

(No Model.)

2 Sheets—Sheet 1.

J. F. MAINS.

DEVICE FOR DELIVERING MAIL BAGS TO CARS IN MOTION.

No. 435,507.

Patented Sept. 2, 1890.

Fig. 2.

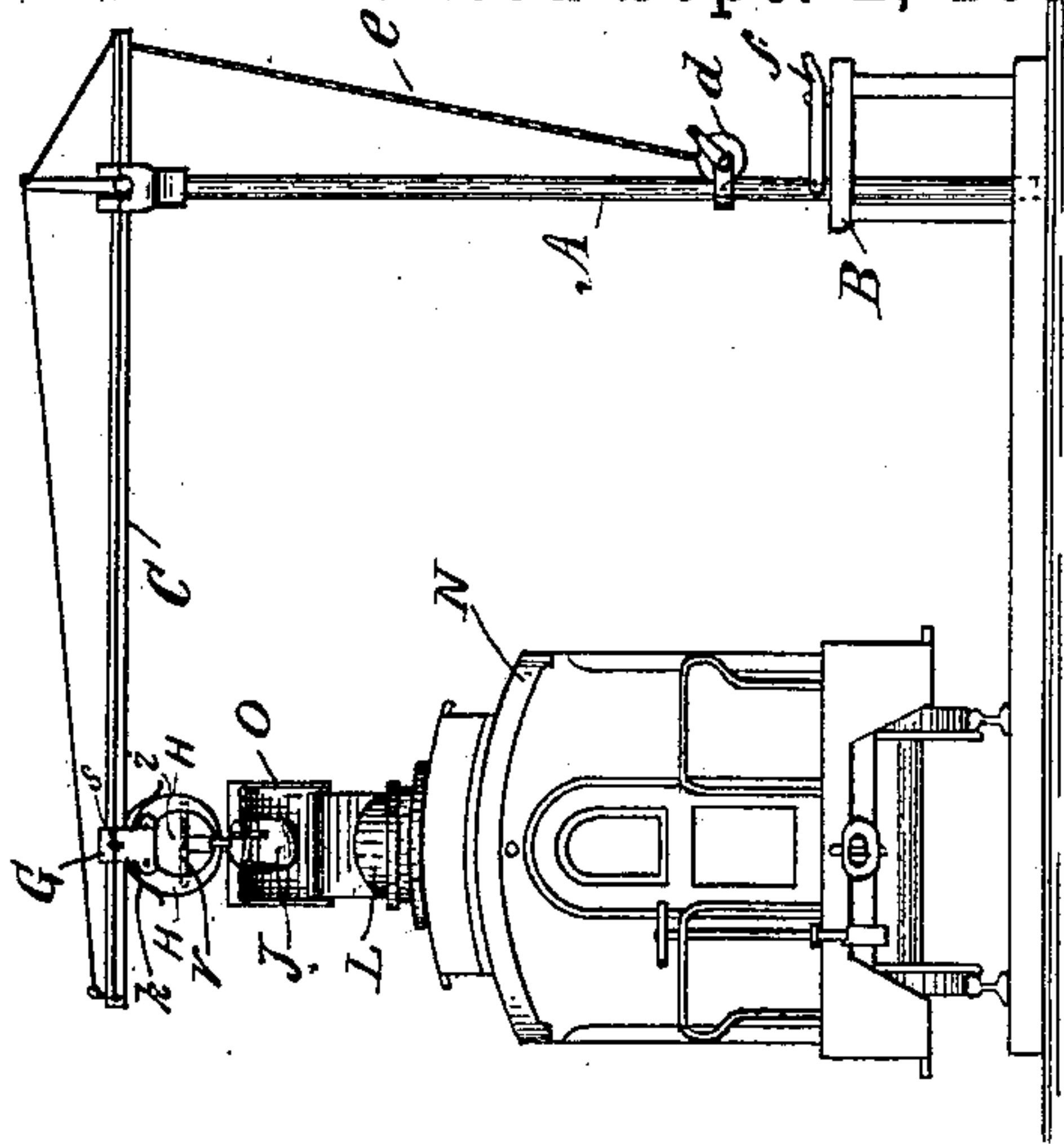
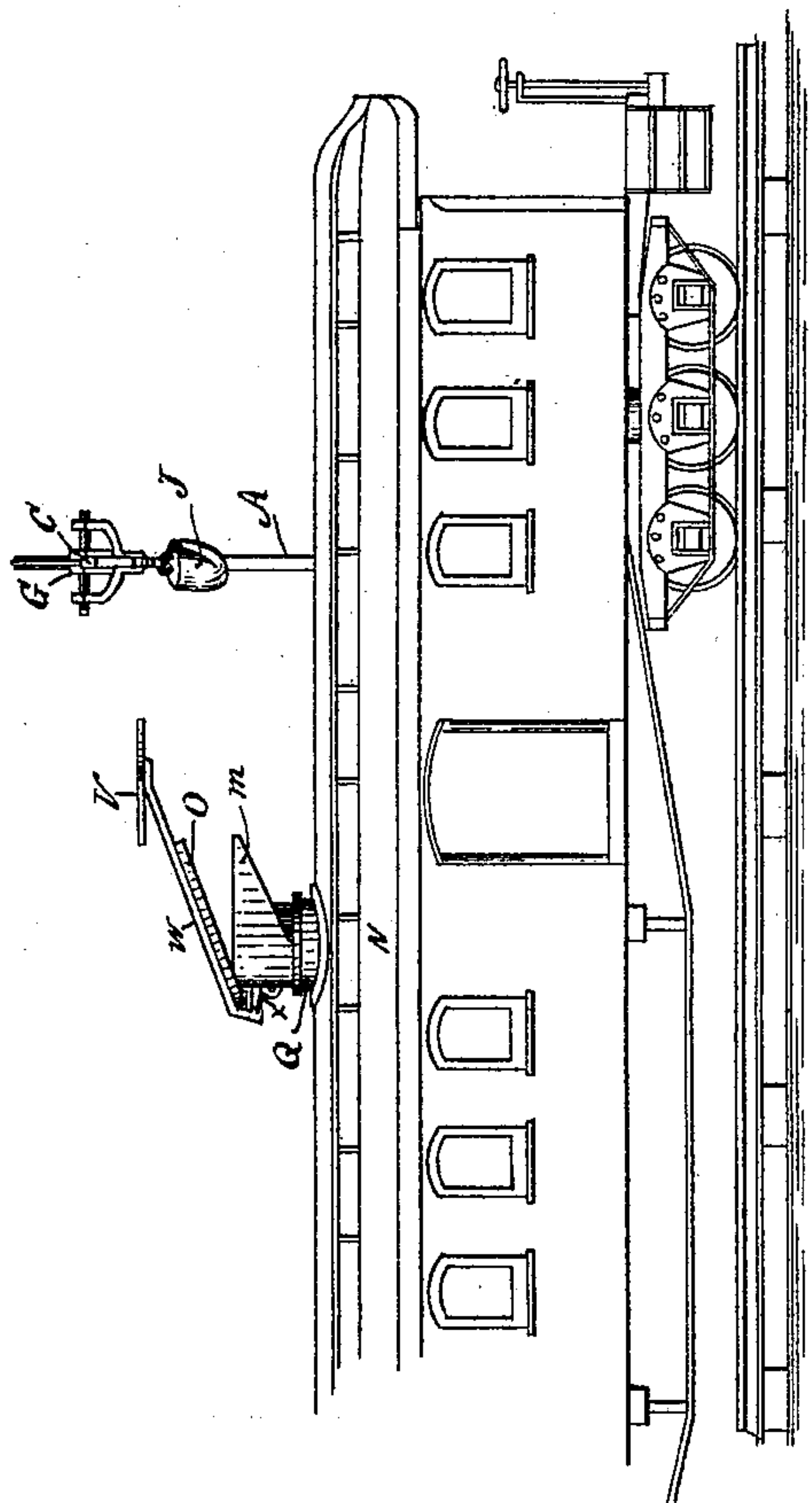


Fig. 1.



