

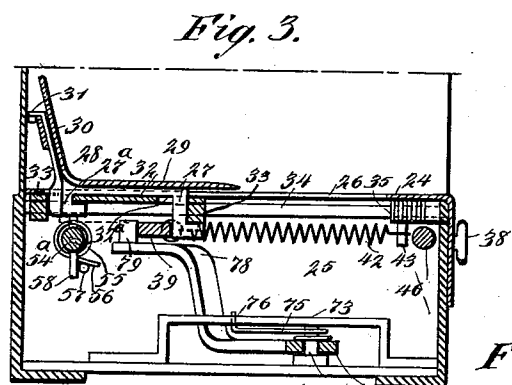
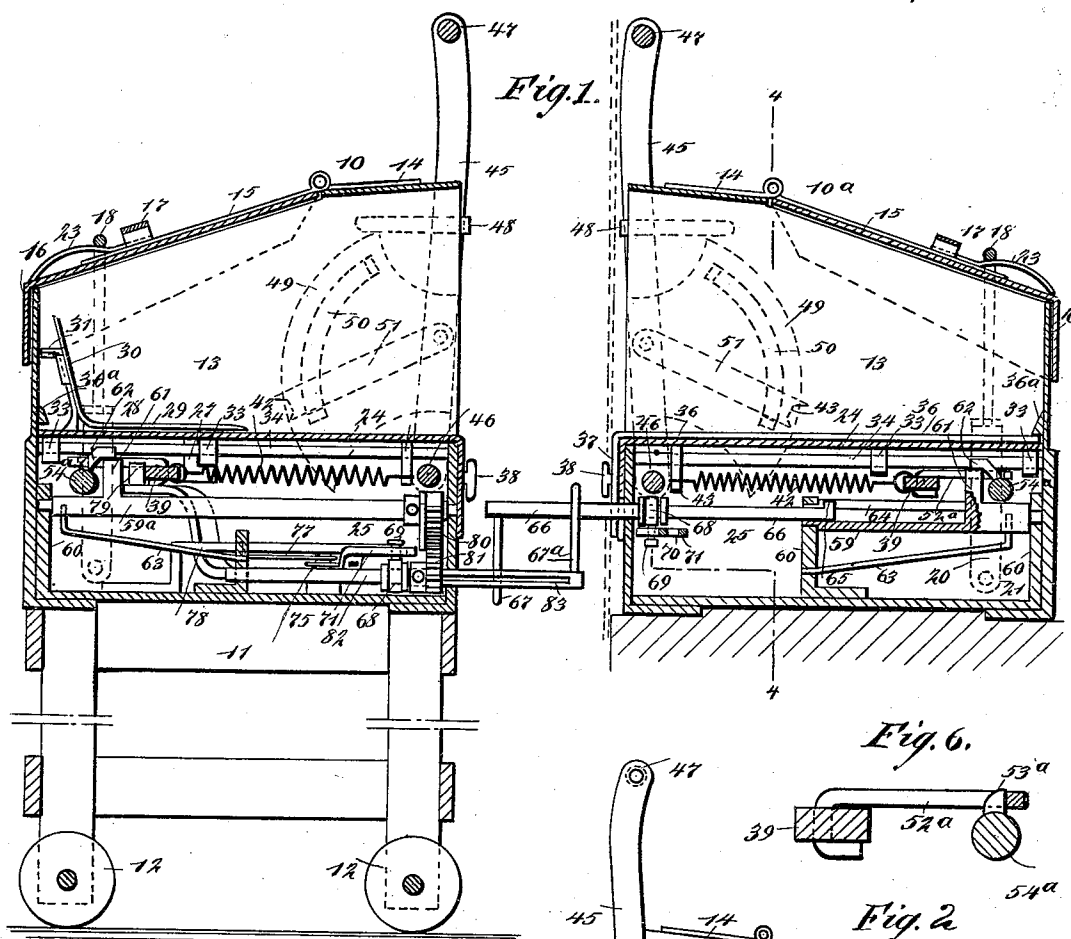
(No Model.)

