Feb. 14, 1950 F. E. BISSELL, JR., ET AL 2,497,288

CASEMENT SASH HINGE

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Fig. 1

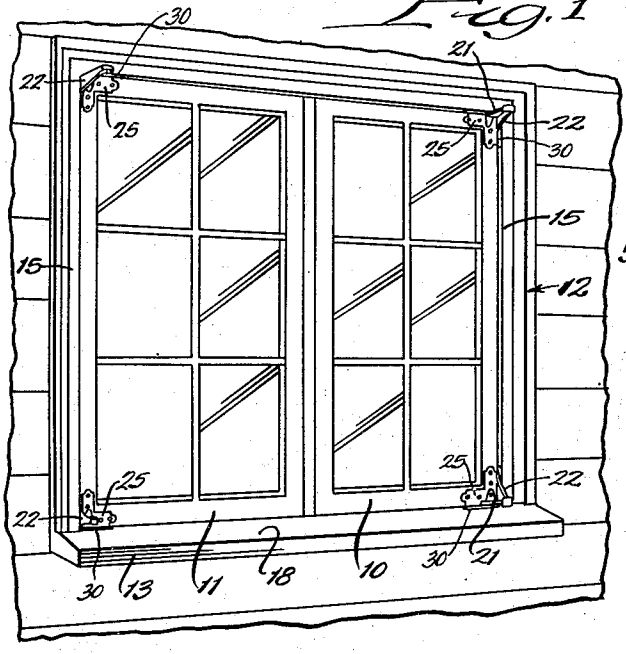


Fig. 3

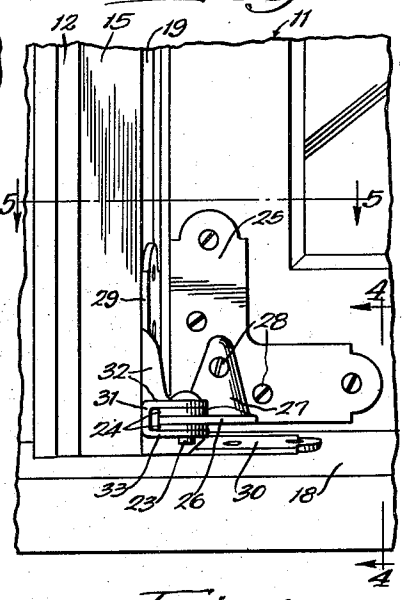


Fig. 2

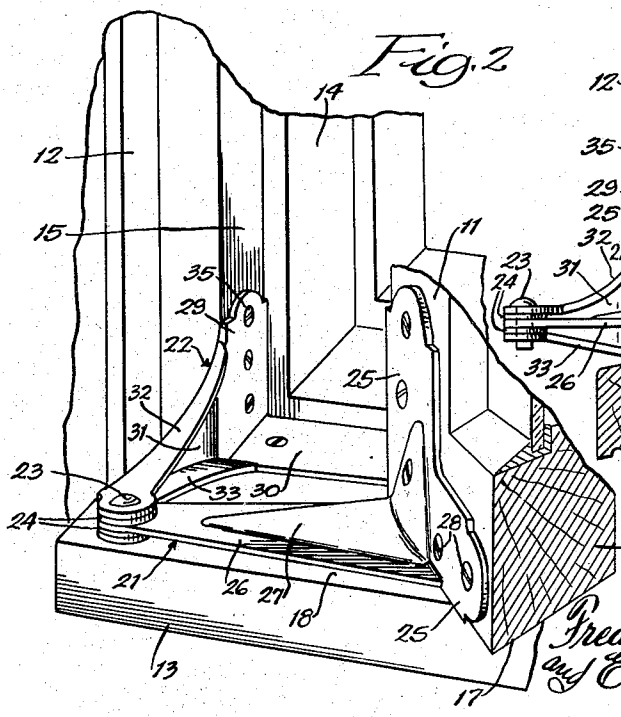
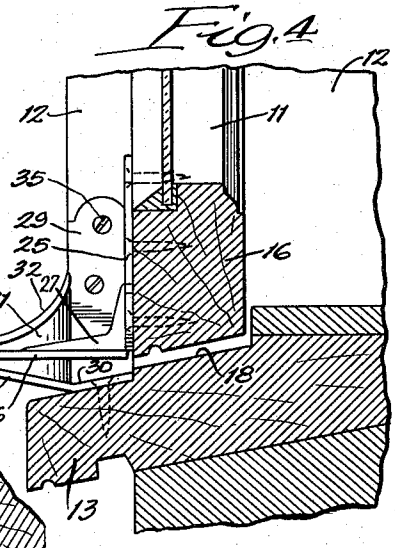


