

No. 732,901.

PATENTED JULY 7, 1903.

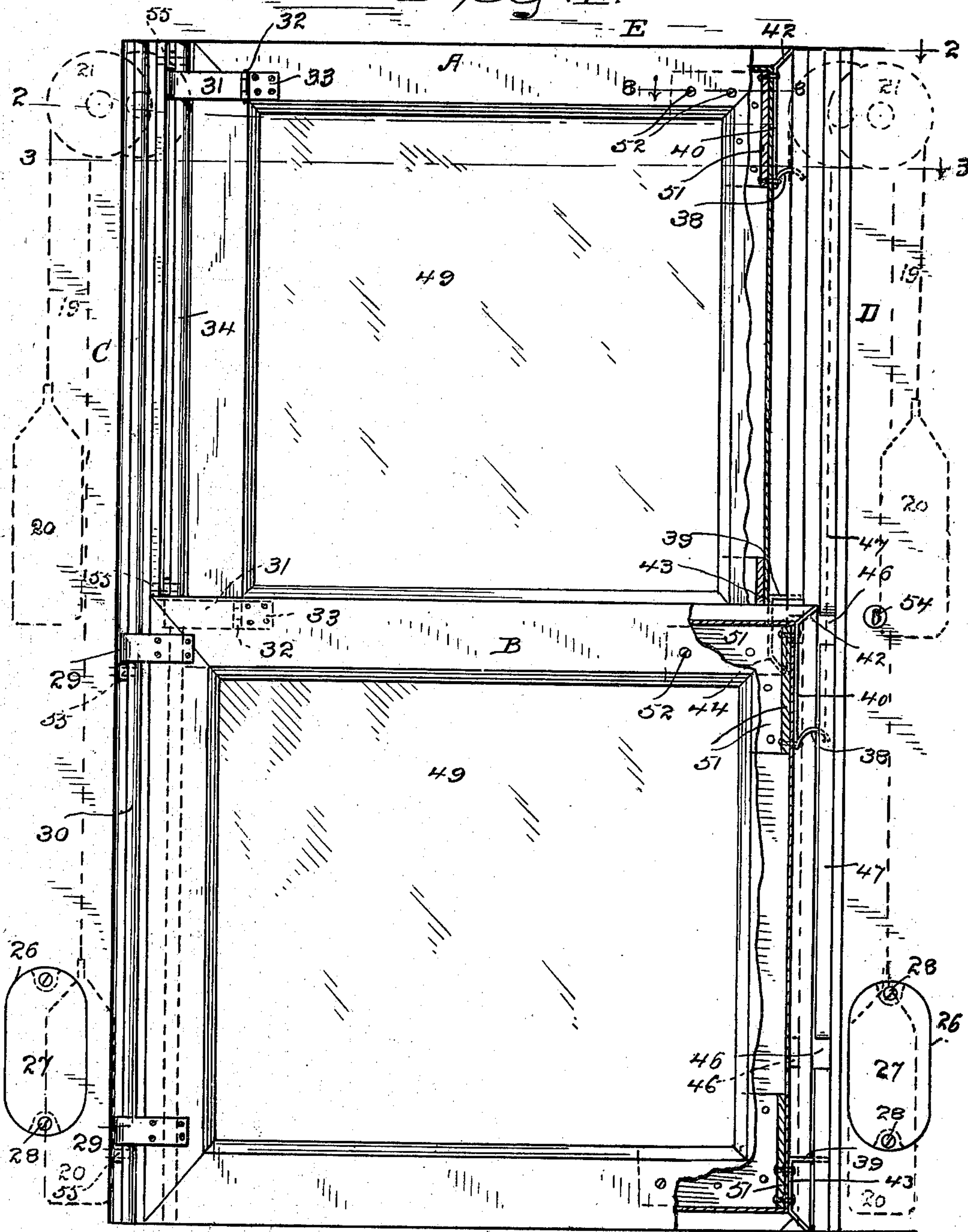
C. SCHROEDER.  
FIREPROOF WINDOW CASING AND SASH.

APPLICATION FILED NOV. 12, 1902.

NO MODEL.

