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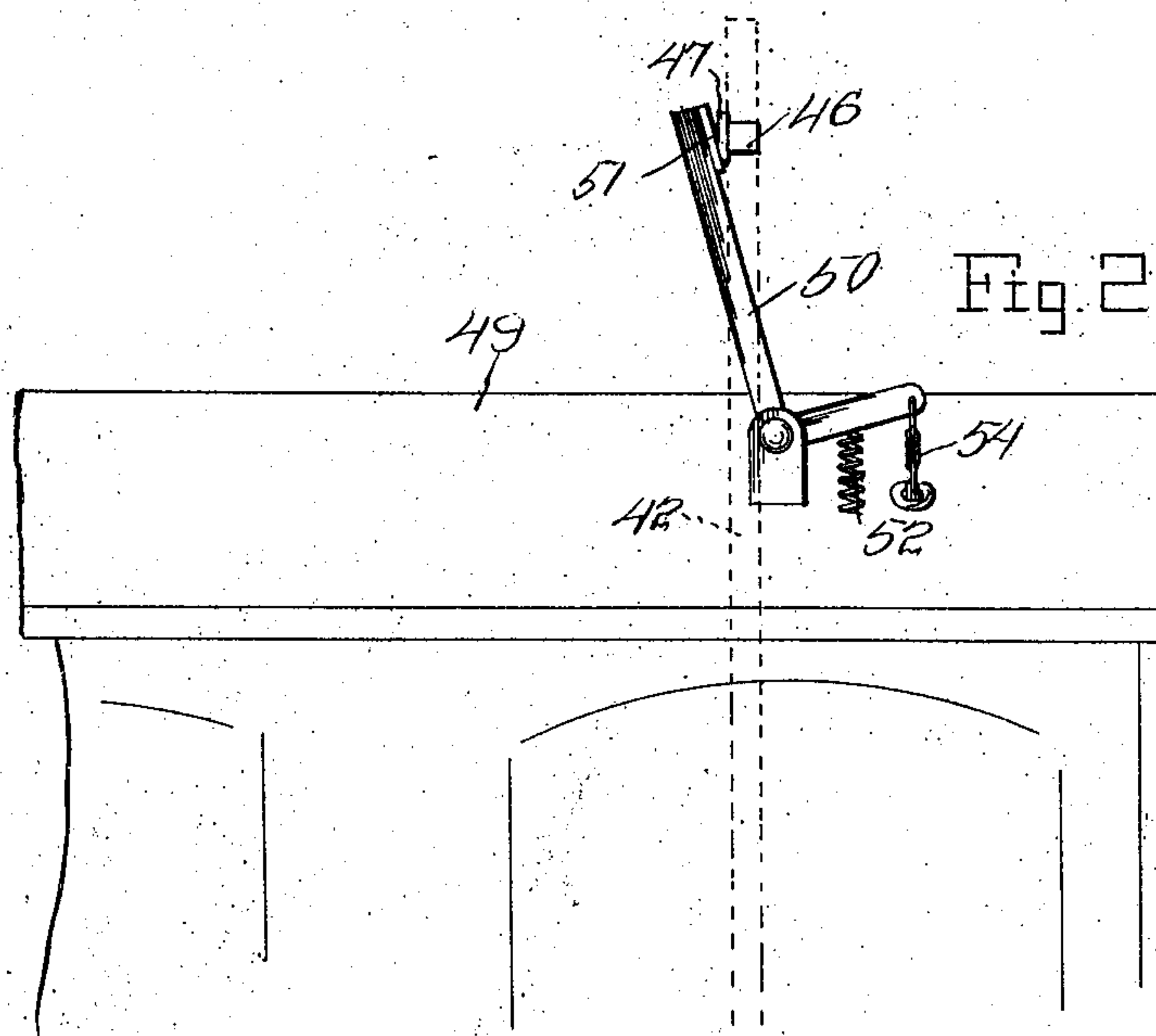
