

No. 776,349.

PATENTED NOV. 29, 1904.

I. N. PRICE.
FIREPROOF WINDOW.

APPLICATION FILED MAR. 1, 1904.

NO MODEL.

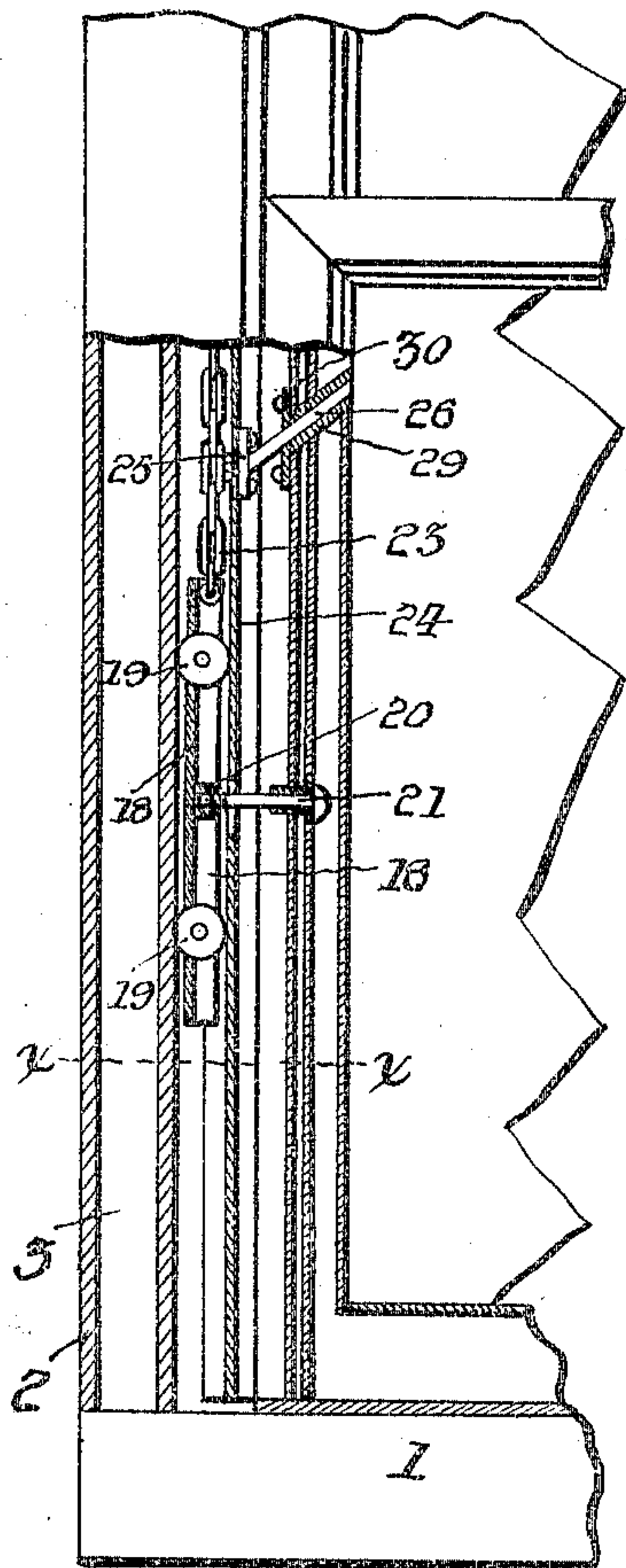


Fig. 1.

