April 19, 1927. 1,625,220

J. MESKER ET AL

WINDOW CONSTRUCTION

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Fig. 1

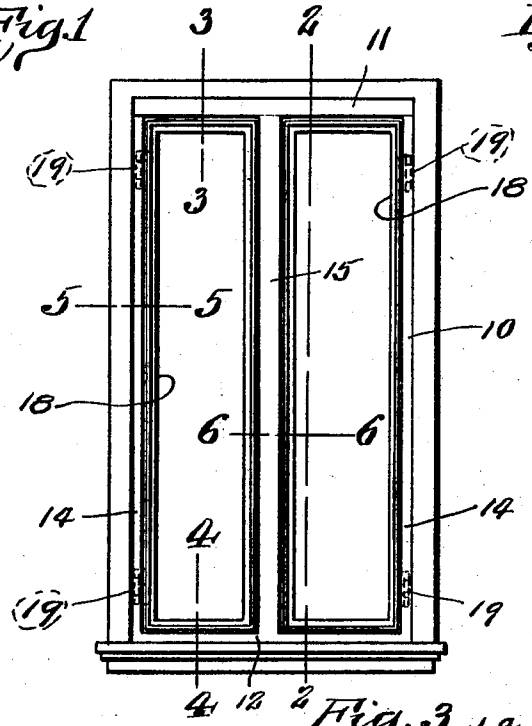


Fig. 2

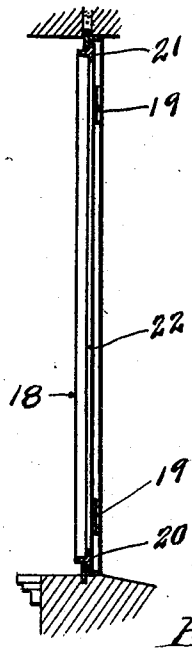


Fig. 3

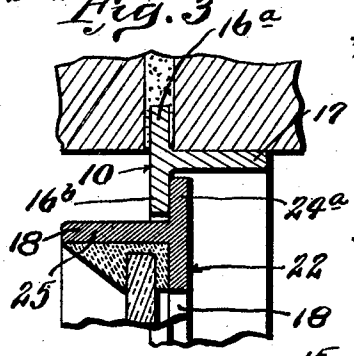


Fig. 4

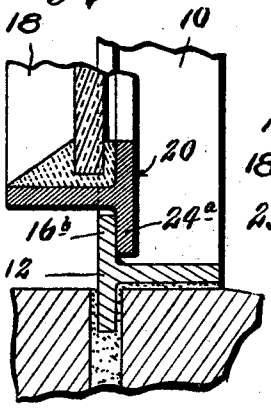


Fig. 5

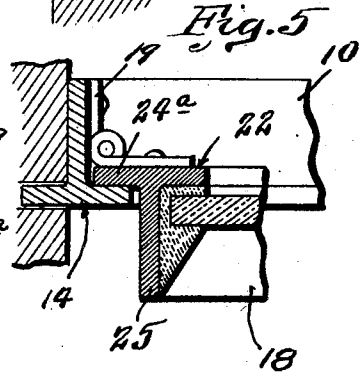
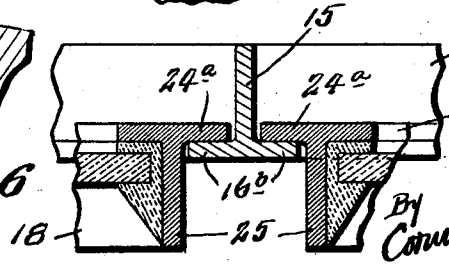