3 SHEETS—SHEET 1.

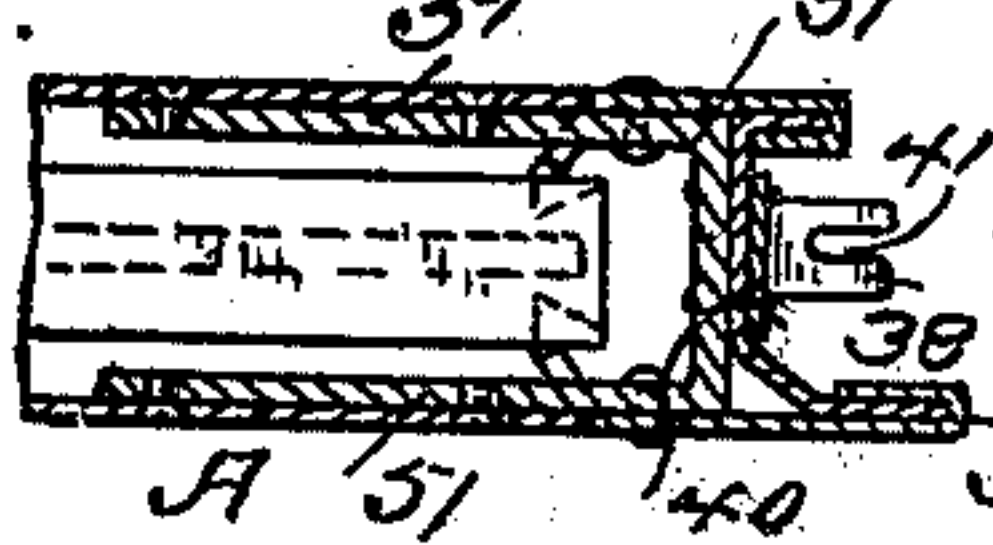
Fig. 1.



WITNESSES.

H. A. Lamb.  
J. W. Asherton.

Fig. 8.



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3 SHEETS—SHEET 2.

Fig. 2.

