

No. 638,907.

Patented Dec. 12, 1899.

W. A. COPE & J. L. MYERS.

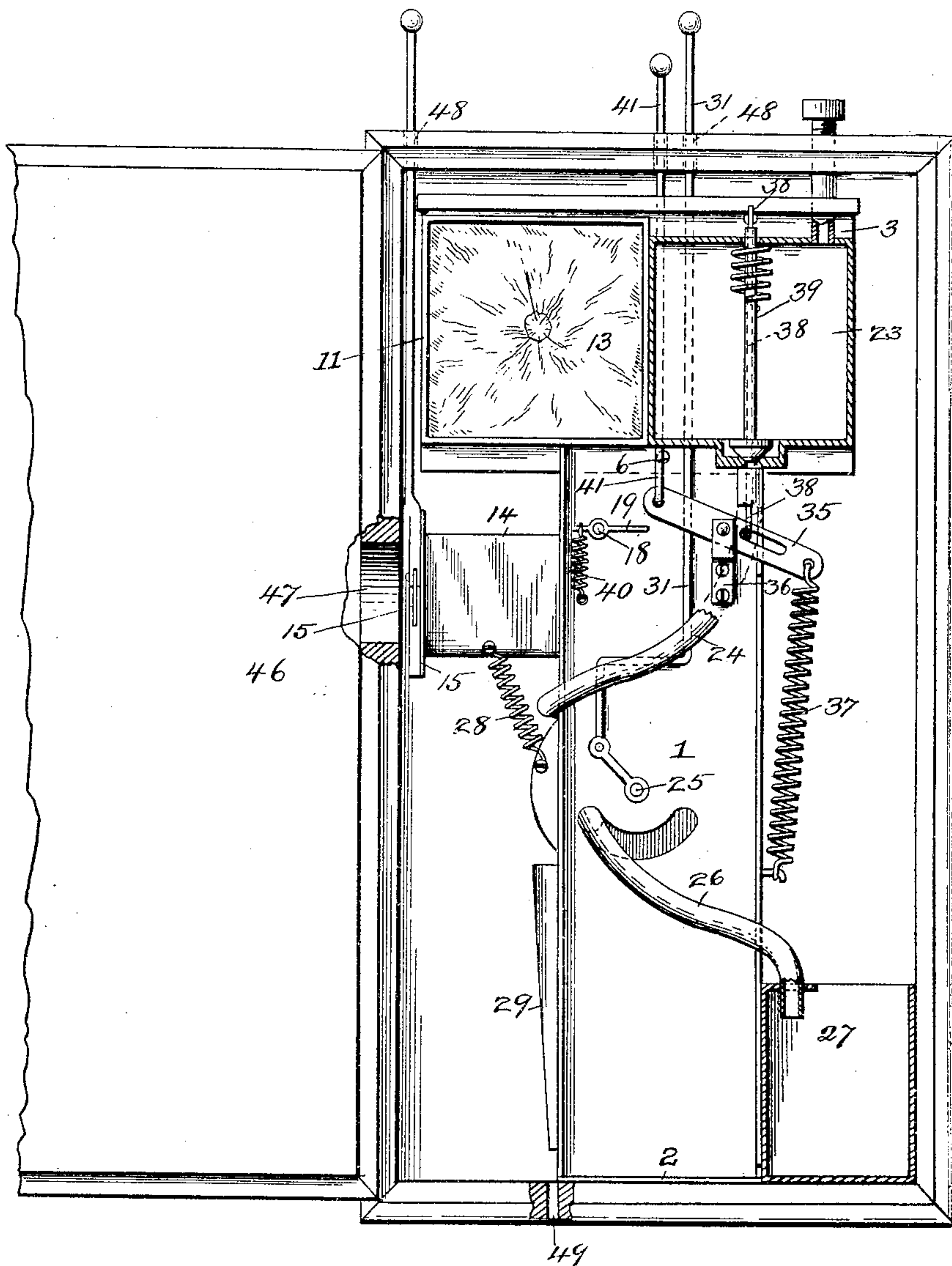
TINTYPE APPARATUS.

