

E. H. LUNKEN & G. H. RIDDELL.
FIREPROOF WINDOW CONSTRUCTION.
APPLICATION FILED OCT. 4, 1910.

994,015.

Patented May 30, 1911.

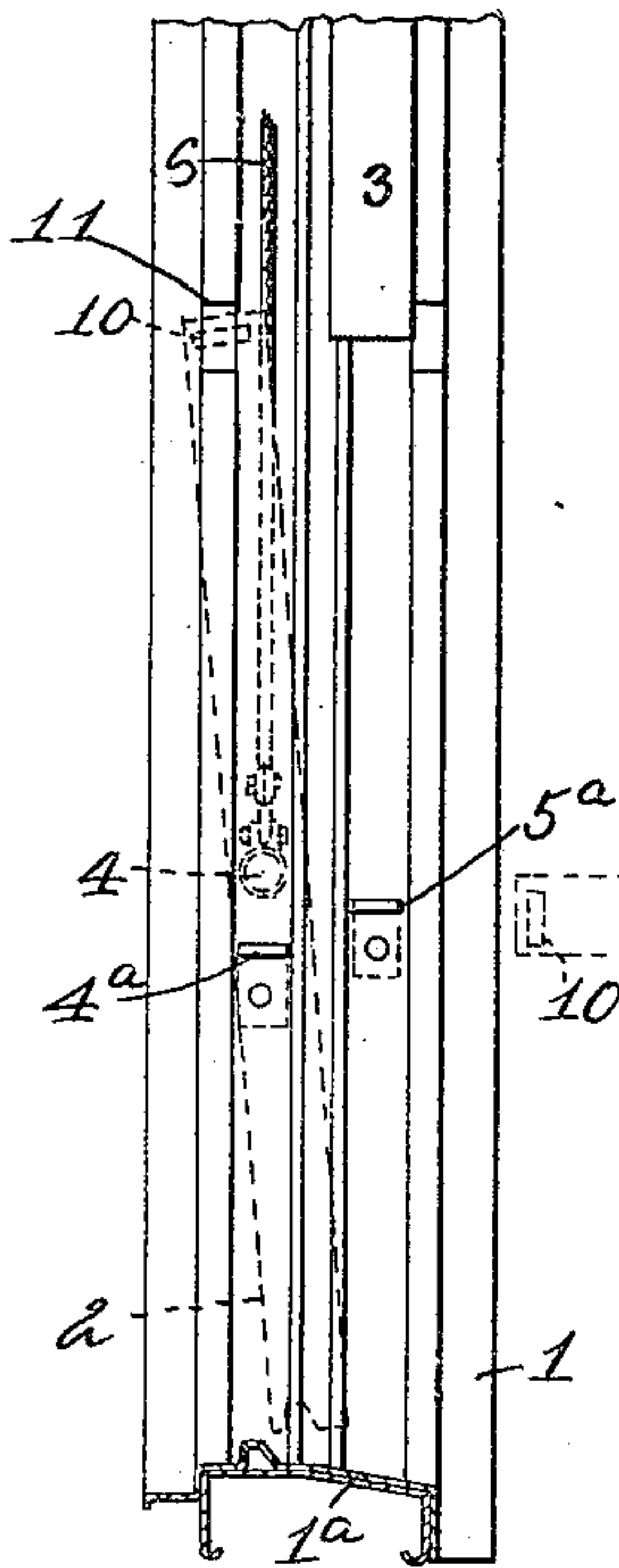


Fig. 1.