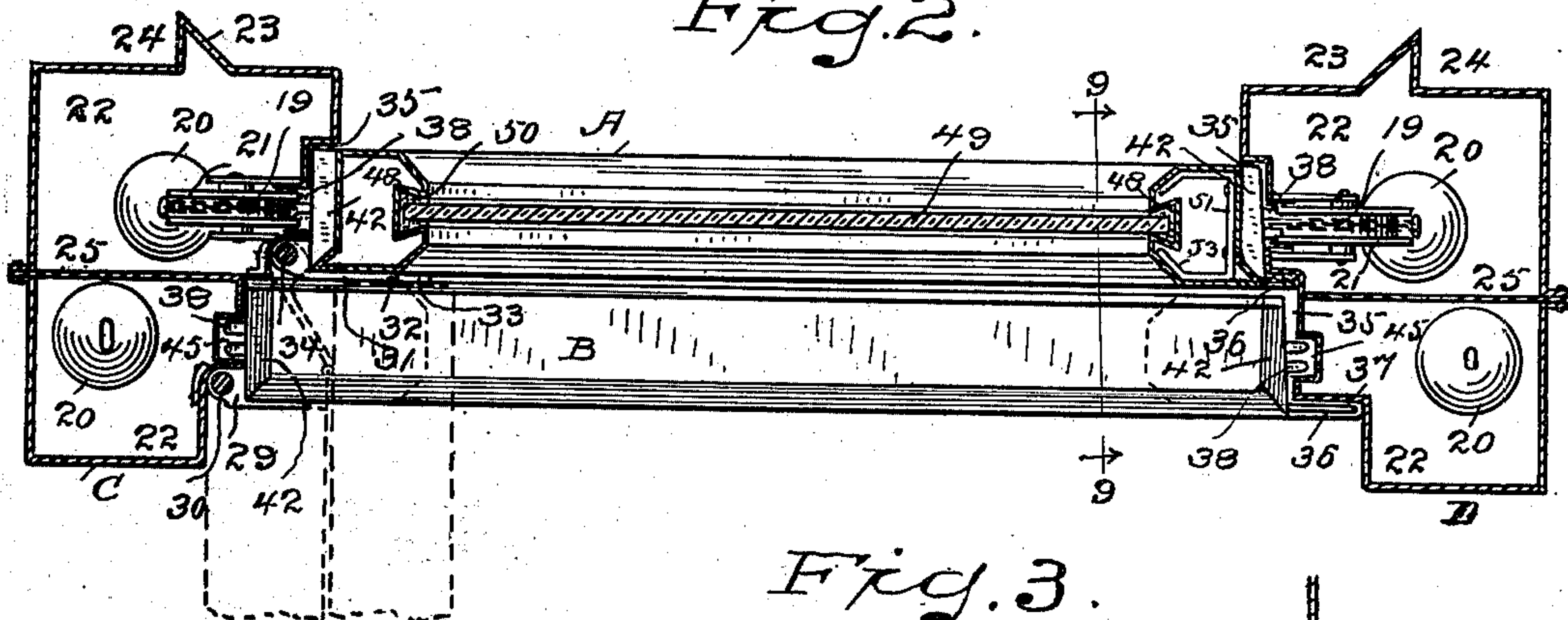


Fig. 3.

