No. 818,703 PATENTED APR. 24, 1906.

C. A. McGINNIS.

METALLIC WINDOW.

APPLICATION FILED JUNE 6, 1904.

4 SHEETS—SHEET 1.

Fig. 1.

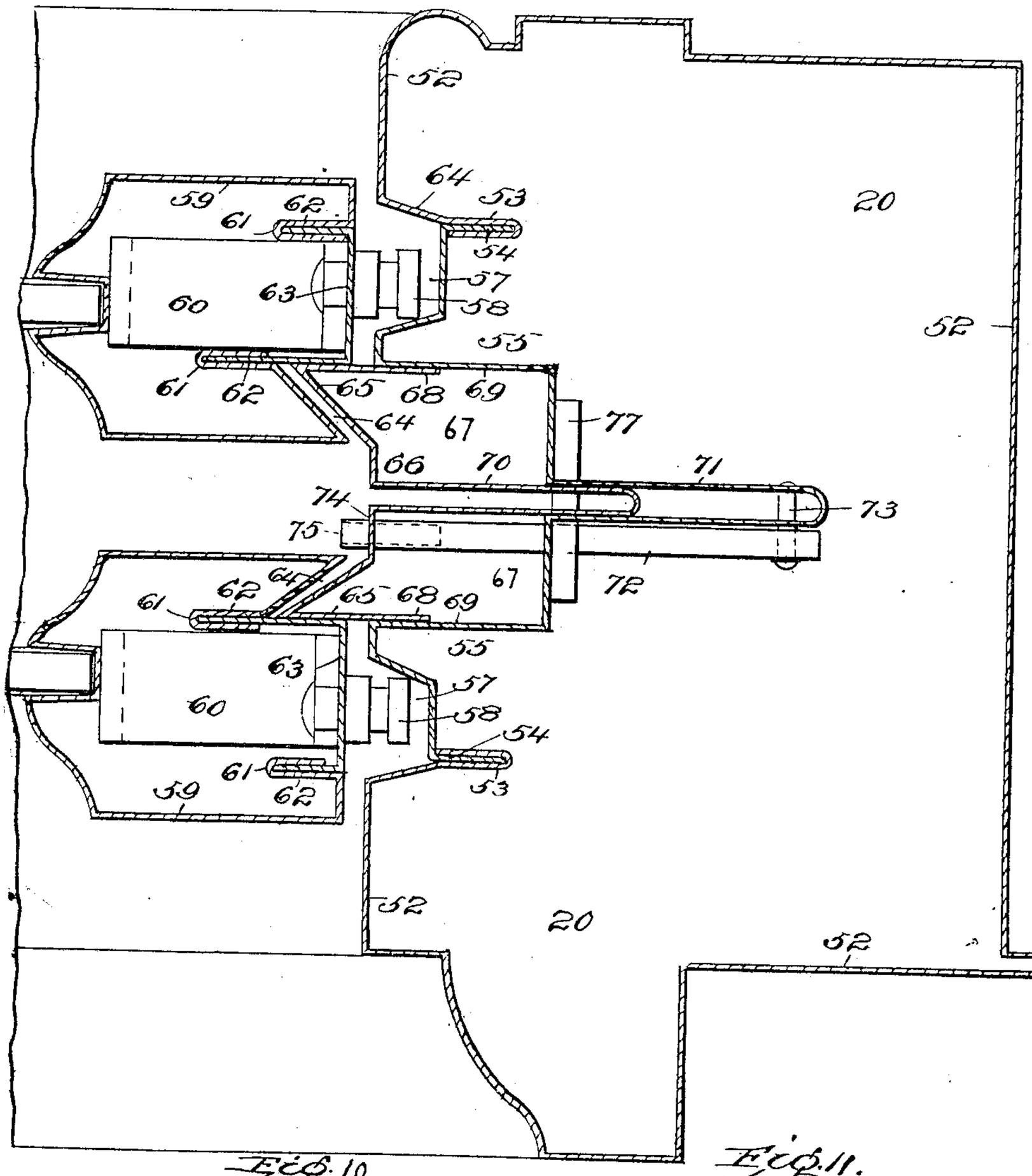


Fig. 10.

