July 23, 1940. A. G. WESTWOOD 2,208,887

HINGE FOR WINDOWS, FANLIGHTS, AND THE LIKE, OPENING OUTWARDLY

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Fig. 1

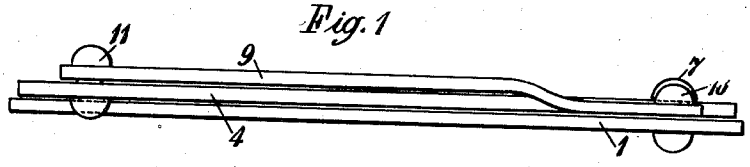


Fig. 2

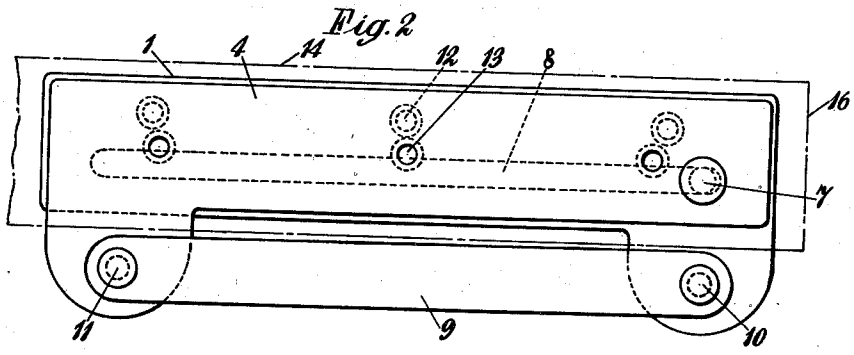


Fig. 3

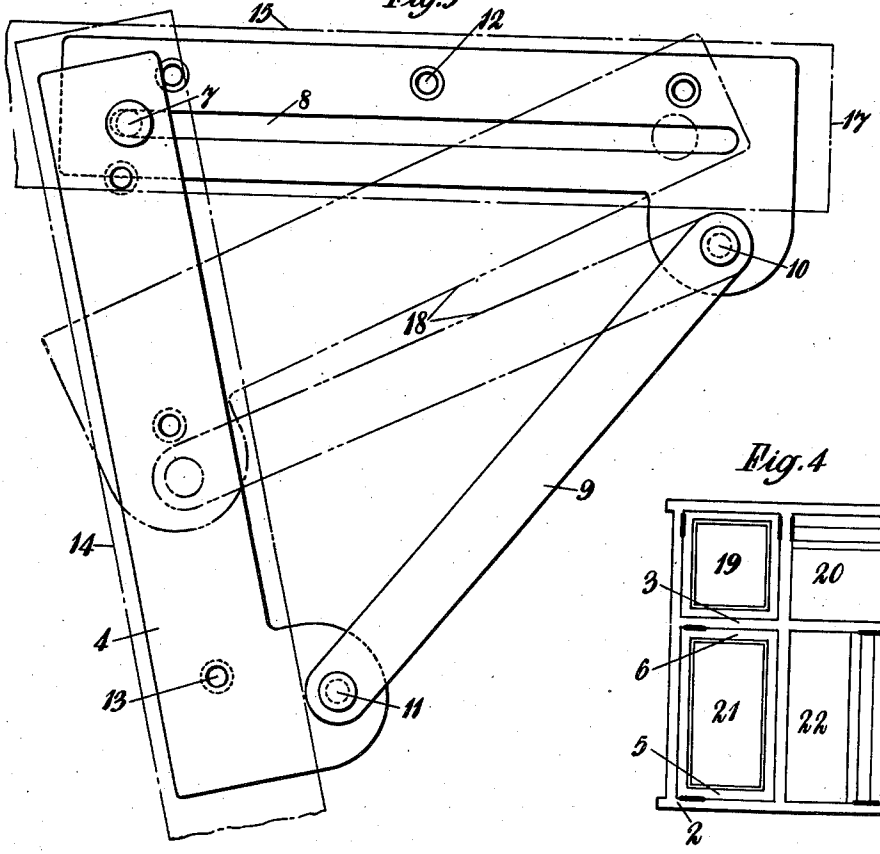


Fig. 4

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HINGE FOR WINDOWS, FANLIGHTS, AND THE LIKE, OPENING OUTWARDLY

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3 Claims. (Cl. 16—166)

This invention is for improvements in or relating to hinges for windows, fanlights and the like opening outwardly.

It is frequently a difficulty with casement windows with sashes and fanlights opening outwardly, that whilst the inside of the window or fanlight can readily be cleaned from the inside of the building, it is very awkward indeed and in many cases quite impossible to clean the outside therefrom.

The object of the present invention is to provide a simple solution to this difficulty, which will enable the outside of windows, fanlights and the like opening outwardly to be as readily cleaned as the inside from the inside of the building and with perfect safety.