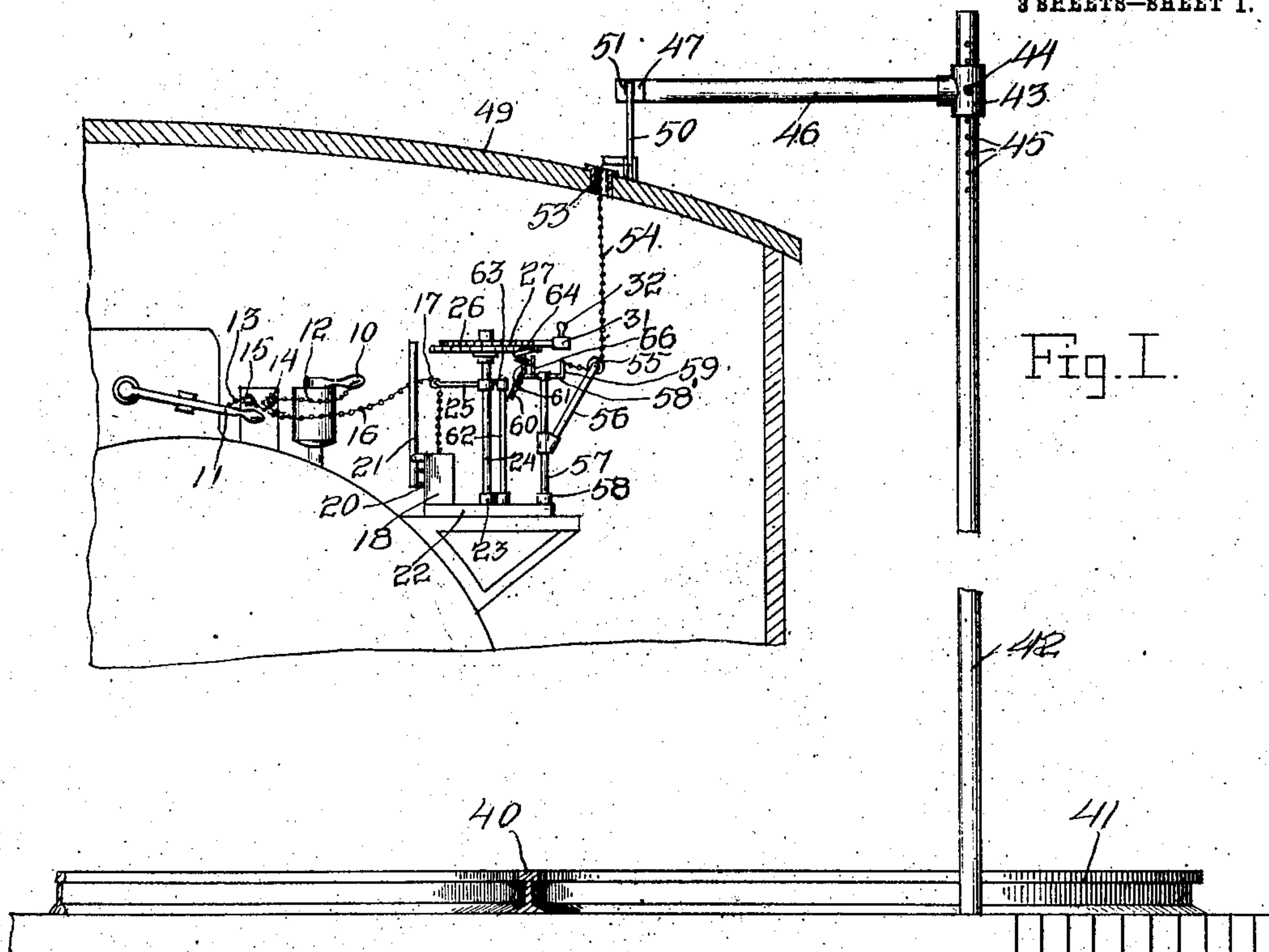
PATENTED MAY 30, 1905.

