

O. H. IMAN.
FIREPROOF WINDOW WITH DETACHABLE MUNNION BARS.
APPLICATION FILED MAY 2, 1910.

1,017,760.

Patented Feb. 20, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

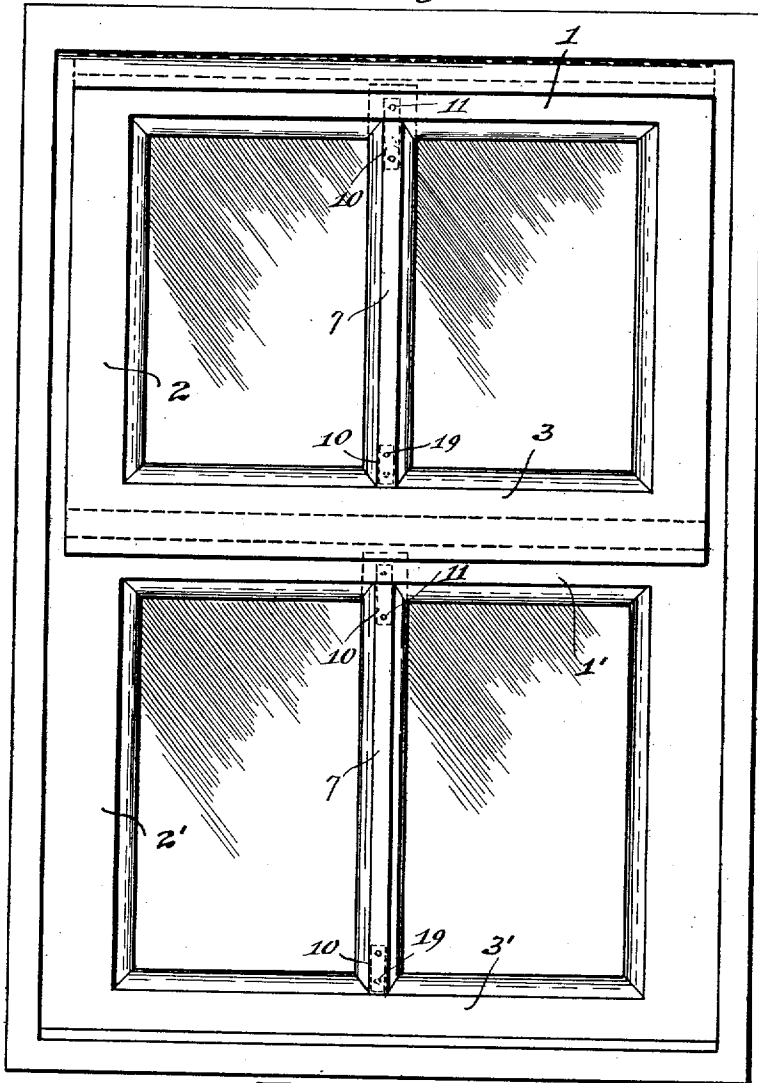
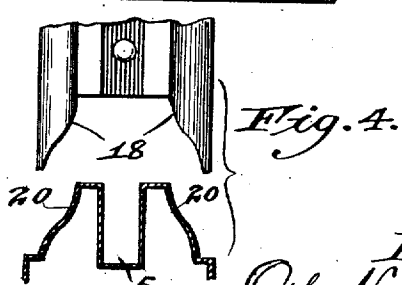
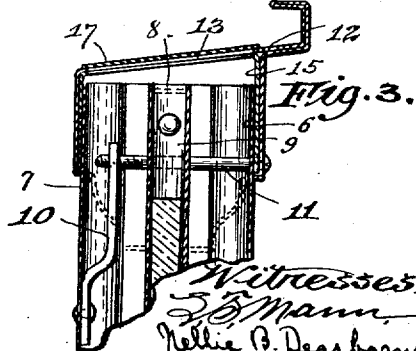
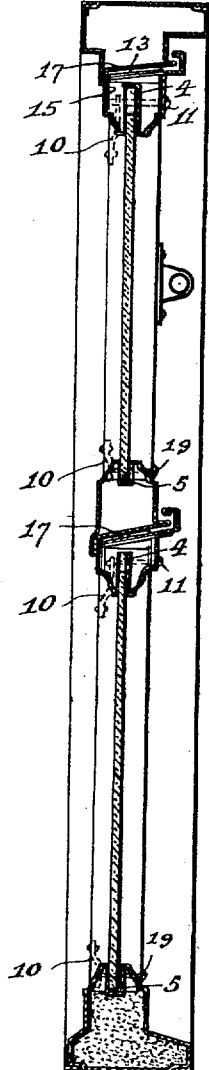


