

No. 765,487.

PATENTED JULY 19, 1904.

W. JOCHIMSEN.
RAILWAY APPARATUS.

APPLICATION FILED JUNE 20, 1901. RENEWED DEC. 5, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

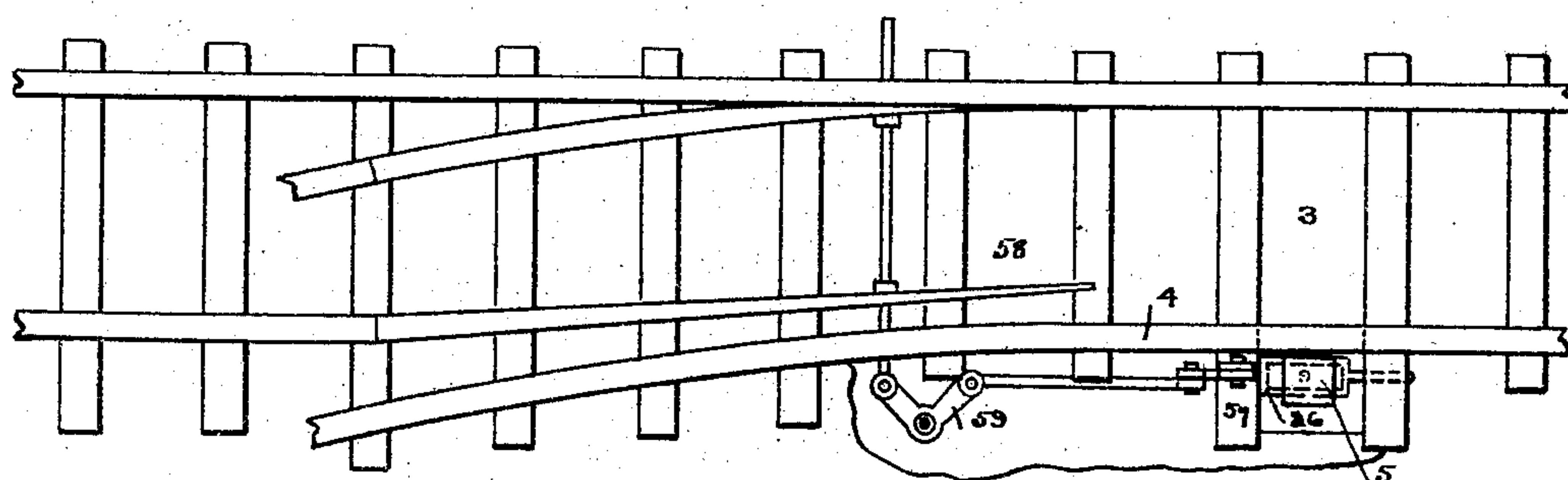