Fig. 6



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Fig. 7

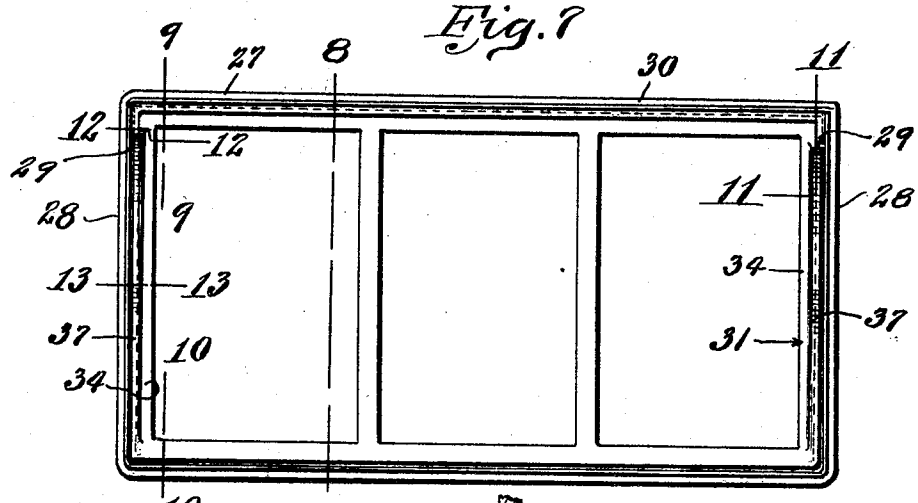


Fig. 8

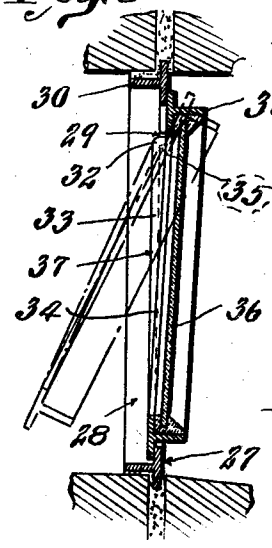


Fig. 9

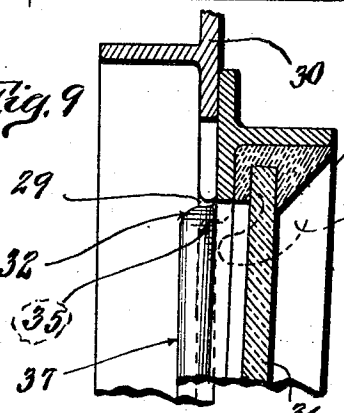


Fig. 10

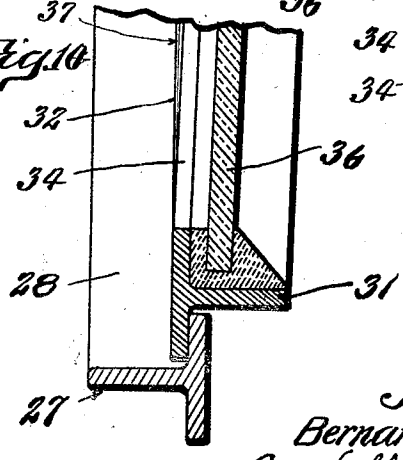
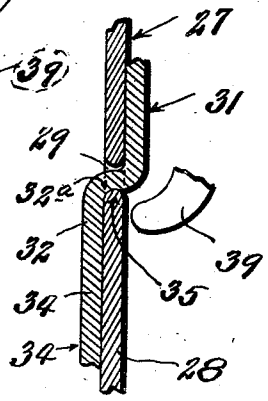


