

No. 746,138.

PATENTED DEC. 8, 1903.

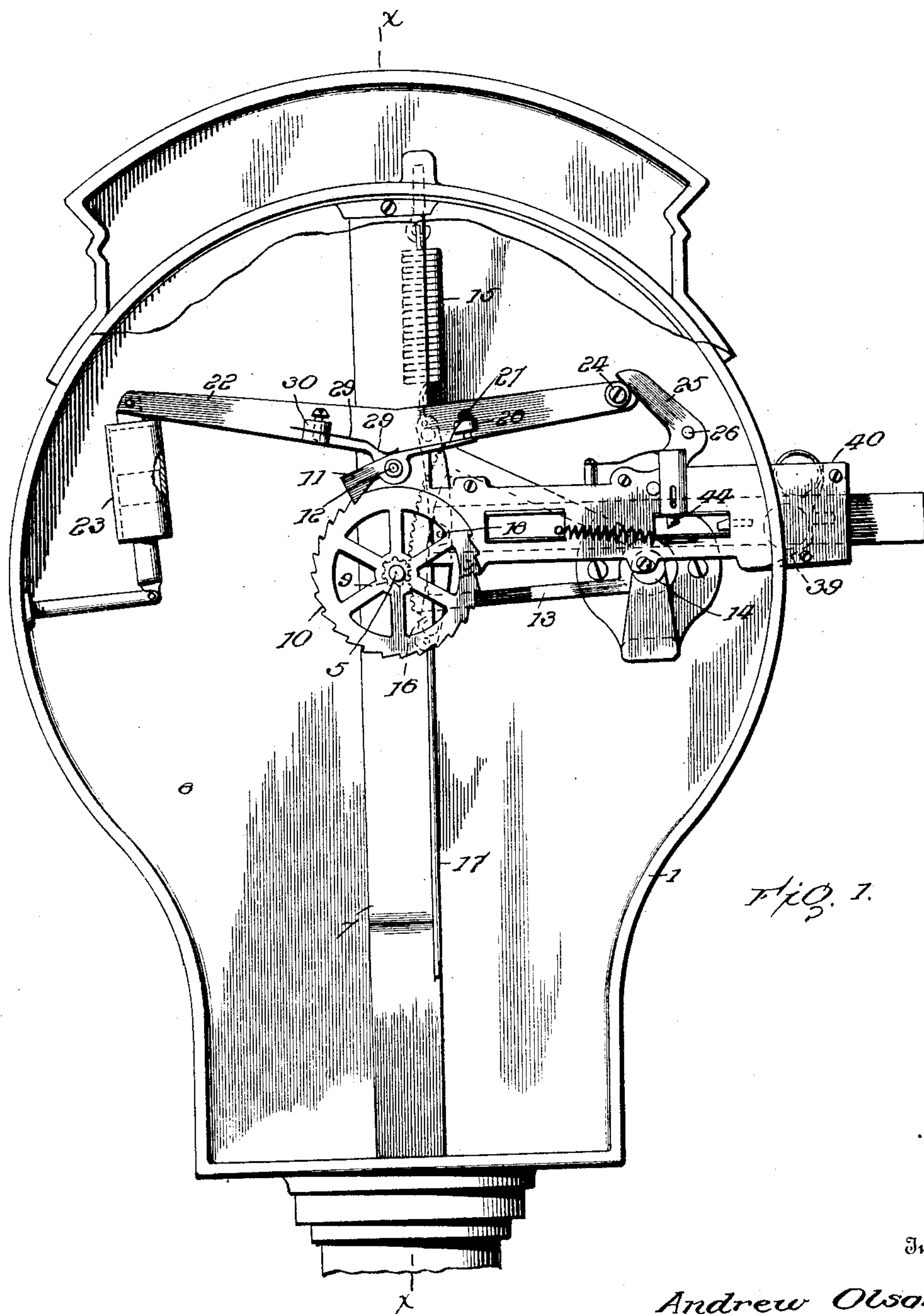
A. OLSON.

