N. BALOIAN.

PANE FASTENER.

APPLICATION FILED SEPT. 17, 1910.

1,017,196.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.

Fig. 1.

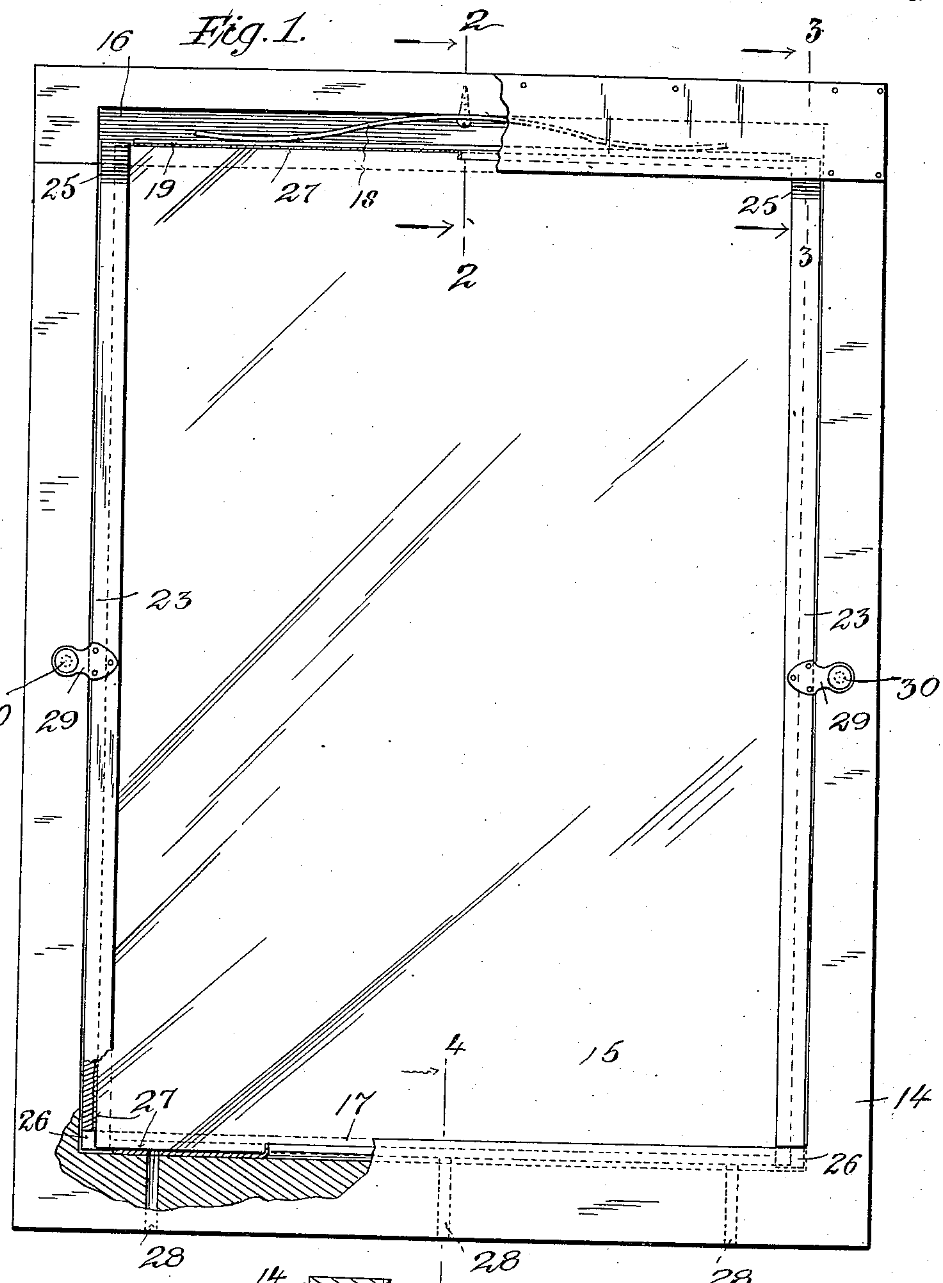
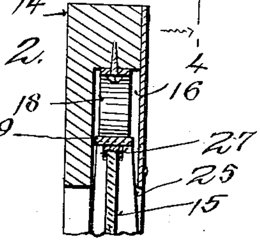


Fig. 2.



