

H. SHEMWELL.  
POINT THROWER.  
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998,645.

Patented July 25, 1911.

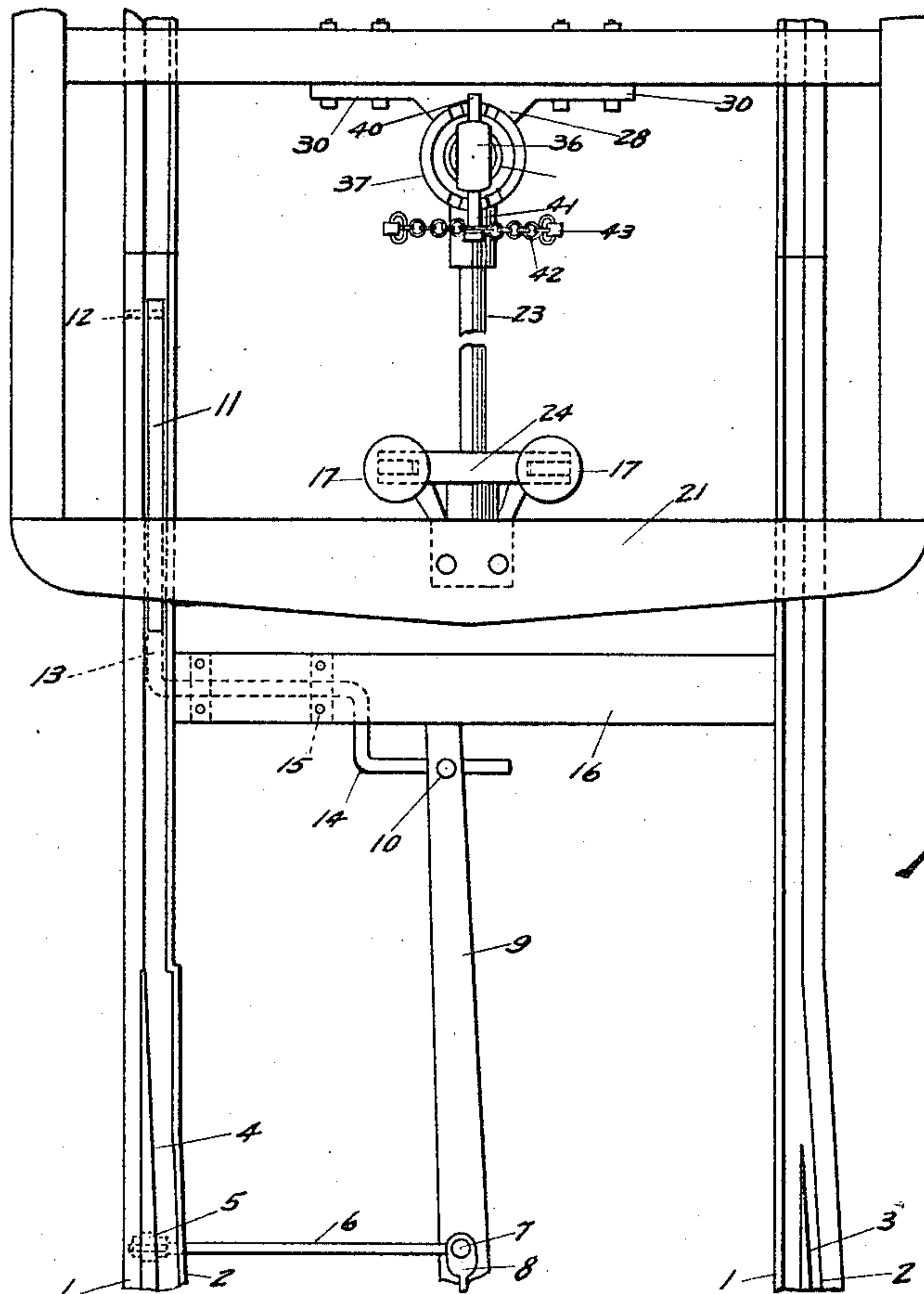


Fig 1

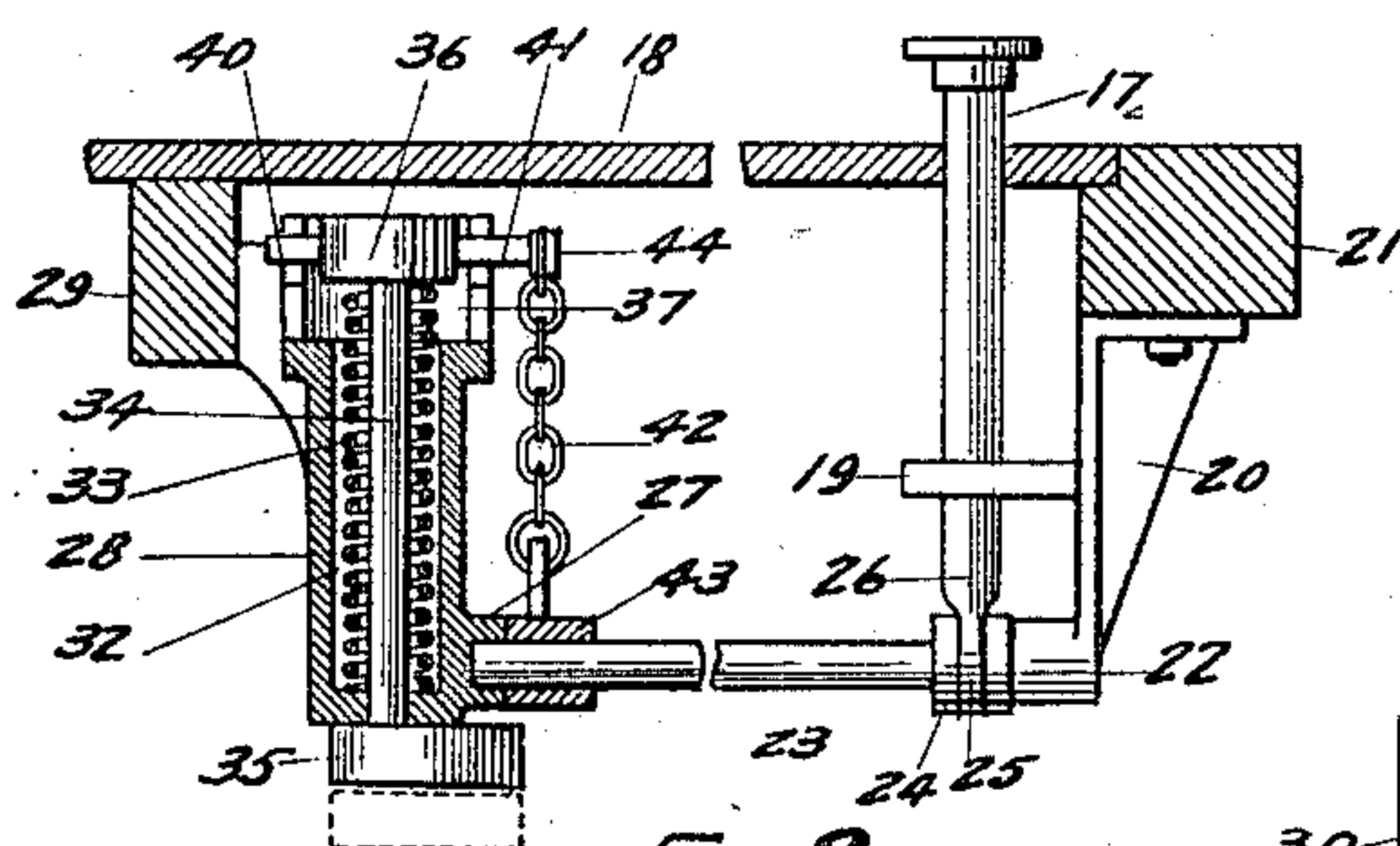