(Application filed Apr. 5, 1899.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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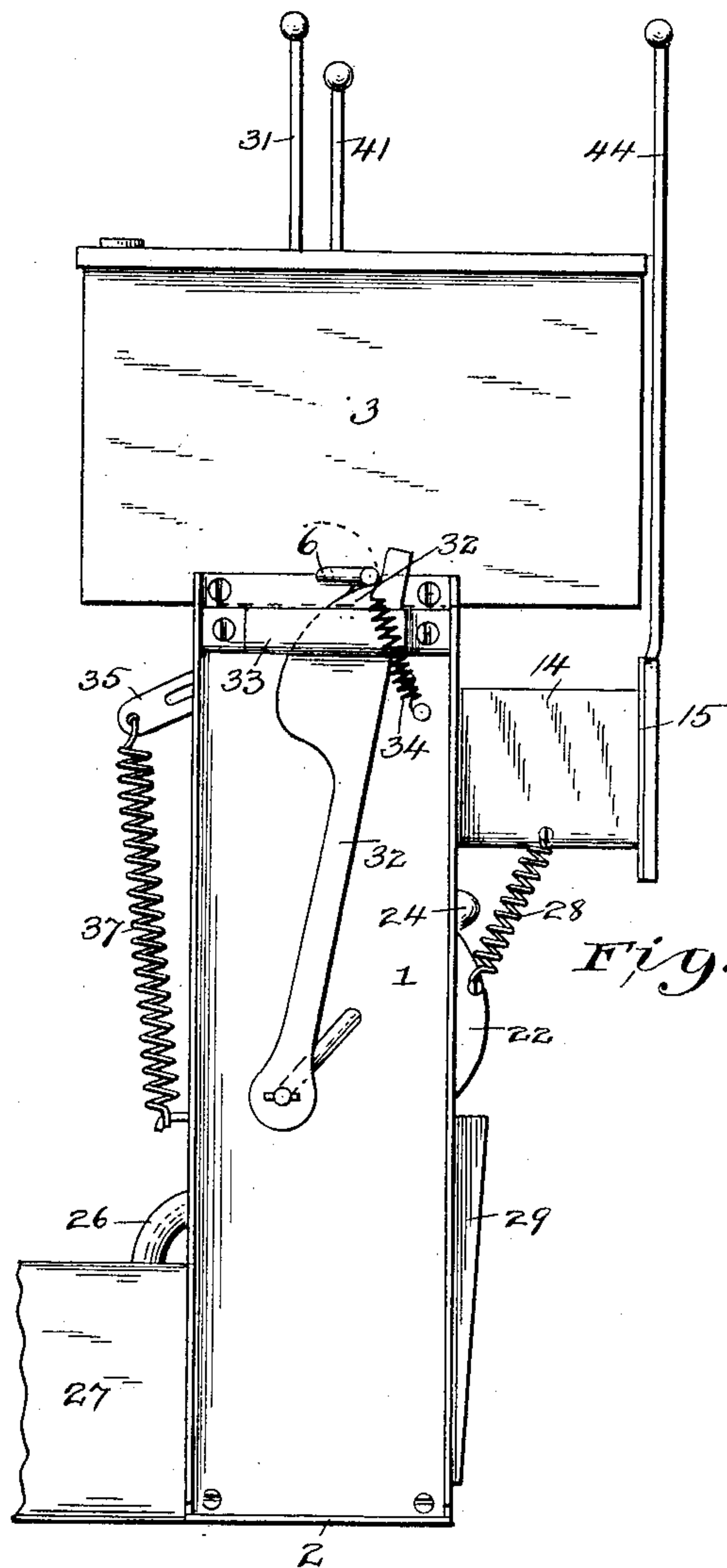


Fig. 2.

