

No. 638,351

Patented Dec. 5, 1899.

J. T. MUMFORD & J. McD. PINKERTON.
APPARATUS FOR RECEIVING AND DELIVERING MAIL BAGS.

(No Model.)

(Application filed Dec. 7, 1898.)

4 Sheets—Sheet 1.

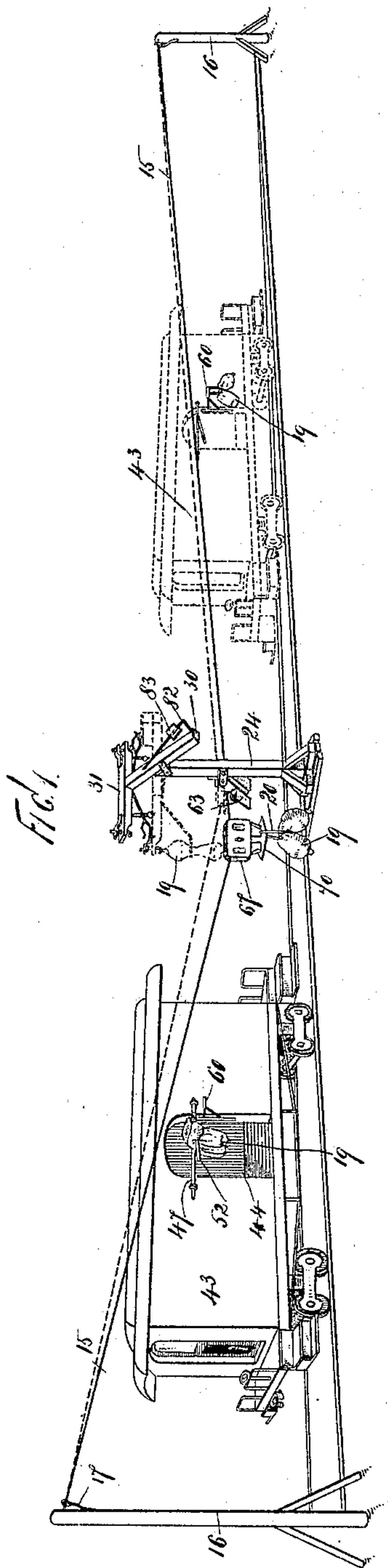


Fig. 1.

Fig. 5.

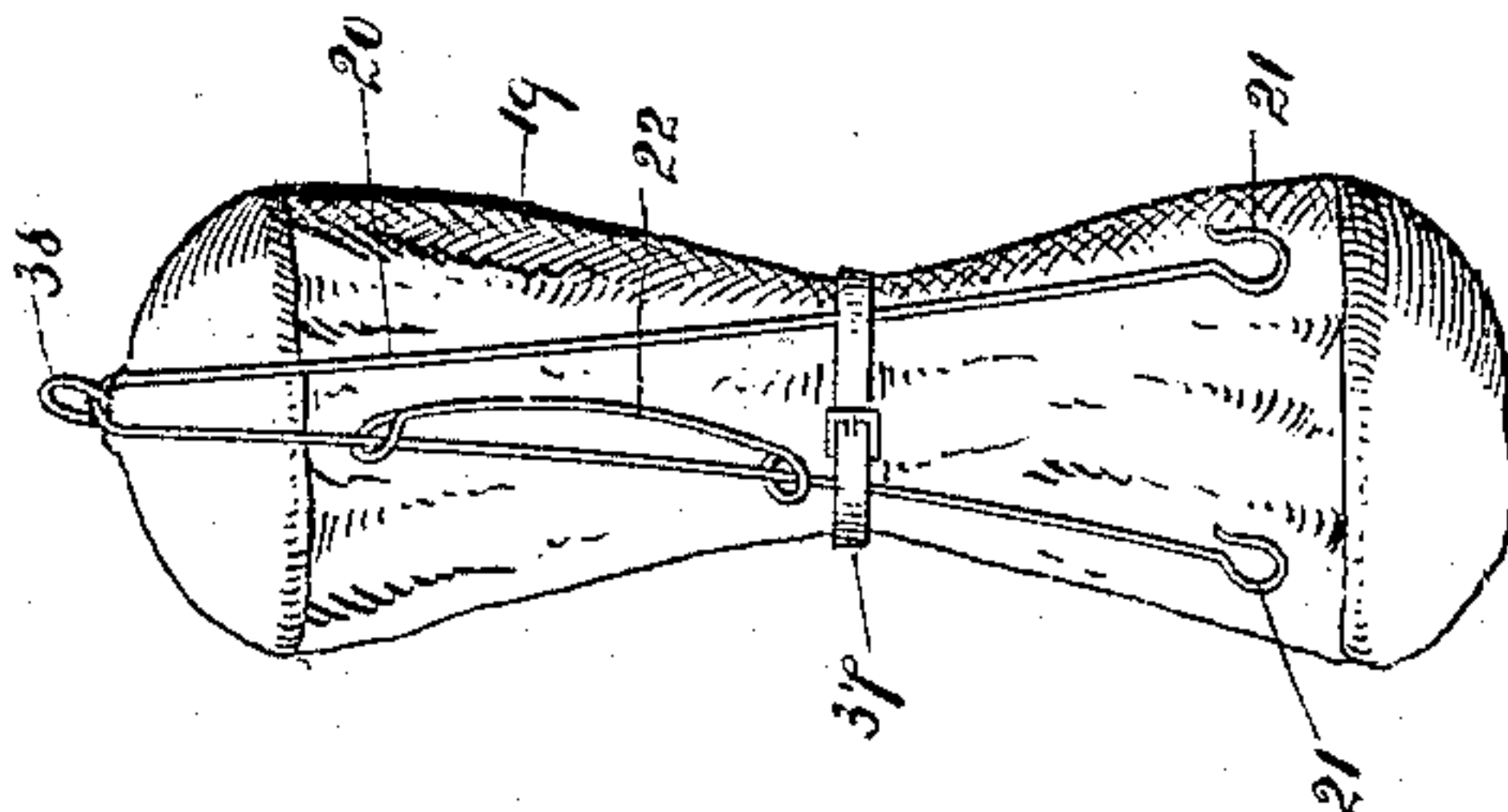


Fig. 4.

