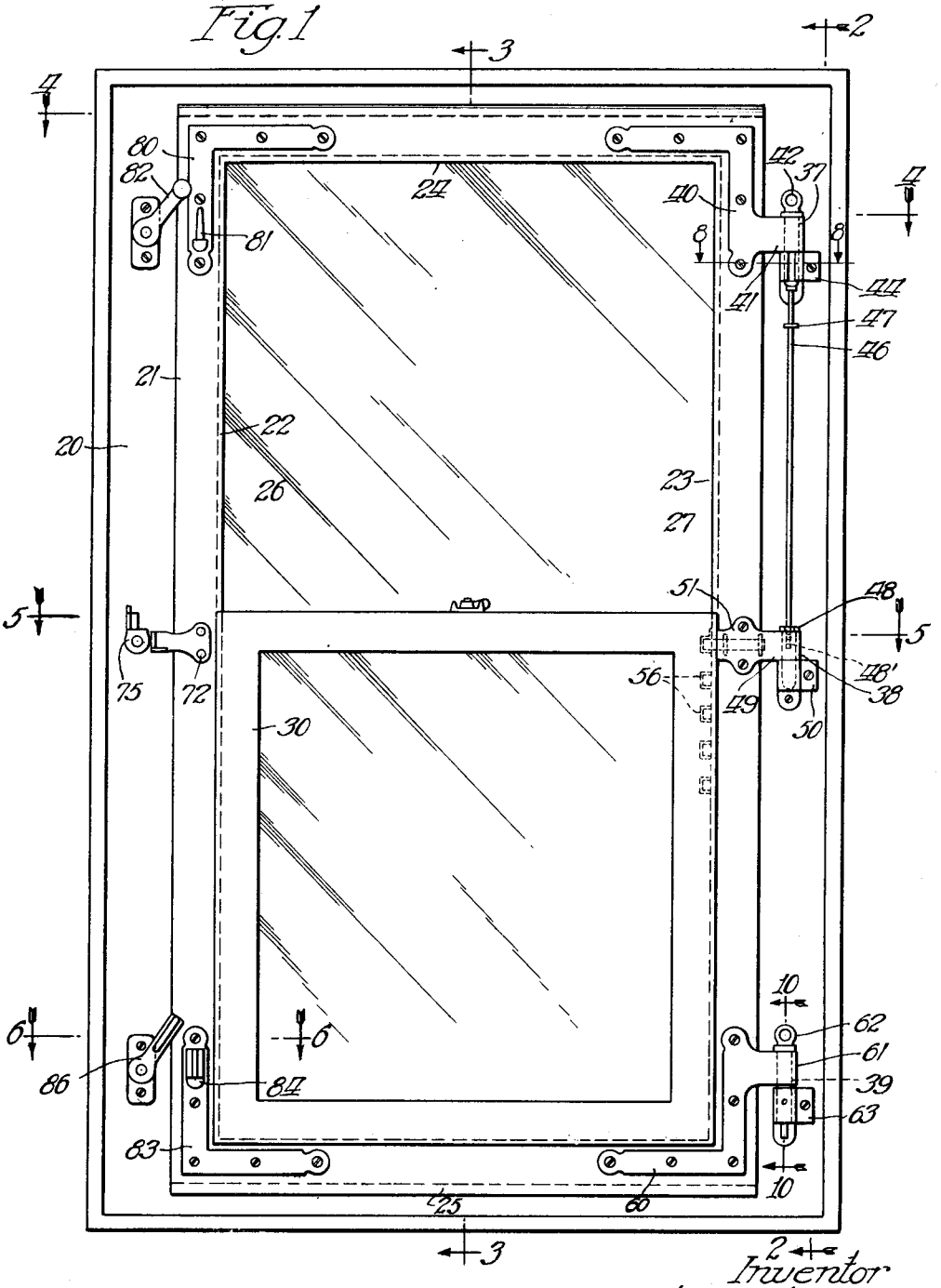
Sept. 10, 1929. G. R. CARL 1,728,040

WINDOW FRAME SASH AND HARDWARE COMBINATION

Filed Oct. 12, 1927 3 Sheets-Sheet 1

Fig 1



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Fig. 2

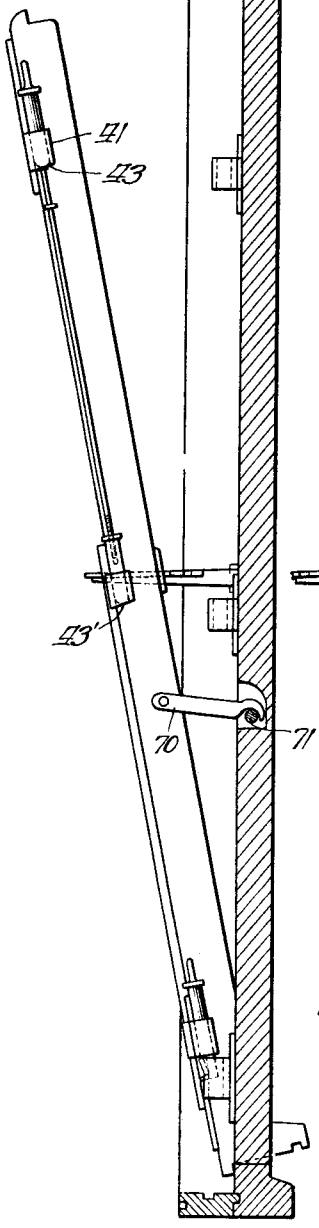


Fig. 3

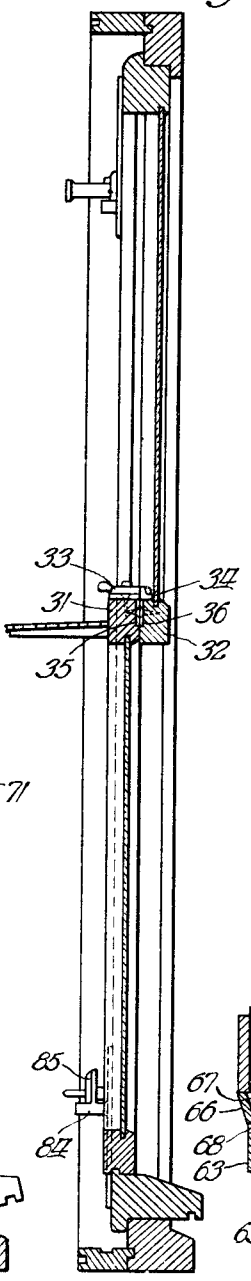


Fig. 9

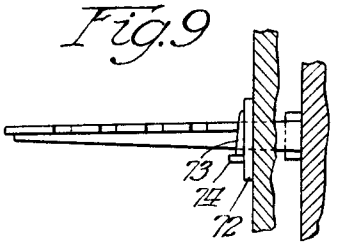


Fig. 10

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WINDOW FRAME SASH AND HARDWARE COMBINATION

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Fig. 4

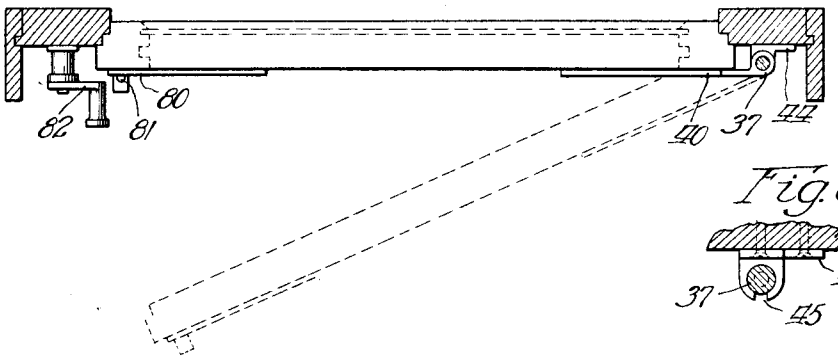


Fig. 8

Fig. 5

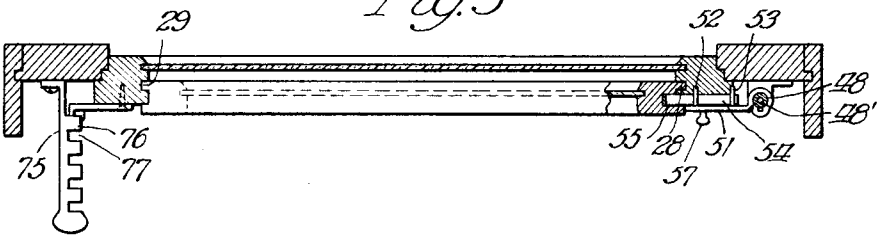


Fig. 6

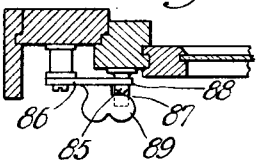
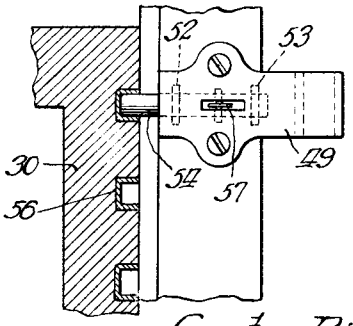


Fig. 7



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Patented Sept. 10, 1929. 1,728,040

UNITED STATES PATENT OFFICE.

GUSTAV RICHARD CARL, OF CHICAGO, ILLINOIS.

WINDOW-FRAME SASH AND HARDWARE COMBINATION.

Application filed October 12, 1927. Serial No. 225,744.

My invention relates to windows and more particularly to the type of window wherein the sash is mounted to swing inwardly about a vertical axis relative to the window frame.

It is a purpose of this invention to provide a window of this character with means whereby the same may be swung inwardly into the room about a vertical axis and which may also be tipped inwardly at the top away from the frame about the lower edge of the sash as an axis.