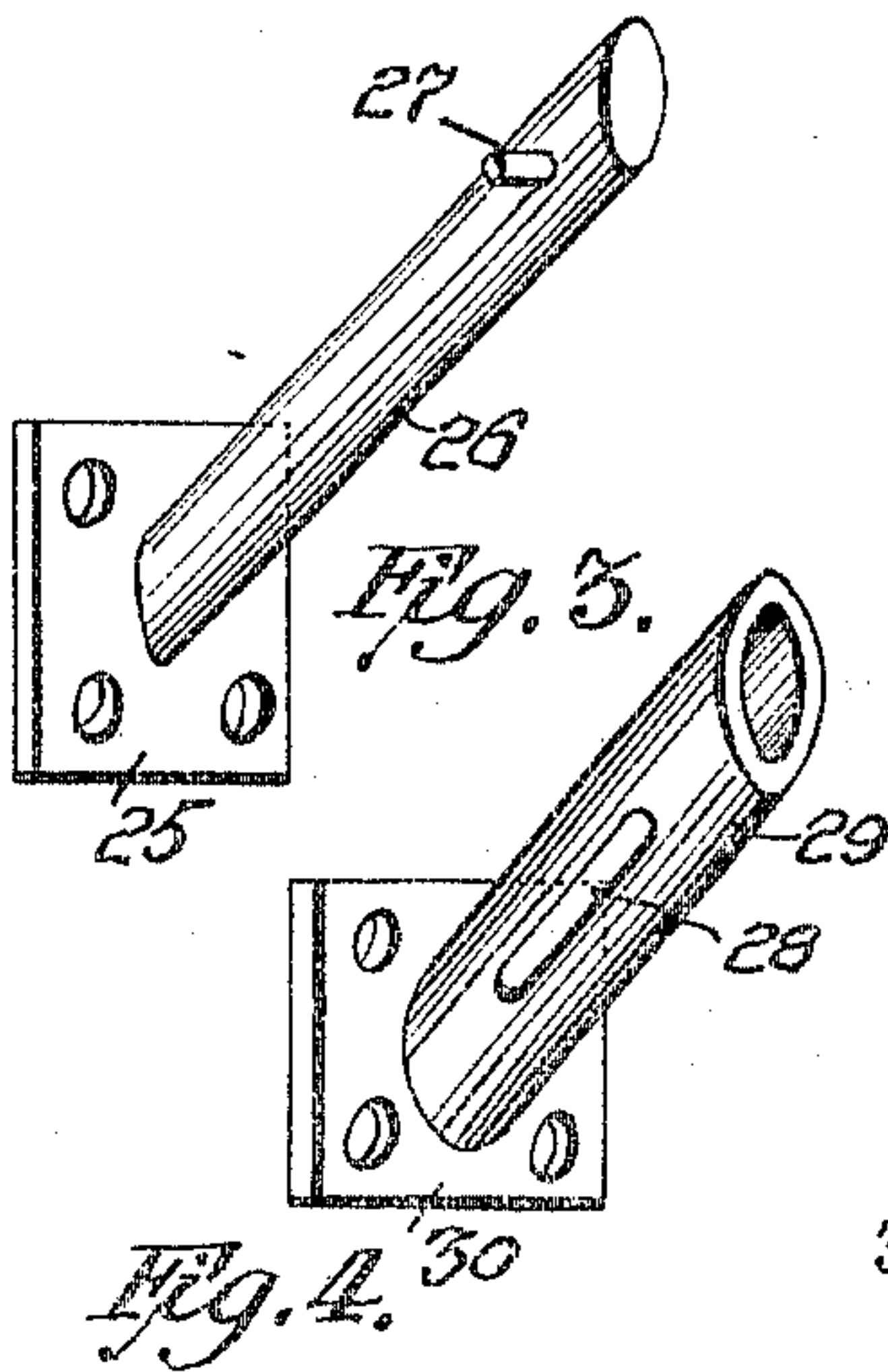


Fig. 2.