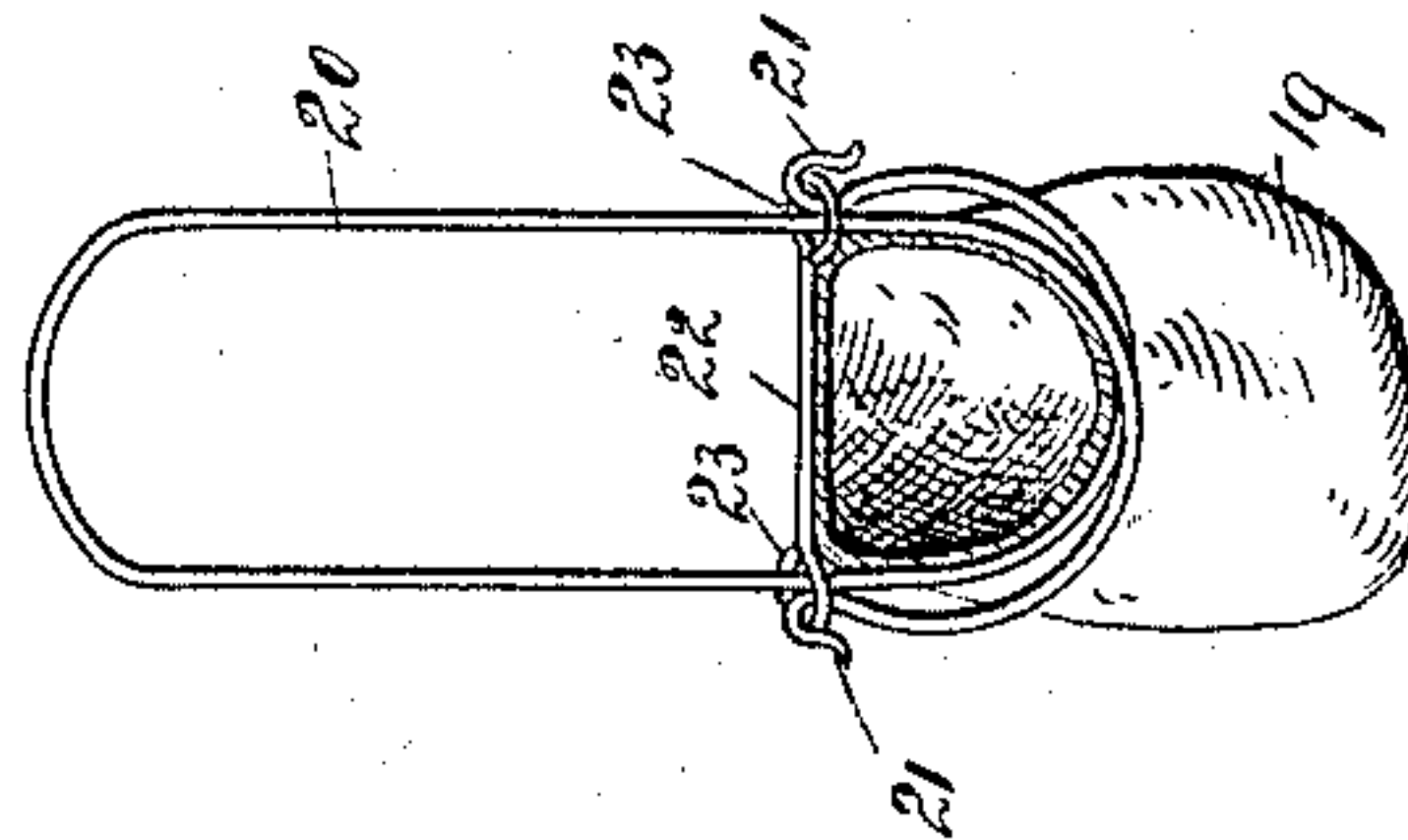


Fig. 3.

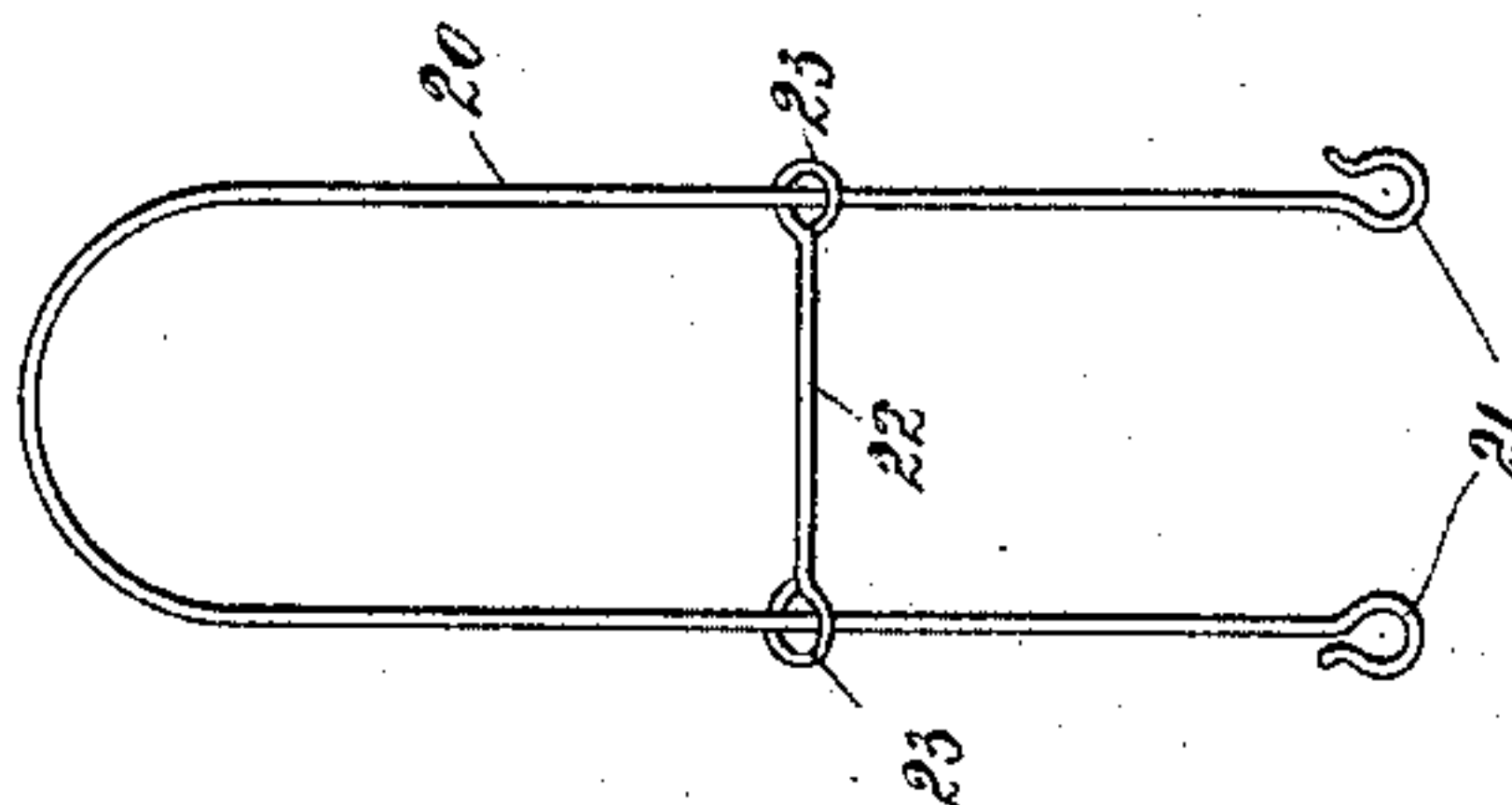
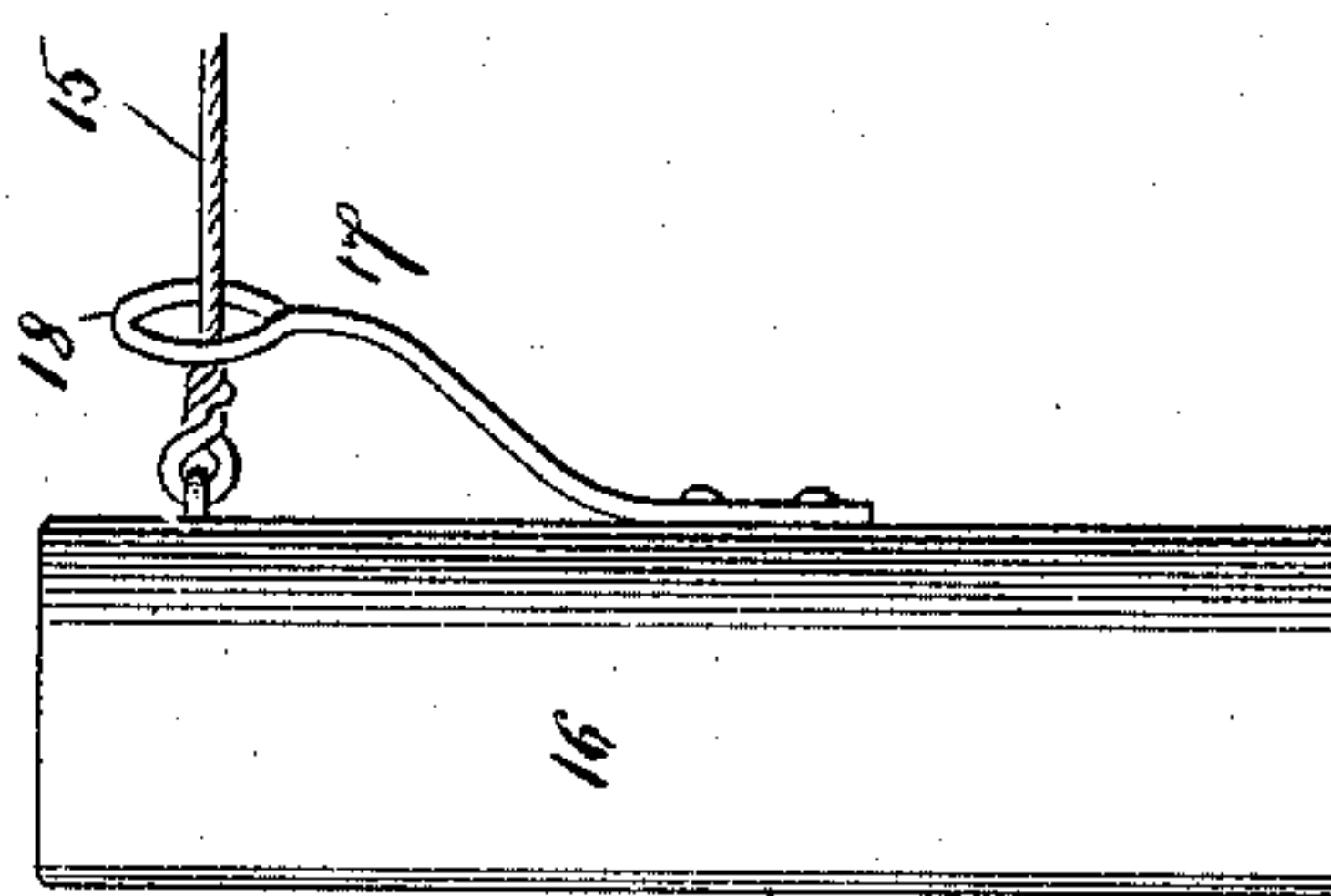


