

No. 670,348.

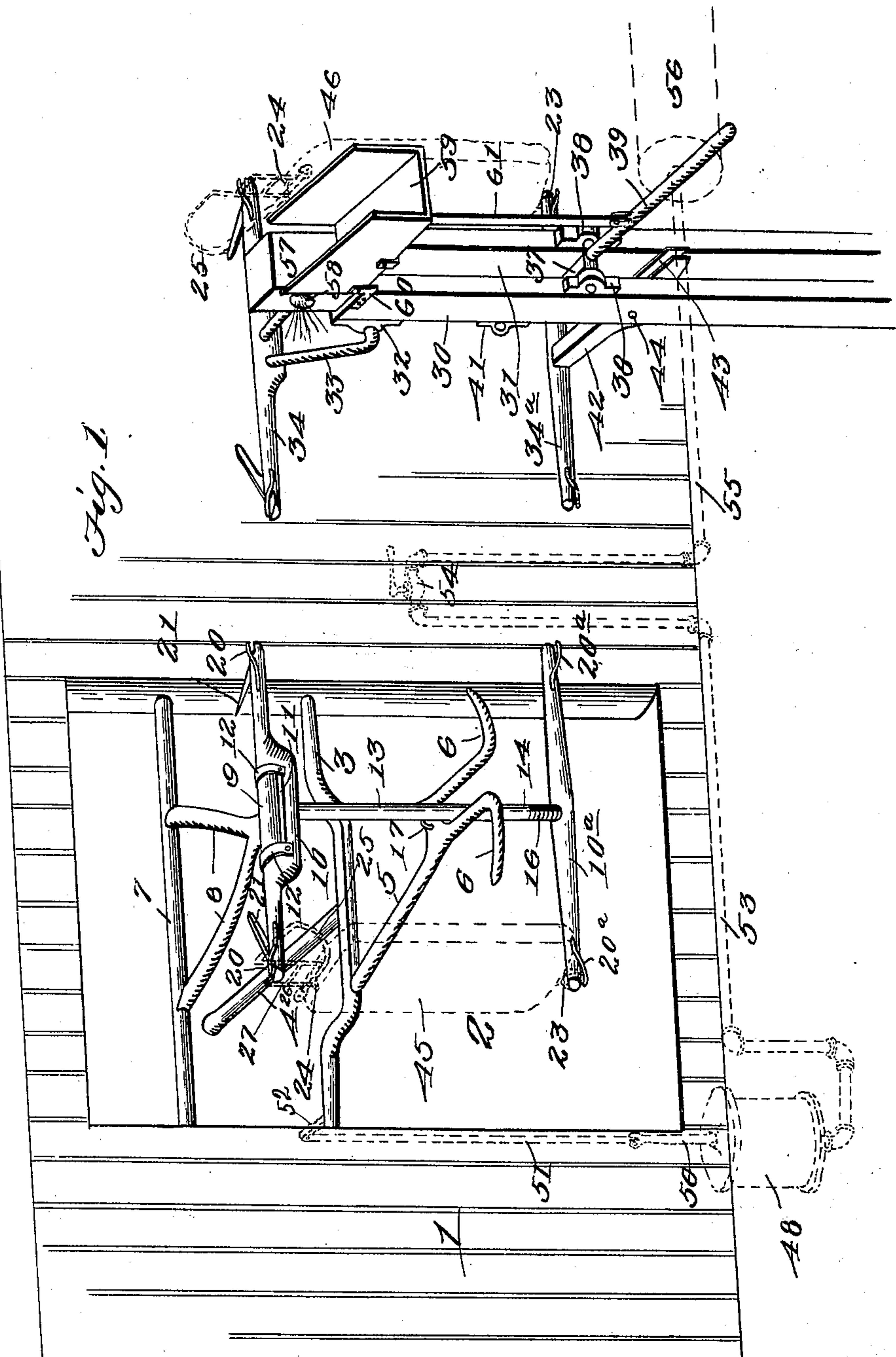
Patented Mar. 19, 1901.

H. N. NORRIS.
MAIL BAG CATCHER.

(Application filed Dec. 3, 1900.)

(No Model.)