Fig. 4



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CASEMENT SASH HINGE

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Fig. 5

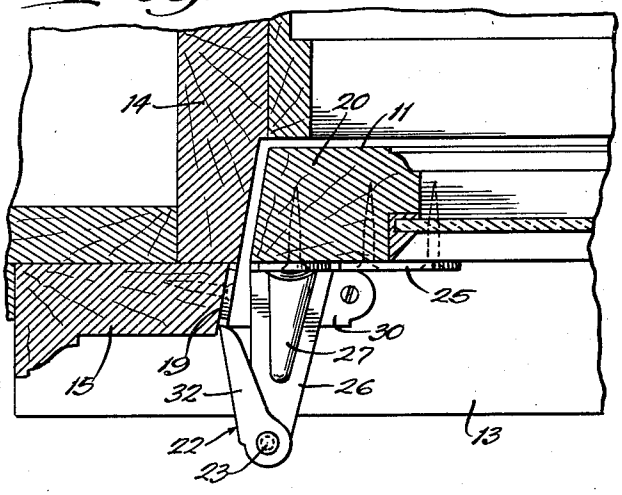


Fig. 6

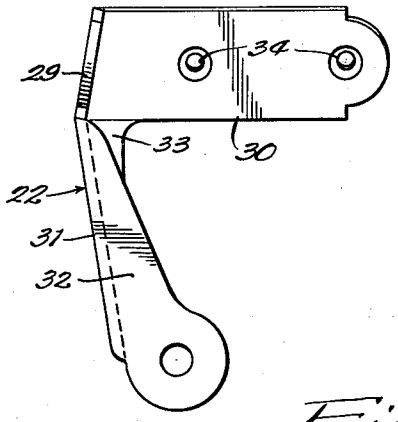


Fig. 7

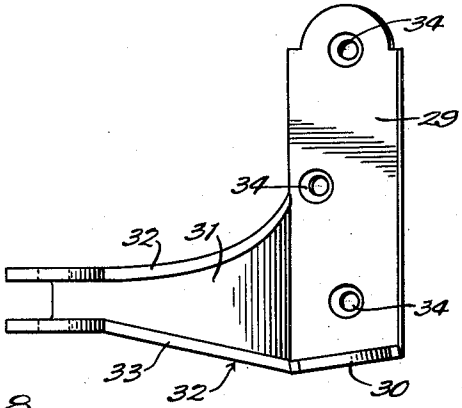
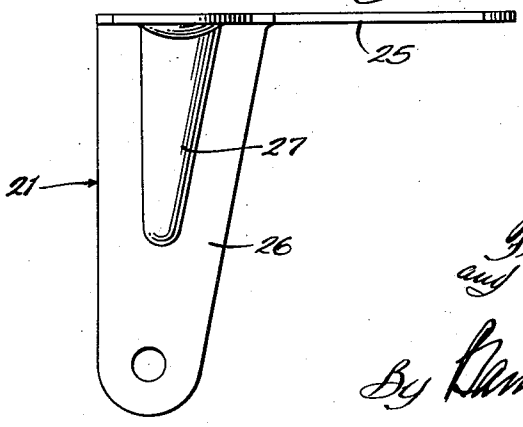


Fig. 8



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UNITED STATES PATENT OFFICE

2,497,288

CASEMENT SASH HINGE

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3 Claims. (Cl. 16—135)

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This invention relates to a hinge for a casement sash which is so hung as to swing out from its supporting frame in a manner which will permit both sides of the sash to be easily accessible for cleaning and other purposes.