COIN ACTUATED WEIGHING SCALE.

APPLICATION FILED MAR. 2, 1903.

NO MODEL.

3 SHEETS—SHEET 1.



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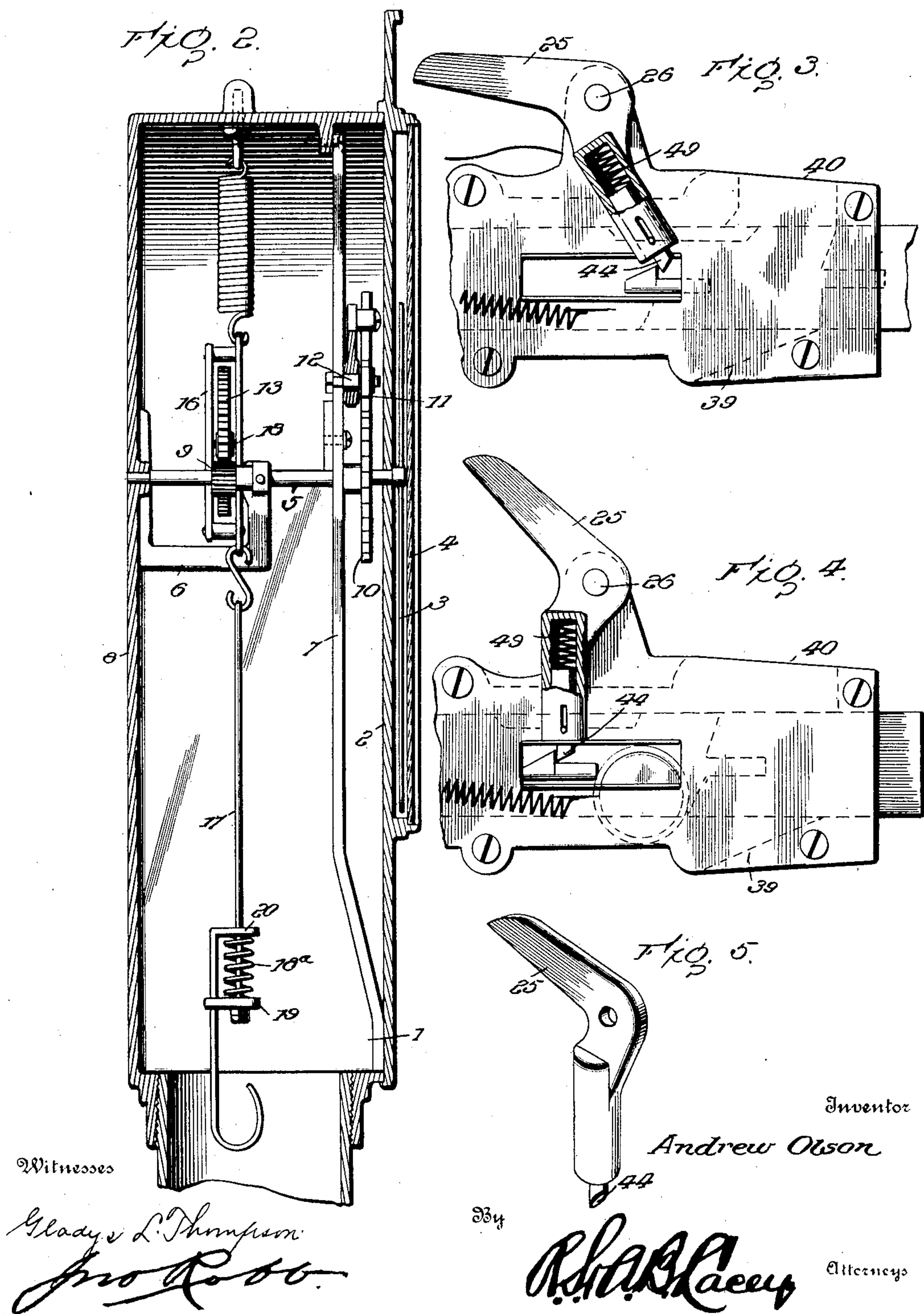
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