

1,056,102.

O. H. IMAN.
SHEET METAL WINDOW.
APPLICATION FILED MAR. 2, 1910.

Patented Mar. 18, 1913.

3 SHEETS-SHEET 1.

Fig. 1.

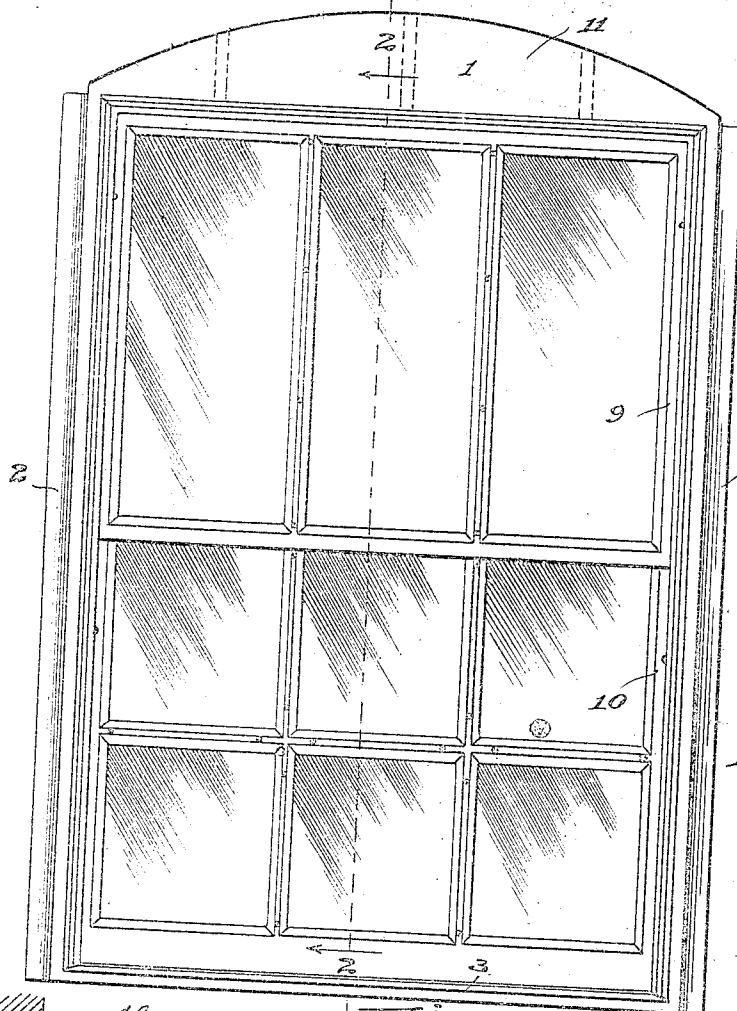


Fig. 2.

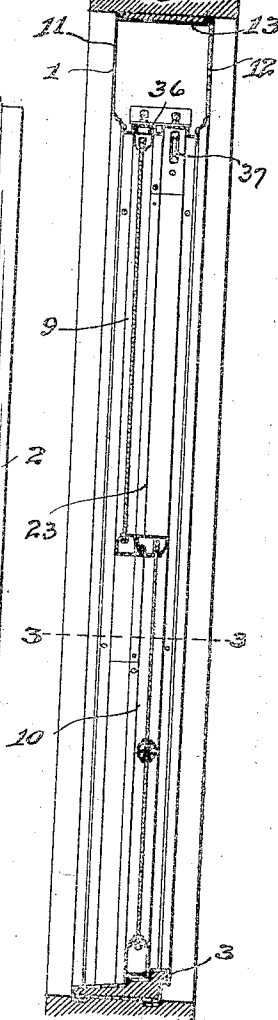
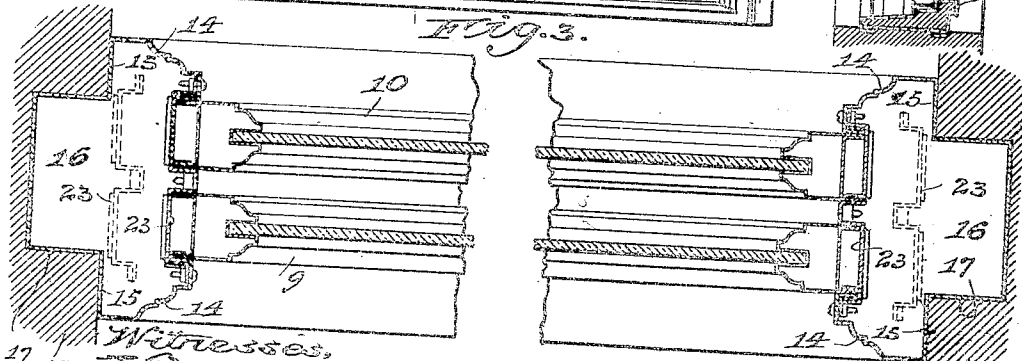