Fig. 2.



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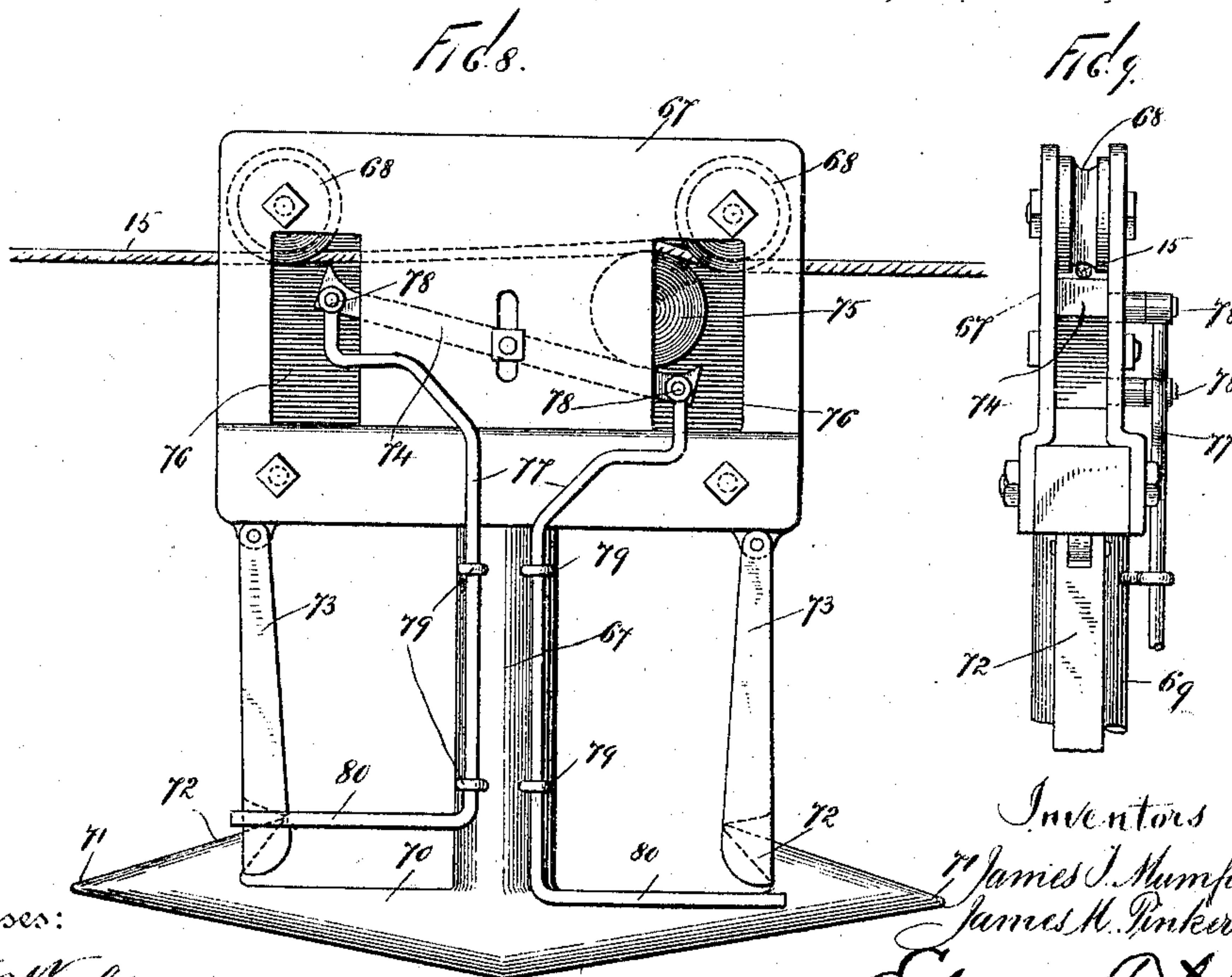
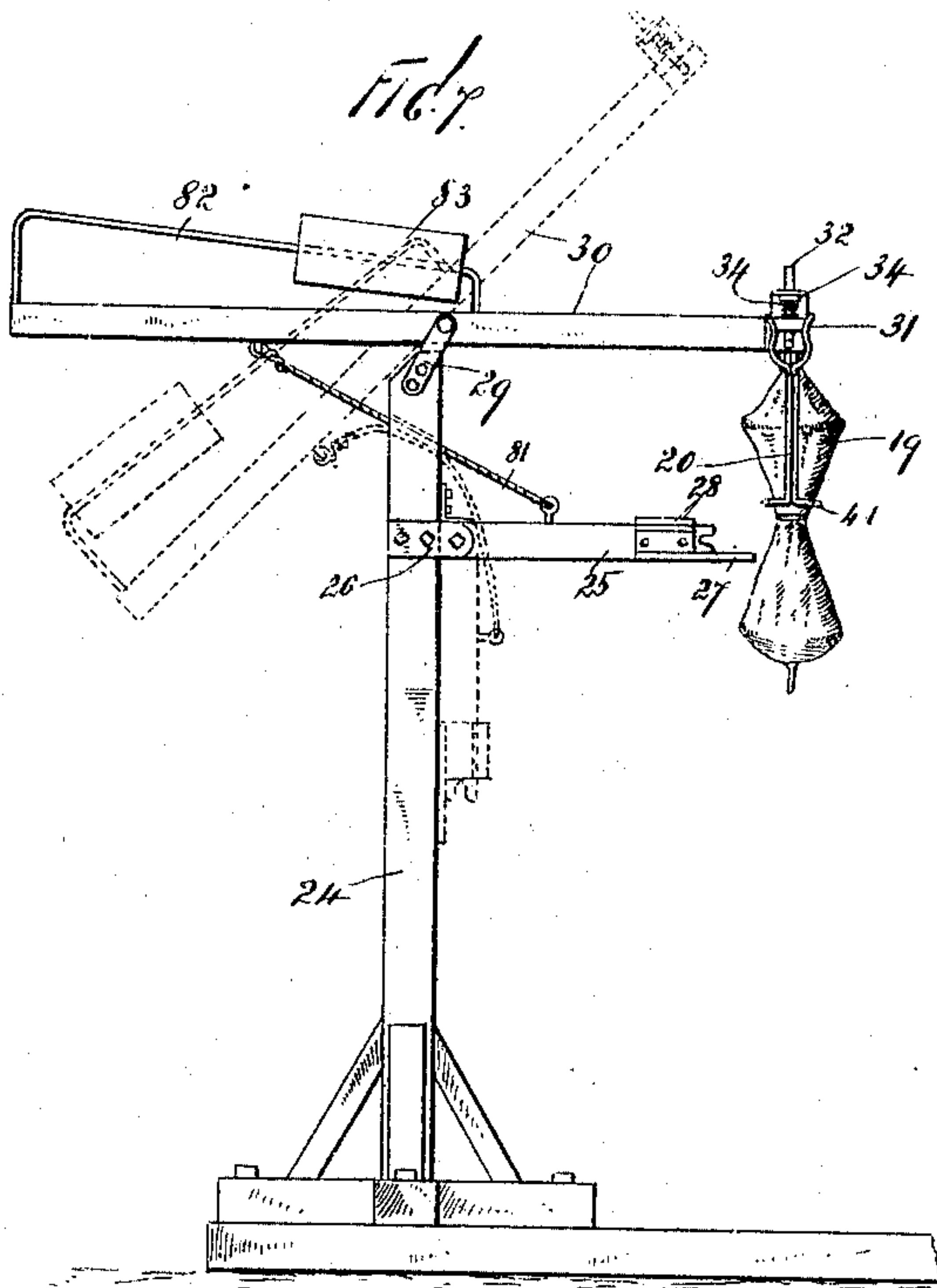
