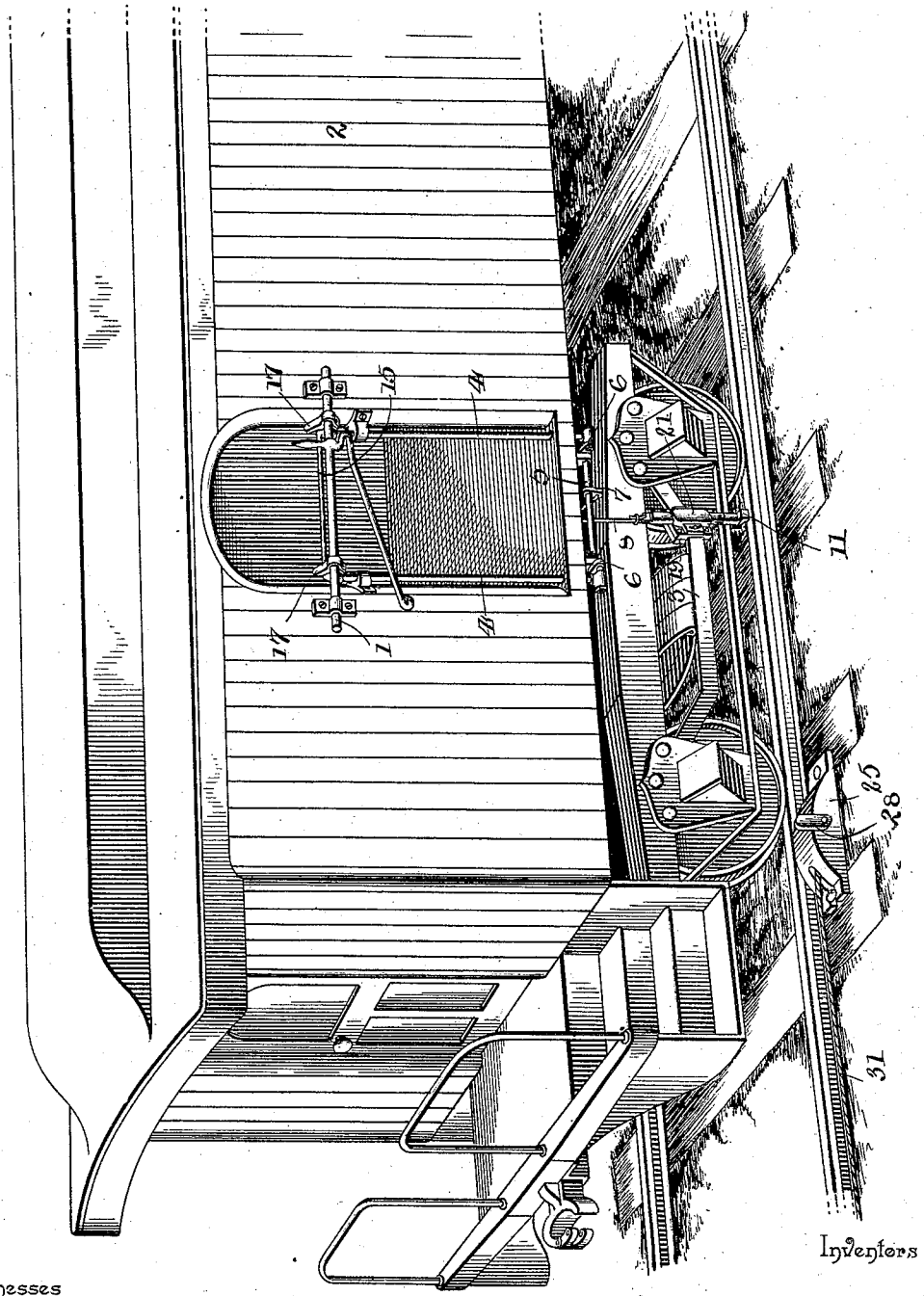
(No Model.) 3 Sheets—Sheet 1.