Witnesses

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(No Model.)

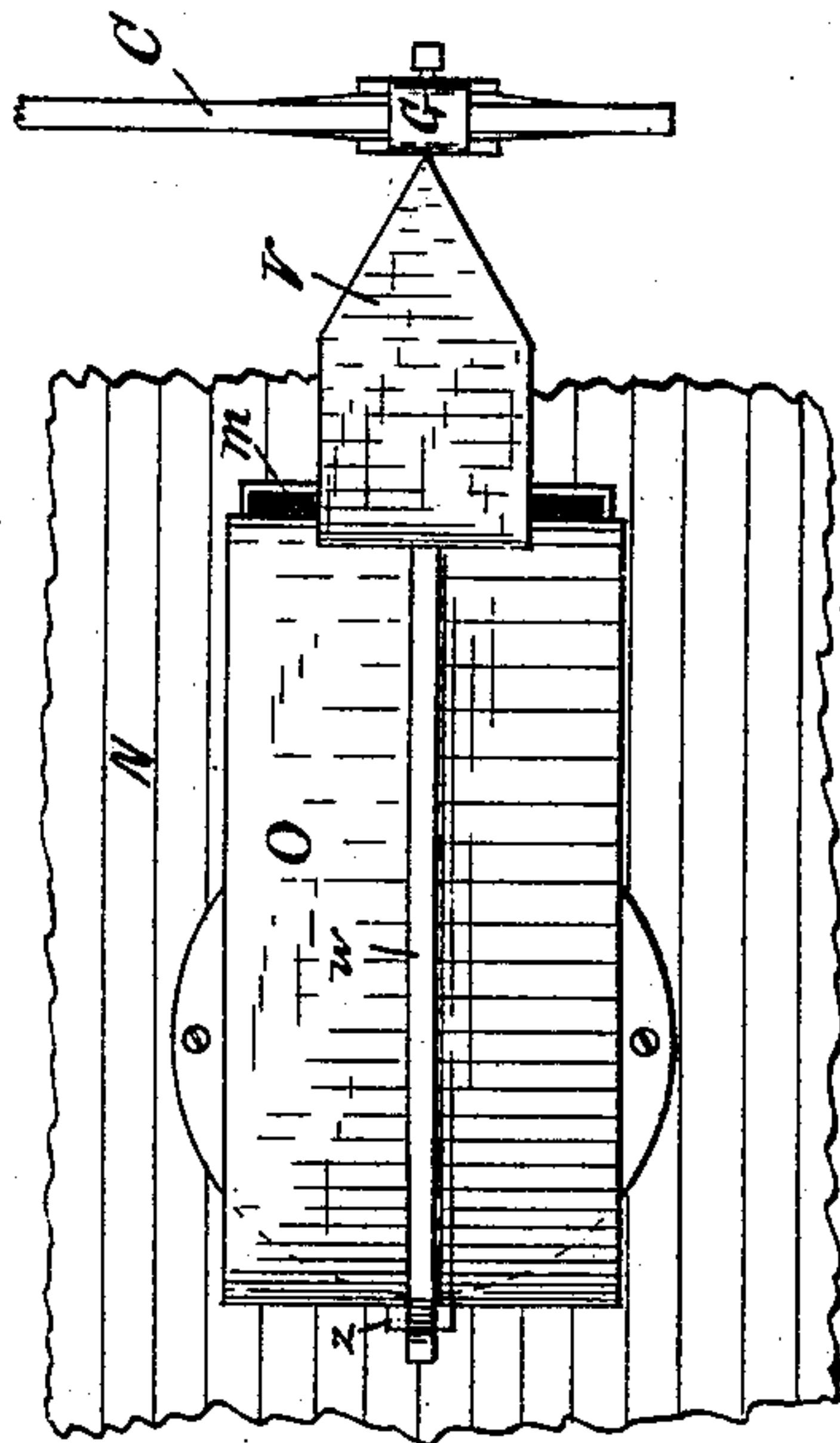
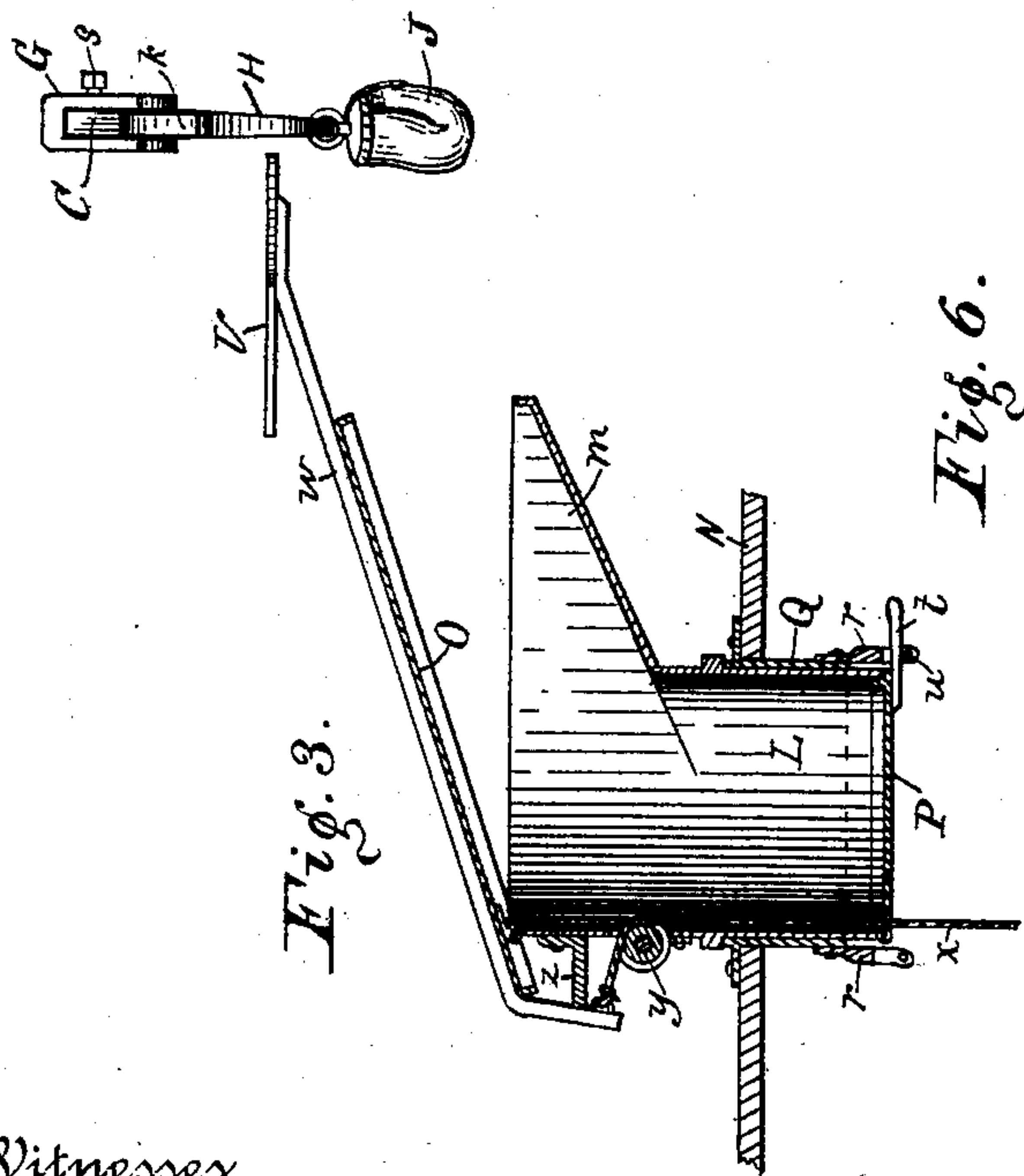
