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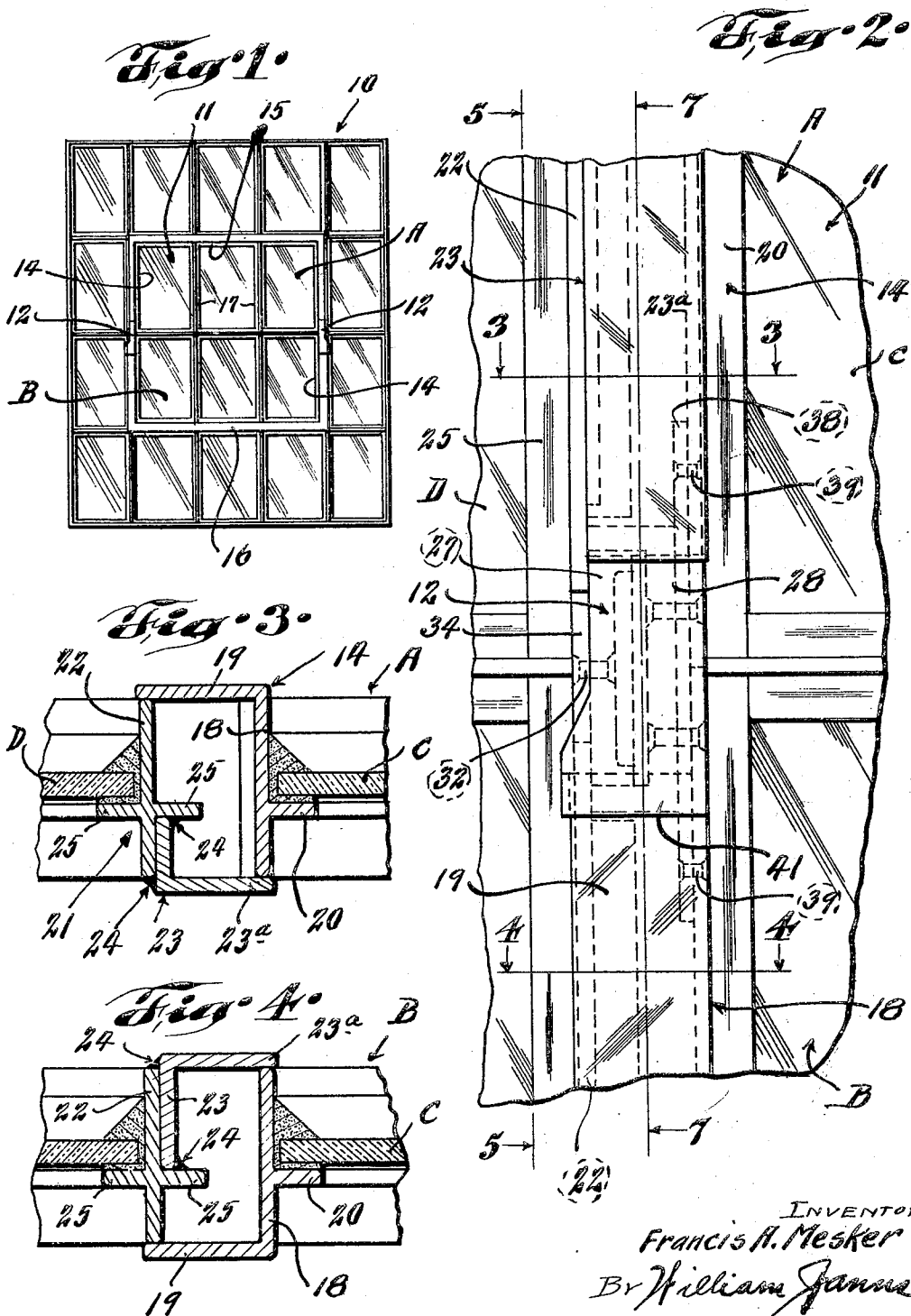
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VENTILATOR CONSTRUCTION