M. J. GROSZ & C. ELISON.

AUTOMATIC MAIL CATCHER.

No. 576,112. Patented Feb. 2, 1897.

Fig. 1.



Witnesses
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V. B. Hillyard.

Inventors
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and
By their Attorneys.
C. A. Snow & Co.

(No Model.) 3 Sheets—Sheet 2.

M. J. GROSZ & C. ELISON.

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Fig. 3.

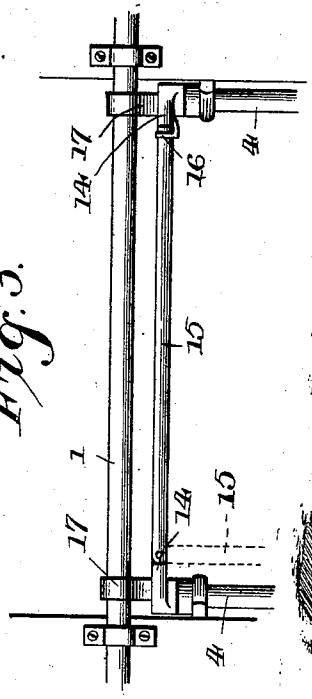

Fig. 8.

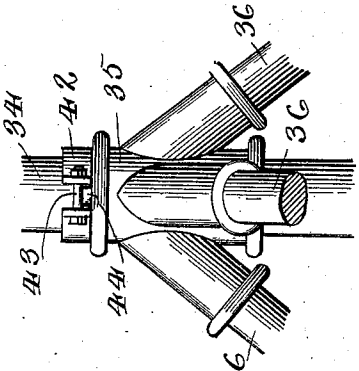

Fig. 7.

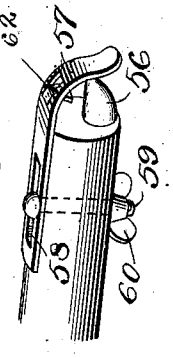

Fig. 2.

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(No Model.) 3 Sheets—Sheet 3.

M. J. GROSZ & C. ELISON.

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Fig. 4.

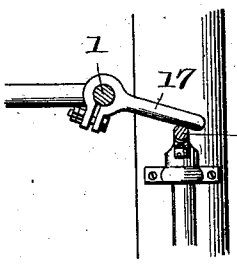
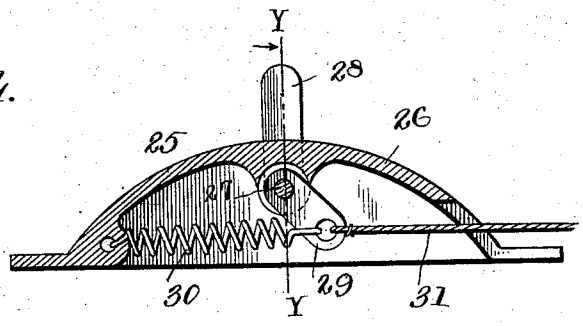


Fig. 5.



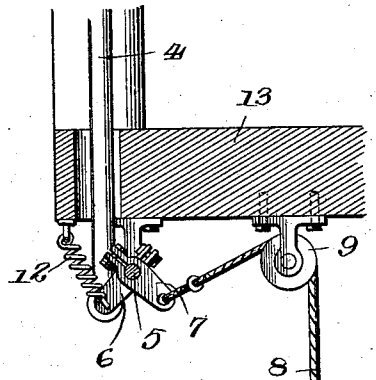


Fig. 6.

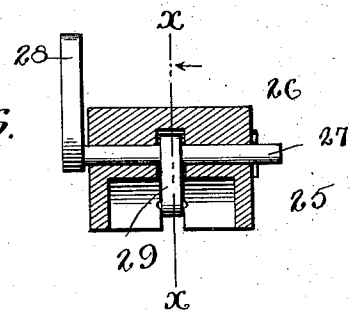


Fig. 10.