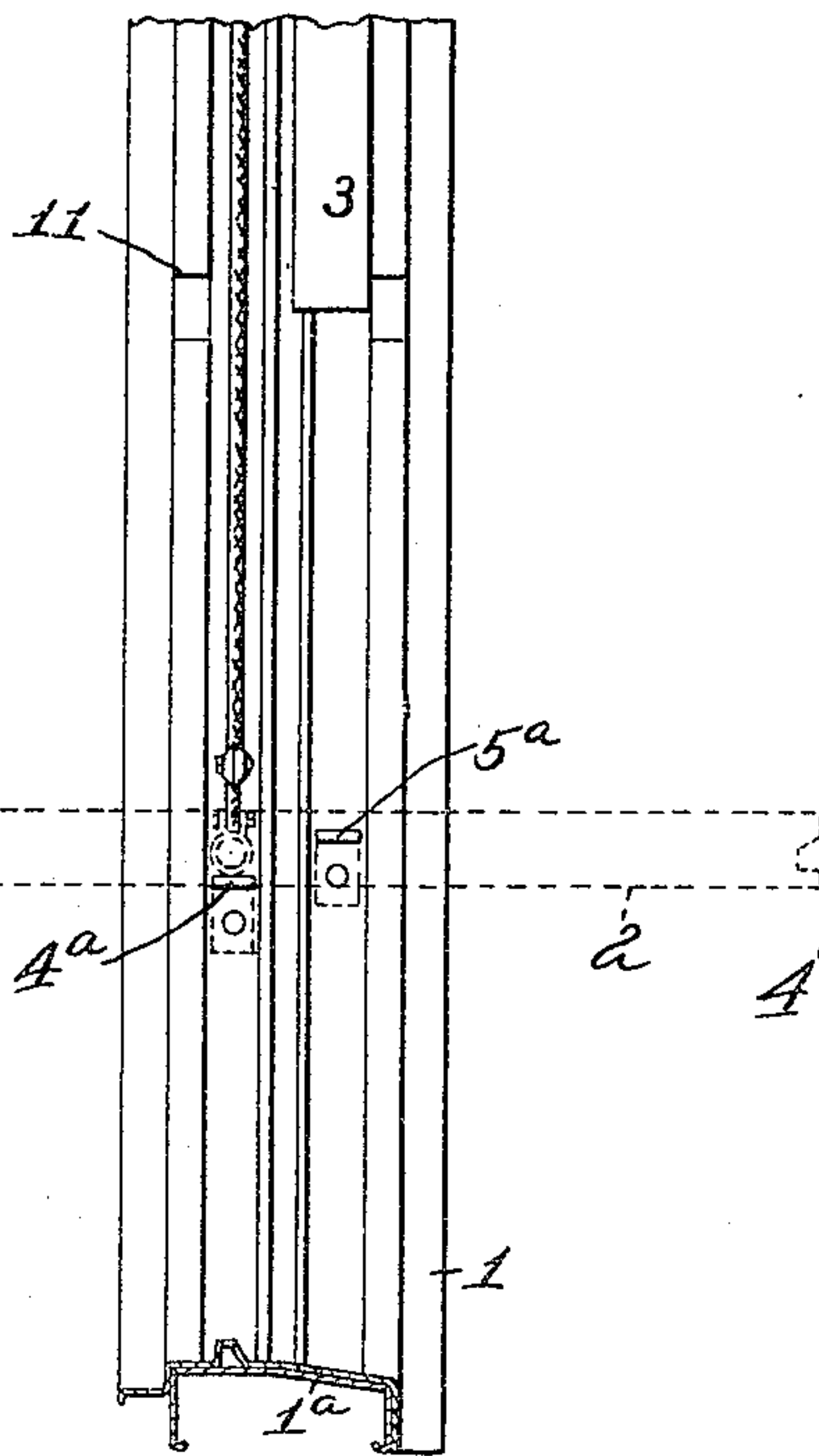


Fig. 2.

