

No. 837,689.

PATENTED DEC. 4, 1906.

F. KRAUSZ.
SWITCH THROWING DEVICE.
APPLICATION FILED SEPT. 26, 1906.

2 SHEETS—SHEET 1.

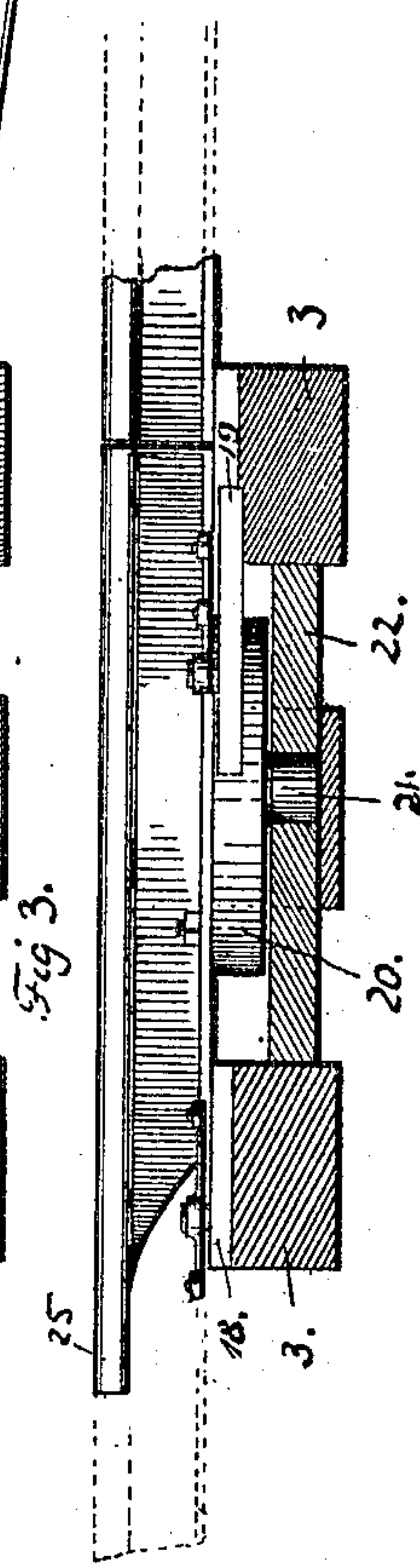
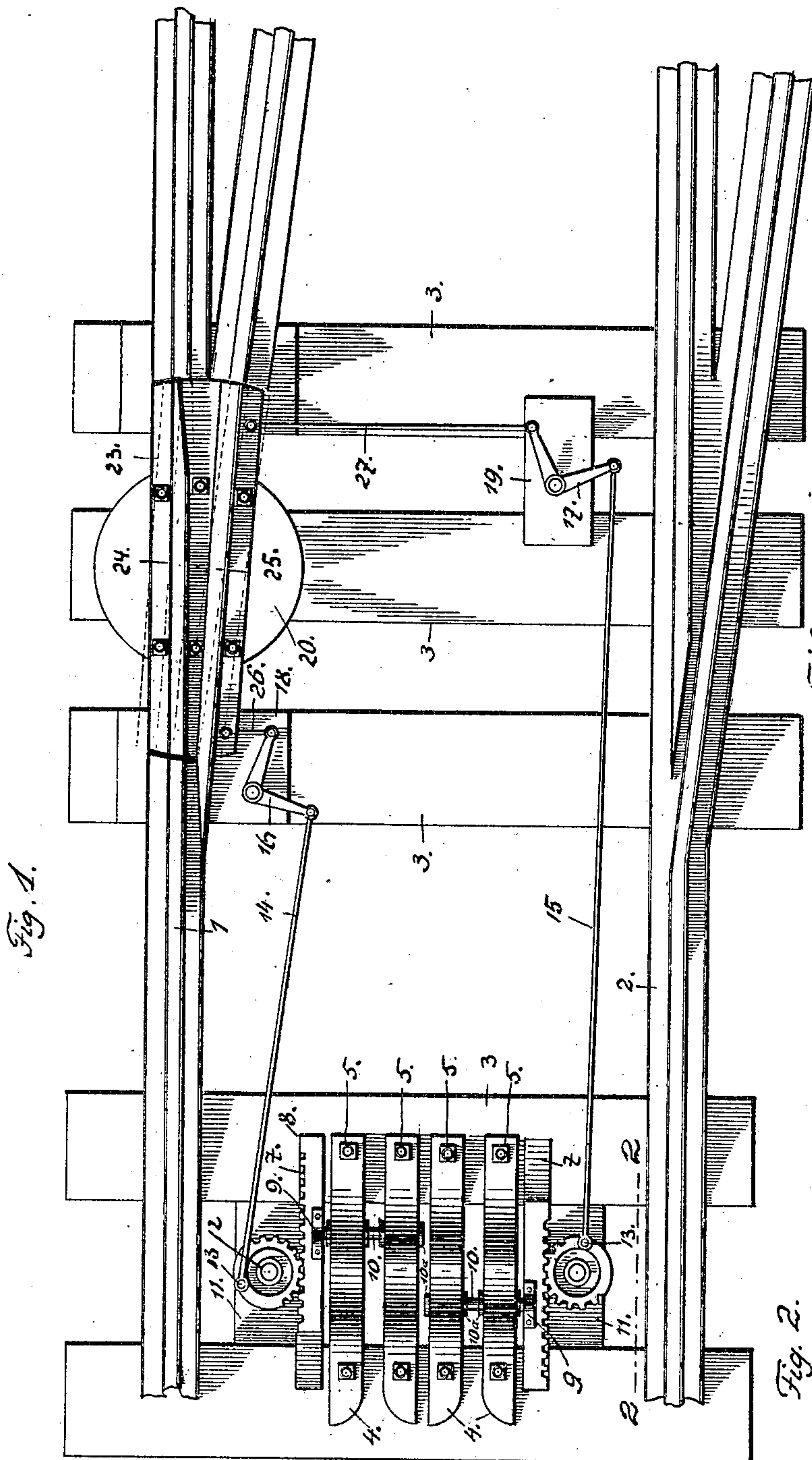