Fig. 11



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WINDOW CONSTRUCTION

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Fig. 12

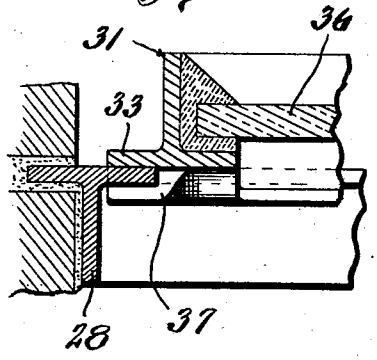


Fig. 13

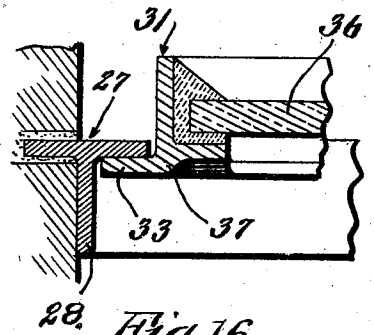


Fig. 14

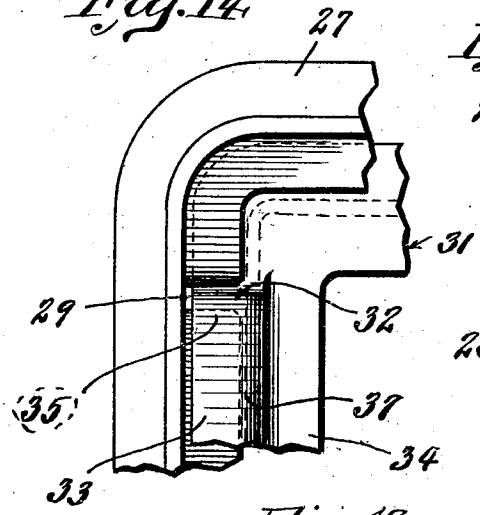


Fig. 15

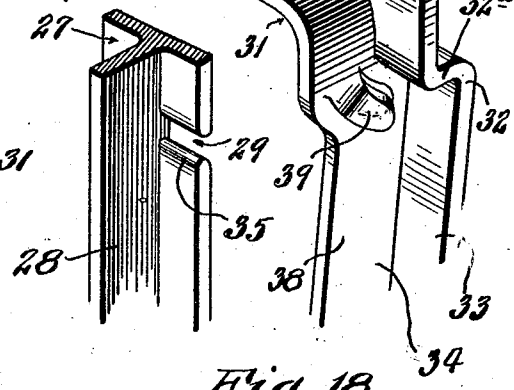


Fig. 16

Fig. 17

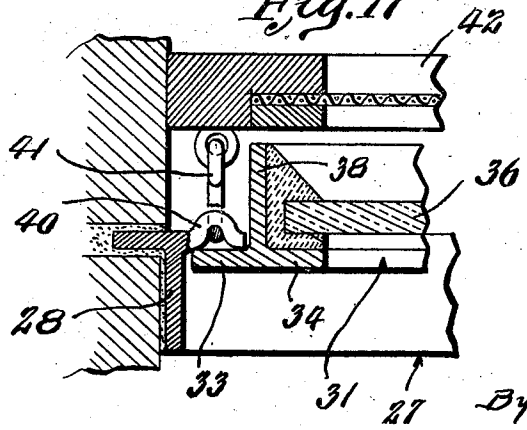
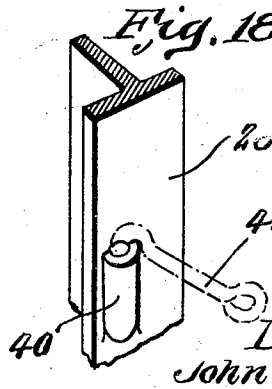


Fig. 18



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Patented Apr. 19, 1927. 1,625,220

UNITED STATES PATENT OFFICE.

JOHN MESKER AND BERNARD T. MESKER, OF ST. LOUIS, MISSOURI, ASSIGNORS TO MESKER BROTHERS IRON COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

WINDOW CONSTRUCTION.

Application filed March 5, 1925. Serial No. 13,311.

This invention relates to new and useful improvements in metallic window construction, and the objects of the invention are to provide a window sash and a frame therefor having a large surface weather contact with each other, the planes of contact being disposed at right angles to the plane of the window opening.

Further objects of the invention are to form the casing frame and the sash frame with laterally disposed flanges which when said sash is closed are brought into overlapping contact with each other, thereby forming a weather-proof joint.

Still further objects of the invention are to form the casing frame and the sash frame of T-shape iron, the contiguous flanges of which frames are adapted to enter into overlapping contact with each other and the edges of said flanges are adapted to be disposed adjacent to the web portions of the corresponding frame members, thereby deflecting the meeting lines of said flanges at right angles to the plane thereof and retarding the access thereto.

Other objects of the invention are to provide a pivot construction for extending sash frames, said sash frames being so constructed that it is not necessary to offset or otherwise distort said sash frame whereby the glass pane disposed in said frame can be arranged therein parallel with the plane of the sash.

