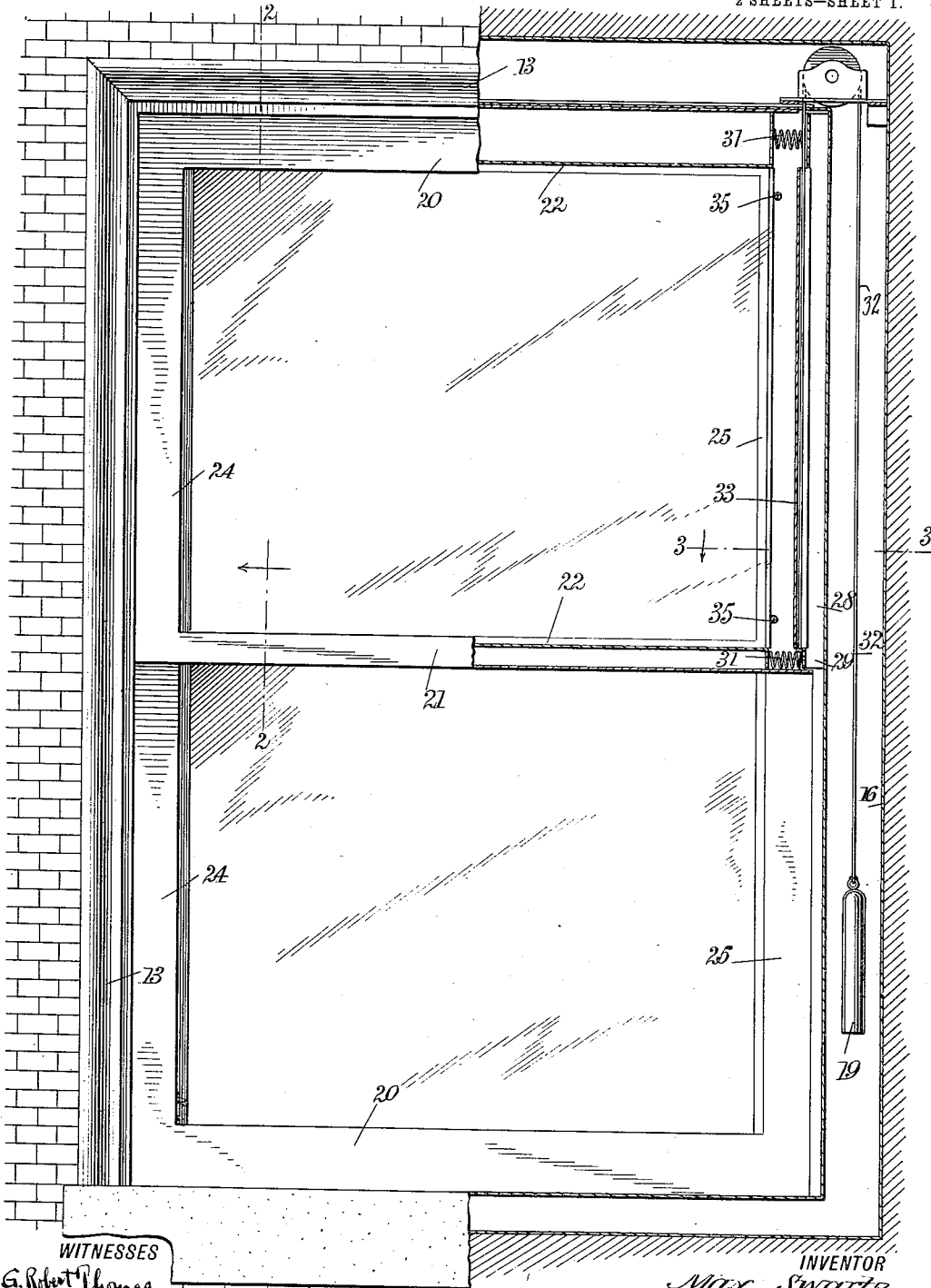


M. SWARTZ.
SHEET METAL WINDOW SASH AND FRAME.
APPLICATION FILED MAY 10, 1911.

1,017,341.