2 Sheets—Sheet 1.

G. W. DAILEY.
MAIL BAG CATCHER OR DISCHARGER.

No. 506,102.

Patented Oct. 3, 1893.



WITNESSES:

Donn Twitchell
C. M. Clark

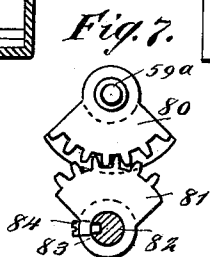
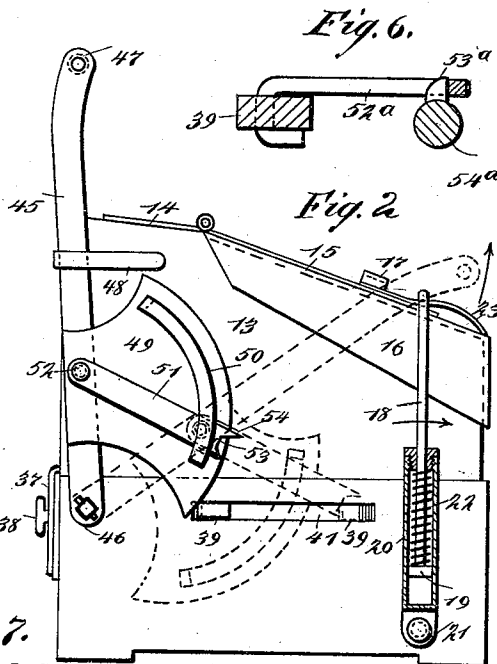


Fig. 7.



INVENTOR

G. W. Dailey
BY
Munn & Co.
ATTORNEYS.

(No Model.)

2 Sheets—Sheet 2

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Fig. 4.

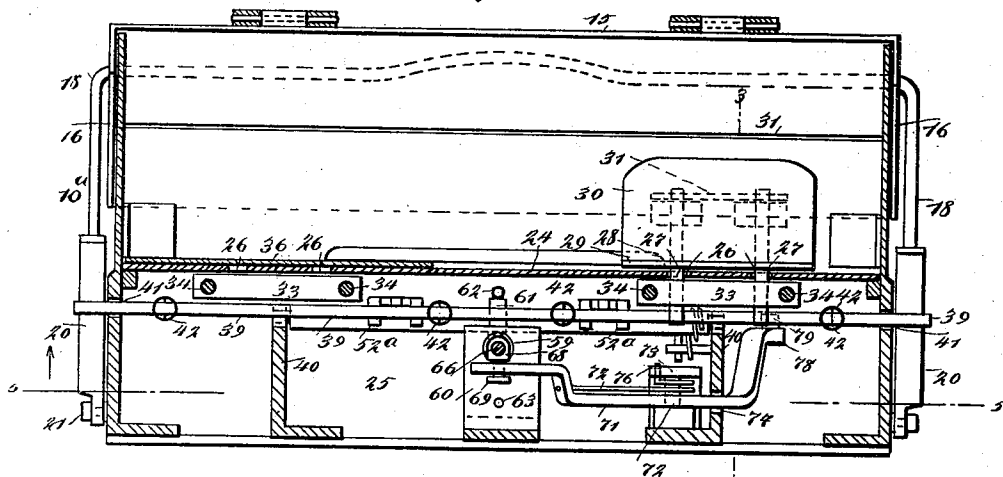


Fig. 5.

