Jan. 28, 1930. M. R. McCARTY 1,744,980

WINDOW

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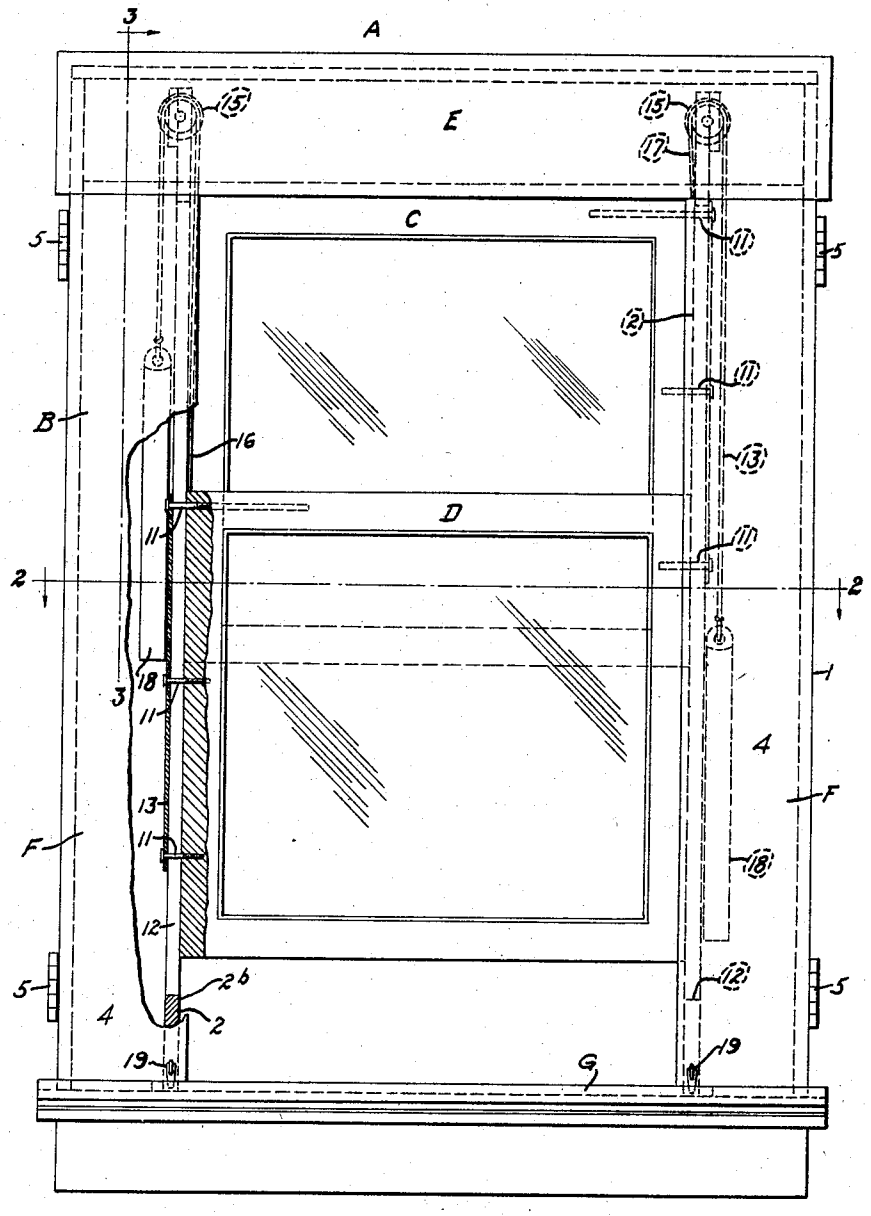