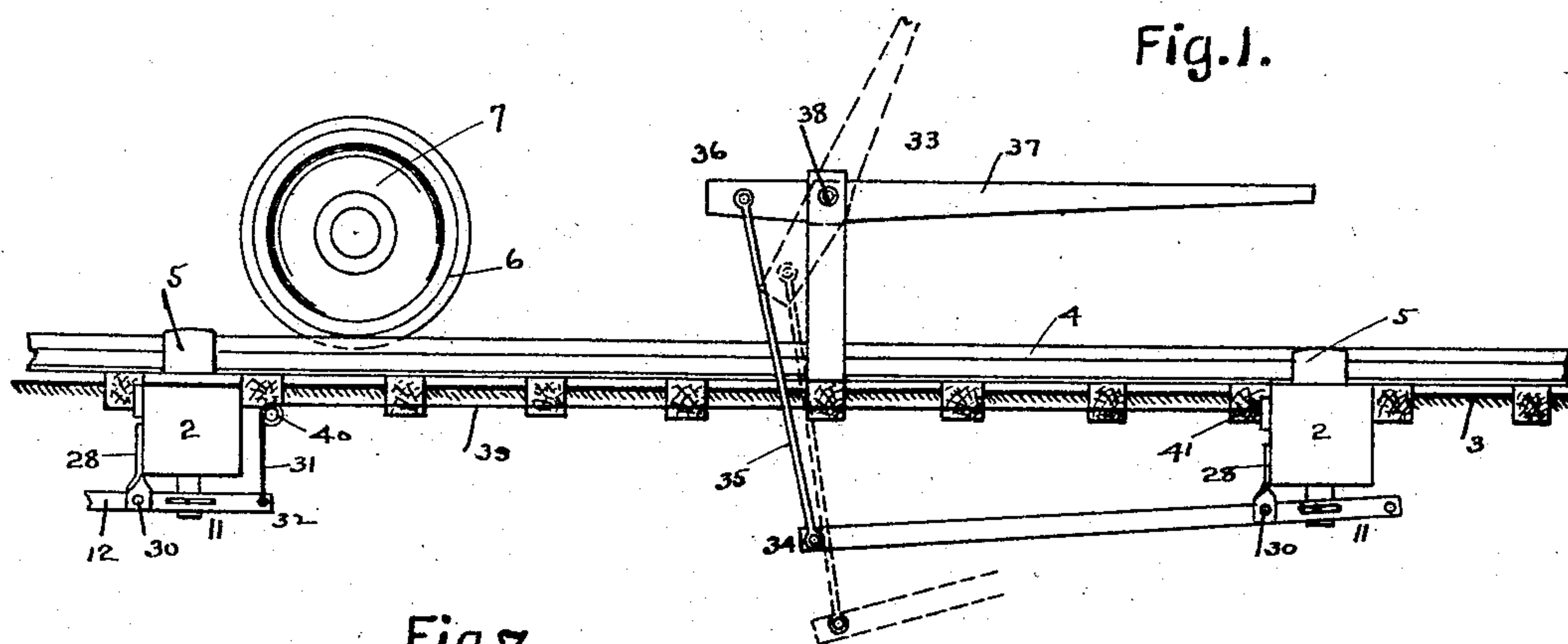
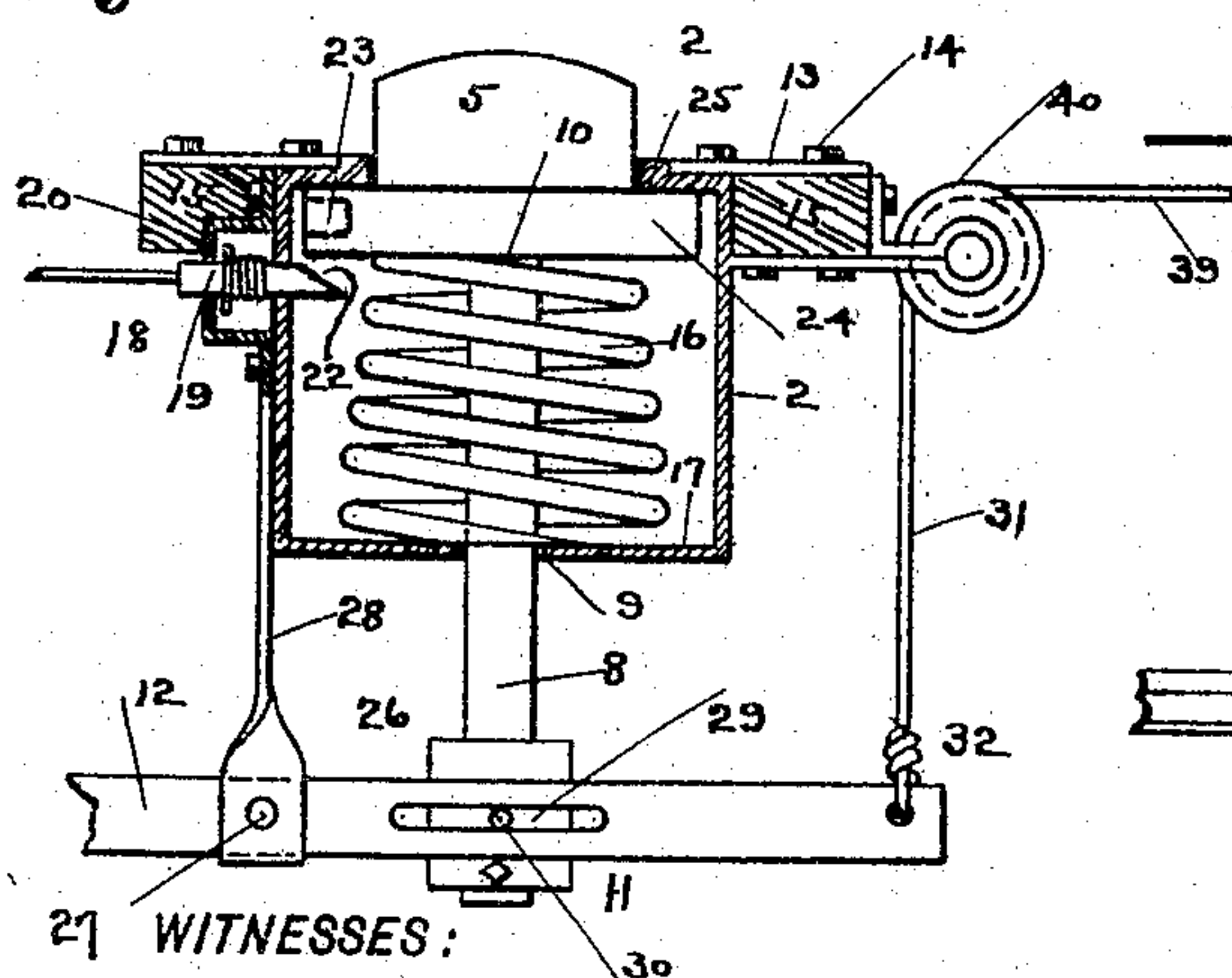
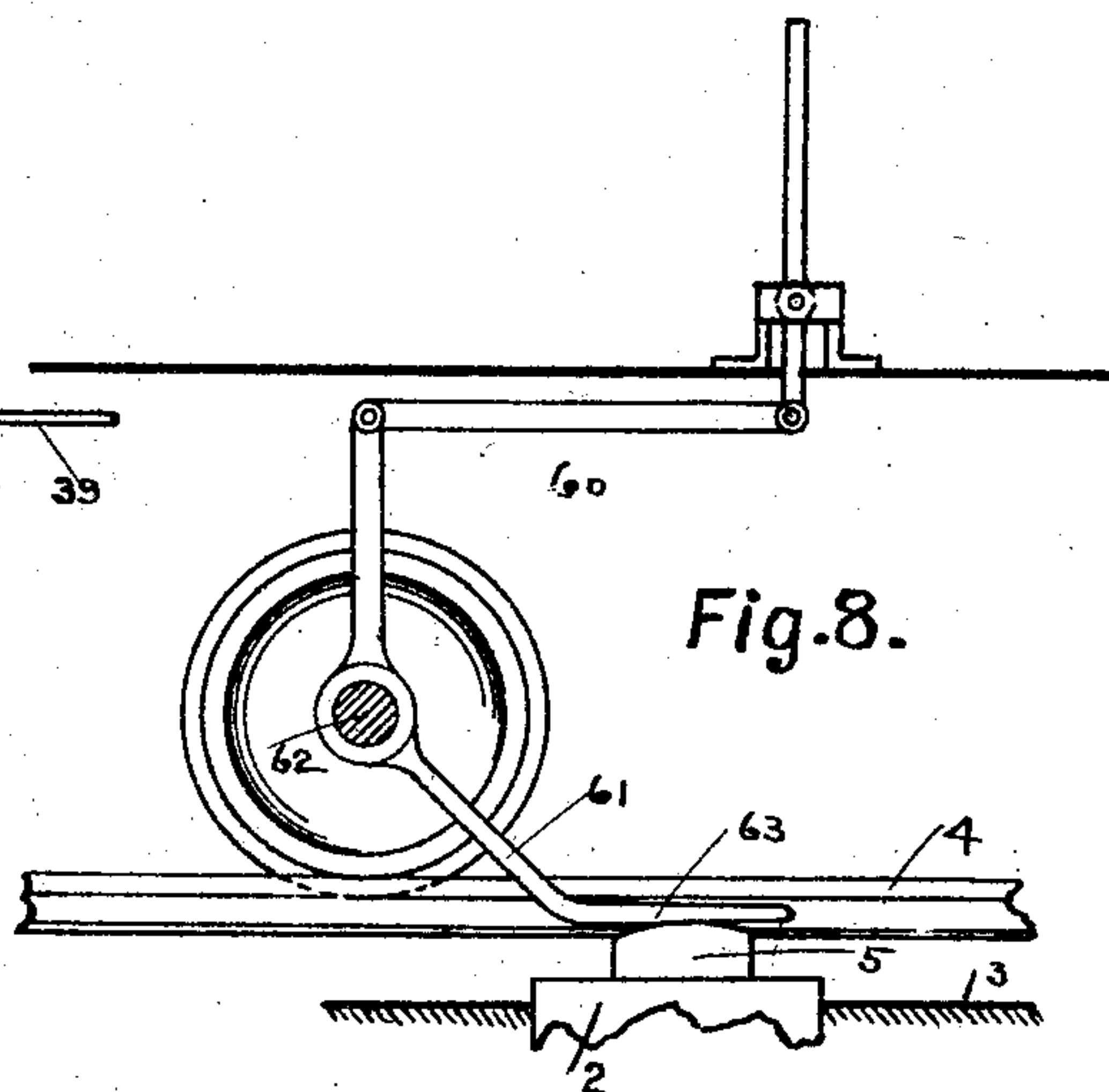