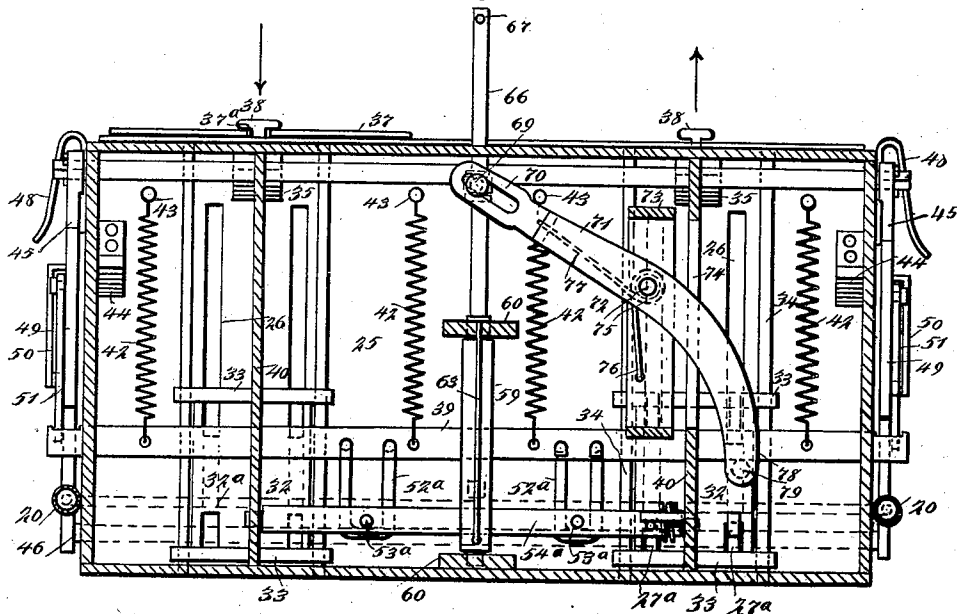
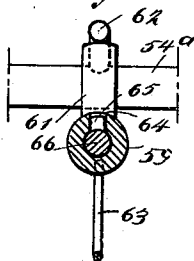


Fig. 8.



WITNESSES:

Donn Twitchell
C. M. Clark

INVENTOR

G. W. Dailey
BY Munn & Co.
ATTORNEYS.

UNITED STATES PATENT OFFICE.

GEORGE W. DAILEY, OF CHARLOTTESVILLE, INDIANA, ASSIGNOR OF ONE-HALF TO JOHN A. CRAFT, OF SAME PLACE.

MAIL-BAG CATCHER OR DISCHARGER.

SPECIFICATION forming part of Letters Patent No. 506,102, dated October 3, 1893.

Application filed February 2, 1893. Serial No. 460,655. (No model.)

To all whom it may concern:

Be it known that I, GEORGE W. DAILEY, of Charlottesville, in the county of Hancock and State of Indiana, have invented a new and Improved Mail-Bag Catcher and Discharger, of which the following is a full, clear, and exact description.

My invention relates to improvements in mail bag catchers and dischargers; and the object of my invention is to produce a machine or apparatus which enables mail bags to be exchanged at certain points along the railroad while the mail car is moving rapidly, the apparatus being intended to simultaneously discharge mail bags from the station and from the moving car and also to simultaneously receive mail bags discharged at the same time, the stationary apparatus discharging the mail bag into the apparatus on the car and receiving one in exchange, and the apparatus on the car discharging a bag into the stationary apparatus and also receiving one in exchange.

A further object of my invention is to construct the apparatus so that it shall be very positive in its operation and so that the discharging apparatus on both stationary and moving machines will be simultaneously operated by contact of certain parts of the machine, to the end that both machines may be purely automatic.

To this end my invention consists in certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a cross section of two machines at the moment of contact, one machine being represented as stationary and the other as carried by a car. Fig. 2 is an end view of one of the machines with parts in section. Fig. 3 is a broken cross section of one of the machines, showing in detail the mail carriage and the mechanism for discharging a mail bag from the carriage. Fig. 4 is a longitudinal vertical section on the line 4-4 in Fig. 1. Fig. 5 is an inverted sectional plan on the line 5-5 in Fig. 4. Fig. 6 is a detail sectional

view of the mechanism for catching and releasing the discharging spring bar. Fig. 7 is a detail sectional view of the connecting gears which are provided for the stationary machine; and Fig. 8 is a detail cross section of a portion of the mechanism for releasing the spring bar.