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AUTOMATIC STOP MECHANISM FOR RAILWAY TRAINS.

APPLICATION FILED DEC. 21, 1904.

3 SHEETS—SHEET 1.



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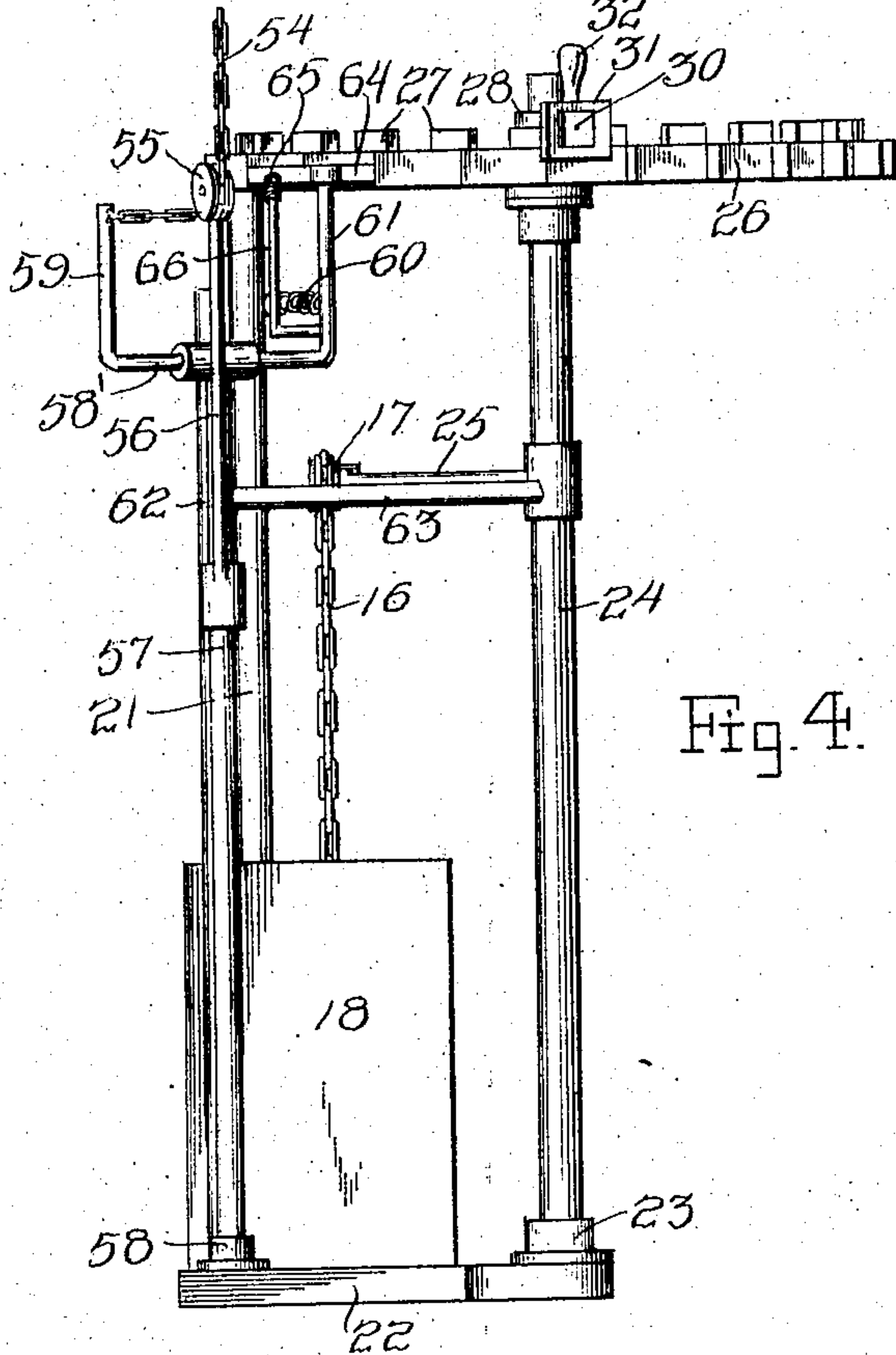