Patented Feb. 13, 1912.

2 SHEETS—SHEET 1.



WITNESSES
G. Robert Thomas

C. J. Muddock

FIG. I.

INVENTOR
Max Swartz

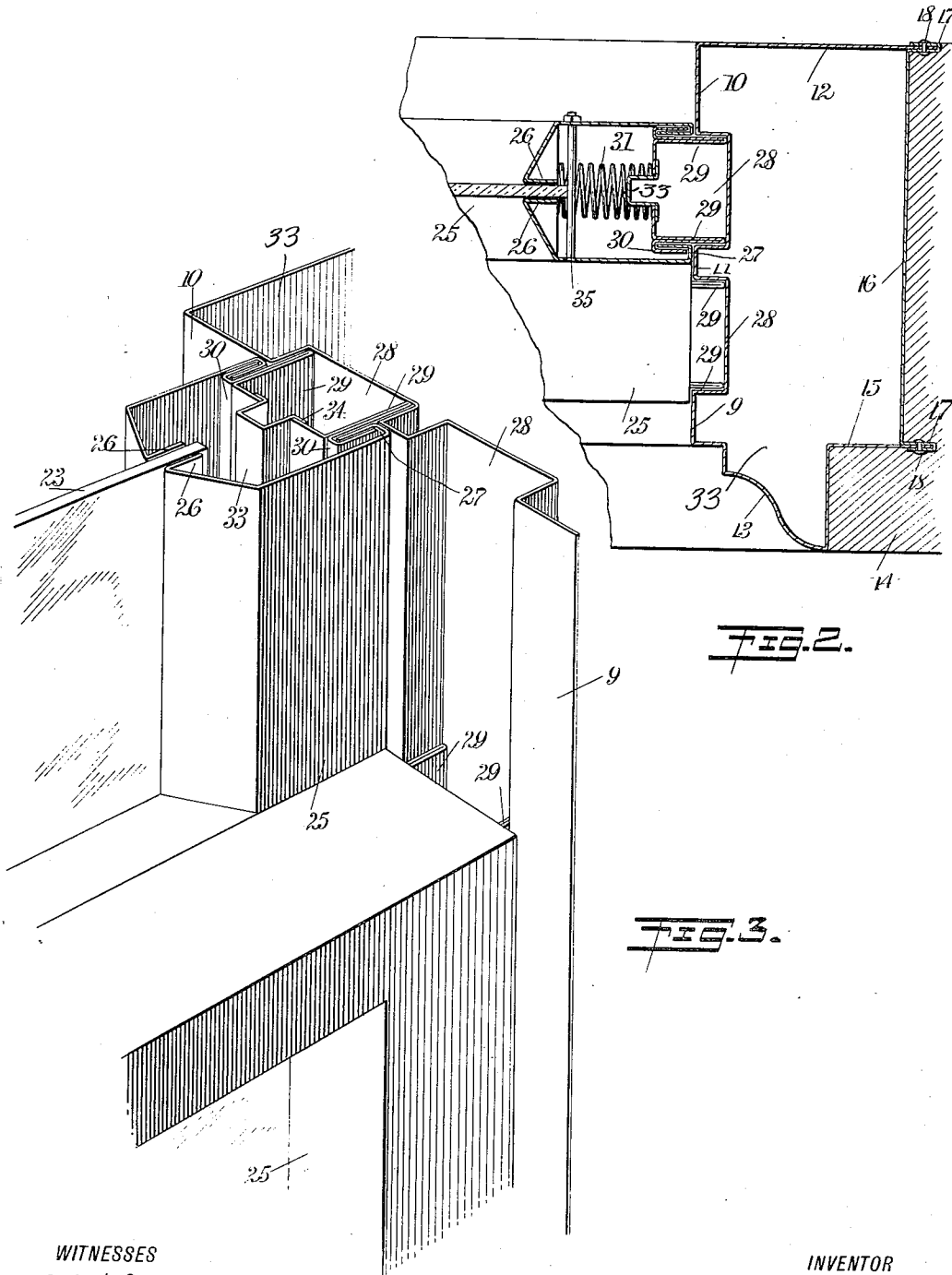
BY *Mumford*
ATTORNEYS

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WITNESSES

G. Robert Thomas

E. M. Munnick

INVENTOR

Max Swartz

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ATTORNEYS

UNITED STATES PATENT OFFICE.

