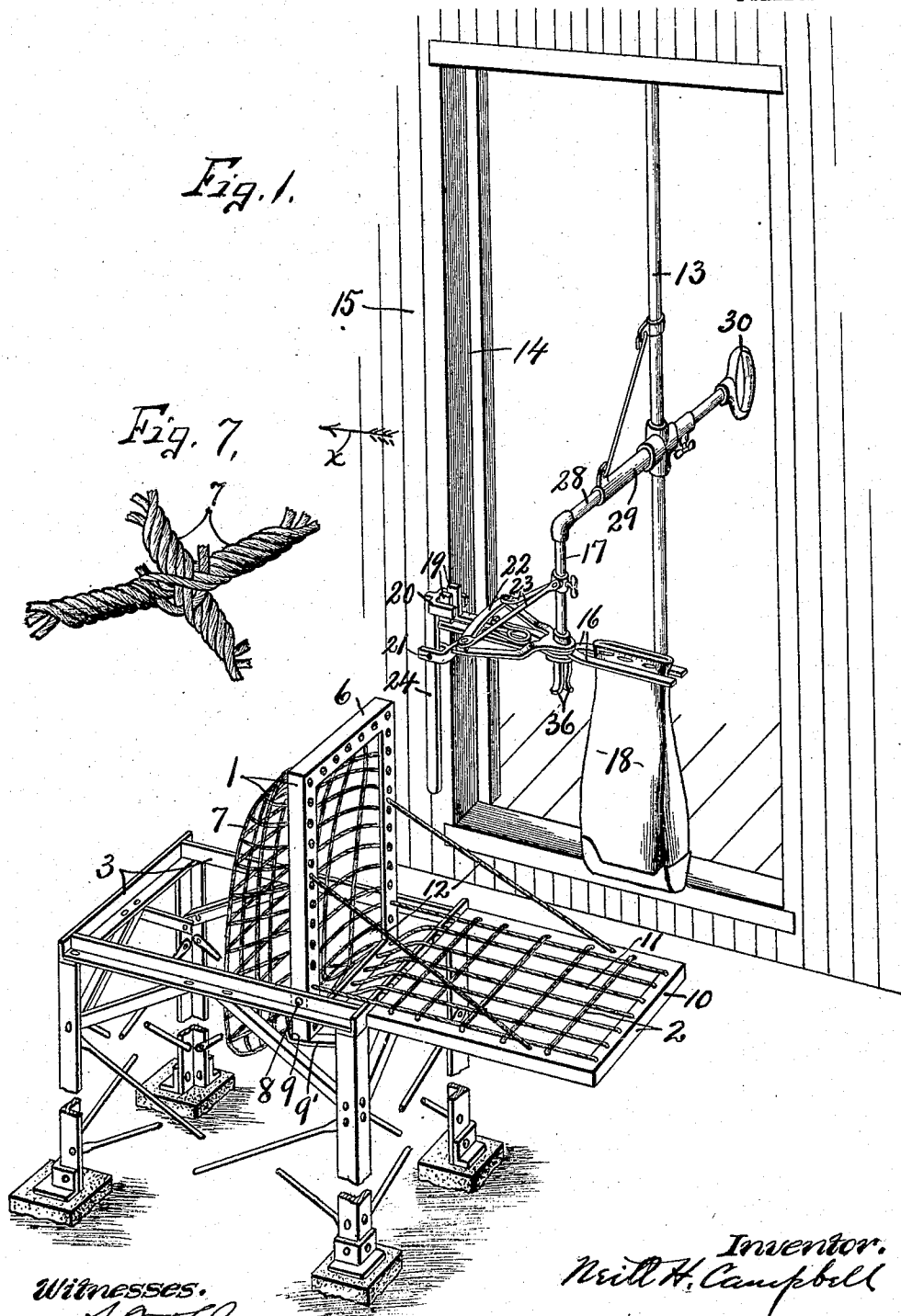


N. H. CAMPBELL.
RAILWAY MAIL HANDLING APPARATUS.
APPLICATION FILED FEB. 1, 1909.

942,054.

Patented Dec. 7, 1909.