Fig. 2.



Witnesses,
J. B. Mann,
Nellie B. Dearborn
Inventor,
Orla N. Iman,
By O'Fallon & Co., Attorneys

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Fig. 5.

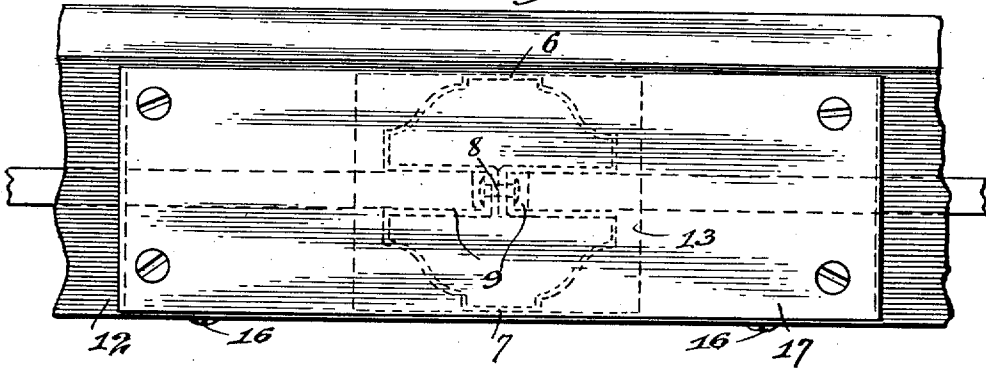
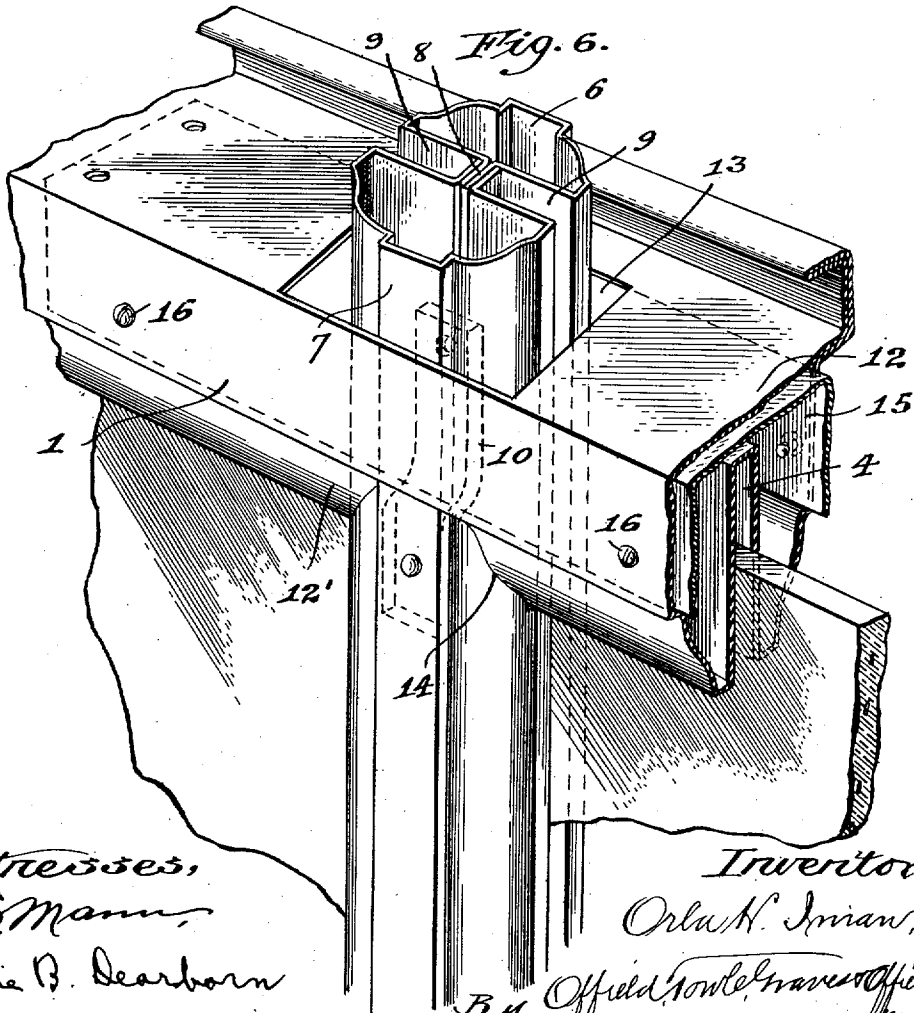