Fig. 2.



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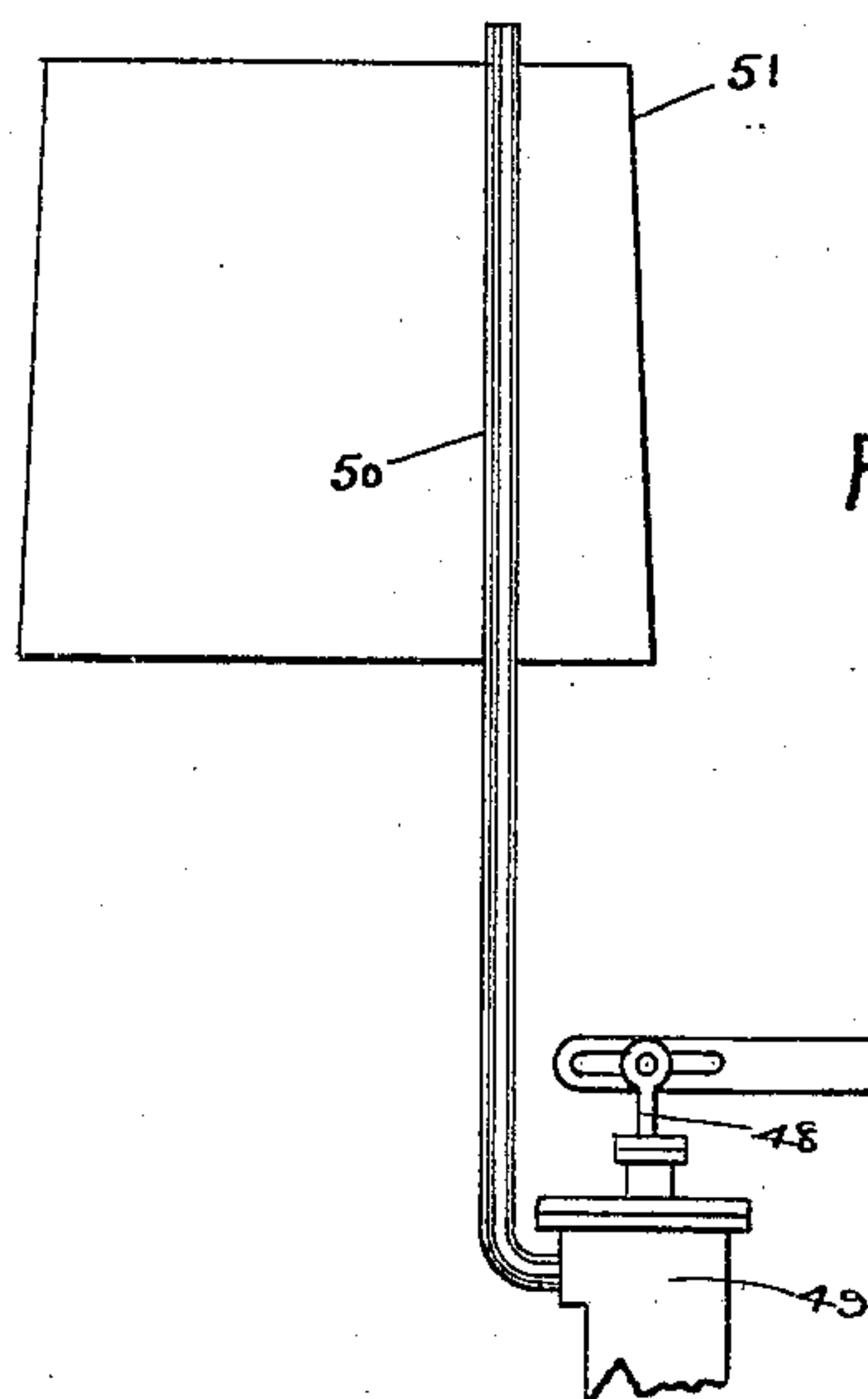
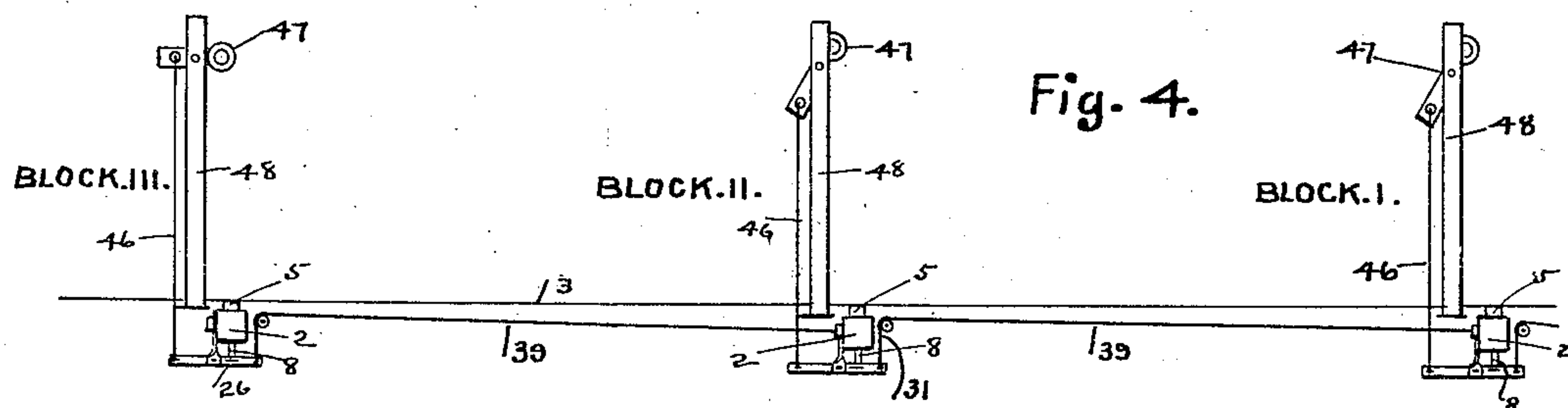


Fig. 5.

