

(No Model.)

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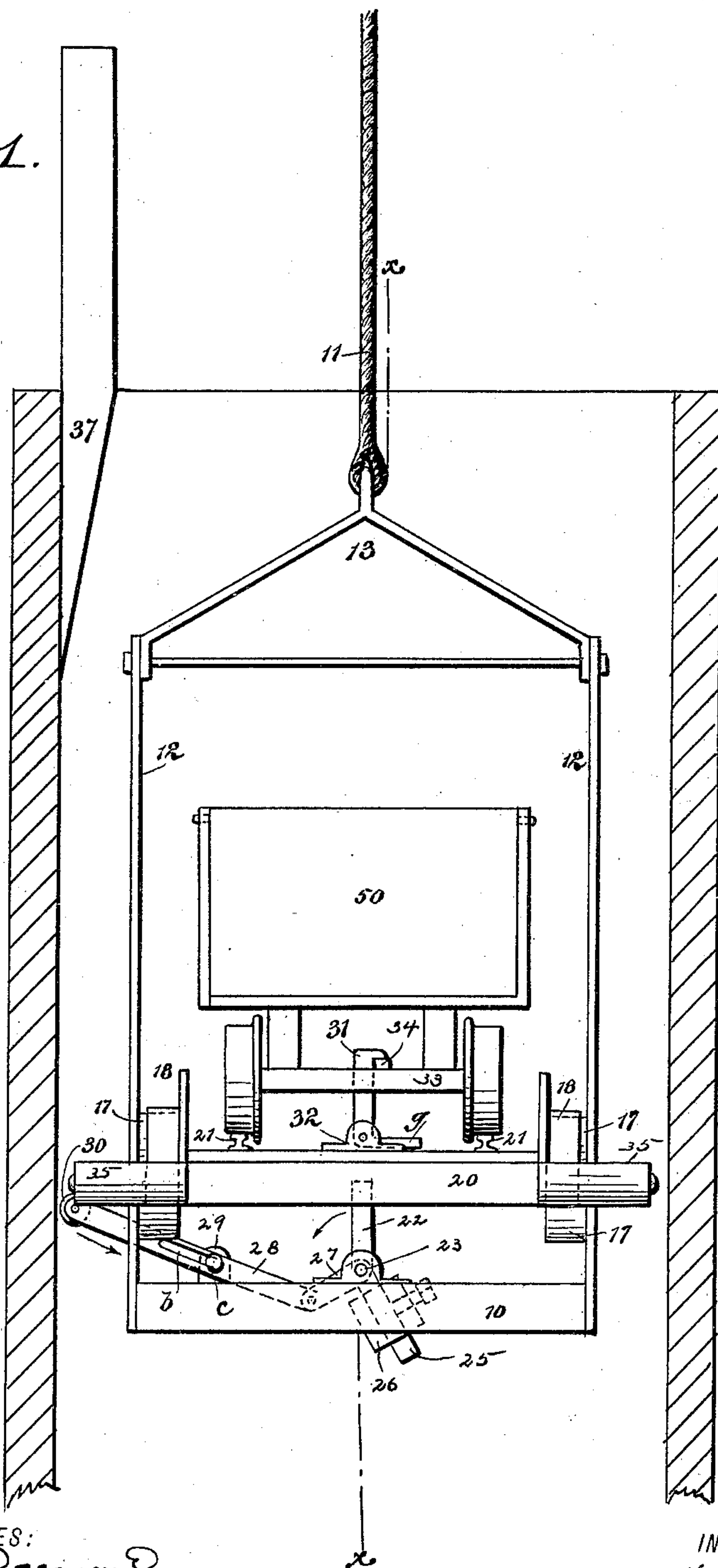
H. MURRAY.

AUTOMATIC DUMPING ATTACHMENT FOR HOISTING CAGES.

No. 405,493.

Patented June 18, 1889.

*Fig. 1.*



WITNESSES:

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INVENTOR

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(No Model.)

