

No. 607,537.

Patented July 19, 1898.

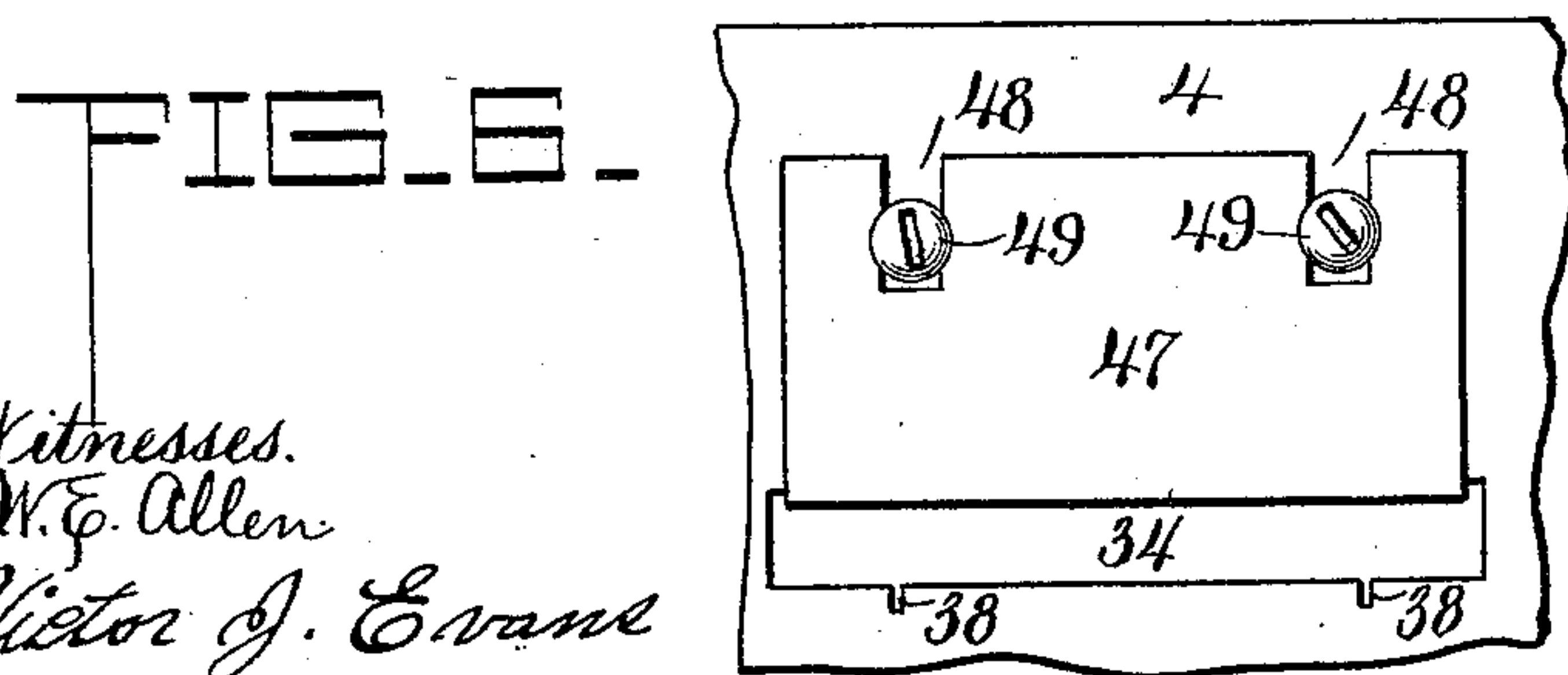
