

July 6, 1937.

J. M. MERCER

2,086,043

WINDOW CONSTRUCTION

Filed Aug. 17, 1936

2 Sheets-Sheet 1

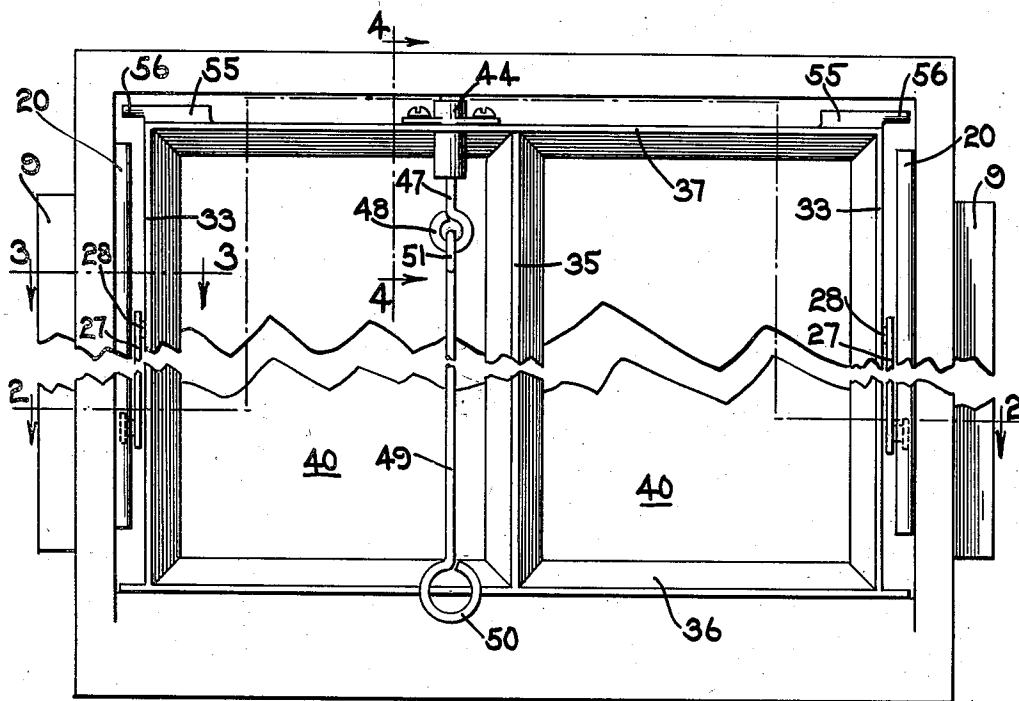


Fig. 1.

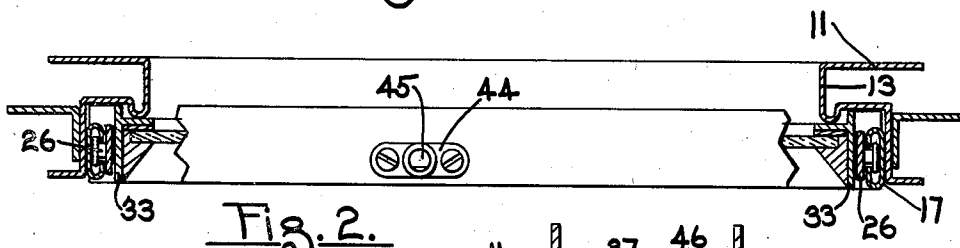


Fig. 2.

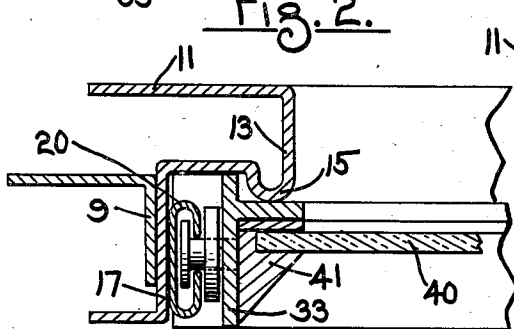


Fig. 3.

