No. 614,756. Patented Nov. 22, 1898.

G. E. PERKINS.

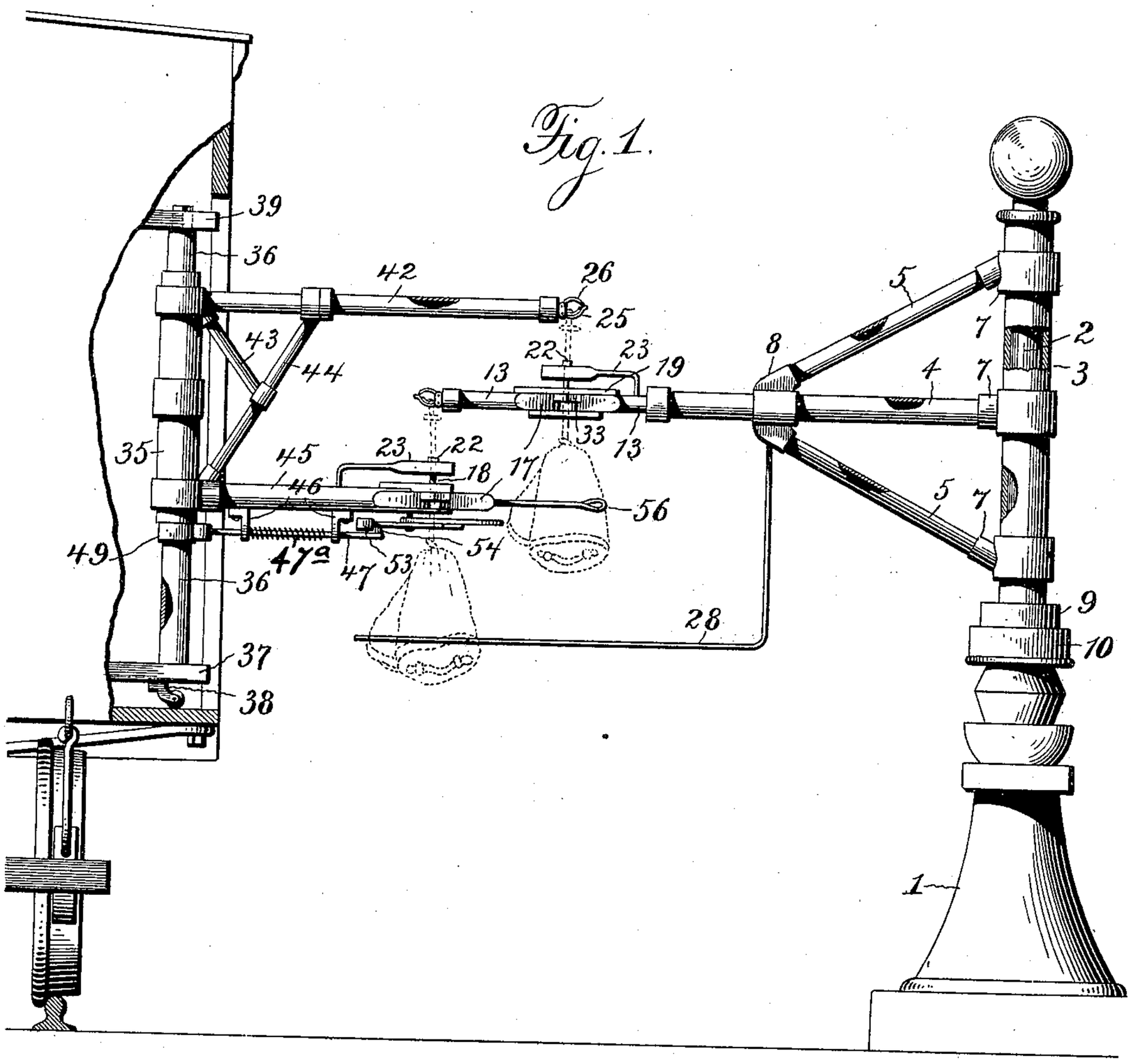
MAIL BAG CATCHER AND DELIVERER.

(Application filed May 25, 1897.)

(No Model.)