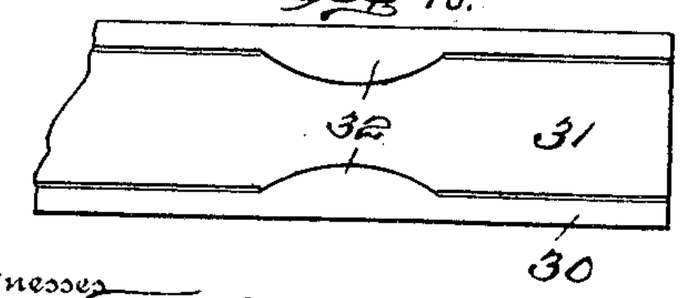
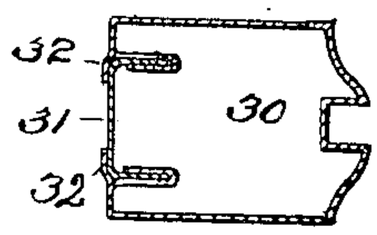


Fig. 11.



Witnesses

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4 SHEETS—SHEET 2.

Fig. 9.

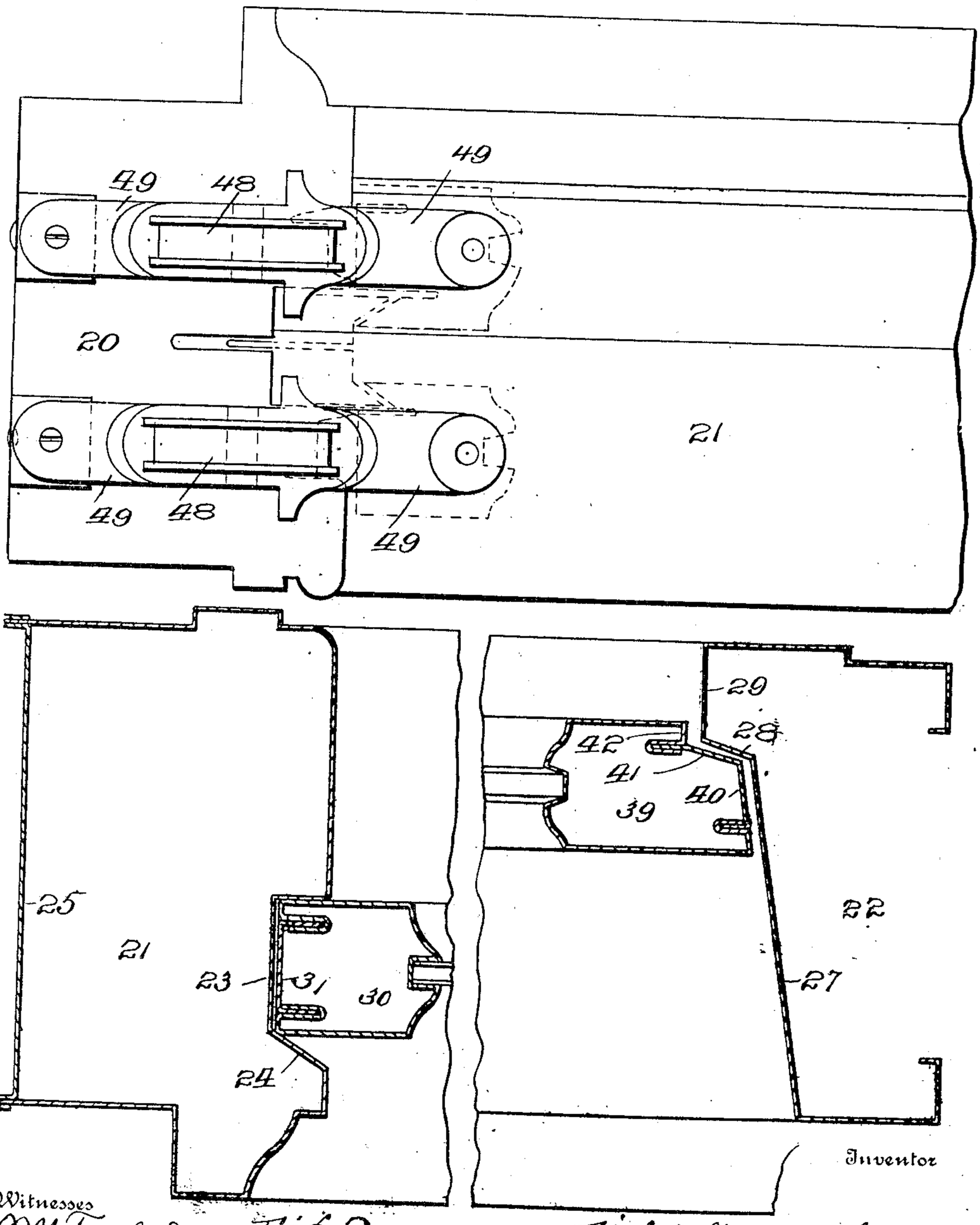

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Fig. 2.

