J. G. RALPH.

HINGE FOR STORM SASH, &c.

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913,429.

Patented Feb. 23, 1909.

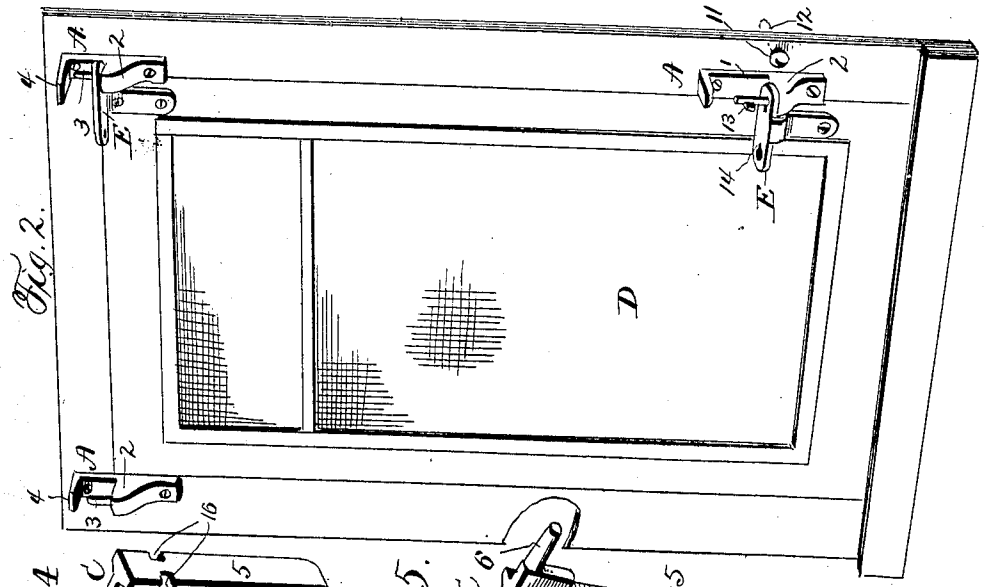


Fig. 2.

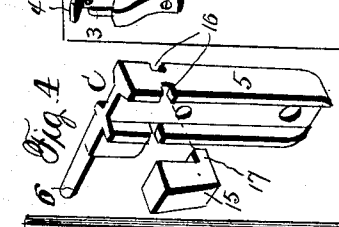


Fig. 4.

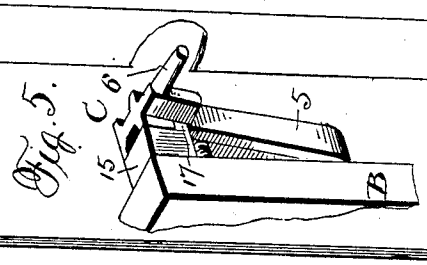


Fig. 5.

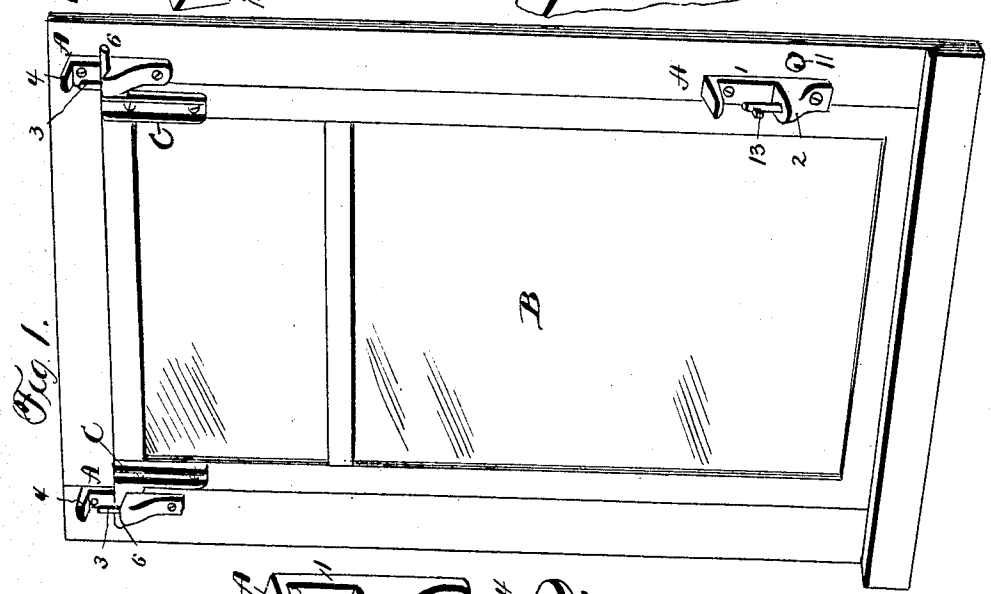


Fig. 1.