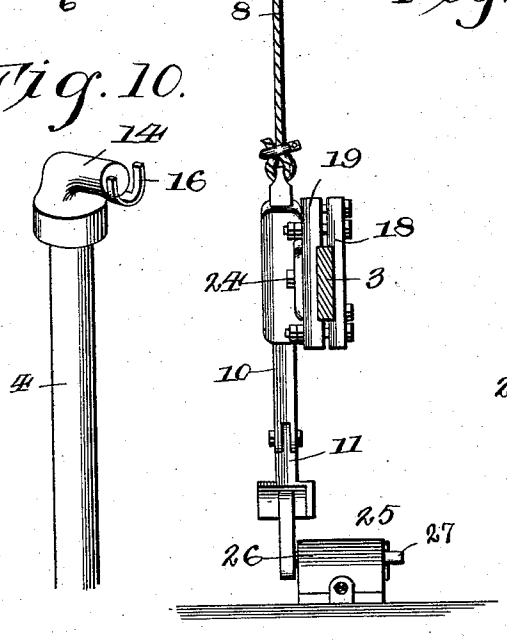
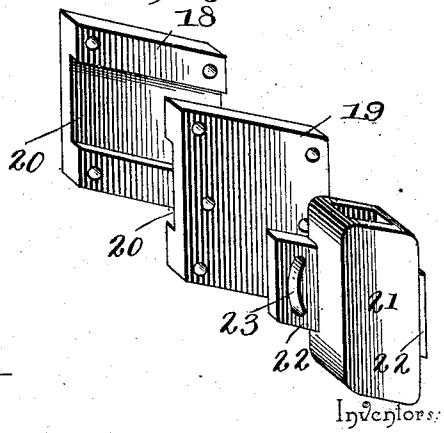


Fig. 9.



Inventors:
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Witnesses
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UNITED STATES PATENT OFFICE.

MARTIN J. GROSZ AND CASPER ELISON, OF EMPORIA, KANSAS.

AUTOMATIC MAIL-CATCHER.

SPECIFICATION forming part of Letters Patent No. 576,112, dated February 2, 1897.

Application filed October 30, 1895. Serial No. 567,435. (No model.)

To all whom it may concern:

Be it known that we, MARTIN J. GROSZ and CASPER ELISON, citizens of the United States, residing at Emporia, in the county of Lyon and State of Kansas, have invented a new and useful Automatic Mail-Catcher, of which the following is a specification.

This invention relates to improvements in mail delivering and catching devices whereby pouches are taken up by a passing train and delivered at a station automatically, and aims to improve the construction shown in Patent No. 529,071, granted to M. J. Grosz November 13, 1894, in the particulars which hereinafter will be more fully described, illustrated, and claimed.

In the accompanying drawings is illustrated an adaptation of the invention, although various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of this invention.

In the drawings, Figure 1 is a perspective view of an end portion of a mail-car, showing it equipped with the invention. Fig. 2 is a perspective view of the crane at the side of a track for delivering the mail-pouch to a passing train. Fig. 3 is a detail view showing the rod and the manner of connecting it with the upper ends of the vertical bars or rods for transmitting motion from the hook or catcher to the hammer. Fig. 4 is a detail view of the improved mechanism, showing the parts operatively related. Fig. 5 is a longitudinal section of the trip on the line X X of Fig. 6, looking to the left, as indicated by the arrow. Fig. 6 is a transverse section on the line Y Y of Fig. 5, looking to the right. Fig. 7 is a detail view of the outer end of a crane-arm. Fig. 8 is a detail view of the upper portion of the stand and that part of the mast adjacent thereto. Fig. 9 is a detail view of the provisions for attaching the hammer to the draft-bar of a truck and admitting of the plumbing of the said hammer, the parts being separated and disposed in the relative position which they will occupy when assembled. Fig. 10 is a detail view of the upper portion of a vertical rod or bar.