Fig. 3.



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C. J. Schmidt. By Offield, Fowler, Graves & Offield

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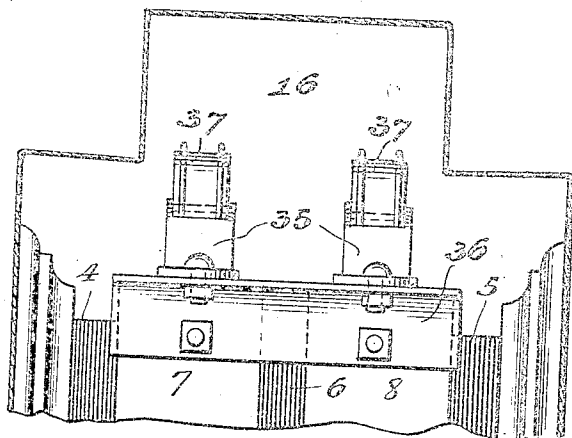
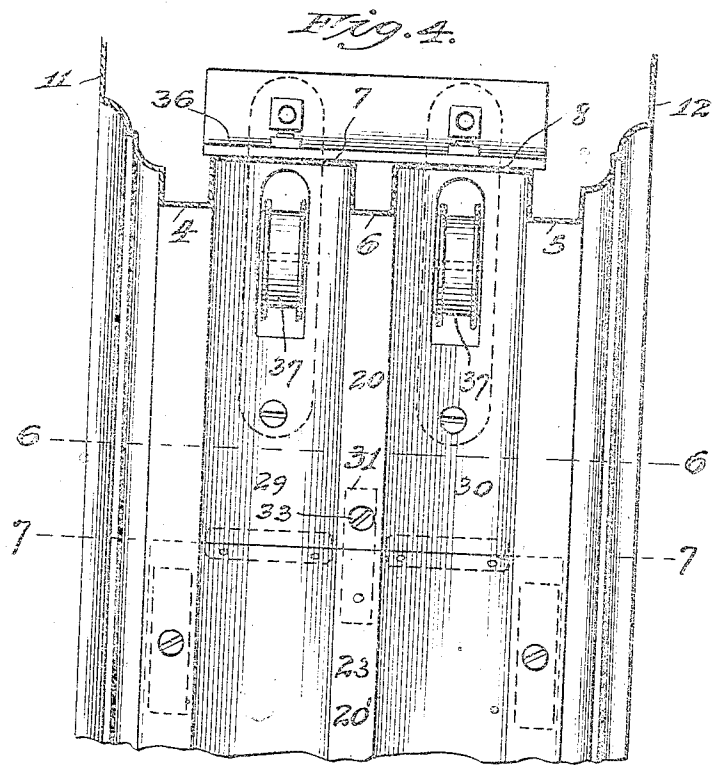
Inventor

Atty.

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3 SHEETS-SHEET 2.



