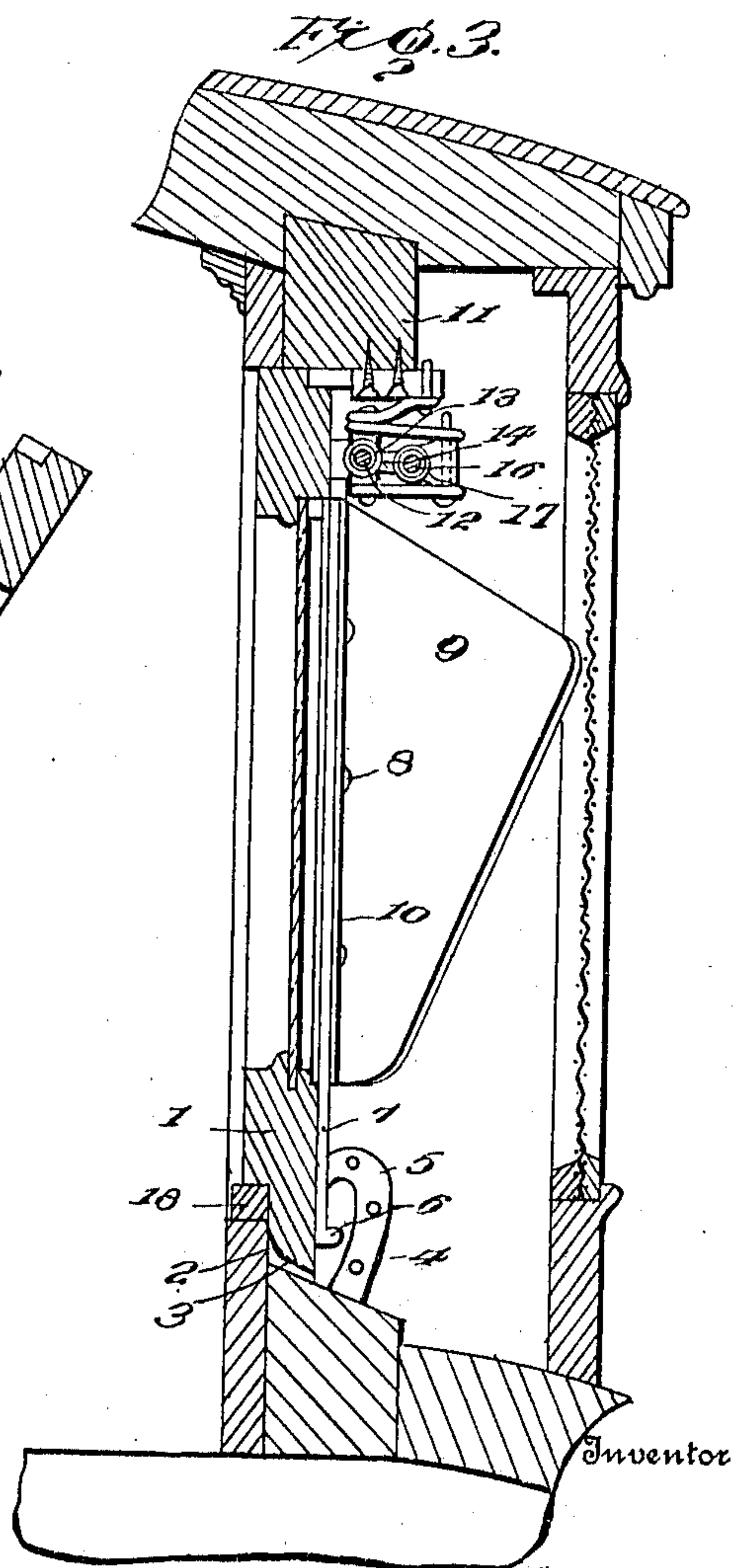
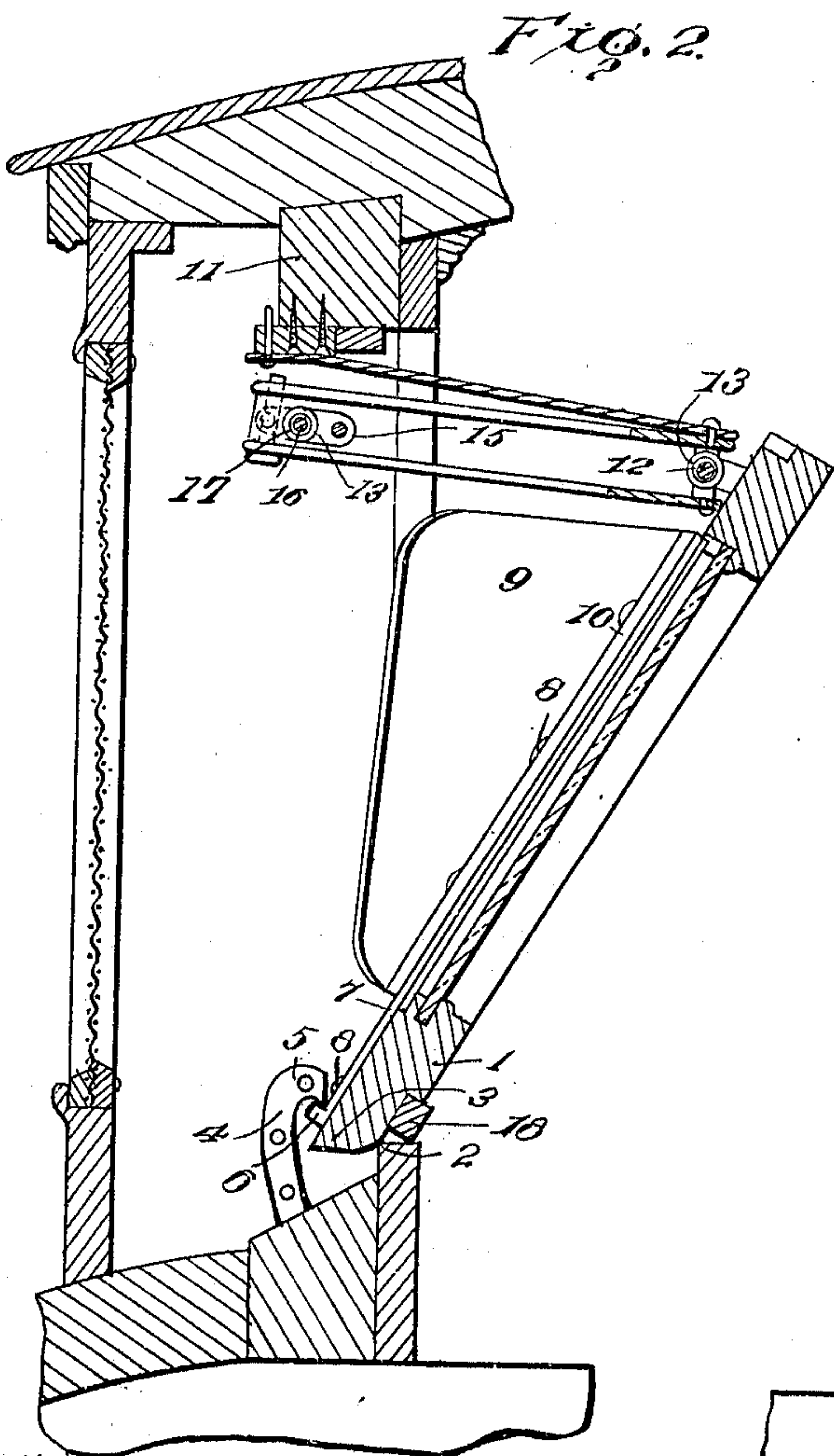
