

**No. 709,514.**

**Patented Sept. 23, 1902.**

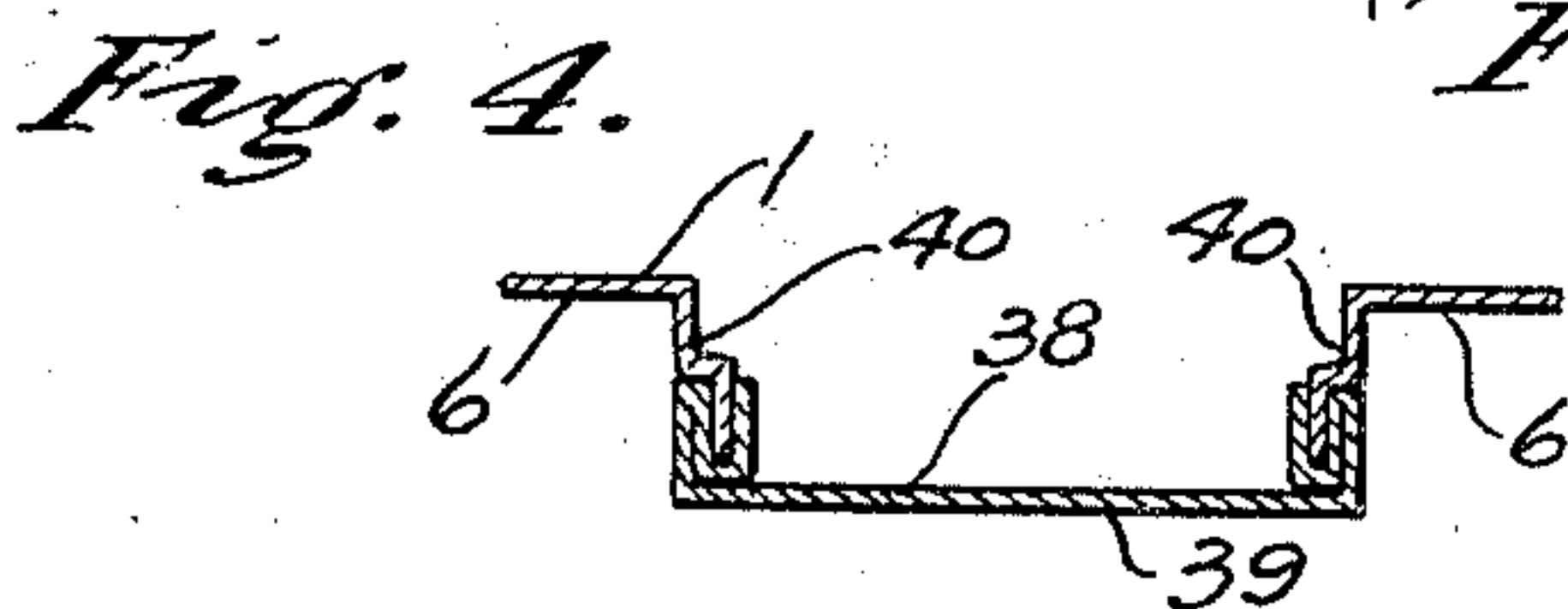