Filed Feb. 20, 1931

2 Sheets-Sheet 1



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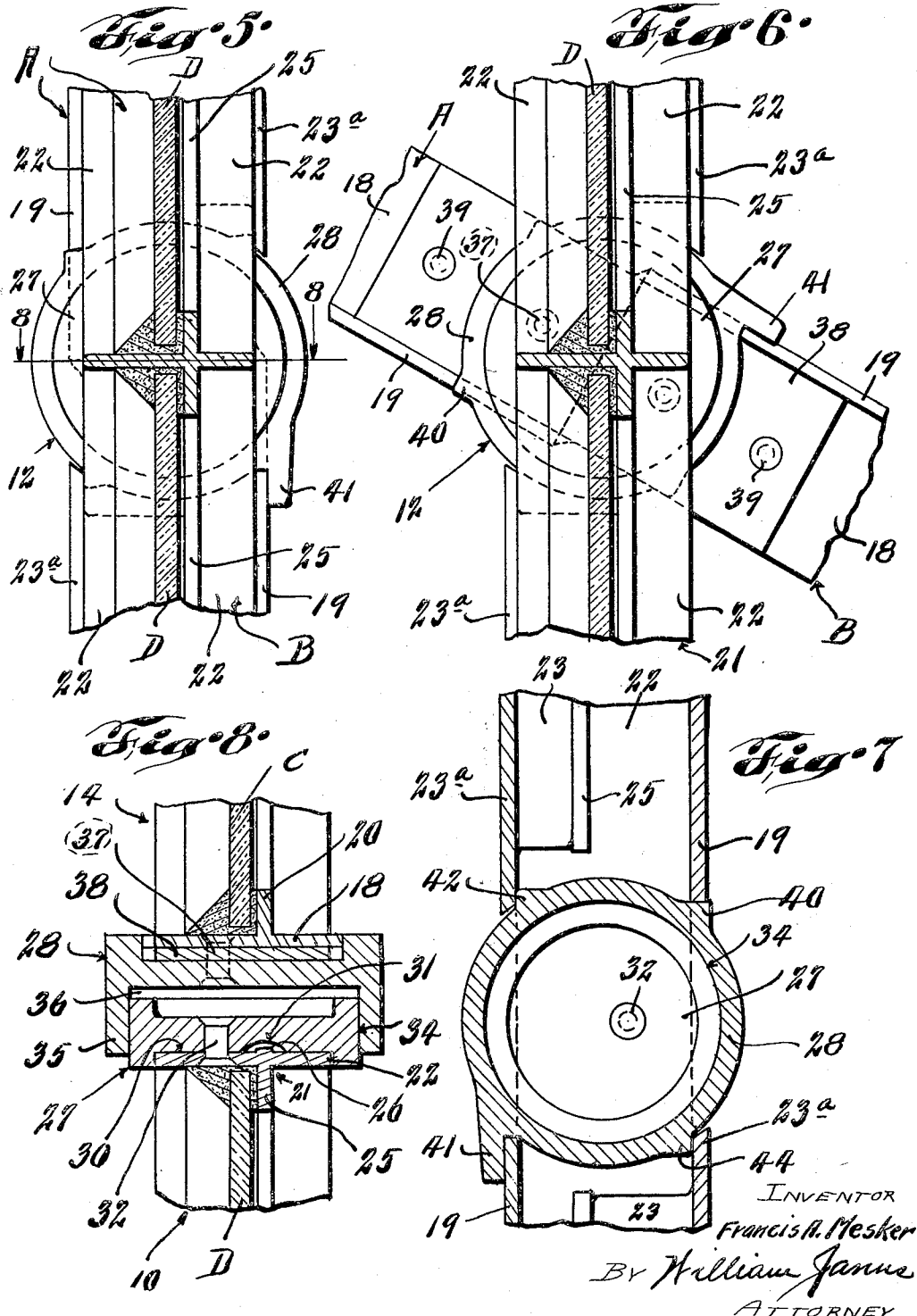
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UNITED STATES PATENT OFFICE

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VENTILATOR CONSTRUCTION

Application filed February 20, 1931. Serial No. 517,152.