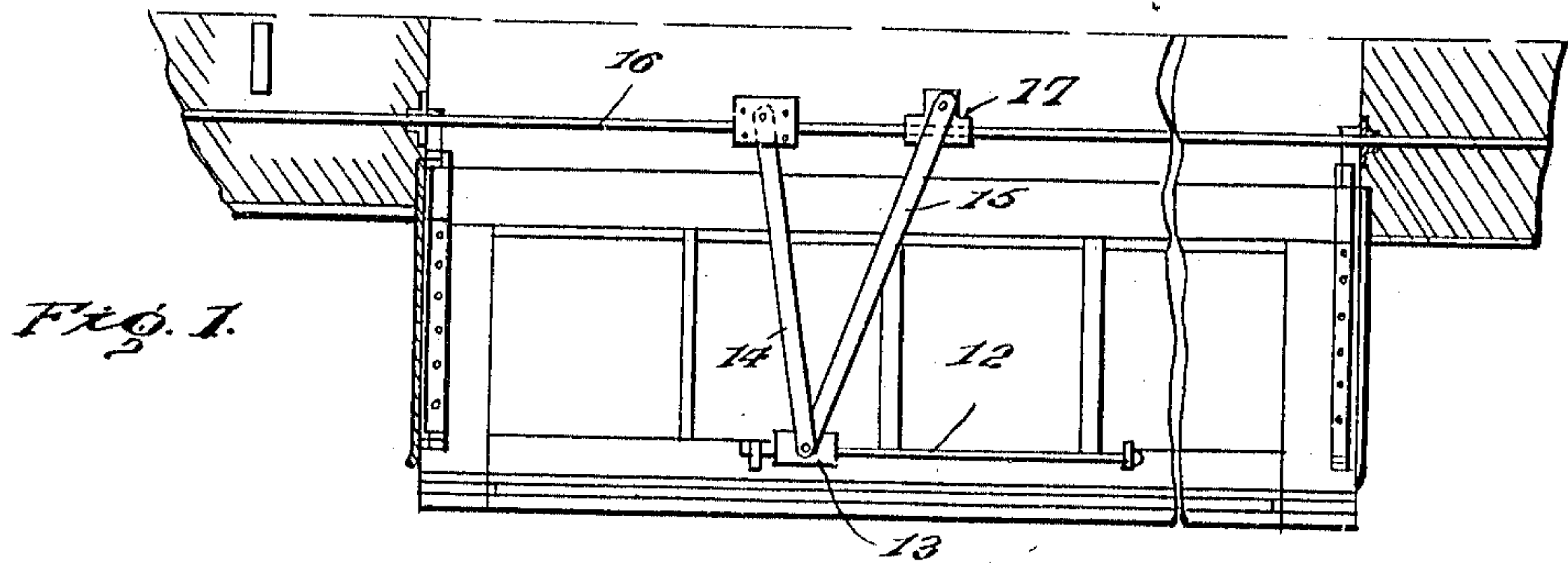