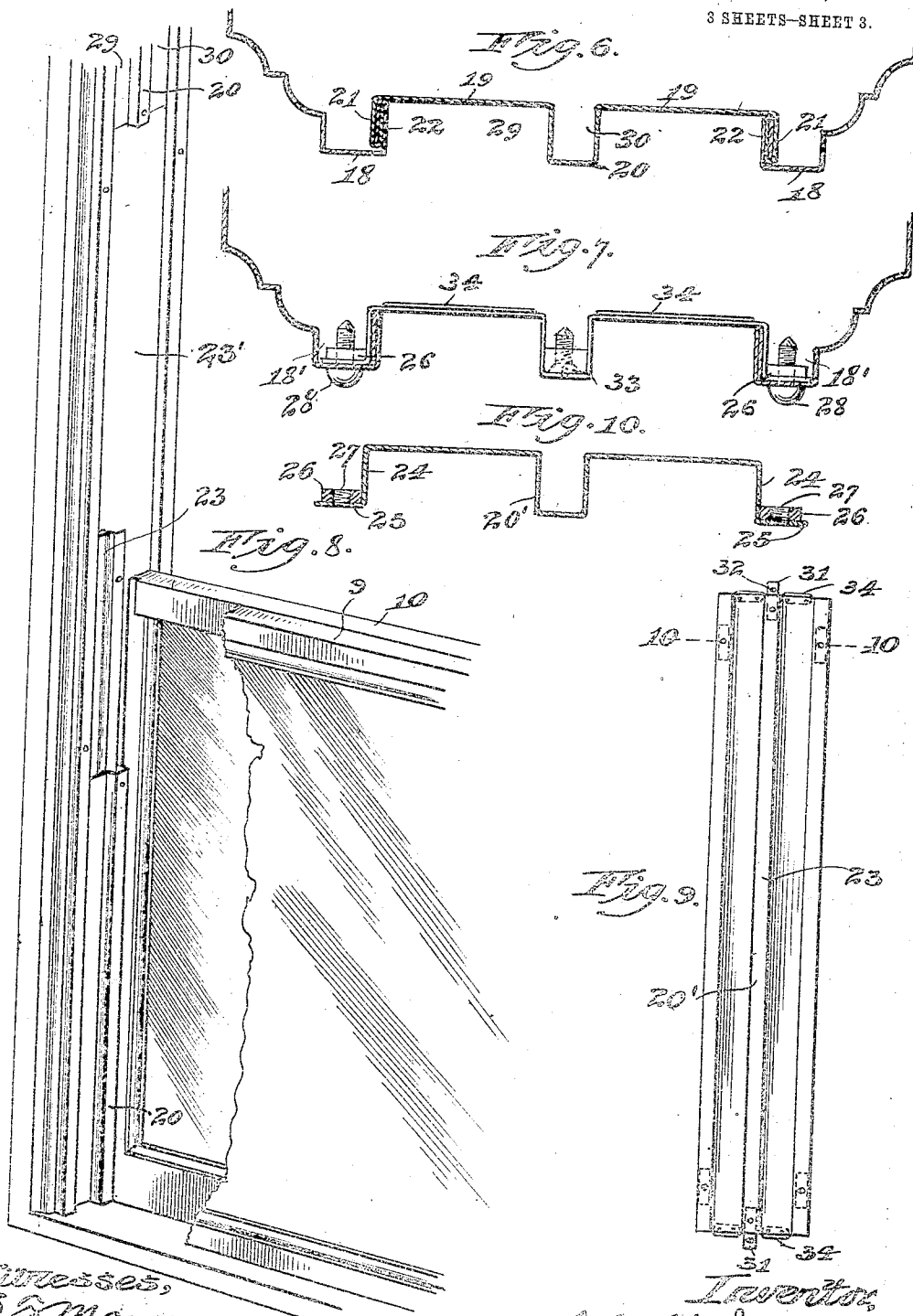
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Fig. 5.
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APPLICATION FILED MAR. 2, 1910.

Patented Mar. 18, 1913.
3 SHEETS-SHEET 3.



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UNITED STATES PATENT OFFICE.

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

SHEET-METAL WINDOW.

1,056,102.

Specification of Letters Patent. Patented Mar. 18, 1913.

Application filed March 2, 1910. Serial No. 546,873.

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 Sheet-Metal Windows, of which the following is a specification.

This invention relates to improvements in sheet metal windows, and refers more specifically to an improved window construction in which a section of the inner side face of the casing is made detachable in order that the window sash may be adjusted to position without the necessity of removing parting strips.

Among the salient objects of the invention are to provide a construction in which the parting strips and window stops may be made as integral parts of the inner side walls of the casing against which the edges of the sash abut; to provide a construction in which a section of the inner side face of the casing having been detached, the sash may be placed in position and the section thereafter returned to place and secured, thus obviating the objections inherent to detachable stops and parting strips; to provide a construction in which access to the weight pulleys and associated parts may be had through the same removable sections which enables the sash to be adjusted to position; to provide a construction in which the weights may be passed into place after the window has been installed, and removed, repaired or inspected at any subsequent time; to provide a construction which may be made to more accurately fitting dimensions, by reason of the fact that no allowances need be made for mechanical inaccuracies of detachable parting strips or stops; to provide a construction which may be somewhat more economically manufactured than when embodying parting strips; and in general, to provide an improved construction of the character referred to.