Fig. 2.

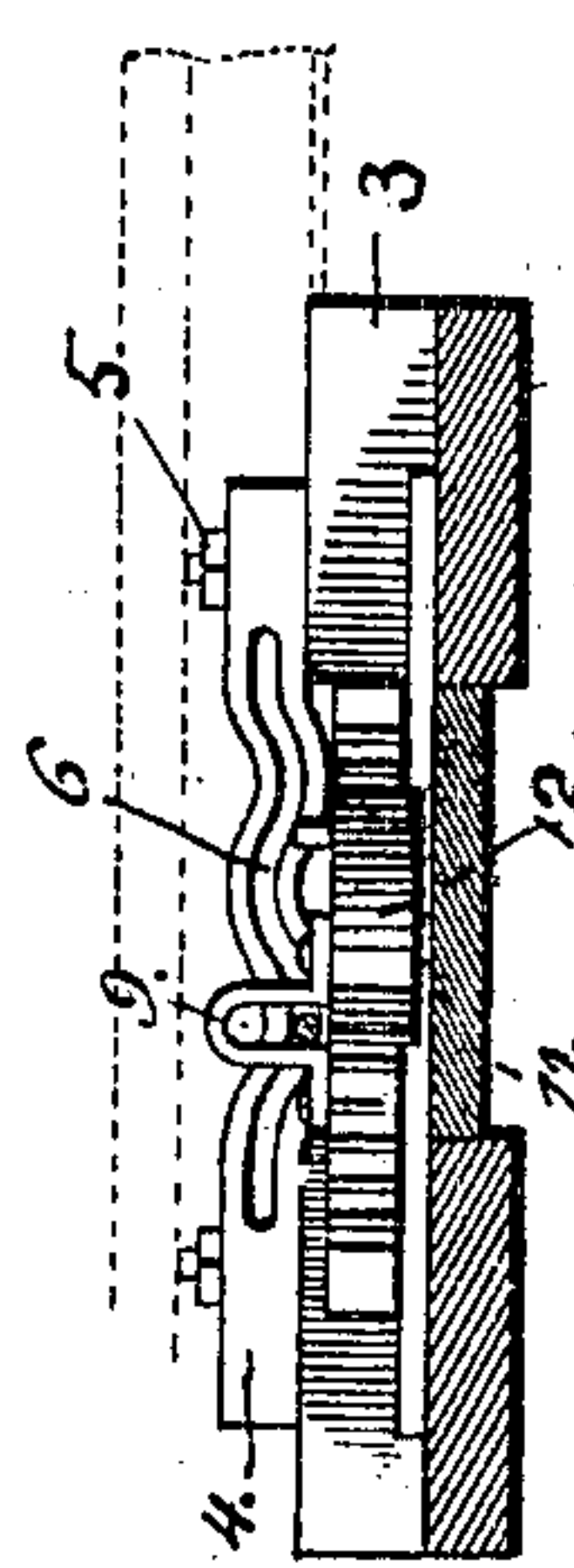


Fig. 3.