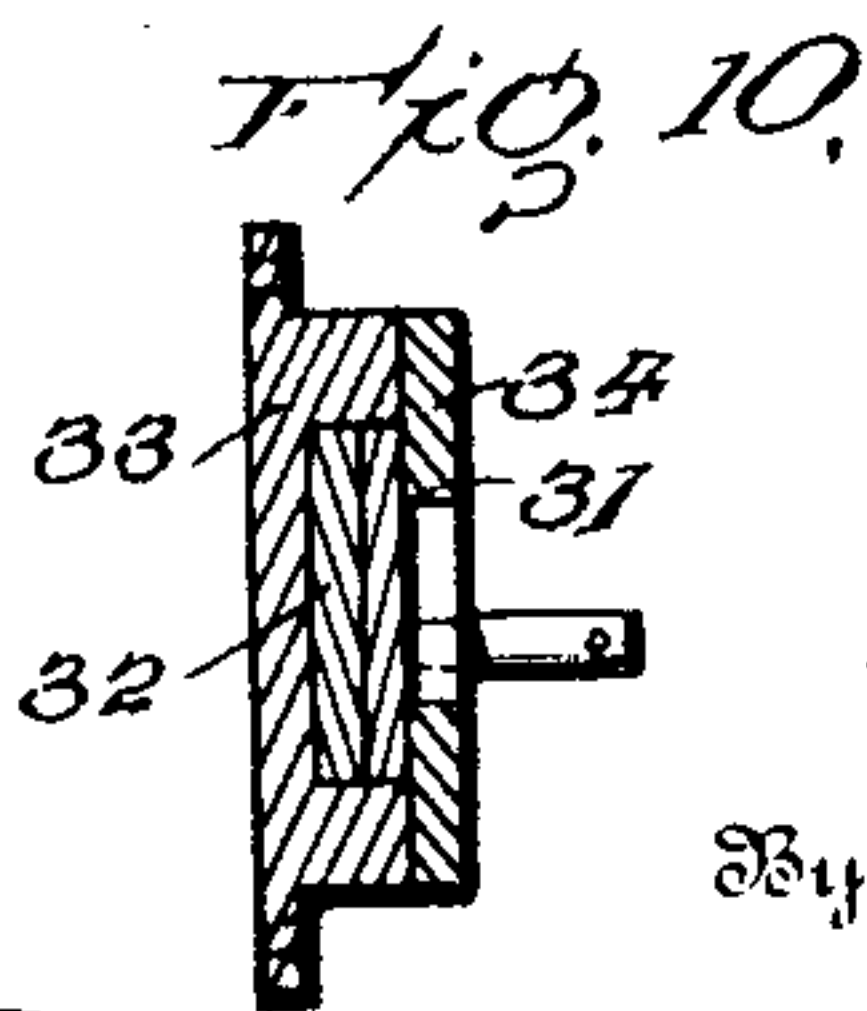
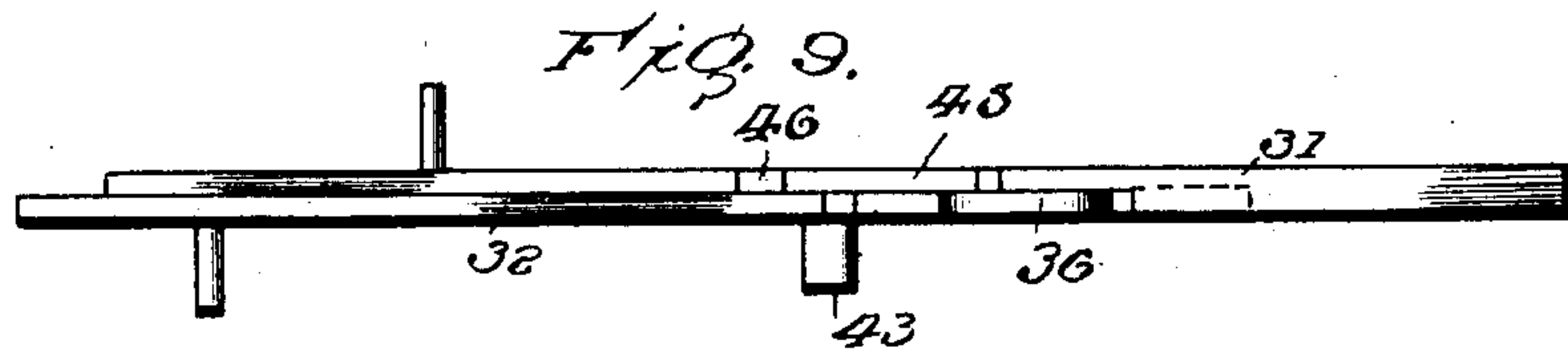
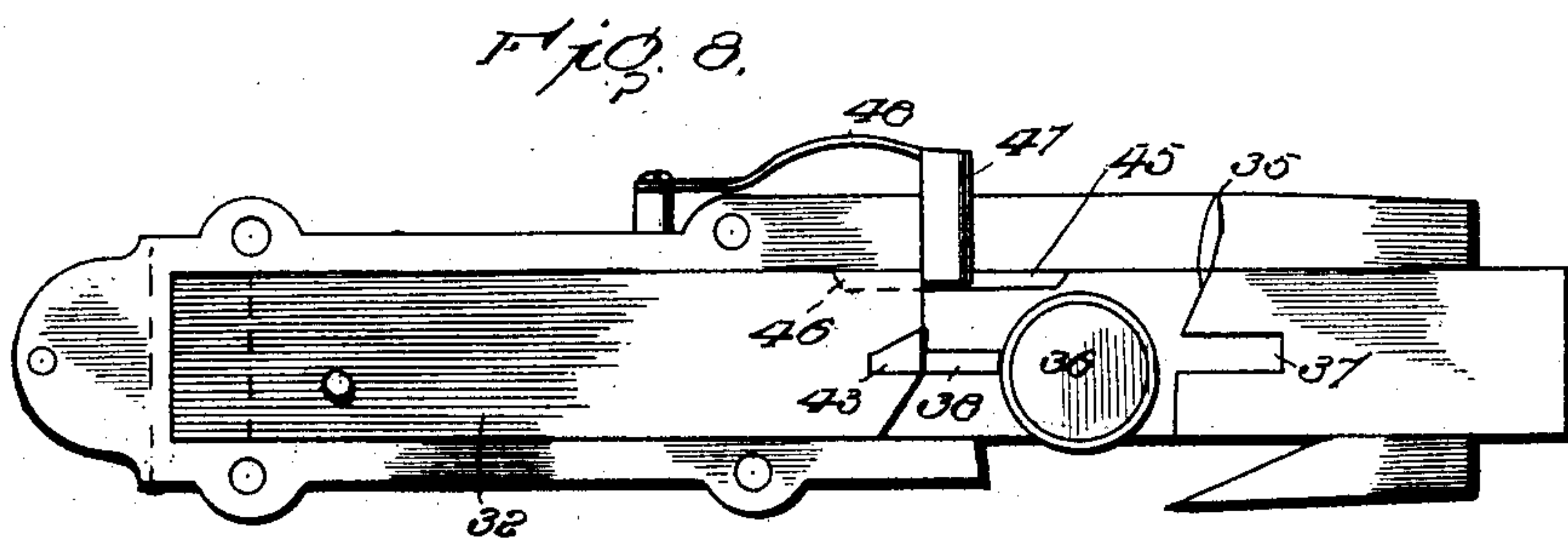
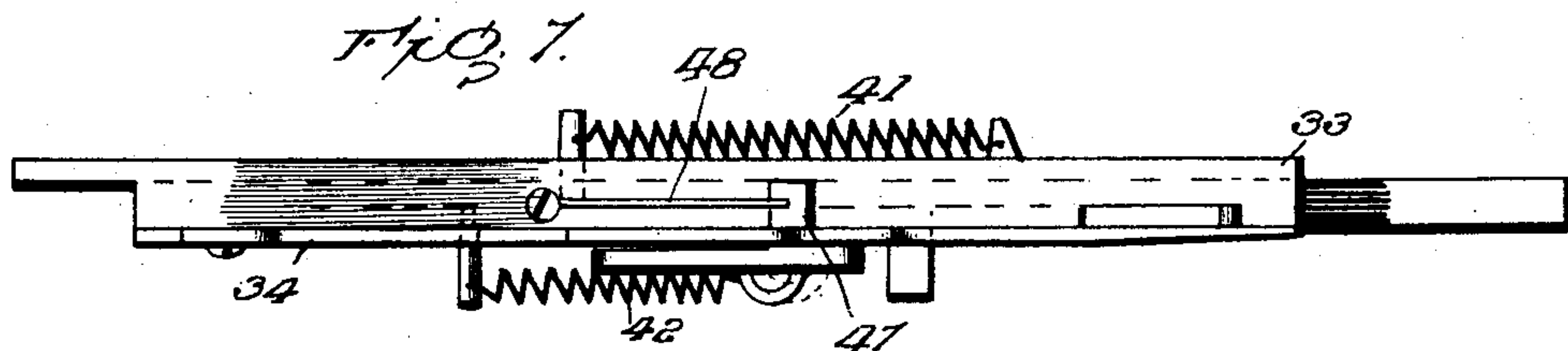
