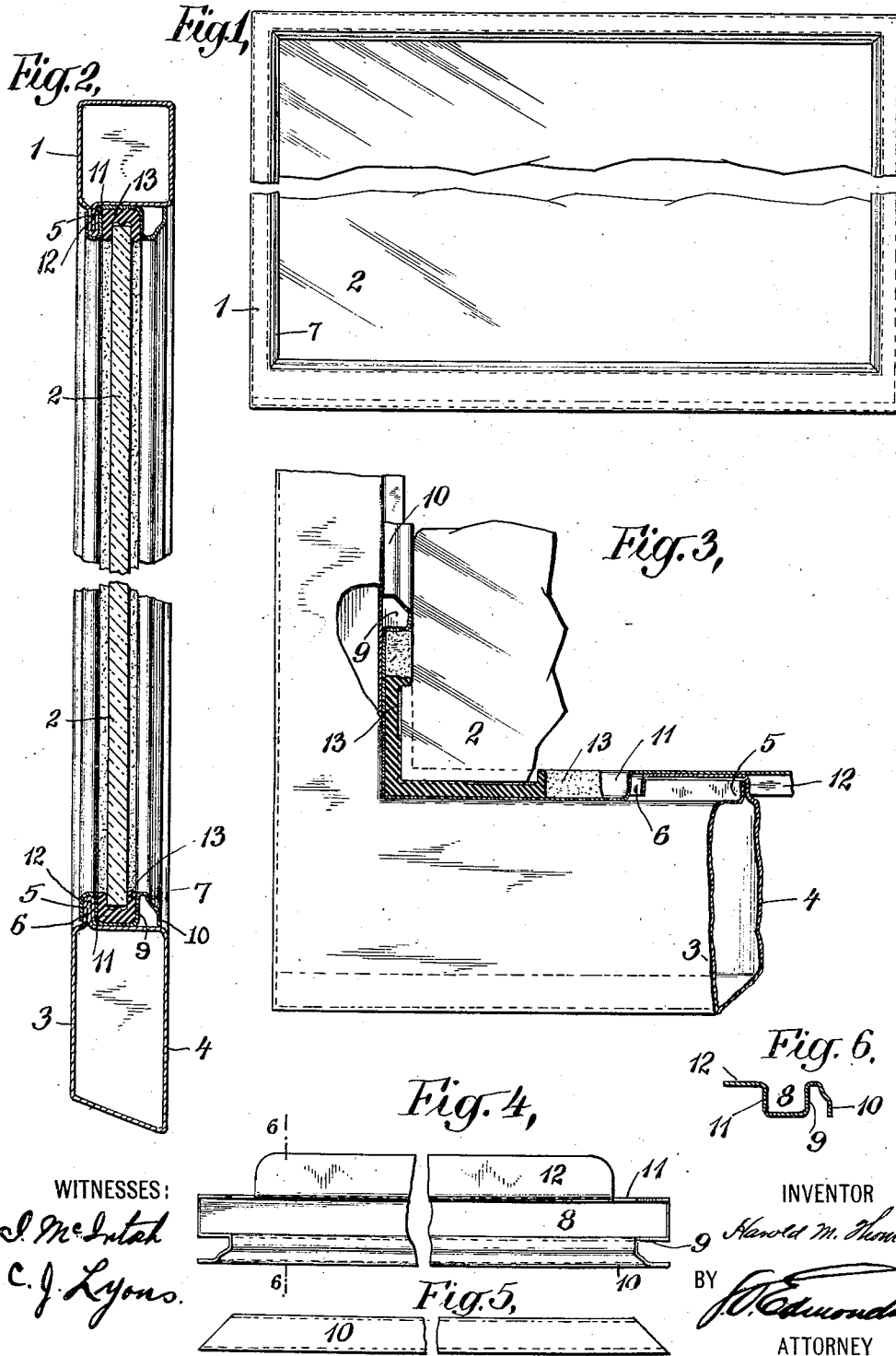


H. M. THOMAS.
WINDOW.
APPLICATION FILED JULY 29, 1910.

1,017,235.

Patented Feb. 13, 1912.



WITNESSES:
J. McIntosh
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Fig. 6.
12
11
8
9
10

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WINDOW.

1,017,235.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed July 29, 1910. Serial No. 574,468.

To all whom it may concern:

Be it known that I, HAROLD M. THOMAS, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Windows, of which the following is a specification.

This invention relates to metallic window-sashes and is directed particularly to the provision of a novel construction of sash which is an improvement over those heretofore used with respect to the means employed for positioning the glass within the sash.

In the construction of buildings, railway cars and other structures it has been found highly desirable to use metallic window frames and sashes and in the construction of such sashes it has been common to use strips of sheet steel, bending these to a rectangular cross-section to form the members of the sash. Furthermore it has been common to provide a flange on the sash extending inwardly thereof and serving to position the pane of glass; but this glass has heretofore been commonly secured in position by means of screws, bolts or rivets entering the thin sheet steel of the sash or the flange above mentioned. Such securing means for the glass have not been entirely satisfactory for the reason that the sheet steel employed is so thin that the hold of a screw thereon cannot always be relied upon and certain of the parts may loosen under the jarring to which the structure is subjected causing a disagreeable rattling noise and requiring repair.

The object of my invention is to provide an improved form of securing means for the glass which is very simple in construction and can, therefore, be manufactured at low cost, which permits of readily assembling the structure at small expense, which is attractive in appearance, which holds the glass firmly in position and which can be relied upon to so hold the glass throughout a long period of use.