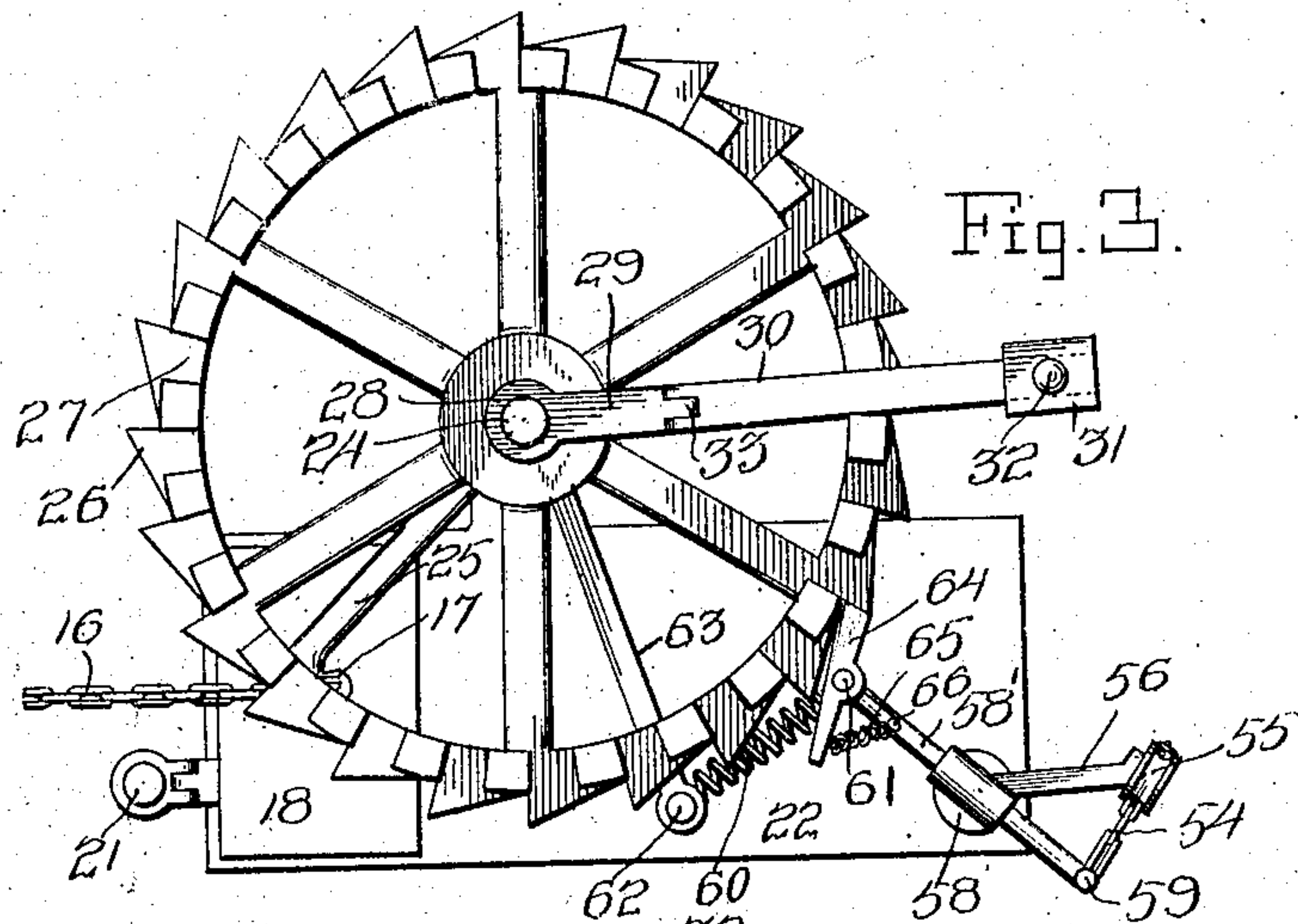
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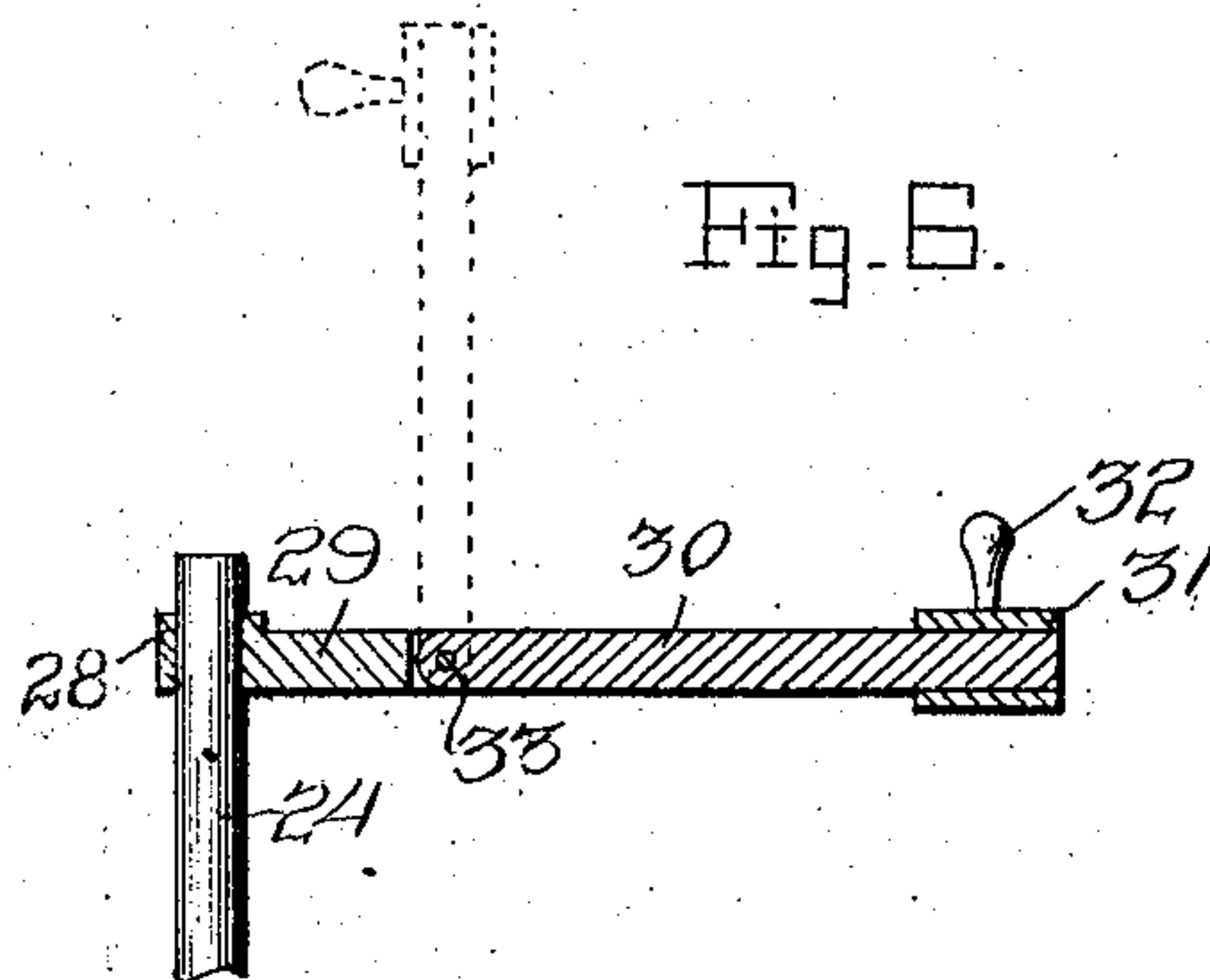