2 SHEETS—SHEET 1.



Witnesses.

A. C. Thomas
W. E. Chase

Inventor.
N. H. Campbell

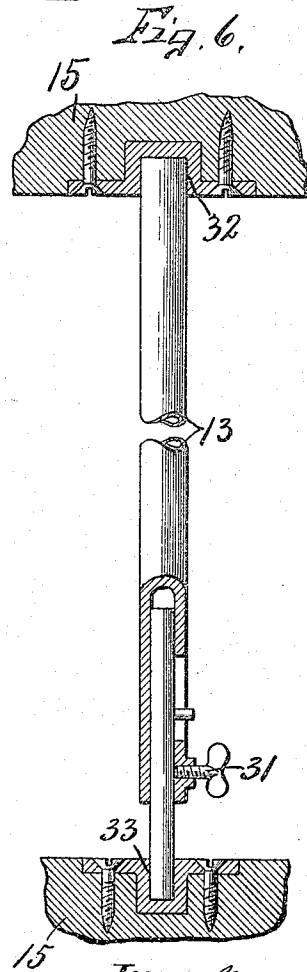
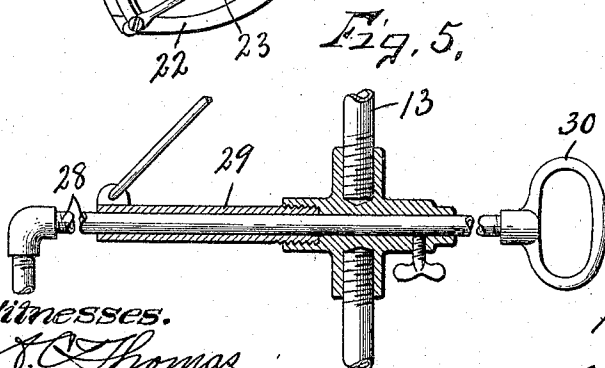
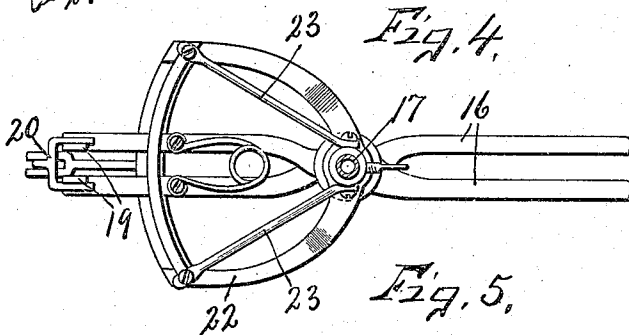
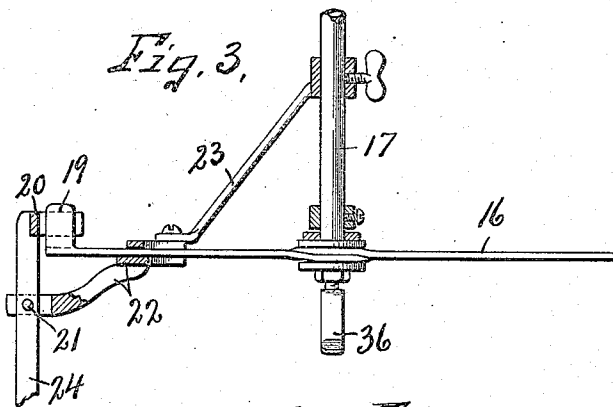
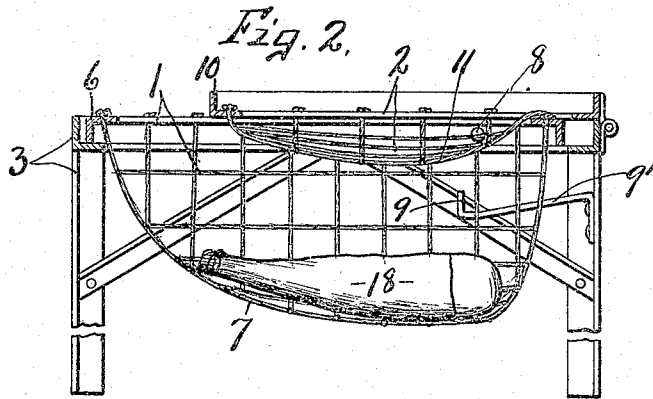
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Attorney.