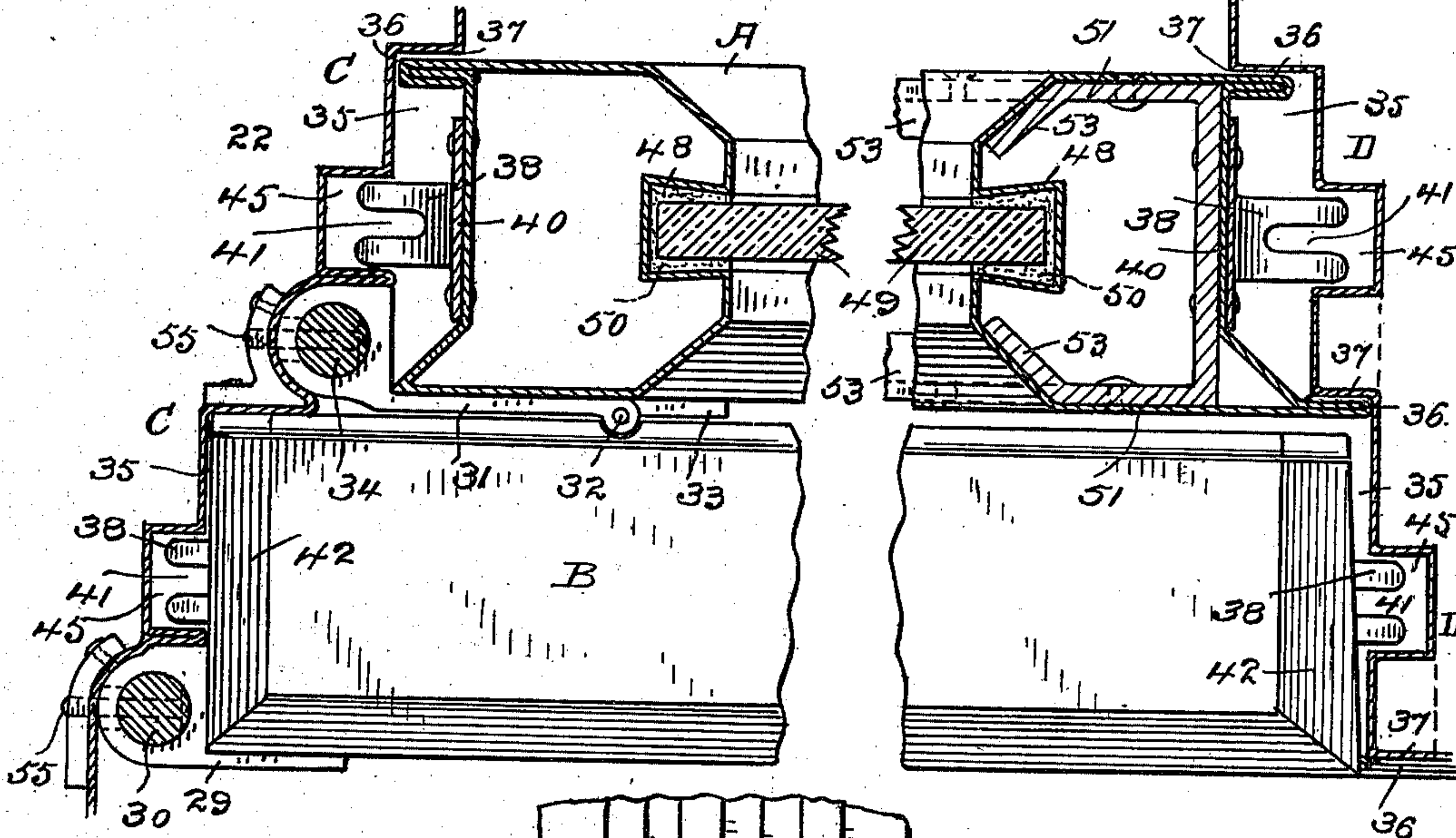


Fig. 4.

Fig. 6.

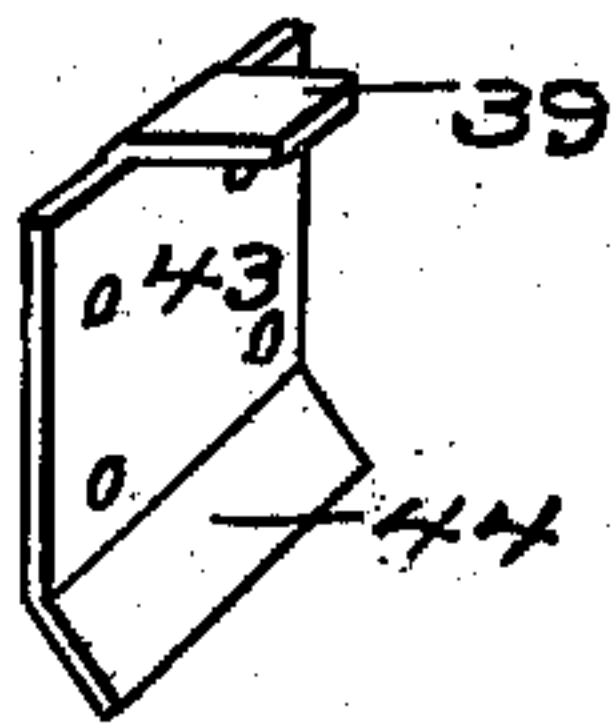


Fig. 7.

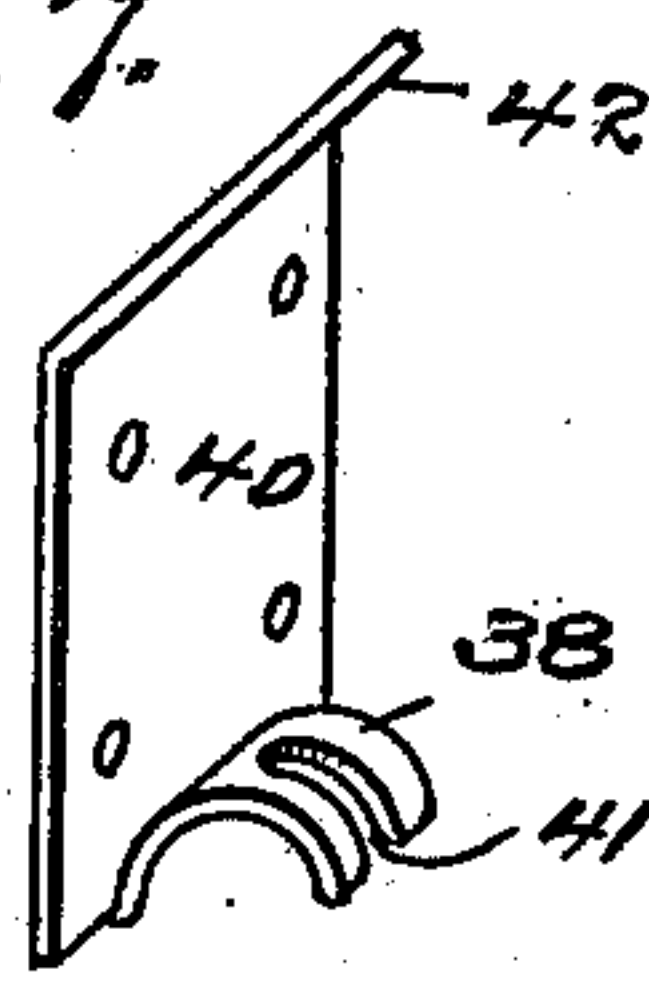
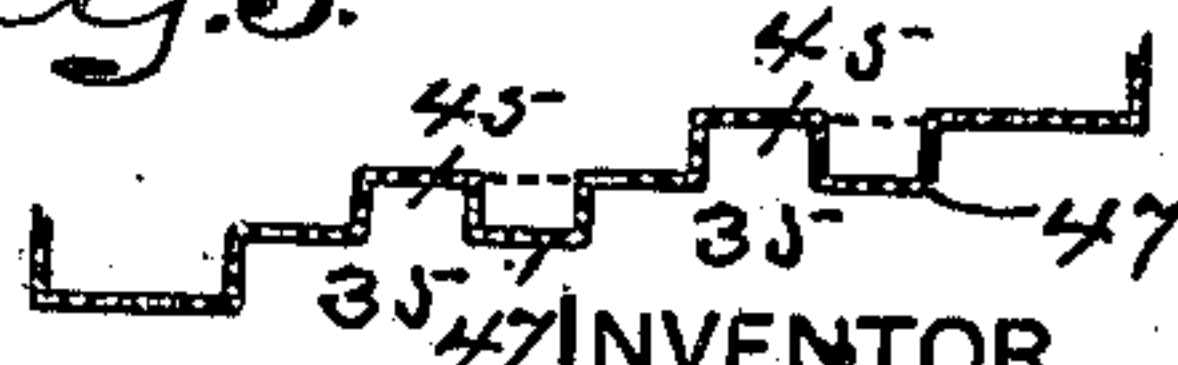