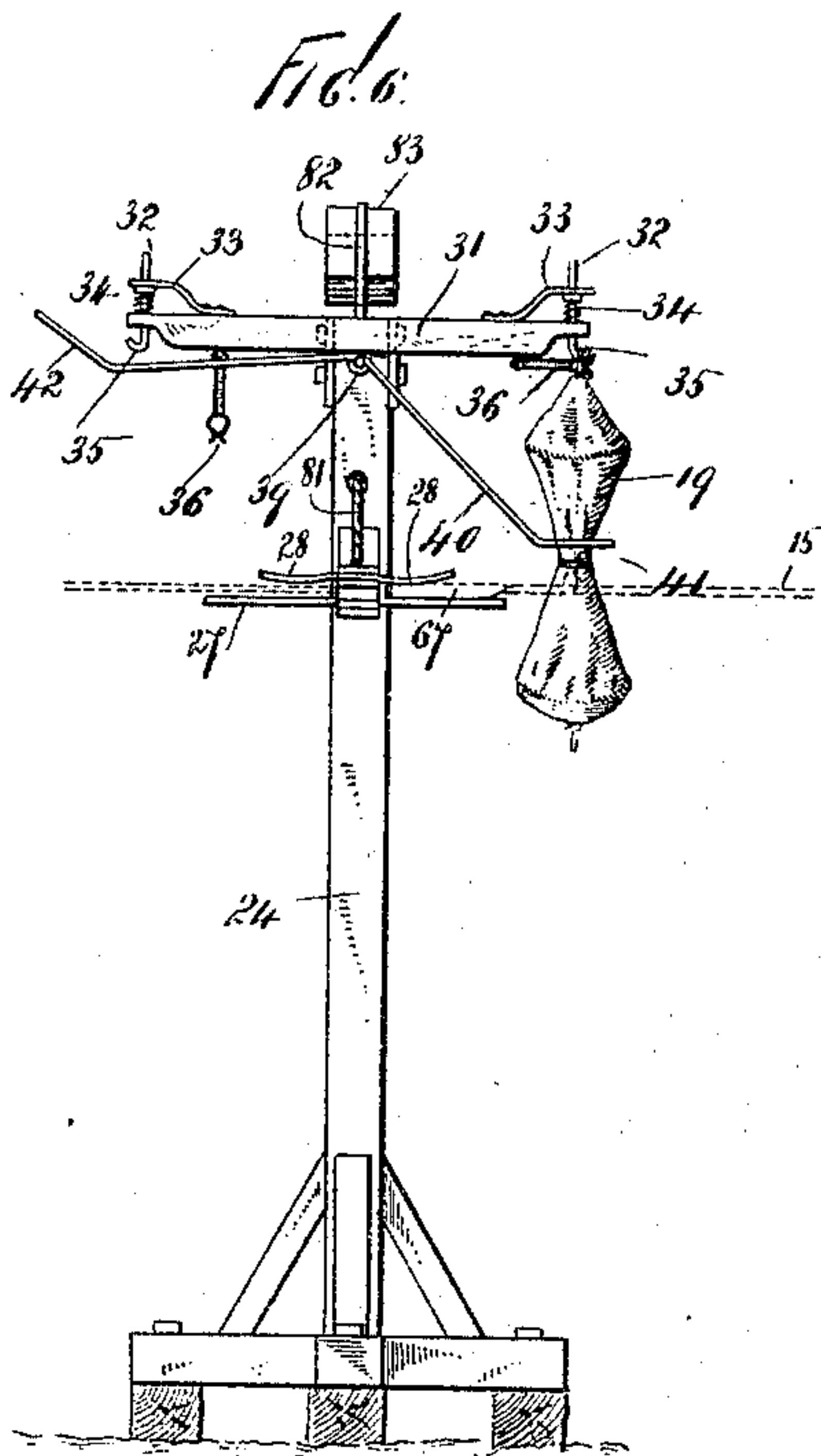
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4 Sheets—Sheet 2.