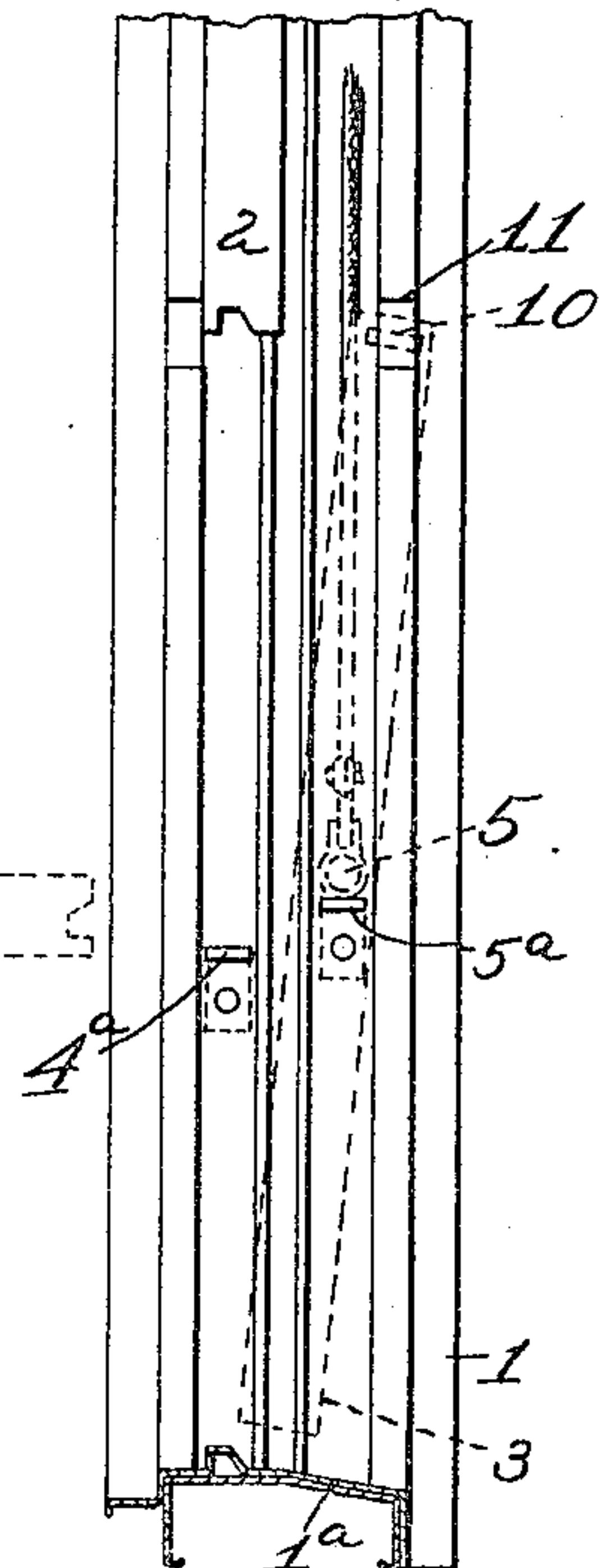


Fig. 3.