It is also a purpose of this invention to provide hinges for the window of a particular character which permit, by a very slight adjustment, the window to swing either about a vertical axis or about a horizontal axis.

A further object of the invention is to provide in connection with the window of the above mentioned character, a sliding sash which may be moved upwardly or downwardly to provide different amounts of ventilation regardless of whether the window is swinging about a vertical axis or is tipped inwardly at the top.

It is also an object of this invention to provide securing means for locking the window either in the closed position or in partially open position when it is moved away from the frame about either a horizontal or vertical axis.

Other objects and advantages of the invention will appear as the description proceeds when taken in connection with the accompanying drawings. However, I wish it to be distinctly understood that I do not intend to limit myself to the exact details shown and described, but that I intend to avail myself of all such modifications as would occur to one skilled in this art and as fall within the scope of the claims.

In the drawings:

Fig. 1 is a side view of my improved window construction;

Fig. 2 is a section along the line 2—2 of Fig. 1 showing a window sash tipped inwardly at the top away from the window frame;

Fig. 3 is a section on the line 3—3 of Fig. 1;

Fig. 4 is a section on the line 4—4 of Fig. 1;

Fig. 5 is a section on the line 5—5 of Fig. 1;

Fig. 6 is a section on the line 6—6 of Fig. 1;

Fig. 7 is a detailed view partly in section of the means for holding the sliding sash in various positions;

Fig. 8 is a section on the line 8—8 of Fig. 1;

Fig. 9 is a detailed view partly in section of the latch means for holding the window in various positions;

Fig. 10 is a detailed section taken along the line 10—10 of Fig. 1.

Referring now in detail to the drawings, the numeral 20 indicates generally the window frame which may be of any suitable construction. Fitting in this window frame is the window sash 21 consisting of the upright stiles 22 and 23 and the top and bottom rails 24 and 25. As is shown clearly in Figs. 1 and 3, the upright stiles 22 and 23 have grooves as indicated at 26 and 27 therein which grooves receive corresponding projections 28 and 29 on the sliding sash 30.

The top rail 31 of the sliding sash 30 and the middle rail 32 of the main sash 21 are provided with interengaging locking means indicated by the numerals 33 and 34. These locking members 33 and 34 as shown clearly in Fig. 3 have downwardly extending flanges 35 and 36 which are secured to the respective rail members 31 and 32 by suitable means such as screws so as to form a very substantial locking means.