According to the invention, a hinge for a hinged window, fanlight or the like arranged to open outwardly comprises a longitudinally slotted plate which is arranged to be affixed to the frame of the window or the like along a member thereof extending transversely to the axis of hinging of the window sash, fanlight or the like; a second plate which is arranged to be affixed to the window sash or the like along a member thereof which when the window sash or the like is in closed position overlies the said member of the frame, the second plate thus overlying the first plate face to face therewith when the window sash or the like is in closed position, and which second plate is pivotably and slidably connected to the first plate by a pin engaging in the slot therein and slidable therealong as the window sash or the like is opened and closed; and a link pivotally connected at one end to the first plate at a point near the end thereof whereat the pin of the sliding connection of the two plates is positioned when the window sash or the like is in closed position, and at the other end to the second plate at the end thereof remote from the end at which the said pin is positioned.

As will be understood, a window sash, fanlight or the like is hung upon a pair of such hinges, one at the top and one at the bottom in the case of a casement window sash, or one at each end in the case of a fanlight.

With the improved hinge of this invention, it is readily possible to clean the outside of an outwardly opening window sash, fanlight or the like from the inside of the building, as when the window, fanlight or the like is open, a space is provided between the frame and the edge of the window sash or the like, at the hinged side thereof, sufficient to enable the cleaner to insert his hand and if necessary his arm, to gain access to the outside of the sash or the like. This is due, as will be appreciated, to the fact that as the window sash or the like is pushed open, the pin hereinbefore referred to its caused, by the action of the parts, to slide along the slot in the first member and carry with it the whole of the window sash or the like bodily away from the frame as well as rotating the same through say 90°.

The invention will now be further described with reference to the accompany drawing, which illustrates a preferred embodiment by way of example, and in which,

Figure 1 is a side elevation of the hinge;

Figure 2 is a plan view with the parts of the hinge in closed position;

Figure 3 is a plan view with the parts of the hinge in open position; and

Figure 4 is a front view of a casement window fitted with the improved hinges of the invention.

Like reference numerals indicate like parts in the various figures.

Referring to Figures 1 to 3, the hinge comprises a slotted plate 1. This plate is arranged to be affixed to the frame of the window along a member thereof which extends transversely to the axis of hinging of the window sash. This member is the bottom member 2 of the window frame or the top member 3 thereof in the case of the lower and upper hinges respectively of the lower left-hand window of the casement window shown in Figure 4. The hinge further comprises a second plate 4 which is arranged to be affixed to the window sash along a member thereof which when the sash is in closed position overlies the said member (2 or 3) of the window frame. This member is the bottom member 5 or the top member 6 of the window sash in the case of the lower and upper hinges respectively of the said lower left-hand window of the casement window of Figure 4.

As will be seen from Figures 1 and 2, the second plate 4 overlies the first plate 1 face to face therewith when the window sash is in closed position and correspondingly the parts of the hinge are in closed position.

The second plate 4 is pivotally and slidably connected to the first plate 1 by a pin 7 engaging in a slot 8 in the plate 1 and slidable therealong as the window sash is opened and closed.

The hinge further comprises a link 9 pivotally connected by a pin 10 to the plate 1 and by a second pin 11 to the plate 4, the pin 10 being situated as shown, at a point near the end of the plate 1 whereat the pin 7 is positioned when

the window sash is in closed position and the pin 11 being situated at the end of the plate 4 which is remote from the end at which the pin 7 is positioned.

The plate 1 is provided with a number of holes 12 for the reception of screws or the like for fastening the plate to the member 2 or 3 of the window frame to which it is to be affixed and the plate 4 is similarly provided with holes 13 for the reception of screws or the like for fastening it to the member 5 or 6 of the window sash.

The link 9 at the end where it its connected by the pin 10 to the plate 1 is bent, as shown, substantially into the plane of the plate 4. In this way, easy fixing is provided for an easy movement in the case of windows with projecting transoms and sills. Alternatively, the link can be straight and a washer be inserted between it and the plate 1, around the shank of the pin 10.

For clearance and easy movement, moveover, there may be a washer between the plate 1 and the plate 4, around the shank of the pin 7, the effect of this washer being to space the plates 1 and 4 a short distance of clearance from one another as the parts of the hinge move in the opening and closing movements thereof.

In Figures 2 and 3, the window sash is shown in chain line at 14 and in Figure 3, the window frame is shown, also in chain line, at 15. It will be seen from a perusal of the Figures 2 and 3 that when the window is in closed position and the parts of the hinge are correspondingly in closed position, one edge of the window sash, namely the edge marked 16, is adjacent the end of the plate 1 of the hinge at which the pin 10 is situated, while when the window is in open position and the parts of the hinge are correspondingly in open position, the said edge 16 of the window sash is removed along the direction of the length of the plate 1 to a position adjacent the opposite end of that plate from the end at which the said pin is situated. The result is, as hereinbefore described, that a person's hand and arm can be inserted between the opened window and the edge 17 of the window frame (see Figure 3) corresponding to the edge 16 of the window sash.