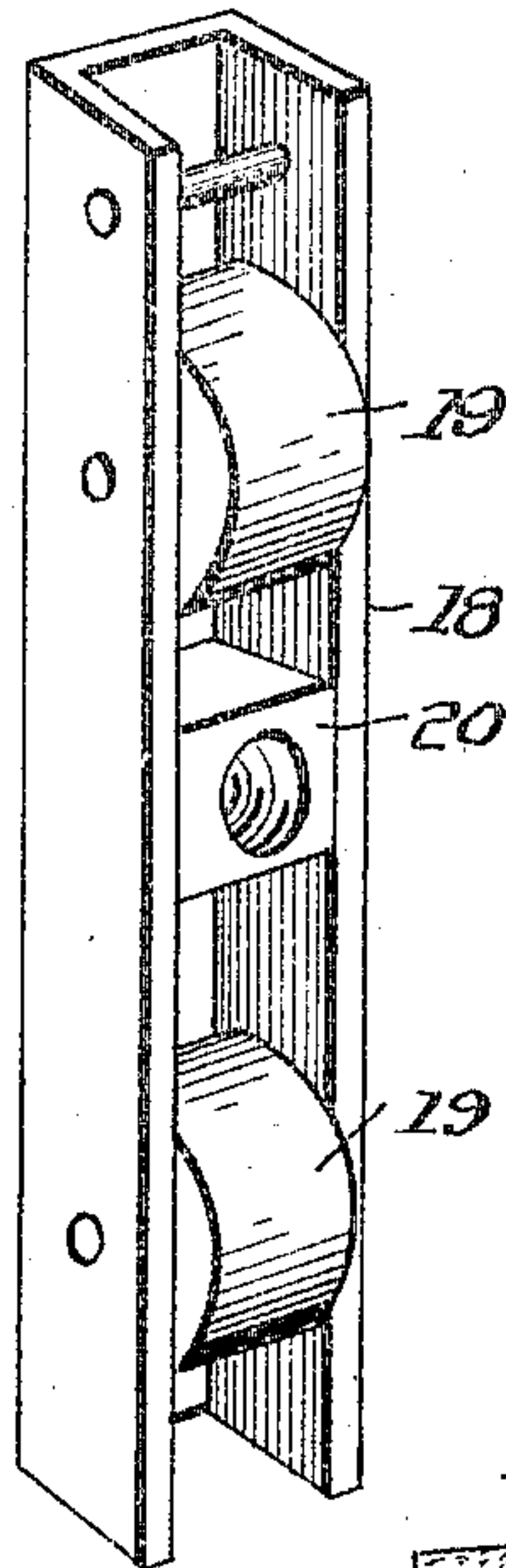
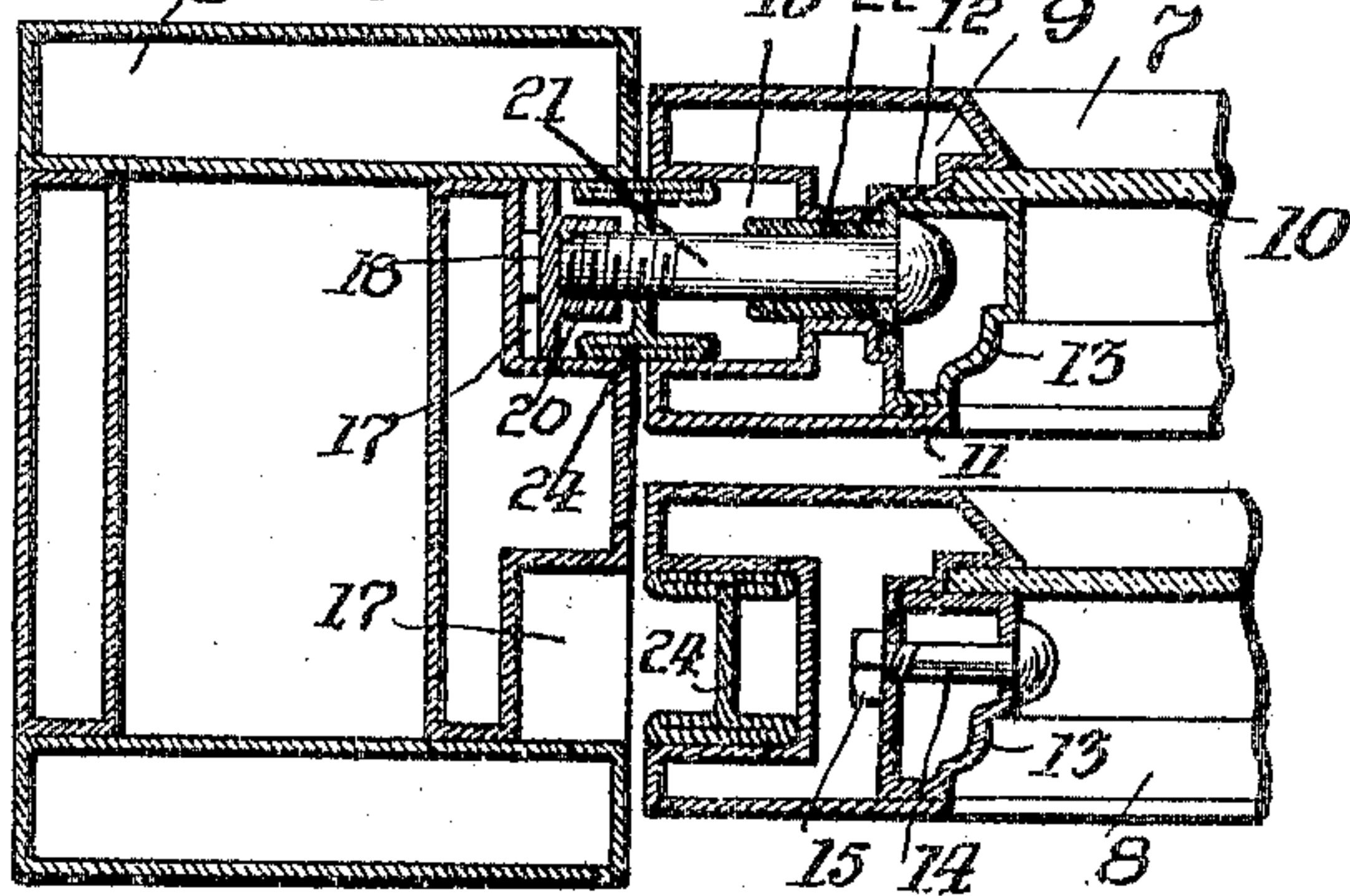