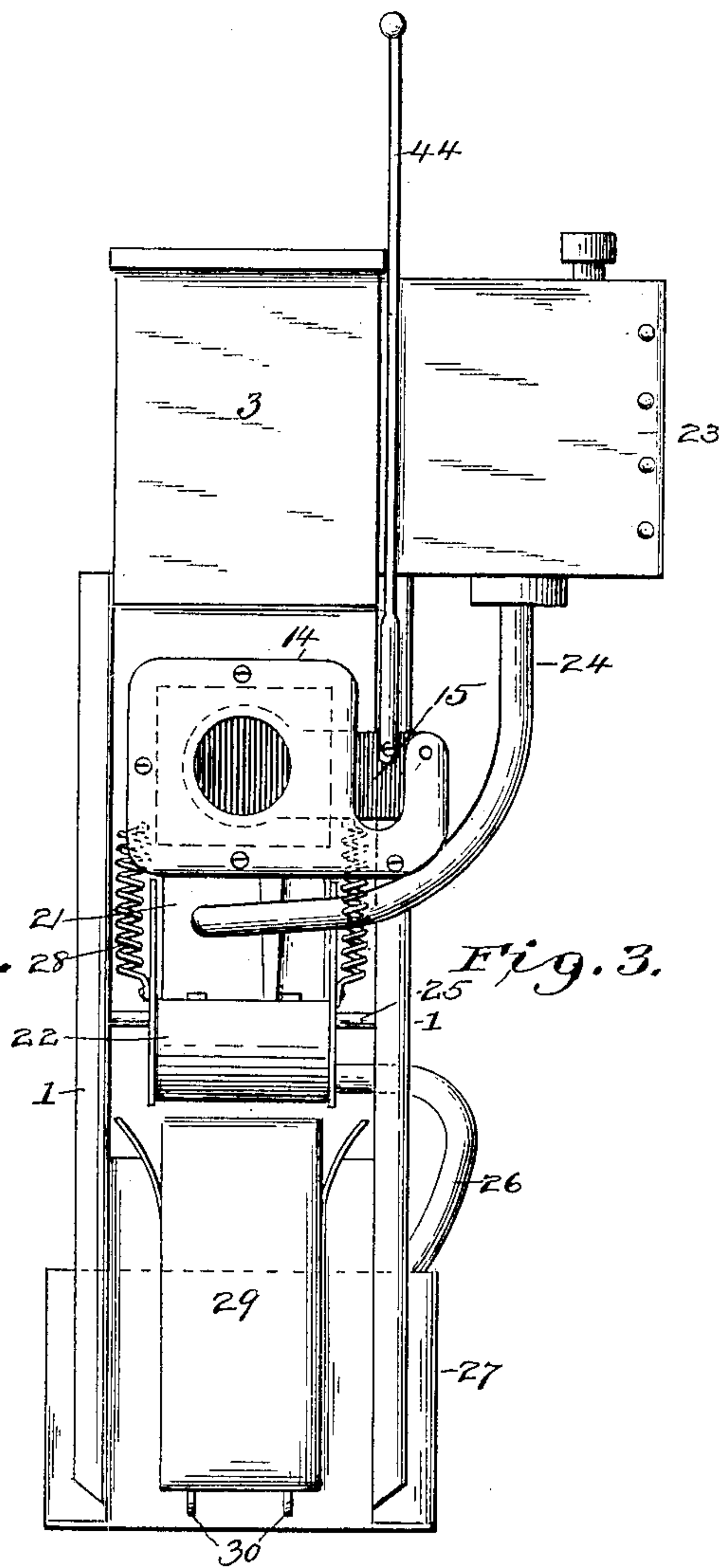


Fig. 3.