The machines 10 and 10^a are substantially alike, with the exception of some few minor details, which adapt the former for use at a station, and the latter for use upon a car, the differences in the two machines being merely such as to enable one to trip and release the discharging mechanism of the other, as will fully appear hereinafter. The machine 10, being adapted for use at a station, is mounted upon a suitable supporting frame 11 which is provided with wheels or trucks 12 to enable it to be moved conveniently to and from the track on which the mail train passes, and the frame 11 is of such a height as to bring the receiving cage 13 of the machine opposite the body of a mail car. The machine 10^a is adapted to be rigidly secured to a convenient portion of a mail car so as to come opposite the stationary machine 10, and each machine has a similar mail cage 13, the open sides of which are adapted to face each other. The cage 13, as above remarked, is open on the front side and it is simply a box having a slightly inclined top portion 14 near the front, to which is hinged a vertically-swinging lid 15, this lid being rearwardly inclined and forming the greater portion of the cage top, and the lid has side and end flanges 16, which drop over the back side and ends of the cage.

The lid 15 is provided with a suitable handle 17 by which it may be raised when a mail bag is to be removed or the carriage hereinafter described, adjusted, and the lid is held closed by a spring bail 18 which extends longitudinally across the lid and opposite the ends of the cage, the bail ends terminating in heads 19 which are held in sockets 20, on the ends and back portion of the cage, these sockets being pivoted to the cage, as shown at 21. The bail is normally held down by spiral springs 22 which are contained in the sockets and press upon the heads 19, see Fig. 2, and the bail is prevented from slipping off the

lid by convex springs 23 which are secured to the top of the lid. When the lid is to be opened, the bail may be swung back off the lid top. It will be seen that the spring bail makes a yielding fastening so that when a mail bag is thrown violently into the open side of the cage, it strikes the lid which breaks the force of the shock and yields sufficiently to prevent injury to the machine or the bag.

The cage is provided with a flat floor 24, beneath which is a compartment 25 in which the ejecting or discharging mechanism is located. The floor is provided near opposite ends, with transverse parallel slots 26, best shown in Figs. 4 and 5, which slots receive the guides or hooks 27 and 27^a on the under side of the transversely-sliding carriage 28, shown best in Fig. 3, which carriage is of angular shape, having a bottom portion 29, adapted to slide horizontally on the floor 24, and an upwardly-extending back 30 against which a mail bag may rest and which further acts as an abutment to throw out the bag. The carriage has a stop 31 upon its back which is adapted to strike the back of the cage when the carriage is pushed into the cage.

The guides or hooks 27^a are adapted to extend downward through slots 32^a in a plate 32 which slides beneath the floor 24, and the plate is secured to cross bars 33 which slide on parallel rods 34, these extending transversely beneath and parallel with the floor 24. It will thus be seen that the cross bars 33 and the plate 32 form a supplemental carriage to which the carriage 28 may be attached, and by reference to Fig. 5, it will be seen that there is a supplemental carriage in each end of the machine so that the ejecting carriage 28 may be arranged at either end of the machine as desired, this depending upon the direction of the trains in connection with which the machine is used.

The carriage is thrown forward in the manner described presently, when a mail bag is to be ejected, and when thrown forward the front cross bar 33 is stopped by a cushion 35 in the front portion of the cage and immediately beneath the floor 24. In order that the cage may have as far as possible, a smooth bottom, a plate 36 is used to cover the slots 26 in the opposite end of the cage from that in which the carriage 28 is located, this plate 36 having its back edge held beneath a ledge 36^a in the cage and having its front portion bent to form a flange 37 which extends downward on the front portion of the machine, and which is provided with a slot 37^a, see Fig. 5, adapted to receive a fastening button 38, which is pivoted on the front of the machine and by which the cover plate 36 is held in place.