G. H. LAWRENCE.  
SASH AND SASH MOUNTING.  
APPLICATION FILED JAN. 20, 1908.

953,210.

Patented Mar. 29, 1910.



Witnesses  
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# UNITED STATES PATENT OFFICE.

GEORGE H. LAWRENCE, OF MIDDLETOWN, NEW YORK.

## SASH AND SASH-MOUNTING.

953,210.

Specification of Letters Patent. Patented Mar. 29, 1910.

Application filed January 20, 1908. Serial No. 411,854.

*To all whom it may concern:*

Be it known that I, GEORGE H. LAWRENCE, citizen of the United States, residing at Middletown, in the county of Orange and State of New York, have invented certain new and useful Improvements in Sashes and Sash-Mountings, of which the following is a specification.

This invention appertains to swinging sashes and to the fittings or mountings co-operating therewith, being designed most especially to improve the arrangement and construction of sashes along the sides of the elevated portion of passenger coaches, the purpose being to provide novel means whereby a close joint may be maintained between the sashes and the frame, to admit of the ready removal of the sashes and the replacement of the same and to combine therewith in a unique manner guards for excluding cinders and dust when the sashes are open to admit of ventilation.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction and the means for effecting the result, reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which:

Figure 1 is a top plan view of a sash and a frame or portion of the top or roof of a car, showing fittings or mountings embodying the invention, said sash being open. Fig. 2 is a vertical section, showing the relation of the parts when the sash is open. Fig. 3 is a view similar to Fig. 2, showing the position of the parts when the sash is closed.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The present invention provides novel and automatic means for operating the sashes along the sides of the raised portion of passenger cars, which sashes are usually operated by hand, thereby requiring special attention and consuming time in a train of any length.