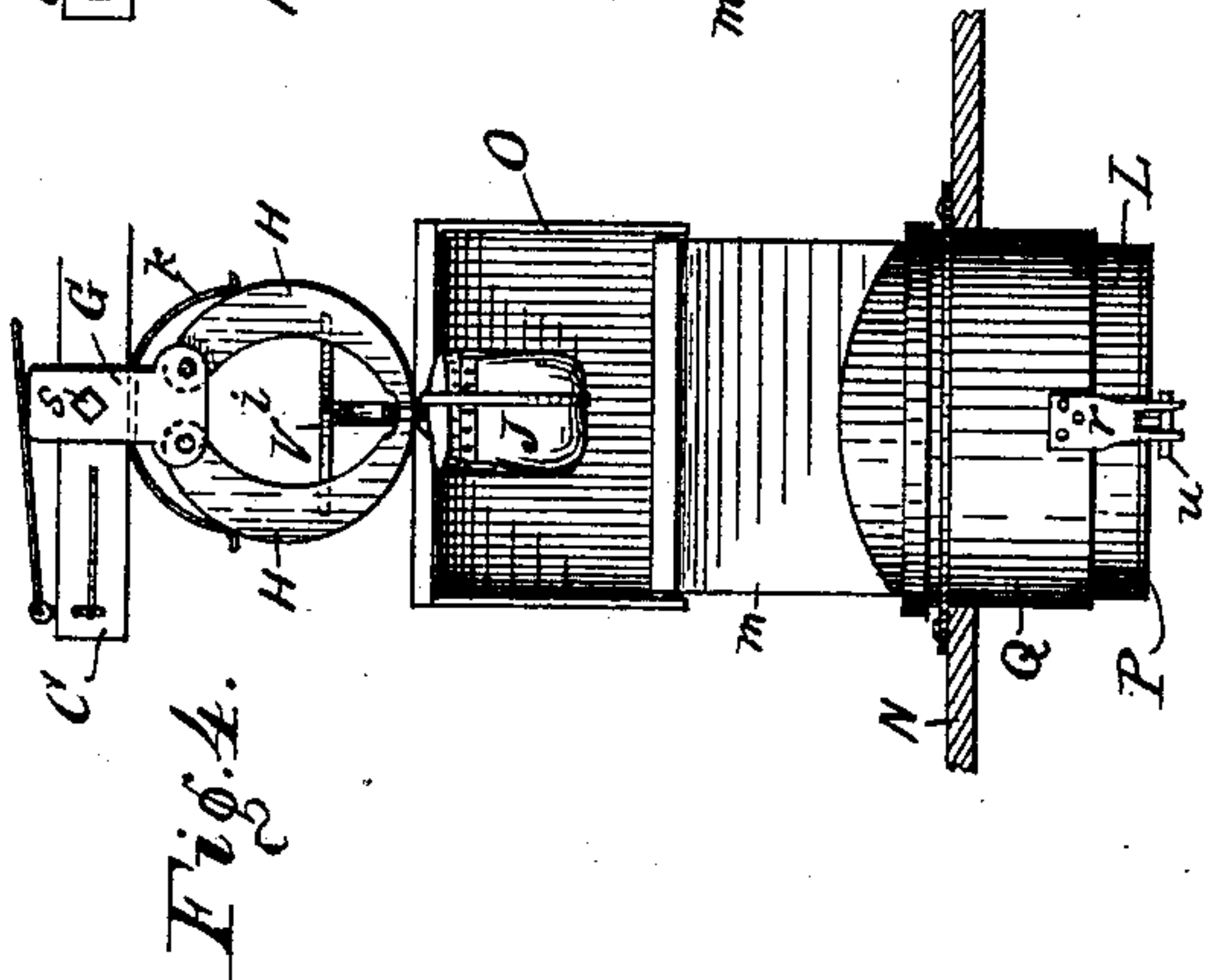
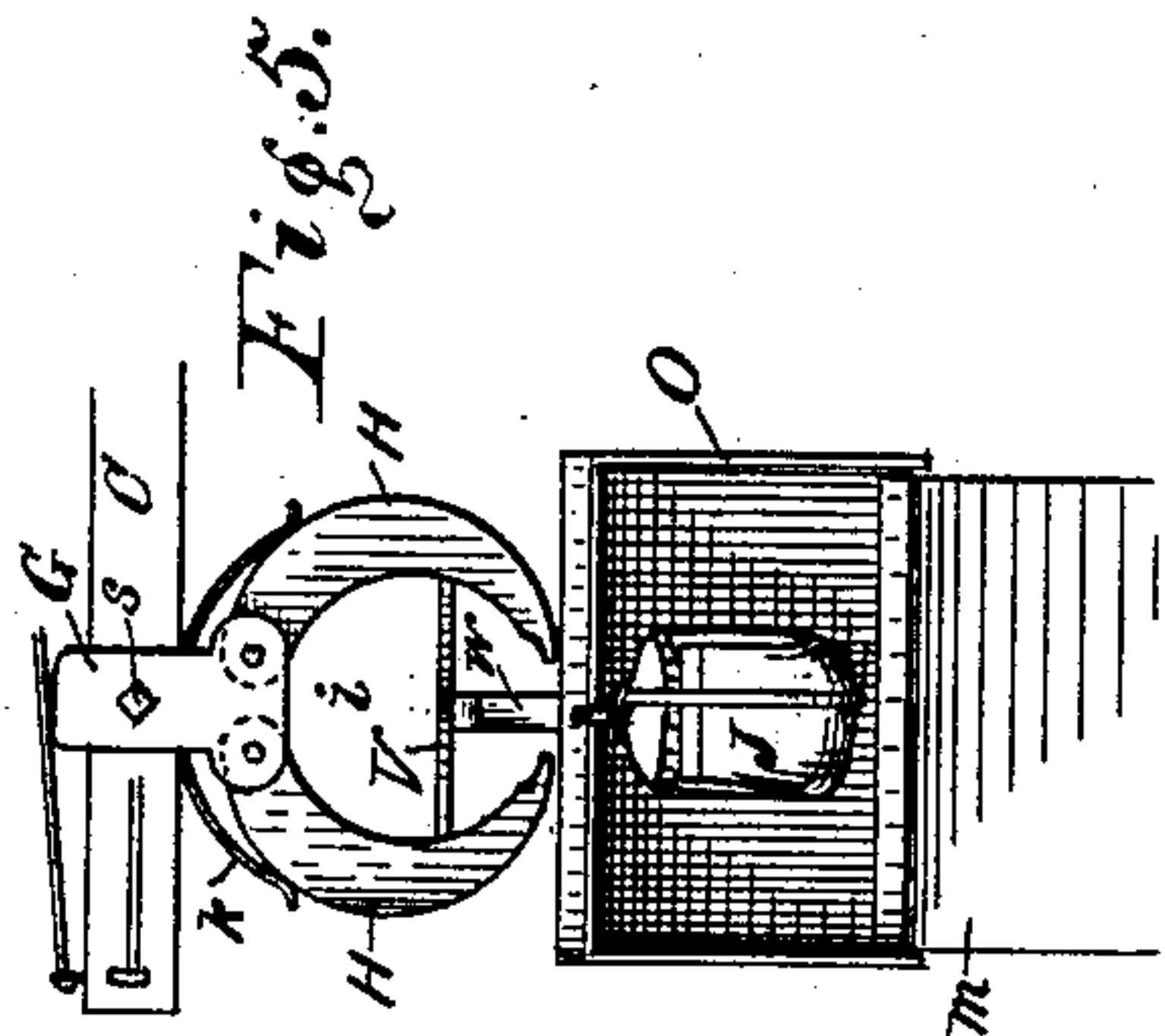
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UNITED STATES PATENT OFFICE.