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2 SHEETS—SHEET 2.

Fig. 6.

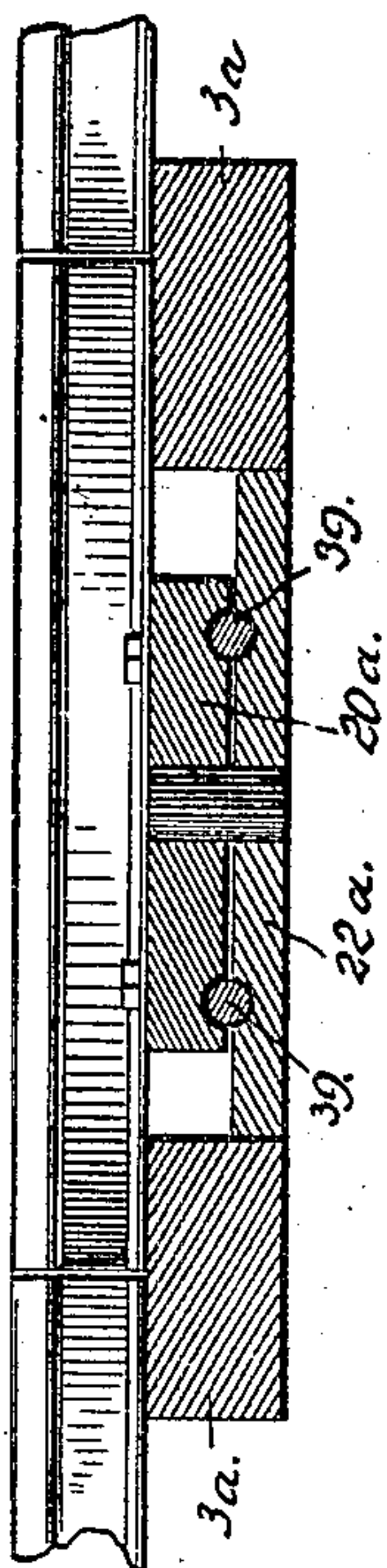


Fig. 5.