3 Sheets—Sheet 1.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

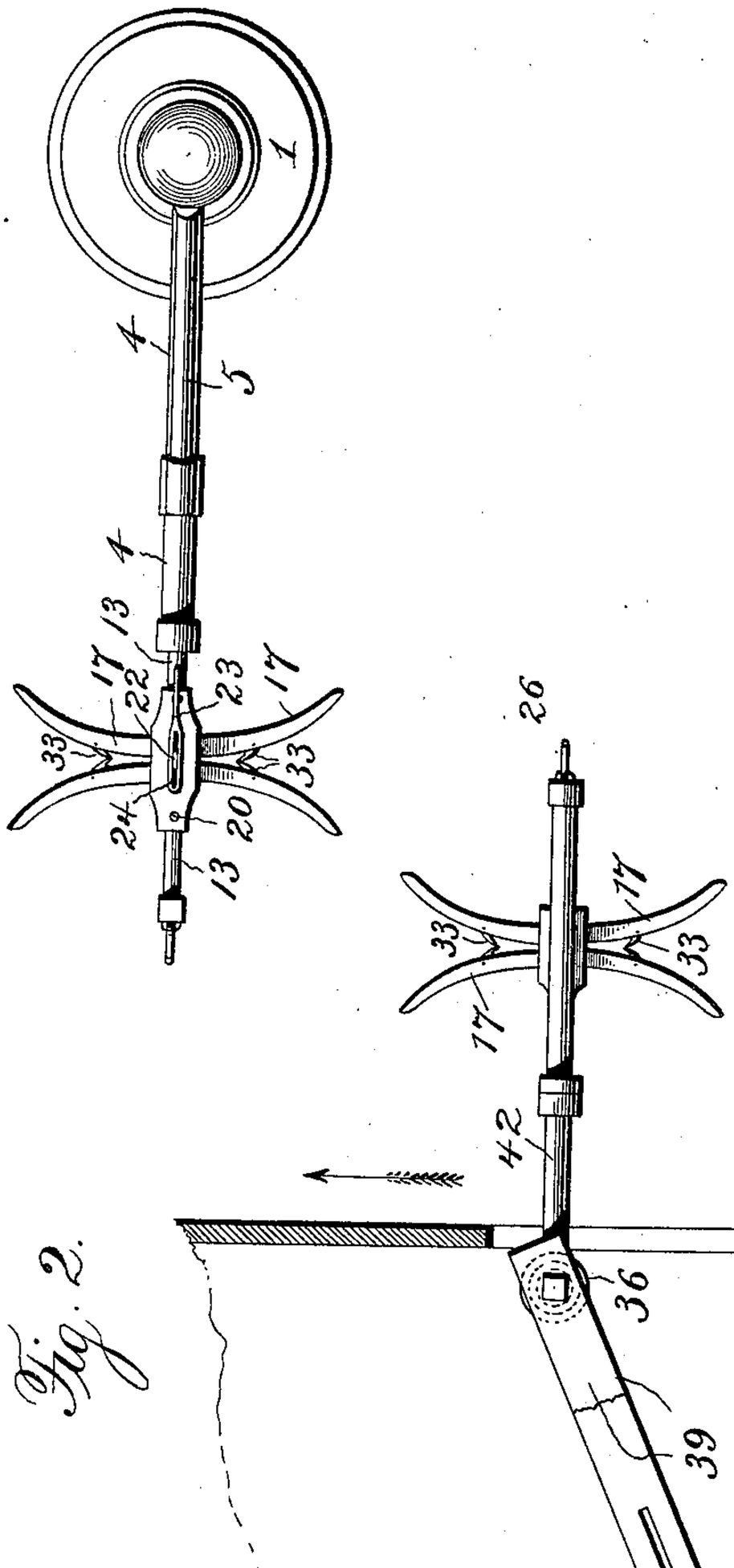

Fig. 2.

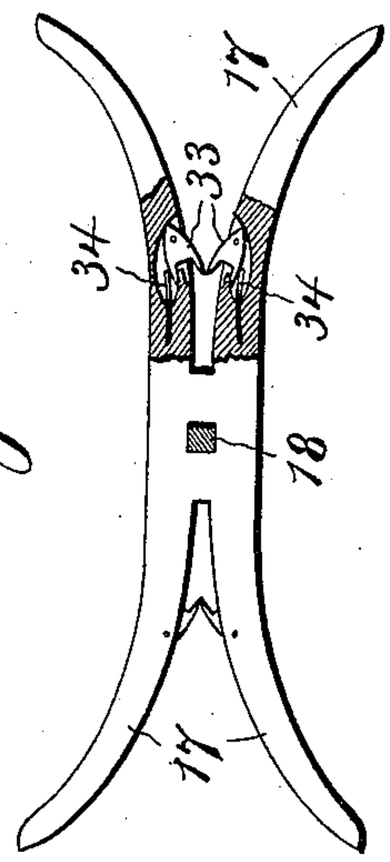

Fig. 3.

