

No. 682,413.

Patented Sept. 10, 1901.

T. B. KELSAY.
SWITCH OPERATING MECHANISM.

(Application filed Jan. 16, 1901.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

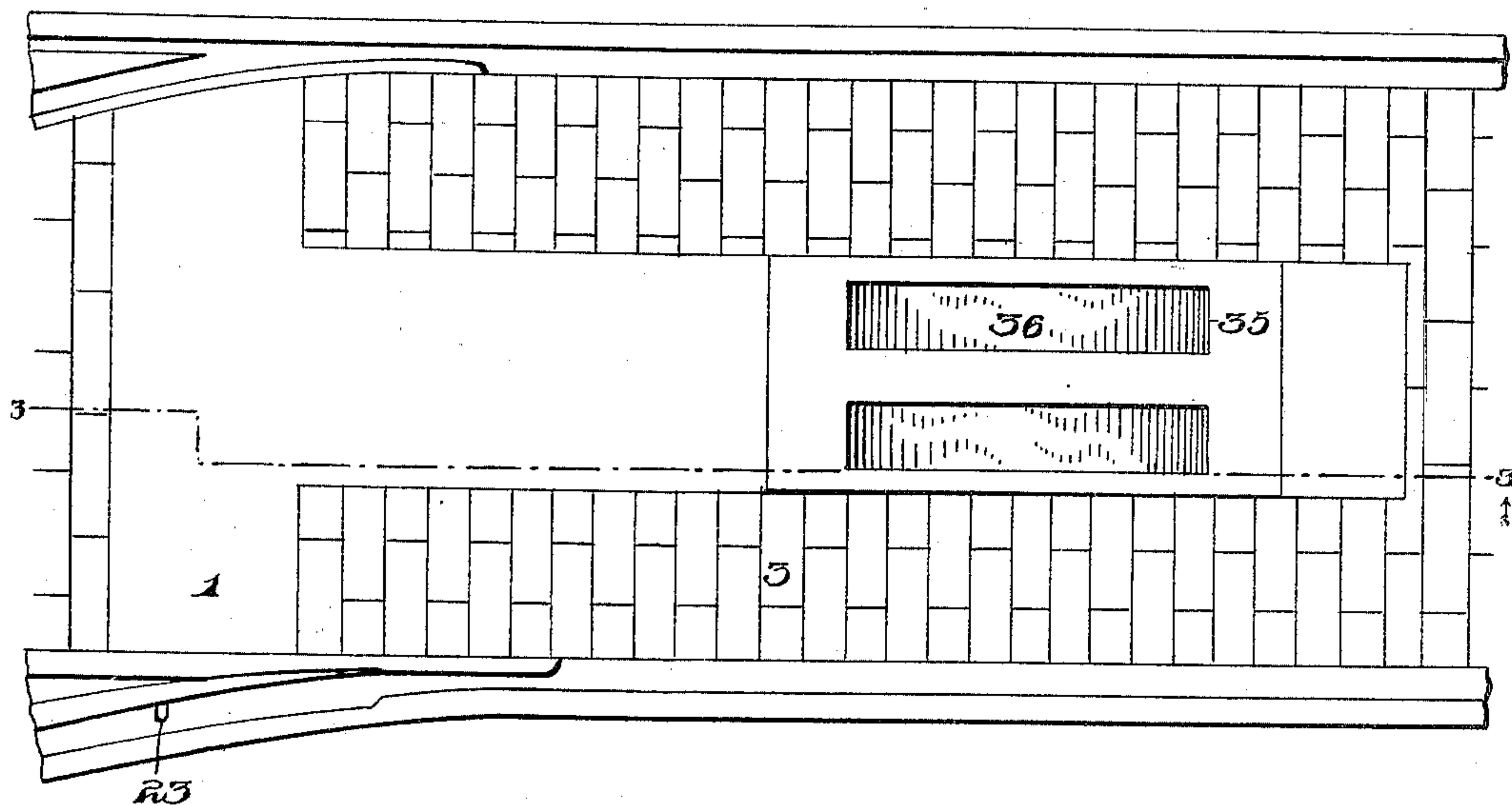
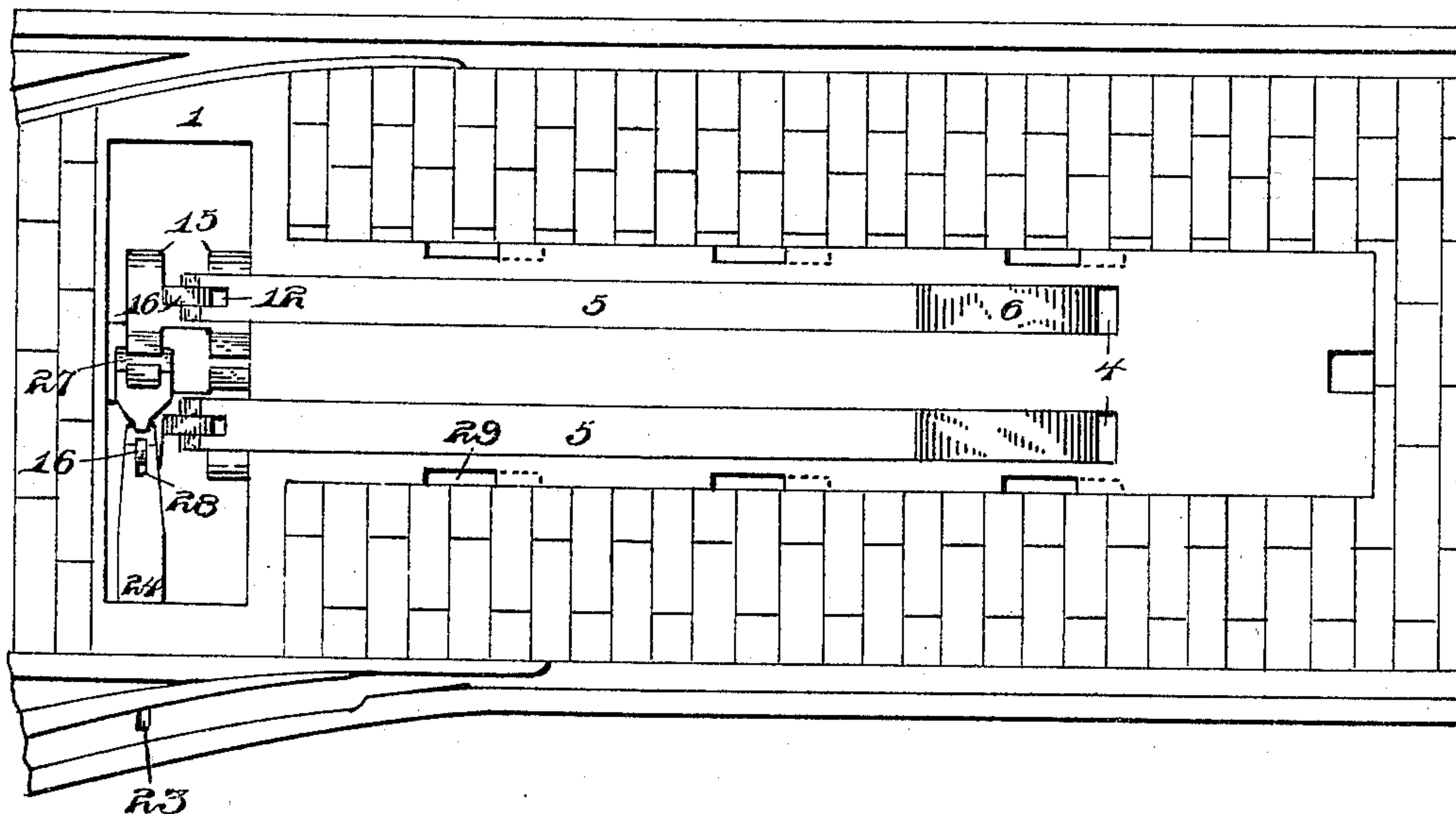