The front hooks or guides 27 of the carriage extend downward into the path of a transversely-sliding spring bar 39, which bar extends longitudinally through the lower portion of the machine; that is, through the compartment 25, and slides on supports 40

and in slots 41 which are produced in the ends of the machine, the ends of the bar projecting outward through the slots so as to be struck by the lever mechanism used in setting the bar. The spring bar 39 is normally thrown forward by spiral springs 42 which are secured to the bar and to studs 43 in the front portion of the compartment 25. When the bar is thrown forward it is stopped by cushions 44, see Fig. 5, which are arranged in opposite ends and near the front portion of the compartment 25. The spring bar is forced back against the tension of the springs 42 by means of levers 45 which are arranged on opposite ends of the machine, and extend normally in a nearly vertical position, these levers being secured at their lower ends to a shaft 46 which is journaled longitudinally in the machine, and at their upper ends the levers are connected by a rod 47 which serves as a handle and which makes the two levers operate together so that the levers 45 and handle form practically, a single bent lever. When the levers are thrown forward they are held in spring sockets or holders 48 which are secured to the ends of the cage. On each lever near its lower end is a rearwardly-extending segment 49, which has near its edge, a curved guide plate 50 which is held a little distance from the segment, and between the guide plate and the segment is held to swing a latch or lever 51 which is pivoted near the front end of the segment and opposite the lever 45, and the free end of which is notched, as shown at 43, and provided on its upper portion with an elongated lip 54 adapted, when the lever or latch is turned down, to engage the end of the spring bar 39.

The latch lever 51 is pivoted eccentrically to the center of the segment 49 and consequently when the levers 45 are turned, the segments will first actuate the spring bar and push back its ends, after which the latch levers will engage the spring bar, as shown by dotted lines in Fig. 2, and push the bar backward to the limit of its stroke. On the back side of the spring bar 39 are loops 52^a which are of spring metal and normally spring downward slightly, and these, when the bar is pushed back, are adapted to ride over catch pins 53^a, see Fig. 6, on an oscillating shaft 54^a, the pins being round on their front portions so that the loops may pass readily over them but having straight backs which hold the loops in place and consequently hold back the spring bar. The shaft 54^a is journaled behind the spring bar in suitable supports, and around it, at one end, is coiled a spring 55, one end 56 of which is secured to the shaft and the other end bears against a stud 57 which projects from one end of the machine. The tension of the spring is such as to normally tilt the shaft forward so as to release the loops 52^a, and the shaft is prevented from being tilted too far by a pin 58 which projects from the shaft and strikes the pin or stud 57. When the loops 52^a ride over the

pins 53^a mechanism, which will be hereinafter described, is employed for holding the pins in a vertical position so as to restrain the loops and spring bar, which mechanism is adapted to be automatically released, as will appear below.

Extending at right angles to the spring bar and shaft 54^a is a hollow shaft 59, which is journaled in suitable supports 60 and at the rear end of this shaft is a stud 61, which is adapted to extend upward in a vertical position, as shown best in Figs. 1 and 8, and engage a bent arm 62 on the shaft 54^a. When in this position, the shaft 54^a is prevented from being tilted and consequently the catch pins 53^a are held in a vertical position so as to retain the loops 52^a of the spring bar. The hollow shaft and the mechanism contained therein is peculiar to the machine 10^a, but substantially similar mechanism which will be hereinafter described, is employed in the machine 10. The hollow shaft is held with the stud 61 uppermost by a spring 63 which extends parallel with the shaft and beneath the same, one end of the spring being secured to the shaft and the other to one of the shaft supports 60.