Fig. 3.

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4 SHEETS—SHEET 3.

Fig. 5

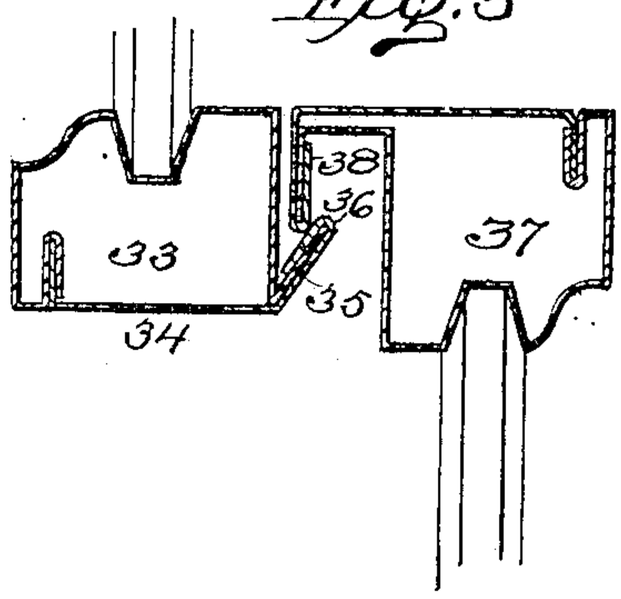
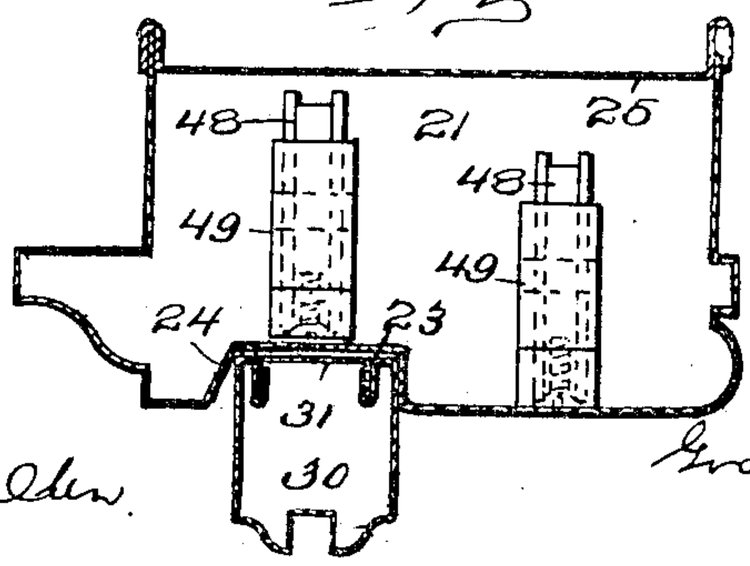


Fig. 4.

Fig. 6



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4 SHEETS—SHEET 4.