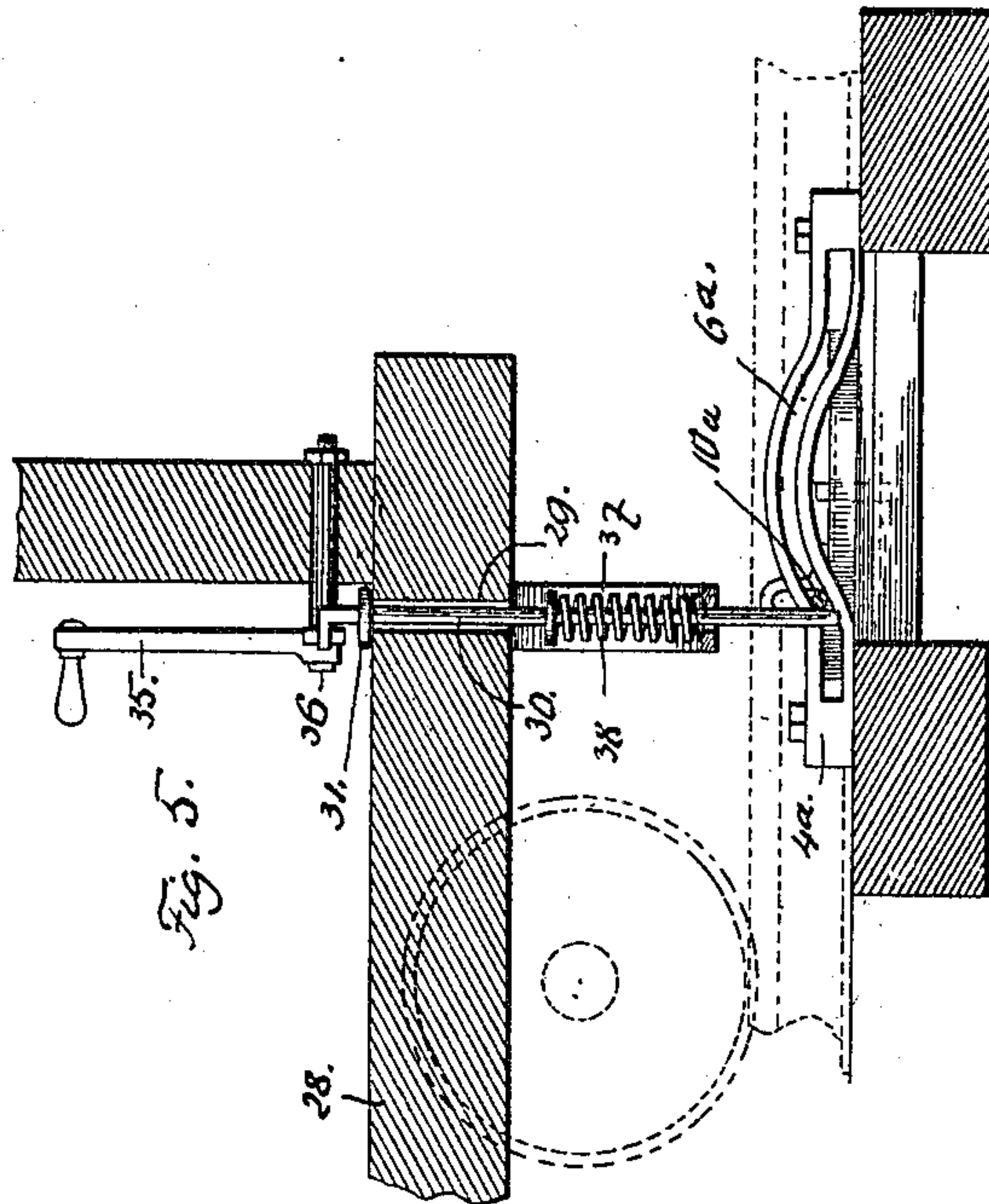
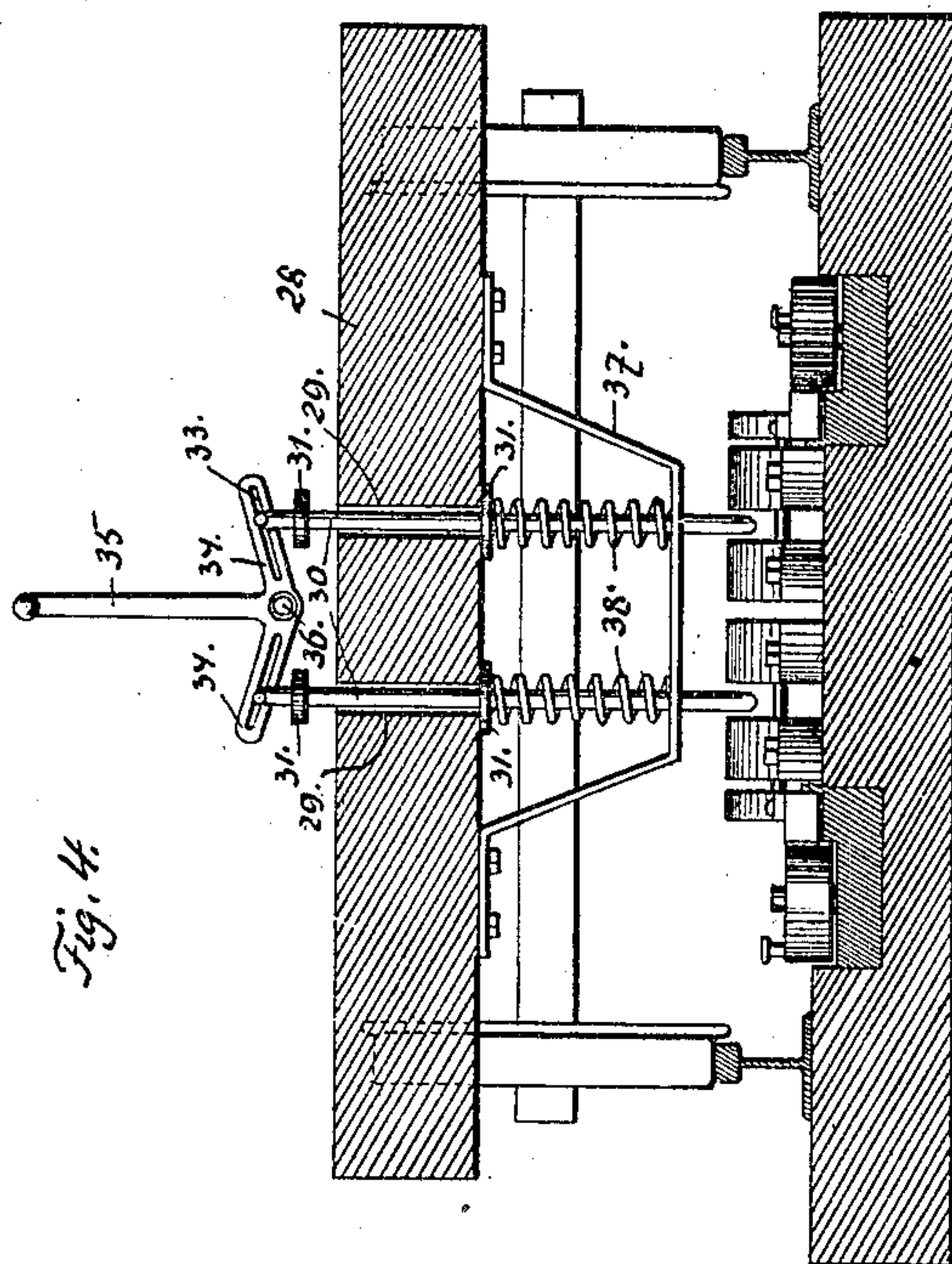