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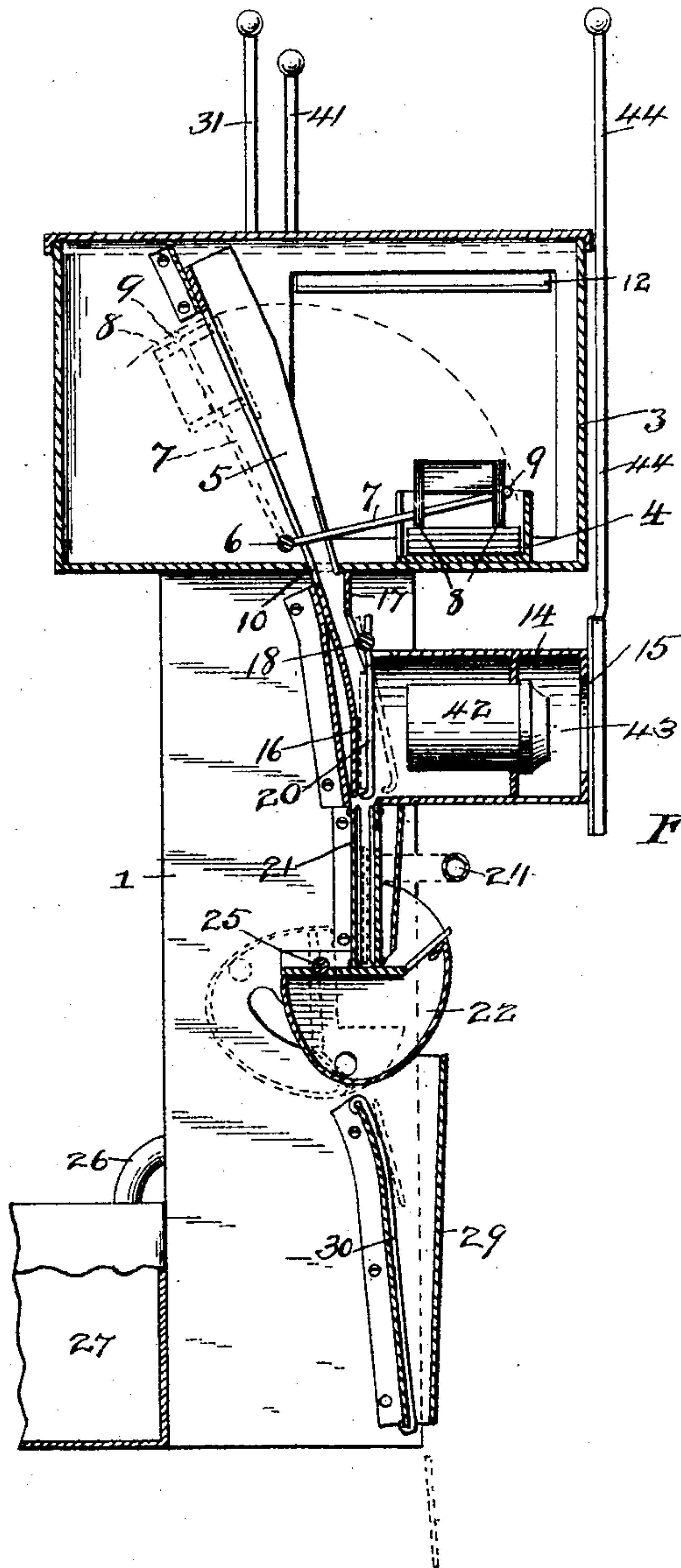


Fig. 5.

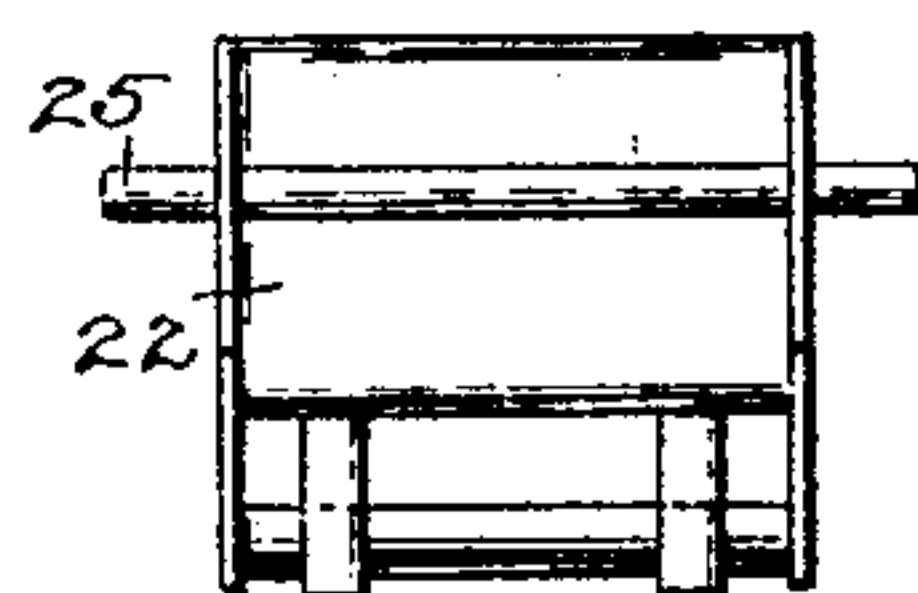
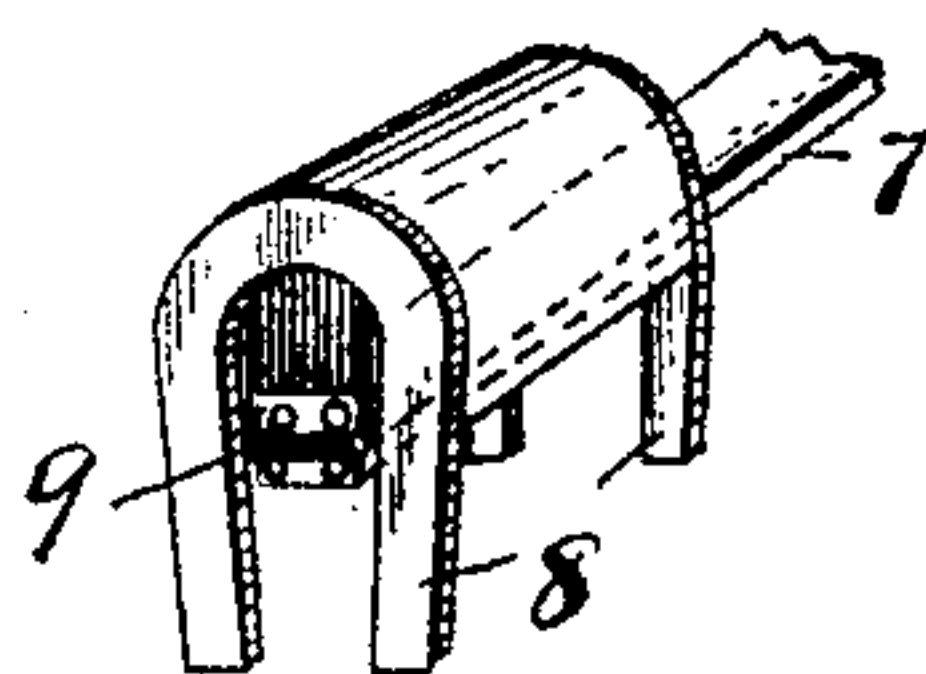