2 Sheets—Sheet 1.



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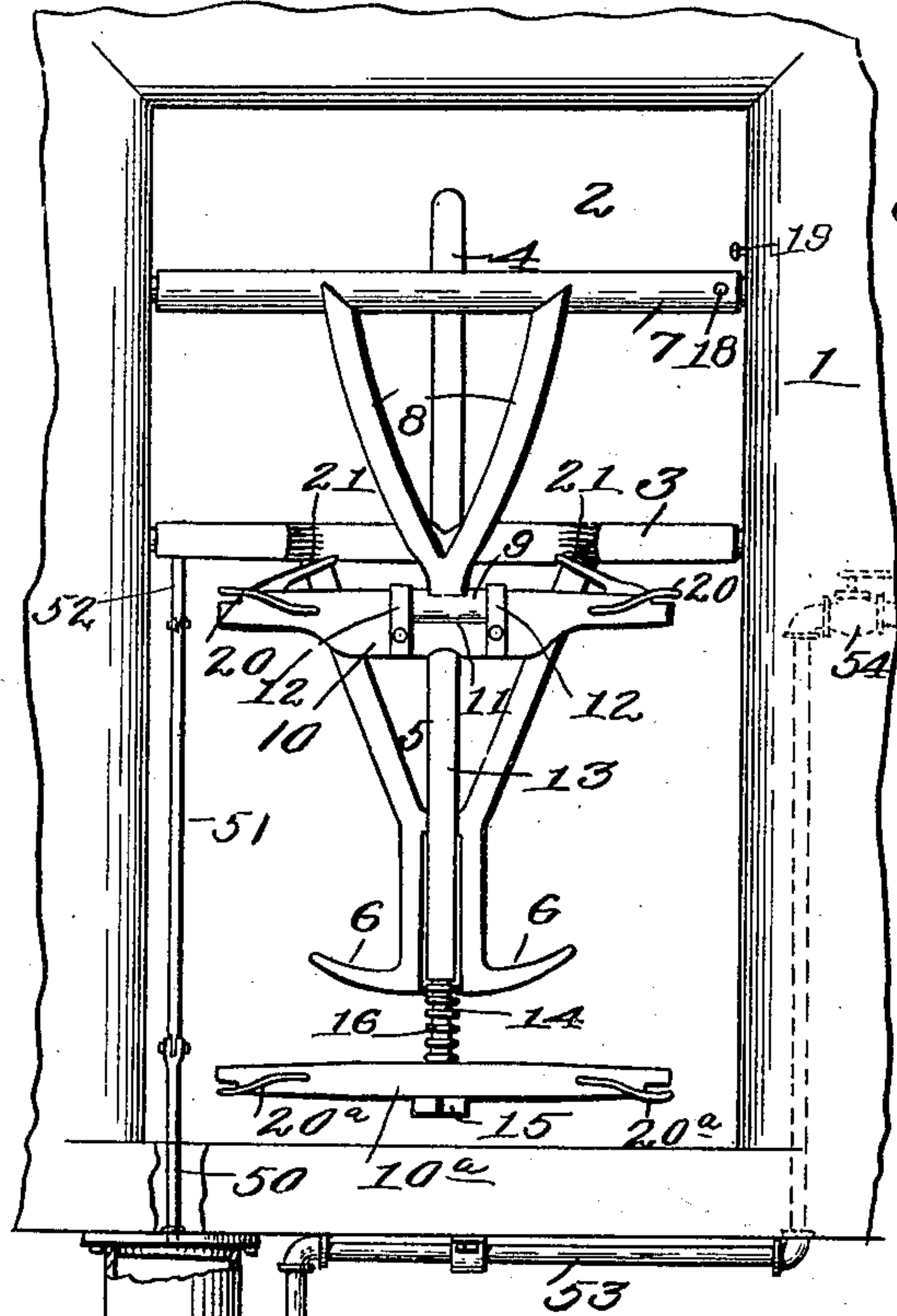


Fig. 2.

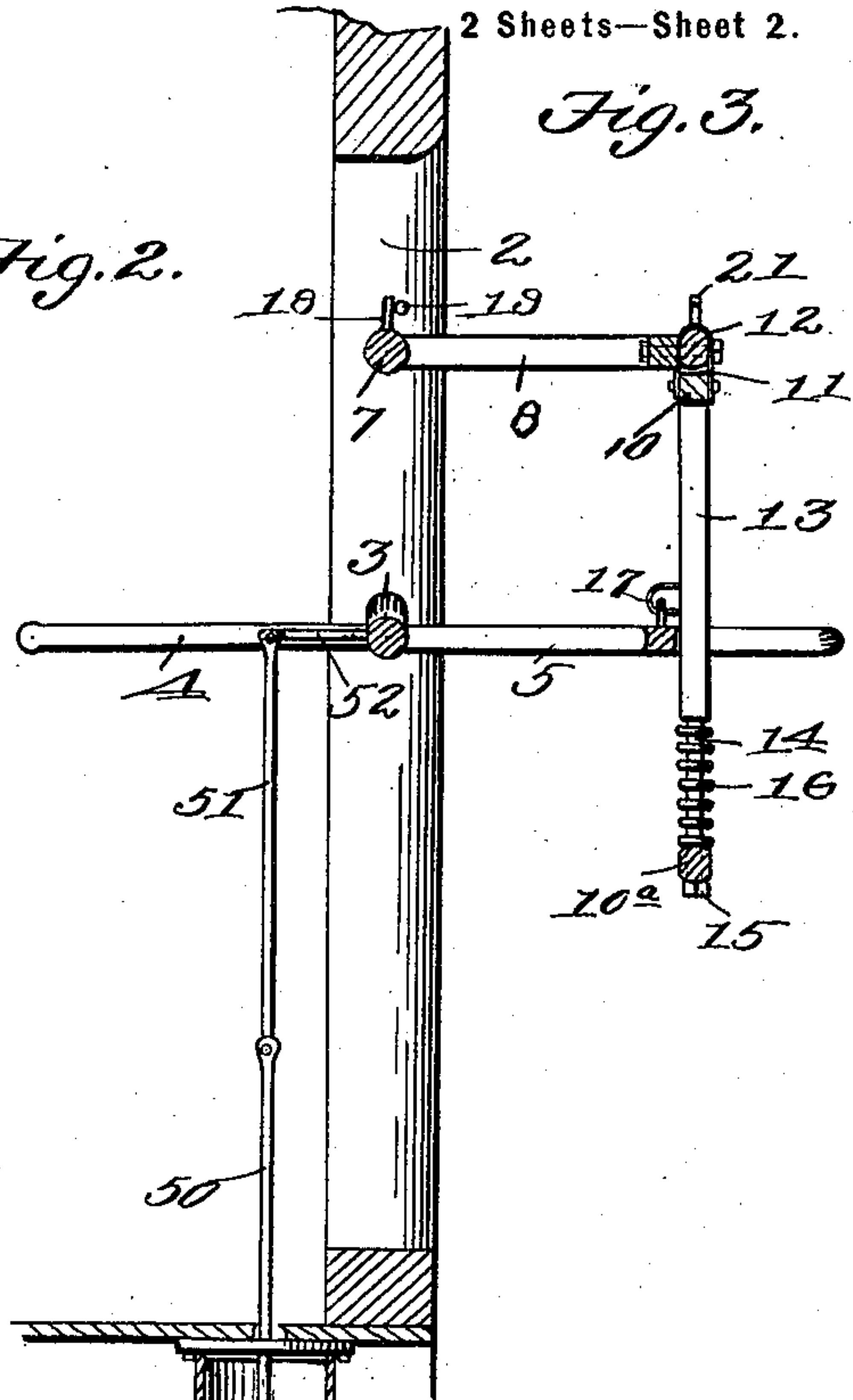


Fig. 3.