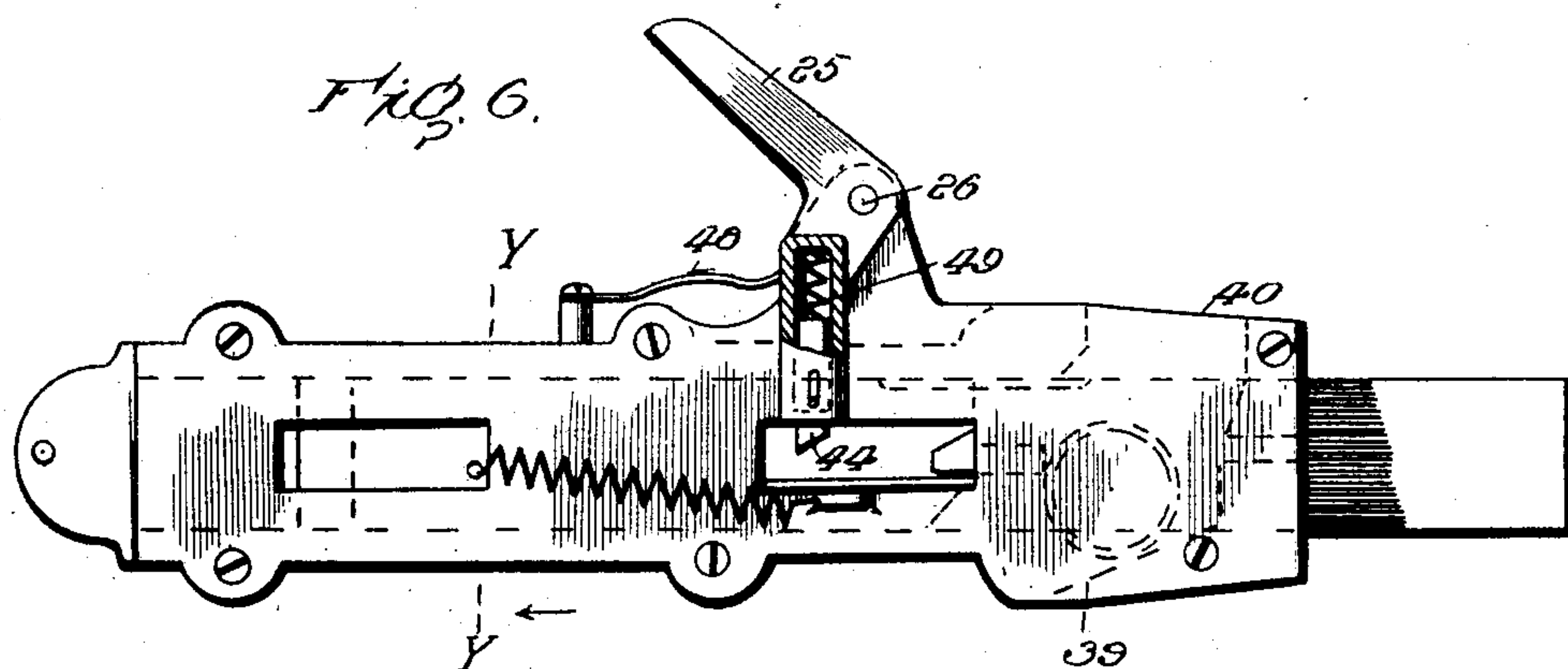
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3 SHEETS—SHEET 3.