MAX SWARTZ, OF NEW YORK, N. Y., ASSIGNOR TO NATIONAL FIRE PROOF SASH AND DOOR COMPANY, OF BROOKLYN, NEW YORK, A CORPORATION.

SHEET-METAL WINDOW SASH AND FRAME.

1,017,341.

Specification of Letters Patent.

Patented Feb. 13, 1912.

Application filed May 10, 1911. Serial No. 626,196.

To all whom it may concern:

Be it known that I, MAX SWARTZ, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Sheet-Metal Window Sash and Frame, of which the following is a full, clear, and exact description.

10 Among the principal objects which the present invention has in view are: to provide a construction of frame and sash therefor to avoid the necessity of using separate stop and molding strips; to provide a sash
5 constructed in a manner to form a continuous guide slot; and to provide means for installing the glass in sashes conveniently and securely.

20 With these objects in view the invention consists in shaping the frame of a window from sheet metal, incorporating in the structure projected portions to form the desired and necessary moldings for the face and strip and the stop or parting bead.

25 The invention further consists in constructing the frames constituting the window sash from sheet metal, the rails and stiles whereof are box-like in form, the stiles being separated to form a passage for
30 the glass within the sash and from the side thereof.

The invention further consists in employing a removable member for closing the aperture through which the glass is installed, which member is coincidentally employed as a guide or pocket for the weight cord.

One embodiment of the present invention is disclosed in the structure illustrated in the accompanying drawings, in which like characters of reference denote corresponding parts in all the views, and in which—

40 Figure 1 is an exterior view of a window frame and sash set therein constructed and arranged in accordance with the present invention, part of the frame and sash being cut away to show in section the interior thereof; Fig. 2 is a detail view, on an enlarged scale, and in cross section, the section
45 being taken on the line 3—3 in Fig. 1; and Fig. 3 is a detail view, on an enlarged scale, showing in perspective a fragment of the upper and lower sashes and the side frame

therefor, the sashes being shown as closed on the meeting rails.

55 As shown in the drawings, the frame is constructed as a box-like one-piece member. The head, the sill and the sides of the frame are suitably mitered at the corners and there secured by being soldered, riveted or otherwise suitably united.

60 As seen best in Figs. 2 and 3, the sections of the frame forming the molding strips 9 and 10 and the stop strip 11 are bent from the same piece of metal, the outer side 12
65 whereof is suitable for insertion within the wall in which it is contained and the molded or inner face 13 whereof is rabbeted to receive the plaster 14, as in wood construction. It is to receive the plaster 14 that the metal
70 is bent to form the rabbet shape 15. Between the raw edges of the side 12 and one side of the metal forming the rabbet 15 there is extended a brace 16. The brace 16
75 forms the outer side of the box wherein are operated the balancing weights for the upper and lower sashes. To strengthen the construction the edges of the brace 16 are bent to form the hooks 17 within which are
80 inserted the said raw edges. Suitable perforations are formed, extending through the two sides of the hooks 17 and the raw edges of the side 12 and rabbet 15 to receive the
85 rivets 18. It will be understood that other suitable forms of fastening devices may be substituted for the rivets 18 if desired. The head of the window frame is suitably cased
90 over at the top. In such construction it will be understood that suitable openings are provided for the installation in the casing of the sash balancing weights 19, as seen in
95 Fig. 1 of the drawings.