Still further objects of the invention are to form the casing frame and the sash frame each of a single bar bent into proper shape and having their ends secured together in any suitable manner, thereby simplifying the construction thereof and reducing the cost of manufacture.

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 inside elevational view of a casement window constructed according to my invention.

Figure 2 is a vertical cross section taken on lines 2—2 of Figure 1.

Figure 3 is a detail vertical cross section taken on lines 3—3 of Figure 1.

Figure 4 is a detail vertical cross section taken on lines 4—4 of Figure 1.

Figure 5 is a detail horizontal cross section taken on lines 5—5 of Figure 1.

Figure 6 is a detail horizontal cross section taken on lines 6—6 of Figure 1.

Figure 7 is an elevational view of the assembled frames and looking against the inside faces thereof.

Figure 8 is a vertical cross section taken on lines 8—8 of Figure 7.

Figure 9 is an enlarged vertical cross section taken on lines 9—9 of Figure 7.

Figure 10 is an enlarged vertical cross section taken on lines 10—10 of Figure 7.

Figure 11 is an enlarged detail view taken on lines 11—11 of Figure 7.

Figure 12 is a horizontal cross section taken on lines 12—12 of Figure 7.

Figure 13 is an enlarged horizontal cross section taken on lines 13—13 of Figure 7.

Figure 14 is a fragmental enlarged view of the pivot construction.

Figure 15 is a perspective detail view of one of the uprights of the casing frame.

Figure 16 is a perspective detail view of a portion of the sash frame.

Figure 17 is an enlarged horizontal cross section showing the method of fastening the screen in position.

Figure 18 is a perspective detail view of one of the side members or uprights of the casing frame and showing the socket or seat formed therein for receiving the screen hook.

Referring by numerals to the accompanying drawings, 10 indicates a window or casing frame which is composed of a lintel or top transverse member 11, a sill member 12, jamb members 14, and a mullion 15. These members are preferably T-shape in cross section with the flanges 16 thereof disposed vertically and the web portion 17 disposed in a horizontal plane and projecting outwardly.

A sash frame 18 is arranged in each opening and where a casement sash is used, pivots 19 are secured to the sash and have pivotal bearing in the horizontal members of the frame as shown in Figures 1 and 2.

Each sash frame comprises a bottom transverse member 20, a top transverse member 21 and side members 22, each of which is T-shape in cross section with the flanges 24 disposed preferably in vertical plane and lying against the inner faces of flanges 16 and with the web portions 25 arranged in horizontal planes and extending inwardly. The outer flanges 16^a are embedded in the wall structure and hold frame 10 in position while the inner flanges 16^b engage and form a stop for the outer flanges 24^a of sash 18. When sash 18 occupies a closed position, the outer flanges 24^a thereof lie against the outer faces of flanges 16^b and form a weather-tight joint. The edges of flanges 24^a are disposed in close proximity to the web portions 17, there being sufficient clearance left therebetween to permit free operation of the sash. Similarly the edges of flanges 16^b are disposed in close relation to the web portion 25 of sash 18 in order to divert the line of the joint at right angle to the planes of the coacting surfaces of said flanges and for a seal thereof. In this manner, the meeting lines of the flanges terminate in restricted spaces formed by the edges of said flanges and the respective web portions, thereby insuring a more perfect and weather-tight joint.

In the form shown in Figures 7 to 16, a window construction of the pivoted type is disclosed. Heretofore in forming the pivotal bearing or seat in the sash frame, it was necessary to offset or distort the upper portion of the sash frame, thereby forming bends or jogs in the vertical members of said sash frame. This method was unsatisfactory as it required the glass pane to be set at an angle to the plane of the sash frame with the top and bottom edges thereof unequal distances from the respective portions of the frame. In the present construction, in forming the pivot portions, the sash frame proper is not disturbed and only the outwardly presented side flanges thereof are offset to provide the pivot portions.