Fig. 2.



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By

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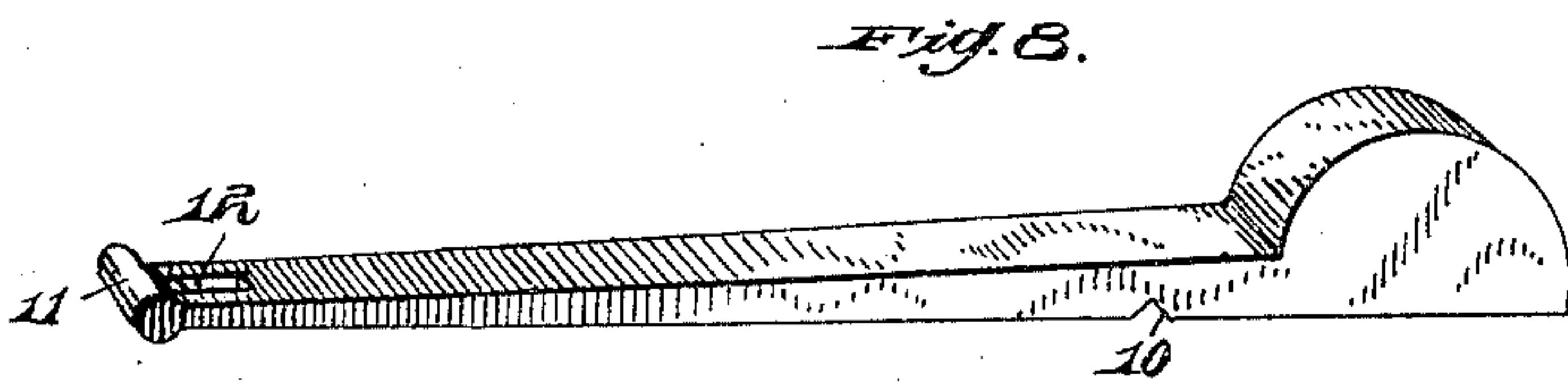
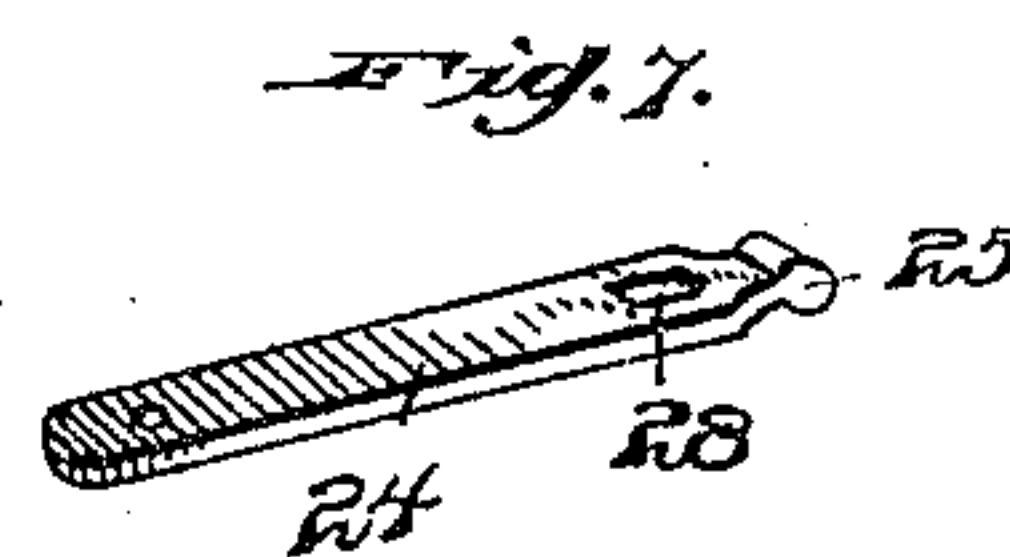
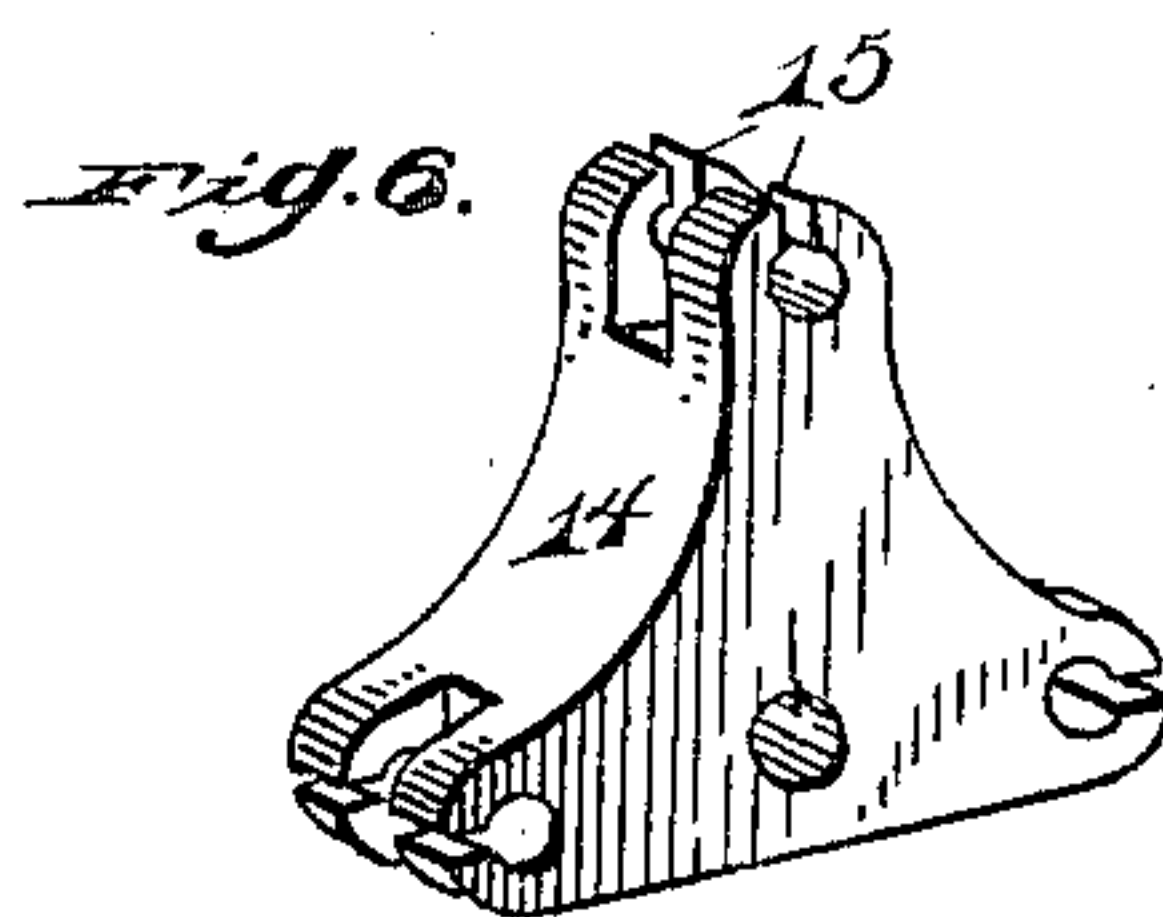