An important object of the invention is to provide an angle butt type of hinge which definitely locates it in the corner of the frame, resulting in an accurate determination of the bearing point and also holds the corner of the frame together, whereas hinges attached to the side jamb or sill alone do not do so.

A further object of the invention is to provide a new and improved form of hinge to eliminate chiselling and grooving of the frame or sash when applying the unit.

A further object of the invention is to provide a frame attachment hinge having beveled portions at right angles conforming to the pitch of the sill, and also to a brick mold on the frame inclined at the same bevel so that only two hinges are necessary for a casement frame in which a pair of sashes are hung, one serving for the lower right and upper left corners, and the other serving for the lower left and upper right corners, depending upon the way in which the sashes are to swing.

A still further object of the invention is to provide an angle hinge connector of this kind which makes possible the hanging of a casement sash on a frame mullion when multiple sashes are fitted in the casement frame.

Other objects of the invention will appear in the specification and will be apparent from the accompanying drawings, in which—

Fig. 1 is a perspective view of a double casement sash unit to which the present invention is applied;

Fig. 2 is a detail in perspective of one of the lower left hinges, as shown in Fig. 1, with the window open;

Fig. 3 is a front elevation of the structure shown in Fig. 2 with the window closed;

Fig. 4 is a sectional view, taken on line 4—4 of Fig. 3;

Fig. 5 is a sectional view taken on line 5—5 of Fig. 3;

Fig. 6 is a top plan view of the frame attachment unit of the hinge;

Fig. 7 is a side elevation thereof; and

Fig. 8 is a top plan view of the sash attachment of the hinge.

In applying to casement window units hinges of the conventional type, it has sometimes been necessary to cut and fit each hinge individually,

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involving often the gouging out of a recess to accommodate the hinge in the frame or side support, and frequently in the sash itself in order to mount the window in the frame; but irrespective of this fitting operation, casement hinges in general have been deficient in failing to interconnect the corner parts of the supporting casement frame where additional strength is greatly to be desired.

The present hinge overcomes these difficulties by providing an interconnecting angle strap for attachment at the inner face of the corner of the frame, thus serving the added function of securing the vertical and horizontal frame parts together. Our casement sash hinge is also advantageous in that it provides a frame attachment unit having angular butt portions beveled with respect to each other and in accordance with the inclination of the sill and a similarly beveled brick mold at the side of the frame extending upward from the sill. With such a construction, it is necessary only to accurately set the hinge portions in place and to attach them by means of suitable tools such as a hammer and screw driver, or even by means of a screw driver alone.

Referring now more particularly to the drawings, a pair of right and left casement sashes 10 and 11 are mounted in a frame 12 having a bottom sill 13 and an upright or side jamb 14 with a vertically extending outside casing or hanging stile 15 which is sometimes known as a side or brick mold. The bottom cross piece 16 of the window sash usually has a beveled bottom surface 17 corresponding to the top bevel surface 18 of the outer side of the sill 13 for directing rain and water which may lodge thereon outwardly from the window and beyond the wall to which it is attached. The inner faces 19 of the side and head brick molds 15 and 15a, respectively, are also similarly beveled outwardly and preferably at the same angle as that of the upper face 18 of the window sill.

The hinge of the present invention employs a sash attachment unit 21 and a frame attachment unit 22 connected by a pivot 23 with washers 24 disposed between the hinge parts. The sash unit comprises a flat angle strap 25 having vertical and horizontal portions and an arm 26 extending from the outer angular edge and reinforced by a rib 27 formed up out of the material of the hinge. This sash unit 21 is secured at the corner of the casement sash by means of screws 28 or other suitable fastening devices which additionally secure the vertical and horizontal parts of the sash together.