Fig 2

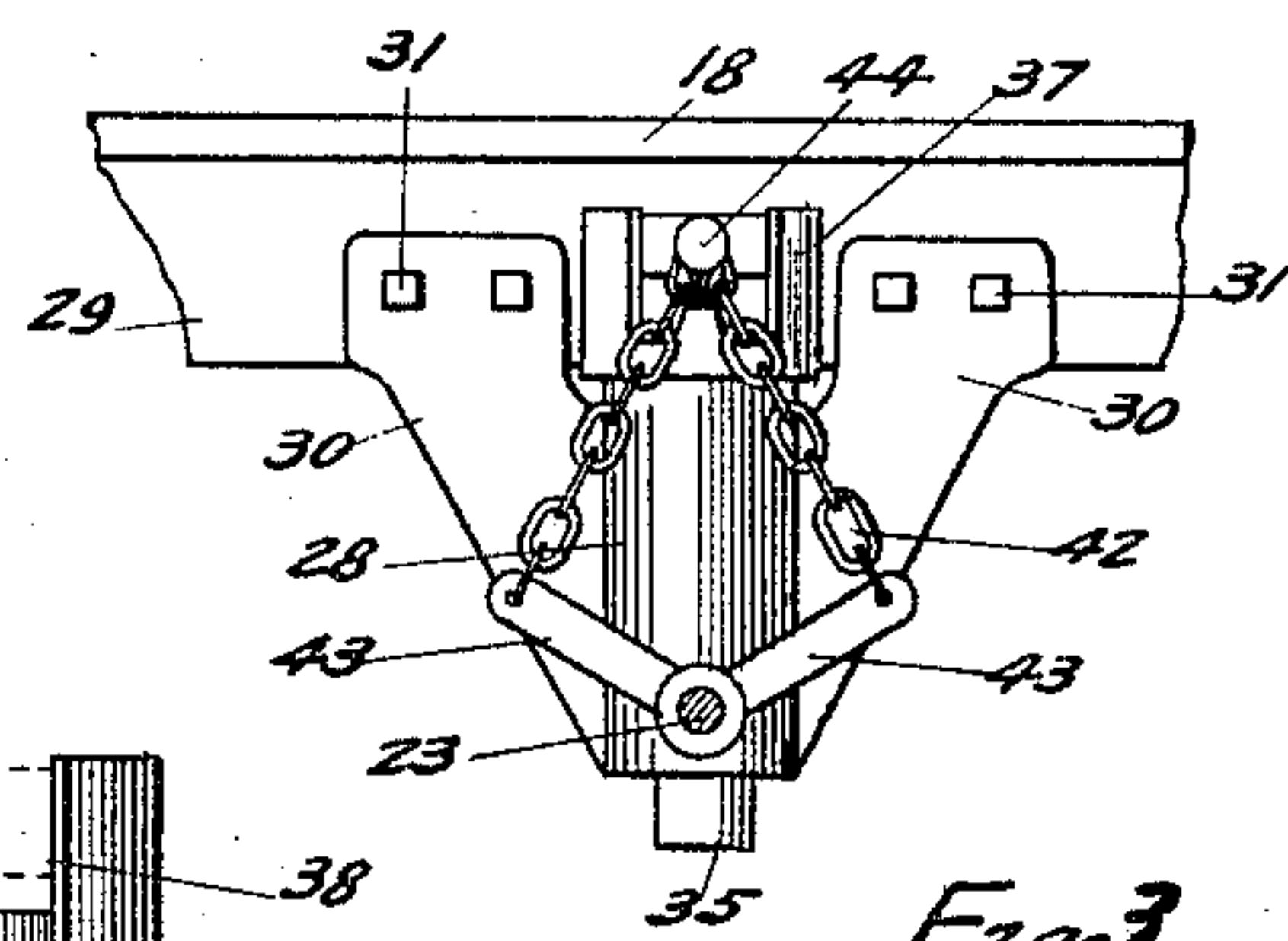


Fig 3

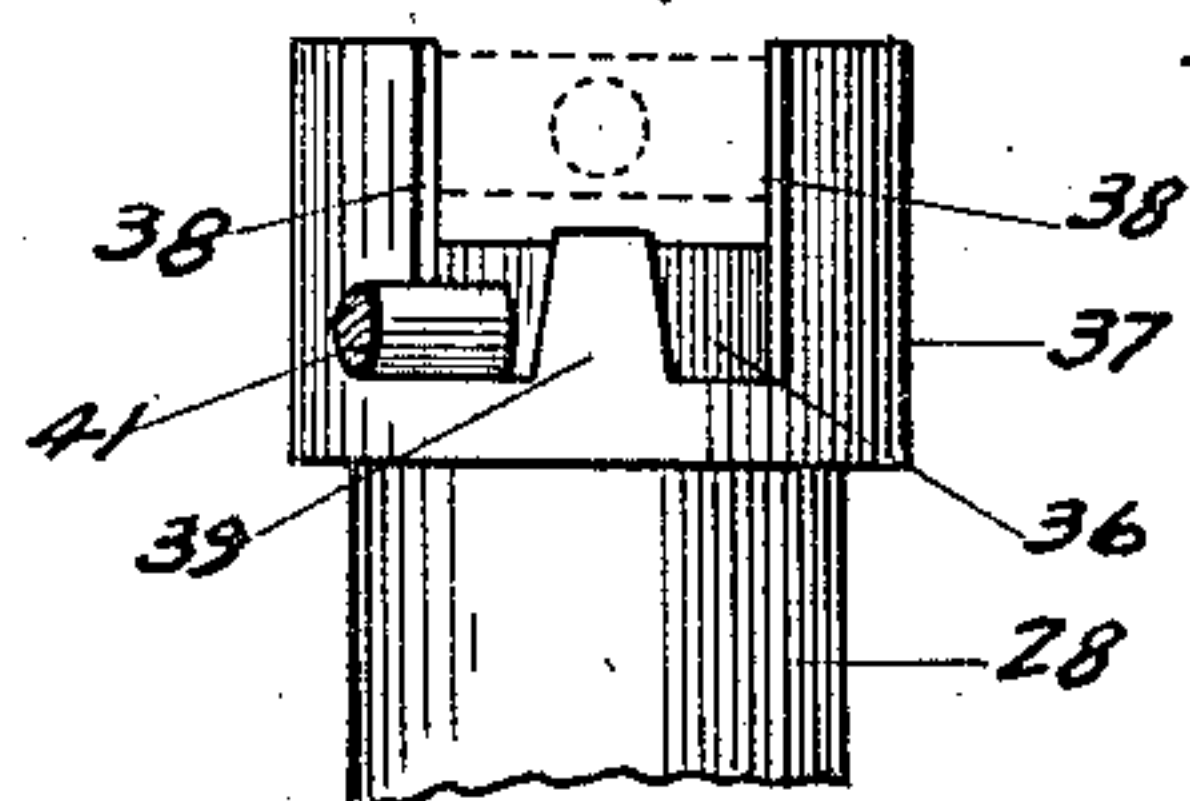


Fig 4

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# UNITED STATES PATENT OFFICE.

HAROLD SHEMWELL, OF BIRMINGHAM, ALABAMA, ASSIGNOR TO AMERICAN AUTOMATIC RAILWAY SWITCH COMPANY, OF BIRMINGHAM, ALABAMA, A CORPORATION OF ALABAMA.

POINT-THROWER.

998,645.

Specification of Letters Patent.

Patented July 25, 1911.

Original application filed July 22, 1910, Serial No. 573,222. Divided and this application filed February 27, 1911. Serial No. 611,275.