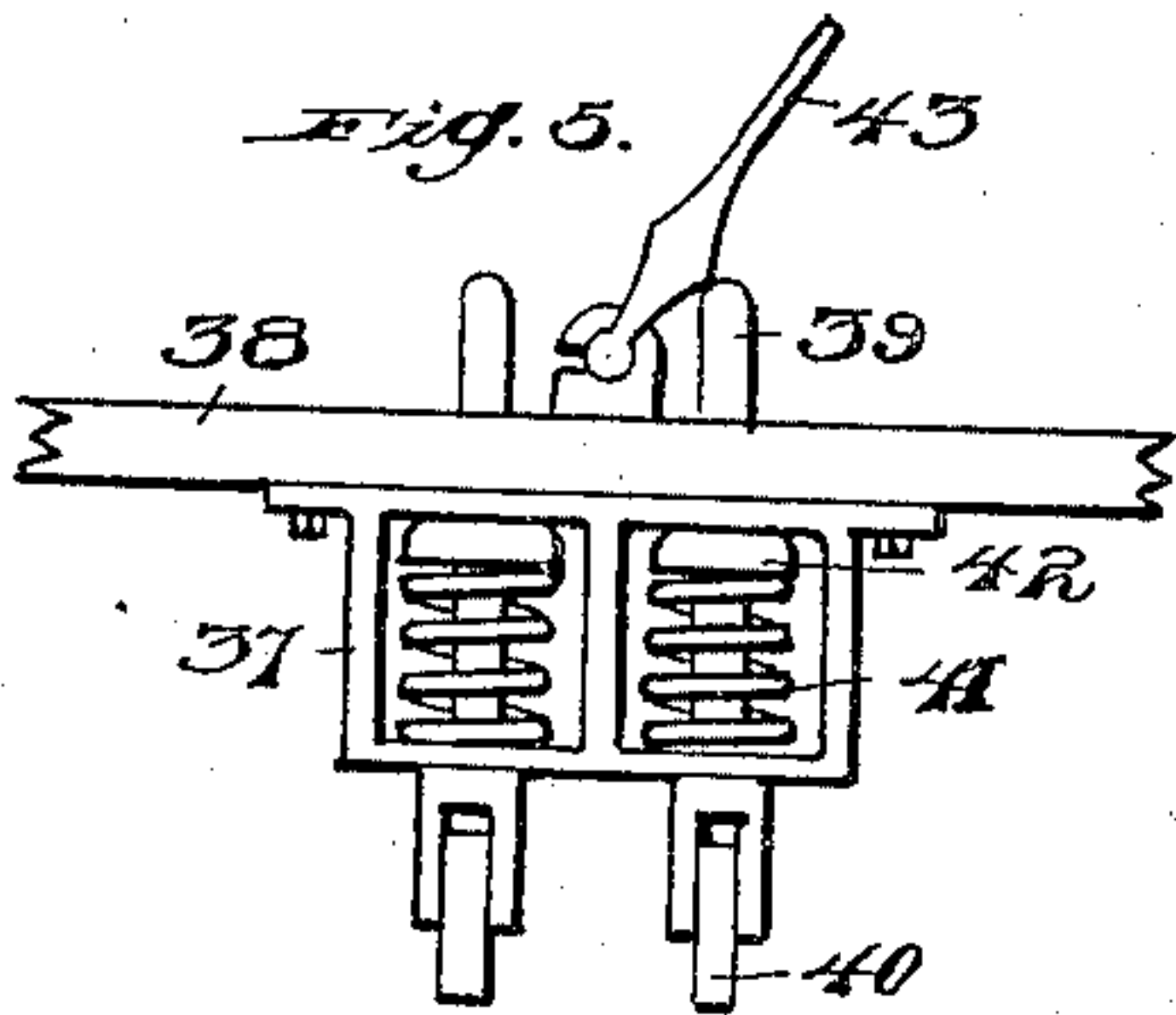
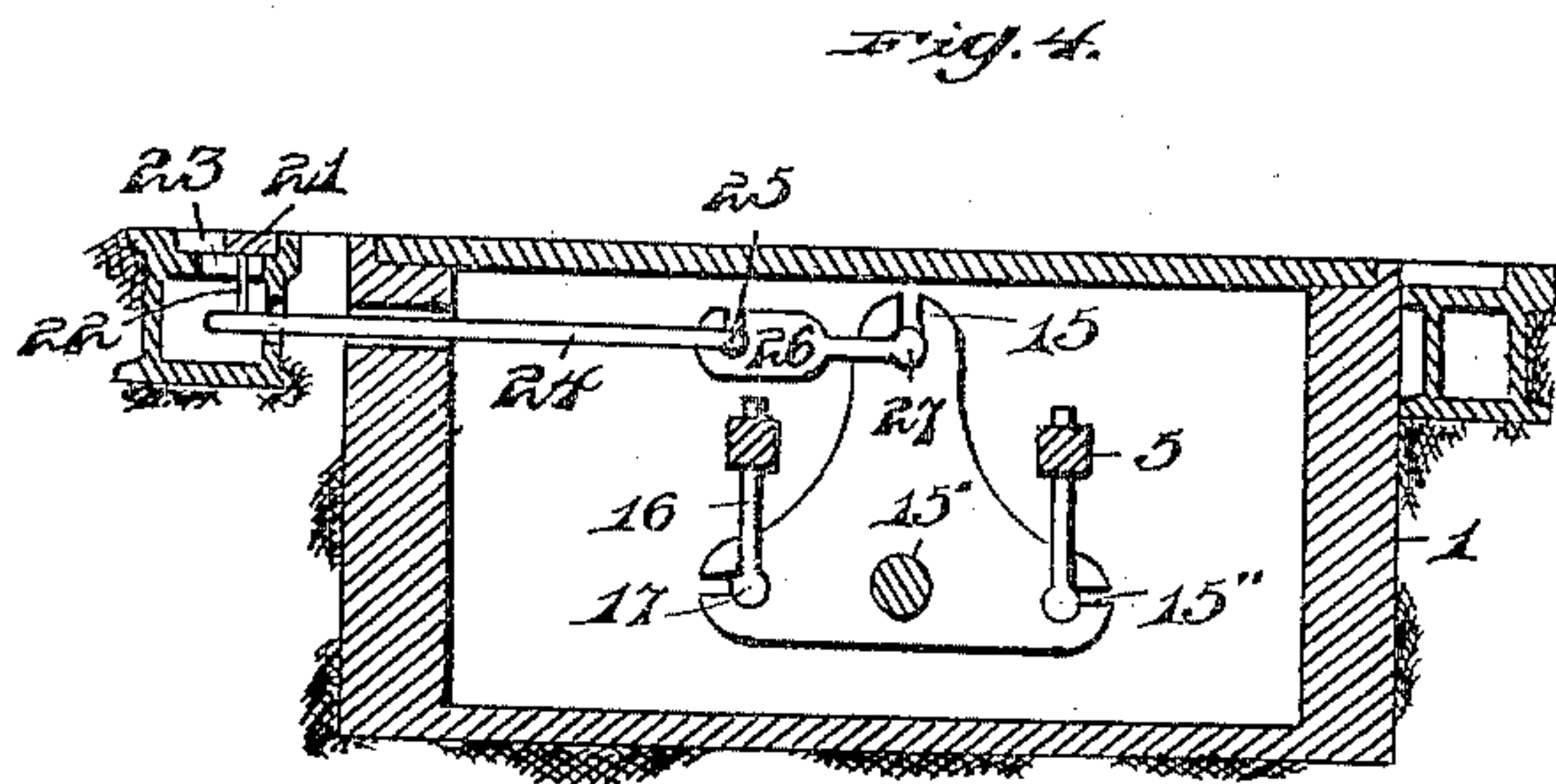
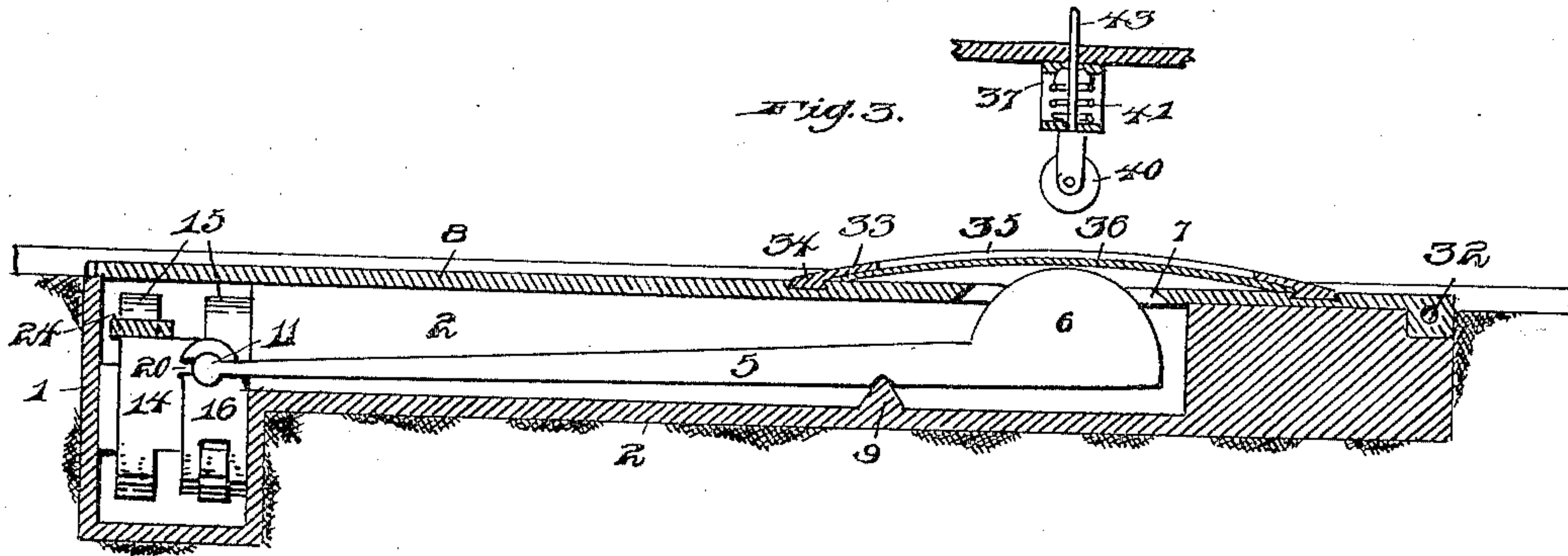