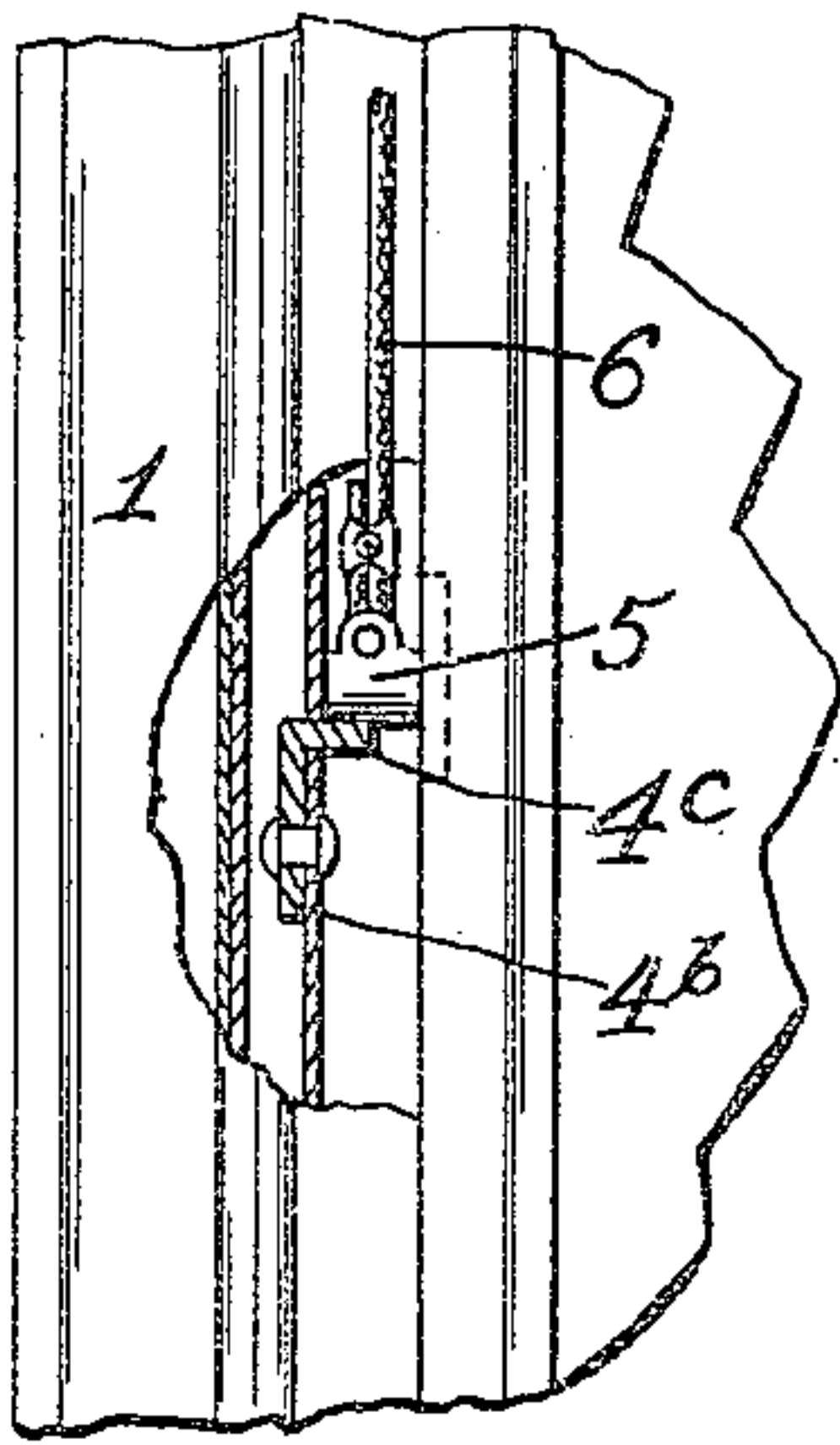


Fig. 4.