This invention relates generally to new and useful improvements in ventilator construction and more particularly to cup pivotal devices for mounting the swinging ventilators in the sash.

The objects of the invention are to provide a ventilator having pivotal mounts whereby the ventilator can be swung about a horizontal axis, said pivotal mounts comprising a fixed member having an annular flange and stationarily secured on the ventilator jamb and a cup member fixed to the stile of the ventilator and engaging the peripheral face of said fixed member, thereby providing pivotal bearings for said ventilator which are of rugged construction and provide ample bearing surface.

Other objects of the invention are to provide a sash having framework of wrought iron and a swinging ventilator mounted in said sash by means of cup pivots having their axes disposed horizontally, the stiles of said ventilators and the ventilator jambs of said sash being formed with oppositely projecting lateral flanges cooperating with each other to provide an efficient seal for excluding water and dust when said ventilator occupies closed position and the movable parts of said cup pivots being formed with projecting portions which are adapted to form a lap joint with the adjacent surfaces to form water and dust-excluding joint therewith.

Further objects of the invention are to provide a cup pivot for swinging closure members, said cup pivot comprising a fixed member having an annular flange to provide a peripheral bearing surface and a cup member adapted to be fixed to the stile of the swinging closure member and having an annular flange for operatively engaging and enclosing the peripheral face of the fixed member, thereby swingingly supporting the ventilator in position, said cup member being provided on its periphery with a lip overhanging the upper end of the lateral flange of the lower half of the ventilator frame so as to provide a watershed therefor, said cup member being further provided on its peripheral face with an outwardly projecting shoulder spaced from said lip and adapted to engage the lower end of

the lateral flange of the upper half of the jamb so as to form a seal therewith for preventing water and dust from passing there-through.

Additional objects of the invention are to improve upon the construction of cup pivots for use in connection with swinging ventilators so as to provide ample bearing surface between the fixed and the movable members of said pivot and to insure efficient support of the ventilator and permit effective seal between the movable cup pivot member and the parts with which the latter is associated.

With these and other objects in view, my invention consists in certain novel features of construction and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which—

Figure 1 is an external elevational view of a window equipped with my improved ventilator.

Figure 2 is an enlarged fragmental elevational view showing the cup pivot and portions of the window and the ventilator.

Figure 3 is a horizontal cross section taken on line 3—3 of Figure 2.

Figure 4 is a horizontal cross section taken on line 4—4 of Figure 2.

Figure 5 is a vertical cross section taken on line 5—5 of Figure 2.

Figure 6 is a similar view but showing the ventilator in moved position.

Figure 7 is a vertical cross section taken on line 7—7 of Figure 2, and looking in a direction opposite to Figure 5.

Figure 8 is a horizontal cross section taken on line 8—8 of Figure 5.

The improved cup pivot construction herein disclosed is designed for use in connection with ventilators mounted for swinging movement about a horizontal axis. The jambs, as well as the entire ventilator, are formed of wrought iron bars of proper cross sectional contour. Consequently it is highly desirable that the pivots be of sufficient strength to support the ventilator in an efficient manner and that the pivots have substantial bearing surfaces to eliminate binding and permit ease of operation at all times.

Also the meeting lines between the pivot members and the flanges of the jambs and the stiles of the ventilator have to be so arranged as to protect them against water and dust when the ventilator occupies closed position.

Referring by numerals to the accompanying drawings, 10 indicates a window having a central opening in which is mounted a swinging ventilator 11. This ventilator is pivotally supported by pivots 12 on a horizontal line disposed substantially centrally of the ventilator, the upper half of the ventilator opening inwardly, as indicated at A, and the lower half opening outwardly, as indicated at B (see Figures 1 and 6).