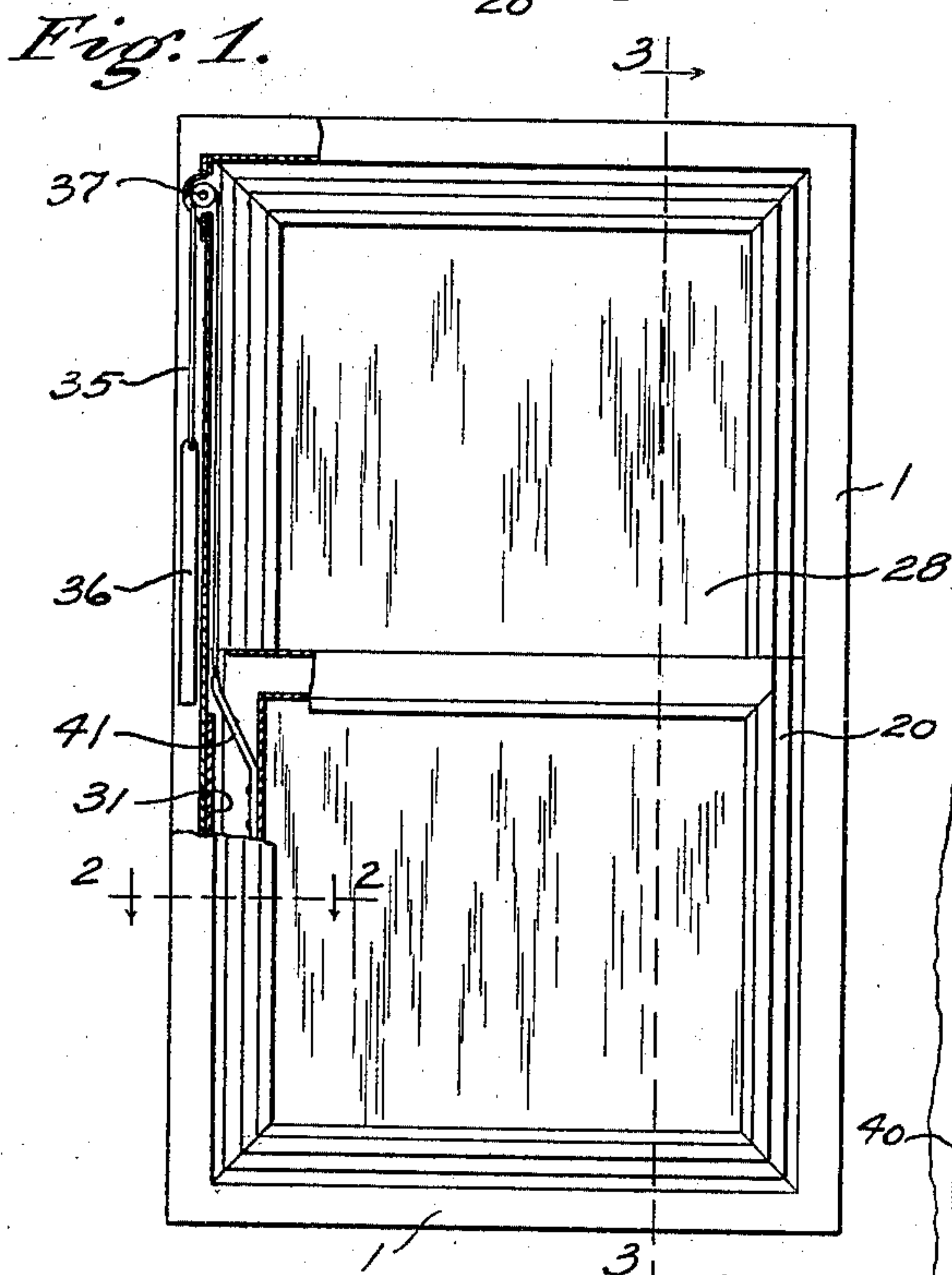
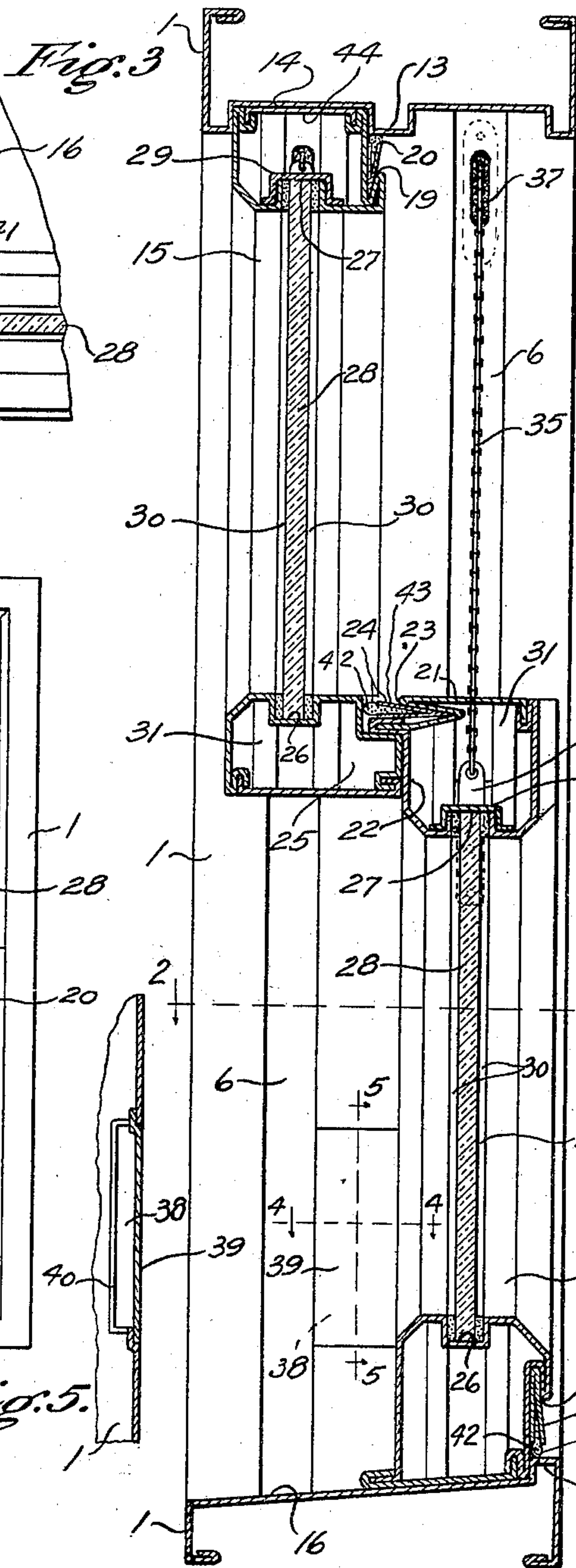