Fig. 5.

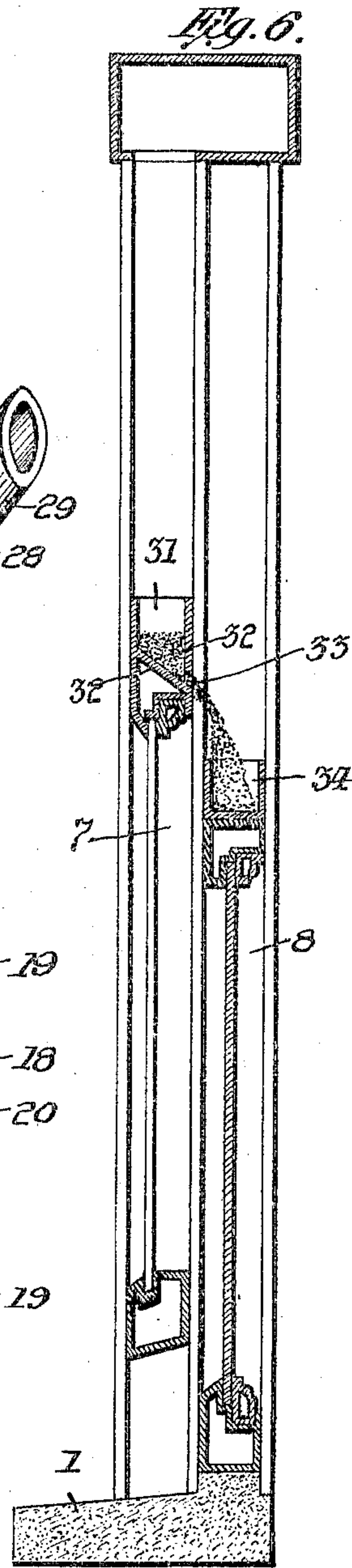


Fig. 6.

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UNITED STATES PATENT OFFICE.

ISAAC N. PRICE, OF SALEM, OHIO.

FIREPROOF WINDOW.

SPECIFICATION forming part of Letters Patent No. 776,349, dated November 29, 1904.

Application filed March 1, 1904. Serial No. 196,034. (No model.)

