27 screwed into the top bar 12 centrally thereof so as to depend downwardly, the downwardly extending end of the stem being provided with a looped offset head 28. The shank of the stem 26 is braced by a plate 29 screwed to the under side of the top bar 12 and through which the stem passes. The top rail 30 of the upper sash 14 is provided with a slot 31 approximately centrally thereof, one wall of which is beveled or inclined as at 32. When the stem 26 is turned to the position shown in Figure 1 of the drawing, it will be seen that the offset head 28 is in vertical alinement with the recess 31 so as to permit the upper sash to be moved to fully closed position, and when in such position, the sash may be held against movement by merely turning the stem 26 by grasping the head 28 so as to dispose the said offset head 28 out of alinement with the slot which will then engage the underside of the top rail 30. To release the upper sash it is only necessary to give the stem the one half turn so that the head is in alinement with the recess 31. The beveled or inclined wall 32 tends to guide the head through the recess when the upper sash is moved into engagement therewith.

It will therefore be seen that when the upper sash is held against sliding movement in the position shown in Figure 3, the free end of the pull cord may be disconnected from the brackets 22 and after the lower sash has been raised the desired distance, the free ends of the cord may be wedged into the notches 25 and the lower sash will be held in such raised position.

Should it be desired to lower the upper sash relative to the lower sash, this may be accomplished by disconnecting the free ends of the pull cords from the brackets 22 and allowing the upper sash to drop to the desired position, it being of course understood that the head 28 has been turned to a position to release the upper sash.

From the foregoing description, it will be seen that I have provided a simple and efficient means whereby a pair of sliding sashes may be held in various open positions without the aid of counterbalance weights whereby the provision of pockets at the sides of the window frame to receive such weight is dispensed with.

While I have shown and described what I deem to be the most desirable embodiment of my invention, I wish it to be understood that various changes in construction may be resorted to if desired, and I do not wish to limit myself to the exact details herein set

forth, nor to anything less than the whole of my invention limited only by the appended claim.

Having thus described the invention, what I claim as new and desire to secure by Letters Patent is:—

In a window construction in which self balancing upper and lower sashes are slidably mounted in a frame, pulley and cable means for facilitating the simultaneous sliding movement of said sashes to open and closed position and the sliding of said sashes relative to each other, and releasable means for securing the upper sash in closed position against movement when said lower sash is moved to an open position, said releasable means including a turnable stem mounted in the top of said frame and provided with an offset head for passage through a slot provided in the top rail of the upper sash, the stem adapted to be turned to cause the head thereof to engage beneath the top rail of the upper sash when in closed position.

In testimony whereof I affix my signature.

BENJAMIN E. MCINTYRE.