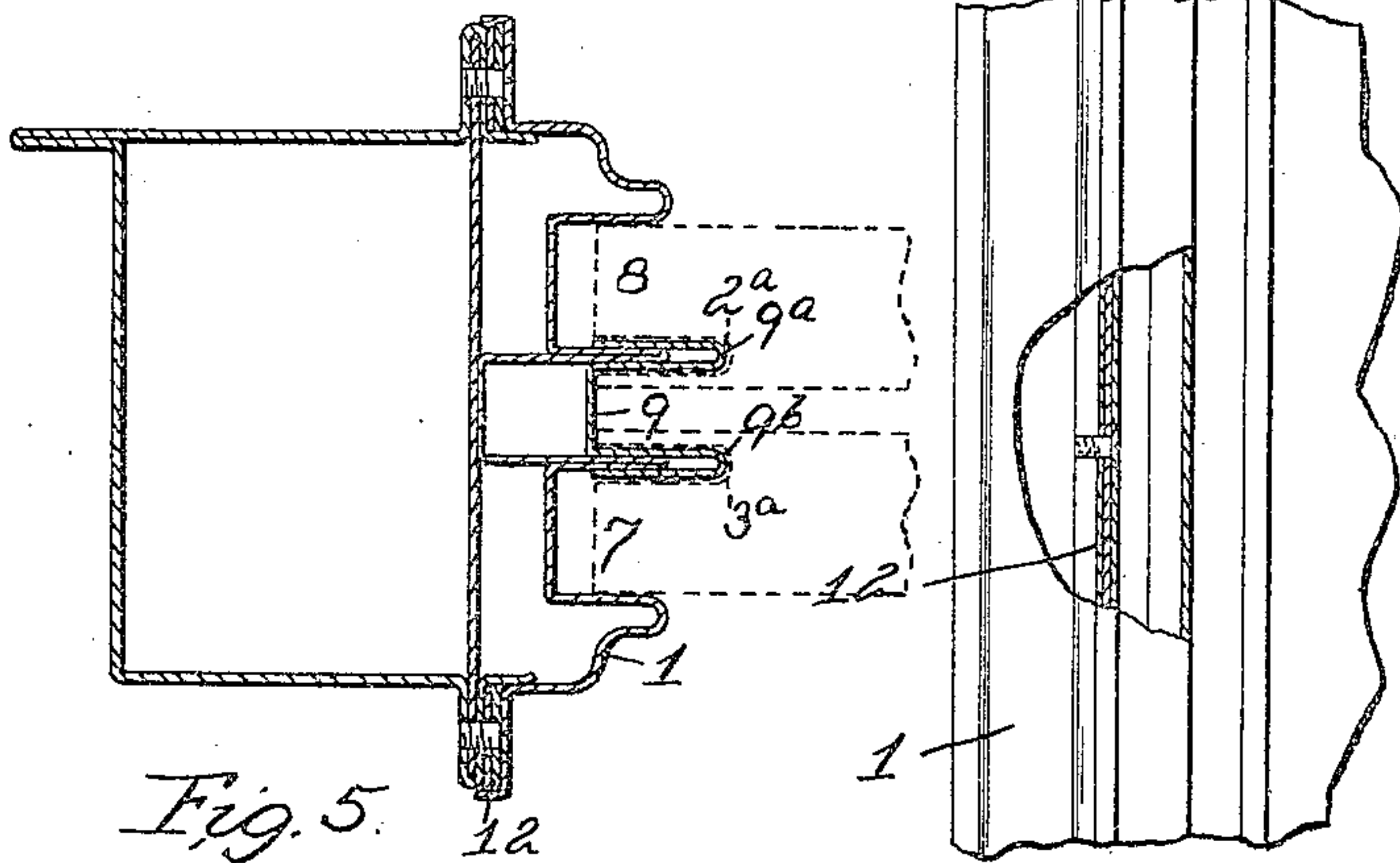


Fig. 5.