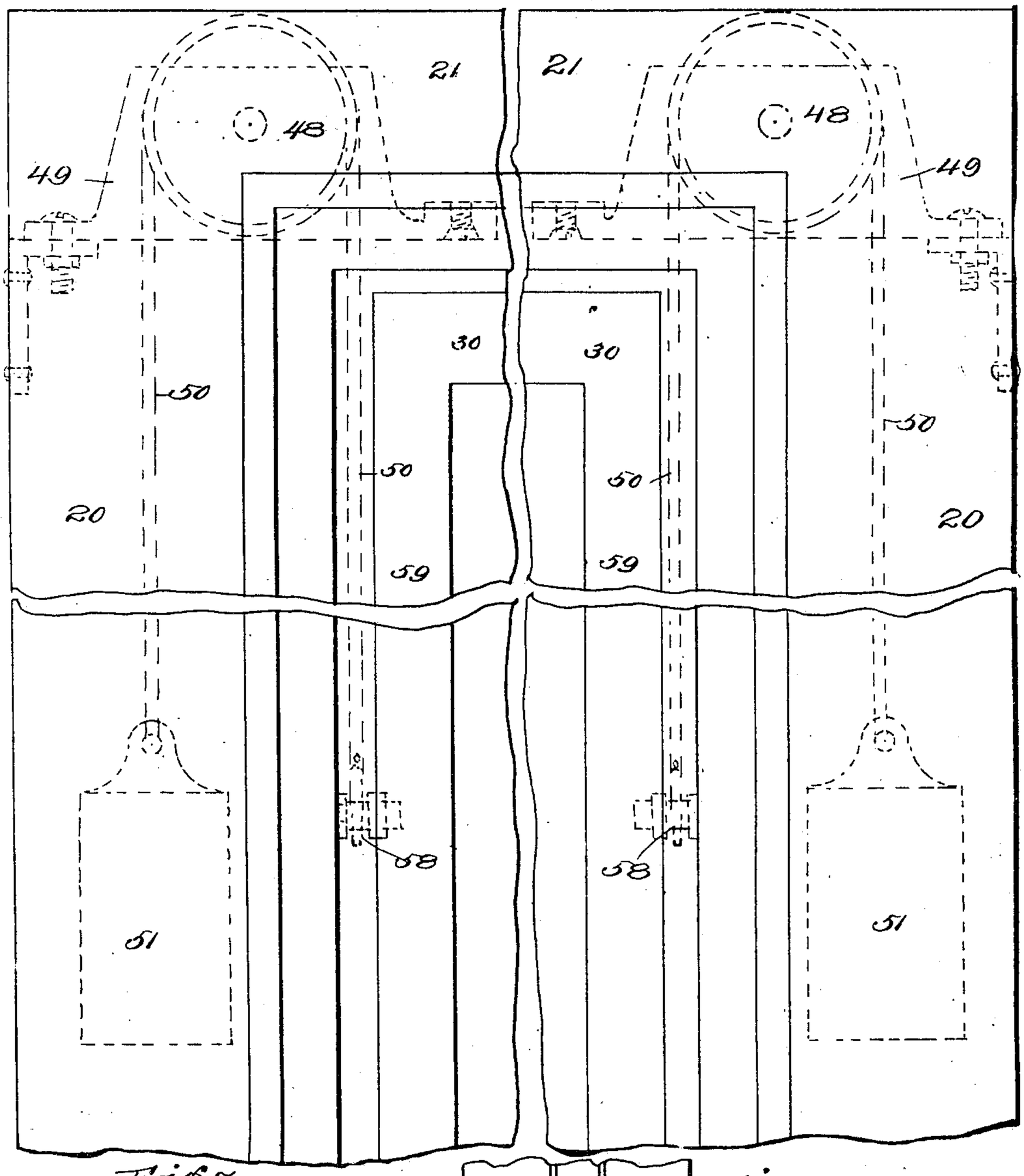

Fig. 7.

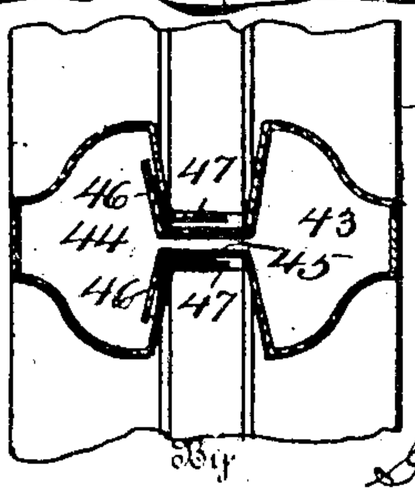

Fig. 8.

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UNITED STATES PATENT OFFICE.

CLAUDE A. McGINNIS, OF ATLANTA, GEORGIA.

METALLIC WINDOW.

No. 818,703. Specification of Letters Patent. Patented April 24, 1906.

Application filed June 6, 1904. Serial No. 211,333.

To all whom it may concern:

Be it known that I, CLAUDE A. McGINNIS, a citizen of the United States, and a resident of Atlanta, in the county of Fulton and State of Georgia, have invented certain new and useful Improvements in Metallic Windows, of which the following is a full, clear, and exact description, such as will enable those skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

The invention relates to improvements in metallic windows of that class in which the casing and sashes are made of sheet metal and in which an upper and a lower sash are mounted in the casing to have a vertical movement therein. Access to the exterior sides of the lights of such windows in ordinary use for cleansing and other purposes is often difficult.