Fig. 6.

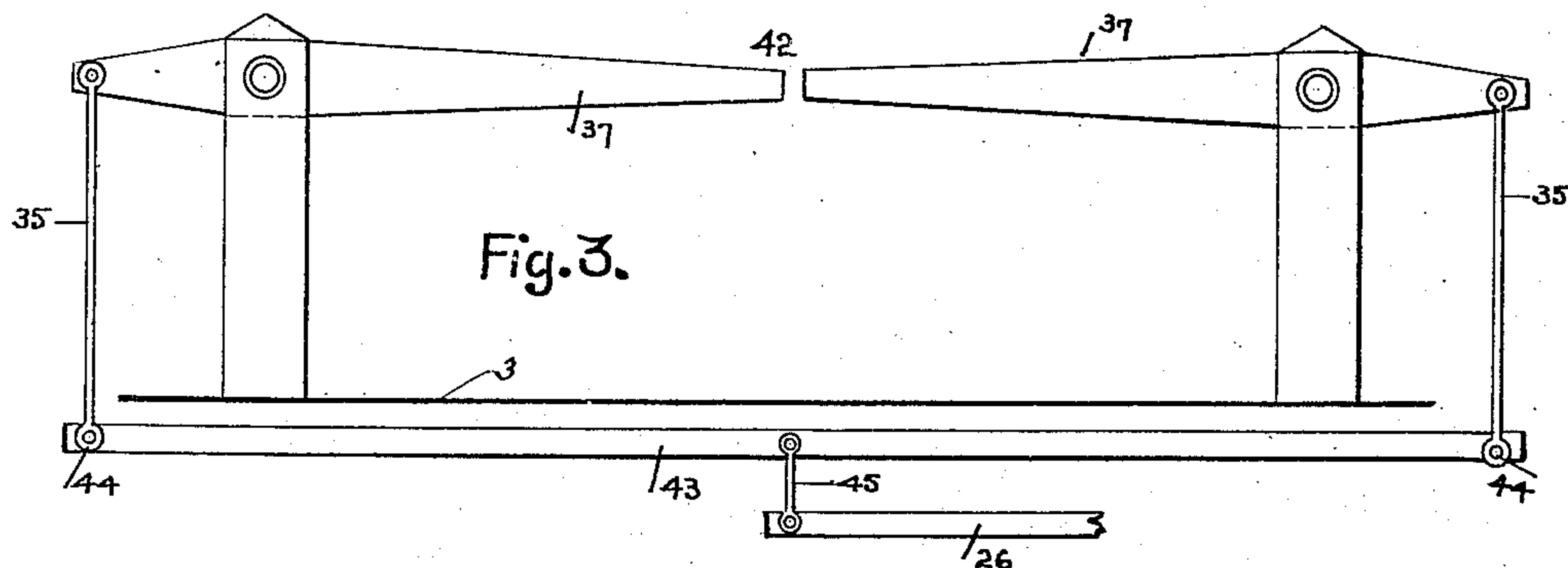
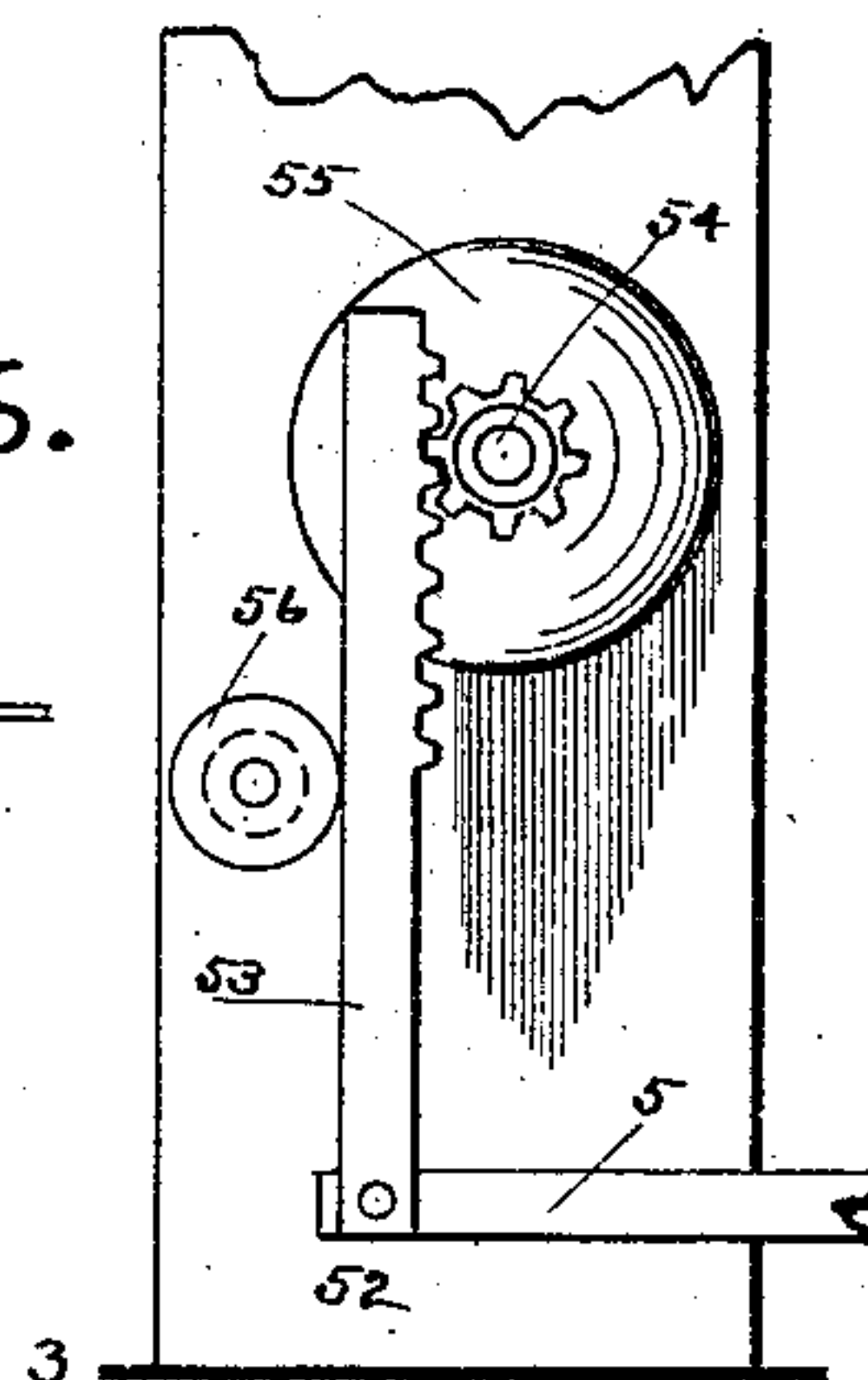