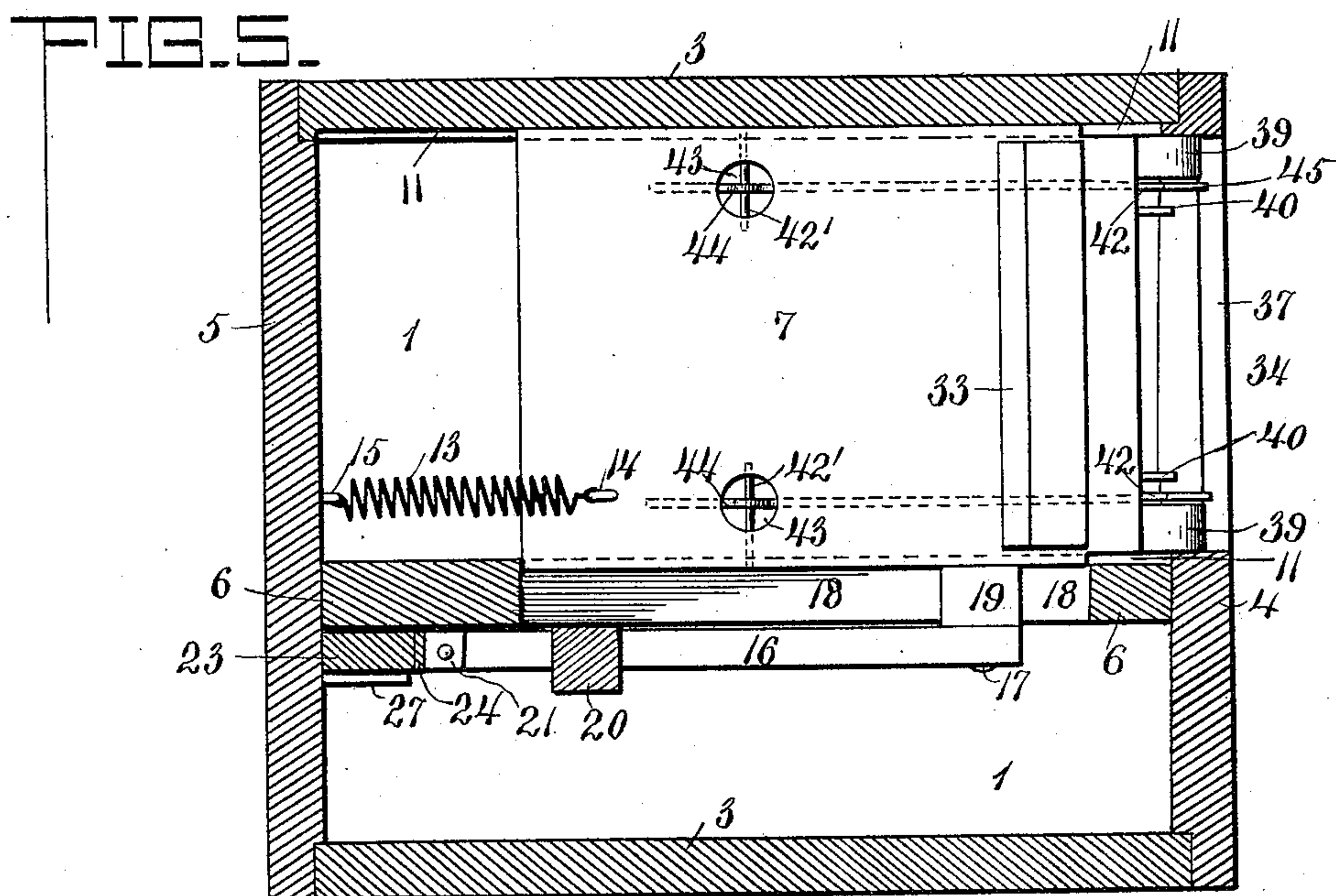
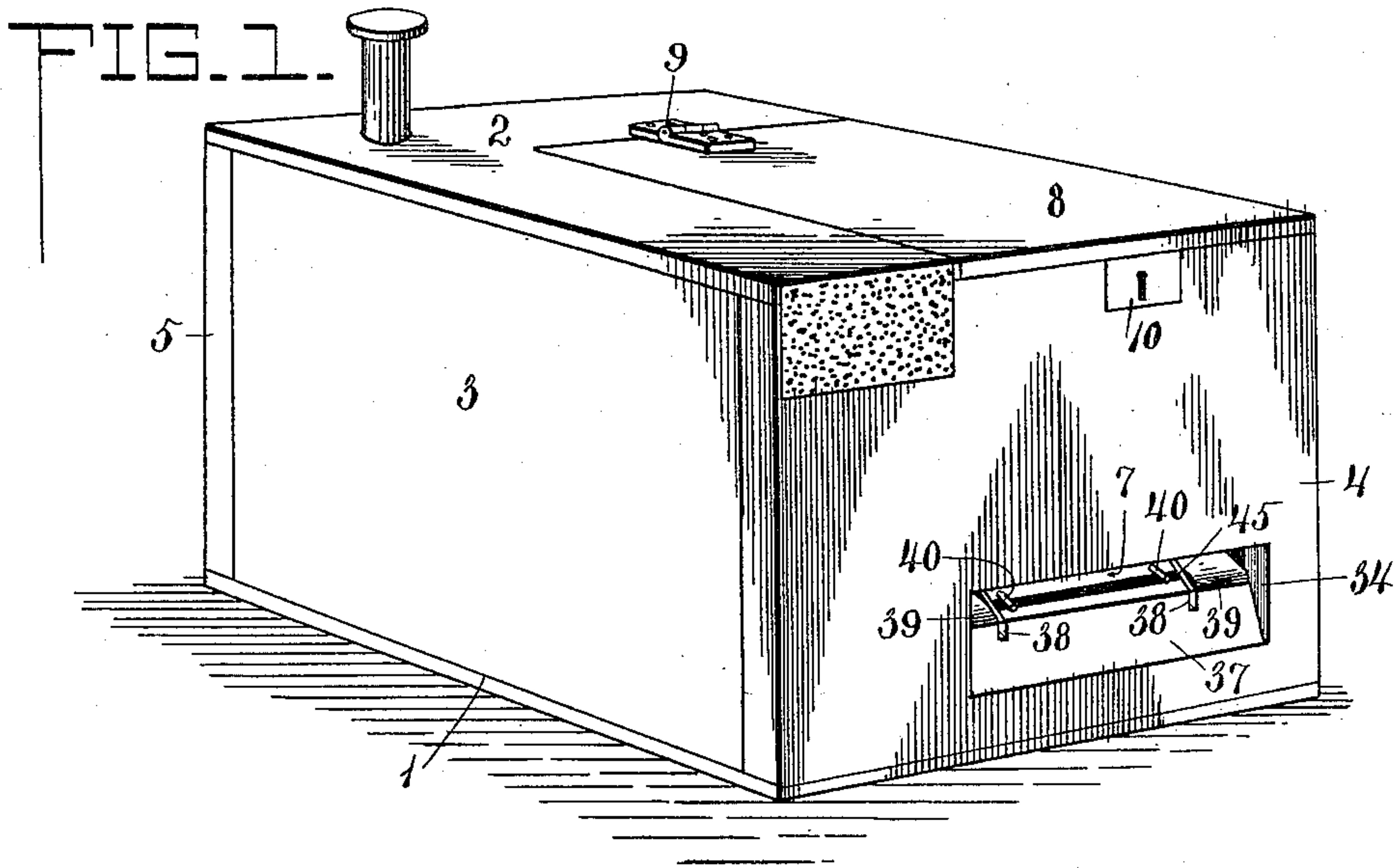
J. H. BENJAMIN.