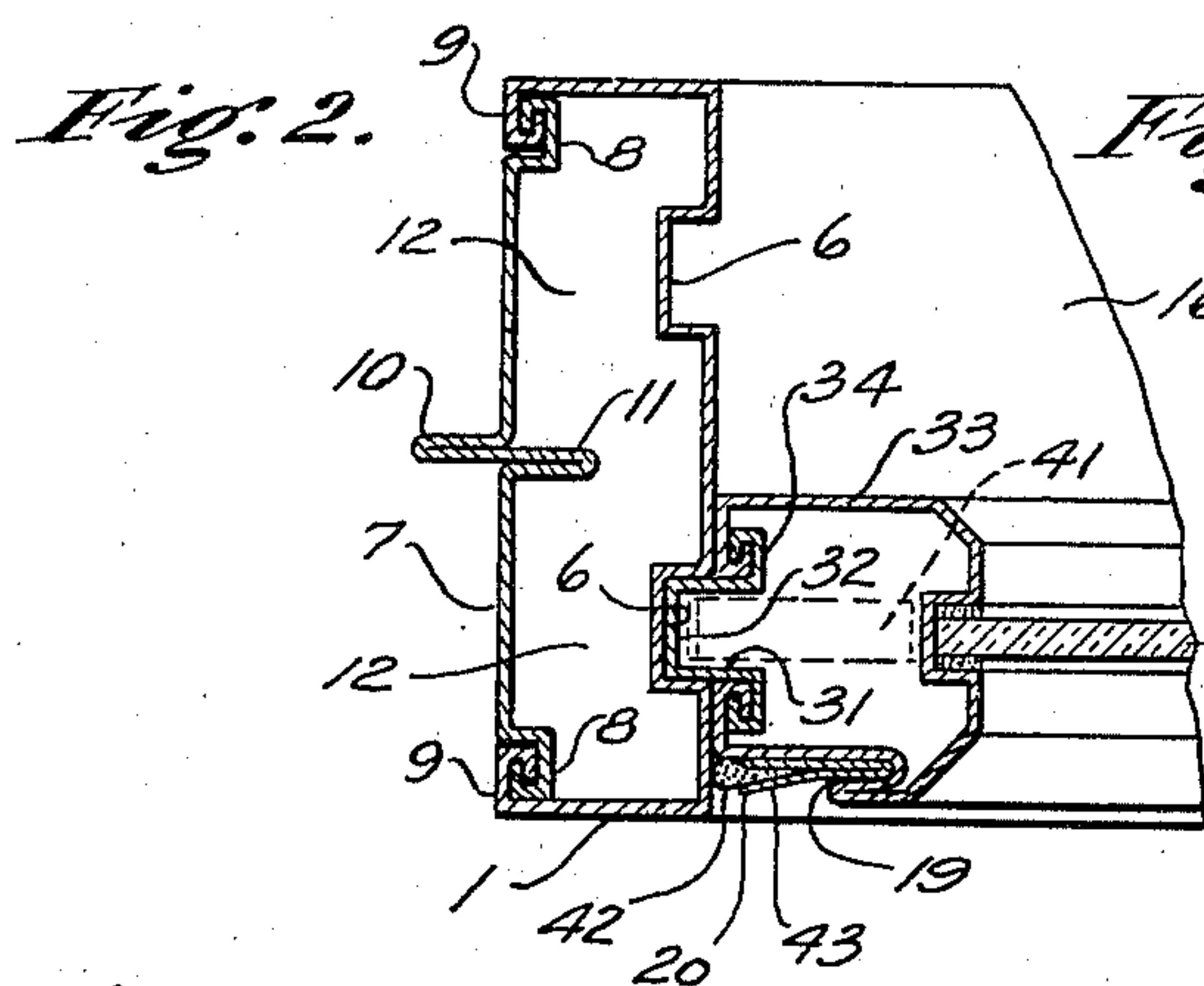
**C. B. SCHILLING.**