The same reference-numerals denote corresponding and like parts in all the figures of the drawings, and in the latter—

1 indicates the mail hook or catcher, which may be of any desired pattern and which is journaled in bearings so as to come opposite the door in the side of the mail-car 2; 3, a side draft-bar connecting the wheels of a truck; 4, the vertical bars or rods extending parallel with and contiguous to the jambs of the door, and 5 the rock-shaft mounted in bearings beneath the sill of the car and provided at its ends with cranks 6, which are connected with the lower ends of the respective bars or rods 4.

An arm 7 is secured to the rock-shaft 5, preferably at a middle point in its length, and a cord or similar connection 8 is attached to the free end of the arm 7 and passes over a guide-pulley 9, thence downwardly, and is attached to the upper end of the vertically-movable bar 10, carrying the pivoted hammer 11 at its lower end. A spring 12 connects one of the cranks 6 with the sill 13 of the car and serves under normal conditions to hold the hammer and the vertical bars or rods 4 in an elevated position.

The vertical bars or rods 4 may be conveniently located either in or to one side of the door-opening and are mounted so as to move vertically without binding, and their upper ends are provided with inturned extensions 14, which are adapted to be connected by means of a rod 15, which is pivoted at one end to one of the bars or rods 4 and which has its opposite end adapted to be detachably fitted into a fork 16, provided on the opposite bar or rod 4, so that the rod 15 can be readily detached at its free end from the fork 16 and be turned into a vertical position, so as to be out of the way. The rod 15 braces the upper ends of the bars or rods 4 and prevents torsional strain thereof when operating the mail hook or catcher to project the parts into an operative position, so that the passing train will take up the mail-pouch at the next station. Tappets 17 are secured to the mail hook or catcher and are disposed to engage with the upper ends or inturned extensions 14 of the bars or rods 4, so as to depress the latter when throwing the mail hook or catcher into a working position.

The provisions for attaching the hammer to the draft-bar 3 comprise companion plates 18 and 19, having depressions 20 in their opposing faces to form seats for receiving the side portions of the draft-bar 3, which is clamped between the plates by bolts passing

through the latter. A vertical socket 21 is adjustably connected to one of the plates in such a manner as to admit of its turning to plumb the bar 10, carrying the hammer, thereby obviating any binding of the said bar 10 in the socket 21. Any means may be employed for attaining the desired end, but for simplicity of construction and ease of adjustment the socket 21 is provided with lateral ears 22, having arcuate slots 23, through which project bolts 24 for connecting the said socket to the plate 19 in the usual manner.

The trip 25 is located at a convenient point along the side of the track and comprises a segmental-shaped casing 26, which is bolted or spiked to the ties and in which is journaled a shaft 27, having a tappet 28 at its outer end and a radius-arm 29 between its ends, and which is connected by a spring 30 with a convenient part of the casing 26, so as to hold the tappet 28 in an upright or vertical position. A cord or like connection 31 is attached at one end to the radius-arm 29 and extends along the side of the track and is connected with the lower end of a lever 32, fulcrumed to the stand of the crane. This cord 31 passes over a guide-pulley 33 opposite to the crane, so as to give proper direction thereto. It will be understood that a trip will be provided upon each side of the crane. Hence there will be a lever 32 for each trip, and a cord 31 will connect each trip with the respective lever.