The shaft 59 is longitudinally slotted, as shown at 64, so as to receive a key or lug 65 formed on the end of a trigger shaft 66, which shaft is adapted to slide longitudinally in the shaft 59 and projects from the front of the machine, the shaft 66 having a crank or striker arm 67 at one end which arm projects at right angles to the shaft. On the shaft 66 is a loose collar 68 which is held between fixed collars, as shown in Fig. 1, and a stud 69 on this collar enters a slot 70 in one end of a horizontally oscillating lever 71 which is fulcrumed near the center, as shown at 72, and swings beneath a support 73, see Figs. 3 and 4, and in a slot 74 in one of the supports 40 of the machine. Around the pivot or fulcrum pin of the lever 71 is a spring 75, one end 76 of which is secured to the support 73 and the other end portion 77 of which is secured to the lever 71, and the tension of the spring is such as to normally throw the lever and push inward the shaft 66 so that the striker arm 67 will lie against the face of the machine. The opposite end 78 of the lever 71 is bent upward, as shown clearly in Figs. 3 and 4, and it terminates in a stud 79 which extends behind and in the path of the spring bar 39. It will be seen therefore, that when the machine is in normal position, the lever 71 will be swung by the spring 75 so as to hold inward the trigger shaft 66, but when the spring bar is pushed back to set the machine, it strikes the stud 79 and tilts the lever 71 so that the latter, acting on the pin 69, throws the trigger shaft outward and into position for use. When the striker 67 of the trigger shaft 66 is struck so as to oscillate the shaft, the lug 65 on said shaft causes the hollow shaft 59 to turn and this swings the stud 61 from beneath the bent arm 62 of the shaft 54^a,

so that the spring 55 swings said shaft forward and tilts the pins 53^a in a manner to release the loops 52^a. The spring bar 39 is thereby released and the springs 42 draw the spring bar violently forward; and the spring bar carries with it the carriage 28 so that the mail bag, which is deposited on the carriage, is thrown forcibly out of the front side of the cage and into the opposite cage which is adapted to receive it.

When the two machines are brought opposite one another, the trigger shaft of one is adapted to strike the striker arm of the other; and it is obvious that the trigger shafts must be held in different planes, and to this end it is necessary to slightly modify the construction of one machine, and such modifications are shown in the machine 10, see Figs. 1 and 7. In the machine 10 a transverse shaft 59^a is substituted for the hollow shaft 59 and is provided with a stud 61 operating on the bent arm 62 on the shaft 54^a in the manner already described, and the shaft is also held in position by a spring 63 also like the one previously described. The shaft 59^a, however, is provided at its front end with a segmental gear 80 which meshes with a similar gear 81, see Figs. 1 and 7, on a trigger shaft 82, which in this machine is substituted for the shaft 66 and which has a key-way 83 therein in which the set screw 84 of the gear 81 is held, and this enables the shaft to slide through the gear. The outer end of the trigger shaft 82 is provided with a striker arm 67^a which is adapted to extend upward and into the path of the trigger shaft 66 of the machine 10^a, see Fig. 1. The shaft 82 is provided with a collar 68 and a pin 69 like that described above, except that in this case the pin 69 extends upward instead of downward, but connects with the lever 71 in the manner already described.