Fig. 5.



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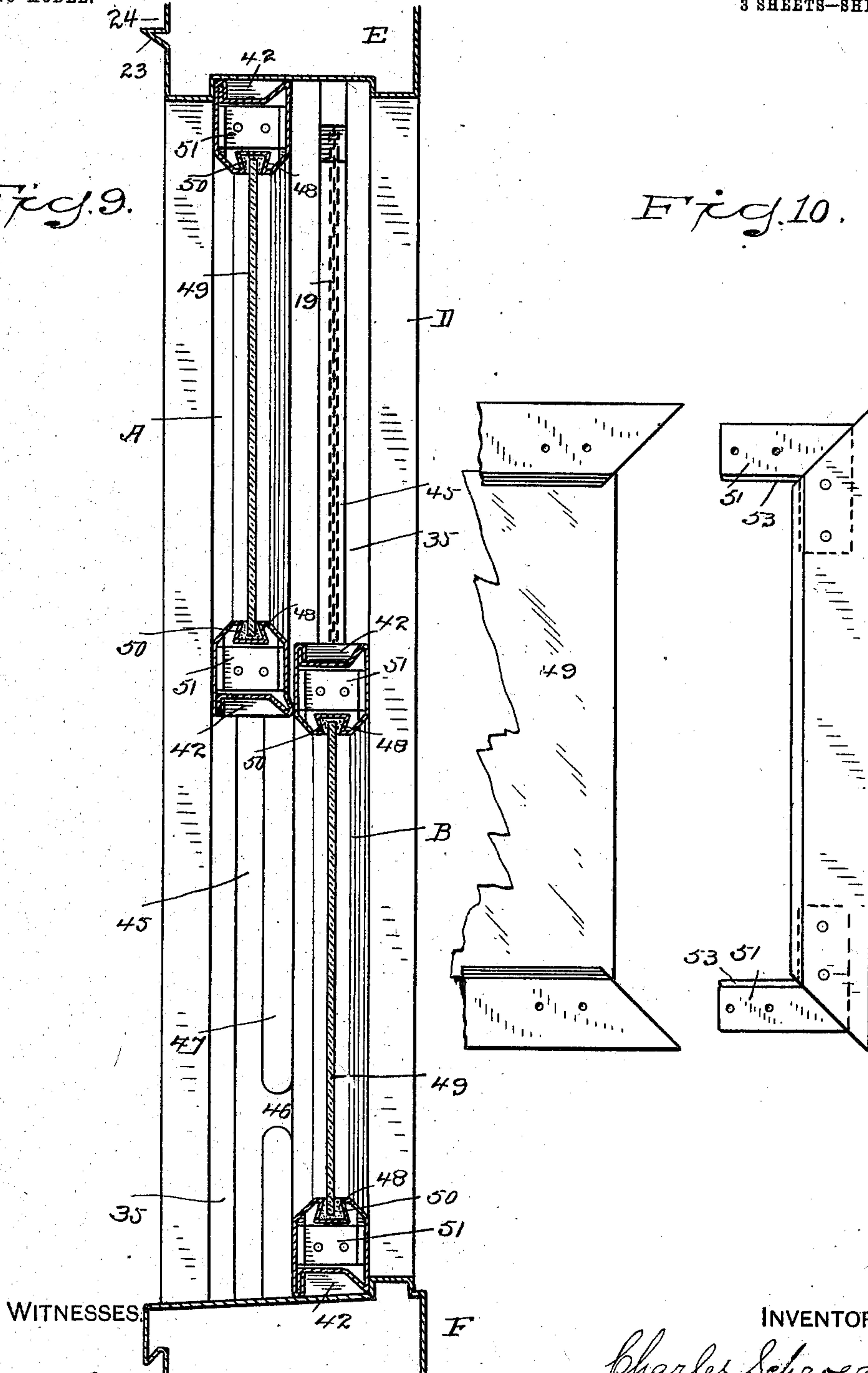
APPLICATION FILED NOV. 12, 1902.