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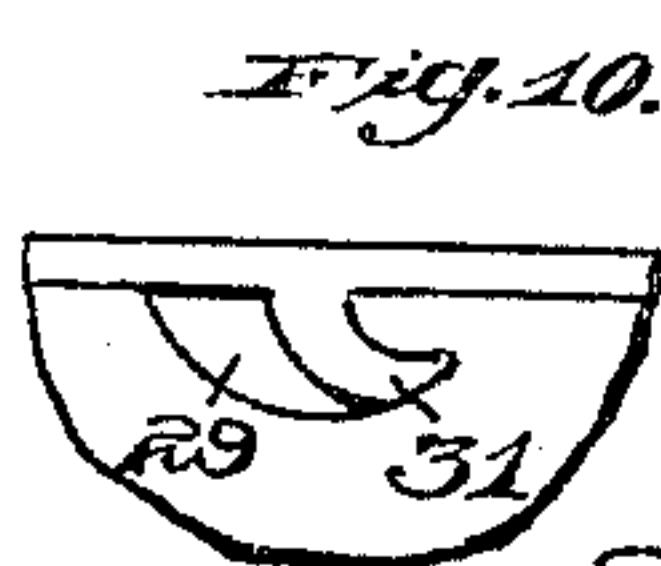
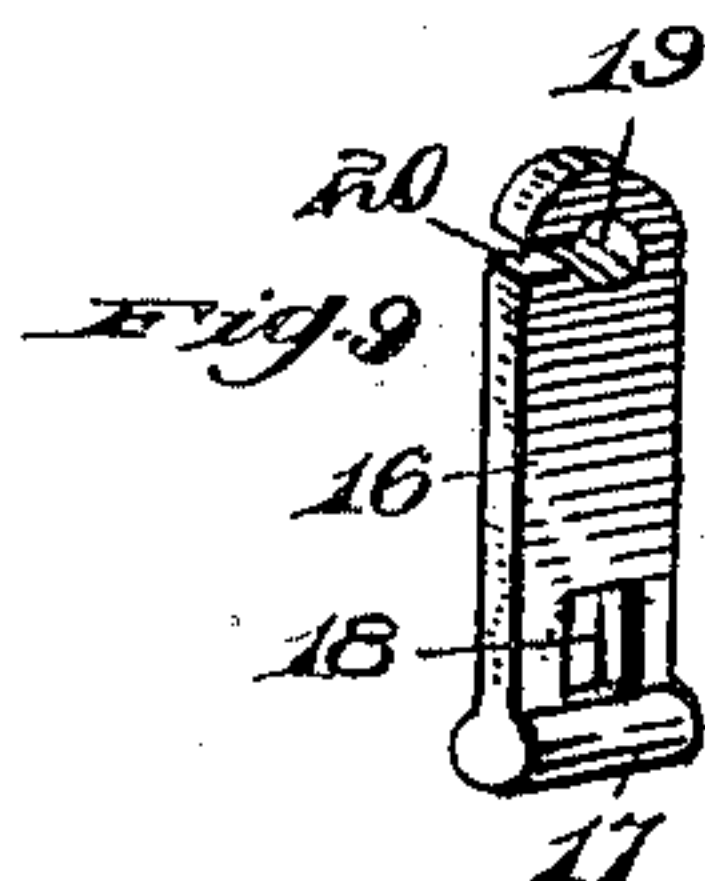
(No Model.)