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2 SHEETS—SHEET 2.

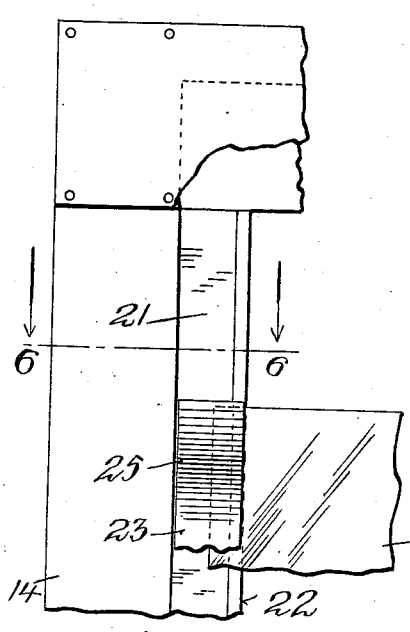

Fig. 5.

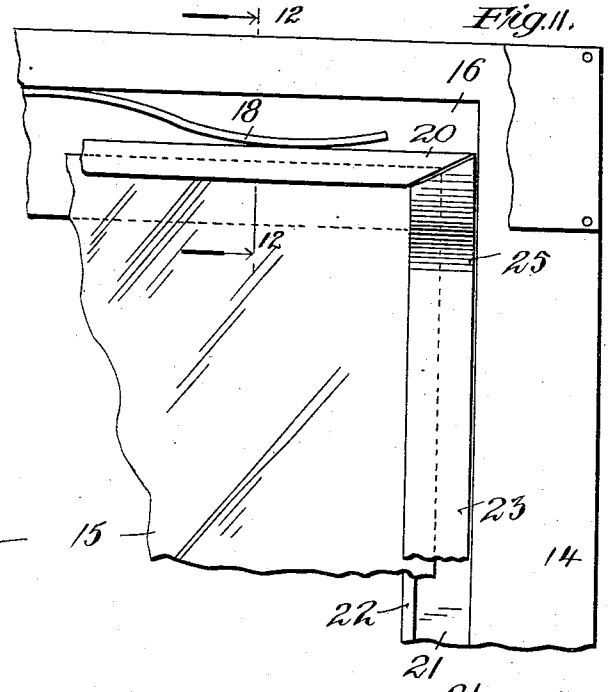

Fig. 11.

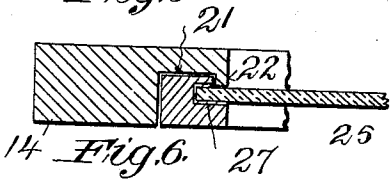

Fig. 6.

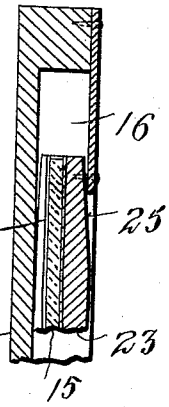

Fig. 3.

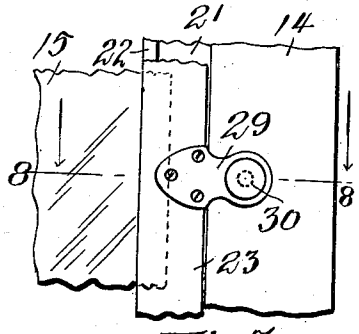

Fig. 7.

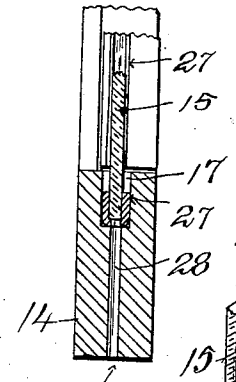

Fig. 4.