The frame attachment unit 22 of the hinge has a side frame butt portion 29 and a sill butt portion 30 at right angles to each other and inclined or beveled to fit the outwardly beveled surfaces 18 of the sill and the outwardly beveled surface 19 of the brick mold 15. From these butt portions are extended a shank 31 having upper and lower flanges 32 and 33 separated at the pivot by the thickness of the arm 26 and the washers 24 at each side thereof, so that the pivot 23 will bind them all tightly together. The shank 31 is shorter than the arm 26 so that the sash, when closed, will occupy a position inwardly of the brick mold (see Fig. 5). The opposite ends of the flanges are rounded outwardly to join the frame butt portion 29 at a distance from the angular corner, and the lower flange 33 extends to the sill butt portion adjacent the angular corner between the frame and sill butt portion, thereby greatly strengthening this hinge unit in its pivotal support of the sash. The frame and sill butt portions 29 and 30 may be provided with the usual countersunk recesses 34 wherein to receive the heads of fastening screws 35 flush with the proximate surface.

With this construction, the arm 26 of the sash attachment unit fits and swings between the upper and lower flanges 32 and 33 of the shank 31, thereby providing a neat and trim appearance when the sash is closed. When the sash is swung outwardly from the frame a sufficient clearance is provided for the arm of a person to be extended around to the outside of the sash for washing or cleaning purposes. By inverting these hinges, it is apparent that a single right and left type of hinge is sufficient for mounting and oppositely hinging two sashes in a frame, and that the attachment of the frame and sill butts of the hinge in the corner of the frame, strengthens the connection of the parts at this point. If there are three or more casement sashes to be assembled into a single frame, an intermediate mullion having opposite sides beveled the same as the brick mold will provide a satisfactory mounting to receive the angular butt portions of the hinge which then is attached to the mullion and to the frame at the top and bottom in the same way as already described.

With this construction, each sash and its associate frame is braced and strengthened by the hinges which are simple and easy to apply, as already pointed out. Furthermore, the hinge pivot is exactly located in every case thereby making possible the use of factory prefit sashes without danger of the sash hitting the frame or binding therewith as would occur if the pivot point were to vary, as is common when the jamb or sash has to be chiselled for the hinge, since it is difficult to chisel two hinge mortises alike.

We claim:

1. A casement sash hinge located in the corner of a casement window frame beyond the outer face of the casement sash and comprising a frame unit fitting within the angle of a corner of said frame exteriorly of the outer face of the sash and consisting of an inner attachment portion secured to the frame and an outwardly extending shank, and a sash unit composed of an inner attachment portion secured to the outer face of the sash at the corner thereof contiguous to the frame unit, and an arm extending outwardly from the attachment portion of the sash unit and pivoted to the outer end of the shank of the frame unit and having sufficient length to extend from its pivoted end to the outer face of the sash when the latter is in its closing movement to be carried inwardly to a position beyond the frame unit.

2. A casement sash hinge located in the corner of a casement window frame exteriorly of the outer face of the casement sash and comprising a frame unit fitting within the angle of a corner of said frame exteriorly of the outer face of said sash and consisting of an inner attachment portion secured to the frame and an outwardly extending shank projecting beyond the frame, and a sash unit composed of an inner attachment portion secured to the outer face of the sash in abutting relation with the frame unit, and an arm extending outwardly from the inner attachment portion of the sash unit and pivoted at its outer end to the outer end of the shank of the frame unit and having a length sufficient to extend from its pivoted end to the outer face of the sash when the latter is in its closed position to cause the sash in its closing movement to be carried inwardly to a position beyond the frame unit.

3. A casement sash hinge located in the corner of a casement window frame beyond the outer face of the casement sash and comprising a frame unit fitting within the angle of a corner of said frame beyond the outer face of the casement sash and consisting of a vertical side frame butt portion and a horizontal sill butt portion arranged at right angles to each other and inclined to fit an outwardly beveled vertical portion of the frame and the beveled surface of the sill of said frame, and a shank extending outwardly from said butt portions, and a sash unit having a flat angle strap secured to the outer face of the sash at the corner thereof adjacent the frame unit and provided with an outwardly extending arm pivoted to the outer end of the shank of the frame unit, and having a length sufficient to extend from its pivoted end to the outer face of the sash when the latter is in its closed position to cause the sash in its closing movement to be carried inwardly to a position beyond the frame unit.

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