The principal purpose of the present invention is to provide means whereby the sashes of such windows can be readily turned, so that access to the exterior lights can be easily had from the interior of the building.

The invention consists in the novel construction, combination, and arrangement of parts, such as will be hereinafter fully described, pointed out in the appended claims, and illustrated in the accompanying drawings.

In the drawings, in which similar reference characters designate corresponding parts, Figure 1 is a horizontal sectional view through the stile of a sash and the adjacent jamb near the pivotal point of the sash. Fig. 2 is a vertical sectional view through the lintel of the casing and the top rail of the upper sash. Fig. 3 is a vertical sectional view through the sill and the bottom rail of the lower sash. Fig. 4 is a perspective view, broken away in parts, of the lower part of a jamb and a part of the sill. Fig. 5 is a cross-sectional view through the meeting-rails of the sashes. Fig. 6 is a cross-sectional view through the lintel of the casing at one side of the pulleys for the weight-chains. Fig. 7 is a front elevation, broken away in parts, of the upper part of the window. Fig. 8 is a cross-sectional view through one of the munnions between the adjacent edges of two lights. Fig. 9 is a plan view of the pulley mechanism for carrying the weight-chains. Fig. 10 is a detail plan view showing the clips for holding a yoke in place. Fig. 11 is a sectional view of a member, showing the clips.

The window-casing is of hollow sheet-metal construction and consists of the jambs 20, connected at their upper ends by the lintel 21 and at their lower ends by the sill 22. It is shaped to fit the aperture formed in the wall for its reception and is ornamented in the usual way. The face of the lintel is provided with a socket 23 to receive the top rail of the upper sash, Fig. 2. One of the sides of the socket, as at 24, is inclined to insure a tight fit of the rail. The edges of the plate forming the lintel are connected by the yoke 25, having sockets in its edges to receive the edges of the plate. The sill 22 has its face sloping downwardly, as at 27, to shed water, and the outer side 28 of its stop 29 is inclined to secure a close engagement with the bottom rail of the lower sash, Fig. 3.

The top rail 30 of the upper sash has the usual socket in its inner edge to receive the edge of the light, and the edges of the sheet metal composing the same are connected by the yoke 31, Figs. 2 and 6. The yoke has its edges bent inwardly and engaging with sockets formed in the edges of the sheet metal. It is held in place by the clips 32, which are spurs cut out of the sheet metal and bent over the yoke, Figs. 10 and 11. The yoke is placed in position by sliding it longitudinally beneath the clips. These clips may be used in any place in the construction where they are adapted to hold the different parts of a member together.

The bottom rail 33 of the upper sash has the usual socket in its inner edge for the light, and the edges of the sheet metal composing the same are joined by the yoke 34, Fig. 5. The latter has one edge engaging with a socket in one edge of the sheet metal and has the other edge formed into a socket 35 to receive the other edge of the sheet metal. The socket 35 and the edge of the metal engaging with it are on the inner side of the rail and form a flange 36, which is bent away from the main part of the rail.

The top rail 37 of the lower sash is of substantially the same construction as the bottom rail of the upper sash, except that its flange 38 projects from the outer side of its rail. This flange is offset from the rail and is parallel to the latter. When the two rails 33 and 37 are brought together by the closing of the sashes, the two flanges 36 and 38 engage

with each other. The two flanges are sprung so that they will bear against each other when brought together with a yielding pressure to form a tight joint between the meeting-rails.

The bottom rail 39 of the lower sash has the edges of the sheet metal forming the main part of the same connected by the yoke 40, which has its edges bent to fit sockets in the edges of the sheet metal, Fig. 3. The under side of the rail 39 is shaped to fit the inclined face of the sill 22. It is inclined, as at 41, to fit the inclined side 28 of the stop 29. It is also shaped to project over the top of the stop, as at 42. By means of this construction a close engagement between the lower sash and the sill is secured.