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(Application filed May 25, 1897.)

(No Model.)

3 Sheets—Sheet 3.

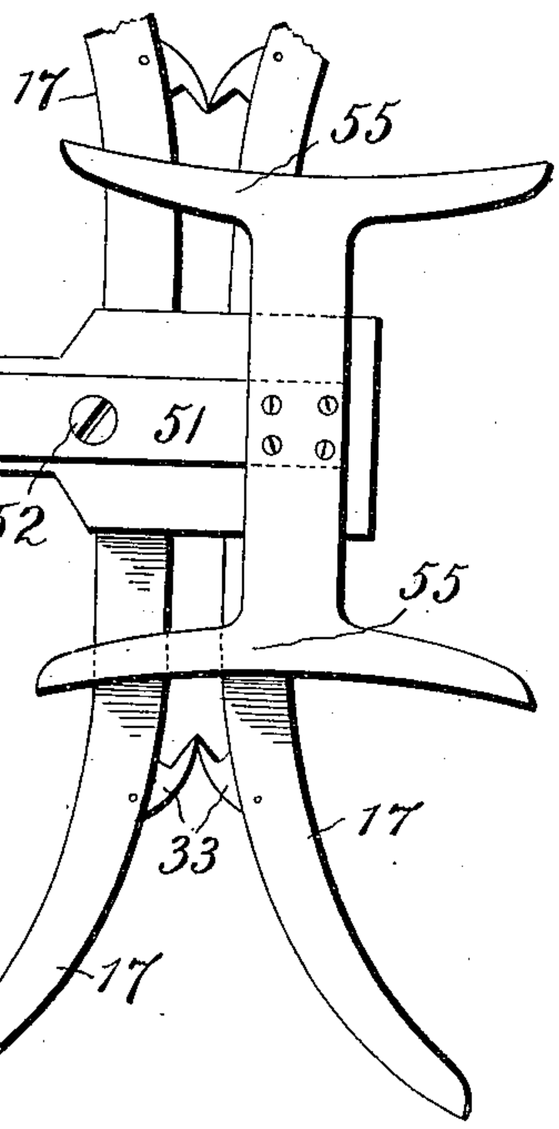


Fig. 4.

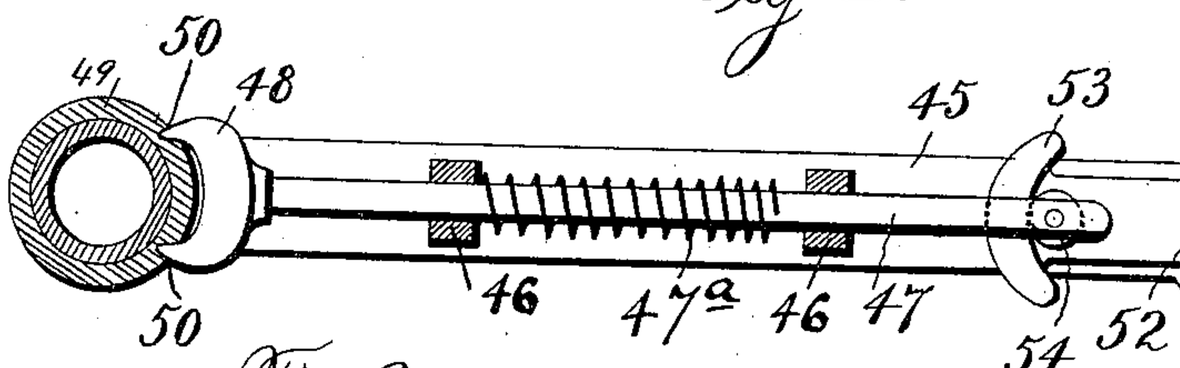


Fig. 6.

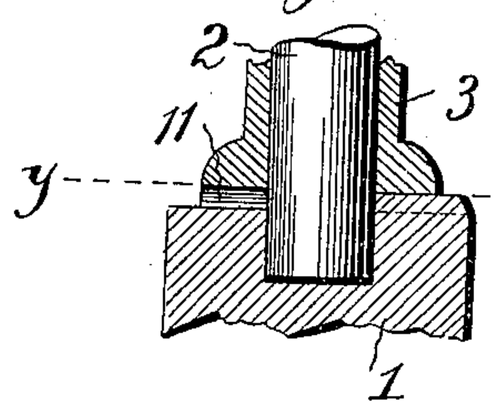


Fig. 7.