Figure 3 also shows in chain line at 18 the movable parts 4, 9 of the hinge in the relative positions they occupy in the course of their opening movement to the fully open positions in which they appear in full line in Figure 3.

As will be seen, the casement window shown in Figure 4 comprises four separate windows 19, 20, 21, 22, two of which, namely the upper two, hinge about horizontal axes and the other two about vertical axes. In the case, therefore, of the two lower windows, the plates 1 of the hinges are affixed to the horizontal members 2, 3 of the window frame, while in the case of the two upper windows, the said plates 1 are affixed to the side members of the window frame.

It will be understood, of course, that the improved form of hinge according to the present invention can be applied either to wood-framed windows, fanlights and the like, or to those which are constructed with metal frames, the general principle of operation and construction of the hinge being the same in both cases.

What I claim as my invention and desire to secure by Letters Patent of the United States is:

1. A hinge for a hinged window, fanlight or the like, arranged to open outwardly, the hinge serving pivotally to connect the sash of the window or the like to the frame thereof and comprising in combination a longitudinally slotted frame plate which is arranged to be affixed to the frame of the window or the like in face to face contact with an inner edge of a frame member extending transversely to the axis of hinging of the sash; a sash plate which is arranged to be affixed to the sash in face to face contact with an outer edge of a sash member which when the sash is in closed position in the frame overlies the said frame member, said sash plate overlying said frame plate in contiguous face to face relation when the sash is in closed position in the frame, and said sash plate being pivotably and slidably connected to the frame plate by a pin engaging in the slot in said frame plate and slidable along said slot as the sash is opened and closed; and a link pivotally connected at one end to the frame plate at a point near the end thereof whereat the pin of the sliding connection of the two plates is positioned when the sash is in closed position in the frame, and at the other end to the sash plate at the end thereof remote from the end at which the said pin is positioned.

2. A hinge for a hinged window, fanlight or the like, arranged to open outwardly, the hinge serving pivotally to connect the sash of the window or the like to the frame thereof and comprising in combination a longitudinally slotted frame plate which is arranged to be affixed to the frame of the window or the like in face to face contact with an inner edge of a frame member extending transversely to the axis of hinging of the sash; a sash plate which is arranged to be affixed to the sash in face to face contact with an outer edge of a sash member which when the sash is in closed position in the frame overlies the said frame member, said sash plate overlying said frame plate in contiguous face to face relation when the sash is in closed position in the frame, and said sash plate being pivotably and slidably connected to the frame plate by a pin engaging in the slot in the frame plate and slidable along said slot as the sash is opened and closed; and a link pivotally connected at one end to the frame plate at a point near the end thereof whereat the pin of the sliding connection of the two plates is positioned when the sash is in closed position in the frame, and at the other end to the sash plate at the end thereof remote from the end at which the said pin is positioned, the points of pivotal connection of the link to the frame and sash plates being positioned to that side thereof which is towards the exterior of the frame of the window or the like and the frame and sash plates being formed with laterally projecting lugs disposed in substantially the same plane as their respective plates to accommodate the connections.

3. A hinge for a hinged window, fanlight or the like, arranged to open outwardly, the hinge serving pivotally to connect the sash of the window or the like to the frame thereof and comprising in combination a longitudinally slotted frame plate which is arranged to be affixed to the frame of the window or the like in face to face contact with an inner edge of a frame member extending transversely to the axis of hinging of the sash; a sash plate which is arranged to be affixed to the sash in face to face contact with an outer edge of a sash member which when the sash is in closed position in the frame overlies the said frame member, said sash plate overlying said frame plate in contiguous face to face relation when the sash is

in closed position in the frame, and said sash plate being pivotably and slidably connected to the frame plate by a pin engaging in the slot in said frame plate and slidable along said slot as the sash is opened and closed; and a link pivotally connected at one end to the frame plate at a point near the end thereof whereat the pin of the sliding connection of the two plates is positioned when the sash is in closed position in the frame, and at the other end to the sash plate at the end thereof remote from the end at which the said pin is positioned, the points of pivotal connection of the link to the frame and sash plates being positioned to that side thereof which is towards the exterior of the frame of the window or the like and the frame and sash plates being formed with laterally projecting lugs disposed in substantially the same plane as their respective plates to accommodate the connections, the said link overlying said lugs at its points of connection thereto and being bent into the plane of the sash plate at a point near the end of its pivotal connection to the lug on the frame plate.

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