JOHN F. MAINS, OF INDIANAPOLIS, INDIANA, ASSIGNOR OF TWO THIRDS TO
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DEVICE FOR DELIVERING MAIL-BAGS TO CARS IN MOTION.

SPECIFICATION forming part of Letters Patent No. 435,507, dated September 2, 1890.

Application filed January 13, 1890. Serial No. 336,784. (No model.)

To all whom it may concern:

Be it known that I, JOHN F. MAINS, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented a new and useful Improvement in a Device for Delivering Mail-Bags to Cars in Motion, of which the following is a specification.

My invention relates to an improved device for delivering mail-bags to cars in motion.

Heretofore mail-bags have been taken onto mail-cars when in motion by means of a catching-fork mounted in the side doorway of the car and manipulated by a person standing in the car-doorway so as to snatch the mail-bag from a post or other suitable device placed beside the track and holding the bag suspended in the path of the fork.

In using such a device great care and the most vigilant attention are required on the part of the operator to bring the fork into exactly the right position to catch the bag and to prevent the bag from dropping off the fork or rebounding out of the car. Mail-clerks are frequently injured by being struck by the locks or other hard portions of the mail-bag when such a catching device is used.

The object of my improvement is to provide means for taking the mail-bag into the car automatically, so that the device when set will secure the mail-bag without the further attention of the mail-clerk, thus avoiding the above-mentioned difficulties.

My invention consists, essentially, of the combination of means for suspending a mail-bag or other package over the path traversed by the car, an open chute arranged in the roof of the car, and means operated by the movement of the car for detaching the mail-package from its support and for directing it into the chute, and in the necessary details of construction connected therewith, all as hereinafter fully set forth.

The accompanying drawings illustrate my invention.

Figure 1 represents a side elevation giving a general view of a mail-car and my device for delivering a mail-bag thereto. Fig. 2 represents an end view of the same. Fig. 3 represents, on a larger scale, a central longitudinal section of the chute and catching mechanism,

and an end view of the jaws holding the mail-bag in suspension. Fig. 4 represents a front elevation of the same. Fig. 5 is a front elevation showing the jaws for holding the mail-bag opened. Fig. 6 is a plan.

For the purpose of suspending the mail-bag over the track traversed by the car I erect beside the track a light derrick, consisting of the mast A, mounted in a base-frame B so as to turn on its axis therein, and a horizontal boom C, mounted on the top of the mast so as to swing in a vertical plane thereon, and controlled by the windlass *d* and rope *e*.

For the purpose of conveniently turning mast A on its axis and locking it in position an arm *f* is hinged to the lower part of the mast so as to swing in a vertical plane, but rigidly connected therewith laterally, and the free end of the arm is temporarily secured at any desired point on frame B. On the outer end of boom C a bearing-block G is adjustably secured by means of the set-screw *s*. A pair of curved arms H H are pivoted at one end to the lower part of block G so as to swing in a vertical plane thereon and leave an open space *i* between them. The free lower ends of arms H are normally held together so as to sustain the mail-bag J thereon by means of a bow-spring *k*.

For the purpose of receiving the mail-bag when discharged from the jaws H a cylindrical tube L, having on one side an inclined chute *m*, is fitted in a vertical position into the roof of the car N so as to project above and also within the car. The upper end of tube L is closed by a cover O, which is hinged to the back side of the tube, and the lower end of the tube is closed by a door P.