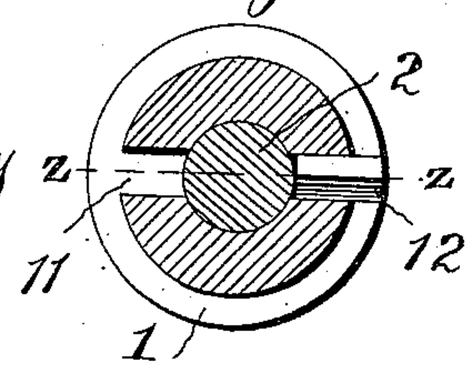


Fig. 5.

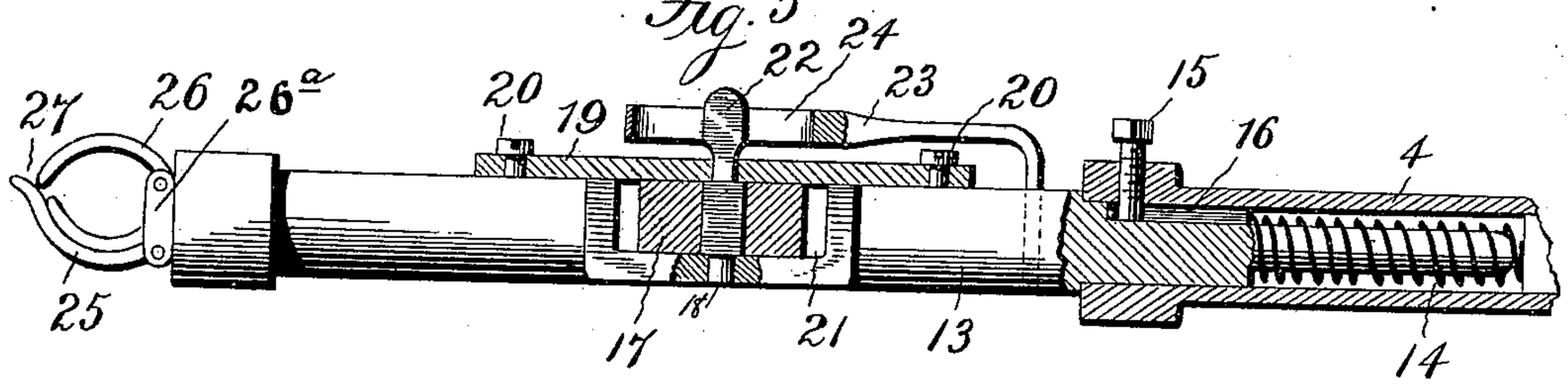


Fig. 8.

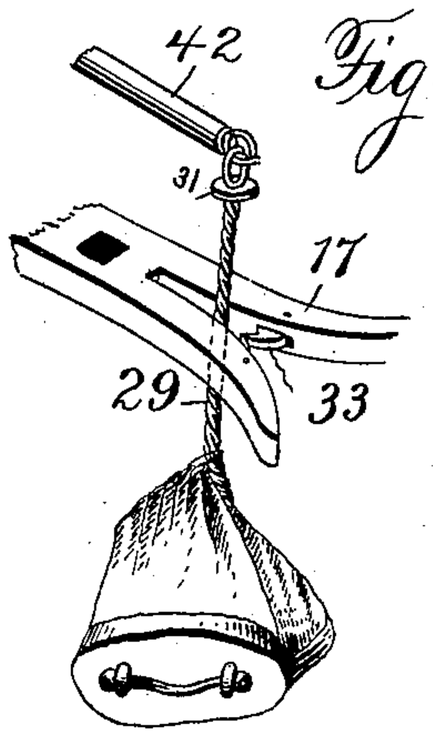
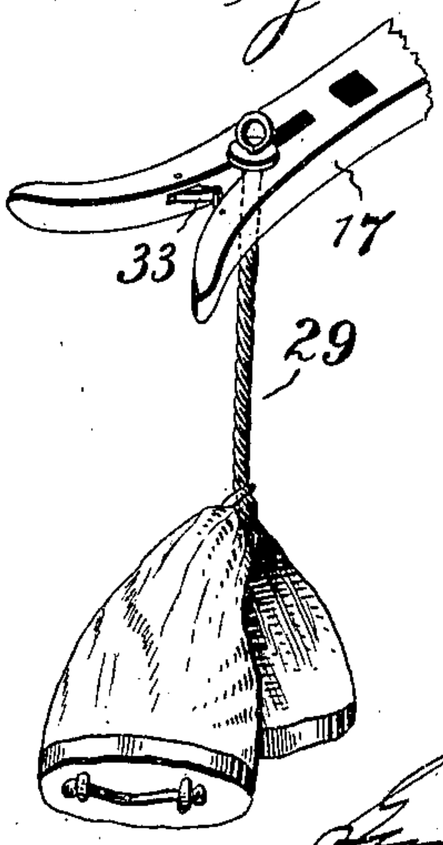


Fig. 9.



