Nov. 6, 1928.

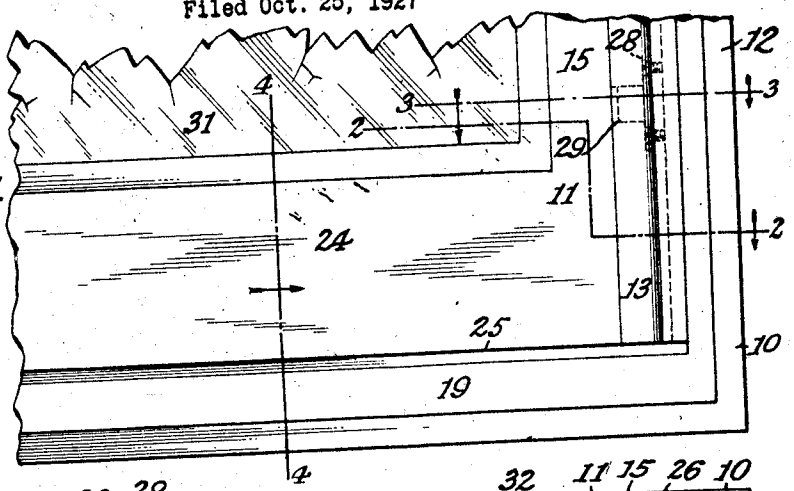
1,690,807

J. ANTAL

WINDOW

Filed Oct. 25, 1927

Fig. 1.



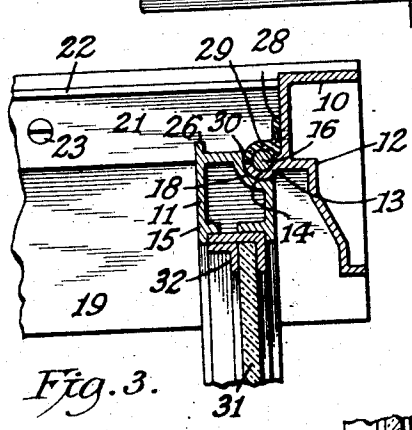


Fig. 3.

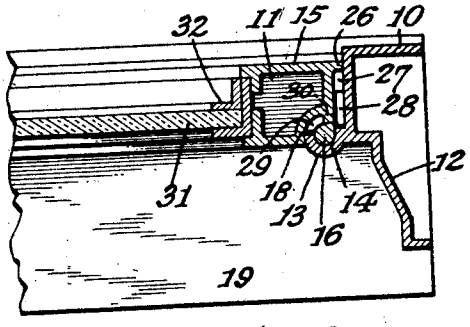


Fig. 2.

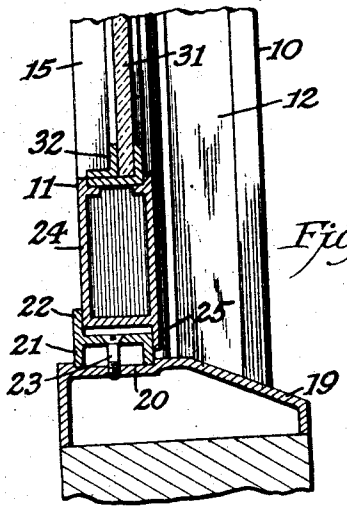


Fig. 4.

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UNITED STATES PATENT OFFICE.

JOHN ANTAL, OF BROOKLYN, NEW YORK.

WINDOW.

Application filed October 25, 1927. Serial No 228,521.

This invention relates to improvements in windows, more particularly to metallic window sash and frame construction, wherein the sash swings outwardly from within the frame.

The object of the invention is to provide in a window of the above described class, an improved sealed hinge joint between the parts, which is dust, air and waterproof, yet permitting of free movement of the swinging member or members.

In carrying out my invention I provide, in a single sash construction, one side of the window frame with a unitary arcuate tongue extending from top to bottom of said frame within the sash opening, thus providing a semi-circular groove in which the sash of the window pivots. In a double sash construction, both sides of the window frame are provided with grooved tongues as will be understood.

One side of the window sash may be integrally formed with a bead and a curved wall spaced from the bead to provide an arcuate tongue or extension on the window frame when the sash swings outwardly with the bead as its center. The bead and arcuate chamber extend from bottom to top of the window sash.

The invention possesses other advantageous features which will be set forth at length in the following specification.

The arrangement of the parts may be varied considerably, the present embodiment illustrates the invention now thought to be the best form, but it will be understood that many refinements may be made in the commercial application construction provided for the purpose set forth.

In the drawings forming part of this specification:

Fig. 1 is a front fragmentary elevation of my improved window construction.

Fig. 2 is a horizontal cross section through the hinge joint taken on the line 2—2 of Fig. 1.

Fig. 3 is a horizontal cross section taken on the line 3—3 of Fig. 1 and

Fig. 4 is a vertical cross section through the window sill and the lower rail of the sash taken on the line 4—4 of Fig. 1.

Referring now to the drawings in detail, I indicate at 10 the lower right hand corner portion of a window frame and at 11 a corresponding portion of a window sash.

The window frame and sash are preferably of brass, steel or other appropriate metal, cast, drawn or stamped to shape to provide a rigid durable structure for use in connection with banks, office buildings, hotels and other buildings of the better sort.