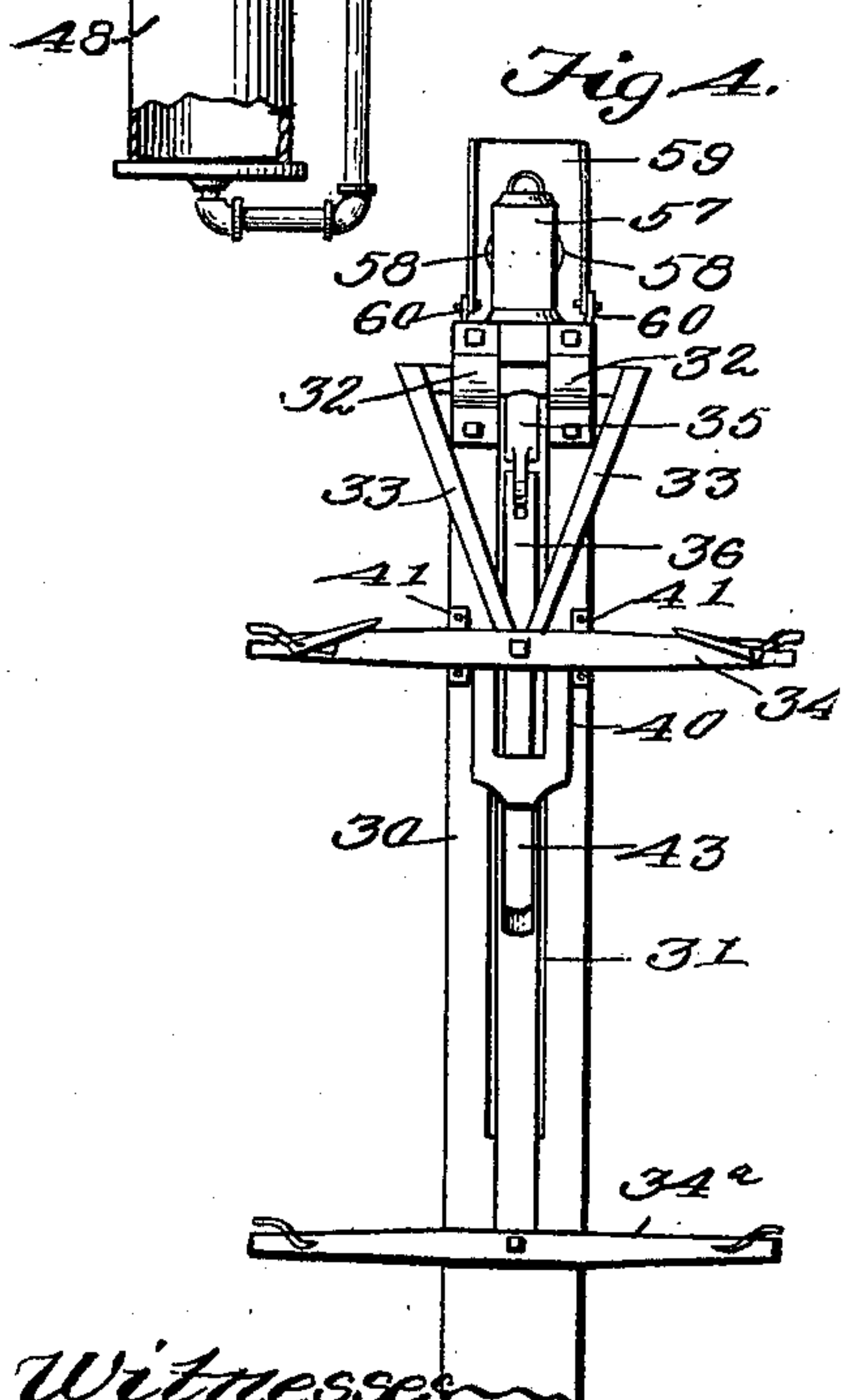


Fig. 4.