A munnion is provided for securing the edges of two adjacent lights, Fig. 8. It is formed of two members 43 and 44, respectively, of sheet metal, and is shaped to simulate the solid munnion in ordinary use. The member 43 has its edges bent together for a short distance, as at 45, and then flared outwardly at its edges, as at 46. The member 44 has its edges bent, as at 47, to clamp the parts 45 of the member 43. The flared-out parts 46 of the member 43 project into the body of the member 44 to engage with the same and serve to hold the two members together. The two members form sockets in the opposite edges of the munnion to receive the edges of the lights, and when the latter are in place the interlocking parts of the two members are firmly held in place, so that they cannot be separated.

In the upper corners of the casing above the jambs are the pulleys 48, journaled in the supports 49, mounted at one end on brackets secured to the inner sides of the jambs and at the other end on the ends of the lintel, Figs. 6, 7, and 9. Over these pulleys pass the chains 50, secured at their outer ends to the sashes and attached at their inner ends to weights 51 within the jambs to counterbalance the sashes.

The main part of the jamb 20, comprising the back, sides, and part of the front, is formed of a single piece of sheet metal 52, Fig. 1. In the edges of the latter are the sockets 53, with which engage the flanges 54 of the face-plate 55. The latter can be moved, so that its flanges will disengage from their sockets, and the face-plate removed from the main part of the jamb, so that access to the sash-weights inside of the jamb can be had. It is held in place by screws, as at 56, Fig. 4, passing through the same into the casing. In the front of the jamb and face-plate, adjacent to the engaging sockets 53 and flanges 54, are the runways 57 for the chains 50 and the pins 58, to which the weight-chains are attached. The pins 58 are secured in the outer edges of the stiles 59 of the sashes and are reinforced by the angle-pieces 60, secured in the interior of the stiles and through which the pins pass.

Each stile 59 of a sash is composed principally of a single piece of sheet metal having sockets 61 in its edges, with which engage the flanges 62 of the yoke 63, Figs. 1 and 4. In the outer edge of each stile, adjacent to the joint formed by a flange and a socket, is a groove 64 of considerable depth. One side of this groove is formed by the flange 62 of the yoke and the other side by a part of the main plate of the stile. The two sides of the groove form an acute angle. With this groove when the sash is in operative position registers a guide-stop 65, shaped to fit the groove. The guide-stop serves to retain a sash in the casing and to guide it in its movements up and down.

The guide-stops 65 on one side of a casing, respectively engaging with an upper and a lower sash, form part of a common support or carrier 66, which can be operated to move the guide-stops into and out of engagement with their respective grooves in the sash-stiles. This carrier or support is mounted in the guideway or longitudinal recess 67 formed in the face-plate 55 and movable both horizontally and vertically therein. It is controlled in its movements in the guideway by the wings 68, which are continuations of the guide-stops 65, bearing against the sides 69 of the guideway. It is further controlled and held in position by the rib 70, projecting from its rear and registering with the socket 71, in which the rib is movable both vertically and horizontally. The walls of the socket 71 are integral with the face-plate 55 and extend from the rear wall of the guideway 67.

Mechanism is provided for moving the guide-stops 65 into and out of engagement with respective grooves in the sashes, Figs. 1 and 4. A lever 72 is pivoted at one end by the pin 73 to the walls of the socket 71. Its free end passes through the rear wall of the guideway 67, which is slotted for the purpose, and engages with the carrier or support 66, as at 74, intermediate of the guide-stops 65. The extreme free end of the lever is provided with a socket 75 and projects slightly beyond the face of the carrier. The projecting end of the lever is in a position to clear the sashes as the latter are raised and lowered. A handle 76 is provided that can be inserted in the socket 75 to move the lever on its pivot. As the lever has an engagement at its free end with the carrier or support, the latter is moved up and down when the lever is oscillated. Passing through the walls of the socket 71 are the pins 77. (Only one of these pins is shown.) These pins engage with the cam-slots 78 in the rib 70 of the carrier 66. The upper ends of the cam-slots are vertical, so that when the carrier 66 is in its lowered and normal position the said vertical upper parts of the cam-slots will be engaged by the