Fig. 3.

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UNITED STATES PATENT OFFICE.

WILLIAM JOCHIMSEN, OF NEW YORK, N. Y.

RAILWAY APPARATUS.

SPECIFICATION forming part of Letters Patent No. 765,487, dated July 19, 1904.

Application filed June 20, 1901. Renewed December 5, 1903. Serial No. 183,977. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JOCHIMSEN, a citizen of the United States, residing at New York, in the county and State of New York, have invented certain new and useful Improvements in Railway Apparatus, of which the following is a specification.

This invention relates to railway apparatus; and it has for its object to provide improved apparatus of this class which may be effectively operated by contact of wheels of rolling-stock to perform a number and variety of offices—such as raising and lowering crossing-gates, operating pumping mechanisms, signals, or switches—and which apparatus will be simple and inexpensive in construction and may be applied to railway road-beds without requiring any material change or alteration in the construction of the latter.

In the drawings, Figure 1 is a longitudinal sectional view of a portion of a railway road-bed, illustrating my improved apparatus as installed within and operatively connected with a single cross-gate. Fig. 2 is a vertical longitudinal sectional view taken through one of the track-boxes embodied in my improved apparatus. Fig. 3 is a side elevation of a double cross-gate, illustrating the operative connections whereby the same may be connected with my improved apparatus. Fig. 4 is a partly-diagrammatic view and partly an elevation of the several elements of a block-signal system embodying my invention. Fig. 5 is a fragmentary side elevation of a pumping mechanism embodying my invention. Fig. 6 is a similar view of an audible-signal device adapted for operation according to my invention. Fig. 7 is a plan view of a railway-switch mechanism embodying my invention, the railway road-bed being partly broken away to show the construction and arrangement of parts. Fig. 8 is a side elevation of a portion of the trucks of a railway-car, illustrating a form of mechanism for actuating my improved apparatus.

Corresponding parts in all the figures are denoted by the same reference characters.

Referring to Figs. 1 and 2 of the drawings, 1 designates my improved railway apparatus,

which embodies a casing or track-box 2, which is sunk in the road-bed 3 of the railway adjacent one of the tracks 4 and in which is mounted a depressible spring-actuated presser-plate 5. The presser-plate 5 is arranged in proper proximity to the track 4 to permit operation of the same by the flange 6 of a wheel 7 of a car or other rolling-stock. A plunger 8 is vertically arranged within the casing 2 and extends through an opening 9 in the bottom of the same, said plunger being connected at its upper end, as at 10, with the lower portion of the presser-plate 5 and is loosely connected at its lower end, as at 11, with an operating member 12, which extends between the same and the mechanism to be operated.