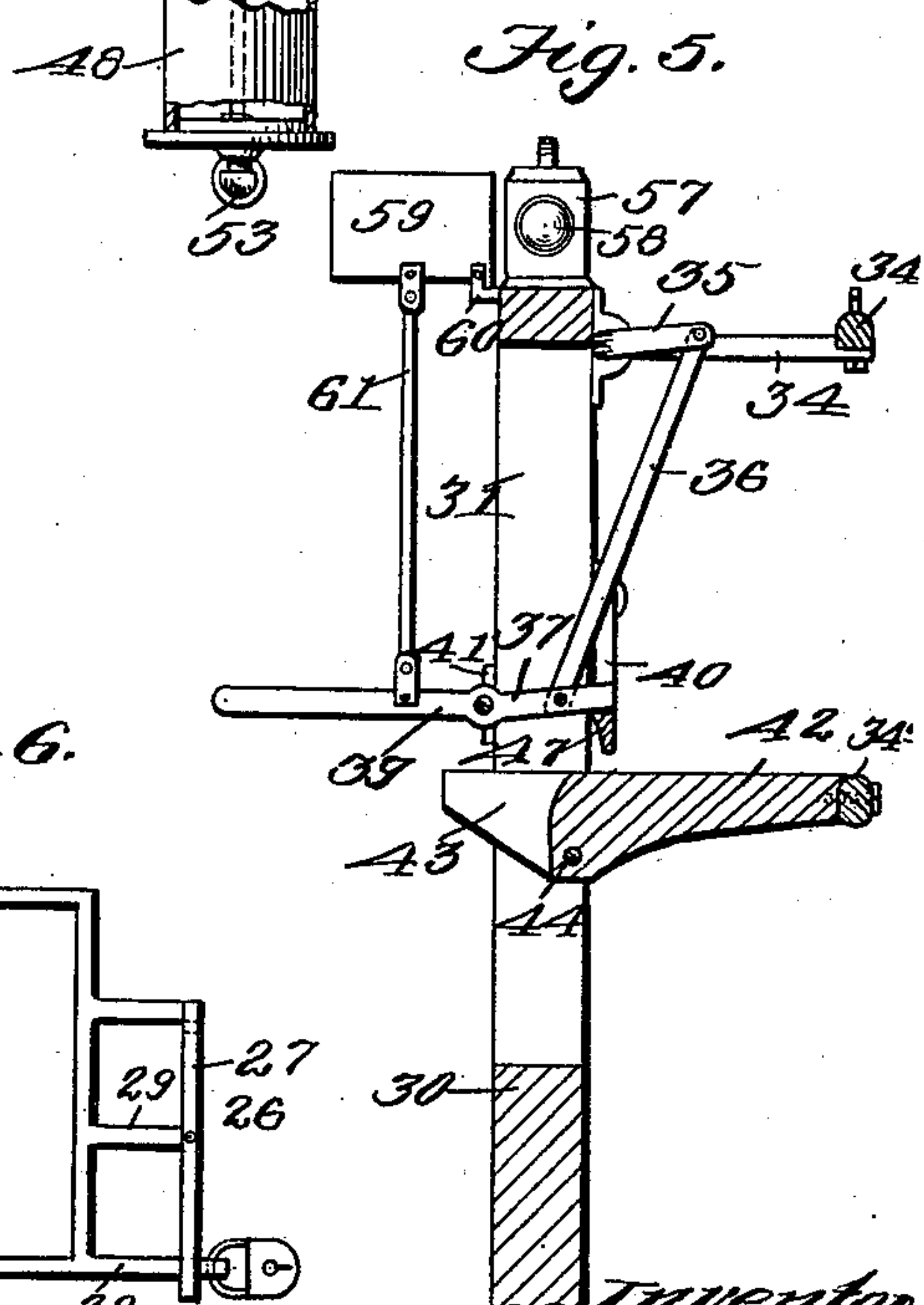
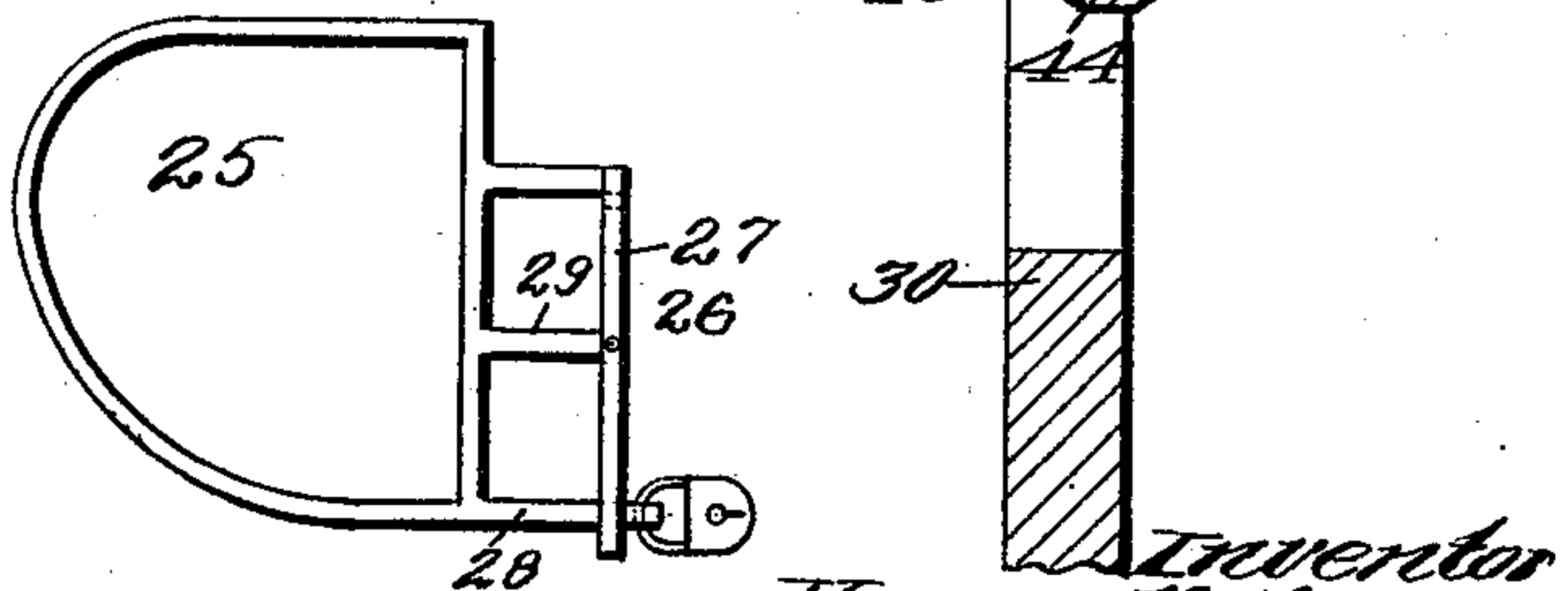


Fig. 5.