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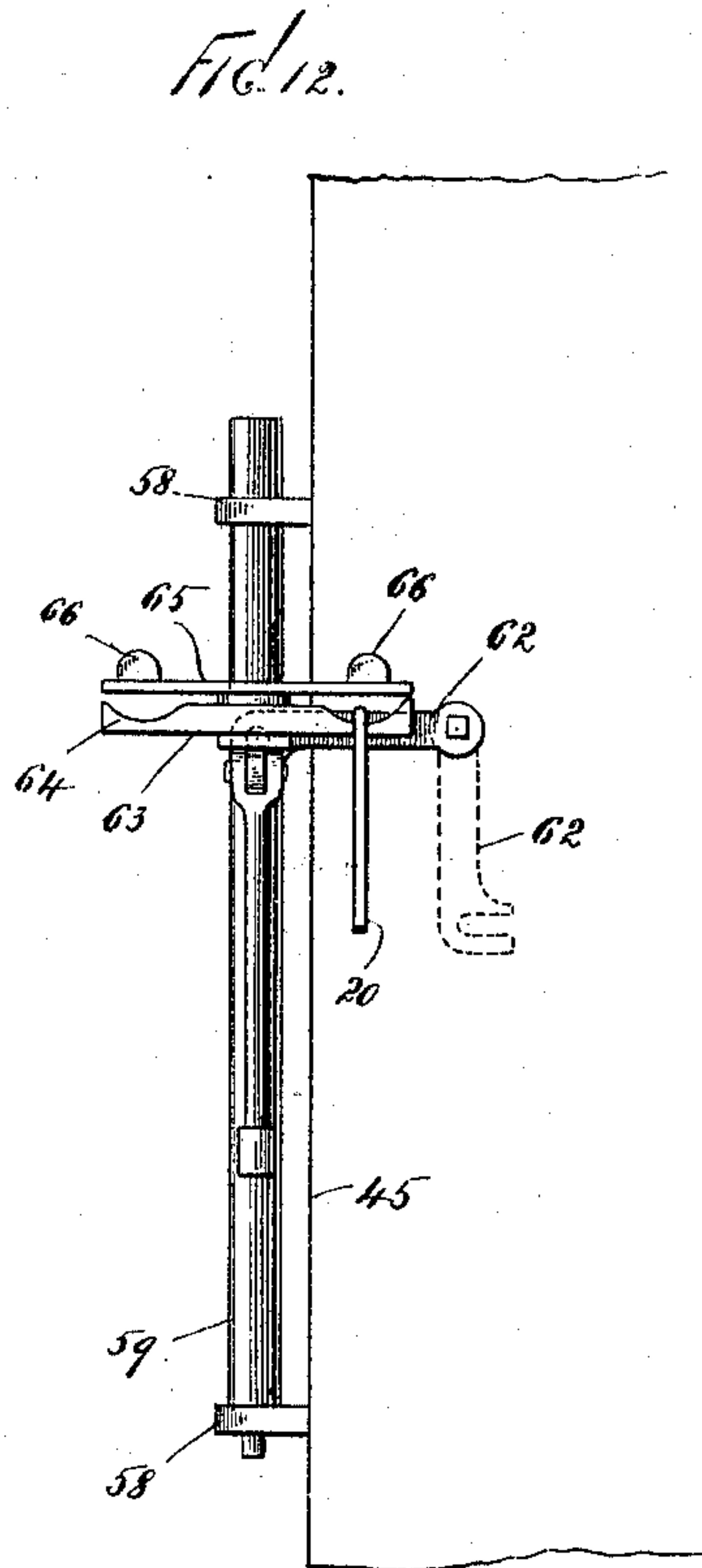
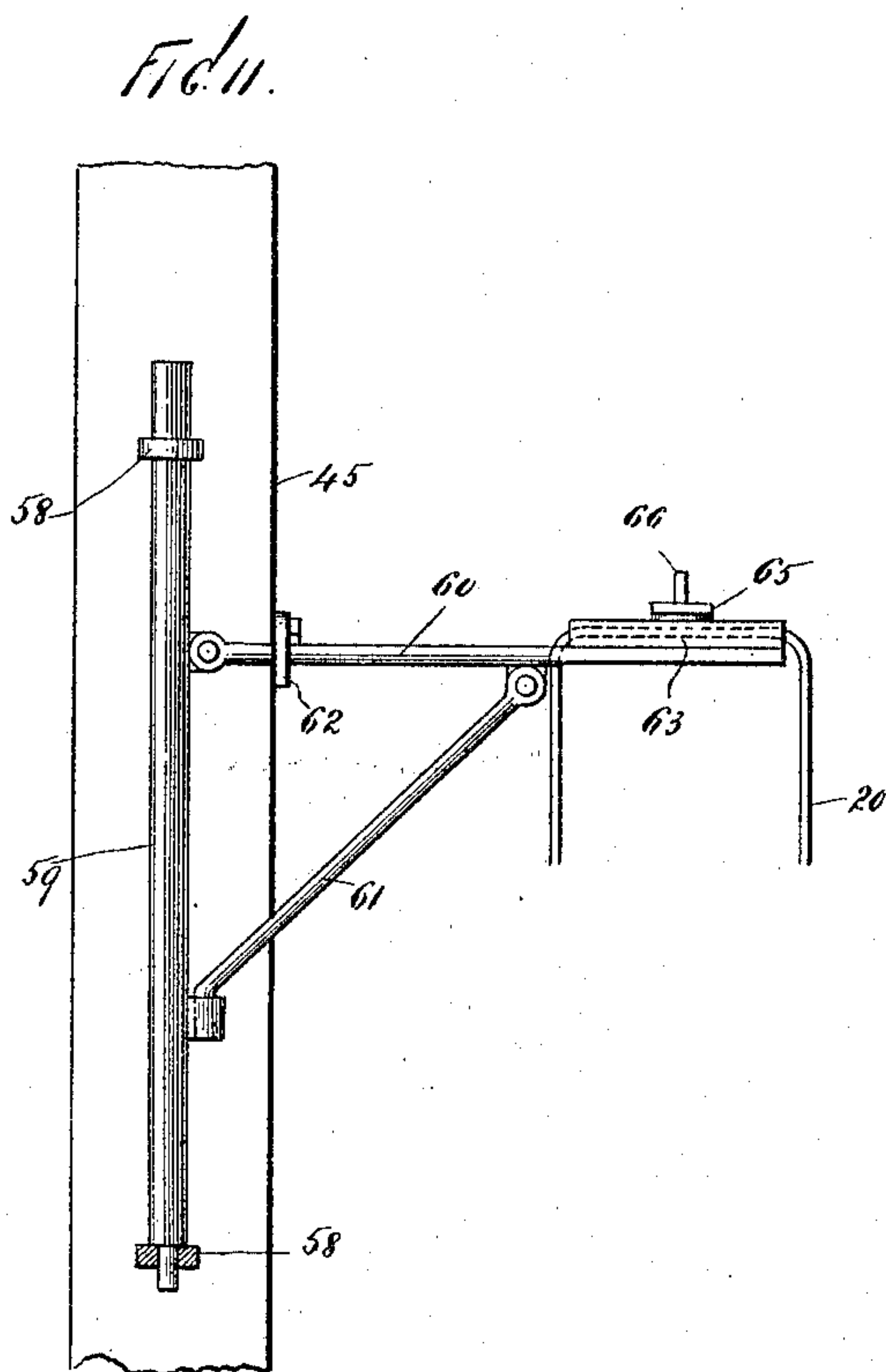
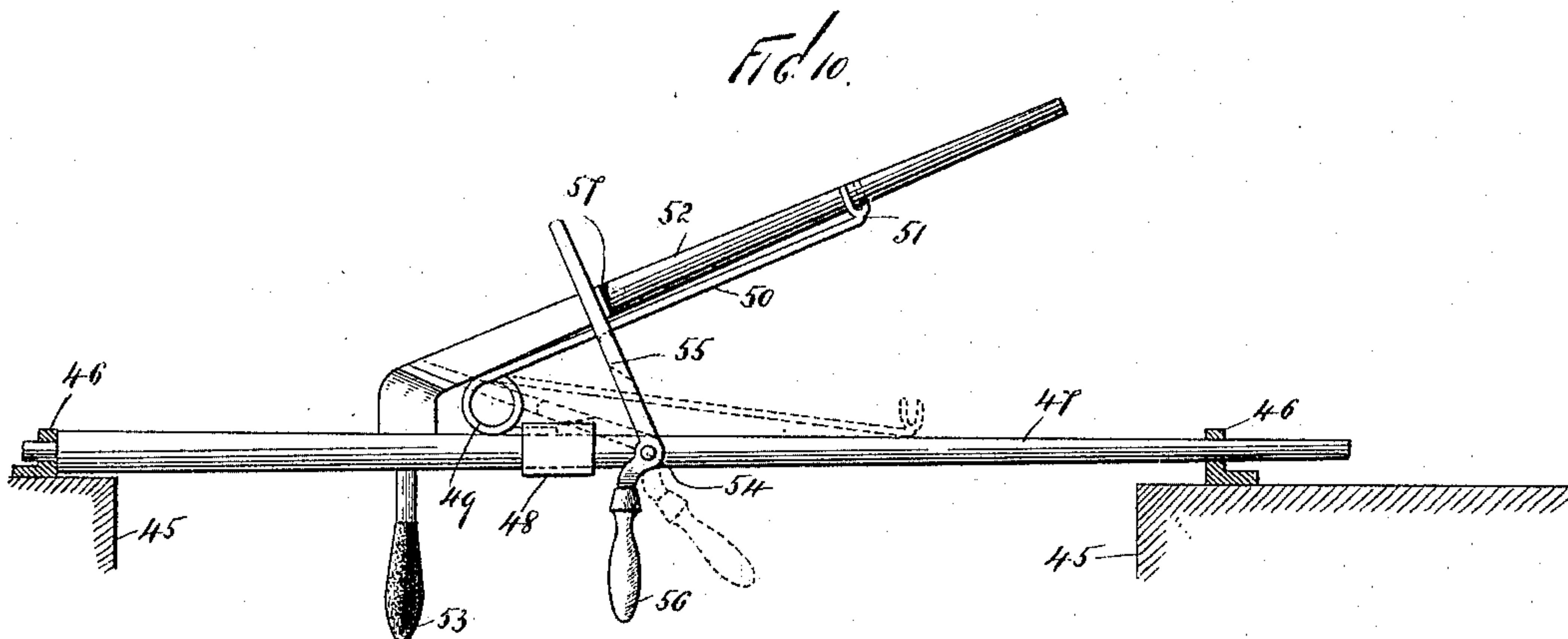
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4 Sheets—Sheet 3.