Fig. 6.



Witnesses,
S. E. Mann,
Nellie B. Dearborn

Inventor,
Orla H. Iman,

By *Offield Howle* Attorney

UNITED STATES PATENT OFFICE.

ORLA H. IMAN, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO FRANK VOIGTMANN, OF CHICAGO, ILLINOIS, AND SILAS H. POMEROY, OF NEW ROCHELLE, NEW YORK.

FIREPROOF WINDOW WITH DETACHABLE MUNNION-BARS.

1,017,760.

Specification of Letters Patent.

Patented Feb. 20, 1912.

Application filed May 2, 1910. Serial No. 559,023.

To all whom it may concern:

Be it known that I, ORLA H. IMAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Fireproof Windows with Detachable Munnion-Bars, of which the following is a specification.

This invention relates to improvements in fireproof windows with detachable munnion bars, and has for its salient objects to provide a construction in which the panes or glazing of the fireproof window may be seated in grooves formed as integral structural parts of the surrounding frame, except only as to the edges which engage the munnions, which latter are made removable, and by reason of being removable make it possible to assemble the panes in position; to provide a construction of the character above described in which each munnion bar is formed of permanently united parts, as distinguished from those heretofore used in which half of the munnion bar is made removable and is detachably secured by screw bolts or screws; to provide a construction which is suitable for embodiment in windows having movable or removable sash, as well also in so-called stationary windows in which the glazing is seated directly in the window frame; to provide a construction which embodies in the highest degree fire resisting and fireproof qualities; to provide a construction which may be very economically made and assembled, and also provides for convenient and ready disassembling; to provide a construction which lends itself to the minimizing of window-opening space occupied by the munnions or dividing bars; and in general, to provide an improved construction of the character referred to.

In the art of so-called fireproof window construction it is well recognized that it is of prime importance that the edges of the wire glass panes be seated in grooves formed as integral structural parts of the surrounding sash frame, in so far as this is possible. Patent No. 626,698, issued June 13, 1899, to George Hayes, and Patent No. 702,754, issued June 17, 1902, to William D. Watson, constitute the prior art, so far as I am aware, bearing upon this subject.

The invention of the present application will be readily understood from the follow-

ing description, reference being had to the accompanying drawings, in which—

Figure 1 is an inside elevation of a window embodying my invention; Fig. 2 is a vertical sectional view taken through the munnion at right angles to the view shown in Fig. 1; Fig. 3 is a vertical sectional detail taken in the same plane as Fig. 2 and showing on a larger scale the upper edge portion of the lower stationary sash; Fig. 4 is a detail showing the lower end of one of the munnion bars in edge elevation, and the grooved portion of the bottom rail, upon which the munnion bar fits, in cross section; Fig. 5 is a plan view of the central portion of the upper or movable sash of the window; Fig. 6 is a perspective view of the same parts shown in Fig. 5, and associated parts; the closure plate being removed and the munnion partially withdrawn.