Fig. 6.



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UNITED STATES PATENT OFFICE.

HENRY N. NORRIS, OF RIVERTON, KENTUCKY.

MAIL-BAG CATCHER.

SPECIFICATION forming part of Letters Patent No. 670,348, dated March 19, 1901.

Application filed December 3, 1900. Serial No. 38,460. (No model.)

To all whom it may concern:

Be it known that I, HENRY N. NORRIS, a citizen of the United States, residing at Riverton, in the county of Greenup and State of Kentucky, have invented new and useful Improvements in Mail-Bag Catchers, of which the following is a specification.

This invention relates to mail-bag catchers, and has for its object to provide improved mechanism for exchanging mail-bags between a rapidly-moving railway-train and mail-stations along the road—that is to say, to provide improved mechanism by means of which a mail-bag may be safely delivered from the moving train and another mail-bag be simultaneously taken on from the mail-station.

It has for its further object to provide apparatus of the character set forth which will be simple and durable in construction and efficient, safe, and certain in operation.

It also has for its object to provide improved means whereby the apparatus on the mail or baggage car is operated from the train air-brake system; and, finally, it has for its object to provide the mail-station apparatus with an improved lantern signaling device, whereby an approaching train is automatically signaled to prepare for taking aboard mail.

To these ends my invention consists in the features and in the novel construction, combination, and arrangement of parts hereinafter described, and particularly pointed out in the claims following the description, reference being had to the accompanying drawings, forming a part of this specification, wherein—

Figure 1 is a perspective view showing my improved apparatus in operative position. Fig. 2 is a view in front elevation of a portion of a car, showing the apparatus applied thereto and folded down within the doorway. Fig. 3 is a vertical sectional view of the same, showing the apparatus raised up in operative position. Fig. 4 is a view in front elevation of that part of the apparatus erected at the railway-station. Fig. 5 is a vertical sectional view of the same, showing the apparatus raised up in operative position; and Fig. 6 is an enlarged detail view of one of the mail-bag-suspending devices.

Referring to the drawings, the numeral 1

indicates a railway mail or baggage car having the usual doorway 2. Journaled in the opposite sides of the frame of the doorway are the ends of a horizontal shaft 3, provided with a rigid handle or lever 4, and fixed to said shaft and projecting in a direction opposite to the lever 4 is a yoke-frame 5, terminating at its outer or free end in two outwardly-curved and divergent arms 6. Journaled in the opposite sides of the frame of the doorway, above the shaft 3, are the ends of a horizontal shaft 7, to which are fixed two outwardly-extending arms 8, which are joined together at their outer ends and are rigidly fixed in a transverse journal 9.

The numeral 10 indicates a horizontal bar disposed parallel to the car and provided midway between its ends with a recess 11, in which is rotatably fitted the journal 9. Two metallic straps 12 loosely embrace the ends of the journal 9 and are fastened at their ends to the bar 10, said straps operating to hold the journal 9 rotatably to the bar. The bar 10 is provided intermediate its ends with a rigid pendent or vertically-depending rod 13, the lower end 14 of which is slightly reduced and is loosely fitted in a perforation formed intermediate the ends of a horizontal bar 10^a, substantially similar in construction to the bar 10 before referred to. A nut 15 is fixed on the lower end of the pendent rod 13, beneath the bar 10^a, to hold the latter in place, and disposed on the lower reduced end of said rod, above the bar 10^a, is a coiled spring 16, that operates to force said bar downward on the rod for the purpose hereinafter explained. The yoke-frame 5 is disposed parallel to the arms 8, and its divergent forked arms 6 embrace the pendent rod, to which it is flexibly connected by a fastening device 17 of any suitable or preferred construction. It will be evident that normally the arms 8, yoke-frame 5, bars 10 and 10^a, and rod 13 will all be folded up within the doorway or lie in substantially the same vertical plane, said parts being held in such position by gravity, whereby they will be entirely out of the way and no part thereof will project beyond the car. To throw this part of the apparatus into operative position, it is only necessary to draw the lever or handle 4 downward, when the yoke-frame 5, arms 8, and bars 10 and 10^a will be swung up into a

horizontal position and will then be in readiness for operation. A lug 18 is formed on one end of the shaft 7 and is adapted to engage a pin or projection 19, fixed to the adjacent side of the doorway when the parts are thrown up into operative position and operates as a stop to limit the upward swinging movement of said parts. Attached to the sides of the opposite ends of the bar 10 are clasps 20, each comprising a stiff wire or resilient rod bent into substantially V shape, the ends of the clasp embracing the sides of the end of the bar and being securely attached thereto in any suitable manner or by any preferred means, and the end of the clasp pressing upon the upper side of the end of the bar and preferably projecting slightly beyond the same for the purpose hereinafter made apparent. Similar clasps are secured to the under side of the ends of the lower bar 10^a. Attached to or formed on the upper sides of the opposite end portions of the upper bar 10 are rearwardly-inclined barbs or hook-shaped projections 21. By the words "rearwardly inclined" I mean to express the fact that each of said barbs inclines or extends upward in a direction away from the adjacent end of the bar for the purpose to be hereinafter set forth.