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UNITED STATES PATENT OFFICE.

ANDREW OLSON, OF MINNEAPOLIS, MINNESOTA.

COIN-ACTUATED WEIGHING-SCALE.

SPECIFICATION forming part of Letters Patent No. 746,138, dated December 8, 1903.

Application filed March 2, 1903. Serial No. 145,761. (No model.)

To all whom it may concern:

Be it known that I, ANDREW OLSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Coin-Actuated Weighing-Scales, of which the following is a specification.

This invention aims to simplify, render more certain and responsive, and increase the life of the operating mechanism of the type of scales designed to be actuated by means of a coin of predetermined value deposited in a slot and directed to the coin-release mechanism.

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

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a front view of the upper or head portion of a weighing-scale embodying the invention, the dial being omitted. Fig. 2 is a vertical section about on the line X X of Fig. 1. Fig. 3 is a detail view of the outer end portion of the guide-frame, trip, and plunger, showing the relation of the parts when the trip has been actuated to operate the retarder-lever. Fig. 4 is a view similar to Fig. 3, showing the relation of the parts when the plunger has been pressed inward and preliminary to the release of the coin. Fig. 5 is a detail perspective view of the trip. Fig. 6 is a detail view of the guide-frame and parts supported thereby, showing their normal position. Fig. 7 is a top view of the parts illustrated in Fig. 6. Fig. 8 is a view similar to Fig. 6, the front plate of the guide-frame and the trip being omitted. Fig. 9 is a top view of the plunger and retarder. Fig. 10 is a transverse section about on the line Y Y of Fig. 6 looking to the left, as indicated by the arrow.

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 casing 1 for inclosing the working parts may be of any design and in practice constitutes the head of platform-scales. The front of the casing is provided with circular graduations to indicate units of weight and fractional parts thereof, the same forming a dial 2, with which a pointer or hand 3 coöperates to designate the weight when the scales have been operated. The dial and pointer are protected by a glass front 4 in the usual way.

An arbor or shaft 5 is journaled in a bracket 6, bar 7, and back 8 of the casing and is provided at its front end with the pointer or hand 3, secured thereto in any convenient way. The bracket 6 and bar 7 are attached to parts of the casing in any substantial manner. A pinion 9 is secured to the shaft 5 and also a ratchet-wheel 10, the latter coöperating with a detent 11, pivoted at 12 to the bar 7 to normally hold the weighing mechanism against operation until released by means of a proper coin deposited into the machine. A toothed segment 13 is in mesh with the pinion 9 and is pivoted at 14 and is connected with the spring 15, by means of which the weight is sustained and determined. A frame 16 is connected at one end to the spring 15 and at its opposite end to the rod 17 and intermediate of its ends to the segment 13 at 18. This frame 16 is composed of companion bars spaced apart and connected at opposite ends by pins, rivets, or like fastenings, said bars embracing opposite sides of the segment, as indicated most clearly in Fig. 2. When pressure is applied to the rod 17 and the weighing mechanism is released, the toothed segment 13 is operated and causes rotation of the shaft 5 and a corresponding movement of the pointer or hand 3 over the dial 2 of the object exerting a pressure or downpull upon the rod 17, as will be readily comprehended. To allow for a limited play of the platform and prevent in a measure oscillation of the hand or pointer, a spring 18^a coöperates with the rod 17 and is interposed between a stop 19 thereof and the bent end 20 of a companion rod 21, to which the platform or other weight-supporting device is connected in the accustomed way.