2 Sheets—Sheet 2.



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UNITED STATES PATENT OFFICE.

THOMAS B. KELSAY, OF MEADVILLE, PENNSYLVANIA.

SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 682,413, dated September 10, 1901.

Application filed January 16, 1901. Serial No. 43,483. (No model.)

To all whom it may concern:

Be it known that I, THOMAS B. KELSAY, a citizen of the United States of America, residing at Meadville, in the county of Crawford and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Operating Mechanism, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in switch-throwing mechanism, and has for its object to construct a device particularly adapted for use in connection with street-railways, by means of
15 which the motorman may conveniently throw the switch-tongue without dismounting from or stopping the car.

A further object of the invention is to construct a device of this character which will
20 be simple, cheap, and effective with no weak parts liable to become broken or out of order.

Briefly described, the invention comprises in connection with a casing which is countersunk in the road-bed a pair of parallel trip-levers adapted to be operated by a shoe or
25 like device carried by the car. The one end of these trip-levers is connected to mechanism by means of which the switch-tongue may be thrown into either a closed or opened
30 position, all of which parts will be herein-after more fully described, and specifically pointed out in the claim.

In describing the invention in detail reference is had to the accompanying drawings,
35 forming a part of this specification and wherein like numerals of reference indicate corresponding parts throughout the several views, in which—

Figure 1 is a top plan view of a part of a
40 road-bed and track, showing my improved switch-operating mechanism arranged therein. Fig. 2 is a like view of the cover or lid for the casing which incloses the mechanism removed. Fig. 3 is a longitudinal sectional
45 view taken on the line 3-3 of Fig. 1. Fig. 4 is a transverse vertical sectional view. Fig. 5 is a front elevation of the spring-held shoes or operating-rods carried by the car. Fig. 6
50 is a detail perspective view of the toggle-block, to which the trip-levers are connected. Fig. 7 is a like view of the link which connects the switch-tongue with the toggle-block.

Fig. 8 is a like view of one of the trip-levers. Fig. 9 is a like view of one of the links which connect the trip-levers with the toggle-block. 55 Fig. 10 is a side elevation of a part of the casing which incloses the mechanism, showing the manner in which the lid or cover is retained in position.