The numeral 45 indicates a mail-bag, to the lower end of which is attached a metallic ring 23, and to the upper end thereof is attached a loop or strap 24, to which is adapted to be detachably attached a suspension device constructed as follows: The suspension device consists of a metallic casting comprising a substantially semicircular loop 25, formed on the vertical straight side of which is a rectangular loop 26. The outer side of the rectangular loop consists of a swinging latch-bar 27, pivoted at its upper end and adapted at its other end to swing over the outer end of the bottom 28 of the rectangular loop and be secured thereto by a padlock.

When a mail-bag is to be placed on the arms 10 and 10^a for delivery, the suspension device is connected to the bag by unfastening the latch-bar 27 and passing it through the strap or loop 24 on the upper end of the bag and fastening it in place. The loop 26 is then passed over the rear end of the bar 10 and underneath the clasp 20, and the ring 23 on the lower end of the bar is in like manner arranged on the corresponding end of the bar 10^a. The clasps 20 and 20^a clasp or clamp the loops 26 and 23 to the bars 10 and 10^a and prevent the accidental removal of the bag therefrom. The mail-bag may be conveniently placed on the bars 10 and 10^a while the parts are folded down in their vertical position within the doorway of the car. When the bag is in place on the bars, the coiled spring 16 operates to hold it taut thereon, and said spring, moreover, permits the lower bar 10^a to yield vertically, whereby bags of different lengths may be used in connection with the apparatus. When the bag is in place on

the bars 10 and 10^a, the loop 25 stands vertically and on the outer side of the bar 10 in the proper position to be engaged by the removing device at the station, which is constructed as follows:

The numeral 30 indicates a post or standard supported in a vertical position in any suitable manner alongside the railway-track and longitudinally slotted, as at 31. Fixed to the inner side (or the side next the track) of the post and at the upper end thereof are two bearings 32, in which is journaled a triangular frame 33, which is fixed at its apex or outer end to a horizontal bar 34, constructed in the same manner as the bar 10, before described. Projecting from the base of the triangular frame 33 is a rigid arm 35, to the free end of which is pivoted the upper end of a link 36, the lower end of which is in like manner connected to one end of a lever 37, which projects through the slot 31 of the post and is journaled in bearings 38, fixed to the rear or outer side of said post. The free end of the lever is prolonged or extended to form a handle 39. The bar 34 normally drops down to a vertical position by gravity and is held in a horizontal or operative position after it has been raised by the lever 37 and link 36 by a bail 40, which is journaled at its ends in bearings 41, fixed to the inner side of the post. The bail normally hangs suspended in a vertical position and is arranged to engage or hook under the adjacent free end of the lever 37, and thus hold the bar 34 in its raised position.

The numeral 42 indicates an arm one end of which is disposed in the slot in the post and is adapted to project therethrough, said end of the arm being slotted or forked, as at 43, and is pivoted to the post by a pivot pin or bolt 44. Rigidly fixed to the other end of said arm is a horizontal bar 34^a, corresponding to the arm 10^a, before described. The bar 34^a and arm 42 normally hang in a vertical position by gravity. The slotted end of the arm 42 is so arranged relatively to the locking-bail 40 that when the arm swings down vertically by gravity the slotted end of said arm will engage the end of the locking-bail and swing the latter from beneath and out of engagement with the end of the lever 37, and thus permit the bar 34 to automatically drop down to a vertical position. The arm 42 is slotted, as shown, to permit the end of the arm to sweep past or beneath the end of the lever 37. The mail-bag to be taken up by the train is placed on the bars 34 and 34^a in the same manner as is the bag on the bars 10 and 10^a, excepting that it is placed on the ends of said bars farthest removed from the approaching train.

The operation of my improved apparatus is as follows: The mail-bag 45, to be delivered from the train and left at the station, is placed on the bars 10 and 10^a, while the apparatus is folded down within the doorway of the car, and the mail-bag 46, to be taken up by the

train at the station, is suspended from the bars 34 and 34^a in similar manner, and after it has been placed in position the bar 34 is swung up into horizontal position by the lever 37 and link 36. As the lever 37 is turned on its pivot to raise the bar 34 its end engages a beveled lug 47, formed on and pendent from the lower end of the locking-bail, and thrusts the latter aside until the end of the lever passes above the lower end of the bail, upon which the bail swings back to normal position by gravity and underneath the end of the lever, thus locking the latter and holding the arm 34 horizontal. It is evident that as the bar 34 is raised in the manner described the bar 34^a will also be raised, as the mail-bag connects the two bars. Hence after the bag has been placed in position on the bars it is only necessary to pull down the handle 39 of the lever, when the bars and the bag will be swung up into operative position and the parts will be automatically locked in the manner set forth. As the train approaches the station the bars 10 and 10^a, carrying the bag 45, are swung up into horizontal position by drawing down the handle 4 and are held in such position until the car has passed the station. As the car passes the post 30 the forward end of the bar 10 passes through the loop 25 of the suspension device on the bag 46, and said loop rides up over and behind the barb 21 until the foremost forked arm 6 engages the bag 46 and strips it off from the ends of the bars 34 and 34^a, leaving it suspended from the bar 10. In precisely the same manner the end of the bar 34 passes through the loop 25 of the suspension device on the bag 45, and as the train passes by the bag 45 is left suspended from the bar 34. In this manner the two bags are simultaneously and automatically exchanged. After the exchange has been effected the handle 4 on the car is released, permitting the parts to fold down by gravity within the doorway of the car and the bag 46 is removed. The bar 34 will take up the bag 45 before the bag 46 is stripped from the said bar 34 by the bar 10 and forked arm 6; but as soon as the bag 46 has been stripped from the bars 34 and 34^a the latter will drop or swing down by gravity, and in doing so its upper end will engage the locking-bail and disengage it from the end of the lever 37, thus permitting the bar 34, together with the bag 45, to also swing down to vertical position, thus permitting of the ready removal of the bag and placing the arms out of the way.