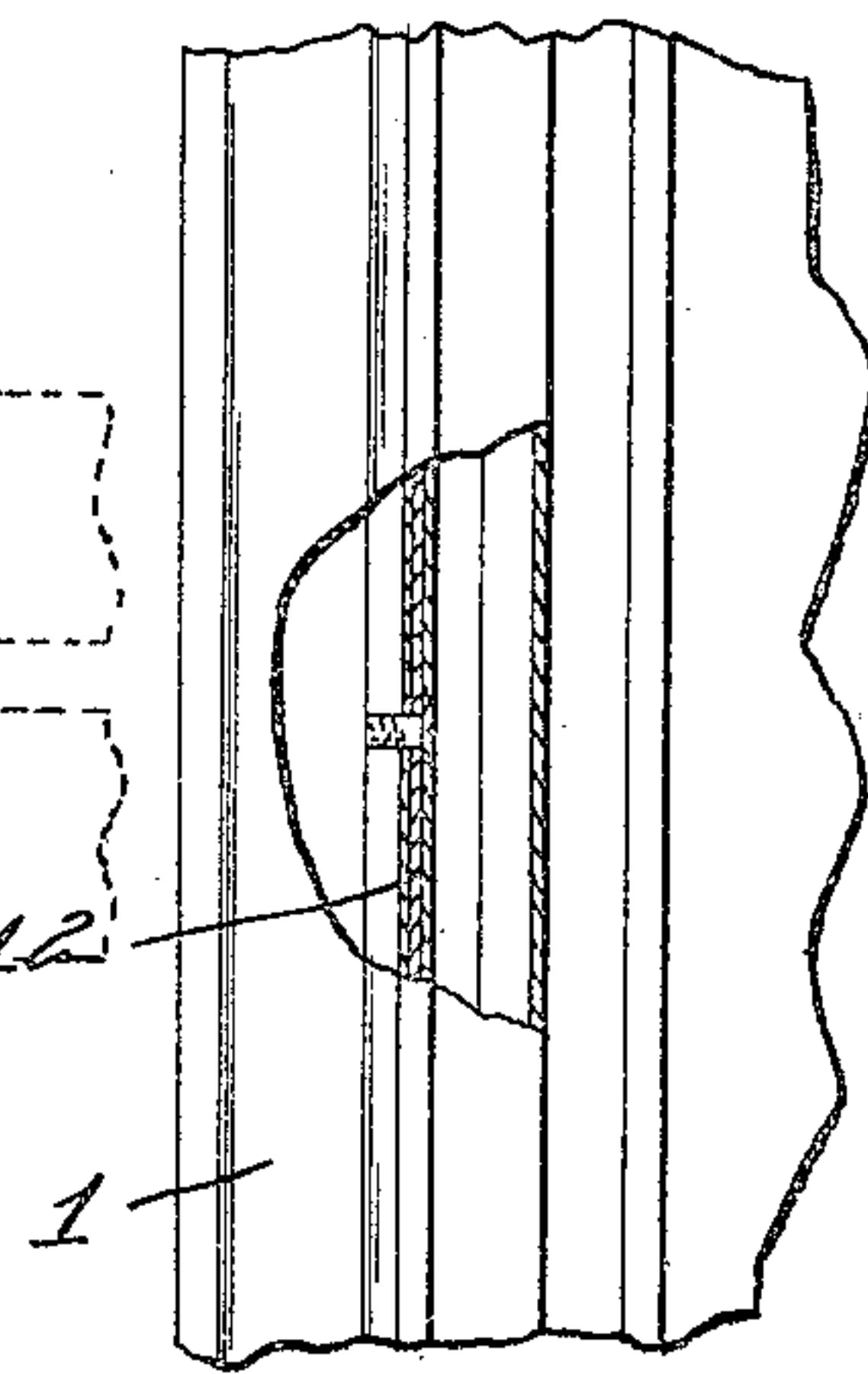


Fig. 6.

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UNITED STATES PATENT OFFICE.

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FIREPROOF WINDOW CONSTRUCTION.

994,015.

Specification of Letters Patent.

Patented May 30, 1911.

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To all whom it may concern:

Be it known that we, EDMUND H. LUNKEN and GEORGE H. RIDDELL, citizens of the United States, residing at Chicago, Illinois, have invented certain new and useful Improvements in Fireproof Window Construction, of which the following is a specification.

Our present invention is designed particularly for use in connection with window construction of the type shown in Letters Patent of the United States granted on the third day of November, nineteen hundred and eight, to The Lunken Steel Window Co., and numbered 902,979, and 902,980, and also an application filed April 22, 1910, Serial Number 557,063.

The invention has for its object to provide certain improved details of construction as will hereinafter more fully appear, the invention including the novel features of construction and arrangement and combination of parts as defined by the appended claims.

An embodiment of our invention is illustrated in the accompanying drawings in which—

Figure 1 is a side view of a portion of the cover plate and sill, showing the lower sash at a point just about to be reversed; Fig. 2 is a similar view showing the lower sash in a horizontal position with the pivots resting upon the stops; Fig. 3 is a similar view with the lower sash raised and the upper sash in a position about to be reversed, with the pivots resting upon the stops; Fig. 4 is an enlarged detail view of stops and the pivots resting upon said stops, and with the cover plate broken away; Fig. 5 is a cross section of the main frame cover plates showing the adjusting bars, and Fig. 6 is a front view of a portion of the frame partly broken away and also showing the adjustable strips.

We have found, in the practical operation of our windows, that when one of the sashes has been swung into horizontal position for washing, the operator, in cleaning one side or face of the glass, would frequently push the sash out of a horizontal position and would fail to restore it to a horizontal position before reversing it for cleaning the other side, thus causing the edges of the sash to bind on each cover plate and resulting in marring the finish of the cover plates. In order to prevent this we provide the means hereinafter described and illustrated

in the drawings above referred to in which similar reference characters refer to the same or like parts throughout the several views.

Referring more particularly to the said drawings, the numeral 1 designates the window frame or casing and 2 and 3 the lower and upper sashes respectively, which are mounted to have both a vertical sliding and a swinging movement upon their horizontal pivots as disclosed in said prior patents. The pivot pins 4 and 5, suitably connected as by flexible elements 6, move in the channels 7 and 8 of the cover plates, and the sashes 2 and 3 are guided in their vertical movement by having their edge grooves or channels 2^a and 3^a engaged by the flanges 9^a and 9^b of the guide bars 9.