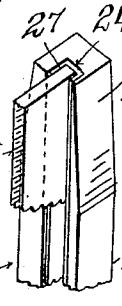

Fig. 9.

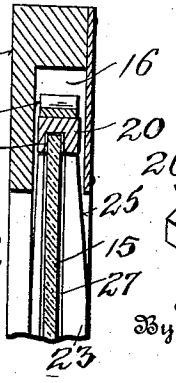

Fig. 12.

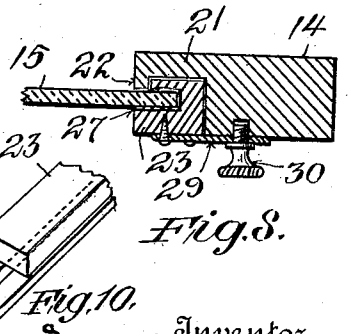

Fig. 8.

Fig. 10.

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PANE-FASTENER.

1,017,196. Specification of Letters Patent. Patented Feb. 13, 1912.

Application filed September 17, 1910. Serial No. 582,450.

To all whom it may concern:

Be it known that I, NAZARETH BALOIAN, a citizen of the United States, residing in the city, county, and State of New York, have made a certain new and useful Invention in Pane-Fasteners, of which the following is a specification.

This invention relates to removable glass panels for window frames and the like.

The object of the invention is to provide a construction to permit the ready removal and replacement of glass or other panels in window frames or the like.

A further object of the invention is to provide a construction for removable glass panels, which is simple and efficient, and wherein the glass panel when inserted in place in its frame is held securely and prevented from rattling.

Other objects of the invention will appear more fully hereinafter.

The invention consists substantially in the construction, combination, location, and relative arrangement of parts, all as will be more fully hereinafter set forth, as shown in the accompanying drawing, and finally pointed out in the appended claims.

Referring to the accompanying drawings, and to the various views and reference signs appearing thereon, Figure 1 is a view in front elevation, parts broken out and parts in section, showing a glass panel and frame embodying the principles of my invention. Fig. 2 is a broken detail view in section on the line 2, 2, Fig. 1, looking in the direction of the arrows. Fig. 3 is a similar view on the line 3, 3, Fig. 1, looking in the direction of the arrows. Fig. 4 is a similar view on the line 4, 4, Fig. 1 looking in the direction of the arrows. Fig. 5 is a broken view in elevation, parts broken out, showing the glass panel partially withdrawn from its frame. Fig. 6 is a broken view in section on the line 6, 6, Fig. 5, looking in the direction of the arrows. Fig. 7, is a broken view in elevation showing a locking means for the removable panel. Fig. 8 is a broken view in section on the line 8, 8, Fig. 7, looking in the direction of the arrows. Fig. 9 is a broken detail view in perspective of the entering end of the removable panel and one of its side pieces. Fig. 10 is a similar view of the other end thereof. Fig. 11 is a view similar to Fig. 1, showing a slightly modified arrangement embodying my invention. Fig. 12, is a broken view in section on the line 12, 12, Fig. 11, looking in the direction of the arrows.

The same part is designated by the same reference numeral wherever it occurs throughout the several views.

Difficulty has heretofore been experienced in removing glass panels from windows, window frames, or the like, on account of having to first remove the heads, or putty or other means for retaining the glass panel, pane, or the like, in place. This operation is rendered still more difficult in the case of metal frames, and consequently broken glass panels or the like cannot be replaced, or panels cannot be removed or changed without incurring expense, and frequently the danger of injury to the pane or panel. It is among the special purposes of my present invention to provide a simple and efficient structure of removable panel whereby the glass panel may be easily and readily detached and removed from its frame, or replaced with ease and without necessitating the removal of holding beads or putty strips.