In accordance with this invention the

sashes 1 are mounted so as to swing inward and downward at their upper edges. The lower edges of the sashes are rabbeted to form shoulders 2 and a portion 3, which latter is made rounding. The shoulder 2 rests upon the lower side of the frame and supports the sash from below when closed. Curved irons 4 are secured to opposite sides of the frames and are formed at their upper ends with inner projections 5 which engage with outer projections 6 of the sashes and limit the inward movement thereof. Iron straps 7 are secured to the side or end bars of the sashes and their lower ends are bent outward to form the projections 6. Headed fastenings 8 serve to secure the straps 7 to the sashes and are also utilized to secure guards 9, which are fitted to opposite ends of the sashes so as to close the spaces between the ends of the sashes and the ends of the frames, thereby preventing cinders or other particles from entering the car. The guards 9 taper in their length and increase in width from bottom to top and have inner flanges 10 at their attaching edges to receive the headed fastenings 8, which flanges are confined between the head of the fastening 8 and the strap iron 7, the latter serving to prevent the attaching edges of the guards from marring the sash frames. To prevent noise when closing the sashes, as well as to relieve jar and insure a close joint, a weather strip 11 is secured to the upper portion of the sash frame for the latter to close against.

A rod or bar 12 is fitted to the upper bar of each sash in a manner to admit of its ready removal so that the sashes may be taken from their frames when required for any purpose. A sleeve or runner 13 is mounted upon each rod or bar 12 and is connected by means of links 14 and 15 to, respectively, the frame and an operating rod or bar 16, the latter being mounted for longitudinal movement. The end of the link 14 pivoted to the frame is fixed, whereas the opposite end is free to move so as to effect opening and closing of the sash. Each sash is provided with a pair of links 15 which embrace opposite sides of the sleeve 13 and a corresponding sleeve or fitting 17 secured to the operating rod or bar 16. As the rod or bar 16 is moved longitudinally to spread the outer ends of the coöperating links 14 and 15, the sleeve 13 is drawn outward toward the operating rod or bar 16 and effects a



closing of the sash, the sleeve 13 sliding upon the rod or bar 12. When the links 14 and 15 assume the position shown in Fig. 3, the sash is closed and upon moving the rod or bar 16 in the opposite direction to bring the sleeve or fitting 17 toward the fixed pivot end of the link 14, the sleeve 13 is moved inward and effects an opening of the sash, the latter being at the limit of its inward movement when the links 14 and 15 assume the position shown in Fig. 1. It is to be understood that the operating rod or bar 16 is connected in the manner substantially as shown and described with each of the ventilating sashes of a car so as to effect simultaneous movement thereof. The sashes upon one side of the raised portion in the roof of a car are connected in one series and the sashes upon the opposite side of said raised portion are connected in a second series, each rod or bar 16 having connection with independent operating means.

An iron strap or bar 18 is fitted against the shoulder 2 and is adapted to rest upon the lower side of the sash and sustain the wear. This construction secures a close joint at the bottom of the sash whether open or closed, as also providing for a wider rabbet.

The rod or bar 16 may be operated by hand or in any convenient way to effect movement of the series of sashes connected therewith. 30

Having thus described the invention, what is claimed as new is:

The combination with a window casing and a sill, of a sash mounted in said casing, curved irons bearing against the opposite sides of said casing and extended upwardly and inwardly from the sill to form hooks, the beaks of which extend in the direction of the sash, straps secured to the outer face of said sash at the sides thereof and having projections at their lower ends for engagement beneath the beaks of said irons to limit the movement of said sash, and a bar seated within the lower edge of said sash to rest upon said sill, said bar having an angular edge for engagement with said sill when the sash is tilted to form a tight joint between said sash and said sill. 35 40 45

In testimony whereof I affix my signature in presence of two witnesses. 50

GEORGE H. LAWRENCE. [L. s.]

Witnesses:

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CHARLES C. REDFIELD.