When the machines are to be used, the levers 45 are forced back so as to carry back the spring bars 39, and the spring bars are caught and held in the manner already described, after which the levers are thrown forward. The carriages 28 are pushed into the back part of the machines, the mail bags to be exchanged are placed upon the carriages, the lids 15 of the machines closed and held by the bails 18, and the machine 10 is wheeled near the track so that the open side of its cage will come very near to the open side of the cage on the passing train. As the machine 10^a passes the machine 10, the striker arms 67 and 67^a are struck by the trigger shafts 66 and 82 so that the shafts 59 and 59^a are tilted, and the spring bars released in the manner described, which permits the two spring bars to be thrown towards each other, and the carriages 28 are also carried forward toward the front portions of the cages and the bag in one cage is thrown into the opposite cage.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A mail bag catcher and discharger, comprising an open sided cage having a yielding top, a spring-pressed carriage held to slide transversely in the cage, an oscillating trigger shaft extending forward from the cage and having a laterally extending striker arm, and mechanism operated by the trigger shaft for releasing the carriage, substantially as described.
2. A mail bag catcher and discharger, comprising a cage having an open front side and a yielding top, a carriage held to slide transversely in the cage and to carry a mail bag, a spring-pressed bar held to slide horizontally in the cage and adapted to engage and throw forward the carriage, a lever mechanism to throw back the bar against its springs, fastening devices to hold the bar back or set, an oscillating trigger shaft extending forward from the machine and having a laterally extending striker arm, and mechanism operated by the trigger shaft for releasing the spring bar, substantially as described.
3. A mail bag catcher and discharger, comprising a cage having an open front side, a swinging lid forming the rear top portion of the cage, a spring bail to hold the lid closed, and ejecting mechanism carried beneath the floor of the cage and adapted to throw a bag from the cage, substantially as described.
4. The combination with the cage having an open front side, of a swinging inclined lid hinged to the cage top, a swinging spring bail extending over the lid and adapted to hold it closed, and catches to hold the bail in place, substantially as described.
5. A mail bag catcher and discharger, comprising a cage having an open front side and a compartment beneath it, a carriage held to slide on the floor of the cage and having projecting portions held to slide in slots in the cage floor, a spring-pressed cross bar extending longitudinally through the compartment beneath the cage and adapted to engage the projections on the carriage, swinging levers pivoted at the ends of the cage and provided with rearwardly extending segments, latch levers pivoted on said segments and adapted to engage the ends of the spring bar and force it back, spring catches adapted to hold the spring bar back or set, an oscillating trigger shaft extending forward from the compartment beneath the cage and having a striker arm at its outer end, and mechanism actuated by the trigger shaft for releasing the spring bar catches, substantially as described.
6. The combination with the cage having an open side and a slotted bottom, of spring-pressed supplemental carriages held to move beneath the slots in the bottom, a detachable bag-carrying carriage adapted to slide on the bottom of the cage and to connect with the supplemental carriages, and mechanism for releasing the supplemental carriages and moving the bag-carrying carriage forward, substantially as described.
7. The combination with the cage having a slotted bottom to receive carriage guides, of a detachable cover plate to cover the slots in the bottom, and a fastening device to secure the cover plate in position, substantially as described.
8. A mail bag catcher and discharger, comprising a cage having an open front side, a transversely moving carriage held to slide on the floor of the cage, a spring-pressed bar extending longitudinally beneath the cage floor and adapted to throw the carriage forward, spring loops secured to the spring bar, an oscillating spring-repressed shaft having catches to engage the loops of the spring bar, the catches being thrown normally out of engagement, a second oscillating shaft adapted to connect with the first shaft and hold the catches in engagement with the spring loops, a trigger shaft held to slide longitudinally in the second oscillating shaft and to project forward from the front of the machine, and a striker arm secured to the trigger shaft and extending laterally from its outer portion, substantially as described.
9. In a machine of the character described, the combination of the spring-pressed bar arranged to throw forward the carriage of the machine, the spring loops secured to the bar, the oscillating shaft arranged parallel with the spring bar and provided with pins to engage the loops, the shaft being normally tilted so as to release the loops, a bent arm secured to the oscillating shaft, a second oscillating shaft arranged at right angles to the first shaft and having a stud to support the bent arm of said shaft and hold the catches into engagement with the spring loops, a sliding trigger shaft adapted to project forward from the front of the machine and having a striker arm at its outer end, means for tilting the second oscillating shaft and releasing the first oscillating shaft by the movement of the trigger arm, and a lever mechanism for throwing forward the trigger shaft by the backward movement of the spring bar, substantially as described.
10. In a mail bag catcher and discharger, the combination of the cage, the spring bar for throwing a bag out of the cage, a trigger shaft held to slide beneath the cage and to extend outward from the machine, a striker arm for oscillating the trigger shaft, mechanism actuated by the trigger shaft for releasing the spring bar, and a spring-pressed lever held to normally throw the trigger shaft inward, and operatively connected with the spring bar so as to throw the trigger shaft forward by the backward movement of the spring bar, substantially as described.

GEORGE W. DAILEY.

Witnesses:

WILLIAM H. H. ROCK,
CASSIUS M. NILES.