**SHEET METAL WINDOW FRAME AND SASH.**

(Application filed Mar. 24, 1902.)

(No Model.)

**2 Sheets—Sheet 1.**



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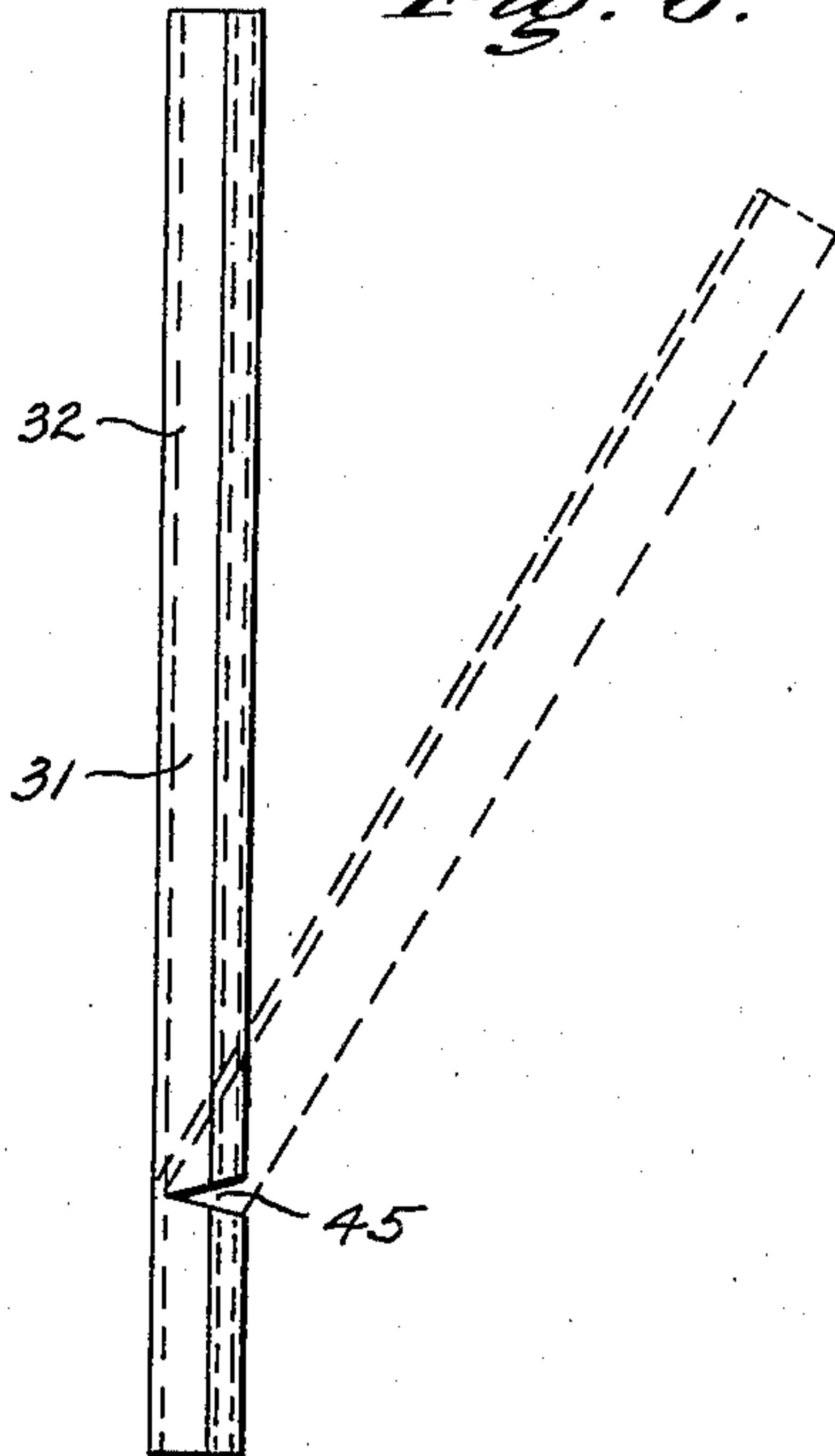
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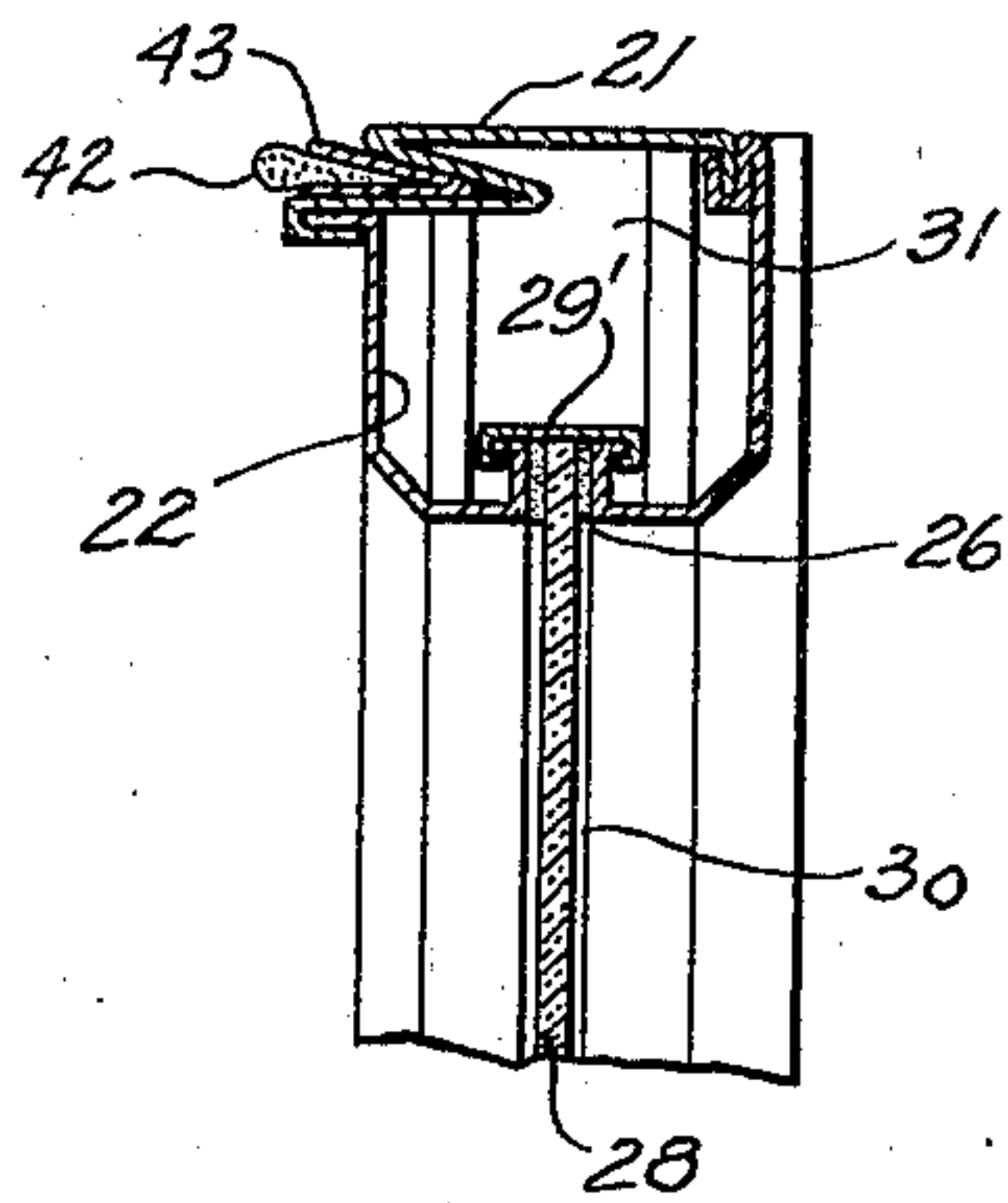
(No Model.)