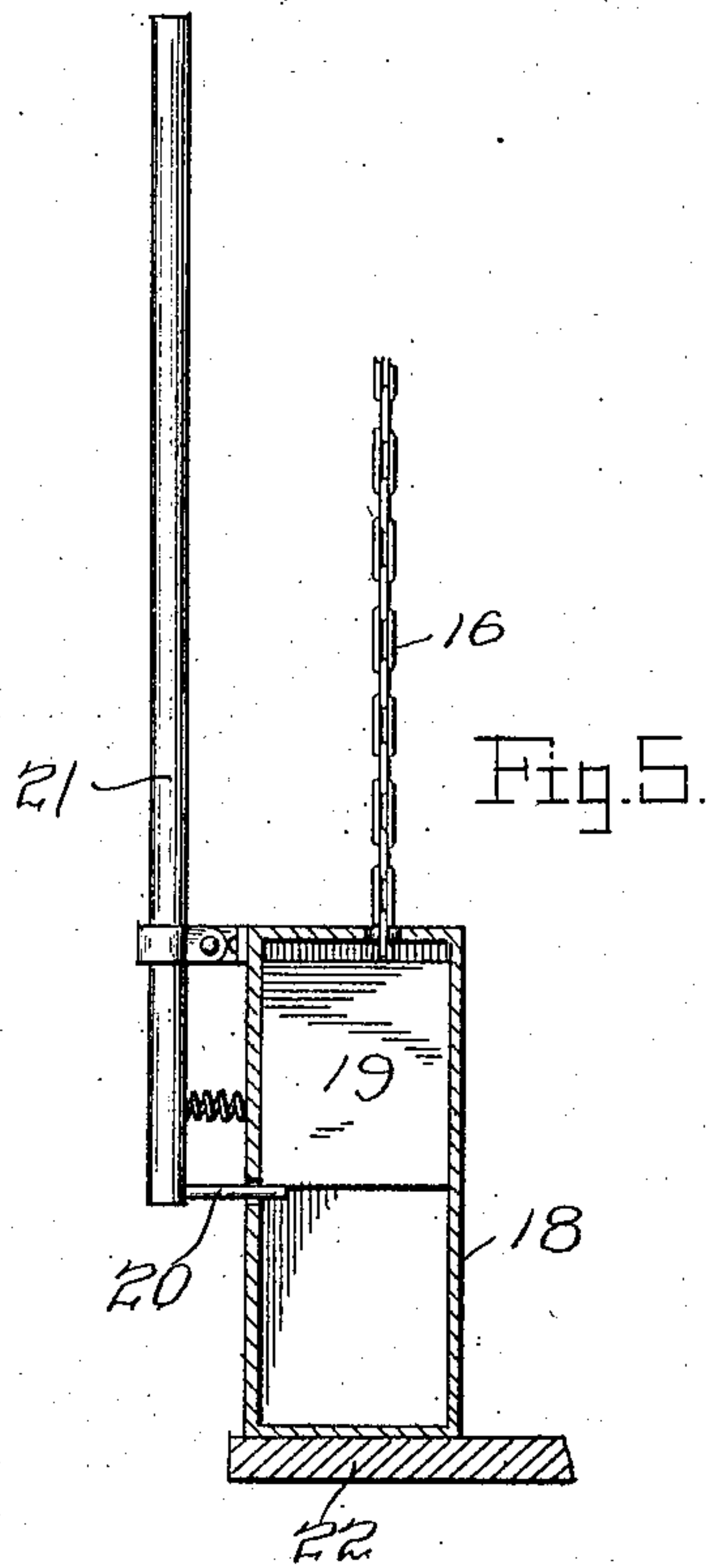
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3 SHEETS—SHEET 3.