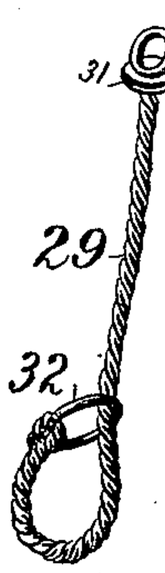


Fig. 10.

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UNITED STATES PATENT OFFICE.

GEORGE E. PERKINS, OF ATKINSON, ILLINOIS, ASSIGNOR OF ONE-FOURTH TO OSCAR MALONEY AND PAUL D. RANSOM, OF SAME PLACE.

MAIL-BAG CATCHER AND DELIVERER.

SPECIFICATION forming part of Letters Patent No. 614,756, dated November 22, 1898.

Application filed May 25, 1897. Serial No. 637,992. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. PERKINS, a citizen of the United States, residing at Atkinson, in the county of Henry and State of Illinois, have invented certain new and useful Improvements in Mail-Bag Catchers and Deliverers; and I do 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, reference being had to the accompanying drawings, and to the figures of reference marked thereon, which form a part of this specification.

My invention relates to mail-bag catchers and deliverers, and has for its objects to provide for certain features of construction and combination of parts in the mechanism attached to a car, and also in the mechanism located at the station, whereby greater efficiency is attained in delivering and also in receiving the mail-bags to and from the car as well as to and from the station, and in which the strain or tension on the parts will be very materially reduced and possible injury to the contents of the mail-bags avoided.

To the accomplishment of the foregoing and such other objects as may hereinafter appear the invention consists in the construction and in the combination of parts hereinafter particularly described and then sought to be specifically defined by the claims, reference being had to the accompanying drawings, forming a part hereof and illustrating the preferred construction and arrangement of parts, and in which—

Figure 1 is an elevation of the mechanism at the station as well as of the mechanism connected to the car, certain of the parts being in section. Fig. 2 is a top plan view of the parts shown in Fig. 1, with parts of the car-body broken away and partly in section and showing the upper slotted arm or beam for sustaining the car mechanism. Fig. 3 is a plan view, partly in section, of one of the receiving-forks. Fig. 4 is a bottom plan view of a portion of the receiving mechanism that is attached to the car. Fig. 5 is a side view, partly in section, of the receiving and delivering arm of the station mechanism. Fig. 6 is a vertical section on the line *z z* of Fig. 7, showing the locking means for the rotatable post or standard. Fig. 7 is a horizontal section on the line *y y* of Fig. 6. Fig. 8 is a perspective of a portion of one of the receiving-forks and supporting-arm with the mail-bag and its cable in position in the fork and before delivery from the arm. Fig. 9 is a perspective of a portion of one of the forks, showing the mail-bag and its cable in position after delivery from the arm; and Fig. 10 a detached view of the cable which holds the mail-bag.

In the drawings the numeral 1 designates the base of the fixed post 2, which is located at the station. This post sustains a rotatable standard 3, which is hollow, so as to receive the post, and from which standard extends laterally the arm 4 and the braces 5, which are secured to the standard by suitable couplings 7, the outer ends of the braces being secured to the arm 4 by a suitable coupling 8. The meeting faces 9 and 10 of the lower portion of the hollow standard 3 and of the upper portion of the base 1 are formed one with notches or recesses 11 and the other with a stud or projection 12, so that the hollow standard will be held to the base either in the position illustrated in Fig. 1 of the drawings or in a retracted or withdrawn position, and the walls of the recesses and of the stud or projection are beveled, as indicated in Figs. 6 and 7, so as to permit the hollow standard to be unlocked from the base in order to rotate when and as the bag is taken from the station delivery-arm by the receiving arm or fork extending from the car, the blow from the receiving-arm of the car against the cable which suspends the mail-bag from the station-arm being sufficient to turn the hollow standard so as to lift it from engagement with the beveled stud or projection and swing it around far enough to permit the recesses in the standard to engage with the stud or projection on the base, and thus automatically lock the arm in its retracted or withdrawn position. The arm 4 is made hollow, and an extension thereof is formed by a rod 13, the inner end of which fits in the arm 4, and a suitable spring 14 is located inside of the arm 4 and connected with that arm and the rod 13, so as to form