In the preferred form of construction the casing 2 is provided with top flanges 13, whereby it may be securely seated in the road-bed 3 by connection with certain of the ties 15, as at 14. The presser-plate 5 may be tensionally sustained in the casing 2 by means of a coiled spring 16, which rests at its lower end upon the bottom 17 of the casing 2 and upon the upper end of which the presser-plate is carried. Suitable means 18 for locking the presser-plate 5 in depressed position are provided, and said means 18 consist of a spring-projected bolt 19, which is slidably mounted in a housing 20, which is arranged at one side of the casing 2, and said bolt 19 is provided with a beveled inner or operative end 21, which is arranged in the path of movement of the lower portion 22 of the presser-plate 5, whereby said bolt may be moved outwardly in the depression of the presser-plate and positively engaged with an opening 23, formed at one side of said lower portion 22 of the presser-plate 5 to lock the presser-plate in depressed position. The lower portion 22 of the presser-plate 5 is provided with extended side edge portions 24, which serve as stops in connection with the top flange 25 of the casing 2 to limit the upward movement of the presser-plate. The operating member 12 consists of a lever 26, which is pivotally supported, as at 27, by a bracket-arm 28, which depends from one side of the casing 2, and said lever 26 is provided with

an elongated slot 29, through which projects a pin 30, which is fixed to a collar 8^a, adjustably mounted on the lower end of the plunger 8 and constitutes, with said slot, the loose connection at 11 between the plunger 8 and the lever 26. The collar 8^a may slide upon the plunger 8 and be provided with a set-screw 8^b to secure it at any desired point on the plunger 8 to limit the movement of said plunger 8. In certain usages of my improved apparatus a supplemental operating member 31 may be employed, which supplemental operating member may be operatively connected with the lever 26, as at 32, intermediate of which point 32 and the point of pivotal support 27 of the lever 12 is the point of loose connection 11 of the plunger 8 and the lever 26.

In operatively connecting my improved apparatus with a crossing-gate, as illustrated at 33, the operating member 12 may be loosely connected, as at 34, with a link-arm 35, which is also loosely connected, as at 36, with one end of the gate 37, which is pivotally supported, as at 38. The gate 37 normally occupies the position shown in dotted lines in Fig. 1; but when the plunger 8 is depressed the said gate is thrown by the operating member 12 and the link-arm 35 into the horizontal closed position. (Shown in full lines.) As shown in the drawings, two of the track-boxes 2 are preferably employed in connection with the crossing-gate, one of the same being arranged and operatively connected with the gate in the manner above described, so as to close the gate before the arrival of the train or other rolling-stock at the crossing, and the other track-box 2 being so arranged and operatively connected with the first track-box as to open the gate after the train has passed the crossing. This operative connection of the two track-boxes is obtained by connecting the supplemental operating member 31 of the second track-box with the locking-bolt 19 of the first track-box by means of a chain, cord, or wire 39, which passes over a pulley 40, which is connected with the second track-box. One end of the chain or cord 39 connects with the lever 26, as at 32, as above described, and the other end thereof connects directly with the bolt 19, as at 41. When the presser-plate 5 of the second track-box—namely, that shown at the left in Fig. 1—is depressed after the train has passed the crossing at which the gate 37 is arranged, the cord or wire 39 retracts the bolt 19 and permits the presser-plate 5 of the first track-box to rise under actuation of the spring 16 and causes the elevation or opening of the gate.

In Fig. 3 is illustrated a double gate 42, consisting of two of the opposed gates 37, which are constructed the same as the gate 37 shown in Fig. 1, the link-arms 35 of the same being loosely connected at their lower ends, as at 44, with a cross-bar 43, with which the lever 26

is connected by a short link 45. This construction will enable the double gate 42 to be operated similarly to the single gate 33.

In Fig. 4 I have shown a block-signal system embodying my invention. In this system one of the track-boxes 2 is arranged at the entrance to each block, the lever 26 being coupled, by means of a link 46, with a semaphore-arm 47, which is mounted upon a post 48 and is of the usual construction. The locking-bolt 19 of each track-box 2 is connected, by means of the wire or chain 39, with the supplemental operating member 31 of the track-box at the entrance of the next block, so that as the train passes from one block to the next it will set one semaphore-arm at "safety" and one semaphore-arm at "danger" in the customary manner. If desired, the apparatus may also be adapted for use in pumping water for railway purposes, as illustrated in Fig. 5. In this adaptation the locking-bolt 19 is preferably omitted, so that the presser-plate is intermittently depressed by the several wheels of the rolling-stock, producing, in connection with the spring 16, a succession of oscillations of the lever 26. Said lever is connected to the piston-rod 48 of the pump proper, 49, the discharge of which pump passes through a pipe 50 to a water tank or reservoir 51, which may be arranged at the side of the track, so as to be in position for use in supplying water to the rolling-stock in the customary manner. This adaptation of my improved apparatus may, if desired, be made in connection with the adaptation illustrated in Fig. 1, the pump being operated by the track-box 2. (Shown at the left in Fig. 1.)