In the drawings I have shown practical exemplifications of my invention wherein 14 is a frame in which the removable panel 15, is to be received. This may be a window frame or any other frame or structure requiring a glass or other panel, pane, or the like. In the form shown for illustrative purposes the frame 14 is rectangular and is provided with side and end pieces designed to receive the edges of the glass or other panel 15. One end piece of the frame, which, for convenience, I will call the upper end piece, is recessed in its inner edge, as shown at 16, to receive the corresponding end or edge of the removable panel. In practice I prefer to arrange a spring within the recess 16, which imposes a yielding tension on the end of the removable panel while it is being inserted in the recess, and which, when the panel is in place in its holding frame, serves to press the opposite end or edge of the panel firmly home in a similar recess 17, formed in the other end piece of the frame, which, for convenience, I will call the bottom end piece. I have shown the spring referred to, as a leaf spring 18, seated in the recess and having its ends arranged to exert their tension upon the edge of the panel. My invention, however, as defined in the claims, is not to be restricted or limited to any particular form or construction of spring.

Instead of the ends of the spring 18 bearing directly upon the edge of the glass panel, I prefer to interpose a strip between the spring and the edge of the panel, thereby equalizing the spring tension. This may be a loose strip as indicated at 19, Figs. 1 and 2, or it may be a grooved strip applied over the edge of the glass or other panel, as shown at 20, in Figs. 11 and 12.

The side pieces of the frame 14, are provided with inwardly extending portions 21, see Figs. 5, 6, 7, 8 and 11, which are provided with a laterally extended bead 22, at their inner edges, thereby forming a channel to receive, guide and hold in place the side pieces of the panel while and after being inserted in place.

The glass or other panel 15, is provided with side pieces 23, which are longitudinally grooved or recessed to receive snugly the side edges of the panel or pane, as clearly indicated at 24, Fig. 9. The side surface of these side pieces which fit the channels formed in the portions 21 of the frame 14, are preferably of such dimension as to fit snugly into place between the bead 22, and the inner wall of the main body part of the frame side pieces.

In order to facilitate the insertion of the top edge of the panel into the recess 16, I prefer to slightly bevel the upper ends of the panel side pieces 23, as clearly indicated at 25, Figs. 1, 2, 3, 5, 9, 11 and 12, and in order that the other or bottom edge of the panel may be efficiently and easily received and held in the groove or recess 17 in the bottom end piece of the frame, I prefer to form the lower ends of the panel side pieces 23, with a rabbet 26, see Fig. 10, which may readily enter the groove 17.

Where the strip 20 is applied to the upper edge of the panel it may be applied in the same manner as the side pieces 23, as clearly shown in Figs. 11 and 12.

If desired, and in order to prevent ingress of dust or dirt, and to prevent rattle of the pane, the recesses in the side and end pieces 23 and 20, and in the bottom frame piece, in which the edges of the panel are received, may be lined as indicated at 27, with some suitable material such as felt, rubber, leather or the like. This, however, is not essential and may be omitted if desired.

Where a removable panel structure embodying my invention is exposed to the rain or to snow, as when employed in connection with a window for houses, cars or the like, water or moisture is liable to collect in the recess 17, in the lower frame piece. To take care of this I propose to provide said end piece with suitable ducts or passages 28, to serve as drains for the recess 17.

It may sometimes be desirable to secure the panel in place when once inserted in the frame 14. To accomplish this I provide the panel side pieces 23, with ears 29, arranged to extend over the adjacent surface of the side pieces of the frame 14, and to be secured thereto by the screws 30, which may also serve as handles to hold the panel while being inserted in the frame, or removed therefrom.

The operation of inserting and removing the panel is very simple and easily effected. To insert the panel into the frame what I have called the upper edge of the panel, with the beveled ends 25 of its side pieces, is inserted into the recess 16, and with sufficient pressure to cause the spring to yield sufficiently for the lower edge of the panel, and the rabbeted ends 26 of its side pieces 23 to be received in the recess 17 in the bottom piece of the frame. When inserted fully home the inner faces of the side pieces 23 of the panel fit snugly down into the channels formed by the portions 21 of the frame sides, and their beads 22. In this position the panels are secured in place by the screws 30. To remove the panel, screws 30 are loosened and the panel moved endwise against the action of the spring 18 sufficiently to enable the lower edge of the panel, and the lower ends of its side pieces, to be withdrawn from recess 17, when the panel can be taken out by a lateral pressure in an easily understood manner.