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK KRAUSZ, OF NORTH BRADDOCK, PENNSYLVANIA.

SWITCH-THROWING DEVICE.

No. 837,689.

Specification of Letters Patent.

Patented Dec. 4, 1906.

Application filed September 26, 1906. Serial No. 336,377.

To all whom it may concern:

Be it known that I, FRANK KRAUSZ, a subject of the Emperor of Austria-Hungary, residing at North Braddock, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Switch-Throwing Devices, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to switch-throwing devices, the object being to provide mechanism whereby a switch-point may be thrown by the motorman of a car.

The invention consists of improved switch-throwing devices supported upon the track between the rails, in combination with means carried by a car and adapted to be manipulated by the motorman.

The invention also includes improved means for supporting the switch-point.

The construction of the improvement will be fully described hereinafter in connection with the accompanying drawings, which form part of this specification, and its novel features will be defined in the appended claims.

In the drawings, Figure 1 is a top plan view of a portion of a railway track and switch with my improvements applied thereto. Fig. 2 is a vertical section on the line 2 2 of Fig. 1. Fig. 3 is a vertical section illustrating the means for supporting the switch-point. Fig. 4 is a transverse vertical section showing the switch-throwing devices on a car-platform together with the devices arranged between the rails of the track. Fig. 5 is a longitudinal sectional view showing a modified form of the guide-plate employed, and Fig. 6 is a vertical section showing a modified construction of the disk or turntable on which the switch-point is supported.

The reference-numerals 1 and 2 designate the rails of a street-railway track, and 3 the cross-ties on which the rails are supported.

Between two of the ties, adjacent to the switch, are secured two pairs of guide-plates 4, the ends of said plates being secured to the adjacent ties by bolts 5. Each of the plates is formed with an elongated slot 6 of undulating contour.

Adjacent to each of the outer plates 4 and parallel therewith is secured a rack 7, the ends of said racks being supported by the ties, as shown, and adapted to have a limited longitudinal movement between guides 8,

projecting from ties. Upon each of the racks 7 is secured a bearing 9, within which are secured inwardly-projecting pins 10, said pins extending through the slots of the guide-plates 4, as shown, and provided with stop-collars 10^a.