My invention is clearly described in the following specification and illustrated on the accompanying drawings, in which drawings—

Figure 1 is an elevation view of a window showing the frame and the sashes in closed position therein, Fig. 2 is a sectional view taken on plane 2—2, Fig. 1, Fig. 3 is a sectional view taken on plane 3—3, Fig. 2, Fig. 4 is an enlarged view of the upper end

of Fig. 2, Fig. 5 is a top view of Fig. 4, Fig. 6 is a sectional view taken on plane 6—6, Fig. 4, Fig. 7 is a sectional view taken on plane 7—7, Fig. 4, Fig. 8 is an enlarged perspective view of part of the frame and sash, showing the sash in lowered position and the removable section in displaced position, Fig. 9 is a front elevation of the removable section, and Fig. 10 is an enlarged sectional view taken on plane 10—10, Fig. 9.

The frame is built up of sheet metal and comprises the upper part 1, the side parts 2 and the sill part 3. The cross-section of the upper part is best shown in Figs. 2 and 4; the cross-section of the sill part is best shown in Fig. 2, and the cross-sections of the side parts are best shown in Figs. 3, 6 and 7. The upper part is of more or less rectangular contour, the lower face being bent to form inner and outer stop ridges 4 and 5 and intermediate parting ridge 6, and between the stop ridges and the parting ridge the grooves 7 and 8 receive the window sashes 9 and 10. A single piece of sheet metal is bent to form the stop ridges, parting ridge, guide grooves and the side walls 11 and 12 of the upper frame part, the ends of the side walls being connected by a base plate 13 suitably seamed to the upper ends of the walls, as best shown in Fig. 2.

Referring particularly to Fig. 3, a single piece of sheet metal is bent up to form the side and rear walls 14 and 15 respectively of each side part 2 of the frame, the rear wall expanding to form a rectangular weight box 16, which expanded parts fit in grooves 17 provided in the adjacent walls *w*. The inner wall of each side part has a section which is detachable from the side walls, and the remainder of the inner wall is integral with or permanently secured to the side walls. The arrangement where the inner walls are permanent is shown best in Fig. 6. The front sections of the side walls 14 are bent to form rectangular stop ridges 18, and spanning between these stop ridges is a sheet 19 deflected along a central line to form a rectangular parting ridge 20. The outer ends 21 of this sheet are interlocked and form a double seam with the ends of the sections forming the stop ridges 18.

Referring particularly to Figs. 3, 4, 8 and 9, the detachable section 23 provided for each side part has the cross-section shown in Fig. 10. The sheet metal from which this

section is formed has the central parting ridge 20' for registering with the parting ridges 20 of the stationary inner walls, and at its edges the sheet is bent forwardly at 24 and then laterally to form flanges 25. On the rear faces of these flanges blocks 26 are secured, through which and through the flanges threaded openings 27 are provided. Where this detachable section appears in the inner walls of the side parts the ends of the side walls 14 are of slightly different arrangement in that the ends 22 thereof, instead of forming a seam with the ends of the detachable strip, are closed together as shown in Fig. 7. When a detachable section is in place the walls 24 and the flanges 25 thereof extend into the pockets 18' formed by the stop ridges 18, and screws 28 passing through the front wall of the ridges 18 engage the threaded openings 27 to hold the sections 23 in place. When thus in place the ends of the section 23 register with the adjacent ends of the permanent inner wall sections to form unbroken stop ridges, an unbroken parting ridge, and the grooves 29 and 30 between the stop ridges and parting ridge, these grooves receiving the sides of the window sashes 9 and 10. In order to more firmly hold the removable sections 23 in position tie plates 31 engage in the pocket 20' formed by the parting ridge 20 and extend a distance beyond the ends of the section (Fig. 9), the protruding ends extending into the registering pockets of the parting ridges of the permanent inner wall sections and having threaded openings 32 for receiving countersunk screws 33 passing through the front wall of the stationary parting ridge sections. Over-lap plates 34 may also be secured to the rear faces of the removable sections (Fig. 9) for engaging against the rear faces of the stationary inner wall sections to assist in maintaining the removable section ends in perfect alignment with the adjacent ends of the stationary sections so that the stop ridges, parting ridge, and grooves will present smooth unbroken surfaces for the sashes to slide over.