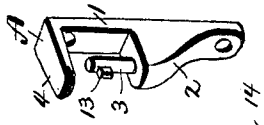


Fig. 3.

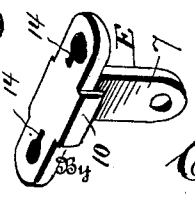


Fig. 6.

Witnesses

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HINGE FOR STORM-SASH, &c.

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To all whom it may concern:

Be it known that I, JAMES G. RALPH, of Aurora, in the county of Kane and in the State of Illinois, have invented a certain new and useful Improvement in Hinges for Storm-Sash, &c., and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of a window embodying my invention when used with a storm sash; Fig. 2 a like view showing the same window provided with a screen; Fig. 3 a perspective view of the hinge member or part that is attached to the window casing; Fig. 4 a detail perspective view of the hinge member or part that is attached to the storm sash, and a filling block to be used therewith when the sash frame is of thinner lumber than the casing; Fig. 5 a detail view in perspective of a portion of a storm sash and the pintle to be secured to it in connection with a filling block; and Fig. 6 a like view of the hinge member or part that is attached to a screen.

The object of my invention is to enable storm sash and screens to be interchangeably used upon windows without the necessity of removing the fixtures, or making any change in their positions whatever, and to enable the fixtures to be applied to the respective parts with as little work and inconvenience as is possible in originally applying the fixtures to the parts they are designed for, and to these ends my invention consists in the features of construction substantially as hereinafter specified and claimed.

In equipping windows with storm sash and screens, which are applied on the outside of the window casing, I have found that the customary blind hinges are an obstacle to the placing of the sash and the screens in the window frame and must be removed in order to enable the work to be satisfactorily done. I have therefore found it desirable to invent a form of hinge which can be used in place of the ordinary blind hinge, and I have given it such a construction that with the window equipped therewith, a storm sash and screen may be interchangeably applied without the necessity for removing or disturbing in any manner the hinge fixtures applied to the window frame or casing and those applied to the storm sash and screens.

The hinge part or member A which I apply to the window frame or casing, consists of a body part 1 having a suitable number of openings for screws to secure it to the frame or casing, from which, at about its middle, projects a horizontal lug 2 that on its upper side has a vertical stud 3. Projecting horizontally from the body 1 and overhanging said stud, is a lug 4, and preferably said lug projects to a point some distance beyond the plane of the stud. I apply three of the hinge parts A to the window casing, two at the top thereof, at each side of the window opening, so that their inner sides are flush with the respective sides of such opening, and one near the bottom of the window frame, but at the side of the window opening with its side flush with the side of such opening.

When, as is illustrated in Fig. 1, a storm sash B is applied to the window, it is hung from the two hinge members A at the top of the window frame, by means of a pair of pintle members C, one for each of said hinge members A, and said pintle members C are made precisely alike so that no rights and lefts are required, but they may be applied indifferently to either side of the storm sash. Each pintle member consists of a body portion 5 having holes by means of which it may be secured by screws to the outer side of the storm sash, and a horizontally projecting pintle 6 adapted to fit in the space between the body of the hinge member A and its vertical stud 3, resting upon the top of the lug 2. To apply the storm sash to the window, it is necessary merely to rest the pintle 6 against the outwardly projecting lugs 4 of the hinge members A, and pass them rearward above the vertical studs 3 until the pintles are in line with the space in rear of the studs 3, when they are permitted to descend and rest upon the supporting lugs 2. In order to make the pintle members light as well as strong, and to decrease the amount of surface thereof in contact with the storm sash, the opposite sides of the body 5 are provided with vertical grooves or channels, which leaves two narrow edges or ribs for contact with the surface of the storm sash. It will be seen that when necessary for purposes of ventilation, the storm sash may be swung open on the hinge connection which exists at its top with the window frame or casing, and its application to and removal from position in the window frame may be most

easily and expeditiously accomplished. Of course some suitable latch may be provided to hold the sash in its closed position.

When, as in summer, the storm sash is to be removed and a screen is to be substituted for it, this is provided for by providing the screen D, as shown in Fig. 2 of the drawings, at one side near top and bottom, with hinge members E. Each of the latter consists of a body part 7 having holes for screws for fastening it to the screen frame, and a horizontally projecting lug or ear 8, which at each end has a hole for an eye 9, of a diameter to closely fit the hinge member stud 3. Two eyes or holes are provided in each hub member E, and oppositely disposed, so that such hinge members need not be made rights and lefts, but the hinge member may be indifferently used at either side of the screen frame, according to the necessity of the particular window. The hinge members E on the screen, it will be seen, coöperate with the two hinge members A in line with each other vertically at the side of the window opening.