FIG. 1

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FIG. 2

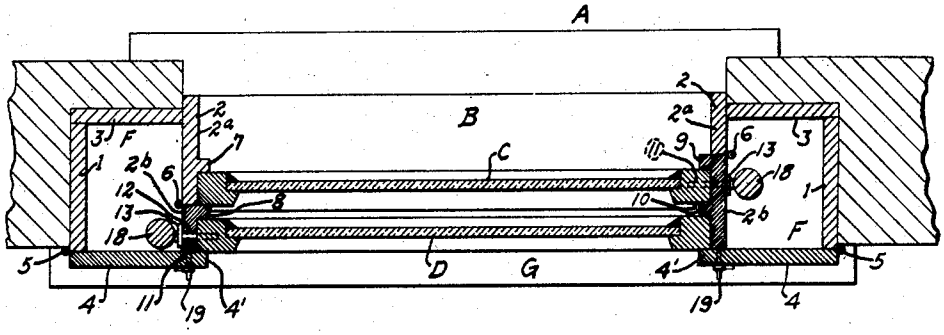


FIG. 3

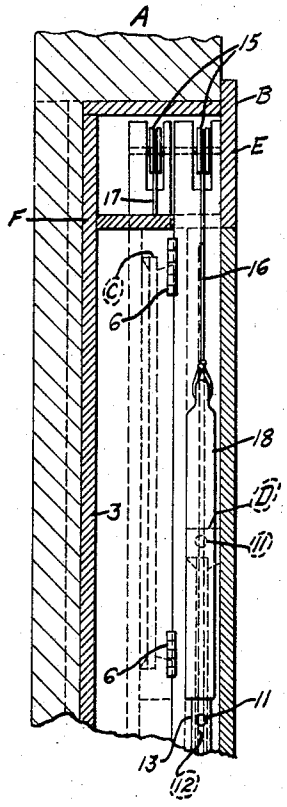
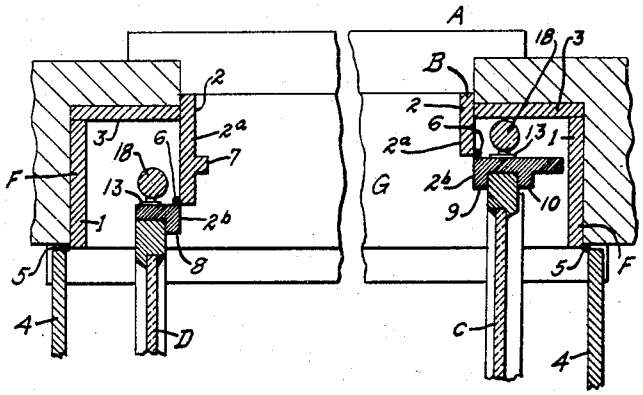


FIG. 4



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UNITED STATES PATENT OFFICE

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WINDOW

Application filed January 21, 1929. Serial No. 334,078.

This invention relates generally to windows, and more specifically to an improved window structure which is so constructed and arranged that the upper and lower, vertically movable sashes of said window structure may be independently swing inwardly into the room with which the window structure is associated. The predominant object of the invention is to provide a window structure of this type which will permit of access being had to the outer side of the window sashes, so that washing of the outer face of the glass of the sashes or other work on the outer sides of said sashes may be conveniently done from within the room.

Fig. 1 is a front elevation of a window constructed in accordance with my invention.

Fig. 2 is a cross-section on line 2—2 of Fig. 1.

Fig. 3 is a vertical fragmentary section on line 3—3 of Fig. 1.

Fig. 4 is a fragmentary cross-section similar to Fig. 2, but showing the sashes swung inwardly so that access may be had to the outer sides thereof from within the room with which the window is associated.

In the drawings, wherein is illustrated one embodiment merely of the invention, A designates a window constructed in accordance with my invention, said window comprising a window frame B, an upper sash C, and a lower sash D. The window frame B is composed of a top member E, side members F and F′, and a sill G, all cooperatively associated to produce a window frame of unitary structure which is set in the wall opening in the usual manner.

The side members F and F′ of the window frame B are rectangular in cross-section, as shown in Figs. 2 and 4, said side members each comprising an outer wall 1, an inner wall 2, a rear wall 3, and a front wall 4. The various walls of which each side member F is composed are suitably secured together to produce a hollow structure, and the front wall of each of said side members is hinged at the point designated by the reference character 5 to the associated outer wall 1, whereby said front wall may be swung on its hinge to the position in which same is shown in Fig. 4. Also, the inner wall 2 of each of said side members comprises a stationary wall portion 2^a rigidly fixed to certain of the associated elements making up the side member, and a wall portion 2^b which is hingedly secured to the associated wall portion 2^a at the point and by the hinge designated by the reference character 6. In view of the arrangement of the side members F and F′ of the window frame B, it is obvious that the hinged wall portions 2^b may be swung inwardly on their hinges 6 into the hollow interiors of said side members, as illustrated in Fig. 4.

By referring to Fig. 2 of the drawing, it will be noted that the stationary wall portion 2^a of the side member F of the window frame is provided with a projection 7. This projection projects inwardly into the window frame and extends longitudinally of the side member from top to bottom thereof. Likewise it will be noted by referring to Fig. 2 that the hinged wall portion 2^b of said side member F is also provided with a projection 8 which projects inwardly into the window frame and extends longitudinally of the side member from top to bottom thereof. The projections 7 and 8 are spaced apart from each other in a direction transversely of the side member F to provide a guideway for the upper sash C. In like manner the hinged wall portion 2^b forming a part of the side member F′ at the opposite side of the window frame is provided with a pair of spaced projections 9 and 10 projected inwardly into the window frame and extended longitudinally of said side member F′ from top to bottom thereof. The projections 9 and 10 provide a guideway in which operates the edge portion of the upper sash C opposite to the edge portion thereof which operates in the guideway provided by the projections 7 and 8, and it is obvious that the upper sash is capable of vertical sliding movement in the guideways referred to.

The hinged front walls 4 of the side members F and F′ overlap, in an inward direction, the hinged wall portions 2^b of the respective side members of the window frame, and these overlapping portions of said front wall, which are designated by the reference

character 4', cooperate with the projections 8 and 10 to provide guideways at the opposite sides of the window sash. The opposite edge portions of the lower sash D operate in the last mentioned guideways in a manner to provide for vertical sliding movement of said lower sash within the window frame, and it is plain therefore that both of the sashes C and D are capable of the sliding movement common to window sashes of this type, the projections 8 and 10 functioning as parting strips between the sashes.