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# UNITED STATES PATENT OFFICE.

GEORGE BERNHARDT GELAKOSKI, OF FRUITPORT, MICHIGAN.

## AUTOMATIC STOP MECHANISM FOR RAILWAY-TRAINS.

SPECIFICATION forming part of Letters Patent No. 791,338, dated May 30, 1905.

Application filed December 21, 1904. Serial No. 237,816.

*To all whom it may concern:*

Be it known that I, GEORGE BERNHARDT GELAKOSKI, a citizen of the United States, residing at Fruitport, in the county of Muskegon, State of Michigan, have invented certain new and useful Improvements in Automatic Stop Mechanisms for Railway-Trains; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to automatic stopping mechanisms for railways wherein by properly setting an instrument in the cab of a locomotive the closing of the throttle and the setting of the brakes automatically will be insured should the engineer neglect to attend to the matter himself at the proper time. When used in connection with an electric car, connection is made with the circuit-breaker in place of the throttle of the locomotive.

Other objects and advantages of the invention will be understood from the following description.

In the drawings forming a portion of this specification, and in which like numerals of reference indicate similar parts in the several views, Figure 1 is a view showing a portion of the cab of a locomotive in section and illustrating, on an exaggerated scale, the present apparatus. Fig. 2 is a side elevation showing a portion of the roof of a cab with the angular rock-lever thereon, the position of one of the striker-arms thereagainst being illustrated. Fig. 3 is a top plan view of the weight-releasing mechanism. Fig. 4 is a side elevation of the weight-releasing mechanism. Fig. 5 is a detail sectional view of the weight-box, the supporting-pin, and connecting-lever, together with the weight and its chain. Fig. 6 is a detail view of the releasing-arm carried by the releasing-wheel.

Referring now to the drawings, in which the invention is illustrated in connection with the cab of a locomotive, there is illustrated at 10 an ordinary air-brake handle, and at 11 the throttle of the engine, and attached to the handle and throttle, respectively, are chains 12 and 13, which are passed over direction-pulleys 14 and 15 and then connected to a chain

16, which after passing over a direction-pulley 17 enters a box 18, where it is connected to a vertically-slidable weight 19, which when passing from the upper to the lower limit of its movement draws the chain 16 and swings the air-brake-reducing-valve handle 10 and the handle of the throttle 11 to set the brake and close the throttle.

Normally the weight 19 is supported at the upper limit of its movement by a pin 20, which is slidably engaged in the side of the box 18 and projects inwardly thereof into the path of downward movement of the weight. A releasing-lever 21 is fulcrumed to the side of the box 18 and is connected at its lower end to the pin 20, while its upper end is in position to be struck and swung by the releasing-arm, hereinafter described, to draw the pin 20 from its supporting position.

The box 18 is secured upon a base 22, upon which is secured a socket 23, having a post 24 mounted therein and from which projects an arm 25, that carries the direction-pulley 17. Rotatably mounted upon the upper end of the post 24 is a ratchet-wheel 26, having a crown-gear 27 on its upper face. Mounted rotatably upon the post 24 above and resting on the hub of the wheel 26 is a collar 28, having a radiating arm 29, at the outer end of which is hinged an arm 30 for vertical movement. At the outer end of the arm 30 is a weight 31, provided with a handle 32, and by grasping said handle the weight may be lifted and the arm 30 swung upwardly upon its hinge 33 and the arm then rotated with the collar 28 to bring the arm 30 above any one of the notches of the crown-gear 27 to vary the angular distance necessary for the arm to travel into engagement with the lever 21. The weight 31 holds the arm 30 down. The arm 30 is at such an elevation when engaged with the crown-gear that when rotated with the gear it will strike the releasing-lever 21 and move it to withdraw the pin 20 from beneath the weight 19, with the result hereinbefore set forth.

The present apparatus is used in connection with a single-track railway having turnouts to permit of passing of trains, and there are as many notches in the crown-gear 27 or an-



nular rack as there are turnouts. In advance of each turnout there is arranged a striker-arm, and carried by the cab of the locomotive is a rock-lever adapted to be struck and rocked by the striker-arms in succession, there being mechanism between the rocker-lever and the ratchet-wheel for rotating the latter one step each time the rock-lever is operated.