2 Sheets—Sheet 2.

*Fig. 6.*



*Fig. 7.*



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# UNITED STATES PATENT OFFICE.

CHARLES B. SCHILLING, OF CHICAGO, ILLINOIS.

## SHEET-METAL WINDOW FRAME AND SASH.

SPECIFICATION forming part of Letters Patent No. 709,514, dated September 23, 1902.

Application filed March 24, 1902. Serial No. 99,748. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES B. SCHILLING, a citizen of the United States of America, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Sheet-Metal Window Frames and Sashes, of which the following is a specification.

The main objects of my invention are to provide an improved fireproof window frame and sash of suitable form to be constructed of sheet metal, to provide improved means for securing weather-strips to sheet-metal sashes, to provide improved means for securing a pane of glass in a sheet-metal sash, and to provide simple means for readily removing such sashes from their frames. I accomplish these objects by the construction shown in the accompanying drawings, in which—

Figure 1 is an elevation of a window constructed according to my invention, being partly broken away to show the means for connecting the sashes with their weights. Fig. 2 is a section of the same along the line 2 2 of Fig. 1. Fig. 3 is a section along the line 3 3 of Fig. 1. Fig. 4 is a section on the line 4 4 of Fig. 3, showing the means for gaining access to the frame for the purpose of removing the sash-weights. Fig. 5 is a vertical section along the line 5 5 of the same. Fig. 6 is an elevation showing the construction of the tongue 32, which facilitates its insertion. Fig. 7 is a section of a modified form of the cover-plate 29.