I have illustrated the preferred embodiment of my invention in the accompanying drawings in which—

Figure 1 is an elevation of the sash broken away in part, Fig. 2 is a central section of the same, Fig. 3 is an enlarged detail view

showing one corner of the sash broken away and sectioned in part, Fig. 4 is a top view of one of the retainers for the glass, Fig. 5 is an elevation of the same and Fig. 6 is a section on line 6—6 of Fig. 4.

Referring to these drawings, the window consists of a rectangular sash 1 having a glass 2 mounted therein, the sash consisting of four members secured together at their ends in any suitable manner. Each of these members is formed from sheet-metal, preferably steel, and is provided with a flange extending inwardly of the sash. The construction which I prefer to employ in making these members is that illustrated in Fig. 2, from which it will be seen that each frame-member consists of a single piece of sheet-metal bent on lines extending lengthwise thereof to substantially rectangular cross-section, so as to provide opposite side walls 3 and 4 spaced apart as shown. The edges of this sheet-metal strip are pressed so as to provide on one a flange 5 and on the other a fold 6 inclosing the flange 5 and forming therewith a flange extending inwardly of the sash. This flange formed by the parts 5 and 6 serves to position the pane of glass within the sash. The several members of the sash are joined together at their ends in any suitable manner preferably by welding them so as to form a unitary structure. The construction of the sash above described is that which I prefer to employ but it will be understood that, so far as my present invention is concerned, other forms of sashes may be employed, if desired.

In order to secure the pane of glass within the sash 1, I provide a plurality of retainers 7 preferably one for each member of the sash 1. This retainer consists of a sheet-metal strip bent along lines extending lengthwise thereof to give it a channel section and having thereon integral portions which are adapted to coact with the flange on a member of the sash, preferably by being folded over the latter so as to grip it firmly. The precise construction of the retainer which I prefer to employ is that illustrated in detail in Figs. 4, 5 and 6. Referring to these figures, it will be seen that the retainer consists of a strip of sheet-metal, preferably brass, pressed to form therein a lengthwise groove or channel 8 and the wall 9 on one side of this channel is provided

with an extension 10 which may be pressed to give it an ornamental appearance; and the wall 11 on the other side of the channel 8 is provided with an extension or flap 12, which, when the retainer is originally formed, extends outwardly as shown in Figs. 4 and 5 at right angles to the wall 11. The ends of the retainers are mitered, as shown in Figs. 4 and 5.

- 10 In assembling the parts, suitable packings 13, as for instance, strips of rubber, are placed within the grooves 8 of the retainers 7 in the manner illustrated in Fig. 2 and these retainers are then applied to the edges of the pane of glass 2. This having been done, the glass with the retainers thereon is moved into its position within the opening of the sash, until the walls 11 of the retainers abut against the inwardly extending flanges 6 on the members of the sash. When in this position the extensions or flaps 12 integral with the retainers 7 extend over the flanges 6, and are disposed at right angles thereto and the edges of the walls 10 of the retainers abut against the members of the sash adjacent to the edges of the side walls 4 thereof. The flaps 12 are then bent downwardly so as to inclose the flanges 6 between them and the walls 11 of the retainers, whereupon the parts will be in the positions in which they are shown in Fig. 2.

The construction herein described is of marked simplicity since it requires only the provision of the sheet-metal retainers and the bending of one edge of these retainers in assembling the complete structure, since no screws, bolts or rivets are employed and no openings need be formed in the metal of the members of the sash or the inwardly extending flange thereon. By reason of this simplicity the cost of manufacturing and assembling the windows and the time required therefor are materially reduced. A much more important advantage, however, is that the parts are held in their proper positions so tightly that they may be relied upon not to become loose at any time throughout a long period of service, even though the structure is subjected to considerable jarring, and therefore the danger of disagreeable rattling is entirely avoided and the expense of periodic attention eliminated.

Having described my invention what I claim as new therein and desire to secure by Letters Patent is:

1. The combination of a rectangular sash consisting of four members secured together at their ends each formed from a single strip of sheet-metal bent to a rectangular cross-section and to form a flange at one of the lateral edges and a fold at the other inclosing said flange and forming therewith a flange extending inwardly of the sash, metallic strips of channel section, packings in the channels of said strips, a glass having its edges entering the channels of said strips, and integral portions on said strips folded over said flanges on the sash and securing the glass in position within the sash, substantially as set forth.

2. The combination of a metallic window-sash certain of the members of which have inwardly extending flanges thereon, a pane of glass, and metallic strips each bent to a channel section and to provide folds on both sides of the channel one of which folds partially incloses one of said inwardly extending flanges to secure the strip thereto, the edges of said glass being received in the channels of said strips; substantially as set forth.

3. The combination of a rectangular metallic window-sash certain of the members whereof have flanges projecting inwardly of the sash from the inner walls thereof, metallic strips of channel section within said sash each having the bottom of the channel bearing against the inner wall of a member of the sash, a fold on one side of said channel inclosing the flange on a member of the sash and a fold on the other side of said channel the edge of which lies close to the inner wall of said member, and a glass the edges of which enter the channels in said strips, substantially as set forth.

4. The combination of a metallic window-sash certain of the members whereof have flanges extending inwardly of the sash, the strips 7 having the channels therein, the projections 12 integral with said strips and folded over said flanges, the walls 10 integral with said strips, and the panel having its edges entering the channels in said strips, substantially as set forth.

This specification signed and witnessed this 23rd day of July, 1910.

HAROLD M. THOMAS.

Witnesses:

W. M. SWOPE,

EDWARD G. BUDD.