The retarder-lever 22 is mounted upon the same support 12 as the detent 11 and is connected at one end to the casing by means of a dash-pot or analogous contrivance 23, where-
 5 by said lever returns slowly to a normal position after being actuated. A stop 24 projects laterally from the opposite end of the lever and extends across the path of the trip 25, pivoted at 26 to a part of the casing. A
 10 set-screw 27 is mounted in a lug 28, projected laterally from the lever 22, and constitutes an adjustable stop for one end of the detent 11. A spring 29, secured at one end to a lug 30 of the lever 22, exerts a pressure upon the
 15 detent 11, so as to normally hold it in contact with the teeth of the ratchet-wheel 10. The retarder-lever 22 when depressed at the end provided with the stop 24 causes a corresponding movement of the detent 11, where-
 20 by the weighing mechanism is released and permitted to operate to designate the weight of the load imposed upon the platform or other weight-receiving support.

The coin-actuated mechanism for effecting
 25 a release of the weighing mechanism comprises, essentially, a plunger 31 and a retarder 32, both slidably mounted and provided with retracting-springs for returning the parts to a normal position when released
 30 after being operated. The plunger and retarder are placed side by side and are mounted in a guide-frame 33, secured to the casing and consisting of a plate having longitudinal flanges to form guides for the parts 31 and
 35 32, the front side of the space or box formed by said longitudinal flanges being closed by means of a plate 34, secured to the frame 33 by machine-screws or like fastenings, so as to admit of the plate 34 and parts applied to the
 40 guide-frame being readily removed for any purpose. The outer portion of the plunger is thickened a distance corresponding to the thickness of the retarder 32, the inner end of the thickened portion forming a shoulder 35
 45 for engagement with the coin 36. A slot 37 extends outward from the shoulder 35 and is adapted to receive a tongue 38, projected forward from the retarder 32. Under normal conditions the coin 36 is received be-
 50 tween the shoulder 35 and the outer end of the tongue 38, so that when pressing upon the plunger 31 corresponding inward movement will be imparted to the retarder through the coin. An inclined ledge 39 supports the coin
 55 when introduced into the coinway by means of the slot 40. A spring 41 connects an extension of the plunger with an extension of the guide-frame and serves to hold said plunger normally projected. A corresponding
 60 spring 42 connects an extension of the retarder with a lateral extension of the guide-frame and normally holds the retarder in operative position. A catch 43 projects laterally from the outer end of the retarder and
 65 is beveled at its upper rear corner to permit it to readily pass by the yielding stop 44 at the lower end of the pivoted trip 25 when

the plunger and retarder are moved inward. The upper edge of the plunger is cut away, as shown at 45, the ends of the cut-away por-
 70 tion being beveled or inclined to form cams 46. A lock 47 enters the cut-away portion 45 and is adapted to engage with the retarder 32 and hold it momentarily until the plunger is
 75 moved forward a distance to release the coin 36 and admit of proper discharge thereof into the box or tray (not shown) arranged for its reception. As shown, the lock 47 consists of a pin or bolt vertically arranged and having
 80 its inner end adapted to enter the cut-away portion 45 and to extend in front of the retarder 32. This lock 47 is mounted in an opening of the guide-frame 33 and is held depressed by means of a spring 48 and is pref-
 85 erably of a width corresponding to the combined thickness of the plunger and retarder.

The trip 25 is pivoted at 26 and is approximately of bell-crank form, the vertical member being tubular, so as to receive the pin or
 90 stop 44 and the spring 49, cooperating therewith, said pin or stop being directed in its reciprocating movements by any suitable means and having its outer end beveled, so as to en-
 95 gage with a radial rod upon the beveled portion of the catch 43 when the plunger and retarder are pressed inward. The weight of the lower portion of the pivoted trip is such as to hold same in a normal position. Ob-
 100 viously a spring may be employed to effect the same result. The trip is disposed with its upper arm or member in position to en-
 105 gage with the stop 24 of the retarder-lever 22 to effect a release of the weighing mechanism after a proper coin has been deposited and the plunger pressed inward.

