Jan. 27, 1925. 1,524,485

C. J. McINTOSH.

METAL WINDOW SASH

Filed April 23, 1923

Fig. 1.

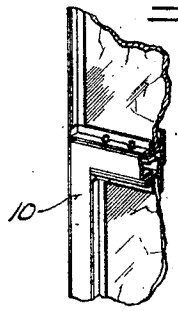


Fig. 3.

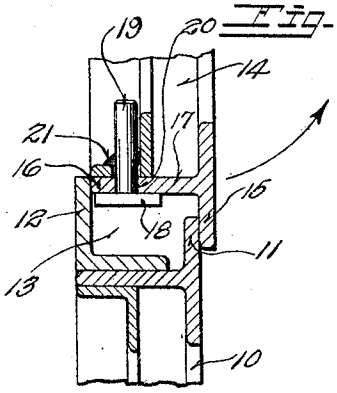
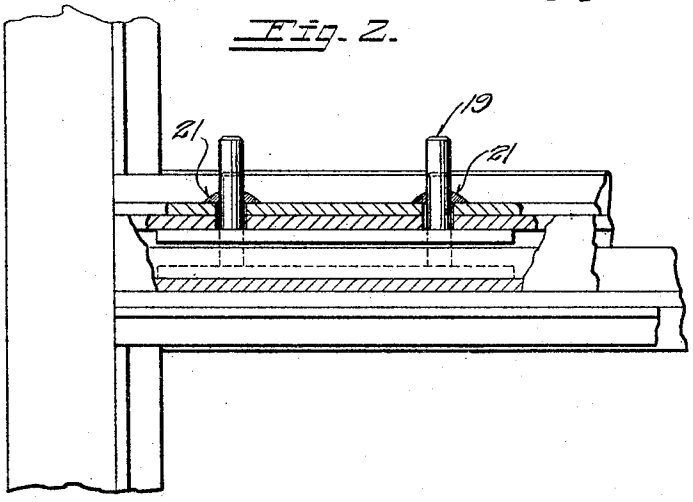


Fig. 2.



INVENTOR.

Charles J. McIntosh.

BY

Morsell, Keeney & Morsell

ATTORNEYS.

Patented Jan. 27, 1925. 1,524,485

UNITED STATES PATENT OFFICE.

CHARLES J. McINTOSH, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO FEDERAL STEEL SASH COMPANY, OF WAUKESHA, WISCONSIN, A CORPORATION OF WISCONSIN.

METAL WINDOW SASH.

Application filed April 23, 1923. Serial No. 633,941.

To all whom it may concern:

Be it known that I, CHARLES J. McINTOSH, a citizen of the United States, and resident of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Metal Window Sashes, of which the following is a description, reference being had to the accompanying drawings, which are a part of this specification.

This invention relates to improvements in metal window sashes, and more particularly to a locking means for preventing the sashes from bulging outwardly and separating under the strain of intense heat, due to fire.

Heretofore it has been customary to provide locking devices of ordinary construction for securing the window sash in closed position, one locking device being employed in connection with sashes of ordinary size, and double locks on sashes of greater size. However, it has been found that in case of fire, the intense heat causes the sash to bulge and separate between the locking parts, thus permitting an escape of the flame and air between the sashes, thus increasing the fire risk and hazard.

To overcome this, the underwriters now require that all locks labeled and approved by them conform to certain specifications regarding dependability and security in case of fire. To meet the requirements with the use of the ordinary type of locking device, would require the provision of locking means at short intervals along the edge of the sash, thus rendering the cost of the sash prohibitive, and making the same extremely difficult to lock and unlock, inasmuch as each separate locking means would of necessity have to be actuated each time the window was opened or closed.

The primary object of this invention is, therefore, to provide a locking device separate and independent from the ordinary locking devices, which locking device is designed to function only in case of fire. Therefore, sashes equipped with this improved locking arrangement may be, under ordinary circumstances, locked and unlocked in the usual manner, but in the event of fire, the supplemental or independent locking means will function to securely lock the sash in place throughout its entire width, thus complying with the underwriter's requirements in every respect.