As will be readily understood by those familiar with the patented constructions, the guides are moved outward away from the sashes when a sash is to be swung out of a vertical plane, as, for instance, for cleaning purposes, so as to disengage the flanges of the guide bars from the grooves in the edges of the sash. When so disengaged, the sash may be swung into an inclined or horizontal position for the purpose of cleaning and when one side has been cleaned, may be reversed to permit access to the opposite face.

In order to maintain the sash in a horizontal plane during cleaning to avoid the objections hereinbefore noted, we provide in the pivot channels 7 and 8 stops 4^a and 5^a arranged in the path of the pivot or hinge pins and upon which said pins rest during the cleaning of the sash. Such stops preferably consist of angle plates which have one portion riveted to the rear face of the cover plate, as indicated at 4^b in Fig. 4, the other portion 4^c of the angle plate projecting through a slot or opening in the cover plate.

The stops for the pins of the lower sash are located slightly below the position occupied by the pivots 4 when the sash is in readiness to be swung out of a horizontal plane owing to the necessity of raising the sash slightly to clear the sill 1^a. After the sash has been swung clear of the sill, as indicated in Fig. 1, a slight lowering of the same brings the hinge pins to rest upon the stops. As the upper sash is always pulled down for cleaning, the lower sash at this

time being raised, the stops 5^a for the upper sash are located in proper position to check the downward movement of said upper sash at a point suitable for swinging or reversal of the sash. Said stops 5^a are also so located with relation to the recesses 11 in the cover plate that the sash is automatically stopped in the exact position to bring the projections or stop pieces 10 in alinement with said recesses 11. As the function and operation of the stops 10 and recesses 11 are fully described in the application above referred to, further description thereof herein is deemed unnecessary.

We have found that sometimes, through settling of the building or like causes, there may be a slight tendency of the sashes to bind in the cover plates. To avoid this, we secure the cover plates adjustably to the main frame as indicated in Figs. 5 and 6, preferably by introducing between the cover plates and the frame filling strips 12, one or more of which may be removed to increase the distance between the cover plates.

Having thus described our invention what we claim is:—

1. In combination a window frame member having a channel, a horizontally disposed pivot traveling in said channel, means located within the channel and connected with the pivot for supporting the sash, a projection at the corner of the sash for abutting against the side walls of the channel, said frame member having a transverse recess leading to the channel to permit the passage of the projection upon the swinging of the sash, and a stop arranged in the path of one of said pivots for stopping the sash in its vertical sliding movement with the said corner projection in line with said recess, substantially as described.

2. In combination, a window frame having cover plates provided with vertical channels, laterally movable guide bars carried by

said plates adjacent the channels, a sash having a slidable engagement with said guide bars and having horizontally disposed hinge pins traveling in said channels, and angle irons having each one portion riveted to the rear face of the cover plate and its other portion projecting through an opening in the cover plate into the path of the hinge pin.

3. In combination two opposing window frame members each having a channel, a horizontally disposed pivot traveling in each channel, means located within the channels and connected with the pivots for supporting the sash, a projection from the edge of the sash engaging said channel and a stop arranged in the channel of each opposing window frame member in the path of the pivot on each side of the sash to enable horizontal alinement of the pivots when the sash is being reversed, substantially as described.

4. In combination two opposing window frame members each having a channel, means located within the channels and connected with the pivots for supporting the sash, a projection from the edge of the sash abutting against the side walls of said channel, said frame members each having a transverse recess leading to the channel to permit the passage of the projection upon the swinging of the sash and a stop arranged in the channel of each opposing window frame member in the path of the pivot on each side of the sash to enable horizontal alinement of the pivots when the sash is being reversed, substantially as described.

In testimony whereof we affix our signatures in presence of two witnesses.

EDMUND H. LUNKEN.
GEORGE H. RIDDELL.

Witnesses:

H. W. STANNARD,
E. G. CASE.