Fig. 4.

Fig. 6.



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# UNITED STATES PATENT OFFICE.

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## TINTYPE APPARATUS.

SPECIFICATION forming part of Letters Patent No. 638,907, dated December 12, 1899.

Application filed April 5, 1899. Serial No. 711,868. (No model.)

*To all whom it may concern:*

Be it known that we, WILLIAM A. COPE, residing at Pratt, in the county of Pratt, and JOHN L. MYERS, residing at Caldwell, in the county of Sumner, State of Kansas, citizens of the United States, have invented certain new and useful Improvements in Tintype Apparatus, of which the following is a specification.

Our invention relates to tintype-machines, and has for its object to provide an apparatus in which, after the plate-magazine has been supplied and the developing and fixing baths filled, the plates are supplied to the camera and passed through the baths by the manipulation of devices outside the machine. This object we accomplish in the manner and by the means hereinafter described in detail and particularly pointed out in the claims, reference being made to the accompanying drawings, in which like figures indicate like parts in all the views.

Figure 1 is a side elevation of our invention with case. Fig. 2 is a side elevation of same from right. Fig. 3 is a front view of same. Fig. 4 is a central sectional view, partly in elevation. Fig. 5 is a detail view of top of bath-carriage. Fig. 6 is a detail view of magnets.

Our invention consists of two rectangular upright standards 1, preferably of sheet metal, with flanges projecting outward from the bottom and sides to give rigidity. The standards 1 may be braced by a cross-piece 2 between their lower ends. Secured between the upper ends of the standards 1 is a rectangular covered box 3. Arranged on the bottom of said box 3, in the forward part, is a plate-bed 4, open at the rear. An inclined slide 5, having a longitudinal slot in its center, is placed in said box 3 a little to the rear of the middle and secured to the sides of said box 3, said slide having flanges extending forward from its side and toward the lower end of said slide 5, bent inward to form a chute. A shaft 6 is journaled in the sides of said box 3 just back of said slide 5 and has one end formed into a crank outside said box 3. Mounted on said shaft 6 and normally extending through the slot in said slide 5 and over said plate-bed 4 is an arm 7. Two horse-shoe-magnets 8 are arranged at a suitable distance apart and secured by a hinge 9 to