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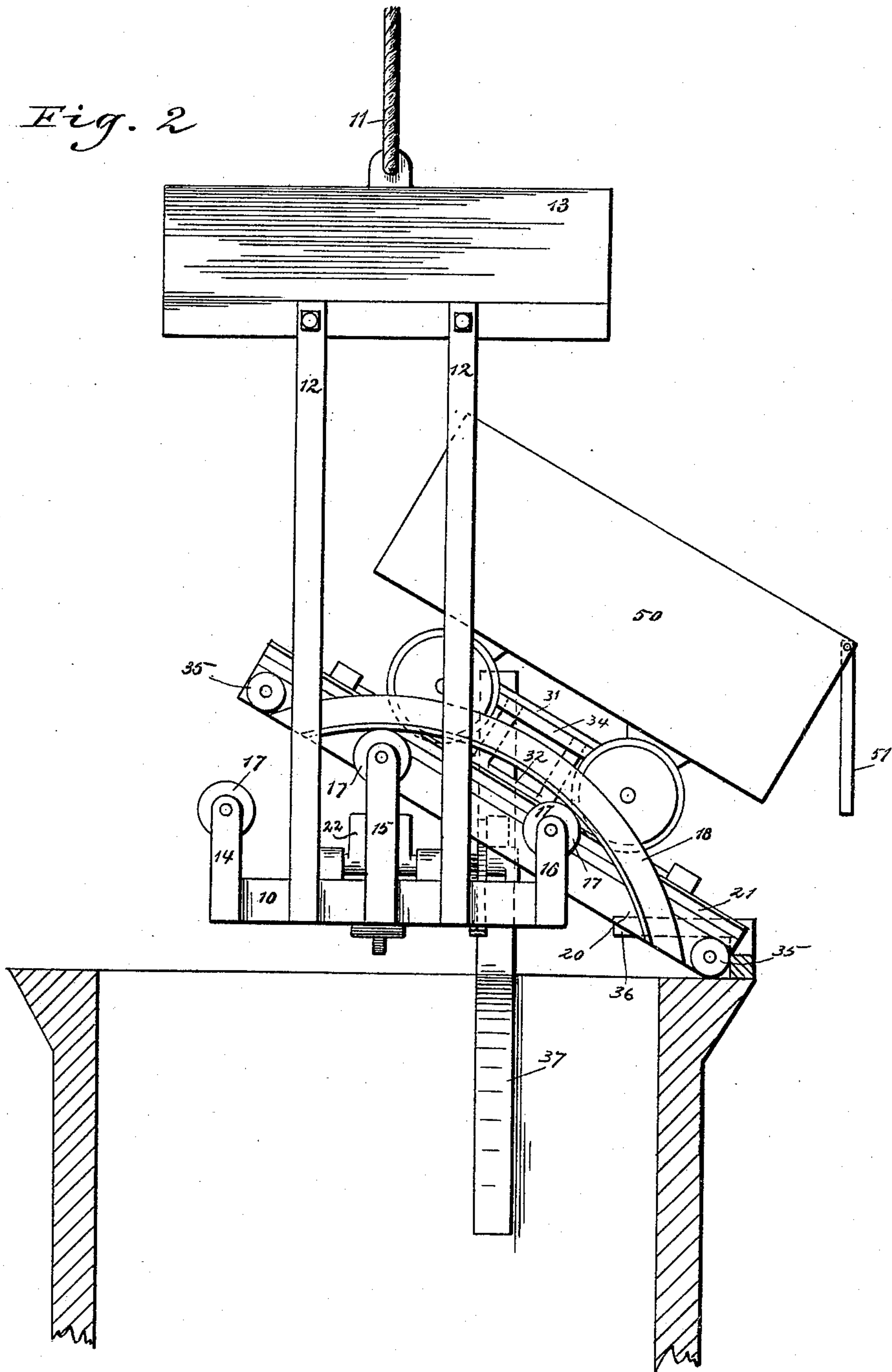
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*Fig. 2*