In the form shown the casing consists of a rectangular frame 1, consisting of sheet metal bent substantially to a channel-section, as shown in Figs. 2 and 3. Two ways or grooves 6 extend vertically along the inner face of each of the sides of the frame 1. The outer face of each side is preferably closed by a panel 7 to prevent the sash-weights from coming into contact with the adjacent masonry. The edges 8 of the panel 7 are bent upon themselves, as shown, and engage the oppositely-bent edges 9 of the frame 1. Extending vertically along the middle of the panel 7 are the webs 10 and 11. The web 10 is adapted to secure the frame to the adjacent masonry, and the web 11 divides the space within the frame 1 into the separate compartments 12 for the sash-weights. The lower

face 13 of the top member of the frame 1 is provided with a recess 14 for receiving the upper sash 15. The upper face 16 of the bottom member or sill of the frame 1 is provided with a stop 17, adjacent to the lower sash 18, and is inclined outwardly, as shown.

The side bars and bottom bars of the sash are each formed of two pieces of sheet metal connected as shown, and the top bars are constructed of four pieces, as will be hereinafter described. The sheet metal forming that face of each of the sashes which is toward the inside of the building is crimped to form a groove 19, adapted to hold a weather-strip 20 in contact with the adjacent part of the frame 1. The plate 21, which forms the upper part of the top bar 22 of the lower sash, is also bent to form a groove 23, which is adapted to hold a weather-strip 24 in contact with the meeting-rail 25 of the upper sash. The bounding bars of each of the sashes are recessed along their inner sides to form the groove 26, within which the window-panes are seated. The upper plates of the top bars of each of the sashes are removable. The plates forming the bottom of the top bars are slotted at 27 to permit the insertion of a pane of glass 28 into the grooves 26. The slots 27 are preferably covered by means of cover-plates 29, which are secured to the adjacent parts of the top bars and serve to retain the glass 28 in position. The glass 28 is packed on each side along the groove 26 with a layer of putty 30. When the modified form of the cover-plate 29 shown in Fig. 7 is used, the opening in the side bar 33, into which the tongue 31 fits, will be made wide enough to permit the modified cover-plate 29' to be withdrawn through same. The plate 31 of each of the side bars is bent to form a tongue 32, extending along said side bar and adapted to slidably engage the groove 6. The plate 31 is bent to engage the main part 33 of the side bar, as at 34, and is adapted to be withdrawn lengthwise of the part 33 to permit the removal of the sash from the frame. The plate 31 is preferably notched at 45 to permit same to bend, (see dotted lines, Fig. 6,) so as to be readily removable above the sash when same is in its lowest position. The upper plates 21 and 44 of the top bars of the sashes are suitably cut away at their ends to permit the re-



removal of the plates 31. The apertures provided for the removal of the plates 31 also serve to receive the chains 35, from which the weights 36 are hung. Sheaves 37 are provided at the upper end of each of the grooves 6, as is usual in devices of this class. A portion of the lower part of the frame 1 is cut away at each side to provide an aperture 38 for the removal of the weights 36. The aperture 38 is covered by a plate 39, Figs. 4 and 5. The plate 39 and the adjacent slots 40 of the frame 1 are bent, as shown, so that the exterior surface of the plate 39 will be flush with that of the frame 1.

Rivets and taps are the preferable fastening means for securing the various parts together. Such parts as are removable only occasionally—as, for instance, the plates 21, 29, 31, and 39—are secured at intervals by small taps or bolts.

The weight-chains 35 are secured to the side bars of the sashes by means of straps 41, which are secured to the side bars independently of the plates 31.

The weather-strip shown consists of a strip of suitable packing material 42, supported by a V-shaped covering 43, of sheet metal.

The operation of the device shown is as follows: The frame 1 is secured within the masonry of the walls of a building. One of the plates or tongues 31 in each sash is removed. The weights 36 are hung by their chains in the compartments 12 of the frame and connected with their respective sashes. Each sash may be placed within the frame in its proper position and each plate 31 inserted from the top of its sash, thus securing the sash within the groove 6. When the lower sash is removed from the frame 1, the weather-strip 24 may be readily withdrawn from its groove. The other weather-strips may be readily removed while the sashes are in the frame. If a window-pane should be broken, it can be easily replaced by removing the plates 29 and 21 or 44.