A railway is indicated at 40, having turnouts 41, and in advance of each turnout is a post 42, on which is slidably mounted a casting 43, which is adapted to be held at different elevations on the post by a pin 44, passed through the casting and through one of a vertical series of perforations 45 in the post. The pin serves also to prevent rotation of the casting on the post. From the casting 43 projects a striker-arm 46, having a soft facing 47 at its outer end. On the roof 49 of the cab is mounted an angular rock-lever 50, having a pad 51 upon one end, and as the engine moves along the track the pad is brought into contact with the pads 47 of the arms 46 successively and the lever 50 is rocked. To return the lever to its normal position when released by a striker-arm, a spring 52 is connected to the angular lever and the roof of the car. Through the roof of the car is passed a thimble 53, through which is passed a chain 54, attached at its upper end to the angular lever. Within the cab the chain 54 passes downwardly and around a direction-pulley 55, carried by an arm 56 of a post 57, mounted in a socket 58 on the base 22. In the upper end of the post 57 above the point of attachment of the arm 56, there is journaled a rock-shaft 58', having at one end a crank-arm 59, to which the chain 54 is attached, so that when the rock-lever 50 is actuated, the shaft 58' is rocked in one direction, return movement of the shaft being insured by a spring 60, attached to the crank-arm 61 at the opposite end of the shaft and to the post 62, this post being connected by a brace 63 with the post 24 to add rigidity thereto. The crank-arm 61 projects above the shaft 58' and has pivoted thereto a pawl 64, which engages the ratchet-teeth of the wheel 26, the pawl being held yieldably in such engagement by a spring 65, attached thereto and to a bracket 66, carried by the crank-arm. The movement of the shaft 58' when rocked by the angular rock-lever is sufficient to advance the ratchet-wheel one notch or tooth, and it will be noted that there is one notch in the crown-gear or annular rack for each tooth of the ratchet-wheel.

In the use of the apparatus if the engineer receives an order to pass a train at a certain turnout and there are five intervening turn-

outs to be first passed he will of course pass six striker-arms before reaching the turnout. He therefore shifts the releasing-arm 30 rotatably and engages it in the sixth notch from the lever 21, so that when the striker-wheel has advanced six steps by actuation of the rock-lever six times by the six striker-arms the releasing-arm at the sixth step of the releasing-wheel will engage and shift the lever 21 to withdraw the supporting-pin 20 and release the weight for the purpose hereinbefore described.

What is claimed is—

1. The combination with a throttle and the reducing-valve of an air-brake, of a weight movable vertically, connections between the weight and the throttle and reducing-valve for throwing the latter when the weight descends, a support for the weight, a releasing-lever connected with the support, a rotatable releasing-arm disposed to engage and actuate the lever, said arm being adjustable to different angular distances from the lever, a striker mechanism and means connected with the striker mechanism and operable thereby for rotating the releasing-arm step by step.

2. The combination with a throttle and reducing-valve, of an air-brake, of a potential device connected therewith for shifting them, a releasing-lever for the potential device, a rotatable releasing-arm adapted to engage and actuate the lever, said arm being adjustable to different angular distances from the lever, a striker mechanism and means connected with the striker mechanism and operable thereby for rotating the releasing-arm step by step.

3. The combination with a potential device having means for connection with a member to be shifted, of means for holding the potential device normally inactive, a lever connected with said means for retracting it, a ratchet-wheel, an annular rack carried by the ratchet-wheel, a releasing-arm pivoted concentrically with the ratchet-wheel and movable into and out of engagement with the rack rotatably thereof, said arm in all positions of engagement with the rack being adapted to engage and actuate the releasing-lever, a rock-shaft, a pawl carried by the rock-shaft in active relation to the ratchet-wheel to rotate the latter when the shaft is rocked, a striker mechanism, and connections between the striker mechanism and the rock-shaft for actuating the latter.

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

GEORGE BERNHARDT GELAKOSKI.

Witnesses:

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