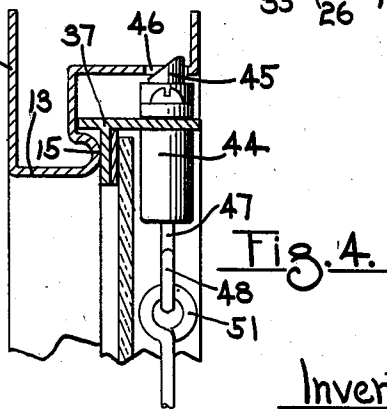


Fig. 4.

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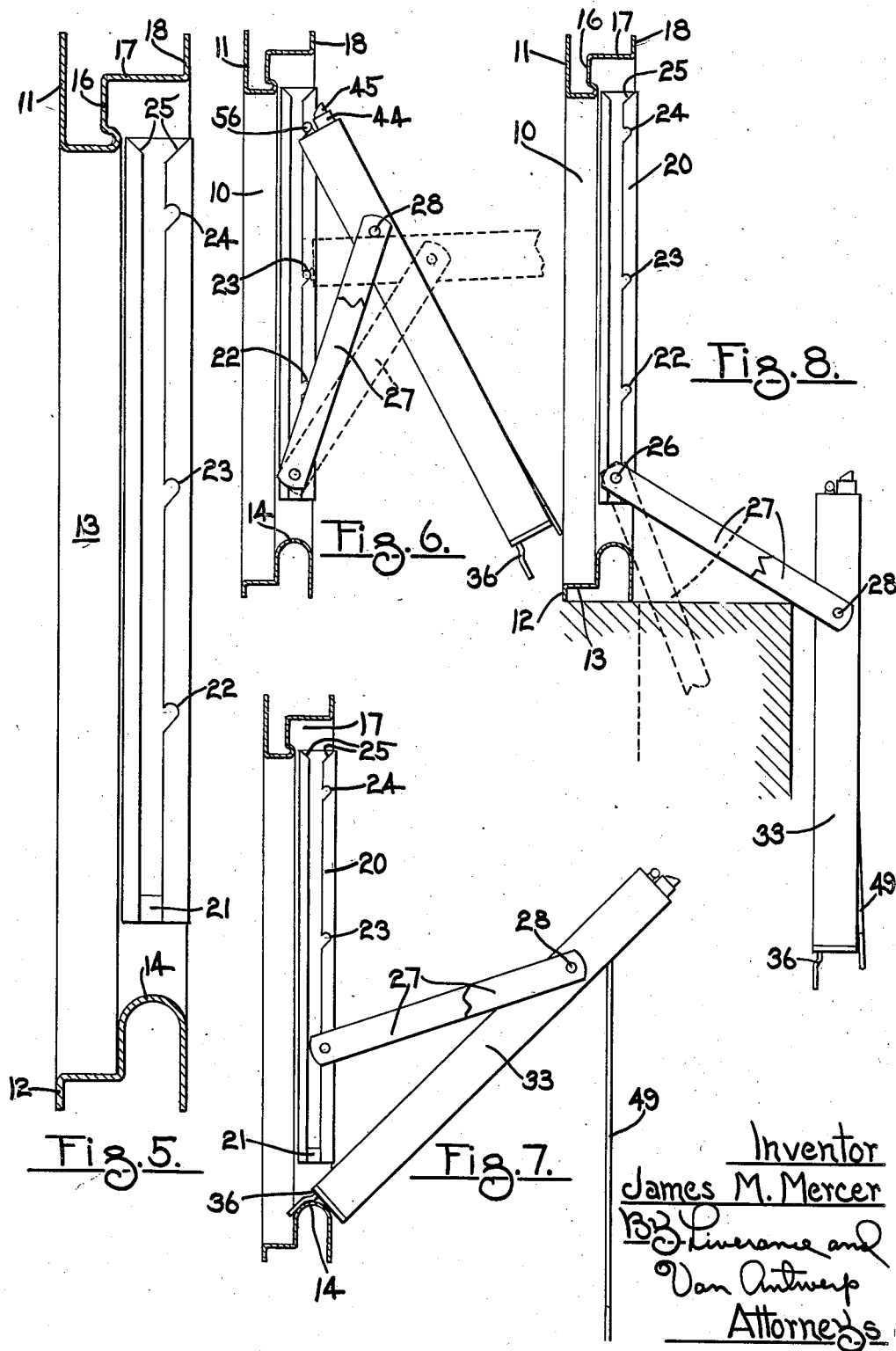
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2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,086,043