The operation of the mechanism is substantially as follows: After the weight has been imposed upon the rod 17 a coin 36 is dropped into the slot 40 and is sustained in position
 110 in the coinway by the rest 39. An inward pressure upon the plunger carries the coin 36 and retarder 32 rearward and brings the coin in position above the discharge-opening of the coinway. As the retarder and plunger
 115 move rearward the springs 42 and 41 are expanded and the catch 43 clears the yielding stop 44 of the trip 25 and the lock 47 drops in front of the retarder. The plunger is now released and is moved outward by the
 120 spring 41, and the coin 36, being liberated, drops into the casing or other receptacle designed to receive same. The retarder is prevented from following the movement of the plunger by means of the lock 47. Hence
 125 the release of the coin 36 is assured. When the plunger reaches a point in its outward movement, the cam 46 at the inner end of the cut-away portion 45 comes in contact with the lock 47 and elevates same, releasing the
 130 retarder 32, which, being free, springs forward under the action of the spring 42, thereby resetting same. As the retarder moves outward the catch 43 engages with the yield-
 135 able stop 44 of the trip 25 and actuates the

latter, causing it to depress the free end of the retarder-lever 22 and compelling disengagement of the detent 11 from the ratchet-wheel 10, so as to release the weighing mechanism, which is operated by the load pulling upon the rod 17. Inasmuch as the retarder-lever 22 returns slowly to a normal position by reason of the dash-pot or like contrivance 23, the hand moves so as to indicate the correct weight and can return to a normal position before the detent 11, controlled by the retarder-lever, assumes a position to engage with the ratchet-wheel 10 and again lock the weighing mechanism against operation until another coin is deposited.

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

1. In a coin-actuated mechanism for weighing-scales, the combination of spring-actuated plunger and retarder, the plunger having a cut-away portion inclined at its inner end to form a cam, and a lock adapted to simultaneously enter the cut-away portion of the plunger and engage with the retarder and hold same repressed, said lock being released by the aforementioned cam when the plunger reaches a predetermined point in its return movement, substantially as specified.

2. In weighing-scales and in combination with the weighing mechanism and locking means therefor including a lever, a trip of approximately bell-crank form for effecting release of the weighing mechanism by engagement with the said lever, spring-actuated plunger or retarder, the said retarder being adapted to engage with one of the arms of the aforesaid trip, the retarder coöperating arm of the trip being tubular, a yieldable spring-actuated stop mounted within the aforesaid tubular arm of the trip and adapted

for positive engagement by the retarder to operate the trip upon return movement of said retarder, and a lock for holding the retarder repressed and adapted to be released by means of the plunger when it reaches a given point in its return movement.

3. In weighing-scales, and in combination with the weighing mechanism and locking means therefor including a lever, a trip for effecting release of the weighing mechanism by engagement with said lever, a yielding stop carried by said trip, a retarder and plunger, a catch projected from the retarder and adapted for coöperation with the aforesaid yielding stop to actuate the trip upon the return movement of the retarder, and a lock for holding the retarder repressed and adapted to be released by the plunger when it reaches a given point in its return movement, substantially as described.

4. In weighing-scales, and in combination with the weighing mechanism and locking means therefor including a lever, a trip for effecting release of the weighing mechanism by engagement with said lever and provided with a yieldable spring-actuated stop, spring-actuated plunger and retarder, the latter having a portion for engagement with the yieldable stop of the trip to operate the latter upon return movement of said retarder, and a lock for holding the retarder repressed and adapted to be released by means of the plunger when it reaches a given point in its return movement, substantially as set forth.

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

ANDREW OLSON. [L. S.]

Witnesses:

A. H. OPSAHL,

F. D. MERCHANT.