It will be seen that numerous details of the device shown may be altered without departing from the spirit of my invention. I therefore do not confine myself to such details except as hereinafter limited in the claims.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of a window-frame; a sheet-metal sash fitting within said frame and having on one face a flange lying in a plane substantially parallel with said face and adapted to hold a weather-strip in suitable position to engage said frame along the edge of said sash.

2. The combination of a window-frame; a weather-strip comprising a strip of packing secured to a suitable bar of sheet metal; and a sash mounted in said frame and having a side bar formed of sheet metal, said metal being bent upon itself along one face to form a flange adapted to secure said weather-strip

against said face and in contact with said frame, substantially as shown and described.

3. The combination of a window-frame with stops thereon for a sliding sash; a sash having a side bar formed of sheet metal bent to form a groove for receiving the window-pane and having flanges on the face of said bar toward the frame; and a sheet-metal tongue having opposite flanges for slidably engaging the flanges on said sash; all arranged to permit the lengthwise withdrawal and insertion of the tongue, and to permit the sash to be swung laterally free from the stops and removed from the frame when said tongue is withdrawn; said tongue being adapted to slidably engage the stops to prevent such removal of the sash when the tongue is inserted between the sash and frame; said side bar being formed of a single piece of sheet metal doubled upon itself on the inner face to form a flange adapted to engage a weather-strip substantially as shown.

4. A window-sash having a side bar formed of a piece of sheet metal bent to form a groove for receiving the window-pane, and being doubled upon itself upon the inner face to form a flange adapted to engage a weather-strip substantially as shown.

5. A window-sash having a cross-bar formed of sheet metal bent to form a channel for receiving the window-pane, said channel having a removable inner part to permit said pane to be passed entirely through said cross-bar, said cross-bar having its front and back extended beyond said inner part and bent to engage the edges of a sheet-metal cover, and a removable sheet-metal cover having its edges bent to interlock with the front and back of said cross-bar.

6. A window-sash having a cross-bar formed of sheet metal bent to form a channel for receiving the window-pane, said bar having its front and rear walls bent to engage a sheet-metal cover, and a removable sheet-metal cover having its edges bent to engage said front and rear walls and being doubled upon itself to form a flange and channel adapted to engage a weather-strip substantially as shown.

7. The combination of a window-frame, a sash slidably mounted in said frame, said sash being of sheet metal and being suitably bent to form a groove extending around three sides of same and lying in a plane substantially parallel with that of the sash, and a weather-strip removably seated in said groove and fitting against the adjacent surfaces of said frame.

8. The combination of a window-frame having ways or grooves therein for guiding a sliding sash, a sash slidably mounted in said frame and having a side bar arranged to slidably engage a tongue seated in one of said grooves, and a tongue adapted to be inserted lengthwise between the side bar and frame in said groove and being formed of two sec-



tions suitably connected to permit the upper section to be tilted on the lower section for insertion in the groove, substantially as shown.

5 9. The combination of a window-frame having ways or grooves therein for guiding a sliding sash, a sash slidably mounted in said frame and having a side bar arranged to slidably engage a tongue seated in one of said grooves, and a channel-shaped sheet-metal  
10 tongue adapted to be inserted lengthwise between the side bar and frame in said groove and being notched in its side walls to permit said tongue to bend at the notched part substantially as and for the purpose described.

15 10. A window-sash having a cross-bar formed of sheet metal bent to form a channel for receiving the window-pane, said channel

having a removable inner part to permit said pane to be passed entirely through said cross-bar, said cross-bar having its front and back 20 extended beyond said inner part and bent to engage the edges of a sheet-metal cover, and a removable sheet-metal cover having its edges bent to interlock with the front and back of said cross-bar, and being adapted to 25 be withdrawn lengthwise from one end of said cross-bar, substantially as shown.

Signed at Chicago this 21st day of March, 1902.

CHARLES B. SCHILLING.

Witnesses:

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