To put my invention into practice, I provide a box or casing the head or part 1 thereof being of a length approximately to the width between the rails, the elongated portion 2 thereof being centrally countersunk in the road-bed 3. This portion 2 of the casing
60 has two longitudinally-extending recesses or grooves 4, in each of which is arranged a trip-lever 5, each lever having a substantially semicircular head 6, which projects upwardly through the slots 7, provided therefor in the
65 lid or cover 8 of the casing. These trip-levers are supported within the casing upon a substantially triangular-shaped bearing 9, which engages in the recess or groove 10, provided therefor in the under face of the said
70 trip-levers. These levers are somewhat tapered, and at their outer ends are provided with a head 11 and back of this head with a slot 12. The said levers are connected to a
75 substantially triangular-shaped toggle-block 14, provided at each of its corners with a pair of jaws 15, which are formed by bifurcating each corner of the block and boring a hole through the bifurcated corners, thus slotting the corners, as shown. This block is mounted
80 upon a shaft 15', which is journaled in the end of the casing, and on the partition 4', which separates the longitudinal grooves 4. The ends 11 of the trip-levers are connected to the toggle-block by means of links 16, provided
85 at one end with a head 17 and adjacent to this head with a slot 18, these links at their other ends being provided with an opening 19, and a slot 20, leading into said opening. The head 17 and slot 18 of the
90 links 16 connect with the jaws 15' of the toggle-block 14, while the head 11 and slot 12 connect with the upper end of the links 16 by means of the slot 20 and opening 19. The
95 switch-tongue 21 carries a downwardly-extending pin 22, operating through the slot 23 in the track, and this pin is connected to the outer end of the link 24, the other end of the link having a head 25, which engages with

the slotted link 26, having a head 27 to engage with the jaws 15 of the toggle-block 14. This link 24 is provided with a slot 28 adjacent to the head, by means of which connections may be made with the links 26, as shown in Fig. 4.

The side walls of the longitudinal part 2 of the casing are provided with curved recesses 29, and the lid or cover 8 of the mechanism carries curved hooks 31, adapted to enter these curved recesses 29 and lock the lid or cover in position. To accomplish this, the lid or cover is so placed that the curved hook or projections 31 will enter the mouth of the recesses, and this lid or cover is then shoved toward the smaller end of the casing, so as to cause these hooks to engage with the walls of the casing, as shown in Fig. 10. If desired, the lid or cover may then be locked in position by a pin 32, engaging the projection carried by the lid of the casing.

To protect the mechanism from dirt passing into the casing through the slots 7, I provide in the lid or cover a cover-plate 33, having a sufficient curvature to permit the rise of the headed ends 6 of the trip-levers. This cover-plate may be advantageously secured in position by dovetailing in the cover 8, as shown at 34. It is provided with slots 35, registering with slots 7, and these slots 35 are closed by means of flat springs 36, which upon being engaged by the shoe or operating-wheel carried by the car are depressed together with the headed end of the trip-lever in order to actuate the switch-tongue. Any convenient form of shoe or other operating mechanism may be carried by the car. I show a bracket 37 attached to the underneath face of the car-platform 38, with rods 39 operating through said bracket, each rod carrying on its lower end a wheel 40. These wheels are held normally elevated by means of a spring 41, the lower end of which is adapted to rotate and the upper ends of which abut against washers 42, carried by the rods. These rods and wheels are depressed as desired by means of an operating-lever 43, pivoted as shown, so as to be moved in either di-

rection to engage either of the rods, as desired. In operation it will be observed that as this lever 43 is moved so as to engage one of the rods 39 and force the wheel 40 downwardly this wheel will engage the spring 36, depressing the same, together with the headed end 6 of the trip-lever 5, and actuate this trip-lever, so as to move the switch-tongue 21 either to the opened or closed position, according to which of the trip-levers have been actuated. The switch-tongue having been moved to one position it remains in this position until the opposite trip-lever is operated to return the same to the normal position, as the trip-levers being practically balanced upon their bearing 9 they remain in the position in which they have been placed by the shoe or operating-wheel of the car until the opposite trip-lever is actuated, which returns the first-operated trip-lever to its previous or original position.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

In a device of the character described, the combination with the switch-tongue, of a casing located in the road-bed of the track and provided with a lid or cover having slots, a pair of trip-levers arranged within the casing and provided with headed ends projecting into the slots of the lid or cover, a toggle-block journaled in the casing, connections between said trip-levers and the toggle-block, connections between the toggle-block and the switch-tongue, spring-plates covering the slots in the lid or cover over the headed ends of the trip-levers, and means carried by a car for engagement with said spring-plates to depress the headed ends of the trip-levers and move the switch-tongue, substantially as described.

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

THOMAS B. KELSAY.

Witnesses:

ISAAC MONDERAN,
D. W. LOCKART.