*To all whom it may concern:*

Be it known that I, HAROLD SHEMWELL, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Point-Throwers, of which the following is a specification.

My invention relates to an improvement in mechanism for actuating track switches by devices mounted on a car or train and, without being limited thereto, my invention is more particularly adapted for use in connection with street car switches where it is desired to throw the switch in the desired direction without stopping the movement of the car.

The objects of my invention generally, are to produce an apparatus which is especially strong and durable, and possesses the minimum number of moving parts for the several operating movements required; to simplify and perfect a single depressible trip mechanism on the car which is effectively braced and locked when lowered and turned to assume either of its operating positions; and to prevent tampering with the mechanism for depressing and rotating the trip mechanism.

My invention further consists in the novel construction and arrangement of parts which I shall now more particularly describe, reference for this purpose being had to the accompanying drawings, in which:—

Figure 1 represents a plan view of the forward end of a car with the flooring removed showing the car and track mechanism in plan view. Fig. 2 is a vertical sectional view taken through the casing for the trip mechanism, the trip and its operating mechanism being shown in side elevation. Fig. 3 is a front view of the trip mechanism on the car when in its raised position. Fig. 4 shows the trip mechanism depressed and locked in one of its operating positions.

Similar reference numerals refer to similar parts throughout the drawings.

The subject matter of my present application was embodied in a former application filed by me on the 22nd day of July, 1910, Serial No. 573,222, the subject matter of said former application relating specifically to the car mechanism being withdrawn therefrom and presented in this ap-

plication as a divisional application of my said former application.

In the preferred embodiment of my invention, as adapted to street car service, the main tracks 1 and the switch tracks 2 are connected by the usual frog 3 and switch-point 4. At an intermediate portion of the point 4 is a depending lug 5 (shown in dotted lines Fig. 1) to which an operating rod 6 is connected in any suitable manner preferably by having its end threaded and passed through an opening in the lug which is connected thereto by a pair of nuts which are screwed on the rod and hold the lug between them. This rod extends inwardly to a point near the center of the track where it is swivelly connected by a pin 7 to the free end of a leaf spring 8, the other end of which is fastened to the switch throwing lever 9. The lever 9 is mounted in the track so as to permit its free end to have both lateral and vertical play through limited angles. A pin 10 is fastened to the forward end of the lever and in order to elevate this pin, which is normally retracted, to a position where it may be engaged by the car trip mechanism, I provide a tread lever 11 which projects through a slot in the rail and is pivotally attached to the rail at one end by a pin 12, the other end of the tread lever resting upon a crank 13 on the bell crank lever 14, which lever is pivotally supported in U-shaped lugs or ears 15 suitably bolted to the underside of the cross bar 16 which is attached to the rail. The arrangement is such that when the wheel flange depresses the tread lever 11 the latter rocks the crank 14 and raises the lever 9, bringing the pin 10 into position to be engaged and actuated by the car equipment.

The car equipment comprises a pair of treadles 17 which pass down through openings in the platform 18 of the car and through guides 19 attached to or formed integral with a plate 20 which is bolted or secured to the front cross beam 21 of the platform and at its bottom end is provided with a bearing 22 which receives the forward end of the rock shaft 23. A double crank 24 is fixed at its center to the shaft 23 and has its ends bifurcated to loosely receive the reduced ends 25 of the treadles 17. This gives a detachable connection so that the treadles may readily be moved to trans-