MATCH BOX.

(Application filed June 18, 1897.)

(No Model.)

2 Sheets—Sheet 1.



Witnesses.
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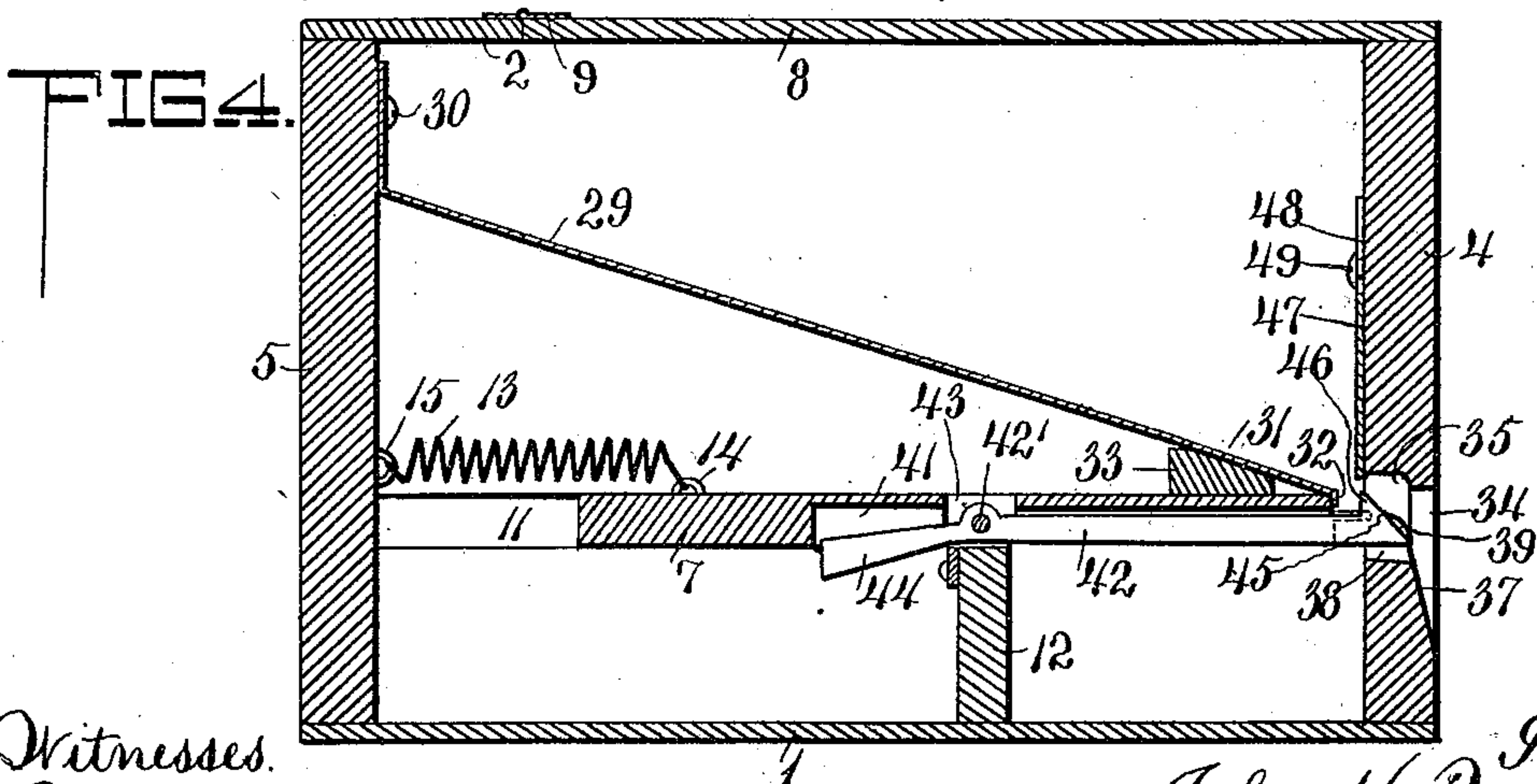
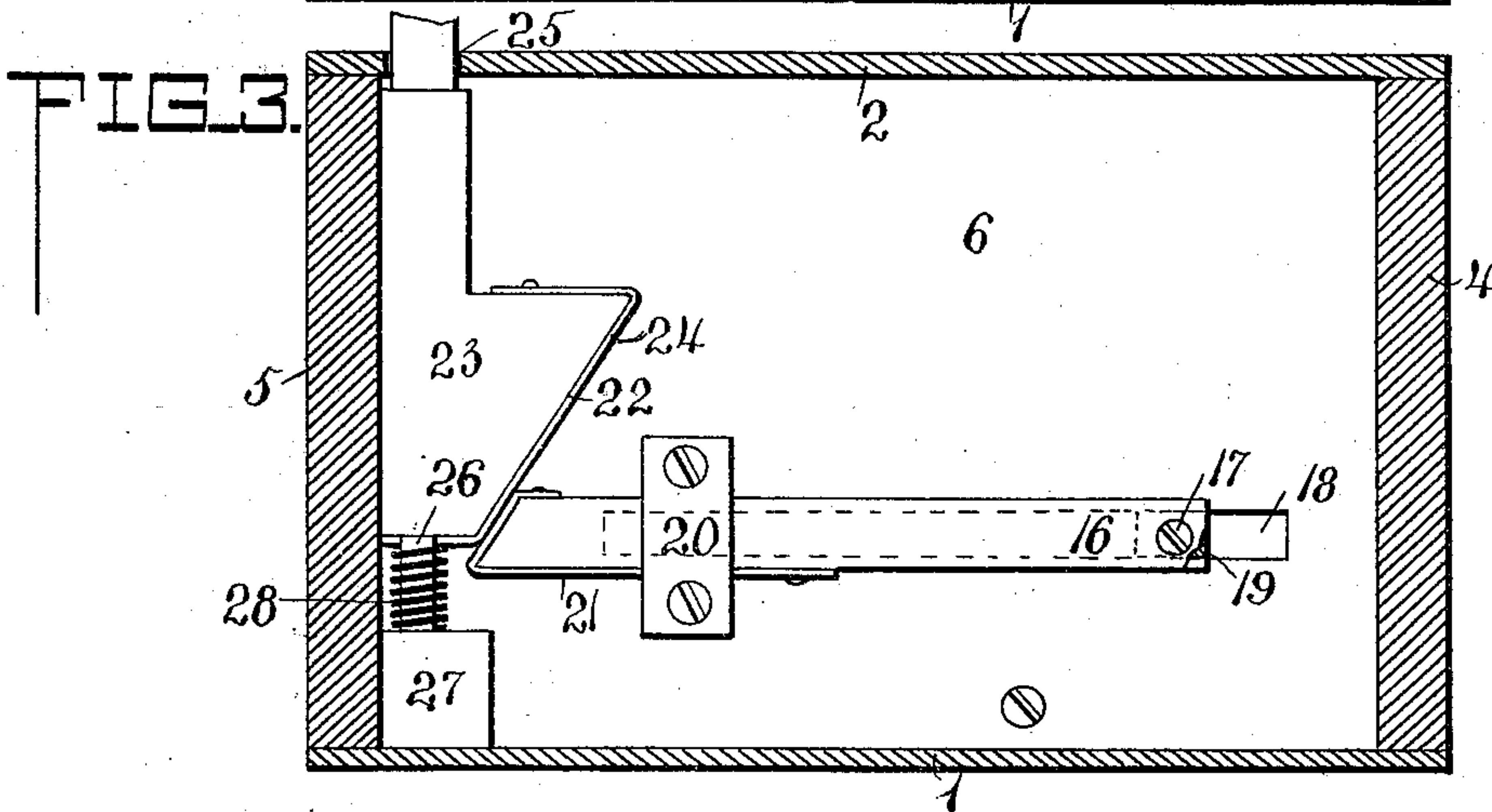
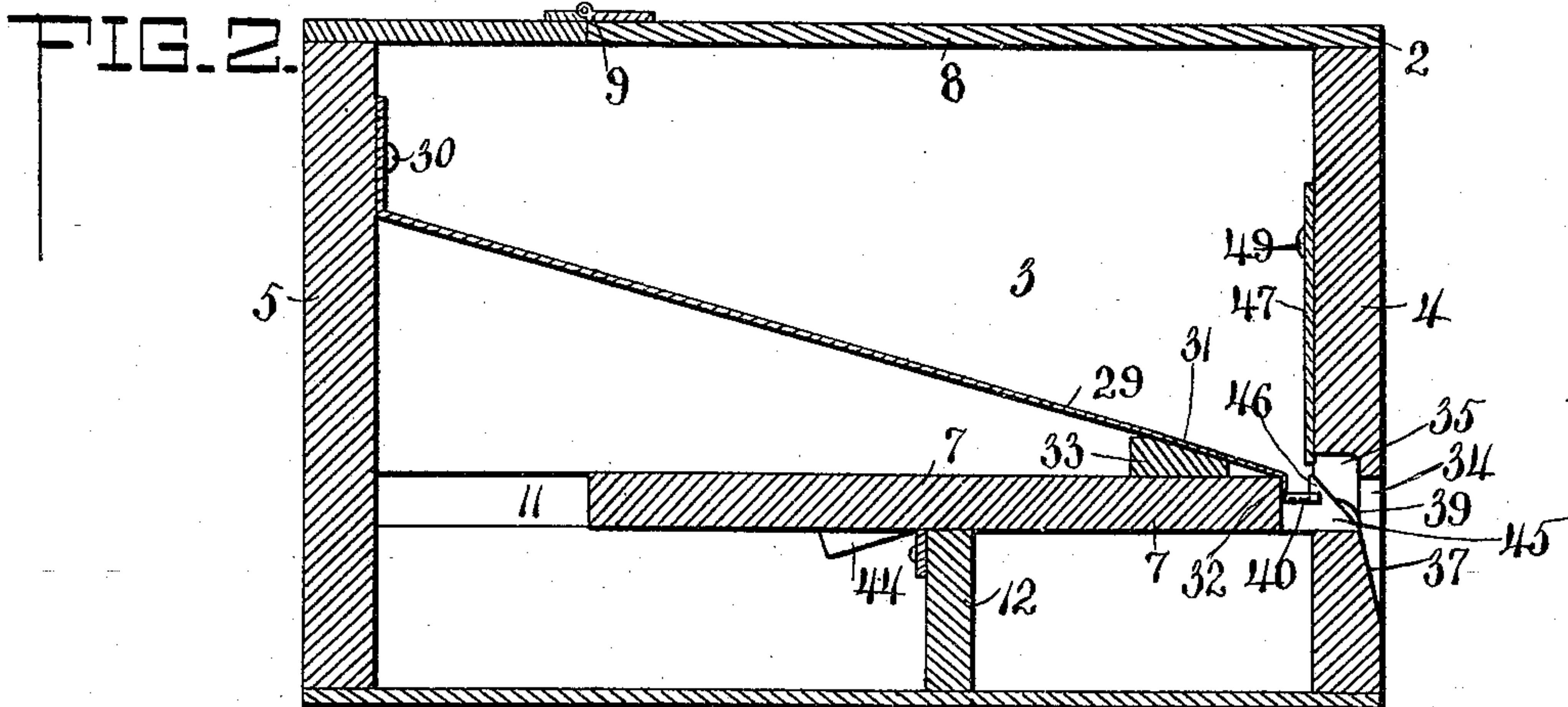
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2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