the end of the arm 7, so that the open ends of said magnets 8 rest in the plate-bed 4. Just in front of the foot of said slide 5 at the mouth of the chute and through the bottom of said box 3 is a transverse slot 10. Opening into said box 3 at one side opposite said plate-bed 4 is a projection 11, having its outer end normally closed by a swinging door 12 and secured to the same end one end of a bag 13, the other end of which bag 13 is drawn together by a piece of elastic. A camera 14, of any of the usual forms, provided with a spring-shutter 15, is secured between the standards 1 below said box 3, so that the plate-holder 16 will be just under the slot 10. A chute 17 extends from the top of the camera 14 just over the plate-holder 16 to within a short distance of the slot 10. Just in front of said chute 17, above said camera 14, a shaft 18 is journaled in said standards 1, one end of said shaft 18 being provided with a crank 19. Depending from said shaft 18 into said camera 14, one on each side said plate-holder 16, are two wires 20, the lower ends of which wires 20 are bent at right angles and normally extend under and form the bottom of said plate-holder 16. Extending through the bottom of the camera 14, immediately under the plate-holder 16, is a chute 21, the lower end of which rests normally on the bath-carriage 22. Secured to the side of the box 3 is a reservoir 23, in which the developing fluid is placed. A tube 24 connects the outlet of said reservoir 23 with said chute 21. The bath-carriage 22 is semi-cylindrical, its ends being crescent-shaped and extending beyond the body. At one side it is attached to a shaft 25, journaled in said standards 1 and provided at each end with a crank. From the bottom of the bath-carriage 22 a tube 26 extends to the receptacle 27. Normally the bath-carriage 22 is held by the spring 28 against the bottom of the chute 21, which it closes. Immediately under the bath-carriage 22 and secured between the standards 1 is a chute 29, provided with a couple of ribs 30 to keep the surface of the plate from contact with the wall of the chute 29 as it passes through. At the bottom of said chute 29, in a suitable receptacle, the fixing-bath is placed. The crank at one end of the shaft 25 is connected to the lower end of a



rod 31, which extends up above the top of box 3, and the crank on the other end of the shaft 25 is connected by a cam 32, working in a slide 33, attached to standards 1, with the crank on the end of the shaft 6. The spring 34 returns the shaft 6 to its normal position. A lever 35 is mounted on a bracket 36, attached to the standards 1. The end of the long arm of said lever 35 is normally drawn down by the spring 37. An arm 38 has its lower end attached to the long arm of said lever 35 intermediate its end and fulcrum by a pin passing through a slot in said lever 35. Said arm 38 extends up above and is bent at right angles over the reservoir 23, its end being connected with the upper end of a rod 39, which extends down through said reservoir 23 and has on its lower end a stopper, closing the outlet of said reservoir 23. The short arm of said lever 35 extends over and is adapted when pressed down to engage and press down crank 19, which when released is returned to its normal position by a spring 40. Attached to the end of the short arm of said lever 35 is a rod 41, which extends up above the box 3. In the front of the camera 14 the usual lenses 42 are placed, and in front of them extends a hood 43, closed by the spring-shutter 15. Secured at its lower end to said spring-shutter 15 is a rod 44, which extends above the box 3. The whole is secured by screws through the flanges at the bottom of the standards 1 in a box 45, closed by a door 46 at one side and provided with an aperture 47 opposite the eye of the camera 14 and with holes 48, through which the upper ends of the rods 31, 41, and 44 extend. Registering with the mouth of the chute 29 is a slot 49 in the bottom of said box 45.

The operation of our invention is as follows: Sensitized plates are passed through the bag 13 and projection 11 and placed face down in the plate-bed 4, the arm 7, carrying the magnets 8, being temporarily raised out of the way. When a sufficient number of plates are in the bed 4, the arm 7 is allowed to resume its normal position, when the open ends of the magnets 8 will rest on the back of the topmost plate. Now by pressing the rod 31 down the shaft 25 is turned and the cam 32 is raised, carrying the crank on the end of shaft 6, thereby turning the shaft 6 and raising the arm 7 and magnets 8, which will attract and hold the topmost plate until it comes in contact with the slide 5, as the magnets 8 pass through the slot in said slide 5, when it will be released. On being released the plate will slide down through the slot 10 and chute 17 on the plate-holder 16. A pressure downward on rod 44 opens the shutter 15 and exposes the plate. When the exposure has been sufficient, the shutter 15 springs back into place, when the rod 44 is released. Rod 41 is now used to press the short arm of the lever 35 down. This raises the arm 38, and rod 39 opens the outlet in the reservoir 23 and permits the developing fluid to pass through

