

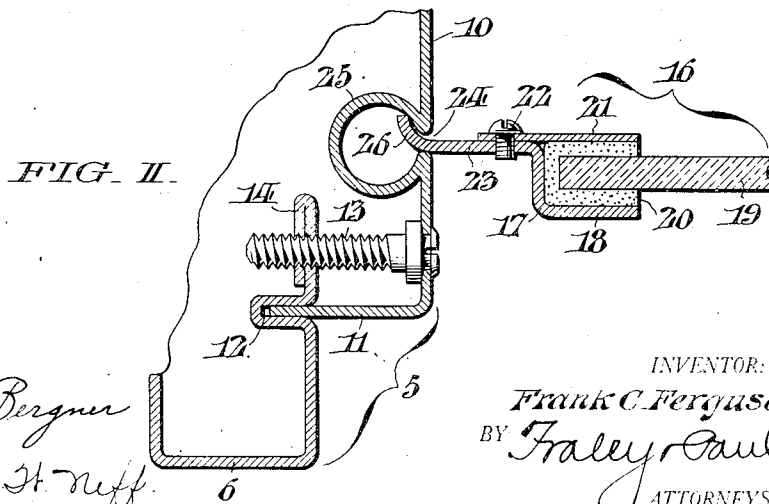
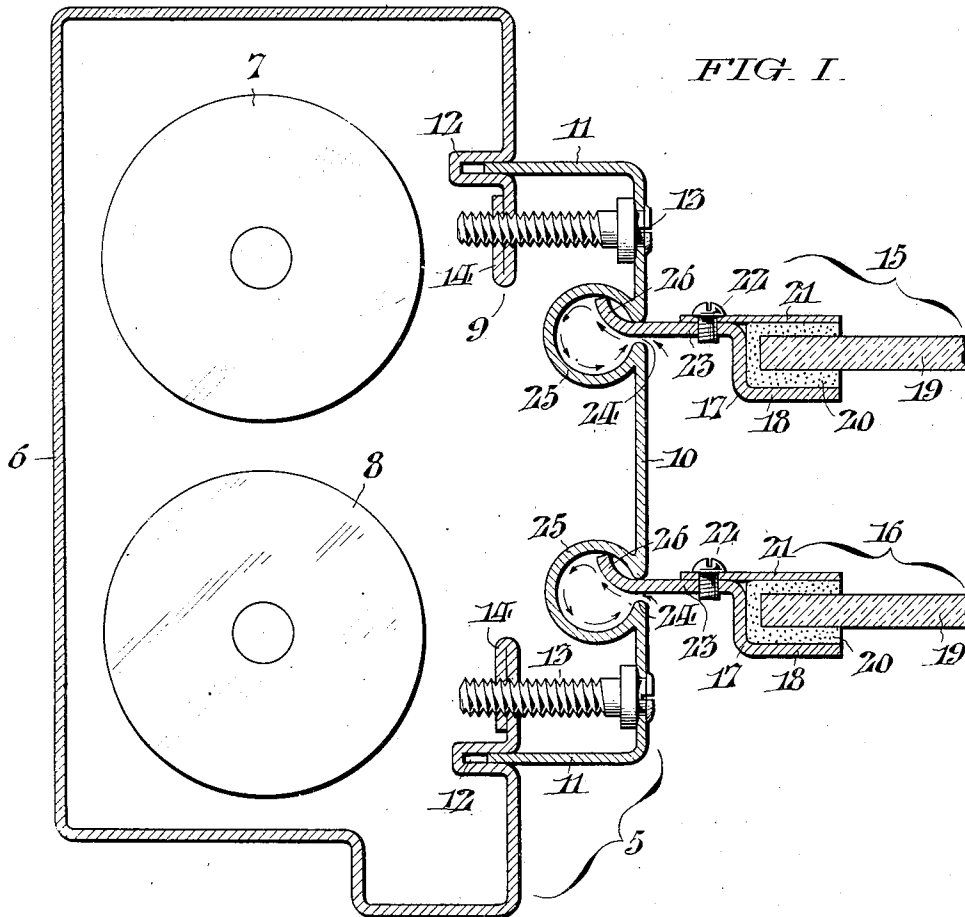
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WINDOW CONSTRUCTION

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WITNESSES

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UNITED STATES PATENT OFFICE.

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WINDOW CONSTRUCTION.

Application filed August 7, 1926. Serial No. 127,797.

This invention relates to windows—more particularly to fire-proof windows constructed from metal—and is concerned with preventing passage of drafts past the junctures between the window frame (or jamb) and the sashes. For this purpose, it has heretofore been customary to employ various types of weather strips which were attached either to the sashes or to the frame, these being not only inefficient in a good many cases, but unsightly and in the way.

One object of my invention is to dispense with the necessity for separate attachments to attain the end aforementioned through novel construction of the window parts themselves.

Another object of my invention is to offset passage of draft air by trapping and deflecting it at the regions of juncture between the window frame and the sashes.

Still another object is to enable securing of the window sashes against operation with assurance of absolute weather-tightness in the event of extreme cold and high winds.

One way in which the foregoing as well as other objects and advantages of this invention may be readily secured in practice will be apparent from the detailed description hereinafter of the typical embodiment shown in the drawings.

Fig. I is a part horizontal section of my novel window structure; and

Fig. II, a fragmentary view illustrating certain parts differently adjusted.