JOHN H. BENJAMIN, OF SMITH'S LANDING, NEW YORK.

MATCH-BOX.

SPECIFICATION forming part of Letters Patent No. 607,537, dated July 19, 1898.

Application filed June 18, 1897. Serial No. 641,267. (No model.)

To all whom it may concern:

Be it known that I, JOHN H. BENJAMIN, of Smith's Landing, in the county of Greene and State of New York, have invented certain new and useful Improvements in Match-Boxes; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to match-boxes; and the object in view is to provide, in connection with a match-box, means for delivering the matches therefrom through the discharge-opening one at a time, the arrangement being such as to prevent unscrupulous persons from removing a large quantity of matches at one time from a match-box. Provision is also made whereby the size of the discharge-opening may be regulated to correspond to the size of the matches placed therein, thus insuring the discharge of but one match at a time.

The detailed objects and advantages of the invention will appear in the course of the subjoined description.

The invention consists in an improved match-box and mechanism for discharging the matches therefrom embodying certain novel features and details of construction and relative disposition of parts, as hereinafter fully described, illustrated in the drawings, and incorporated in the claims hereto appended.

In the accompanying drawings, Figure 1 is a perspective view of a match-box constructed in accordance with the present invention. Fig. 2 is a longitudinal section through the same, taken through the compartment in which the slide operates. Fig. 3 is also a longitudinal section showing the mechanism for actuating the slide. Fig. 4 is a detail vertical longitudinal section through the slide, taken in line with one of the pivoted fingers. Fig. 5 is a horizontal section showing the way in which the slide is mounted and operated. Fig. 6 is an inside elevation of the front wall of the match-box, showing means for adjusting the sides of the discharge-opening.

Similar numerals of reference designate corresponding parts in the several figures of the drawings.