It will of course be readily understood without further description that the mail-bags may be exchanged between the car and station irrespective of the direction in which the train is traveling.

In the foregoing description I have referred to the apparatus on the car as being operated by hand, and such may be the case where the train is not equipped with the usual air-brake system. I prefer, however, to operate such apparatus by means of compressed

air derived from such system in the following manner: Attached to the under side of the car, beneath one side of the doorway 2, is an air-cylinder 48, in which is arranged to reciprocate a piston 49, carrying a piston-rod 50, that projects up through the floor of the car. Pivotally connected to the piston-rod is one end of a pitman 51, the other end of which is in turn pivotally connected to an arm 52, fixed on the shaft 3. Leading from the bottom of the cylinder 48 is a pipe 53, which is connected with a valve 54 of well-known construction, arranged in the baggage or mail car, and a pipe 55 connects said valve with the usual air-cylinder 56 beneath the car. When the apparatus is not in operation, the piston 49 stands at the bottom of its cylinder, as shown. When the apparatus is to be thrown into operation, as shown in Fig. 3, however, the valve 54 is turned to admit compressed air from the air-cylinder 56 to the cylinder 48, thereby raising the piston and through the medium of the connected mechanism rocking the shaft 3 on its journals and raising the apparatus up into operative position. When the valve 54 is turned to cut off the connection between the cylinders, it will operate in a usual and well-known manner to "bleed" or exhaust the air from the cylinder 48 and permit the piston to descend.

In order that the mail-clerk on a train traveling at night may know whether or not mail is to be taken aboard the train from a station that is being approached, and consequently whether or not to throw the bag-catching mechanism carried by the car into operative position, I provide the station apparatus with automatic lantern signaling apparatus constructed and operating as follows: On top of the post 31 is arranged a lantern 57, which is preferably provided on opposite sides with "bull's-eyes" 58, that are visible to trains approaching in either direction. These bull's-eyes may be of a distinctive color to give them the proper signification and to distinguish them from other train-signals. Disposed over the lantern is a swinging hood 59, consisting of a rectangular box, open on one side and at its bottom and hinged at one of its lower edges, as at 60, to the top of the post 31. To the hood 59 at a point above the hinged edge thereof is pivotally connected one end of a link 61, the other end of which is pivotally connected to the handle 39 of the lever 37 before referred to. The operation of this part of the device is as follows: When a mail bag is fixed in place on the bars 34 and 34^a and the latter swing up into operative position, the downward movement of the lever 37 in raising the bar 34 to place will through the medium of the link 61 swing the hood 57 about its pivot through an arc of substantially ninety degrees and uncover the lantern, thus disclosing the bull's-eyes to the view of a train approaching in either direction, and thereby giving notice to the mail-clerk to prepare the

bag-catching apparatus on the car for taking on board the bag at the station. When the bag has been caught and removed from the bars 34 and 34^a, the bar 42 drops to a vertical position by gravity and trips the locking-bail 40, thereby releasing the lever 37 and permitting the bar 34 to drop, as heretofore explained. The bar 34 in dropping to place elevates the handle 39, and the latter through the medium of the link 61 swings the hood 59 up to a vertical position, thus covering the signal-lantern and concealing the same from view, thereby giving notice to an approaching train that no mail is to be taken aboard. It will be noted that the signaling apparatus is entirely automatic throughout—that is to say, the signal-lantern is normally concealed from view; but the mere act of throwing the mail-bag up into position to be caught by a passing train automatically uncovers the lantern and exhibits the signal, and when the mail-bag is removed by the catcher on the car the lantern is automatically covered and concealed. Such arrangement not only saves the station-attendant time, labor, and trouble, but also prevents any mistake being made in the display of the signal, as the latter is controlled absolutely by the bag-supporting mechanism.

30 Having described my invention, what I claim is—

1. A mail-bag-catching device comprising two horizontal bars arranged one above the other and carried by swinging supports pivotally attached to the side of a car whereby said bars and their supports may be folded down into a vertical position, said bars at their opposite ends being provided with spring-clasps arranged to clasp loops on the ends of a mail-bag, and the upper bar being provided at its opposite ends and on its upper sides with rearwardly or inwardly inclined barbs, in combination with means arranged alongside the track for suspending a bag in the path of said arms, substantially as described.

2. A mail-bag-catching device, comprising two horizontal shafts journaled at their opposite ends in the sides of a car-doorway one above the other and means for rocking one of them, of laterally-projecting supports fixed on said shafts, a horizontal bar pivotally mounted on the free end of the uppermost of said supports parallel to the side of the car, a vertical rod pendent from the said bar and having mounted on its lower arm a horizontal bar parallel with the first-named bar, and a flexible connection between said rod and the lowermost support, substantially as described.

3. A mail-bag-catching device comprising two horizontal shafts journaled at their opposite ends in the sides of a car-doorway one above the other and means for rocking one of them, of laterally-projecting supports fixed on said shafts, the lowermost of which terminates in two forked divergent arms, a horizontal bar journaled intermediate its ends on

the end of the uppermost of said supports parallel with the side of the car, a vertical rod pendent from said bar and having mounted on its lower end a corresponding horizontal bar, said rod being embraced between the said forked arms and loosely connected therewith, and means for detachably connecting the opposite ends of a mail-bag to either of the two corresponding ends of said bars, substantially as described.