Sheet metal fireproof windows as now almost universally constructed, have hollow sheet metal frame-work throughout to receive the glazing; the hollow frame-work with its inclosed air spaces serving to better resist fire, and being subject to less distortion and warping by the action of heat than solid metal or partially solid metal constructions. The preferred embodiment, therefore, of my present invention comprises frame members of hollow sheet metal construction.

The window frame may be of any suitable and usual construction throughout, except only in so far as concerns the detachable munnions and grooves to receive the glazing.

In the preferred embodiment shown, the grooves in the top rail 1 of the movable sash and in the corresponding rail 1' of the stationary sash, the grooves in the side rails 2 and 2' of the movable and stationary sash, and the grooves in the bottom rails 3 and 3' of the movable and stationary sash, are all formed as integral structural parts of the corresponding frame members, and preferably, and as shown, take the form of grooves with closed bottoms, as shown more clearly in Figs. 2, 4 and 6, wherein 4 designates the groove in the upper rail, and 5 the groove in the lower rail. The depth of the grooves in the side and bottom rails of both the movable and stationary frames is desirably just sufficient to accommodate the edges of the

panes of glass, *i. e.* these grooves have no considerable excess depth, but the grooves in the top rails 1 and 1' are made approximately twice as deep as is necessary to normally hold the edges of the panes, as best shown in Fig. 6. Moreover, the top grooves 4 are made continuous across the full width of both panes, so that a pane of glass having its upper edge inserted and engaged with one of these upper grooves may be slid along laterally in either direction. With the munnion bars detached and bodily removed, it will be obvious that the panes of glass may be inserted by slipping the upper edge of each pane into the deep upper groove while allowing the lower edge of the pane to rest against the face of the bottom rail, lifting the pane after being thus entered until its lower edge clears the bottom rail, then swinging said lower edge inwardly into the plane of the grooves, dropping the lower edge into the bottom groove, and then shifting the pane bodily laterally until its side edge properly engages the groove of the side rail. After the two panes have been thus inserted in the sash, their edges will be separated by a space which is to accommodate the munnion bar, which latter is inserted endwise bodily through one of the upper or lower rails of the sash and passed key-fashion between the edges of the panes.

Describing, now, in detail the preferred construction and arrangement of the munnion bar and associated parts, and referring to Figs. 5 and 6, each munnion bar is preferably formed of two similar hollow molding-like members 6 and 7 having the lateral edges of the blanks from which they are formed extending outwardly at right angles from the median lines of their inner faces and telescoping each other, as clearly shown in Figs. 5 and 6, to form a connecting web 8. The overlapping parts of this web are riveted together at intervals apart to permanently unite the two halves of the munnion bar, and the web serves to space the members 6 and 7 apart to form grooves 9 for the reception of the inner edges of the panes of glass.

As a convenient means of reliably securing the munnions in assembled position, one-half is provided near each end with a strap-like metal reinforcement 10 (see Fig. 3), one end of which is permanently riveted to the wall of the munnion member and the other bent to stand outwardly away from the wall, and apertured and threaded to receive a screw bolt 11. In the preferred construction shown the munnion bar is inserted through the top rail of the movable sash and through the corresponding rail of the stationary sash. A description of the mechanism of one is practically a description of the other. Referring more particularly to Figs. 5 and 6, it will be seen that