In a single sash window construction I form a side rail 12 of the window frame with a unitary arcuate tongue or extension 13, providing a semi-circular groove 14 extending from top to bottom of the window opening.

One side or stile 15 of the window sash 11 is preferably formed with a unitary bead 16, and an arcuate wall 17 spaced from said bead to provide a chamber 18 adapted to receive the arcuate tongue 13, when the window is swung outwardly, the bead 16 acting as the pivotal center.

The sill 19, of the window frame is preferably indented longitudinally to form a shallow groove 20, in which a stop bar 21, having an upwardly directed flange 22 is secured by screws or other devices 23.

The lower rail 24 of the window sash 11 has formed therewith a downwardly directed flange 25, which abuts the stop bar 21, at its outer side when the window is closed, the inner face of the lower rail 24 also abuts the flange 22 thus providing a sealed step joint at the bottom of the window sash.

The stile 15 of the window is also formed with a short outwardly extending flange 26, which abuts the inner face of the window frame when the window sash is closed. There is a space 27 provided between the window frame and sash, in which the base plates 28, of brackets for bracing the stile 15 may be disposed and secured to the window frame as shown in dotted lines in Fig. 1 and in section in Fig. 3. The brackets (but one of which is shown) take the form of curved lugs 29, integral with their base plates 28, and which extend through openings 30, and into the curved chamber 18.

Base plates 28, and their lugs 29 may, however, be dispensed with since the sash bead 16 could disengage its groove 14 in the arcuate tongue 13 in one position only, namely when the sash is fully closed. To permit the easy assembly of the window, I namely prefer to make the arcuate extension semicircular so that the circular bead could enter into the same in the position of the sash above mentioned, and naturally could also be easily lifted out of it in said position. To prevent this

I however employed the abutting member 22 on the window sill which will prevent the freeing of the bead from the groove even after the arcuate tongue has left the chamber 18.

The customary window panes 31 are held in place by appropiate means 32.

The terms and expressions employed, are used as terms of description and not of limitation, and I have no intention in the use of such terms and expressions of excluding any equivalents of the features shown.

What I claim as new is:

1. In a window, a frame and a sash, the frame having a semicircular extension, the sash having means engaging said extension for imparting pivotal movement to said sash when it is moved outwardly, and a stop member on the window frame to prevent the disengagement of the means on the sash from said extension when they are facing the open side of said semicircle.

2. In a window, a frame and a sash, the frame having a semicircular extension providing a groove, the sash having means engaging said groove for imparting swinging movement to said sash when it is moved outwardly, and a stop member on the window frame to prevent the disengagement of the means on the sash from said semicircular groove when they face the open side of it.

3. In a window, a frame and a sash, the frame having an arcuate tongue provided with a semi-circular groove and extending from top to bottom of the sash opening, the sash having means for engaging said groove to swing said sash outwardly, and a stop member on the window frame to prevent the disengagement of the means on the sash from said semicircular groove when they face the open side of it.

4. In a window, a frame and a sash, the frame having an arcuate tongue provided with a semi-circular groove and extending from top to bottom of the sash opening, the sash having means for engaging said groove to swing said sash outwardly, said means comprising a bead and an arcuate wall spaced therefrom, and a stop member on the window frame to prevent the disengagement of the bead from said groove when in juxtaposition with the open side of the semicircle.

5. In a metallic window, a frame and a sash, the frame having a unitary arcuate tongue providing a semi-circular groove, the sash having a unitary bead adapted to enter said groove and an arcuate wall providing a chamber to receive said tongue as shown and described, and a stop member on the window frame to prevent the disengagement of the bead from said groove when in juxtaposition with the open side of the semicircle.

6. In a window, a frame and sash, the frame having an arcuate extension, the sash having means engaging said extension for imparting pivotal movement to said sash when it is moved outwardly, and bracing brackets secured to the frame and entering openings in said sash.

7. In a window, a frame and a sash, the frame having an arcuate extension providing a groove, the sash having means engaging said groove for imparting swinging movement to said sash when it is moved outwardly and bracing devices secured to the frame and entering openings in said sash.

8. In a window, a frame and a sash, the frame having an arcuate tongue provided with a semi-circular groove and extending from top to bottom of the sash opening, the sash having means for engaging said groove to swing said sash outwardly and bracing brackets secured to the frame and entering openings in said sash.

9. In a window, a frame and a sash, the frame having an arcuate tongue provided with a semi-circular groove and extending from top to bottom of the sash opening, the sash having means for engaging said groove to swing said sash outwardly, said means comprising a bead and an arcuate wall spaced therefrom, and bracing brackets secured to the frame and engaging said sash.

10. In a window, a frame and a sash, the frame having an arcuate tongue provided with a semi-circular groove and extending from top to bottom of the sash opening, the sash having means for engaging said groove to swing said sash outwardly, said means comprising a bead and an arcuate wall spaced therefrom, and bracing brackets secured to the frame and engaging said sash, said brackets comprising base plates and arcuate lugs.

Signed at New York, in the county of New York and State of New York, this 18th day of October, A. D. 1927.

JOHN ANTAL.