To all whom it may concern:

Be it known that I, ISAAC N. PRICE, a citizen of the United States of America, residing at Salem, in the county of Columbiana and State of Ohio, have invented certain new and useful Improvements in Fireproof Windows, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention has relation to fireproof windows of that class in which metallic window-sashes are mounted in a metallic frame in such a manner that they may be raised and lowered and also swung around on a horizontal axis without removing them from the frame.

My invention has for its object the provision of a metallic fireproof window of novel construction in which the sashes are counterbalanced and slide up and down in a metallic frame and in which the window-sashes are guided in the frame so as to be vertically movable and are swiveled on a movable axis, so that they may be swung around at any point in the path of their movement in the frame.

My invention has for its further object the provision, in a window, of novel means whereby vertically-movable counterbalanced window-sashes will move automatically and close the window-opening when subjected to an abnormal degree of heat, thereby safeguarding the apartments in which the windows are located from fire.

My invention consists in the novel construction, combination, and arrangement of parts to be hereinafter more fully described, and specifically pointed out in the claims.

In the accompanying drawings, Figure 1 is an elevation of a portion of a window-frame, partly in section, with my improvements applied thereto. Fig. 2 is a transverse sectional view, looking upwardly, on the line *xx* of Fig. 1, but on a larger scale than Fig. 1 and with a modified form of window-frame. Figs. 3, 4, 5 are perspective views of detached parts of the devices shown in Figs. 1 and 2. Fig. 6 is a vertical transverse sectional view of a window containing two window-sashes constructed according to my invention.

The sill of the window, which is designated

by the numeral 1, is of the usual character, being made of stone or cement, and upon said sill 1 is mounted a frame 2, which is composed of sheet metal of appropriate character and contains the usual cavities 3 for the reception of the weights by means of which the window-sashes are counterbalanced. The frame 2 is substantially rectangular in cross-section. Both sashes 7 8 are of the same construction and provided with the same appliances for counterbalancing the sashes and for the swinging of the sashes on horizontal pivots, and hence the description of one of these sashes will apply to the other, and the same reference-numerals will be used to designate corresponding parts of such sashes. The sash 7, taking this sash for description, is made of sheet metal and is formed with the usual bead 9, against which rests the glass 10 of the window, and the other edge of the sash is formed with a narrow flange 11, and between said flange 11 and the shoulder 12, formed adjacent to the bead 9, a hollow metallic molding 13 is arranged, said molding being secured in position by bolts 14, which pass through the wall of the sash and carry nuts 15 on their inner ends. In the edge of the sash adjacent to the frame a longitudinally-disposed recess 16 is formed, and a corresponding recess 17 is formed in the frame 2, and in said recess is slidably arranged a channel-bar 18, provided with friction-wheels 19, that run against the inner wall of the recess 17. The channel-bar 18 is formed with a boss 20, located between the wheels 19 19, and a bolt 21, which is socketed in the sleeve 22 in the window-sash, screws into the hole in the said boss and serves to attach the bar 18 to the window-sash.

A chain 23 is attached to the upper end of the bar 18 and passes over pulleys arranged near the top of the frame and carries on its other end the weights by means of which the window-sash is counterbalanced, these weights being disposed in a suitable cavity in the window-frame in the usual manner. Arranged in the recesses 16 17 of the window-sashes and the frame and so disposed as to project over the joint between the window-sash and the frame is a substantially I-shaped section of

metal 24, which will be hereinafter called the "joint-section." This joint-section is secured to the window-sash in the manner hereinafter described and under normal conditions moves up and down with the sashes, sliding in the recess 17 in the frame in the position shown at the top of Fig. 2; but when the frame is to be swung around on its pivotal supports the joint-section 24 is moved into position shown at the lower side of Fig. 2, when it lies wholly within the recess 16 of the sash and in this position allows the sash to be swung around on its pivotal supports 21. The joint-section 24 has a plate 25 attached to its inner side, and said plate carries a diagonal arm 26, which may be of any suitable shape in cross-section, and is provided with a laterally-projecting pin 27, that projects through a slot 28 in a sleeve 29, that is carried by the plate 30, fastened to the rear wall of the recess 16 in the sash. The arm 26 serves when the joint-section 24 is pushed upwardly to cause the joint-section to move into the recess 16, so as to rest wholly within the same, as shown at the lower side of Fig. 2 of the drawings, and, if desired, an additional arm and sleeve can be located near the lower end of the sash. The sash 7, which is the upper sash of the window, is formed with a trough 31 on its upper edge, the said trough having an inclined bottom 32, and the wall of the trough at the side adjacent to the sash 8 is provided with a series of holes 33, which are normally closed by a substance fusible at comparatively low temperature, such as any of the well-known fusible alloys used on automatic fire-extinguisher appliances. The trough 31 is kept filled with sand or other heavy substance of a granular character, and the sash 8 is provided with a trough 34, into which the sand from the trough 31 will pour when the fusible material which seals the holes 33 is melted.