The main sash 21 is hinged to the window frame by means of the hinges indicated generally by the numerals 37, 38, and 39. The upper hinge 37 consists of a combined brace and socket member 40 which as shown in Fig. 1 braces the top rail and the upright stile 23 and has the outwardly projecting portion 41 provided with a hole therethrough to receive the hinge pin 42. As shown in Fig. 2, the lower edge of the projection 41 is slightly bevelled as at 43 for a purpose which will presently appear. Mounted on the window frame is another hinge portion 44 adapted to cooperate with the hinge pin 42 and the projecting portion 41 to connect the sash and window frame at this point. As shown, the member 44 is provided with a vertical slot as indicated in Fig. 8 at 45 and the hinge pin 42 has depending therefrom a connecting member 46 which is preferably a small rod

of less diameter than the width of the opening 45 so that when the hinge pin 42 is lifted so as to move above the member 44, the rod 46 can pass outwardly through the slot 45 and thus disconnect the sash and frame at this point. The stop member 47 is provided on the rod 48 to prevent its being lifted too far. The rod 46 extends downwardly and connects to the hinge pin 48 which cooperates with the socket portions 49 and 50 on the sash and window frame respectively and forms the hinge 38. The length of the hinge pin 48 is preferably such that when pin 42 is lifted so as to permit the rod 46 to pass out through the opening 45 in the member 44, the pin 48 will be disengaged from the socket member 50 and thus the sash and window frame will be disconnected at this point. The head of the pin 48 is preferably screw threaded into the pin by means of stem 48' so that it can be adjusted upwardly and downwardly to accommodate for different distances between the members 41 and 49.

The socket member 49 is secured to the sash by the laterally projecting portion 51 which portion 51 is provided with lugs 52 and 53 seated in the sash and guiding a locking pin 54. This locking pin 54 is adapted to project beyond the upright stile 23 into a slot 55 provided in the upright stile of the sliding sash 30 and engage the various recesses indicated generally by the numeral 56 to hold the sliding sash 30 in any position relative to the main sash. The pin 54 is actuated by means of the handle 57 which projects upwardly through a slot provided in the member 51.

Coming now to the lower hinge 39, this hinge consists of a combined brace and socket member 60 which is adapted to brace the corner between the bottom rail 25 and the upright stile 23 and which has the socket portion 61 adapted to receive a hinge pin 62 and resting upon the socket portion 63 secured to the window frame. Referring now to Fig. 10 which is an enlarged detailed section of hinge 39, it will be noted that the hinge pin 62 is provided at its lower end with a reduced downwardly extending portion 64 having a hook 65 thereon. Socket member 63 has an outwardly projecting portion 66 at the top thereof forming a groove 67 adapted to receive the projecting portion 64 of the hinge pin when this pin is lifted to permit the window to tip outwardly at the top. It is understood, of course, that at this time the rod 46 is moved vertically so as to permit the disconnection of hinges 38 and 37. An opening 68 is provided at the lower edge of the portion 66 to receive the hook 65 and thus lock the window in the position shown in Fig. 2 when it is swung upwardly at the top. In addition a latch member 70 is fastened to the upright stile 23 and adapted to engage a pin 71 on the frame member to add rigidity to the window when it is tipped outwardly at the top. The lower bevelled edges 43 and 43' on the socket members 41 and 49 make it more easy to engage and disengage them with their corresponding members 44 and 50 on the window frame.

In addition to the latch 70 I provide on the opposite side of the window an adjustable latching means whereby the window may be held in any adjustable position within limits relative to the window frame. This consists of the bracket 72 mounted on the upright stile 22 and having the bearing face 73 thereon where it projects beyond the outer edge of the stile 22. A stop portion 74 is provided at the lower end of the bearing 73. Cooperating with this bracket is a member 75 pivotally mounted on the window frame and projecting directly outward therefrom as shown more clearly in Fig. 5. This member 75 which serves as a latch is provided with a series of alternating projections 76 and recesses 77, the recesses 77 being sufficiently large to receive the projecting end of the bracket 72 therein. Thus by turning the member 75 about its pivot into the position shown in Fig. 1, the window may be swung outwardly either about the vertical axis established by the hinge pins 42, 48, and 62, or by the manipulation of these hinge pins as hereinbefore described may be tipped outwardly at the top a limited amount. If it is desired to hold the window in a partly open position, the member 75 is swung down into the position shown in Fig. 5 and Fig. 2 so as to engage with the bearing surface 73 and lock the window in this position. Thus the latch member 75 serves not only as a latch when the window is closed but also as a means for holding the window in partly open position either when it is swung around on the hinges or when it is tipped outwardly at the top.