It will be observed that the lateral beads 22 serve to form channels in the side frames 14 in which the side pieces 23 fit. This fit may be snug to prevent rattling, and any unevenness or inaccuracies of manufacture or assembling of the parts will be taken up by the pane 15, the edges of which are received in the recesses 24, and are cushioned therein by the felt or other filler lining 27. In this manner the side members 23 are made to fit snugly in their seats and are thereby prevented by the beads 22 from rattling through sidewise movement. Moreover, the glass pane or panel 15, bears against the lateral beads 22, and hence only one joint is presented for access of rain. This joint occurs on the outside of the pane, and if the bead 22 were omitted there would be two joints for rain or moisture to gain access through, and being the joint between the pane and its recess 24 and the other between the member 23 and its seat 21. Both these joints are protected from access of rain by the single joint between the pane 15 and bead 22.

From the foregoing description it will be seen that I provide an exceedingly simple and efficient construction of removable glass or other panel, wherein dust or dirt or moisture is excluded, and wherein looseness or rattle is avoided.

While my invention is well adapted for use in connection with any removable glass panel, pane or the like wherever required, it

is particularly well adapted for use in connection with metal frames, and especially for windows of steel street or railway cars.

Having now set forth the object and nature of my invention and various constructions embodying the principles thereof, what I claim as new and useful, and of my own invention, and desire to secure by Letters Patent, is,—

1. In a removable panel structure, a frame having side and end pieces, said end pieces having grooves or recesses in their opposed faces, said side pieces having inwardly extending flanges adjacent one of the side surfaces thereof to form open side seats, the inner surface of the side piece adjacent the open sided seat therein forming a wall of the seat, a panel having side pieces, said side pieces adapted to be received flatwise in said seats, the ends of the panel adapted to be removably received in the grooves or recesses in the frame end pieces.

2. In a removable panel structure, a frame having opposite side and end pieces, said side and end pieces having longitudinal grooves in the opposed faces thereof, one of the walls of the groove in each side piece being of less transverse width than the other to form an open sided seat or guideway of said groove, a panel having its end edges received in the grooves of the end frame pieces, and its side edges adapted to be received flatwise in the open sided seats or guideways of the frame side pieces, and means for yieldingly opposing the insertion of one of the panel ends in the groove of one of the frame end pieces.

3. In a removable panel structure, a frame having opposite side and end pieces with longitudinal grooves in the opposed faces thereof, one of the walls of the groove in each side piece being of less transverse width than the other to form an open sided seat or guideway of said groove, a panel having strips applied to opposite faces thereof adjacent and parallel to its side edges, one end of each of said strips being beveled, said strips adapted to be received in the open sided seats or guideways in the frame side pieces, the end edges of the panel being received in the grooves in the frame end pieces, the beveled ends of the strips being received in the groove of one of the frame end pieces, and means for yieldingly opposing the insertion of one end of said panel into the groove of the corresponding frame end piece.

4. In a removable panel structure, a frame having side and end pieces, the end pieces having recesses, and the side pieces having channels, a panel having side pieces applied thereto, the ends of said panel side pieces and the corresponding ends of the panel arranged to be received in the recesses in the frame end pieces, the side surfaces of the panel side pieces being received, held, and guided in the channels of the frame side pieces, and means for yieldingly opposing the insertion of one end or edge of the panel into the corresponding recess in the frame end piece.

5. In a removable panel structure, a frame having side and end pieces, said end pieces having grooves or recesses in their inner opposed faces, said side pieces having inwardly extending flanges adjacent one of the side surfaces thereof, said flanges having laterally extending ribs or beads at their inner edges, forming, with the inner surface of the side pieces, an open sided seat, a panel having side pieces adapted to be received flatwise in said seats, the ends of the panel adapted to be removably received in the grooves or recesses in the frame end pieces.

In testimony whereof I have hereunto set my hand in the presence of the subscribing witnesses, on this 13th day of September A. D., 1910.

NAZARETH BALOIAN.

Witnesses:

GARABED BALOIAN,

SAMUEL E. DARBY.