Operation: The parts being constructed and arranged as above described operate in the following manner: It is to be understood that both edges of each window-sash are of the same construction and provided with the appliances hereinbefore described. Under ordinary condition the joint-sections 24 on each side of both sashes are in the position shown in the upper part of Fig. 2. Under these conditions the joint-section serves to sustain the sashes in proper alinement in the frame, while permitting them to slide freely up and down, the sashes being counterbalanced by the weights attached to the chain 25. When it is desired to swing the sash on its pivotal supports, the joint-sections on both sides of the sash are raised by inserting a finger under each, the upward movement of the joint-sections causing them to move inwardly until they rest wholly within the recesses 16, as shown at the lower side of Fig. 2, said inward movement being produced by the sliding of the arm 26 in the sleeve 29. When the joint-sections are

in this position, the window can be swung freely around upon the bolt 21, and access is thus had to either side of the window. To restore their parts to their normal condition, the window-sash is swung back until it assumes a position in alinement with the frame, whereupon the joint-sections will return to their normal position by their own weight and the window can be slid up and down in the frame in the usual manner. If one or both of the sashes should be left open and a fire should occur in such proximity to the window as to endanger the apartment in which the window is located, the fusible seal of the holes 33 in trough 31 will be melted, and the sand therein will pour out of trough 31 into trough 34 and will thus lighten the sash 7 and increasing the weight of sash 8, so that the counterbalance-weights of sash 7, being now greater in weight than the sash, will fall and close the sash upwardly, while the sash 8 by reason of the increased weight due to the sand in the trough 34 will overbalance its counterweights and close downwardly. The window will be thus automatically closed and will prevent the entrance of flames into the room.

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

1. In a device of the character described, the combination of a window-frame having a vertical recess on its inside with a vertically-movable window-sash having a coinciding recess on its edge, a vertically and laterally movable joint-section of substantially I shape in cross-section bridging the joint between the frame and the sash, and means for moving said section laterally so as to cause it to rest wholly within the recess in the sash.

2. In a device of the character described, the combination with a window-frame having a vertically-disposed recess on its inner side, of a window-sash slidably mounted in said frame, and having a coinciding recess in its side, a laterally-movable joint-section bridging the joint between the frame and sash, means for sustaining and guiding said window-sash in its vertical movement, a bar arranged in the recess in the frame, a bolt passing through the window-sash and through said joint-section and screwing into said bar, and counterbalance-weights connected to said bar, substantially as described.

3. In a device of the character described, a window-frame having vertically-disposed recesses, bars slidably mounted in said recesses, counterbalance-weights connected to said bars, wheels mounted in the bars and bearing on the rear wall of said recesses, in combination with window-sashes having recesses coinciding with the recesses in the frame, bolts passing through said window-sashes and into said bar, joint-sections arranged in the recesses of the frame and the window-sashes, diagonal arms connected to said joint-sections, diagonal sock-

ets in the window-sash receiving said arms and serving to cause the joint-sections to move into the recesses in the window-sashes when the joint-sections are moved in a vertical direction.

4. In a window, the combination with a vertically-movable counterbalanced window-sash, of a trough located at the upper edge of the same and having holes in its outer wall sealed by fusible material, of a counterbal-

anced window-sash mounted in said frame adjacent to the first-named sash and having a trough on its upper side.

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

ISAAC N. PRICE.

Witnesses:

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