a spring or elastic cushion for the rod 13. In this way the arm is formed of two parts and is cushioned by a spring, so as to relieve the shock occasioned by the blow given by the receiving-arm extending from the car as the car passes the station and takes the mail-bag from the delivering-arm and delivers the mail-bag to the station mechanism. The extension 13 of the arm 4 is prevented from turning by means of a set-screw 15, which passes through the end of the arm 4 and enters the longitudinal groove 16 in the rod 13, which will thus permit a slight longitudinal movement of the rod 13 within the arm 4.

The rod 13 carries the receiving-fork 17, which has its opposite ends formed alike, so as to receive the mail-bag from the car delivering mechanism in whichever direction the car may be running. The fork 17 is provided with a pivot-pin 18, which is journaled at one end in the rod 13 and at its other end in a plate 19, secured to the rod 13 by bolts 20 or otherwise, the rod preferably being recessed, as shown at 21, so as to receive the fork 17 and permit a slight rotatable movement of the fork as the mail-bag cable is received from the delivering-arm of the car mechanism, and thus relieve the shock and strain upon the arm occasioned by the momentum incident to the delivery of the mail-bag. For the purpose of cushioning the fork at the time that it receives the mail-bag and also for the purpose of holding the fork in its normal position to receive the mail-bag a suitable connection is made between the fork and a spring. The preferred construction for this purpose is to form one end of the pivot-pin 18 with a flattened head 22 and to provide a spring-arm 23, secured at one end to the rod 13 and at its other end formed with a slot 24 to receive the flattened head 22 of the pivot-pin 18, the side walls of the slot 24 being elastic, so that as the fork 17 is moved sidewise by the blow arising when the mail-bag is delivered to the fork and the flattened head of the pivot-pin turned the walls of the slot 24 will distend and serve as a spring to cushion the fork, the spring to serve, as is apparent, to hold the fork normally in position to receive the mail-bag.

The outer end of the rod 13 is provided with a suitable hook to receive the cable by which the mail-bag is suspended from the arm. I prefer to employ for this purpose the special form of hook illustrated, which consists of the curved finger 25, above which is pivoted—say to the ears 26^a—what I will designate as the "eye-hook" 26, which is annular in form, with its outer ends converging toward each other, but not meeting, so as to form a mouth 27 thereto, and the mouth 27 of which normally lies below the end of the finger 25, so as to prevent the mail-bag cable from accidentally slipping out of the hook. When, however, the cable is pulled laterally as it is taken by the receiving-hook of the mail-catcher, the pressure on the pivoted hook 26 swings the mouth of the hook away from the end of the finger 25, and thus permits the cable to be easily detached from the hook. This forms a pivoted hook with a guard to its mouth, so as to properly hold the cable in place, the hook being swung away from its guard when the bag is to be taken by the mail-catcher.

For the purpose of insuring the mail-bag being properly suspended in position to be received by the mail-catcher and to prevent it from swinging out of position by heavy winds or by the draft occasioned by the moving train, I provide what I will designate as a "wind-guard" and which consists of an angular arm 28, which is connected at one end to the arm 4 and the horizontal member of which extends to a point opposite to the mail-bag when it is suspended and against which the mail-bag may bear or press. This arm being on the proper side of the mail-bag will cause the same to hang properly, so that it will be caught by the mail-catcher.

The means for suspending the mail-bag consist of the cable 29, made of a rope or chain or other suitable material and provided at one end with an eye 30 to engage with the hook of the mail-delivering arm and beneath the eye 30 with a plate 31 of any suitable form adapted to rest upon the top of the receiving-fork, as illustrated in Fig. 9, when the mail-bag is taken from the deliverer by the catcher. The other end of the cable is formed with a ring 32, so that the cable may be looped, as indicated in Figs. 8, 9, and 10, in order to clasp the mail-bag, as illustrated in Figs. 8 and 9. By thus employing a flexible cable for suspending the mail-bag the shock incident to the blow or force of the mail-catcher is weakened and strain is taken from off the parts. It also guards against the possibility of injury to the contents of the mail-bag, as the blow is imparted to the flexible cable and not to the bag itself. The mail-catching fork is provided in its opposing faces with locking-pawls 33, which may be under the influence of springs 34 to normally hold the pawls projected, so as to prevent the cable from accidentally pulling out of the fork in any movement of the fork as it receives the mail-bag, said pawls yielding so as to permit the easy reception of the mail-bag cable as the mail-bag is taken from the delivering-arm.