An additional locking means is provided at the top of the window which consists of the bracket 80 reenforcing the joint between the upright stile 22 and the top rail 24 and provided with a bearing surface at 81. Cooperating with this bracket is the pivoted latch 82 secured to the window frame and adapted to be pressed downwardly over the bearing surface 81 so as to hold the window in closed position.

At the lower end of the window another bracket 83 is provided which has a projection 84 extending outwardly therefrom and provided with the upwardly extending member 85. Pivoted to the window frame is a latch member 86 which is provided with a recess as at 87 and projections 88 and 89 adapted to fit over and engage the upwardly projecting member 85. Thus it will be seen that when the window is closed it can be locked securely at the top and bottom as well as the center and it is practically impossible to open the same from the outside. Again, the slidable

sash 30 can be adjusted to provide any desired ventilation regardless of the position of the main sash 21.

When it is desired to clean the windows from the outside, it is only necessary to swing the window around into the room so that the exterior of the panes may be readily cleaned. It is sometimes desirable particularly where there are small children in the home and where the windows are low, to have means whereby the windows may be opened to permit ventilation without providing any way by which a child might fall out through the window. This window provides for this by permitting it to be tipped inwardly at the top as shown at Fig. 2 and locked in this position by means of the latches 70 and 75.

From the above description, it is thought that the construction and advantages of this device will be clear to those skilled in this art and having thus described my invention, what I claim and desire to secure by Letters Patent of the United States is:

1. In a window construction, a sash, a window frame, and means connecting said sash and frame whereby said sash may be swung about either a vertical or horizontal axis relative to said frame, and a second sash carried by said first named sash and slidable relative thereto in any position of said first named sash.

2. In a window construction, a sash, a window frame, and means connecting said sash and frame whereby said sash may be swung about either a vertical or horizontal axis relative to said frame, said means including an upper hinge and a lower hinge securing said sash to said frame, the elements of said upper hinge being separable to permit the top of the sash to swing away from the frame and the elements of said lower hinge being adjustable to permit a limited movement of the top of said sash away from said frame.

3. In a window construction, a sash, a window frame, and means connecting said sash and frame whereby said sash may be swung about either a vertical or horizontal axis relative to said frame, said means including an upper hinge and a lower hinge securing said sash to said frame, the elements of said upper hinge being separable to permit the top of the sash to swing away from the frame and said lower hinge having an adjustable connecting pin which in one position permits swinging of said sash horizontally and in another position permits a limited movement of the top of said sash away from said frame.

4. In a window construction, a sash, a window frame, and means connecting said sash and frame whereby said sash may be swung about either a vertical or horizontal axis relative to said frame, said means including socket members on adjacent vertical edges of said frame and sash, hinge pins for connecting said socket members to permit swinging of said sash about a vertical axis, said pins being movable to permit separation of their socket members when said sash is swung about a horizontal axis, a second sash slidably mounted in said first named sash and cooperating means on said second sash and one of said socket members on said first named sash for holding said slidable sash in different positions relative to said first named sash.

5. In a window construction, a sash, a frame and means connecting said sash and frame, whereby said sash may be swung about a horizontal axis relative to said frame, said means including an upper member and a lower hinge securing said sash to said frame, the elements of said upper member being separable to permit the top of the sash to swing away from the frame, and said lower hinge having an adjustable connecting pin which in one position permits a limited movement of the top of said sash away from said frame and in another position prevents said movement.

In witness whereof, I hereunto subscribe my name this 23rd day of September, A. D. 1927.

GUSTAV RICHARD CARL.