The improved match-box comprises a sub-

stantially rectangular box or case embodying a bottom 1, a top 2, sides 3, and front and rear ends 4 and 5, respectively, the said parts being secured together in any convenient form and of any suitable material. Extending longitudinally within the box is a partition 6, which divides the interior of the box into two compartments, in one of which is arranged a slide 7, the other compartment containing the means for actuating the slide. The top of the box is provided with a lid 8, which is hinged at one edge, as shown at 9, and which is adapted to be engaged at its free edge by a suitable lock 10 for preventing access to the interior of the match-box by unauthorized persons. The slide 7 is substantially rectangular in plan view, and its side edges are slidably mounted in longitudinal grooves 11 in one of the sides 3 and the partition 6, said grooves extending horizontally. Arranged under the slide is a transverse web or partition 12.

13 designates a coiled spring which is placed between the slide and the rear side of the match-box, said spring having one of its terminals engaged with an eye or staple 14 on the slide and its other terminal engaged with the staple or eye 15 on the inner surface of the rear side of the box. This spring serves to retract the slide after the same has been projected outward by the operating means hereinafter described.

Arranged upon the opposite side of the partition 6 from the slide is a slide-bar 16, which is connected with the slide by means of a pin, bolt, screw, or other fastener 17, which passes through an opening in the forward end of the slide-bar into the adjacent edge of the slide, said pin or fastener working in a longitudinal slot 18 in the partition 6, the slide-bar 16 being preferably provided with a lateral offset 19, which enters and works in the slot 18, so as to steady the movements of said slide-bar.

20 designates a slotted guide secured to the partition 6 and through which the slide-bar 16 reciprocates. At its rear end the slide-bar 16 is beveled and reinforced by a wear-plate 21, the beveled surface of the slide-bar cooperating with a correspondingly-inclined surface 22 of a plunger 23, the surface 22 being reinforced by a wear-plate 24. The plunger 23 is vertical and operates through an

opening 25 in the top of the box, above which it is provided with a suitable head or button wherewith it may be depressed. The lower end of the plunger 23 is reduced, as indicated at 26, and is mounted to slide in the bearing-block 27 within the box. Disposed around the reduced portion of the plunger is a coiled spring 28, which serves to elevate the plunger after the same has been depressed and restore said plunger to its normal position. Thus it will be seen that by depressing the plunger the slide 7 is actuated toward the front of the box, and by releasing said plunger the latter is uplifted by means of the spring 20, the slide 7 being at the same time retracted by means of the spring 13, the said parts being restored to their normal positions.

29 designates an inclined apron which is preferably formed of sheet material, such as metal, and which constitutes the bottom of the match-receiving hopper. The apron 29 is inclined downwardly from the rear end of the match-box, and the rear end of the apron 29 is secured by suitable fasteners 30 to the rear wall of the box. The forward end of the apron 29 is deflected or slightly depressed, as shown at 31, and its extreme forward edge 32 is turned downward, so as to overhang the front end of the slide 7 when the latter is drawn back. Secured to the upper side of the slide 7 is a transverse strip 33, having an inclined upper surface to act on the bottom of the apron or bottom 29 for the purpose of elevating the front edge of said apron when the slide is moved forward.

The front of the match-box is provided with a discharge-opening 34 of a suitable size, the upper edge of said opening being concaved or provided with a cove 35 for facilitating the discharge of the matches, while the lower edge of the opening is chamfered, as indicated at 37, for a similar purpose, and the lower edge is also provided with notches 38 for a purpose that will appear.

The slide 7 is provided at its forward edge and at each front corner with longitudinally-projecting lips 39, which normally rest in the discharge-opening 34. Between the lips 39 and adjacent thereto are arranged pins 40, projecting from the end of the slide and adapted to support a match preparatory to the discharge thereof.