pins 77 and the carrier thereby locked in a forward or outward position from the jamb with the guide-stops 65 in position to engage with their respective grooves in the sash-stiles. The lower ends of the cam-slots are inclined, so that when the carrier 66 is moved upwardly by the raising of the free end of the lever the said inclined parts of the cam-slots, bearing on the pins 77, will force the carrier inwardly, and thereby withdraw the guide-stops 65 from their respective grooves 64 in the stiles of the sashes. When the guide-stops are withdrawn from the opposite sides of a sash, the latter can be turned on its pins 58, which fulcrum in the runways 57. These pins are on opposite sides of the sash at about the middle part of the same, so that the sash will be balanced when it is turned. While it is turned the sash is held by the chains 50, connected with the same at one end and with the counterweights at the other end. By turning the sash in this way the outer sides of the lights can be readily moved to a position where they can be cleaned from the interior of the building. After the lights have been cleaned the sash can be easily turned back to its normal position. When this is done, the free end of the lever is depressed to move the carrier 66 downwardly, and through this downward movement and the action of the cam mechanism the guide-stops will be projected outwardly from the face-plate of the jamb into engagement with their respective grooves in the stiles of the sashes.

It is to be observed that the movement of the carrier 66 on one side of the casing controls the movement of both guide-stops 65 on that side, as they are integral with the carrier. Also, when the handle 76 is not in use it can be removed from the lever 72.

While the herein-described embodiment of the invention is the preferred one, yet it can be departed from to a considerable extent without departing from the spirit of the invention.

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

1. In a metallic window, a sash having a groove in a stile, a jamb provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, wings on said carrier and bearing against the sides of said guideway, a rib on said carrier registering with said socket, a guide-stop on said carrier, and means for operating said carrier to move said guide-stop into and out of engagement with said groove.

2. In a metallic window, a sash having a groove in a stile, a jamb provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, wings on said carrier and bearing against the sides of said guideway, a rib on said carrier registering with said socket, a guide-stop on said carrier, and cam mechanism for operating said carri to move said guide-stop into and out of engagement with said groove.

3. In a metallic window, a sash having a groove in its edge, a casing provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, a guide-stop on said carrier, a rib on said carrier registering with said socket and provided with cam-slots, pins passing through the walls of said socket and engaging with said cam-slots, and means for raising and lowering said carrier.

4. In a metallic window, a sash having a groove in its edge, a casing provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, a guide-stop on said carrier, a rib on said carrier registering with said socket and provided with cam-slots, pins passing through the walls of said socket and engaging with said cam-slots, a lever pivoted to the wall of said socket and engaging at its free end with said carrier, and means for operating said lever to raise and lower said carrier.

5. In a metallic window, a sash having a groove in its edge, a casing provided with a guideway and having a socket opening into said guideway, a carrier movably mounted in said guideway, a guide-stop on said carrier, a rib on said carrier registering with said socket and provided with cam-slots, pins passing through the walls of said socket and engaging with said cam-slots, a lever pivoted to the wall of said socket and engaging at its free end with said carrier, and a detachable handle for operating said lever to raise and lower said carrier.

6. In a metallic window, a member, such as a rail, composed of a main metal plate and a yoke connecting the edges of said plate, and a clip formed of a spur cut from said plate and bent over said yoke.

7. In a window, the jamb formed of folded and interlocked sheet metal; the facing of which is bent so as to form a central seat provided with a median hollow fold, whereby the interior of the jamb is partially divided into two compartments; a telescopic slideway received within said seat, and having also a median fold received within the hollow median fold of the seat; sashes which engage with the telescopic slideway; and means for projecting and retracting said slideway so as to engage or disengage it in relation to the sashes.

8. A metallic window-frame having a seat formed within its facing, with a hollow fold projecting inwardly across the jamb; a telescopic slideway fitting said seat, with a double fold which is received within the first-named hollow fold; a pin-and-slot connection between the hollow fold of the seat and

the fold of the slideway which is received within it, the inclination of the slot being such that vertical motion of the slideway is translated into a motion of projection or retraction thereof; and a straight end to said slots whereby the slideway is locked in its projected position.

9. In a window-frame, the combination of the jamb with a seat; a slideway received within said seat; connections between the same whereby vertical motion of the slideway is translated into a motion of projection or retraction; and a handle-bar capable of being passed through a slot formed in the slideway to a fulcrum which is in fixed relation to the seat, whereby vertical movement of the handle-bar effects projection and retraction of the slideway.

10. In a metallic window-frame, the jamb the facing of which is formed of a piece of sheet metal bent to form two runways and a seat with a hollow median fold; and a collapsible slideway received within said seat and having a fold corresponding to and received within that of the seat.

In testimony whereof I hereunto affix my signature in the presence of two witnesses.

CLAUDE A. McGINNIS.

Witnesses:
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DALLAS C. DUMAS.