The removable sections are preferably of a length greater than that of the highest sash, so that each sash can be moved laterally through the opening 23' upon removal of the section, whereby any sash may be readily bodily removed from the frame. The positions of the removable sections are also preferably such that the sections can be detached and reinserted while all the sashes are in the frame, this position being preferably as near as possible to the top of the frame so that when both the sashes are down the weights therefor will be adjacent the opening 23' so that inspection and repairs of the weights can be quickly and readily made.

Referring to Figs. 4 and 5 particularly,

the pulley frames 35 for each side part are hung from the vertical wall of an angle plate 36 whose horizontal wall is bolted to the ends of the inner wall of the top part 1, the pulleys 37 protruding into the weight boxes 16 of the frame side parts.

In Fig. 8 the removable section 23 is shown detached and dropped down until it rests against the sill part, this leaving the opening 23' through which the weights of the lowered sash 9 and 10 are accessible. The dotted lines in Fig. 3 also show the detached position of the detachable sections. Fig. 8, plainly shows that the sections 23 can be readily detached or re-secured in position without necessitating removal of the window sashes from the frame. To replace a section 23, it is merely raised and brought forwardly into place, the tie plates and sliding plates enabling quick and accurate registration of the section whereupon the screws 28 and 32 are applied.

By thus making the window stops and parting strips rigid or integral parts of the frame much more accurate construction is possible, and much more accurate fit can be obtained between the sash and the frames to produce more weather-proof jointure and also to prevent rattling, the stops and the strips being so true that the sash can readily slide through the grooves without any lost motion whatever. Detachable stops and strips soon warp and wear, the result being loose jointure and rattling of the sash. Furthermore, where detachable strips and stops are used they must be removed whenever it is desired to remove a sash or whenever it is desired to get at the weights. In my arrangement, in order to remove the sash or to move it laterally in the frame, all that is necessary is to drop one or both of the removable sections. Also, if it is desired to get at the weights, all that is necessary is to drop one or both of the sections. In my arrangement, therefore, the sash can be primarily installed in the frame and need never thereafter be removed for the purposes of installing, adjusting or repairing the weights, and the dropping of the removable sections will give ready access to the sides of the sash to which the ends of the weight chains are applied. The sheet metal wall sections with which the stops and parting strips are rigid or integral can be very economically manufactured.

I do not desire to be limited to the precise construction and arrangement which I have shown, as changes may readily be made without departing from the spirit of my invention.

I, therefore, desire to secure the following claims by Letters Patent:

1. In a fire-proof window structure, the combination of a window frame and window sashes, each side part of the window

frame being formed of sheet metal to leave a vertical compartment, the inner wall of each side part being bent to form rectangular stop ridges and a parting ridge, said parting ridge and stop ridges forming grooves for receiving the edges of the window sashes, a section of the inner wall of each side part being removable to be displaced inwardly and downwardly within the side part compartment to leave an opening extending from stop ridge to stop ridge and longer than the longest sash through which opening the window sashes can be simultaneously displaced laterally, and means for securing the detachable sections in operative positions.

2. In a fire-proof window structure, the combination of a window frame and window sashes, each side part of the window frame being formed of sheet metal to leave a vertical compartment, the inner wall of each side part being bent to form rectangular stop ridges and a parting ridge, said parting ridge and stop ridges forming

grooves for receiving the edges of the window sashes, a section of the inner wall of each side part being removable to be displaced inwardly and downwardly within the side part compartment to leave an opening extending from stop ridge to stop ridge and longer than the longest sash through which opening the window sashes can be simultaneously displaced laterally, the outer edges of each detachable section being bent to fit into the stop ridge sections of the side part and having threaded openings, and screws engaging through the stop ridge sections of the side part and with said threaded openings to lock the detachable sections in closed position.

In witness hereof, I herenunto subscribe my name this 28th day of February, A. D. 1910.

ORLA H. IMAN.

Witnesses:

CHARLES J. SCHMIDT,
NELLIE B. DEARBORN.