As shown, the ventilator consists of stiles 14, top and bottom rails 15 and 16, respectively, and a series of muntins 17. The stiles 14 are L-shaped in cross section having web portions 18 and an outwardly projecting lateral flange 19. Each web portion has formed integral therewith, and intermediate its edges, a longitudinally disposed flange 20, which extends inwardly or in a direction opposite to terminal flange 19. Flanges 20 permit glazing of glass sections C.

The jambs 21 of the ventilator opening are cruciform in cross section, the web portion 22 being disposed parallel with and spaced from the web portion 18 of the stile so that the edge of the outwardly presented flange 19 of the stile overlaps the respective edge of the web portion 22. An angle 23 is secured to the web portion 22 of the jamb in such manner that the projecting flange 23^a thereof is arranged on the opposite side and parallel with the flange 19 of the stile with the edge of said flange 23^a bearing against the edge of the web portion 18 and forming a seal therewith in the same manner as that effected by the flange 19 with the corresponding edge of the web portion 22 of jamb 21.

Thus a double seal is provided between the ventilator frame and the jambs. The angle members 23 are secured to the jambs in any suitable manner, preferably by welding, as indicated at 24. The cross flanges 25 of jambs 21 extend in opposite directions, the outer one forming a seat for glazing purposes and the inner one being cut away as indicated at 26 to provide clearance for the pivot member 12.

It will be noted by comparing Figures 3 and 4 that the positions of angles 23 and flanges 19 in the upper half A is reversed with respect to the lower half B, the flanges 19 in the upper half being located on the inside and the flanges 23^a of angles 23 on the outside, while in the lower half flanges 19 are located on the outside and flanges 23^a on the inside. This reversal of flanges is made necessary by the swinging movement of the ventilator

whereby the two halves swing in opposite directions.

Each pivot member consists of a fixed member 27 and a movable member 28. Fixed member 27 is provided on one side with a vertically disposed seat 30 in which is received the web portion 22 of jamb 21, the corresponding portion of the inner flange 23 being cut away, as indicated at 26, to provide clearance for member 27. Preferably this side of the fixed member 27 is provided with a recess 31 at the point adjacent to the cut-away portion 26 in order to provide clearance for said cut-away portion and insure an accurate fit between the remaining portions of the web 22 and member 27. A rivet 32 secures member 27 in position. Fixed member 27 is provided with a peripheral face 34 of suitable width to provide the necessary bearing surface and the movable pivot member 28 is provided with an angular flange 35 forming a circular cavity 36 in which fits loosely said member 27. Member 28 is fixed to the stile of the ventilator by rivets 37.

As stated before, the halves A and B of the ventilator occupy reversed positions with respect to each other and are, therefore, preferably made in separate sections, the ends of the stiles being secured together by plates 38 which are secured to the web portions 18 of the stiles by rivets 39 while rivets 37 secure said plates to said web portions and to members 28. Flanges 19 of the stiles of the two halves terminate at points adjacent to the peripheral face of flange 35 and said peripheral face is provided with a lug 40 which fits closely against the lower end of flange 19 of the upper half. Flange 35 is provided at a point substantially diametrically opposed to lug 40 with a downwardly presented extension or lip 41 which extends downwardly over the outer face of flange 19 of the lower half a suitable distance below the upper end of said flange, thereby forming an effective water shed and seal therefor.

The outer face of flange 35 is provided in its upper half with a lug 42 which when the ventilator occupies closed position bears against the inner face of flange 23^a and extends a suitable distance upwardly past the lower end thereof, as clearly shown in Figure 7. The lower half of annular flange 35 is provided at a point substantially diametrically opposed to lug 42 with a lug 44 which is similar to the aforesaid lug and bears against the inner face of flange 23^a of the lower half of the ventilator. These lugs 42 and 44 form seals between the pivot members and the flanges 23^a of the jamb, thereby preventing passage of water and dust therethrough when the ventilator occupies closed position. Thus the meeting lines between the movable pivot member 28 and parts of the jamb are effectively sealed in a simple and efficient manner. The pivot members 27 and 28 are preferably

made of rust-resisting metal, thereby insuring easy operation thereof and eliminating danger of binding or corrosion.