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2 SHEETS—SHEET 2.



Witnesses.
J. C. Thomas
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UNITED STATES PATENT OFFICE.

NEILL H. CAMPBELL, OF BINGHAMTON, NEW YORK.

RAILWAY MAIL-HANDLING APPARATUS.

942,054.

Specification of Letters Patent.

Patented Dec. 7, 1909.

Application filed February 1, 1909. Serial No. 475,442.

To all whom it may concern:

Be it known that I, NEILL H. CAMPBELL, a citizen of the United States, residing at Binghamton, in the county of Broome, in the State of New York, have invented new and useful Improvements in Railway Mail-Handling Apparatus, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to certain improvements in railway mail handling apparatus and refers more particularly to the combination of a receiver and delivering apparatus, the latter being adapted to receive and automatically retain the mail bag and is provided with means coacting with a portion of the receiver for releasing the mail bag and enabling the same to be deposited by its momentum and gravity into the receiver.

My main object is to provide a combined delivering and receiving apparatus by which the mail bag may be suspended from the neck and automatically deposited into the receiver without liability of damaging the bag or its contents.

The mail bag is suspended by the neck between suitable jaws of the delivering apparatus on the moving car, the jaws being held in their closed position upon the neck of the bag by a movable detent having a trip arm adapted to contact with a portion of the receiver while the car is moving for the purpose of causing the jaws to open to release the bag and allow it to discharge by its own momentum and gravity into the receiver which is stationary and located in suitable proximity to the moving car in the path of the trip arm and bag.

Other objects and uses relating to specific parts of the delivering device and receiver will be brought out in the following description.

In the drawings—Figure 1 is a perspective view of the receiver and delivering apparatus, the latter being shown as operatively mounted in the door of a mail car ready to deliver the mail bag into the receiver which is shown in its receiving position. Fig. 2 is an enlarged lengthwise vertical sectional view through the receiver and supporting frame shown in its closed position after the mail bag has been delivered thereinto. Fig. 3 is an elevation partly in section of the main portion of the delivery

device. Fig. 4 is a top plan of the detached delivering apparatus showing the upright supporting standard in section and the jaws in their closed position. Fig. 5 is a sectional view through the swinging support for the adjusting rod for the delivery device showing said adjusting rod in elevation. Fig. 6 is an elevation partly in section and partly broken away of the upright supporting standard and its retaining sockets. Fig. 7 is a detail view of intersecting portions of the rope which form the cage or basket receiver.

The receiver preferably comprises a swinging cage—1— and a swinging closure—2—therefor, both of which are mounted in and upon an open rectangular supporting frame—3—, the latter being supported at the desired height relatively to the car upon upright legs or standards—4— which rest upon the ground or other suitable foundation. It is evident, however, that any other suitable support, capable of holding the receiver in proper relation to the delivering device in the car, may be substituted. It is also evident that the basket may be hung upon any convenient support so long as it is capable of swinging to and from a vertical and horizontal position. It is evident, however, that although I have described the frame—3— with the cage—1— and cover—2— as removable bodily from the platform—4—, the effect in reversing is the equivalent of mounting the latter device upon a revolving support.

The cage—1— consists of an open rectangular frame—6— preferably of angle or channel iron and a flexible netting—7— made of intersecting ropes fastened together at their intersections and properly anchored to the frame—6— preferably by passing the ends of the ropes through apertures and having crown knots to prevent withdrawal of such ropes. These ropes are usually made of French cable-made hemp or other suitable material capable of retaining a more or less permanent form when the frame—6— is adjusted for use, that is the ropes are arched or projected some distance beyond the rear of the frame—6— to form a flexible basket or cage to receive the mail bag when released from the delivery device hereinafter described.