WINDOW CONSTRUCTION

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Application August 17, 1936, Serial No. 96,430

7 Claims. (Cl. 189—69)

This invention relates generally to a window and more particularly to a window casing having a frame pivoted therein, said frame also being bodily movable to a number of different positions relative to its casing.

The reissue patent to Gillman, No. 17,389, granted July 20, 1929, sets forth a window of the same general type as the present invention, but the present invention includes several features which are not shown in the Gillman patent and which are very desirable and advantageous.

For instance, one location in which this invention may be utilized, may be the wall of a basement, the window casing being located just above the ground level and under such conditions the window casing is sometimes placed rather close to the outside of the wall. Thus, a pivotal mounting of the frame within its casing does not give the desired desideratum as regards the entrance of air, light, stability of the moving frame, as well as the ease of cleaning the frame. Now, I provide for bodily movement of the frame of the window inwardly and downwardly with respect to its casing, the frame lying alongside the wall in staggered relationship to the casing, such a location being desirable for the above referred to reasons.

Also, I provide means on the casing whereby the frame may be tilted inwardly and upwardly and held in such position, the top of the frame being adjustably mounted upon the casing.

Furthermore, I simplify previous structures along this line due to the curved bearing member at the bottom of the casing, such not only being much easier to manufacture than the structure shown in Gillman but also providing a hinge whereby the frame will move in exactly an accurate path, this giving a very close and tight joint at the top of the frame. Also, a weatherproof joint is produced at the bottom of the casing as the lower member of the frame extends downwardly outside of the casing member.

Another advantage of my invention resides in the cross sectional shape of the frame and sash sides and sash top members whereby leakage of rain and the like therearound is prevented. Thus a double contact is had whereby a double seal is obtained.

Another feature resides in the side channel construction. These channels are vertically positioned and the single channel serves a double purpose, namely, as a runway for the sliding inner pivots of the links and also as a runway for the lateral extensions located on the top member of the sash. Along this same line, it will be

realized that my construction absolutely prevents accidental detachment between lateral extensions on the upper sash bar and the channels receiving the same.

Yet another advantage resides in the construction of parts whereby the swinging link members, located between the sash and its frame, contact against the lower cross bar of the frame to support the sash with its upper edge below the bottommost part of the opening through the frame. Thus coal or the like may be thrown through the opening without danger of breaking the sash. This particular positioning of the elements is shown in the dotted line construction of Fig. 8.

Another feature of my invention is the operating handle. This handle is of rigid construction and is universally connected at its top end and extends below the glass of the sash at its lower end. Thus the operating bar cannot swing against the glass under any circumstances. Its length is such as to permit complete operation of the sash by a person of normal height standing upon the basement floor. It will be understood that my construction dispenses with the overhead latch.

These features, as well as many others not at this time specifically stated, will appear as an understanding of the invention is had from the description taken in connection with the accompanying drawings, in which:

Fig. 1 is a view looking at the inner side of my improved window construction, a medial portion thereof being broken away in order to condense the showing.

Fig. 2 is a horizontal sectional view taken along the line 2—2 of Fig. 1.

Fig. 3 is a fragmentary horizontal view, somewhat enlarged, taken along the line 3—3 of Fig. 1.

Fig. 4 is a fragmentary view, likewise somewhat enlarged, taken along the line 4—4 of Fig. 1.

Fig. 5 is a vertical section through the casement frame showing the inner construction of the end member thereof.

Fig. 6 shows the frame member swung inwardly from the casing.