fer from front to rear ends of the car. The shoulders 26 on the treadles positively engage the ends 24 and rock the shaft 23 to the right or to the left, according to the treadle depressed by the foot of the motorman. The rear end of the rock shaft 23 is mounted in a bearing socket 27 which is connected to or formed integral with a tubular casing 28 which is rigidly and very strongly braced to the cross beam 29 of the car, being for this purpose provided with integral flange portions 30 which are secured to the beam 29 by a series of bolts 31. This casing 28 is formed with a cylinder 32 which is open at the top and receives a coil spring 33 which surrounds the stem 34 that passes through a suitable opening in the bottom of the casing and has connected to its lower end the foot piece 35 which is adapted when lowered to be in position to engage the pin 10 on the switch throwing lever 9. The spring 33 bears at its upper end against a cross head 36 which is rigidly attached to the upper end of the stem 34 and disposed in the enlarged upper end 37 of the casing. This upper end is cut away on opposite sides to form deep notches having parallel walls 38 and in the center of each notch and diametrically oppositely disposed I leave a short integral stud or projection 39. Attached to the cross head 36 or formed integral therewith are two oppositely disposed pins or projections 40 and 41, the former of which is disposed to the rear and works in the rear notch while the latter pin projects forward and beyond the front notch and is adapted to receive the upper links of a pair of chains 42 which extend downwardly and diagonally at each side to engage the outer ends of a double crank 43, which at its middle, is mounted fixedly upon the rock shaft 23. A head or shoulder 44 on the pin 41 prevents the disengagement therefrom of the connecting members of the chains.

The notches in which the pins 40 and 41 swing serve as stops to limit the swinging movements of foot 35 and also the downward movement of the switch throwing member to bring foot 35 into position to engage pin 10 when the latter is elongated. The stud 39 forms with each adjacent wall 38 a pocket, and end 37 of the casing therefore has two pairs of oppositely disposed notches, situated at the bases of walls 38 and one of said pairs being adapted to receive the pins 40 and 41, when the foot piece 35 assumes either of its two operating positions, to effectively lock it against forces tending to swing it laterally. This foot piece 35 is provided with a long sharply pointed forward end and a short rear end, the stem 34 being connected to the longitudinal center thereof near the rear end. The width of the slots for the pins 40 and 41 is determined by the arc through which

it is desirable for the forward pointed end of the foot piece to travel in moving from one operating position, when it will throw the pin 10 to the right, to its other operating position when it will throw the pin to the left.

The operation of my apparatus is as follows:—Assuming the car is moving ahead (Fig. 1), and it is desired to continue on the main track, the motorman will depress the left hand treadle 17 which will rock the shaft 23 to the left (Fig. 3) and through the crank 43 and the left hand chain 42, will pull the pin 41 downwardly to the left in an oblique direction and will force this pin to move downwardly against the left hand wall 38 and move downwardly along same until it enters the pocket formed between the stud 39 and said wall of the slot, or in other words, to the full line position shown in Fig. 4. When this takes place, the rear pin 40 will have dropped into the locking pocket formed between the rear stud 39 and the right hand wall 38 of the rear slot. These movements of the operating mechanism cause the foot piece 35 to drop to the dotted line position shown in Fig. 2, with its forward point turned so that it presents its left hand inclined side wall for engagement with the pin 10. The engagement of the front and rear pins 40 and 41 in the locking pockets will hold the foot piece rigidly against lateral strain when the pin is engaged and thrown to the left (Fig. 1), by reason of the fact that said pins are held firmly in position between the portions of the head 37. As the forward wheels of the car strike the treadle 11, they depress the latter and by means of lever 14, lift lever 9 and bring its pin 10 above the track and into position to be engaged by the lowered foot 35. The lever reaches its raised position just before the foot piece 35 is ready to strike the pin 10 and treadle 11 holds the lever elevated until the foot piece has moved past the pin. When the lever 9 is thus elevated its pin 10 will be engaged and forced to the left by the foot piece, applying pressure through the spring 8 to the rod 6 and thus forcing the switch point 4 to open the main track.

By making the treadles 17 movable the motorman can lift them from one platform and place them in position in the other platform when he reverses the car, thus leaving no way for the passengers to tamper with the mechanism under the rear platform.

In simplicity, compactness and strength, my present invention constitutes a marked improvement over the car mechanism shown and described in my Letters Patent No. 945,621, dated January 4th, 1910.

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