The top rail 15 of the upper half of the ventilator is substantially of the same construction as the upper half of the stile, as shown in Figure 3, while the bottom rail 16 of the lower half of the ventilator is substantially of the same construction as the lower half of the stile, as shown in Figure 4. In the case of top rail 15, flange 19 is disposed inwardly and presented upwardly, while in the case of lower rail 16 flange 19 is disposed outwardly and presented downwardly, the other construction of details being arranged accordingly.

I claim:

1. In a cup pivot construction of the class described, the combination with a pair of flanged jambs, and a ventilator frame arranged between said jambs and including flanged stiles, of pivots for supporting said ventilator between said jambs for swinging movement on horizontal axis, each of said pivots comprising a stationary disk fixed to each jamb and provided with an annular flange, a cup member fixed to each stile and having an annular flange enclosing and resting upon the peripheral face of the annular flange of the fixed disk of the corresponding jamb, and outwardly projecting peripherally spaced extensions formed integral with the peripheral face of each cup member for overlapping the adjacent surfaces of the flanges of the corresponding jambs and stiles to form weathering joints therewith.

2. In a cup construction of the class described, the combination with a pair of jambs including a weathering angle section fixed to the upper and the lower halves of each jamb with their flanged portions disposed on opposite sides and having their inner ends terminating in spaced relation with each other, and a ventilator including stiles, each of which has its web portion disposed in spaced parallel relation with the web portion of the jamb and each of which consists of an upper and a lower half section provided with laterally disposed flanges arranged oppositely to each other and to the flanges of said jambs to form a weathering joint with the respective edges of the web portion of said jamb, the inner ends of said flanges terminating adjacent in spaced relation with each other, of a cup pivot structure comprising an annular flanged disk fixed to the web portion of each jamb, a pivot cup member fixed to the web portion of each stile section and enclosing and freely resting on the corresponding fixed disk member whereby said ventilator is supported for swinging movement about the axis of said pivots, a lip formed integral with the peripheral face of each cup member and overhanging the upper end of the outwardly presented flange of the

lower stile section to form a water shed therefor, and a pair of diametrically opposed radially projecting portions formed on said peripheral face and having plane faces in overlapping engagement with the inner ends of the lateral flanges of the jamb to form weathering joints therewith when the ventilator occupies closed position.

3. In a pivot construction of the class described, the combination with flanged jambs and swinging flanged stiles, the flanges of the upper and lower halves of each jamb being arranged on the outer and inner sides, respectively, and the flanges of the upper and lower half of each stile being arranged on the inner and outer sides, respectively, the inner ends of said flanges terminating in spaced relation with the axis of the swinging movement of a cup pivot construction comprising, a disk fixed to the web portion of the jamb and provided with an annular flange, a cup pivot member fixed to the flange of the stile and provided with an annular flange enclosing and resting upon the flange of said fixed disk member, whereby said stiles are swingingly supported, and projections formed integral with the peripheral face of the annular flange of said cup member and adapted to overlap the inner ends of the respective flanges and form weathering joints therewith.

4. In a cup pivot construction for swinging ventilators, the combination of a stationary disk member having annular flange and adapted to be secured to a flanged jamb, a cup member adapted to be secured to a flanged stile and having an annular flange enclosing and revolubly engaging the flange of said disk member, and a plurality of outwardly extending projections formed integral with the peripheral face of said cup member and adapted to overlap the ends of the flanges of said jamb and stile and form weathering joints therewith.

In testimony whereof I hereunto affix my signature this 18th day of February 1931.

FRANCIS A. MESKER.