In the drawings, a casing frame 27 is formed of a single piece of bar which is preferably T-shape in cross section and bent into rectangular shape with the ends secured together in any suitable manner. The vertically disposed members 28 of frame 27 are provided in their inwardly disposed flanges with notches 29 arranged a short distance from the upper cross member 30. A sash frame 31, also formed of a single piece of T-shape bar, is arranged within frame 27 and is pivotally mounted therein by means of a bend 32 formed in the outwardly presented flange 33 of each side member 34. This bend provides a horizontally disposed portion 32^a which intersects notch 29 and rests on the upwardly presented point 35 formed by said notch. Thus the sash frame is supported in the casing frame at points 35 which form pivotal bearing for said sash frame so that the latter may be extended inwardly as shown by dotted lines in Figure 8.

When in position the upper transverse member of the sash frame is disposed outwardly of the casing frame and rests against the outer face thereof while the remaining portion of said sash frame or that portion disposed below the pivots is arranged rearwardly of the casing frame and is adapted to contact with the inwardly disposed faces thereof. In order to preserve the proper alignment of the sash frame and permit the positioning of the glass pane 36 therein in a plane substantially parallel with the plane of said sash frame, only the outwardly presented flanges 33 of side members 34 are distorted or pressed out to furnish the bends or bearings 32 for engaging the pivotal points 35. This offset portion 37 thus formed tapers downwardly from bend 32 and finally merges with the flanged portions of the sash frame.

In order to prevent accidental displacement of the sash frame 31 from its position in casing frame 27, the web portion 38 of the side members 34 of sash frame 31 are formed under bends 32 with tongues 39 which are struck therefrom and are presented toward the notched flanges of side members 28 of casing frame 27 as shown in Figures 9 and 11. These tongues, while permitting free pivotal movement of the sash frame, are adapted to bear against the notched flanges and prevent unseating or slipping of the sash frame from its position. The side members 28 of the casing frame 27 are formed at appropriate points with sockets or seats 40 in which are adapted to be seated hooks 41 of a screen 42 whereby the latter can be held in position.

The weathering contact formed by the flanged cooperating portions of the frames is weatherproof and no weather strips are necessary. The pivot construction is an improvement over the construction disclosed in United States Patent No. 1,421,019 granted to Frank Mesker and Jacob Benc, June 27, 1922.

The present improved construction permits the use of the particular pivot arrangement without the necessity of distorting or offsetting the sash frame thereby facilitating the glazing of the sash frame.

Obviously, various minor changes in the construction of our improved window could be made without departing from the spirit of our invention.

We claim:

1. In a metallic window construction, the combination of a casing frame provided with flanges disposed in a vertical plane and having web portions extending laterally, and a

sash frame operatively mounted in said casing frame and having its flanges disposed in a vertical plane, and web portions extending laterally in a direction opposite to the web portions of the casing frame, the flanges of the sash frame being adapted to enter into overlapping relation with the flanges of said casing frame and the outer edges of the sash frame terminating in close proximity to the web portion of the casing while the inner edges of the casing frame terminate in close proximity to the web portion of the sash thereby diverting the line of contact between the flanges in opposite directions and at right angles to the planes of the coacting surfaces of said flanges.

2. In a metallic window construction, the combination of a casing frame provided with flanges disposed in a vertical plane and having web portions extending laterally, and a sash frame operatively mounted in said casing frame and having its flanges disposed in a vertical plane, and web portions extending laterally in a direction opposite to the web portions of the casing frame, the flanges of the sash frame being adapted to enter into overlapping relation with the flanges of said casing frame, and the edges of the respective flanges being disposed adjacent to the web portions of the corresponding frames to divert the lines of contact between the flanges in opposite directions and at right angles to the planes of the coacting surfaces thereof.

3. In a metallic window construction, the combination of a casing frame T-shaped in cross section with the web portion extending laterally and the flanges arranged in vertical plane, and a sash frame T-shape in cross section and operatively mounted within said casing frame and having its outwardly presented flanges adapted to engage and form close contact with the inwardly presented flanges of said casing frame, the edges of the respective flanges terminating near the web portions of the respective frames in order to divert the terminating lines of contact at right angles to the meeting faces of said flanges and shield the edges of the respective flanges and form a weathering joint closed at both terminals.