NO MODEL.

3 SHEETS—SHEET 3.

Fig. 9.

Fig. 10.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

CHARLES SCHROEDER, OF BRIDGEPORT, CONNECTICUT.

## FIREPROOF WINDOW CASING AND SASH.

SPECIFICATION forming part of Letters Patent No. 732,901, dated July 7, 1903.

Application filed November 12, 1902. Serial No. 130,997. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES SCHROEDER, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Fireproof Window Casing and Sash, of which the following is a specification.

My invention relates to the construction of fireproof buildings, and has for its object to provide simple and inexpensive sheet-metal window casings and sashes which shall be so constructed as to secure the maximum of efficiency at a minimum cost of construction and of building in, shall permit both upper and lower sashes to be raised and lowered in the usual manner and also to be swung inward for the purpose of cleaning or ventilation without the removal of any parts or any inconvenience whatever, and which will permit the replacement of broken glass by simply removing one side of the sash and sliding the glass into place.

With these and other objects in view the invention consists in certain constructions and in certain parts, improvements and combinations which will be hereinafter described and then specifically pointed out in the claims hereunto appended.

In the accompanying drawings, forming part of this specification, Figure 1 is an elevation showing my novel window-casing with upper and lower sashes in the closed position, a portion of one side of both sashes being broken away to show the construction; Fig. 2, a section on the line 2 2 in Fig. 1 looking down, the chains and rollers for the lower sash being omitted for the sake of clearness; Fig. 3, a greatly-enlarged sectional view on the line 3 3 in Fig. 1 looking down; Fig. 4, a detail elevation of the face of the casing on the side corresponding to the free side of the sashes; Fig. 5, a section of the casing on the line 5 5 in Fig. 4; Fig. 6, a perspective of one of the lower side guides detached; Fig. 7, a perspective of one of the upper side guides detached, said upper guides serving also as fasteners for the sash cords or chains; Fig. 8, a detail sectional view on the line 8 8 in Fig. 1; Fig. 9, a vertical transverse section of the top casing, the sill, and both upper and lower sashes; and Fig. 10 is a detail view showing one side of a sash detached, as in replacing a glass.

A denotes the upper sash, B the lower sash, C a casing for the hinged side of the sashes, D a casing for the free side of the sashes, E the top casing, and F the sill, all of which are formed from sheet metal.

The sashes may be balanced in any ordinary or preferred manner, as by weights 20, carried by cords or chains 19, passing over pulleys 21 and attached to the sashes, preferably in a manner which I shall presently describe.