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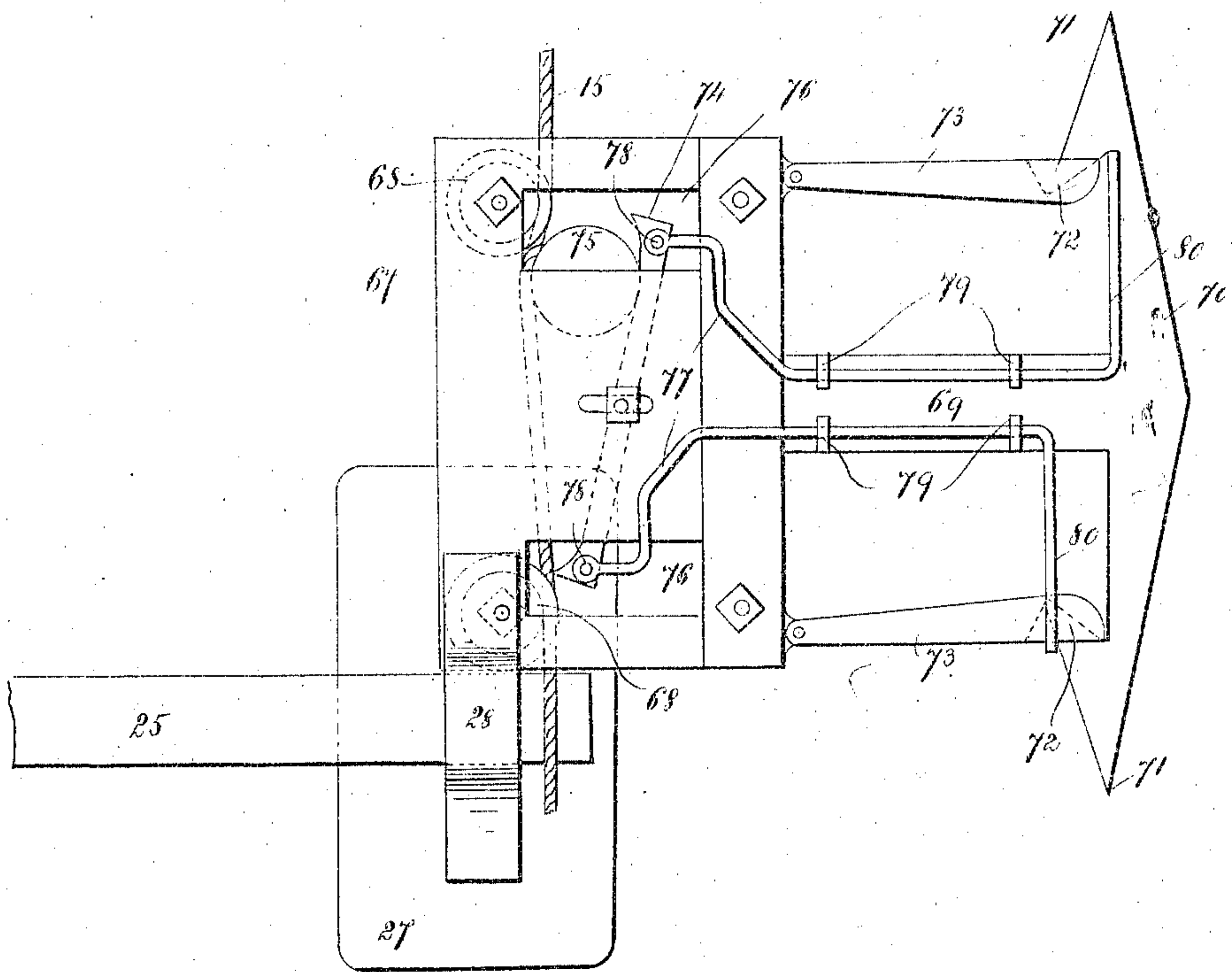
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(No Model.)

4 Sheets—Sheet 4.

FIG. 13.



WITNESSES

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UNITED STATES PATENT OFFICE.

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APPARATUS FOR RECEIVING AND DELIVERING MAIL-BAGS.

SPECIFICATION forming part of Letters Patent No. 638,351, dated December 5, 1899.

Application filed December 7, 1898. Serial No. 698,529. (No model.)

To all whom it may concern:

Be it known that we, JAMES THOMAS MUMFORD and JAMES McDILL PINKERTON, citizens of the United States, residing at Cromwell, in the county of Union and State of Iowa, have invented certain new and useful Improvements in Apparatus for Receiving and Delivering Mail-Bags, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to apparatus for delivering mail-bags from a station to a passing train and also for delivering said bags from a passing train to the station; and the object thereof is to provide an improved apparatus of this class which is simple in construction and operation and by means of which mail-bags may be more safely and conveniently transferred, as described, than has heretofore been possible.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which—

Figure 1 is a diagrammatic view showing our improved apparatus and illustrating the operation thereof. Figs. 2, 3, 4, and 5 are side elevations of details of the construction we employ; Fig. 6, a side view of a standard or crane which we employ for supporting the bag to be delivered to the car or train and the device or devices which receive the bag from the train; Fig. 7, a view of said standard or crane at right angles to that of Fig. 6; Fig. 8, a side view of the device which receives the bag from the train; Fig. 9 an edge view thereof; Fig. 10, a plan view of the device attached to the sides of the door of a car for receiving the bag from the standard or crane; Fig. 11, a face view of one side of the door and showing the means whereby the bag is delivered from the car to the standard or crane; Fig. 12, a view at right angles to Fig. 11; and Fig. 13 is a plan view, on an enlarged scale, of details of the construction.

In the drawings, forming part of this specification, the separate parts of our improvement are designated by the same numerals of reference in each of the views, and in the practice of our invention, reference being made to Fig. 1, we provide a cable 15, which

is supported parallel with and adjacent to a railway-track by standards 16, it being understood that the standards 16 and cable 15 are arranged adjacent to a railway-station from which mail is delivered and at which mail is received, and both of the standards 16 are provided with a spring-arm 17, having at its upper end an eye or ring 18, through which the cable 15 passes and the operation of which will be hereinafter described.

We have also shown in Figs. 4 and 5 a mail-bag 19, and as a part of the apparatus which we employ we have shown in Figs. 3 to 5, inclusive, a yoke-shaped attachment 20 for the mail-bag 19, which is composed of wire or rod and the ends of the sides of which are provided with open hooks 21, and mounted on said sides of the yoke-shaped attachment 20 and adapted to slide thereon is a cross-rod 22, having eyes or rings 23 at its opposite ends, through which the sides of the yoke-shaped attachment pass, and the operation of this device will be hereinafter described.