4. A mail-bag-catching device comprising two horizontal shafts journaled at their opposite ends in the sides of a car-doorway one above the other and means for rocking one of them, of laterally-projecting supports fixed on said shafts, the lowermost of which terminates in two forked divergent arms, a horizontal bar journaled intermediate its ends on the end of the uppermost of said supports parallel to the side of the car, a vertical rod pendent from said bar and having movably mounted on its lower end a horizontal bar parallel with the first-named bar, a spring on said rod for forcing the bar downward, a stop for limiting the downward movement of the bar, said rod being embraced by said forked arms and loosely connected thereto, and means for detachably connecting the opposite ends of a mail-bag to either of the two corresponding ends of said bars, substantially as described.

5. A mail-bag-catching device, comprising a post arranged beside the track, a swinging support pivoted to the upper portion of said post and provided at its free end with a horizontal bar disposed parallel to the track, means for raising said support to a horizontal position, an arm pivoted to the post below the support and provided with a horizontal arm disposed parallel to the track, locking mechanism for holding the support in its raised position, means for detachably connecting the opposite ends of a mail-bag to either of the two corresponding ends of said bars, and means operated by the downward movement of the said arm for disengaging the locking mechanism and permit the support to swing down to a vertical position, substantially as described.

6. A mail-bag-catching device, comprising a post arranged beside the track, a swinging support pivoted to the upper portion of said post and provided at its free end with a horizontal bar disposed parallel to the track, a link pivotally connected at one end with said support, a lever pivoted intermediate its ends to the post and near one end of the link, a pivoted bail adapted to engage the end of said lever to hold the support in its raised position, an arm pivoted to the post beneath the support and having fixed to one end a horizontal bar disposed parallel to the bar carried by the support, and means for detachably connecting the opposite ends of a mail-bag to either of the two corresponding ends of said bars, said arm when the mail-bag is removed dropping by gravity and disengaging the bail

from the lever to permit the support and its bar to drop to a vertical position, substantially as described.

7. A mail-bag-catching device, comprising
5 a post arranged beside the track, a swinging support pivoted to the upper portion of said post and provided at its free end with a horizontal bar disposed parallel to the track, a link pivotally connected at one end with said
10 support, a lever pivoted intermediate its ends to the post and near one end to the link, a pivoted bail adapted to engage the end of said lever to hold the support elevated, a beveled lug on the free end of the bail arranged to be
15 engaged by the end of the lever when the latter is raised to elevate the support whereby the bail is swung to one side out of the path of the end of the lever and drops back by gravity to engage and hold the latter, an arm
20 pivoted to the post beneath the support and having fixed to one end a horizontal bar disposed parallel to the bar carried by the support, and means for detachably connecting the opposite ends of a mail-bag to either of
25 the two corresponding ends of the said bars, one end of said arm, when the mail-bag is removed, operating to engage the bail and release it from engagement with the lever to permit the support and its bar to drop to a
30 vertical position, substantially as described.

8. The combination with a mail-bag-catching device, of a bag-suspending device, comprising a semicircular loop, a rectangular loop formed on the straight side of the semicircular loop, and a pivoted latch-bar operating to
35 close the lower end of the rectangular loop, substantially as described and for the purpose specified.

9. A mail-bag-catching device comprising
40 two horizontal bars arranged one above the other and carried by swinging supports pivotally connected to the side of the car whereby said bars and their supports may be folded down into a vertical position, said bars
45 at their opposite ends being provided with spring-clasps arranged to clasp loops on the ends of a mail-bag, and the upper bar being provided at its opposite ends and on its upper sides with rearwardly or inwardly inclined barbs, and a compressed-air motor for
50 raising said bars at will, substantially as described.

10. A mail-bag-catching device comprising two horizontal shafts journaled at their opposite ends in the sides of a car-doorway one
55 above the other, of laterally-projecting supports fixed on said shafts, a horizontal bar pivotally mounted on the free end of the uppermost of said supports parallel to the side of the car, a vertical rod pendent from the
60 said bar and having mounted on its lower arm a horizontal bar parallel with the first-named bar, a flexible connection between said rod and the lowermost support, and a compressed-air motor arranged to rock one of
65 said shafts and raise said bars at will, substantially as described.

11. In a device of the character described, the combination with a lantern-support and mechanism for holding a mail-bag suspended
70 in position to be caught by a passing train, of a hood hinged at its lower end to the lantern-support and arranged to swing over and from off a lantern held by said support, and means automatically operated by the bag-sus-
75 pending mechanism for swinging said hood or cover from over the signal to display the latter when the bag is suspended in position and to move said hood over and conceal said
80 lantern from view in both directions when the bag is removed, substantially as described.

12. In a device of the character described, the combination with an upright support and with mechanism affixed thereto for suspending a mail-bag in position to be caught by a
85 passing train, of a pivoted lever for actuating said mechanism, a lantern arranged on said support, a hinged hood arranged to be swung over and from off said lantern, and a link connecting said hood and lever, the ar-
90 rangement being such that when the lever is swung in one direction to suspend the bag in position the link will swing the hood from off the lantern, and when the lever is swung in the other direction on the removal of the bag
95 the hood will be thrown over the lantern, substantially as described.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

HENRY N. NORRIS.

Witnesses:

WILLIAM H. KOUNS,
JAMES M. WILSON.