The numeral 35 designates the hollow rotatable standard of the delivering and receiving mechanism which is attached to the car, which standard fits over the post 36, which rests at its lower end upon an arm or carriage 37, supported upon rollers 38 and sustained at its upper end by an arm 39. The arms 37 and 39 may each be formed with a slot 40, as illustrated in Fig. 2 of the drawings, so as to receive bolts, of which one, 41, is illustrated in Fig. 2, and by which the arms may be held to the car-body, although any other suitable means may be employed for securing the mechanism in position within

the car; but by employing the arms 37 and 39 the mechanism can be located at any desired point in the car and at either side thereof. The arm 39 may be secured by the bolt 41 to any suitable timber projecting from the sides or roof or other part of the car-body on the inside of the car.

From the hollow standard 35 there extends a delivery-arm 42, which preferably is made tubular and which may be strengthened in its connection to the standard by suitable braces 43 and 44. The outer end of the arm 42 is provided with a hook 26 and finger 25, formed and operating like the corresponding hook on the station delivery-arm and from which the mail bag will be suspended in the same manner as already described for the station delivery-arm.

From the rotatable standard 35, below the delivery-arm 42, extends the arm 45, which sustains the double fork 17, corresponding to the similar fork of the station delivery-arm, said fork likewise being provided with the holding-pawls 33 and pivoted to the arm 45 by the pivot-pin 18, having a flattened head 22 fitting in the slot of a spring-arm 23, said parts corresponding to and operating like the similar parts attached to the station delivery-arm, as already described.

Supported from the under side of the arm 45 by means of brackets 46, so as to slide therein, is a rod 47, which at its inner end is provided with a dog or claw 48, adapted to lock with the stationary post 36 or a collar 49 secured thereon—for instance, by having the ends of the dog or claw entering notches 50, formed in the collar 49. The purpose of this locking-dog is to hold the delivery-arm and receiving-arm in their projected positions (illustrated in Fig. 1 of the drawings) until the mail-bag is caught by the receiving-fork, at which time the dog is automatically released from engagement with the stationary post, so as to permit the arms to swing inward toward the car.

For the purpose of effecting the automatic unlocking of the dog a lever 51 is pivoted at 52 to the under side of the arm 45, which lever carries at its inner end a cam 53, arranged to act upon the end of the dog-arm 47—for instance, by means of a roller 54, secured to the end of the arm 47 and located so that the cam 53 will contact therewith. The lever 51 has attached to it one or more fingers 55, preferably two fingers, one for each extension of the fork 17, which fingers will lie across the space between the forks, so as to be in the path of the suspending mail-bag cable as the cable is received by the fork, in order that when the cable strikes the finger it will turn the lever 51, so as to move the cam 53 against the roller 54 in such manner that the rod 47 will be drawn outward, and thus release the dog 48 from locking engagement with the stationary post, which movement permits the arms to swing inward toward the car by the momentum imparted by the blow of the cable against the receiving-arm or its fork in catching the bag. After the pressure of the cam on the roller 54 is released a spring 47^a will retract the dog 48 and its rod 47 to their normal positions, one end of the spring being connected in any suitable manner to the rod 47 and the other end bearing against or secured to one of the brackets 46.

From the end of the mail-catching arm 45 extends what I will designate as a "wind-guard" 56, which lies back of the mail-bag when suspended from the delivery-arm and prevents the mail-bag from swinging while the car is in rapid motion, and thus causes the bag to hang in proper position for its cable to be received by the fork on the receiving-arm of the station mechanism.

In actual construction wherever the parts will admit of it they will be formed of steel tubing and of wrought-iron.

The parts constructed as described constitute a very efficient mail catcher and deliverer, comparatively inexpensive to build, and not liable to get out of order. The device also greatly reduces the strain or tension to which devices of this general type are ordinarily subjected. The arms are held in their extended or projected position as the train moves along, and as the bags are delivered and received the arms are thrown inwardly, those connected to the car being swung inside of the car and the station-arm being thrown to one side or to the rear of its support.