In Figs. 6 and 7 we have shown the standard or crane, which is placed midway of the cable 15 and which is intended to support or hold a mail-bag to be delivered to the train and which is also provided with means for receiving a bag from the train, and this standard or crane consists of an upright 24, provided with an arm 25, which is pivotally connected therewith or with suitable brackets at 26 and at a predetermined distance below the top thereof or a little below the center of a mail-bag when suspended therefrom, and said arm is provided at its outer or free end with a cross-plate 27, which projects laterally, as shown in Figs. 6 and 13, and secured to the end of said arm above said cross-plate and projecting in each direction laterally of the arm is a spring clamp or clamps 28, which operate in connection with the plate 27, as hereinafter described. The upright 24 is also provided at the top thereof with a laterally-projecting support 29, in which is pivoted a lever 30, one end of which is provided with a cross-arm 31, through each end of which passes a pin 32, and said pins also pass through angular bracket-arms 33, secured to the top of the cross-arm 31, and between the ends of the cross-arm 31 and the bracket-

arms 33 are springs 34, which operate to force the pins 32 upwardly, and said pins are each provided at their lower ends with hooks 35, and pivoted to the under side of the cross-arm 31 adjacent to each end is a clamp 36 to prevent the bag from coming off of the hooks before being caught by the train, and said cross-arm 31 is adapted to hold a bag for delivery to the train.

In connecting or suspending the bag 19 from the cross-arm 31 the yoke-shaped attachment 20 is connected with the bag, as shown in Fig. 5, the end of the bag being inserted therein and said attachment being secured to said bag by a central strap 37, and the cross-bar 22 is turned until it is held on one side of said attachment. A link or ring 38 is then connected with said attachment and the bag is suspended from one of the hooks 35 by means of said link or ring. A spring rod or lever is pivoted centrally of the bottom of the cross-arm 31 at 39, and one arm 40 thereof projects downwardly and is provided at its end with a fork 41, in which the central portion of the bag hangs, and the other arm of said lever projects outwardly beneath the cross-arm 31, as shown at 42, and this lever operates normally to hold the bag in the position shown in Figs. 6 and 7.

The object of providing the cross-arm 31 with an attachment for the bag at each end, as shown in Fig. 6, is to accommodate the apparatus to trains moving in both directions; and having now described the means for supporting the bag adjacent to the track to be delivered to the train we will now describe the devices which are connected with the mail-car and adapted to receive the bag from the support or crane.

In Fig. 1 we have shown at 43 a mail-car having a door 44, and the sides of this door are shown at 45 in Fig. 10, and mounted transversely of said door in brackets 46, secured to the inner side of the frame thereof, is a rod 47, on which is mounted a sliding sleeve 48, to which is secured a spring 49, having an angular extension 50, the end of which is provided with a yoke 51, and secured to the rod 47 is an angular arm 52, against which the extension 50 of the spring 49 normally bears. The rod 47 is provided with a handle 53, by which it may be brought into position for catching the mail-bag at the station, and pivoted to said rod at 54 is a yoke 55, having a downwardly-directed handle 56, and the yoke 55 straddles the arm 52 and bears on a shoulder 57 formed thereon, and the object of the yoke 55 is to hold the extension 50 of the spring 49 in the position shown in full lines in Fig. 10.

Fig. 10 is a plan view of the device above described, and the arm 52 when in position for use projects at an angle from the car, as shown, and as the car moves along the track the mail-bag, suspended as shown in Figs. 6 and 7, passes between the arm 52 and the rod 47 and the pivoted yoke 51 is forced back-

wardly thereby into the position shown in dotted lines in Fig. 10, the extension 50 of the spring 49 is released and springs into the position shown in dotted lines in said figure, and the mail-bag is grasped and held between the extension 50 of the spring 49 and the rod 47, as shown at the left of Fig. 1.

The car 43 (shown in Fig. 1) is supposed to be moving toward the left; and having fully described the means for delivering a mail-bag to the car we will now describe the means for delivering the bag from the train to the station. For this purpose we secure to the face of one side of the door of the car brackets 58, in which is mounted a vertical shaft 59, provided with a horizontal arm 60, the outer end of which is braced or supported by a rod 61, and the arm 60 and shaft 59 are free to swing in the brackets 58, and pivoted to the side of the car is a catch 62, which is adapted to hold the arm 60 in a projected position, as shown in Fig. 11. The arm 60 is provided at its outer end with a cross-head 63, having in each end a notch or recess 64, and secured to said arm above said cross-head is a spring 65, the ends of which project over said notches or recesses, and each end of said spring 65 is preferably provided with an upwardly-directed projection 66.

In suspending a mail-bag from the cross-head 63 the yoke-shaped attachment is employed, as shown in Fig. 4. The mail-bag is folded in the middle and the ends of the yoke-shaped attachment 20 are passed around the bag and connected with the eyes or rings 23 at the end of the cross-rod 22 by means of the hooks 21 at the ends of the sides thereof, as shown in Fig. 4, and the yoke-shaped attachment is then suspended from one end of the cross-head 63, as clearly shown in Figs. 11 and 12, and the object of providing the cross-head 63 with means for suspending the bag at each end is to adapt the apparatus for use in connection with trains moving in both directions.

A portion of the apparatus for receiving the bag from the car is connected with the support or crane hereinbefore described, and this portion of the apparatus is clearly shown in Figs. 8, 9, and 13, and consists of a flat casing 67, mounted on the cable 15 and in which are mounted two friction-rollers 68, which are placed adjacent to the outer corners of said casing, and the casing 67 is adapted to be suspended by and to move on the cable 15, and said casing is provided at one side with a central extension 69, provided with a cross-head 70, the ends of which are pointed as shown at 71, and each end of said cross-head is provided with a backwardly or inwardly directed barb 72, and pivotally connected with or suspended from the ends of the casing 67 are arms 73, into the ends of which the barb 72 projects, as clearly shown in Fig. 8. Pivoted in the casing 67 is a lever 74, between which and the cable 15 is placed a movable friction-roller 75, and the casing

67 is provided in one side with transverse openings 76, and angular rods 77 are pivotally connected with the opposite ends of the lever 74 by means of projecting pins 78, secured to the ends of said lever and projecting through the openings 76 in the casing 67. The rods 77 are passed through keepers 79, secured to the side of the extension 69 of the casing 67, and said rods 77 are provided at the ends thereof opposite the lever 74 with angular extensions 80, which project outwardly in the direction of the points 71 of the cross-head 70. The casing 67 is adapted to be connected with the support or crane shown in Figs. 6, 7, and 13 and to receive the bag from the car, said bag being suspended from the arm 60 or the cross-head 63 thereof, as hereinbefore described and as shown in Figs. 11 and 12. For this purpose the casing 67 is inserted between the plate 27 and one of the spring-arms 28 of the support or crane, and the cross-head 70 projects toward the car, and as the car passes the support or crane one of the points 71 of the cross-head 70 passes through the yoke-shaped device 20, by which the bag is suspended, which is caught on one end of said cross-head. At the same time the casing 67 is detached from the support or crane, as shown in Fig. 1, and the bag is held on said cross-head by one of the barbs or prongs 72, and as the weight of the bag drops onto the adjacent extension 80 of the corresponding rod 77 the lever 74 is operated and the movable roller 75 moves along said lever, and said roller operating in connection with the friction-rollers 68 prevents the casing 67 from being forced along the cable 15, it being understood that the momentum given the bag by the car would, unless means were provided to prevent it, force the casing 67 along the cable 15 to a considerable extent and possibly to the adjacent standard or support 16.