The mast 34 is mounted in a socket 35, forming the head of the stand in such a manner as to be vertically adjustable to adapt its elevation to the length of mail-pouch or character of the ground upon which the crane is placed. The socket 35 has legs 36, extending therefrom and secured at their lower ends to posts 37, buried or otherwise anchored in the ground. The legs 36 terminate in feet 38, which are constructed to have a portion overlapping the top of the posts and a portion extending along the inner side of the posts and receiving the bolts or fastenings, by means of which the stand is held in place. The stand in general appearance represents a tripod, and the two legs adjacent to the track are connected by a horizontal brace 39, provided midway of its ends with a socket 40 in vertical alinement with the socket 35 and having ears 41, to which the levers 32 are fulcrumed. A collar 42 is clamped upon the mast above the socket 35 and rests upon the latter, so as to support the mast at the required elevation, and this collar is formed by bending a strip so as to encircle the mast and having the end portions of the strip extending radially and apertured to receive the clamp-bolt 43, and between which extends a projection 44 at the top end of the socket 35, so as to prevent the mast from turning in the sockets 35 and 40. This collar 42 is sufficiently stout to support the mast and hold it in working position, but which will break in the event of the crane being subjected to an abnormal strain, thereby obviating serious injury or the disabling of the crane should the latter be struck a smart blow by a passing train or otherwise be subjected to abnormal strain. A pin 45 passes transversely through the mast at a point between the sockets 35 and 40 and is intended to receive the chain 46, which connects the rear end of the topmost arm 47 with the mast. The upper ends of the levers 32 are formed with eyes and overlap and receive the projecting end of the pin 45.

The arm 47 is fulcrumed between its ends to a bifurcated head 48 at the upper end of the mast, and its rear end has a coupling 49, adjustably mounted thereon and to which a rod 50 is attached, said rod being provided in its length with a spring-compensator 51, to admit of the said rod being lengthened slightly when placing the mail-pouch 52 in proper position. A weight 53 is adjustably mounted upon the rear end of the arm 47 to provide a convenient means for counterbalancing the mail-pouch and allowing for variations in the weight thereof. The lower arm 54 is pivotally connected at its inner end to a collar or sleeve 55, adjustably mounted upon the mast, so as to be moved to adapt the distance between the arms 47 and 54 to the length of the mail-pouch to be suspended between the said arms. The outer ends of the arms 47 and 54 are similarly constructed, each being provided with a stud 56 and a spring-finger 57, the latter having a slot 58, through which passes a bolt 59, having a thumb-nut 60, by means of which the spring-finger can be loosened or secured in the adjusted position. By loosening the thumb-nut the spring-finger can be moved, so as to admit of the ring at the end of the mail-pouch being engaged over the stud 56 between it and the spring-finger, and after the spring-finger is properly adjusted the thumb-nut is retightened, thereby maintaining it in the located position.

When the parts are properly assembled, the lower end of the chain 46 is permanently engaged with the pin 45, thereby holding the arm 47 in an approximately horizontal position, when the mail-pouch 52, suspended therefrom, will be so disposed as to be caught by the mail hook or catcher of the passing train. In the event of the mail-pouch being attached to the crane and it being desired to hold it out of the way of passing trains until the mail-train approaches, a ring 61 near the lower end of the chain 46 is engaged with the projecting end of the pin 45, thereby holding the rear end of the arm 47 depressed and the front end correspondingly elevated. On the approach of the mail-train the messenger or postal clerk will operate the mail hook or catcher so as to project it into a horizontal or operative position, and this movement will move the tappets 17 and cause them to depress the vertical bars or rods 4 and rock the shaft 5 in its bearings so as to bring the arm 7 into an approximately horizontal position, thereby permitting the hammer 11 to drop so

that it will extend into the path of the tappet 28 and strike the latter on the passing of the train and produce a pull upon the cord 31, which will actuate the lever 32, connected therewith, and disengage the ring 61 from the pin 45, and thereby admit of the lengthening of the chain 46 and the dropping of the arm 47, so as to project the mail-pouch into the path of the mail hook or catcher, by which it will be picked up in the usual manner. When the mail hook or catcher 1 is not required for immediate use, it assumes a vertical position, as shown in Fig. 1 of the drawings, when the parts 4 and 11 will be held in an elevated position and the hammer 11 out of the path of the trip 25 or the tappet 28 thereof. When the cord 8 is slackened by the arm 7 assuming a horizontal position, the hammer 11 will drop by its own weight and the weight of the bar 10, attached thereto, and in order to prevent any binding between the socket 21, which forms a guide, and the bar 10 it is essential that the said socket 21 occupy a truly vertical or plumb position, and provision is had for attaining this end by having the said socket 21 adjustably connected with the draft-bar 3 in the manner herein set forth.