4. In a metallic window construction, the combination of a casing frame formed of a T-shape bar, the web portion of which extends laterally and the flanges thereof are disposed in a vertical plane, and a sash frame also formed of T-shape material with the web portion disposed laterally in opposed relation to the casing frame and having its flanges disposed in vertical plane in overlapping relation with the flanges of said casing frame, the edges of said flanges terminating in close relation with the web portions of the respective frames, thereby providing operating clearance therebetween and forming double edge seal between said web portions and the corresponding flanges to insure perfect weathering.

5. In a metallic window construction, the combination of a casing frame formed of a T-shape bar, the web portion of which extends laterally and the flanges thereof are disposed in a vertical plane, and a sash frame also formed of T-shape material with the web portion disposed laterally in opposed relation to the casing frame and having its flanges disposed in vertical plane in overlapping relation with the flanges of said casing frame, the edges of said flanges terminating in close relation with the web portions of the respective frames, thereby sealing both edges of the cooperating surfaces of said flanges and providing dust-proof and weather-proof joints and means for operatively mounting said sash frame in said casing frame.

6. In a window construction, the combination with a casing frame formed of a single piece of bar and having its ends secured together, and a sash frame also formed of a single piece of bar and having the outwardly presented flanges of its side members offset to provide means for pivotally engaging the inwardly presented flanges of the side members of said casing frame, the body portion of said sash frame being disposed in one plane whereby the glass can be placed in position therein in a plane parallel to said sash frame.

7. In a window construction, a casing frame T-shape in cross section having the inwardly disposed flanges of its side members provided with notches, and a sash frame having the outwardly presented flanges of its side members offset to provide shoulders adapted to be seated in said notches and pivotally support said sash frame in said casing.

8. In a window construction, a flanged casing frame, the inward flanges of the side members of which are provided with notches, and a flanged sash frame having the outward flanges of its side members offset to provide portions intersecting the inward flanges of said casing frame and adapted to be seated in the notches thereof for pivotally supporting said sash frame in position thereon, the glazing portions of said sash frame being disposed in one plane.

9. In a window construction, a flanged casing frame, the inward flanges of the side members of which are provided with notches, a flanged sash frame having the outward flanges of its side members offset to provide portions intersecting the inward flanges of said casing frame and adapted to be seated in the notches thereof for pivotally supporting said sash frame in position thereon, the glazing portions of said sash frame being disposed in one plane, and projections struck out from said sash frame and disposed

adjacent to the pivotal points of support thereof for preventing the accidental displacement of said sash frame.

10. In a window construction, a flanged casing frame, the inward flanges of the side members of which are provided with notches, a flanged sash frame having the outward flanges of its side members offset to provide portions intersecting the inward flanges of said casing frame and adapted to be seated in the notches thereof for pivotally supporting said sash frame in position thereon, the glazing portions of said sash frame being disposed in one plane, projections struck out from said sash frame and disposed adjacent to the pivotal points of support thereof for preventing the accidental displacement of said sash frame, and seats formed in said casing frame and adapted to receive the hooks of a screen for holding the latter in position.

11. In a window construction, the combination of a flanged casing frame and a flanged sash frame disposed within said casing frame, and a screen provided with hooks for attaching it in position, said casing frame being provided with seats pressed out from the flanges of said casing frame for receiving said hooks.

12. In a window construction, the combination of a flanged casing frame and a flanged sash frame disposed within said casing frame, said sash frame being arranged at an angle relative to said casing frame for receiving a pane of glass in a plane parallel with the plane of said sash frame, the outer flanges of the side members of said sash frame being raised above the plane thereof to pivotally engage the flanged portions of said casing frame.

13. In a window construction, the combination of a flanged casing frame, and a flanged sash frame operatively disposed in said casing frame, the latter being provided with seats pressed out from the flanges thereof and adapted to receive hooks of screen.

In testimony whereof we hereunto affix our signatures this 7th day of February, 1925.

JOHN MESKER.
BERNARD T. MESKER.