The novel combination, construction and arrangement of parts of this improved invention will be made more apparent as this description proceeds, especially when considered in connection with the accompanying drawings, wherein:

Figure 1 is a fragmentary perspective view of a portion of a window sash and frame, constructed in accordance with this invention;

Fig. 2 is an enlarged fragmentary vertical sectional view, partly in elevation; and,

Fig. 3 is an enlarged transverse fragmentary vertical sectional view.

Referring now more particularly to the drawings wherein like reference characters indicate like parts, it will be noted that there is illustrated a window frame 10 formed with an upwardly extending flange 11 and a second flange 12, spaced therefrom, and forming therebetween a channel 13. The reference character 14 indicates a window sash which is formed with a flange 15. The sash is adapted to swing in the direction of the arrow (see Fig. 3) and in its closed position is adapted to engage the flanges 11 and 12 of the window frame with its flange 15 and its inner edge 16, respectively. This double contact between the sash and frame provides a double seal, thus insuring a tight closure between the parts.

Below the rim portion 17 of the sash, is a locking bar or member 18, which may extend any length horizontally of the sash. Projecting from this locking bar is a plurality of supporting pins, 19, which pass loosely through a plurality of apertures 20, formed in the rim 17 of the sash. Thus the locking bar 18 is loosely supported upon the sash so that the same may drop by gravity to the channel 13, formed by the pair of window frame flanges. The locking bar 18, in its lowermost position illustrated in dotted lines in Fig. 2, locks the sash to the frame, as will be immediately apparent.

Inasmuch as this locking means is employed only in case of fire, the bar is maintained in its upper or inoperative position by fusible means, such for instance as fus-

ible solder 21, which partly surrounds the pins 19 at the point at which they pass through the sash.

As mentioned hereinbefore, the locking means forming the subject matter of this invention is independent and separate from the usual window locks employed, and therefore the window under ordinary conditions, may be opened and closed in the usual manner, the locking bar being maintained in the position illustrated in full lines in Fig. 3, by the fusible means. In case of fire, however, the fusible solder will melt and the locking bar 18 will thus automatically drop downwardly to the dotted line position shown in Fig. 2, whereupon the sash will be locked throughout its length and firmly maintained in its locked position, thus preventing the same from bulging or becoming displaced outwardly by explosions or other heat strains. In its lower position the bar 18 rests in the channel formed by the spaced flanges of the window frame.

While the invention has been illustrated as embodied in one particular type of window sash and frame construction, it will be obvious that the invention is not limited in its use to this particular type of construction, but may be employed with equal facility in various standard types of windows without departing from the spirit and scope of the invention, and to this end reservation is made to make such changes in the invention as may come within the purview of the accompanying claims.

Having thus described the invention what is claimed is:

1. In an arrangement of the class described, a window frame formed with a pair of spaced flanges, a sash formed with a flange, said sash engaging said frame flanges with its edge and flange respectively to form a seal, a locking bar extending along said sash, means vertically slidably mounting said bar on said sash, said bar engaging between said frame flanges in its locked position and fusible means normally rigidly securing said mounting means to said sash in inoperative position.

2. In an arrangement of the class described, a window frame formed with a pair of spaced flanges, a flanged sash engaging said frame flanges in its closed position, a locking bar extending across said sash adjacent said frame, pins projecting from said bar and engaging apertures formed in said sash for slidably supporting said bar, said bar engaging said frame flanges in its locked position and fusible material engaging said pins and sash for holding said bar inoperative.

3. The combination with a window frame formed with a pair of spaced flanges of a swinging sash engaging said frame flanges in its closed position, a gravity actuated locking bar, pins secured to said bar and engaging apertures in said sash for slidably mounting said locking bar thereon, said locking bar dropping between said frame flanges in its locked position and fusible material engaging said pins and sash for holding said locking bar inoperative.

In testimony whereof, I affix my signature.

CHARLES J. McINTOSH.