The stud 56 tapers and is straight on its working or engaging side, and the spring 57 has a hook 62 to hold the ring of the mail-pouch when the upper arm 47 is lowered to have the pouch connected therewith by slipping its upper ring between the stud 56 and the spring.

Having thus described the invention, what is claimed as new is—

1. In a mechanism for catching mail-bags, the combination of a plate to be secured to the draft-bar of a truck, a socket adjustably connected with the plate to be turned into a vertical position, and a vertically-movable bar mounted in the said socket and operatively connected with the mail-hook and carrying a hammer to be projected within the path of a trip along the track, substantially as and for the purpose set forth.

2. In a mechanism for catching mail-bags, the combination of plates having grooves in their opposing faces to receive the opposite sides of a draft-bar and to be clamped to the latter, a vertically-disposed socket adjustably connected with one of the plates, a hammer-carrying bar mounted in the socket and adapted to be projected within the path of a tappet disposed along the side of the track, a vertically-movable rod operatively connected with the hammer-bar, and a mail hook or catcher for actuating the said vertical rod to project the hammer within the path of the trip, substantially as set forth for the purpose described.

3. In combination, a rock-shaft having radially-disposed arms extending at different relative angles, a vertically-movable hammer operatively connected with one of the arms, a vertically-movable rod connected with the other of the said arms, a spring for holding the hammer and rod elevated, and a mail hook or catcher having a tappet to be brought into forcible contact with the said vertical rod to lower it and the hammer when throwing the mail hook or catcher into an operative position, substantially as and for the purpose set forth.

4. In combination, a rock-shaft mounted in bearings beneath the sill of the car and having cranks at its ends, vertically-disposed rods extending parallel with and contiguous to the jambs of the door-opening and having connection at their lower ends with the said cranks, a mail hook or catcher having tappets to engage with the upper ends of the said vertical rods to depress the latter when throwing the said catcher into an operative position, a vertically-movable hammer operatively connected with the said rock-shaft, and a spring for holding the rock-shaft in a normal position and maintaining the hammer and the aforesaid vertical rods in an elevated position, substantially as and for the purpose set forth.

5. In a mail-catching mechanism, the combination of vertically-disposed rods extending parallel with and contiguous to the jambs of the door-opening, a hammer actuated by means of the said rods, a rod having pivotal connection at one end with one of the vertical rods and extending across the doorway, and adapted to be detachably connected at the opposite end with the other vertical rod, and a mail hook or catcher having tappets to be brought into forcible contact with the upper ends of the aforementioned vertical rods, substantially as set forth for the purpose described.

6. In combination, a vertical socket secured to the draft-bar of a truck, a rock-shaft having a radial arm between its ends and cranks at its extremities, a hammer-bearing bar movable in the said socket, a cord secured to the upper end of the hammer-bar, passing over a guide-pulley secured to the car-sill, and having its upper end connected with the said radial arm, vertically-disposed bars extending parallel with and contiguous to the jambs of the door-opening and having inturned extensions at their upper ends, one of the said extensions having a fork, a rod pivotally connected to one of the inturned extensions and having its free end detachably connected with the said fork, a spring for maintaining the vertical bars and hammer in an elevated position, and a mail hook or catcher having tappets to engage with the inturned extensions of the vertical bars, substantially as set forth for the purpose described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

MARTIN J. GROSZ.
CASPER ELISON.

Witnesses:
CHAS. FLETCHER,
J. M. MCCANN.