The open frame—6—, which is quite rigid and of ample size to receive the mail bag, is hinged or pivoted near its lower or

front end at —8— to the front end of the main supporting frame —3— and is preferably of the same form and size as the main frame, the pivot or hinge —8— being located equidistant from the corresponding ends of the frames —3— and —6— so that when the frame —6— is in its closed position its sides and ends lie in close proximity to the sides and ends of the main supporting frame —3—, the rear end of the latter forming a limiting stop or abutment with which the corresponding end of the frame —6— engages when forced to its closed position by the impact of the mail bag and trip arm therewith. The greater portion of the receiving basket or cage —1— therefore projects some distance above the top of its supporting frame —3— with the open side of the frame —6— in alinement with and facing the mail bag when the latter is suspended upon the car for delivery.

The swinging movement of the main receiver or basket —1— is limited to a vertical position by means of one or more limiting stops —9— which in this instance constitute the upturned ends of spring arms —9'—, the latter being secured to adjacent legs or upright parts —5— of the main supporting frame —3— and are spring-tensioned upwardly so as to automatically position the stops —9— in the path of the adjacent ends of the disk supporting frame —6— as the latter is swung upwardly to a vertical position.

The swinging closure —2— comprises a substantially rectangular open frame —10— (preferably of angle iron) and a rope netting —11— of comparatively coarse mesh united at the sides and ends of the frame —10— except at the end which is hinged to the main supporting frame —3— where the lengthwise ropes are continued across the adjacent end bars of the frames —3— and —10— and attached to the corresponding end of the swinging frame —6— of the basket —1—.

The swinging frame —10— and its netting —11— constitute what may be termed a supplemental receiver forming an extension of the end of the frame —3— in which the basket —1— is hinged, said supplemental frame being adapted to swing through an arc of substantially 180° from a horizontal position at one side of the main supporting frame —3— to another position substantially coincident with that of said main supporting frame where it serves to cover a portion of the open side of the basket. This supplemental receiver —2— is connected intermediate its ends by cables or ropes —12— to the intermediate portions of the sides of the basket frame —6— leaving ample intervening space between the cables for the reception of the mail bag, said cables serving to limit the downward swinging

movement of the supplemental receiver, when the basket —1— is swung to its vertical position or adjusted for use and at the same time causing said supplemental receiver to fold over upon the frame when the basket is forced to its down position by impact of the trip arm of the delivery mechanism and mail bag therewith.

The delivery mechanism previously referred to is supported upon an upright bar —13—, which is located in the door way —14— of a car —15— and comprises a pair of intersecting levers or jaws —16— fulcrumed upon an upright supporting bar —17— and having their rear ends movable toward and from each other for grasping and releasing the neck of a suitable mail bag —18—, the forward ends of said jaws being provided with shoulders —19— which are normally engaged by a bifurcated detent —20— for holding the mail bag between the gripping jaws of the levers —16— or upon the neck of the mail bag —18— when the delivery device is adjusted for delivering the mail bag to the receiver —1—.

The detent —20— is made in the form of a lever fulcrumed at —21— upon a supporting bracket —22— which is also mounted upon the upright support —17— and is reinforced or braced by suitable braces —23— and secured to the forward end of the bracket —22— and to the upright support —17— as best shown in Fig. 1. This detent is provided with a trip arm —24— extending some distance beyond the fulcrum —21— and when the delivery device is adjusted for use for delivering the mail bag into the receiver, the trip arm —24— projects into the path of the upper portion of the frame —6— of the basket —1—. It is now clear that as the car is moving in the direction of arrow —X—, Fig. 1, the trip arm —24— will encounter the upper end of the basket frame —6— of the receiver thereby tripping the detent —20— and allowing the gripping jaws of the levers —16— to be opened by the action of a spring —25— as best seen in Fig. 5.