The method of connecting the casing 67 with the arm 25 is best shown in Fig. 13, and said casing may be inserted between the plate 27 and the spring clamp or clamps 28 on either side of the arm 25, according to the direction in which the train is moving.

The object of the spring-arm 17, which is secured to both of the standards 16, is to prevent the casing 67 from striking said standards if at any time the impetus given to said casing would be sufficient to carry it thereto, and it will be observed that the casing 67, which constitutes the device for receiving the bag from the car, is also made to operate in either direction, the opposite sides thereof being similar in form and construction. It will also be observed that the end of the lever 30, which forms a part of the standard or crane opposite the cross-arm 31, is connected with the arm 25 by a wire rope or chain 81, and the said end of the lever 30 is provided with an inclined rod or support 82, which extends from the outer end thereof inwardly past the pivotal support of said

lever, and mounted on said inclined rod or support is a weight 83, which is adapted to slide thereon, the object of this construction being to provide means to swing the lever 30 into a substantially upright position after the bag 19 has been detached therefrom, as hereinbefore described. The position of the rod or support 82 and the sliding weight 83 thereon is such that the lever 30 will be held in a horizontal position, as shown in full lines in Fig. 7, when the bag is connected therewith, regardless of the weight of said bag; but when said bag is detached the weight 83 will operate to force said lever into the position shown in dotted lines or substantially into an upright position, the arm 25 being at the same time forced downwardly by the weight of the mail-bag despatched from the car, and it will also be observed that when the lower arm drops the chain 81 raises the upper lever into an upright position and that when the lever 30 is in a horizontal position the arm 25 will also be in a horizontal position.

One of the chief advantages of this invention consists in the fact that a bag may be delivered from the support or crane to the moving train or car and from the moving train or car to the support or crane at the same time.

In Fig. 1 the car 43 at the right is provided with a mail-bag ready to be delivered, said car and said bag being shown in dotted lines, while said car shown in full lines at the left has delivered said bag to that part of the apparatus designated by the reference-numeral 67, which has been detached from the support or crane thereby, and the car has also received the bag from the support or crane.

It will thus be seen that we accomplish the object of our invention by means of devices simple in construction and operation and well adapted to accomplish the result for which they are intended. It will also be apparent that many changes in and modifications of the construction herein described may be made without departing from the spirit of our invention or sacrificing its advantages, and we reserve the right to make all such alterations therein as fairly come within the scope of the invention.

Having fully described our invention, we claim as new and desire to secure by Letters Patent—

1. An apparatus for delivering mail to and receiving mail from a moving train, comprising a support or crane, a cable supported parallel with the track, and between the same and said support or crane, a friction device mounted on said cable and adapted to be detachably connected with said support or crane and provided with devices for receiving a bag from the train, devices for suspending said bag from a car so as to be received by said friction device, devices for suspending a bag from the support or crane, and devices connected with a car for receiving said bag, substantially as shown and described.

2. An apparatus for delivering mail to and

receiving mail from a moving train, comprising a support or crane, a cable supported between the track and the support or crane, a friction device mounted on said cable and adapted to move thereon and to be detachably connected with said support or crane, said friction device being provided with means for receiving a bag from a car, and devices for detachably suspending a bag from said support or crane, and devices connected with a car for receiving said last-named bag, said car being also provided with devices for supporting a bag to be received by said friction device, substantially as shown and described.

3. In an apparatus for the purpose described, a crane or support which is mounted adjacent to a railway-track, a cable supported adjacent to said crane or support and between the same and the track, a lever which forms a part of the crane or support and which is provided at one end with a cross-arm, and spring-operated devices for suspending a bag from either end thereof, said crane or support being also provided with a pivoted arm which is in operative connection with said lever, and a friction device which is mounted on said cable and adapted to be detachably connected with said arm, said friction device being provided with means for receiving a bag from a moving train, and said train being provided with means for supporting said bag and for receiving a bag from the cross-arm of said lever, substantially as shown and described.

4. In an apparatus for the purpose described, a crane or support, comprising an upright, a lever pivotally connected therewith and provided at one end with a cross-arm, and at the opposite end with an adjustable weight, said cross-arm being provided with means for detachably suspending a bag from either end thereof, and an arm pivotally connected with said upright, and in operative connection with said lever whereby said arm is pivotally swung when said lever is actuated, and means for detachably suspending a bag from said arm, substantially as shown and described.

5. In an apparatus for the purpose described, a crane or support mounted adjacent to a railway-track, a cable supported parallel with the track and between the same and the crane or support, a friction device mounted on said cable and adapted to move thereon, and provided with a brake, said friction device being adapted to receive a bag from a moving train, and being also adapted to be detachably connected with said crane or support, substantially as shown and described.

6. In an apparatus for the purpose described, a crane or support mounted adjacent to a railway-track, a cable supported parallel with the track and between the same and the crane or support, a friction device mounted on said cable and adapted to move thereon, and provided with a brake, said friction device being adapted to receive a bag from a moving train, and being also adapted to be

detachably connected with said crane or support, and said crane or support being also provided with means for detachably suspending a bag to be delivered to the train, substantially as shown and described.

7. In an apparatus of the class described, a crane or support provided with a pivoted arm, a cable supported adjacent to said crane or support, a friction device through which said cable passes, means for detachably connecting said friction device with said pivoted arm, a cross-head connected with said friction device and adapted to receive a mail-bag from a moving train, and a brake which operates in connection with said cable and which is adapted to be operated by said bag, substantially as shown and described.

8. In an apparatus of the class described, a crane or support adapted to receive from, and deliver mail-bags to, a moving train, and devices connected with a car adapted to deliver and receive said mail-bags, comprising a rod mounted transversely of the door of the car and provided with an angular arm which projects therefrom, a spring operating in connection with said arm and said rod, a yoke pivotally connected with said rod and operating in connection with said arm and said spring; and an arm connected with the side of the door and adapted to swing horizontally, said arm being provided with a cross-head, and means for suspending a bag from either end thereof, substantially as shown and described.

9. In an apparatus of the class described, the combination with the door of a car, of a rod mounted transversely thereof, an arm connected with said rod and projecting at an angle therefrom, a yoke pivoted to said rod and operating in connection with said arm, a sleeve mounted on said rod, a spring connected therewith and adapted to bear on said rod, said spring being normally held in connection with said arm by said yoke, substantially as shown and described.

10. In an apparatus of the class described, a cable and a friction device mounted thereon, said device consisting of a casing through which said cable passes, friction-rollers mounted in said casing and over which said cable passes, a lever pivoted in said casing, a movable roller mounted between said lever and said cable, rods pivotally connected with the opposite ends of said lever, and devices connected with said casing for receiving a mail-bag from a moving car, said bag being adapted to operate said rods so as to operate said lever, substantially as shown and described.

11. The herein-described attachment for mail-bags, comprising a yoke-shaped device adapted to receive a bag, a sliding cross-bar mounted on the sides thereof and provided at its ends with eyes or rings through which said sides pass, the said sides and said yoke-shaped device being also provided at their ends with hooks, substantially as shown and described.

12. In an apparatus of the class described
a cable mounted longitudinally of and adja-
cent to a railway-track, a mail-bag catcher
slidably suspended thereon, a support adja-
5 cent to the side of the track between the sup-
ports of said cable and with which said catcher
is adapted to be detachably connected, and
devices connected with a car for delivering a
bag to said catcher, substantially as shown
10 and described.

In testimony that we claim the foregoing as
our invention we have signed our names, in
presence of the subscribing witnesses, this
29th day of November, 1898.

JAMES THOMAS MUMFORD.
JAMES MCDILL PINKERTON.

Witnesses:

WILLIAM MARTIN SPARR,
MOSES BRADFORD REED.