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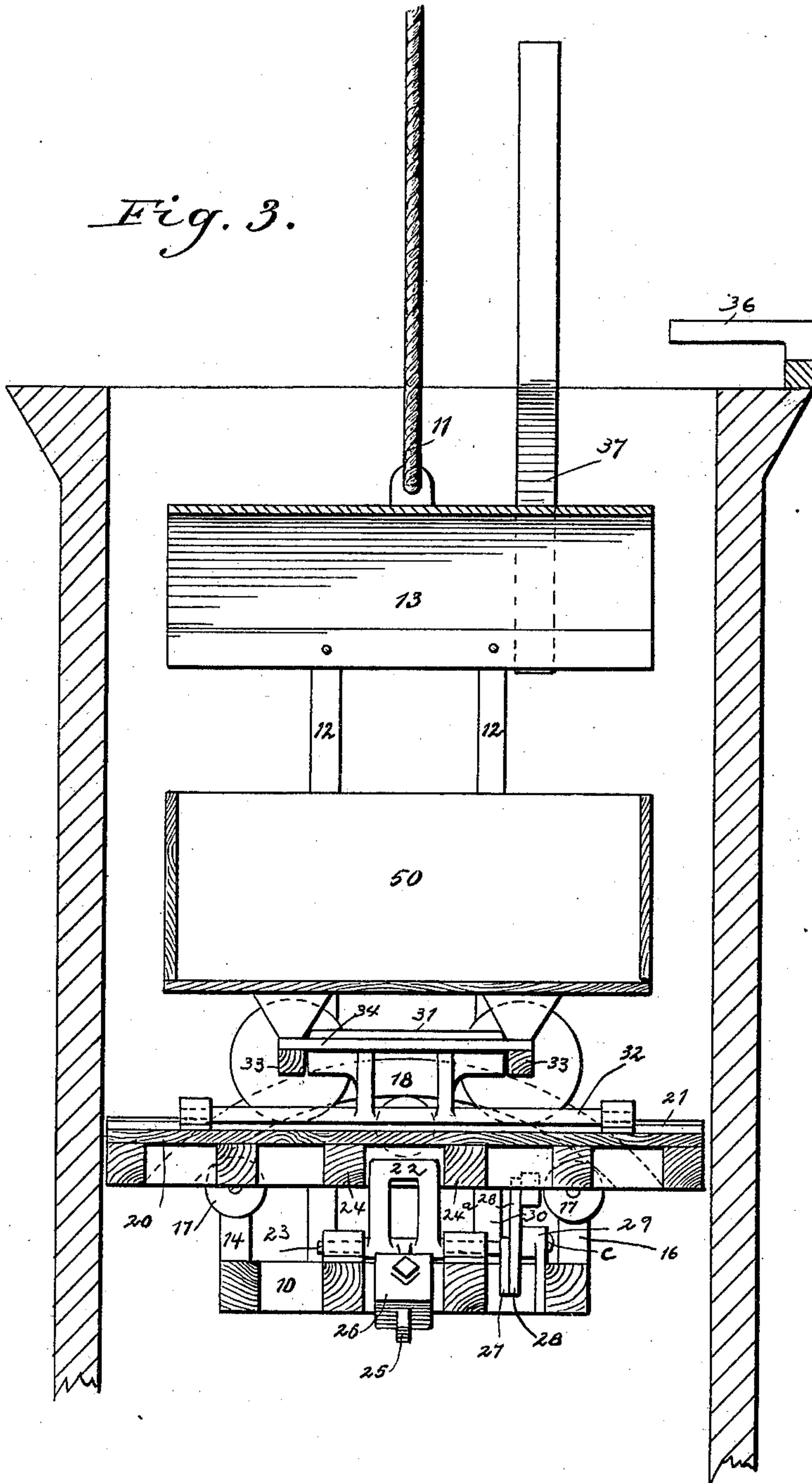
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*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

HUGH MURRAY, OF SPARTA, ILLINOIS.

## AUTOMATIC DUMPING ATTACHMENT FOR HOISTING-CAGES.

SPECIFICATION forming part of Letters Patent No. 405,493, dated June 18, 1889.

Application filed February 26, 1889. Serial No. 301,186. (No model.)

*To all whom it may concern:*

Be it known that I, HUGH MURRAY, of Sparta, in the county of Randolph and State of Illinois, have invented a new and Improved Automatic Dumping Attachment for Hoisting-Cages, of which the following is a full, clear, and exact description.

The object of this invention is to provide an automatic dumping attachment for hoisting-cages of the class employed in mines; and to the end named the invention consists of certain novel constructions, arrangements, and combinations of elements, to be hereinafter more fully described, and specifically pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures and letters of reference indicate corresponding parts in all the views.

Figure 1 is an end view of a cage embodying my invention. Fig. 2 is a side view of the cage, the parts being represented as they appear when in position to dump the load of the car; and Fig. 3 is a sectional elevation taken on line *x x* of Fig. 1.

In the drawings, 10 represents a frame-work that is connected with the hoisting-rope 11 by means of side irons 12 and the usual cage-top 13, the parts named constituting a hoist-cage. At each side of the frame 10 there are secured a number of standards 14, 15, and 16, three of such standards being preferably employed, as shown in the drawings. The standards referred to carry anti-friction rolls or wheels 17, which serve as supports for segmental angle-irons 18, said irons being rigidly connected to a heavy platform 20, upon which there are secured tracks 21.