The mail bag is suspended from the gripping jaws of the lever —16— in alinement with the position of the open side of the receiver —1— so that as it is released by the opening of the gripping jaws or levers —16—, its momentum and gravity will carry it directly into the open side of the receiver and the force of impact of the mail bag together with that of the trip arm —24— against the receiver will rock the receiver from its vertical position to its horizontal position with the bag therein. This rocking of the receiver from its vertical to a horizontal position will cause a corresponding movement of the supplemental receiver —2— through the medium of the cables —12—, said supplemental receiver serving to trap

the mail bag in the basket —1— after the latter has been forced to its down position with the mail bag therein and at the same time it affords a more positive trapping of the mail bag in the receiver by reason of the fact that as soon as the tilting receiver —1— is rocked from its operative position by the force of impact of the mail bag and detent therewith, the extension or supplemental receiver —2— is immediately thrown toward and partially closes the open side of the receiver —1— to prevent rebound of the bag therefrom.

The upright supporting arm —17— is mounted upon a horizontal extension —28— which telescopes with and passes through a horizontal tubular support —29—, the latter being mounted directly upon the upright support —13—. The inner end of the horizontal support —28— is provided with a handle —30— by which it may be adjusted to properly position the delivery device relative to the receiver.

The upright supporting rod —13— is extensible and removably supported in the upper and lower sides of the door opening and for this purpose is composed of telescoping sections clamped together by a set screw —31—, the upper end of the upper section being stepped or loosely seated in a socket —32— in the upper side of the door opening while the lower end of the lower section is loosely seated or stepped in a socket —33— in the bottom of the door opening as best seen in Fig. 4, the entire support being rotatable in said sockets to allow the delivery device which is mounted thereon to be rocked by hand entirely within the car or adjusted so as to support the mail bag and trip arm of the detent in position to engage and deposit the mail bag into the receiver. As the trip arm —24— is forced from its normal position by impact with the upper end of the receiver its free end is impinged between a pair of spring jaws —36— which operate to frictionally hold said detent in its inoperative position. By loosening the set screw —31—, the lower section of the support —13— may be elevated out of the socket —33— thereby permitting the withdrawal of the upper section from the socket —32— and allowing the entire delivery device to be removed from the car or by the reverse operation installed in the same or any other car provided with sockets —32— and —33—.

What I claim is:

1. In a railway-mail transfer system, a bag holder on a car, a stationary support, a bag receiver pivoted to and rising from the support and means on the car coacting with the receiver for releasing the bag from said holder and depositing the same into the receiver and rocking said receiver from its receiving position as the car moves relatively to the receiver.

2. In a railway-mail transfer system, a bag holder on a car, a movable receiver, a stationary support for the receiver, means on the car actuated by contact with the receiver for releasing the bag from the holder and shifting the receiver from its receiving position and a normally open cover closed by the shifting of the receiver.

3. In a system for transferring mail bags from a moving car to a receiving station, a bag holder on the car, a stationary support, a swinging basket pivoted to and normally rising from the support and having its open side normally opposed to the direction of movement of the car and in the path of movement of the bag, and means on the car coacting with the receiver for releasing the bag from the holder and allowing such bag to pass into the basket and rock the same from its receiving position.

4. In a system for transferring mail bags from a moving car to a receiving station, a bag holder on the car, a support at the station, a normally upright vertically swinging basket hinged to and rising from the support and having a flexible netting bottom and its open side disposed in the path of the approaching bag, and coacting devices at the station and on the car for releasing the bag from its holder and allowing such bag to gravitate into the basket and rock the same to a horizontal position.

5. In a system for transferring mail bags from a moving car to a receiving station, a bag holder on the car, a movable basket at such station and having its open side disposed in the path of the approaching bag, and coacting devices at the station and on the car for releasing the bag from the holder and allowing such bag to gravitate into and shift the basket from its receiving position, and a normally open basket cover closed by the shifting of the basket.

6. In a system for transferring mail bags from a moving car to a receiving station, a support at the station a bag holder on the car, a normally upright vertically swinging basket pivoted at its lower end to said support, and having its open side normally disposed in an upright plane in the path of the approaching bag, and coacting devices at the station and on the car for releasing the bag from its holder and allowing such bag to gravitate into the basket and rock the same from its receiving position.

7. In a system for transferring mail bags from a moving car to a receiving station, a bag holder on the car, a vertically swinging basket at such station, and having its open side normally disposed in an upright plane in the path of the approaching bag, a normally open swinging cover for the basket, connections between the basket and cover, and coacting devices at the station and on the car for releasing the bag from the holder

and forcing the basket and cover from their receiving positions.