41 designates two grooves in the under side of the slide 7, said grooves being intended to receive a pair of fingers 42, the same being pivotally mounted at their rear ends upon transverse pins 42', extending across openings 43 in the slide, the heel ends of the fingers being offset, as shown at 44, to enter said openings and embrace the pins 42'. At their forward ends the fingers are beveled, as indicated at 45, and are also provided with upwardly-projecting lips or caps 46 for engaging the uppermost match and preventing the premature discharge thereof. The forward ends of the fingers 41 lie and work in the notches 38 at the lower portion of the discharge-opening

34, and as the slide 7 is moved forward the ends of the fingers which are lowest at their extremities pass outward through the opening 34 and are at the same time lowered by reason of the rear ends 44 being moved upwardly by contact with the stationary stop 12, the free ends thereof swinging downward sufficiently to carry the upwardly-projecting lips of the fingers below the foremost match, the match at the same time resting on the pins at the end of the slide. The match is thus left free to fall through the discharge-opening 34 or to be removed by the party operating the plunger. When the plunger is released, the slide is retracted, the fingers 42 are again rocked about their pivots as soon as the weighted rear ends 44 are freed from the stop 12, and a match falling through the space between the end of the incline 29 and the front of the casing will be retained upon the pins at the front end of the slide by the projections 45.

By means of the construction above described it will thus be seen that it is impossible to discharge more than one match at a time from the match-box, and the sides of the discharge-opening may be regulated to matches of different sizes by means of a gate 47, preferably constructed from a rectangular piece of metal and provided with spaced slots 48, through which pass screws or clamps 49, the same entering the front wall of the box. Thus provision is made for raising or lowering the lower edge of said gate and thus increasing or diminishing the size of the discharge-opening. It will be apparent, therefore, that the mechanism above described, while insuring the discharge of matches from the box, will at the same time prevent unscrupulous persons from removing a large quantity of matches at one time. The inclined floor or apron 29 insures the gravitation of the matches toward the discharge-opening.

It will be understood, of course, that the improved match-box and the operating means above described are susceptible of changes in the form, proportion, and minor details of construction, which may accordingly be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

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

1. In an apparatus for the purpose described, the combination of an inclosing case or shell having its interior divided into two compartments by an inclined apron, and having an outlet or discharge opening formed in one side wall adjacent to the lower end of said inclined apron, a reciprocating slide mounted beneath said apron and having at its forward end a match holder or support which extends across the space between the lower end of the inclined apron and the plane of the inner face of the aforesaid apertured side wall of the case or shell, retaining means arranged in advance of and normally extend-

ing above said holder or support to prevent a match escaping therefrom through the discharge-opening, and means for automatically withdrawing said retaining means as the said holder or support is moved, by the slide, forward through the discharge-opening, substantially as set forth.

2. In a match-delivering apparatus, the combination of a shell or casing having a discharge-opening formed in one of its vertical walls and having an interior inclined apron, or support for a series of matches, extending to a point adjacent to said opening, a horizontally-movable slide mounted beneath said apron and provided at its forward end with forwardly-projecting fingers, 40, adapted to receive a match escaping over the lower end of the apron, a lever-arm, 42, pivotally mounted on said slide and having its forward end extending into the discharge-opening in the casing, in advance of the slide, and to points above said fingers, 40, whereby a match falling upon said fingers will be held thereon, and a stop or tripping device arranged in the path of the said lever-arm, 42, and adapted, when the slide has been advanced to cause the fingers, 40, thereof to project through the discharge-opening, to remove the forward end of said lever-arm vertically out of the planes

of the match on said fingers, substantially as set forth. 30

3. In an apparatus for delivering matches, the combination of a box or casing having a discharge-opening formed in one of its vertical sides, an inclined apron arranged within said box and having its lower end terminating adjacent to the said discharge-opening, an adjustable stop-plate, 47, adapted to vary the size of the passage between the lower end of said apron and the discharge-opening, a reciprocating slide mounted beneath said apron and having a match holder or support adapted to project across the passage between the lower end of the apron and the discharge-opening, and a wedge-shaped abutment carried by said slide, and adapted to force the lower end of said apron against the aforesaid adjustable stop to close the passage through which matches pass from the upper surface of said apron to the holder on the slide, as the latter is advanced, substantially as set forth. 40 45 50

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

JOHN H. BENJAMIN.

Witnesses:

THOS. J. CONERTY,

CHARLES M. GILBERT.