22 denotes the wells in which the weights are hung and which are made from sheet metal and built into the brick or stone work. I have shown the exterior wells as provided with inclined facings 23, back of which are recesses 24, into which the brick or stone work is built. The wells for the upper and lower sashes are preferably separated by metallic walls 25 to prevent interference of the weights. These partitions do not in practice extend quite to the bottom of the wells, openings 26 being provided at the front of the inner wells to give access to the weights. The openings are shown as covered by plates 27, retained in place by screws 28, engaging lugs which are shown only in dotted lines. The sashes slide vertically in the usual ways 35, both sashes being provided with facings 36, formed by folding the metal of which the sashes are formed and adapted to bear against shoulders 37 on the side casings to serve as weather-stops. As shown in Fig. 2, the lower sash is made slightly wider than the upper sash in order to provide for swinging both sashes inward. The top and side casings and the sill are, as stated, made wholly of sheet metal, which is stamped to the required configuration. The lower sash is provided on one side (the left, as shown in the drawings) with eyes 29, which are rigidly secured thereto and are adapted to slide vertically and also to oscillate on a rod 30, which is rigidly secured in place, as by screws 55, which pass through the rod and rigidly engage the casing. (See dotted lines, Fig. 3.) The upper sash is provided with eyes 31, which are hinged, as at 32, to plates 33, which are themselves rigidly secured to the sash. Eyes 31 upon the upper sash are adapted to slide vertically and also to oscillate on a rod 34, rigidly secured in place by screws 55 and placed back of and inward from rod 30, on which the lower sash slides, so as to permit



the upper sash to swing inward parallel with the lower sash, as indicated by dotted lines in Fig. 2, it being of course obvious that the upper sash cannot be swung inward until the lower sash has been swung inward. In swinging the upward sash inward eyes 31 will turn on rod 34 until they assume an oblique position, as shown in Fig. 2, and the sash will then swing inward at right angles to the casing, turning on the hinges. In order to retain the sashes in place in the casings when it is desired to raise and lower them vertically, as in ordinary use, I provide them with upper side guides 38 and with lower side guides 39. The upper side guides perform the additional function of attaching devices for detachably securing the sash cords or chains to the sashes. These upper side guides and attaching devices are formed integral with or rigidly secured to plates 40, which are themselves rigidly secured to the edge of the sash, as by rivets or screws. The combined upper side guides and chain-attaching devices are formed by curving a strip of metal upward, over, and downward, forming approximately a half-cylinder, and providing in the outer edge thereof a slot 41 to receive the cord or chain, the under side of the half-cylinder forming a socket to receive a knot upon a cord or a link of chain, which may be additionally secured in any suitable manner, as by a cross-pin. (Not shown.) At the upper edges of plates 40 are oblique plates 42, which extend to the tops of the sashes and approximately fill ways 35, in which the sashes slide. The lower side guides 39 are simply lugs formed integral with or rigidly secured to plates 43, which are also provided with oblique plates 44, extending downward to the bottom of the sash and approximately fitting the ways in which the sash slides. In order to receive the side guides, which necessarily extend outward beyond the ways in which the sashes slide, I provide grooves 45 at the mid-width of the bottom of the ways, into which said side guides extend, the sashes being securely retained in their normal position by the engagement of said guides with the side walls of the grooves. In order, however, that the sashes may be readily swung inward whenever required without inconvenience and without the removal of any parts, I provide passages or openings 46 through the raised ribs of metal 47, which form the inner side walls of the grooves 45. It should be noted that the casings are made from sheet metal, which is pressed into the desired shape. The configuration of the casing will be readily understood from Fig. 5, which see in connection with Fig. 4. Raised ribs 47 are, in fact, pressed up in sections, leaving the passages 46 between the sections.

The inner edges of the top, bottom, and side rails of the sashes are provided with grooves 48, preferably widest at their bottoms, as shown, which receive the glass 49, the edges of the glass within the grooves being set in

putty or cement, (indicated by 50.) In order to provide a simple and convenient way of replacing a glass in the event of breakage, I make the side rail on the free side of the sash detachable. On the other side of the sash, however, the top and bottom rails may be rigidly and permanently secured to the side rail in any ordinary or preferred manner. The attachment of the side rail on the free side to the top and bottom rails is effected by means of angle-pieces 51, which may be riveted or otherwise rigidly secured to the side rail and which pass into the open ends of the top and bottom rails, to which they are secured after the glass is in place by means of screws 52. The edges of these angle-pieces may be turned inward obliquely, as at 53, to bear upon the inner side of the oblique inner and outer faces of the side rail as a brace and support therefor.