The platform 20 is normally held in a horizontal position, as shown in Figs. 1 and 3, by means of a latch 22 that is carried by a rock-shaft 23, the latch being arranged to enter the space between the center cross-timbers 24 and 24<sup>a</sup> of the platform 20.

The shaft 23 is provided with a lever-arm 25, upon which there is adjustably mounted a weight 26, and to one end of the shaft 23 there is connected a lever 27, which lever is in turn connected to an arm 28, that is formed with a slot *b*, through which there is passed a stop or

limit pin *c*, carried by a standard 29. The arm 28 extends outward beyond the hoisting-cage, and this extending end carries an anti-friction roll or wheel 30.

The car to be hoisted is run upon the tracks 21, and is there securely held by means of a catch or dog 31, which is carried by a shaft 32, journaled upon the platform 20, the catch or dog being arranged to extend upward between the axles 33 of the car 50, there to engage a bar 34, which is placed upon said axle. In order that the catch or dog 31 may be readily operated, I connect a treadle *g* to the shaft 32.

Rollers 35 are connected to the platform 20 in the positions shown, and stops 36 are secured to the shaft-casing in position so as to extend into the lines of travel of the rollers at one end of the platform, while a cam-faced projection 37 extends into the path traversed by the roll or wheel 30, carried by the arm 28, the stops 36 and the cam-faced projection 37 being so located that the roll or wheel 30 will bear against its cam-face 37 just prior to the time when the wheels or rollers 35 reach their stops 36.

From the above description it will be seen that if a car be placed upon the platform 20 and the parts adjusted as represented in Figs. 1 and 3 the car and the platform will be securely locked to place during the ascent of the car, but that as the roll or wheel 30 of the arm 28 bears against its cam-face 37 the arm will be forced inward in the direction of the arrow shown in connection therewith in Fig. 1, which movement of the arm will carry the latch 22 in the direction of its arrow, whereby the latch will be moved from its normal position between the timbers 24 and 24<sup>a</sup>. Then as the cage is drawn upward the wheels or rollers 35 will strike against the stops 36, and that end of the platform in connection with which the stops 36 are arranged will be held from any further ascent, so that any continued rise of the cage-frame will cause the platform 20 to tilt to the position in which it is shown in Fig. 2, the door 51 of the car 50 swinging outward as the platform 20 is so tilted, thus delivering the load of the car. Any automatic attachment for opening the door 51 may be employed, many such attachments being in use.



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

1. The combination, with a cage, of rolls or wheels supported at the sides thereof, a platform, segmental irons carried by said platform and arranged to rest upon the cage rolls or wheels, and a means for locking the platform to the cage, substantially as described.

2. The combination, with a cage, of rolls or wheels mounted at the sides thereof, a platform, segmental angle-irons carried by the platform and arranged to rest upon the cage rolls or wheels, a rock-shaft, a latch carried thereby and arranged to enter the space between the platform cross-timbers, and a means, substantially as described, for throwing the latch from engagement with the platform, as and for the purpose stated.

3. The combination, with a cage, of rolls or wheels arranged at the sides thereof, a platform, segmental angle-irons carried by the platform and arranged to rest upon the cage rolls or wheels, a rock-shaft carried by the cage, a latch carried by the shaft, a weight connected to the shaft, a slotted arm mounted upon a standard carried by the cage and con-

nected to a lever that is secured to the rock-shaft, a roller carried by the end of the arm, a cam arranged in the path of the roller, and stops arranged to engage projections at one end of the platform, substantially as described.

4. The combination, with a hoist-cage, of a shaft 23, mounted thereon, a latch 22, carried by the shaft, a lever 25, connected to the shaft, a weight 26, mounted upon the lever, a second lever 27, also connected to the shaft, an arm 28, pivotally connected to the lever 27 and formed with a slot *b*, a stud *c*, which passes through the slot *b* and engages a standard 29, a roller 30, carried at the end of the arm, a cam-faced projection 37, arranged in the path of the roller, rollers 17, mounted upon standards 14, 15, and 16, a platform 20, segmental angle-irons 18, carried by the platform, rollers 35, also carried by the platform, and stops 36, which extend into the path of the rollers 35, substantially as described.

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Witnesses:

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