Fig. 7 shows the sash or frame member tilted inwardly about the sill of the frame.

Fig. 8 shows the frame separated from the casing and positioned alongside the wall in which the casing is mounted.

Similar numerals refer to similar parts throughout the several views.

Briefly described, my invention comprises a

mounting frame or casing, having channel guide means along each of its sides and a bearing along its bottom member, this bearing pivotally receiving the lower end of a sash which has links pivoted thereon, near its top edge these links connecting onto vertically movable guide means positioned in the same channels. An operating bar depends from the upper sash member.

Numerals 10 designates the sash generally. The sash has an outwardly extending flange 11 which extends around its top and sides. This flange is integral with a shorter lower flange 12. The sash extends inwardly from the flanges 11 and 12 to form rectangular frame member 13 and continues at its bottom to form the bearing 14 and at its sides and top to form the projection or nose 15. This projection or nose 15 extends around the top and sides of the outer frame member. The outer frame continues at its sides and top in a portion 16, parallel to the flange 11, then extends at 17 parallelly to the portion 13 and terminates in a flange 18.

The side portions 17 are suitably mounted upon members 9, see Figs. 1 and 3, and receive the channel shaped guide channels 20 thereon as by welding. These guide channels 20, there being one at each side of the frame, have bottom abutments 21 and are notched as indicated at 22, 23 and 24. The upper corners of the flanges of these guide channels are tapered as indicated at 25 to aid in the entry of the guide spools 26.

The guide means 26 is located upon the links 27 these links being pivotally connected at 28 onto the end members 33 of the sash. See Fig. 1 of the drawings.

The sash comprises a bottom member 36 which rides upon the bearing member 14. See Fig. 7. The sash has side members 33, as previously mentioned, a vertical partition 35, and a top cross member 37. Both the top member and the side members 33 are formed of members having a T-shape, see Figs. 3 and 4, the stem of the T abutting the projection 15 while one side of the cross bar portion extends behind the extension 15. Thus a double sealing contact is formed.

The sash carries suitable glass panels 40 held in place by suitable means 41.

The upper member of the sash has an opening therethrough which opening receives the latch means 44. The latch bolt 45 is received in an opening 46 which extends through the portion 17 of the outer frame member. The latch bolt is spring pressed upwardly and is operated by means of the rod 47 having an eye 48 formed therein.

A rigid operating arm 49, having handle means 50, has a second eye 51 which engages with the eye 48 to form a universal joint connection. See Figs. 1 and 4. The operating rod 49 is of sufficient length to extend downwardly across the glass panels 40 and thus it cannot swing there-against.

Brackets 55, having extensions 56, are fastened at each end of the top member 37 of the sash. See Figs. 1 and 6.

My construction is capable of being adjusted to many different positions whereby utilitarian advantages are obtained. For instance, it may be positioned as shown in Fig. 7 of the drawings, whereby overhead ventilation is had. In this instance, the air currents are deflected up and over the sash thus avoiding any direct draft.

Another position is that shown in full lines in Fig. 6. This position gives both top and bottom ventilation with some downward deflection of the air currents.

Another position is that indicated by the dotted line showing of Fig. 6. This positions the window in fully open position with respect to the ceiling line. It is to be noted that no ceiling hook is required.

Fig. 8 shows the sash raised off the sill and hanging down inside of the wall, thus giving a full opening. If the position of the frame is relatively close to the inner wall face, as shown by the dotted lines in Fig. 8, then the sash drops downwardly to a position completely below the outer frame. If desired, the sash may be bodily detached, turned end for end, and then the spools 26 again slid into the guide channels 20. Thus the parts assume a position similar to the one shown in Fig. 8 but with the greater part of the sash above its pivotal axis.

It will be understood that each of the aforesaid positions may be easily and quickly obtained by the operator grasping the handle 50 and manipulating the sash. Also, the sash is easily removed and replaced as desired. The detachability thereof permits the sash frames to be set aside and separately glazed and stored during construction until it is desired to complete the assembly.