the tube 24 to the chute 21, into which the plate has been dropped by the same movement, the short arm of the lever 35 pressing down the crank 19, turning shaft 18, and throwing wires 20 forward, releasing the plate, which falls into chute 21. When the plate has been sufficiently long in the developing fluid, rod 31 is again pressed, bringing, as above explained, another plate before the eye of the camera 14 at the same time that it turns the bath-carriage 22 downward and drops the first plate through the chute 29 into a receptacle containing the fixing-bath. The developing fluid drains into the bath-carriage 22 and through the tube 26 into the receptacle 27.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a tintype-machine, a plate-carrier consisting of two horseshoe-magnets separated a suitable distance, an arm revolvably mounted and having said magnets hinged to its free end, an inclined slide provided with a longitudinal slot through which said arm passes and adapted to feed plates to a plate-holder, and means for operating the same, substantially as shown and described.

2. In a tintype-machine, a closed box having a plate-bed formed on its bottom, an inclined slide leading to a transverse slot in the bottom of said box, said slide secured in said box, and having a longitudinal central slot, an arm extending through said slot and mounted on a revolvable shaft, two horseshoe-magnets mounted a suitable distance apart and hinged to the free end of said arm, said magnets adapted normally to rest in said plate-bed, and means of operating the same, substantially as shown and described.

3. In a tintype-machine, a revolvable shaft mounted over the plate-holder, two wires depending from said shaft, one on each side of said holder, said wires bent at right angles and normally forming the bottom of said holder, and means for operating the same, substantially as shown and described.

4. In a tintype-machine, a reservoir of developing fluid, a chute opening from the bottom of the plate-holder and connected with said reservoir, a bath-carriage normally closing the lower end of said chute, and means for operating the same, substantially as shown and described.

5. In a tintype-machine, a bath-carriage normally closing the lower end of a developer-bath, said carriage adapted to receive the waste developing fluid and to receive and direct the plate after passing through the developer-bath into a fixing-bath and means for operating the same, substantially as shown and described.

6. A tintype-machine consisting of an outer casing, a plate-bed, a plate-carrier formed of magnets and adapted to feed one plate at a time to the holder, a camera having a spring-shutter, a plate-holder adapted to release said



plate, a reservoir of developing fluid, a chute adapted to receive said plate and connected with said reservoir, a bath-carriage under said chute, a chute under said bath-carriage, and means for operating the same, substantially as shown and described.

7. A tintype-machine consisting of an outer casing, a box having a transverse slot in its bottom arranged in the upper part of said casing, a plate-bed in said box, an inclined slide with a central longitudinal slot secured back of said transverse slot, an arm mounted on a revoluble shaft, said arm extending through said slot and over said plate-bed, two horseshoe-magnets mounted a suitable distance apart and hinged at the end of said arm, the open ends of said magnets normally resting in said bed, a camera secured under said box, said camera having a spring-shutter operated from outside said casing, a chute having its upper end registering with said transverse slot and its lower end with an opening in said camera over the plate-holder, wires depending from a revoluble shaft into said camera, the lower ends of said wires bent at right angles and normally forming the bottom of said plate-holder, a chute extending from just under the plate-holder downward, a res-

ervoir, secured to said box, a tube connecting said reservoir and the last-named chute, a bath-carriage mounted on a revoluble shaft and normally closing the lower end of said last-named chute a rod passing loosely through the top of said casing, its lower end connected with a crank on the end of the bath-carriage shaft, a crank on the other end of such shaft, a cam attached to such crank and bearing against a crank on the end of the magnet-arm shaft, a rod passing loosely through the top of said casing, its lower end attached to a lever mounted below said reservoir and above said wire-carrying shaft, the short arm of said lever adapted when pressed down to depress the crank on the end of said wire-carrying shaft, an arm adapted to open and close the outlet of said reservoir and attached to said lever, and a chute arranged under said bath-carriage, substantially as shown and described.

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

WILLIAM A. COPE.

JOHN L. MYERS.

Witnesses:

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