The frame or jamb of the window, herein comprehensively designated 5, has at each side (only one being represented) a member 6 conveniently formed from sheet metal to the hollow configuration shown to accommodate up and down movement of the sash balance weights 7, 8. The member 6 is usually known in the art as the weight box, and, in the present instance, will be observed as having an opening 9 at the inner side. This opening 9 is bridged by a part 10 which may be conveniently termed the "sash runner strip", the same having rearward flanges 11, 11 engaging grooves 12, 12 formed in the weight box 6. Supported with capacity for free rotation in bearing apertures of the sash runner strip 10 are adjusting screws 13—13 that take into the retroverted marginal edges 14, 14 of the opening 8 in the side of the weight box 6. By this arrange-

ment, the sides of the window frame 5 are rendered expansible and contractable for a purpose to be explained presently.

The upper and lower sashes 15, 16 are preferably identical in construction, each comprising a main frame member 17 which is offset as at 18 to provide a recess for the edges of the window pane 19 together with the weather packing 20, and a perimetric retaining member 21 to overlap the packing on the in-side of the sash. The member 21 may be secured by any convenient removable fastening means, such, for example, as screws whereof one is depicted at 22. As shown, the marginal portions 23, 23 afforded by the members 17, 17 of the respective sashes 15, 16, extend into guide slots 24, 24 which are coextensive with integrally-formed tubular pockets or channels 25, 25 of the sash runner strip 10. The channels 25, 25, it will be noted, are rounded in cross sectional configuration, and the sash margins 23 formed with counter-rounded flanges 26, 26.

By means of the screws 13—13 aforementioned, the sash runner strips 10—at opposite sides of the jamb 5—may be relatively adjusted to establish the normal relation of the parts shown in Fig. I,—that is to say—with the margins 23, 23 of the sashes 15, 16 running free in the associated guide slots 24, 24, while the ends of the flanges 26, 26 contact with the walls of the respective tubular channels 25, 25. Under these conditions, draft air entering through the clearances at the guide slots 24, 24 will be trapped in the channels 25, 25, and; by virtue of the rounded configuration of the latter and the counter rounding of the sash flanges 26, 26, will be whirled and deflected for expulsion at the region of entry as graphically indicated by the arrows in Fig. I, and thereby prevented from getting past the sashes 15, 16.

If desired, the sashes 15, 16 may be made absolutely weather tight in extremely cold and windy weather when there is no necessity for opening them for ventilation, by tightening up the adjusting screws 13—13. This condition is exemplified in Fig. II, from which it will be noted that through coaction between the rounded interior surface of the channel 25 and the flange edge 26, the plane of the sash 16 has been shifted forward or outward. As a consequence, the guide slot 24 is completely closed against

entrance of draft air and the flange edge 26 of the sash 16 strained into binding engagement with the wall of the channel 25.

By my invention, I have thus provided a 5 window structure with incorporated features that render it proof against passage of draft air under normal conditions, as well as with provisions whereby the sashes 10 may be secured against operation in absolute weather-tight relation to the window frame or jamb during periods of extreme cold and wind when universal ventilation is not essential or desirable.

While I have shown and described my 15 invention in connection with a fire-proof window wholly of metal, the underlying principles are obviously capable of embodiment in windows constructed from other materials with attendant advantages analogous to those herein pointed out.

20 Having thus described my invention, I claim:

1. In a window, the combination of sliding sashes, and a jamb affording tubular 25 channels with longitudinal guide slots for engaging side margins of the sashes, the channels aforesaid being rounded in cross sectional configuration and the lapped sash margins counter-rounded for cooperation in 30 whirling draft air thereby to check and prevent it from getting past the sashes.

2. In a fire proof window, the combination of sliding metallic, sashes and a hollow sheet metal jamb affording tubular channels 35 with longitudinal guide slots for engaging side flanges of the sashes, the channels aforesaid being rounded in cross section and the sash flanges counter-rounded for cooperation in whirling draft thereby to check and 40 prevent it from getting past the sashes.

3. In a window, the combination of sashes, and a jamb with longitudinal guide slots

for engaging margins of the sashes with a clearance fit, and coextensive tubular channels of rounded cross section to take counter- 45 rounded flanges of the sashes, the sides of the jamb being contractable thereby to effect binding engagement of the flanges aforesaid with the channel walls and concurrent displacement of the plane of the sashes to close 50 the guide slots for absolute weather-tightness.

4. In fireproof window construction, the combination of metallic sashes, a jamb comprising sheet metal weight boxes open at 55 their inner sides, and sash runner strips, also of sheet metal interfitted the jamb openings, said runner strips embodying integral tubular channels to take lateral flanges along the sliding edges of the sashes, and 60 means enabling adjustment of the runner strips toward the jamb sides for binding contact with the flanges aforesaid and weather-tightness.

5. In fireproof window construction, the 65 combination of sliding metallic window sashes, a jamb comprising sheet metal weight boxes open at their inner sides, and sash runner strips also of sheet metal interfitted the jamb openings, said runner strips embodying longitudinal guide slots and coextensive tubular channels of rounded cross section to take counter-rounded flanges of 70 the sashes, and means enabling adjustment of the runner strips toward the jamb sides thereby to effect binding engagement of the flanges aforesaid with the channel walls, and concurrent displacement of the plane of 75 the sashes for closure of the guide and slots and absolute weather-tightness. 80

In testimony whereof, I have hereunto signed my name at Philadelphia, Pennsylvania, this 4th day of August, 1926.

FRANK C. FERGUSON.