In Fig. 6 I have illustrated my improved apparatus as adapted to signaling, the lever 26 being loosely connected, as at 52, with a rack-bar 53, which meshes with a gear-wheel 54, which is associated with the striking mechanism of a gong-bell 55. The rack-bar 53 may be guided in its movements by a guide-roller 56. This adaptation of my invention may, if desired, be employed in connection with a crossing-gate and the means for operating the same, such as shown in Fig. 1, the signal device being so arranged as to be sounded in advance of the closing of the gate or during the continuance of the same in closed condition. In Fig. 7 I have illustrated my improved apparatus as appropriated to the operation of a railway-switch, the lever 26 being operatively connected, as at 57, with the movable switch-point 58 by means of a bell-crank lever 59, two of the track-boxes 2 being used in this embodiment of my improvement, one to set the switch and the other to open the switch, in the same manner as the gate 37 is operated in Fig. 1.

In Fig. 8 is shown an operating mechanism 60 for actuating the presser-plate 5 independently of the wheels of the rolling-stock, said actuating means 60 consisting in the preferred

form of construction of a lever-arm 61, which may be movably carried upon an axle 62 of the rolling-stock and which is provided at its lower end with a shoe 63, which is arranged for engagement with the presser-plate 5. In using my improved apparatus for the purpose last described the track-box is preferably arranged slightly farther from the side of the track than in the adaptations above described, so that the shoe 63 and not the wheels may engage and actuate the presser-plate.

The operation and advantages of my improved railway apparatus will be readily understood by those skilled in the art to which it appertains. In the several adaptations illustrated and described the operation of the track-box 2 and its contents is the same, the presser-plate 5 being retained in depressed position by the locking-bolt 19 until released from the locking-bolt preferably by the depression of the presser-plate in another of the track-boxes through the medium of the supplemental operating member 31 and the wire or cord 39. The entire apparatus is relatively simple in construction and may be applied to a wide variety of usages, and, furthermore, does not require any material alteration of the road-bed to which it is applied.

The actuating means illustrated in Fig. 8 are intended for manual operation by a member of a train crew and are particularly useful in setting and opening switches.

I do not desire to be understood as limiting myself to the details of construction and arrangement as herein described and illustrated, as it is manifest that variations and modifications may be made in the features of construction and arrangement in the adaptation of the device to various conditions of use without departing from the spirit and scope of my invention and improvements. I therefore reserve the right to all such variation and modification as properly fall within the scope of my invention and the terms of the following claims.

Having thus described my invention, I claim and desire to secure by Letters Patent—

1. An improved railway apparatus of the class described, comprising a box or casing, a presser-plate depressibly mounted therein and adapted to be depressed by the engagement with the wheels of a train, a spring normally holding said presser-plate in elevated position, a plunger depending from said presser-plate and provided with an adjustable collar, and a pivoted lever having a pin-and-slot connection with said collar and adapted for operative connection with the device to be operated by said mechanism.

2. An improved railway apparatus of the class described, comprising a track-box adapt-

ed for arrangement at the side of the track, a depressible presser-plate mounted in said track-box, a spring arranged between said presser-plate and the bottom portion of said box, a spring-actuated locking-bolt arranged at one side of said track-box and provided with a beveled end portion arranged to be engaged by said presser-plate in the depression of the same, said presser-plate being provided with a recess formed to receive said beveled end portion when the presser-plate is in depressed position to lock the presser-plate against elevation, a plunger vertically movably mounted in said track-box and connected at its upper end with said presser-plate and provided at its lower end with an adjustable collar, and an operating member with which said collar is operatively connected.

3. An improved railway apparatus of the class described, comprising a box or casing, a presser-plate mounted therein and adapted to be depressed by engagement with the wheels of a train, a spring for normally maintaining the presser-plate in raised position, a locking-bolt projecting at one end exteriorly of the casing and being beveled at its end and projecting interiorly of the casing in a position for engagement with a recess in the presser-plate, a housing secured to one side of the casing and in which said bolt is tensionally mounted, a plunger depending from the presser-plate and provided at its lower end beneath the box or casing with an adjustable collar provided with a projecting pin, and a pivoted lever provided with a slot through which said pin projects and adapted for operative connection with a device to be operated by said apparatus.

4. An improved railway apparatus of the class described, comprising a series of devices each embodying a casing, a presser-plate mounted therein and adapted to be depressed by the wheels of a train, a spring adapted normally to hold the presser-plate in raised position, a locking-bolt adapted to lock the presser-plate in depressed position, a plunger depending from the presser-plate and provided at its lower end with an adjustable collar, and a pivoted lever loosely connected with said collar and adapted for operative connection at one end with the device to be operated and at the other end with means for releasing the lock-bolt in the next preceding device of the same series.

In testimony whereof I have signed my name in the presence of the subscribing witnesses.

WILLIAM JOCHIMSEN.

Witnesses:

RAYMOND J. BLAKESLEE,
F. W. WULF.