The sashes are constructed as shown in the drawings. The top and bottom rails 20, 20 and the parting rails 21 are constructed
100 to box-like shapes, each having a bent section 22 shaped to form channels wherein rest the edges of the glass 23. The stiles 24, 24, one in each sash, are shaped to substantially the same lines as the rails 20 and 21.
105 That is, to provide bent sections similar to the sections 22 in the rails for the same purpose, to form solid channels to receive the edge of the glass 23. The stiles 25, 25 at the opposite side of each sash, as shown in Figs. 2 and 3, are constructed of two separated

pieces. Each piece is provided with an inner bent portion 26, the said portions 26 being maintained in parallel relation, as seen best in Fig. 2 of the drawings. The portions 5 26 in this manner form a slot through which the glass 23 is inserted to be held within the sash. Each of the pieces forming the stile 25 has, at the edge opposite that forming the portions 26, a hook 27. The side of one 10 of the hooks 27 bears against the face of the stop strip 11. The side of the other of said hooks bears against the molding strip 9 or 10, as the case may be. Between the molding strips 9 and 10 and the stop strip 11 are 15 formed the runways 28 to guide and hold the sash in proper position in the frame. As a guiding member for the sash there is provided the channel member 29. The member 29 is bent, as seen best in Figs. 2 and 3, 20 to form overturned hook portions 30, 30 to engage the hooks 27 formed on the sides of the stiles 25.

When the members 29 have been installed in the sashes to which they belong they are 25 normally extended outward therefrom to fit within the runways 28, being impelled thereto by the springs 31. As seen in Fig. 1 of the drawings there are two springs 31 in each sash, being disposed at the upper 30 and lower ends or in line with the upper and lower rails thereof. The normal operation of the springs 31 is to force the members 29 into the runways 28. It will be seen however, that by inserting an instrument above 35 either of the sashes into the runways 28 the members 29 may be retracted to avoid the sides of the said runways or the molding strips 10 and stop strip 11 thereof.

I prefer to secure the sash cords 32 adjacent the bottom of each sash. For this 40 reason, and to close the aperture through which the glass 23 is introduced into the sash, I have provided the channeled boxing 33 which has flange edges 34 adapted to 45 rest against the side of the members 29. A slot is constructed lengthwise the member 29 in length equaling the height of the glass 23, so that when the boxing 33 is removed the glass may be freely passed 50 through the opening left by this removal. When installed the boxing 33 forms a recess

wherein rest the sash cords 32, the danger of abrasion to the sash cord being thereby avoided.

It is to secure the glass 23 firmly in position within each of the sashes that I have 55 provided the fastening bolts 35. Any suitable form of fastening member may be used in this relation. The fastening devices or bolts 35 are secured in the stiles 25 after the 60 glass has been inserted in the sashes. To remove the glass from the sash the bolts 35 are first removed from the sash structure, when it will be seen, the boxing 33 having been removed, that the glass 23 may be 65 slid laterally from the frame.

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

1. In a sheet metal window sash and 70 frame, a sash having box-like rails and stiles, each having a channel formed therein for holding the glass of said sash, one of said stiles being formed of separated pieces; a closure member for said separated pieces 75 slidably connected with said pieces to cover the exposed edge of said glass; means provided in said sash for holding the same in position; and a plurality of resilient members adapted to extend said closure member 80 into guided relation with said channels.

2. In a sheet metal window sash and frame, a sash having one of the stiles thereof constructed from two separated pieces of sheet metal the outer edges whereof are inwardly bent to form hooks; a guide member constructed from sheet metal the edges 85 whereof are shaped to form hooks to engage the first mentioned hooks and to hold the sash and guide member in guided relation; and a resilient member disposed between said guide member and said sash to 90 normally extend the said guide member outwardly from said sash.

In testimony whereof I have signed my 95 name to this specification in the presence of two subscribing witnesses.

MAX SWARTZ.

Witnesses:

E. F. MURDOCK,
PHILIP D. ROLLHAUS.