through the upper outer wall 12 of the top rail 1 is formed an opening (rectangular) 13 large enough to permit the munnion bar to be inserted endwise, while through the opposed lower wall 12' of the top rail is formed a corresponding opening, the periphery or boundaries of which 14 conform accurately to the outside contour of the munnion bar. The munnion bar is of a thickness less than the thickness of the sash frame, so that these apertures do not cut into or interfere with the side walls of the rail. As a means of reinforcing the top rail where thus weakened by the apertures therethrough, a channel shaped sheet metal reinforcement 15 is fitted accurately inside this part of the rail in inverted position, its bottom wall resting against the inner face of the top wall of the rail, and being secured in place by suitable screws or rivets through the side walls of the parts, as indicated at 16. A removable cap plate 17 is arranged to overlie the opening 13; this plate being applied after the munnion has been inserted and being secured by a plurality of screws inserted therethrough and into the channel-like reinforcement 15. The lower end of the munnion is preferably cut out, as indicated at 18 (Fig. 4), to fit accurately upon the grooved portion of the lower sash rail, instead of intersecting the latter, and said lower end is secured in position by a screw 19 (see Fig. 2) passed through the recessed portion of the munnion bar, through the embraced portion 20 of the lower sash rail and into the corresponding reinforcement 10. The munnion bar is, of course, made of such length that when inserted in position and engaged with the lower rail its upper end terminates inside of the top rail of the sash.

It will, of course, be obvious that the invention is applicable to a window provided with a plurality of munnion bars in the same sash; that horizontal munnion bars may be constructed and assembled as well as vertical munnion bars, and that while the preferred construction shown and described embodies hollow sheet metal construction, the invention is nevertheless equally available for solid metal construction either in whole or in part.

I claim as my invention:

1. In a window, the combination with a frame adapted to receive a plurality of panes of glass and provided in its inner perimeter with integral-structure channels permanently closed at their bottoms to receive the edges of the glass, of a munnion bar forming a unitary structure and insertible endwise through one of the side members of the frame and between and in engagement with the proximate edges of adjacent panes of glass.

2. In a fireproof window construction,

the combination with a window frame adapted to receive a plurality of panes of glass and provided around its inner perimeter with integral-structure grooves permanently closed at their bottoms to receive the edges of the glass, of a munnion bar grooved at its opposite sides to receive and hold the proximate edges of panes of glass, said frame being provided with an opening in one of its sides in which said munnion bar is insertible as a unitary structure and means for securing the end of the munnion to the frame.

3. In a fireproof window construction, the combination with a window frame adapted to receive a plurality of panes of glass and provided in its inner perimeter with integral-structure grooves for the edges of the glass, a portion of said grooves being of excess depth to permit the insertion of the panes of glass in the grooves, and a munnion bar grooved at its opposite sides to receive the proximate edges of panes of glass and insertible endwise as a unitary structure.

4. In a fireproof window, the combination with a window frame adapted to receive a plurality of panes of glass and grooved to receive the external edges of said glass, of a munnion bar formed as a unitary structure, grooved at its opposite sides to receive the proximate edges of panes of glass between which it is insertible, said frame being provided with an inlet opening through one of its sides, through which the munnion bar is insertible endwise, a reinforcement applied to the part of the frame weakened by the aperture therethrough, and means for securing the opposite ends of the munnion to the frame.

5. In a fireproof window construction, the combination with a sash frame adapted to receive a plurality of panes of glass and provided with permanently closed channels at its perimeter, the channels of the upper sash rail being of excess depth to permit the insertion of panes of glass, and a munnion bar removable endwise through the frame as a unitary structure.

6. As a new article of manufacture, a glazing frame for panes of glass comprising an outer surrounding frame having grooves at its perimeter closed at their bottoms to receive the panes of glass, the grooves at the upper end of the frame being of excess depth to permit the insertion of panes of glass, and a munnion insertible endwise in said frame as an entirety and having grooves to receive the proximate edges of the glass, said grooves being likewise closed at their bottoms.

7. As a new article of manufacture, a glazing frame for windows, comprising an outer surrounding frame and a munnion, said munnion being removable endwise through the frame in its entirety, and the glass receiving grooves of the frame being permanently closed channels.

8. As a new article of manufacture, a glazing frame for panes of glass, comprising an outer surrounding of glass having glass receiving channels at its perimeter permanently closed at their bottoms and a munnion insertible endwise through the frame as a unitary structure.

ORLA H. IMAN.

Witnesses:

ALBERT H. GRAVES,
EMILIE ROSE.