I have in giving a description of the construction of the parts specified the operation of the parts and the functions to be performed by the several parts, and the same being perfectly intelligible therefrom a recapitulation is unnecessary.

I have illustrated and described with particularity the preferred details of construction and arrangement of the various parts; but it is obvious that changes can be made therein without departing from the essential features of the invention.

Having described my invention and set forth its merits, what I claim is—

1. In a mail-bag catcher and deliverer, a mail-bag-delivery arm provided with an annular-shaped hook having converging ends separated from each other to form a mouth thereto, and a guard-finger extending across the mouth of the hook to normally close the same, one of said parts being movable to open the mouth of the hook, substantially as and for the purposes described.

2. In a mail-bag catcher and deliverer, a swinging arm provided with a pivoted fork, and a spring to hold said fork in its normal position, substantially as and for the purposes described.

3. In a mail-bag catcher and deliverer, the combination with a swinging and longitudinally-yielding arm, of a double fork connected to said arm and extending beyond opposite sides thereof to receive a mail-bag or a part

connected thereto from either side of the arm, substantially as and for the purposes described.

4. In a mail-bag catcher and deliverer, the combination with a swinging arm, of a spring-influenced double fork connected to said arm and extending beyond opposite sides thereof to receive a mail-bag or a part connected thereto from either side of the arm, substantially as and for the purposes described.

5. In a mail-bag catcher and deliverer, the combination with a swinging arm provided with a fork pivoted thereto, the pivot of the fork having a flattened head, and a spring connected to the arm and formed with an opening to receive the flattened head of the fork-pivot, substantially as and for the purposes described.

6. In a mail-bag catcher and deliverer, the combination of a two-part swinging arm, one of the parts carrying a fork to receive the mail-bag, and a cushion between the two parts of the arm to afford a yielding resistance to the movement of one part, substantially as and for the purposes described.

7. In a mail-bag catcher and deliverer, the combination with a horizontally-swinging arm provided with means for the suspension of a mail-bag therefrom, of a wind-guard adapted to move horizontally in the horizontal swinging of the mail-bag-suspending arm, said guard being located and extended so as to lie to one side of the suspended bag and have the bag bear against the same on one side or the other as may be required, substantially as and for the purposes described.

8. In a mail-bag catcher and deliverer, the combination of a swinging and longitudinally-yielding arm provided with a fork to receive a mail-bag, a rotatable support for said arm, a stationary base for said support, and means for locking said support and base together for the purpose of holding the swinging arm in its projected position, said locking means being adapted to be released in the movement of the swinging arm, substantially as and for the purposes described.

9. In a mail-bag catcher and deliverer, the combination of a swinging arm carrying a pivoted fork to receive a mail-bag, a movable rod supported from said arm and provided with a dog to engage a fixed part to hold the arm projected, and a lever provided with a cam to engage a part of said movable rod and having a member extending across the fork which receives the mail-bag and adapted to be actuated by the bag to release the locking-dog and permit the arm to swing, substantially as and for the purposes described.

10. In a mail-bag catcher and deliverer, the combination with a swinging arm provided with means to receive a mail-bag, of a support for said arm, a locking-dog extending parallel with the swinging arm and adapted to engage the support of the arm to secure the arm in its projected position, and a trip mechanism actuated by the mail-bag to unlock the dog and permit the arm to swing, substantially as and for the purposes described.

11. In a mail-bag catcher and deliverer, the combination with a forked arm, of a cable for suspending the mail-bag from the arm, said cable provided with an attachment adapted to rest on top of the forked arm while the cable lies between the fork members of the arm, substantially as and for the purposes described.

12. In a mail-bag catcher and deliverer, the combination of a horizontally-swinging arm provided with a fork to receive a mail-bag, a horizontally-swinging delivery-arm located above the fork-arm and provided with means for the suspension of a mail-bag therefrom, and a second swinging arm provided with a fork located to receive the mail-bag from the opposite delivery-arm and with means for suspending a bag in position to be received by the fork of the opposite receiving-arm, substantially as and for the purposes described.

13. In a mail-bag catcher and deliverer, the combination with the rotatable standard provided with a projecting mail-bag-delivering arm and with a mail-bag-receiving arm, a post to receive the rotatable standard, and the slotted arms connected respectively to the upper and lower ends of the stationary post and adapted to be secured in various positions to the inside of the car carrying the delivering and receiving mechanism, substantially as and for the purposes described.

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

GEO. E. PERKINS.

Witnesses:
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JOHN F. NOWERS.