Between the ties to which the guide-plates are secured is secured a block 11, and upon this block, on opposite sides of the racks 7, are pivotally secured mutilated gear-wheels 12, the teeth of which engage the racks, as clearly shown in Fig. 1. Each of the gear-wheels 12 is provided with a wrist-pin 13, to which are secured connecting-rods 14 and 15, the opposite ends of said rods being pivotally connected to bell-crank levers 16 and 17, fulcrumed upon blocks 18 and 19, secured to the ties.

The numeral 20 designates a disk or turntable provided with a depending central stud 21, fitting a bearing formed in a suitable support 22, arranged between the ties. Upon this disk or turn-table 20 is secured a casing 23, provided with two integral oppositely-disposed switch-points 24 and 25. The bell-crank lever 16 is connected by a rod 26 to one end of the casing 23, while the bell-crank lever 17 is connected to the opposite end of said casing by a connecting-rod 27.

The car-platform 28 is formed with parallel openings 29, through which extend vertical rods 30, provided with stop-collars 31 above and below the platform. The upper ends of the rods 30 are provided with laterally-projecting pins extending into the elongated slots 32, formed in the oppositely-projecting inclined arms 34 of a lever 35, said lever being pivotally secured at the point 36 to any convenient support above the car-platform.

Below the platform 28 is a depending bracket 37, provided with openings through which the lower ends of the rods 30 extend, and between said bracket and the lower collars 31 on the rods 30 are supported coil-springs 38, encircling said rods.

As illustrated in Fig. 4, the rods 30 are held by the springs 38 above the pins 10. When it is desired to operate the switch, the lever 35 is thrown to depress one or the other of the rods 30, causing the latter to strike the adjacent pin 10 to move the rack 7, which imparts a partial revolution to the gear 12, meshing with said rack, and throws the switch, through the rod 14, bell-crank lever, and the rod connecting the latter, to the casing 23.

Instead of employing the curved guide-plates shown in Figs. 1 and 2, said plates may be of a construction shown in Fig. 5, which comprises a plate bent upward at its center and formed with a curved slot 6^a.

In Fig. 7 I have shown the modified construction of the oscillating disk. In this modification the disk 20^a is formed on its under side with an annular groove registering with a similar groove in the supporting-plate 22^a to form a raceway to receive antifriction-balls 39.

The utility and operation of the mechanism constructed as thus described has been specifically disclosed in the foregoing description and will be readily understood therefrom in connection with the drawings.

What I claim, and desire to secure by Letters Patent, is—

1. A switch-throwing device comprising parallel longitudinally-disposed guide-plates arranged between the rails of a track and provided with slots, longitudinally-movable racks supported adjacent to said guide-plates, pins carried by said racks and extending through the slots of the guide-plates, gear-wheels mounted adjacent to said racks and meshing therewith, a disk pivotally supported below the track, switch-points secured thereon, connections between said gear-wheels and switch-points, and means carried by a car-platform to engage said pins.

2. A switch-throwing device comprising parallel longitudinally-disposed guide-plates arranged between the rails of a track and provided with slots, longitudinally-movable racks supported adjacent to said guide-plates, pins carried by said racks and extending through the slots of the guide-plates, gear-wheels mounted adjacent to said racks and

meshing therewith, a disk pivotally supported below the track, switch-points secured thereon, connections between said gear-wheels and switch-points, and means carried by a car-platform to engage said pins comprising vertically-disposed rods, a lever on the car-platform having oppositely-extending arms to which the upper ends of said rods are loosely connected.

3. In a switch-throwing device, the combination with slotted guide-plates supported upon ties longitudinally of the rails between the latter, of longitudinally-movable racks on opposite sides of said guide-plates, pins carried by said racks, and extending through the slots of the guide-plates, horizontally-mounted gear-wheels meshing with said racks, a horizontally-disposed disk pivotally supported below the track, a switch-casing on said disk, switch-points secured thereon, connections between said gear-wheels and the opposite ends of said switch-casing, and means carried by the car to engage said pins.

4. In a switch-throwing device, the combination with, slotted guide-plates secured to the ties in parallel pairs, racks adjacent to said plates, pins carried by said racks, and extending through the slots in the casing, gear-wheels meshing with said racks, means carried by a car to engage said pins, a turn-table, switch-points supported thereon, and connections comprising rods and bell-crank levers, interposed between said gear-wheels and turn-table.

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

FRANK KRAUSZ.

Witnesses:

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MAX H. SROLOVITZ.