For the purpose of adapting the device for use when the car is moving in either direction tube L is mounted so as to turn on its axis in a short tubular bearing Q, secured to the roof of the car. Forked lugs *r r* are secured to the opposite sides of bearing Q within the car, and the handle *t* of door P is secured in the fork of either lug by a pin *u*, thus locking the chute in position and also holding the door closed.

For the purpose of opening the jaws H, and thus disengaging the bag J, a tripping-plate V, having its forward end tapered to a point

and its rear end wider than the space *i* between the jaws when closed, is mounted on the forward end of the cover O by means of a bar *w*, which is secured to the top of the cover
 5 and projects forwardly and rearwardly beyond the ends of the cover.

For the purpose of raising the free end of cover O a cord *x* is secured to the rearwardly-projecting end of bar *w* and passed down over
 10 pulley *y* and inside of tube L to the interior of the car. A stop *z*, secured to the tube and arranged in the path of bar *w*, determines the height to which the cover may be raised.

The operation of my device is as follows:
 15 The outer end of boom C having been lowered until within reach of the mail-agent at a station, the mail-bag is suspended by a ring or loop thereon from the jaws HH at the meeting-point of their normally-closed free ends.
 20 Boom C is then raised and the mast turned and secured in such a position that the boom stands squarely across the track and at such a height that the opening *i* between the jaws H will be in the path of the tripping-plate V
 25 on the approaching train. On approaching the station the mail-clerk in the car sees that chute *m* is turned toward the direction in which the train is moving. He then raises cover O by pulling downward on cord *x* until
 30 stopped by the stop *z*, thus raising the tripping-plate V into line with the opening *i* between jaws H, as shown in Figs. 3 and 4. Cord *x* having been secured, the further attention of the operator on the car is not re-
 35 quired. As the car approaches the station the pointed forward end of plate V enters between the jaws H, and the jaws are forced apart by the wider rear portion of the plate, thus releasing the mail-bag, which in falling
 40 is caught in the open mouth of chute *m* and falls to the bottom of tube L, where it lies until door P is opened, when it falls to the car-floor. During transit between stations cover O remains closed, thus excluding rain,
 45 smoke, and dust.

While I have described my device as in-

tended, primarily, for delivering mail-bags to a car in motion, it is obvious that it may also be used for delivering express-matter or other packages.

I claim as my invention—

1. In a device for delivering packages to a car in motion, the combination, with an arm arranged above the path of the car, and a pair of normally-closed jaws suspended from the
 55 arm and adapted to hold a package between them, of a chute mounted in the roof of the car and communicating with its interior, and a tripping device mounted on the car arranged to enter between the jaws and adapted to force
 60 them apart during the forward movement of the car, whereby the package is automatically dropped into the chute, as set forth.

2. In a device for delivering packages to a car in motion, the combination, with the sus-
 65 pended package-holder, the car, and the chute mounted in the roof of the car and communicating with its interior, of the cover hinged to the chute and arranged to close its top, the tripping-plate mounted on the free end of the
 70 cover and adapted to open the package-holder, and means arranged within the car for raising the cover, whereby the chute is opened and the tripping-plate is at the same time set,
 75 as set forth.

3. The combination of the car, the pivoted jaws suspended above the car, the chute mounted in the top thereof so as to rotate therein, the cover arranged to close the top of the chute, the bar secured to the cover and
 80 projecting from the free edge thereof, the tapered tripping-plate mounted on said projecting end of the bar, the arm projecting from the hinged end of the cover, the cord attached to said arm, and the stop secured to the chute
 85 and arranged in the path of the arm, all arranged to co-operate substantially as set forth.

JOHN F. MAINS.

Witnesses:

H. P. HOOD,
 E. K. HOOD.