The operation of my novel sashes and casing will be readily understood from the drawings and description. In ordinary use the sashes slide vertically in the usual manner. When it is desired to swing the lower sash inward, it is raised until the side guides 38 and 39 register with passages 46, when the sash may be swung inward by oscillating eyes 29 on rod 30, after which the sash is dropped down upon the rod, the hinged end of the sash resting upon the sill. Should it be desired to swing the upper sash inward also, said sash is lowered until the side guides thereon register with passages 46, after which it may be swung inward parallel with the lower sash, as indicated by dotted lines in Fig. 2, and dropped down to the sill, the eyes 31 oscillating on rod 34 and standing obliquely, as indicated by dotted lines. To restore the sashes to their normal position, the upper sash is first raised until the side guides will pass through the passages, after which it is raised to place in the usual way. The lower sash is then raised until the side guides will pass through the passages, after which it is lowered to place. In order to swing the sashes inward to the position shown in dotted lines, it is of course necessary to detach the sash chains or cords therefrom. This may be readily accomplished as soon as the side guides have passed through the passages, the operator simply disengaging the cords or chains from the upper side guides, which also serve as attaching devices therefor, and then attaching said cords or chains to a hook 54, which is conveniently placed on the inner side of the casing.

Having thus described my invention, I claim—

1. The combination with a window-casing having vertical ways with grooves at their bottoms and upon one side vertical rods, the groove in the opposite side having for its inner wall a raised rib with passages through it, of sashes having eyes adapted to both slide and oscillate on the rods, and side guides upon the edges of the side rails which engage the



grooves; said side guides being adapted when registering with the passages to pass through them and permit the sashes to be swung inward.

5 2. The combination with a window-casing having vertical ways and upon one side vertical rods one of which is placed back of and inward from the other, of sashes having eyes adapted to both slide and oscillate on said  
10 rods respectively so that the sashes may slide vertically in the ways and also be swung inward on the rods.

3. The combination with a window-casing having vertical sashways and upon one side  
15 vertical rods one of which is placed back of and inward from the other, of upper and lower sashes having eyes adapted to both slide and oscillate on the rods respectively, the eyes on the upper sash being hinged there-  
20 to at a distance from the edge, so that when the lower sash is swung inward the upper sash may be swung inward parallel therewith.

4. The combination with a window-casing having vertical ways with grooves at their  
25 bottoms and upon one side vertical rods, of upper and lower sashes having eyes adapted to both slide and oscillate on the rods respectively, and provided on their edges with side guides engaging the grooves, the inner side  
30 wall of the groove on the side opposite the rods having passages through which the side guides may pass, substantially as shown, for the purpose specified.

5. The combination with a window-casing  
35 having vertical ways with grooves at their bottoms and upon one side vertical rods, of upper and lower sashes having eyes adapted to both slide and oscillate on the rods respectively and provided on their edges with upper  
40 and lower side guides engaging the grooves, said upper side guides being curved upward

and over to form chain or cord attaching devices.

6. A sheet-metal window-sash having in the inner edges of the rails grooves to receive  
45 the glass, one of the side rails being provided with angle-pieces which extend into the top and bottom rails to which said angle-pieces are detachably secured.

7. A sheet-metal window-sash having in  
50 the inner edges of the rails grooves made widest at the bottom, which receive the edges of the glass and are adapted to retain putty or cement, one of the side rails having rigidly  
55 secured thereto angle-pieces adapted to enter the open ends of the top and bottom rails to which they are detachably secured.

8. A sheet-metal window-sash having in the inner edges of the rails grooves to receive  
60 the glass, one of the side rails having angle-pieces rigidly secured thereto which are adapted to enter the open ends of the top and bottom rails to which they are detachably se-  
65 cured, the edges of said angle-pieces being turned inward obliquely to bear upon and support the inner sides of the rails.

9. The combination with a window-casing having sashways, grooves 45 at the bottoms of the ways and shoulders 37, of upper and lower sashes formed from sheet metal and  
70 having facings 36 which bear against the shoulders, and side guides which engage the grooves and have formed integral therewith oblique plates 42 which extend upward and downward respectively and approximately fill  
75 the ways.

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

CHARLES SCHROEDER.

Witnesses:

A. M. WOOSTER,  
S. W. ATHERTON.