The upper sash C is slidingly attached to the hinged wall portion 2^b of the side member F' of the window frame, and the lower sash D is similarly slidingly attached to the hinged wall portion 2^b of the side member F of said window frame, the mode of attachment in each case comprising a plurality of pins 11 (Figs. 1 and 2) which are carried by the sash and pass through an elongated opening 12 in the associated hinged wall portion. The pins 11 are provided with head portions 11' at their outer ends, and interposed between said head portions and an adjacent face of the associated hinged wall portion are plates 13, said plates being of greater width than the elongated openings 12. In view of the construction just described, it is plain that the portions of the hinged wall portions 2^b adjacent to the elongated openings 12 formed therein are loosely confined between the edges of the window sashes and the associated plates 13, hence the sashes may be moved vertically with respect to said hinged wall portions while the pins 11 and plates 13 move with said sashes and travel longitudinally with respect to the hinged wall portions 2^b.

The hinged wall portions 2^b of the side members of the window frame A extend upwardly into the hollow interior of the top member E, as shown clearly in Figs. 1 and 3, and at the upper end of each thereof said hinged wall portion is bifurcated as shown in Fig. 3. Mounted for rotary movement between the spaced elements providing said bifurcated portion of each hinged wall portion is a grooved roll or sheave 15. 16 designates a rope which is suitably attached to the lower sash D and passes over the sheave 15 associated with the hinged wall portion of the side member F of the window frame, and 17 designates a similar rope which is attached to the upper sash and passes over the sheave 15 associated with the hinged wall portion 2^b of the side member F' of said window frame. At the ends of the ropes 16 and 17 opposite to the ends thereof which are attached to the sashes C and D I attach sash weights 18, which serve to counterbalance the weight of the sashes. The sash weights operate within the hollow interiors of the side members F and F' when the sashes are raised and lowered, and because the sheaves are supported by the hinged wall portions 2^b the sash-weights and the ropes to which they are attached swing with said hinged wall portions when the sashes are swung inwardly.

In the use of a window constructed in accordance with my invention, the sashes C and D will move vertically in the guideways provided therefor in the manner common to windows of this type. When it is desired to swing the window sashes C and D inwardly for the purpose of washing the outer faces of the glass thereof, or for any other purpose, the front walls 4 may be swung inwardly, as illustrated in Fig. 4, after first operating the locks 19 to permit such movement. The inward movements of the front walls 4 will remove the portions 4' from the positions in which same are shown in Fig. 2, in which position said portions constitute parts of the guideways in which the lower sash D operates, and hence said lower sash may be grasped and moved inwardly into the room, as shown in Fig. 4, to permit access to the outside of said sash. When the lower sash is swung inwardly as described, the hinged wall portion 2^b of the side member F swings on its hinge, and of course the sash weight and rope associated with said lower sash will swing with said hinged wall portion.

After the lower sash D has been swung inwardly as described, the upper sash C may likewise be swung inwardly into the room, as the displacement of the hinged wall portion 2^b of the side member F removes the projection 8 from its normal position in which it is shown in Fig. 2, whereby such movement is permitted. As in the case of the lower sash, the inward movement of the upper sash causes the associated hinged wall portion 2^b to swing on its hinge 6, and the sash rope and sash weight move with said hinged wall portion. When the sashes are swung inwardly as described, the pins 11 and plate 13 will prevent said sashes from becoming detached from the associated hinged wall portions, the overhang of the sashes binding the sashes and the hinged wall portions together, so as to prevent sliding movement of the sashes with respect to the hinged wall portions.

It is plain, therefore, that the upper and lower sashes may be independently swung inwardly into the room to permit access to the outer portions thereof, whereby the necessity to climb out on the window sill for such access is eliminated.

I claim:

1. A window structure comprising, in combination, a pair of vertically movable window sashes, a hinged means co-operatively associated with each individual window sash, and a counterbalancing means comprising a rope and a sash weight associated with each window sash, each hinged means being swingable on its hinge to cause the window sash associated therewith to swing inwardly with

respect to the wall by which the window structure is supported, and each of the counterbalancing means associated with each individual window sash being supported by and swingable with the associated hinged means.

2. A window structure comprising, in combination, a pair of vertically movable window sashes, a hinged means cooperatively associated with each individual window sash, and a counterbalancing means comprising a rope and a sash weight associated with each window sash, each hinged means being swingable on its hinge to cause the window sash associated therewith to swing inwardly with respect to the wall by which the window structure is supported and with respect to the associated window sash, and each of the counterbalancing means associated with each individual window sash being supported by and swingable with the associated hinged means.

3. A window structure comprising, in combination, a pair of vertically movable window sashes, a hinged means cooperatively associated with each individual window sash, and a counterbalancing means associated with each window sash, each hinged means being swingable on its hinge to cause the window sash associated therewith to swing inwardly with respect to the wall by which the window structure is supported, and each of the counterbalancing means associated with each individual window sash being supported and swingable with the associated hinged means.

In testimony that I claim the foregoing I hereunto affix my signature.

MICHAEL R. McCARTY.