The screen, it will be seen, may be turned on its hinge connections from a closed to an open position, and I preferably provide means for automatically latching it in position, which consists of a downwardly projecting lip or flange 10 on the ear or lug 8, preferably of the lower member E, adapted when the screen is swung fully open, to engage the head 11 of a screw 12 screwed in the window frame or casing. The outer surface of the screw head is rounded, and the outer surface of the flange or rib is inclined or rounding, so that when the screen swings open, the rib or flange will engage and ride over the head of the screw, the screen lifting slightly until the screw head is past, and then dropping to cause the engagement of the rib or flange and the inner side of the screw head. When the screen is to be closed, it is slightly lifted to disengage the flange or rib, and the screw head, and in order to prevent the screen being lifted off the pintle accidentally, either at this time or when it automatically lifts, the stud 3 of preferably the lower hinge member A, is provided with a laterally projecting lug 13 which at the time of the vertical movement of the screen to latch it to and unlatch it from the screw head, alines with a solid portion of the eye-carrying lug. The latter, however, to permit the engagement and disengagement of its members E with the hinge members A, is provided with a radial slot 14 to pass over said lug 13, and which slot is preferably placed so that it alines with the lug when the screen is in a half opened position. The lugs 4 on the hinge members A are useful in aiding the engagement of the screen hinging members E, and said hinge members A, just as in the case of the storm sash. I use the screw for the latch both because of its inexpensiveness and its ready adjustability.

When, for example, a $\frac{7}{8}$th frame is to be hung to a $1\frac{1}{8}$th casing, in which event the outer face of the frame will not be flush with but will be inside of the plane of the outer face of the casing, I use a filling block 15, such as is shown in Figs. 4 and 5, which is interposed between the body portion of the pintle and the frame. I find it necessary to use but one of said blocks 15, and to place it at the top of the pintle body adjacent the pintle so as to cause the latter to stand away from the frame the required distance, and it will be seen that when the filling block is used, the pintle body stands at an angle or incline with reference to the plane of the frame, and for this reason in order to give a good bearing of the block upon the frame, the frame-engaging surface of the block is inclined as shown. To hold the filling block and pintle body in proper position, and to prevent the accidental displacement of the block, I provide the pintle body and block with complementary engaging surfaces, which, as illustrated in the drawings, comprise a notch 16 in the side of the pintle body, and a rib or lug 17 on the filling block, which snugly fits the notch in the pintle body, and in order to make the device independent of any right and left arrangement, and so that it may be used reversibly, a notch is provided in both sides of the pintle body. It will be apparent that the screws which pass through the pintle body, in view of the interlocking engagement of the filling block and the pintle body, tightly clamp the filling block in position.

In illustrating my invention, I show a sash and a screen of a size to wholly fit the window opening, but, of course, my invention is useful with half sash and half screen, and I also wish it understood that my hinges may be used for blinds, or for any other swinging or hinge construction.

Having thus described my invention, what I claim is—

1. The combination of a frame or casing having a plurality of fixed hinged members arranged so that a pair are in a horizontal line and a pair are in a vertical line, and sets of movable hinge members interchangeable with each other, one set having means for pivotal connections with one pair of said fixed hinge members, and one set having means for pivotal connection with the other pair of said fixed members.

2. The combination of a frame or casing, a plurality of hinge members arranged so that a pair alines horizontally at the top of the casing and a pair alines vertically at the side of the casing, each of said members consisting of a body having a horizontally projecting lug and a stud rising from the lug,

and interchangeable parts to be hinged to the casing, one of said parts having pintle members, consisting each of a body and a pintle, the pintle being adapted to rest on said lugs in rear of said studs, and the other interchangeable part having hinge members provided with eyes to engage the studs of the hinge members applied to the side of the frame or casing.

3. The combination of a hinge member consisting of a body having a horizontally projecting lug, a stud rising from the lug, and a projection overhanging the stud, the top of the lug and the stud both serving as hinge bearings, and interchangeable hinge members, one of which has a pintle adapted to rest on the lug in rear of its stud, and the other having an eye to engage the stud.

4. The combination of coöperating hinge members, one having a stud and the other consisting of a body provided with oppositely disposed eyes either of which is adapted for engagement with the stud, whereby the same hinge part may be used interchangeably at either side of the part to be hinged.

5. The combination of a hinge comprising members having a coöperating stud and an eye, a latch device consisting of a rib or flange on the eye-carrying member, and a head with which it co-acts, causing vertical movement of the eye-carrying member, and means to prevent the disengagement of the eye-carrying member and the stud when such vertical movement takes place.

6. The combination of a hinge member and a filling block, adapted to be interposed between such member and the part to which the member is to be attached, said block and hinge member having complementary interlocking devices.

In testimony that I claim the foregoing I have hereunto set my hand.

JAMES G. RALPH.

Witnesses:

JAMES D. FOX,

HELENE FOX.