8. In a system for transferring mail bags from a moving car to a receiving station, a bag holder on the car comprising levers centrally pivoted to each other and having one end normally gripping the neck of the bag, means for holding the jaws closed, a pivoted detent engaging the opposite ends of the levers for holding them in their gripping position, and a basket at the station having its open side normally disposed in the path of the approaching bag and detent for tripping said detent, to release said jaws and allow the bag to gravitate into the basket.

9. In a system for transferring mail bags from a moving car to a receiving station, movable jaws on the car normally gripping the neck of the bag, a detent for said jaws, a trip-arm for the detent a support at said station and a bag receiving basket pivoted to and rising from the support and having its open side in the path of the approaching trip-arm and bag for tripping the detent and releasing the jaws and thereby allow the bag to gravitate into the basket and rock the basket from its receiving position.

10. In a system for transferring mail bags from a moving extension to a receiving station, an extensible upright bar on the car, a horizontal tubular guide on the bar, an arm slidable endwise in said guide and provided with a pendent extension movable jaws on the car normally gripping the neck of the bag, a detent for said jaws, a trip-arm for the detent, and a bag receiving basket having its open side in the path of the approaching trip-arm and bag for engaging and tripping said trip-arm and thereby releasing the bag and allowing the latter to fall into the basket.

11. In a system for transferring mail bags from a moving car to a receiving station, movable jaws on the car normally gripping the neck of the bag, a detent for said jaws, a trip-arm for the detent, a support for the jaws, detent and trip arm, a stationary support at said station, a bag receiving basket pivoted to and normally rising from the support and having its open side in the path of the approaching trip-arm and bag for engaging and tripping said trip-arm and thereby releasing the bag, and a normally open basket cover hinged to the support, said basket and cover being rocked from their normal positions by the impact of the bag with the receiver.

12. In a system for transferring mail bags from a moving car to a receiving station, a bag holder on the car comprising a pair of gripping jaws for engaging and holding the bag, means for holding the jaws in their closed position, a swinging basket having a flexible bottom and an open side normally disposed in a vertical plane in the path of

the approaching bag, a stationary support for the basket, a supplemental bag receiving support hinged to the basket support and connected to said basket, and movable means on the car adapted to be engaged and operated by contact with the basket for tripping the detent and releasing the bag from the grasp of the jaws, and means for opening said jaws.

13. In a system for transferring mail bags from a moving car to a receiving station, a bag holder and an adjustable support therefor mounted upon the car, said bag holder comprising gripping jaws for the bag, means for holding the gripping jaws in their gripping position, a trip arm for throwing the said holding means from its holding position, means for opening the jaws when the holding means is released, a vertically swinging basket having its open side in the path of said tripping arm, said tripping arm being operated by contact with the basket to trip the detent and also operating to rock the basket from its receiving position by contact therewith.

14. In a system for transferring mail bags from a moving car to a receiving station, a bag holder and an adjustable support therefor mounted upon the car, said bag holder comprising gripping jaws for the bag, means for holding the gripping jaws in their gripping position, a trip arm for throwing the said holding means from its holding position, means for opening the jaws when the holding means is released, a vertically swinging basket having its open side in the path of said tripping arm, said tripping arm being operated by contact with the basket to trip the detent and also operating to rock the basket from its receiving position by contact therewith, said basket having a hinged extension normally disposed in a horizontal plane and flexibly connected thereto.

15. In a system for transferring mail from a moving car to a receiving station, a horizontally swinging bag holder and support therefor, said bag holder having a separate horizontal adjustment relatively to the car upon which it is mounted and comprising gripping jaws, and movable means for holding the gripping jaws in their gripping position, in combination with a basket and support therefor, said basket having its open side disposed in the path of the approaching bag, and means on the car coacting with the basket to trip the jaw holding means from its holding position.

In witness whereof I have hereunto set my hand this 15th day of January 1909.

NEILL H. CAMPBELL.

Witnesses:

JOHN W. GLASER,
JOHN M. HANRAHAN.