From the above description it will be appreciated that I have inventively created a window of very desirable characteristics and one which is relatively simple in its construction and hence economical to manufacture and consequently I desire to protect the same by securing Letters Patent of the United States.

I claim:

1. In a wall, such as is located in the basement of a house, said wall having an opening therethrough adapted to receive a window casing therein, the combination of, a window casing adapted to be seated in said opening, a frame movably mounted in said casing whereby said frame may be tilted inwardly and whereby said frame may be raised to separate its lower edge from said casing whenever it is located out of the plane of the said casing, and means for preventing excessive inward tilting of said frame, said means including a link having a slidable connection with the said casing and locking mechanism for holding the slidable connection in one of a plurality of positions, said frame also being movable from its position in said casing to a position substantially parallel to the inner face of the wall, said means for preventing inward tilting of the frame beyond a predetermined point abutting against said window casing and supporting the frame in its said parallel position.

2. In a window construction, an open casing, a frame fitting into said casing, means for pivotally and detachably mounting the lower edge of the frame onto the casing, a link pivotally connected with an end of the said frame and pivotally and slidably connected at its other end to the said casing and being slidable to substantially the bottom of the casing, means for limiting the pivotal movement of the frame relative to the link in one direction, and means on the casing adapted to be engaged by the limiting means whereby the frame is held at the desired angle relative to the casing.

3. In a window construction, an open casing, a frame fitting into said casing, means for pivotally and detachably mounting the lower edge of the frame on the casing, means connecting the frame with the casing and for holding the frame a limited distance away from the casing at its upper portion, said means being slidably

mounted on the casing for movement to the top thereof whereby disengagement is had, said means also having pivotal connection to both the frame and casing, said pivotal connection
 5 to the frame being above the center of gravity, said casing having a plurality of downwardly facing notches, the lower edge of the frame being swingable away from the casing when disconnected therefrom and pin means for detachably
 10 positioning the frame onto the casing by entering any one of said notches, gravity acting upon the frame to maintain the pin means and its notch in associated relationship.

4. In a window construction, an open casing, a frame fitting into said casing, means for detachably mounting the frame in the casing, and a link pivotally connected near its respective ends to the frame and casing, whereby the frame may be shifted to a parallel and staggered position relative to the casing, said link being detachable from the casing when moved to the top portion thereof whereby it may be reversed end for end to give a second parallel and staggered position.

25 5. In a window construction, an open casing, a frame fitting into said casing, means for pivotally and detachably mounting the lower edge of the frame on the casing, link means pivoted onto the frame, a channel located along the side of the casing, a bottom abutment in said channel,
 30 a sliding pivot, attached to the free end of the link means, said sliding pivot being receivable in said channel, and means on the frame slidable in the said channel for detachably fastening the
 35 frame onto the casing at one or more points below the upper edge of the casing.

6. In a window construction, an open rectangularly shaped window casing of metal having a lower bar formed at its upper side with a bearing portion, a rectangular window frame adapted to be received in said casing and having its lower side adapted to seat upon said lower bar of the
 5 said window casing, means pivotally connected to the upper portion of the frame and slidably connected to the casing for movement entirely along its vertical dimension to permit a limited
 10 swinging movement therebetween and foldable into position alongside the frame when the frame is in closed position and extending between the casing and frame when the upper portion of the frame is tilted away from the said casing, said
 15 means acting to limit the said tilting movement of the frame and also acting to connect the upper portion of the frame to the casing when the lower side of the frame is disconnected from the casing and the frame is swung inwardly and downwardly with respect to the casing, said connecting
 20 means being sufficient in length to permit said casing to be substantially uncovered by the said frame.

7. In a window construction, an open casing, a frame fitted into said casing, means for detachably mounting the frame in the casing, links pivoted at one end onto the frame and having their other ends slidably and pivotally connected to the casing whereby the frame may be shifted
 25 to an angular position relative to the casing for the purpose described, a rigid operating rod and means for universally connecting the upper end of the rod onto the upper part of the frame
 30 above its center of gravity.

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