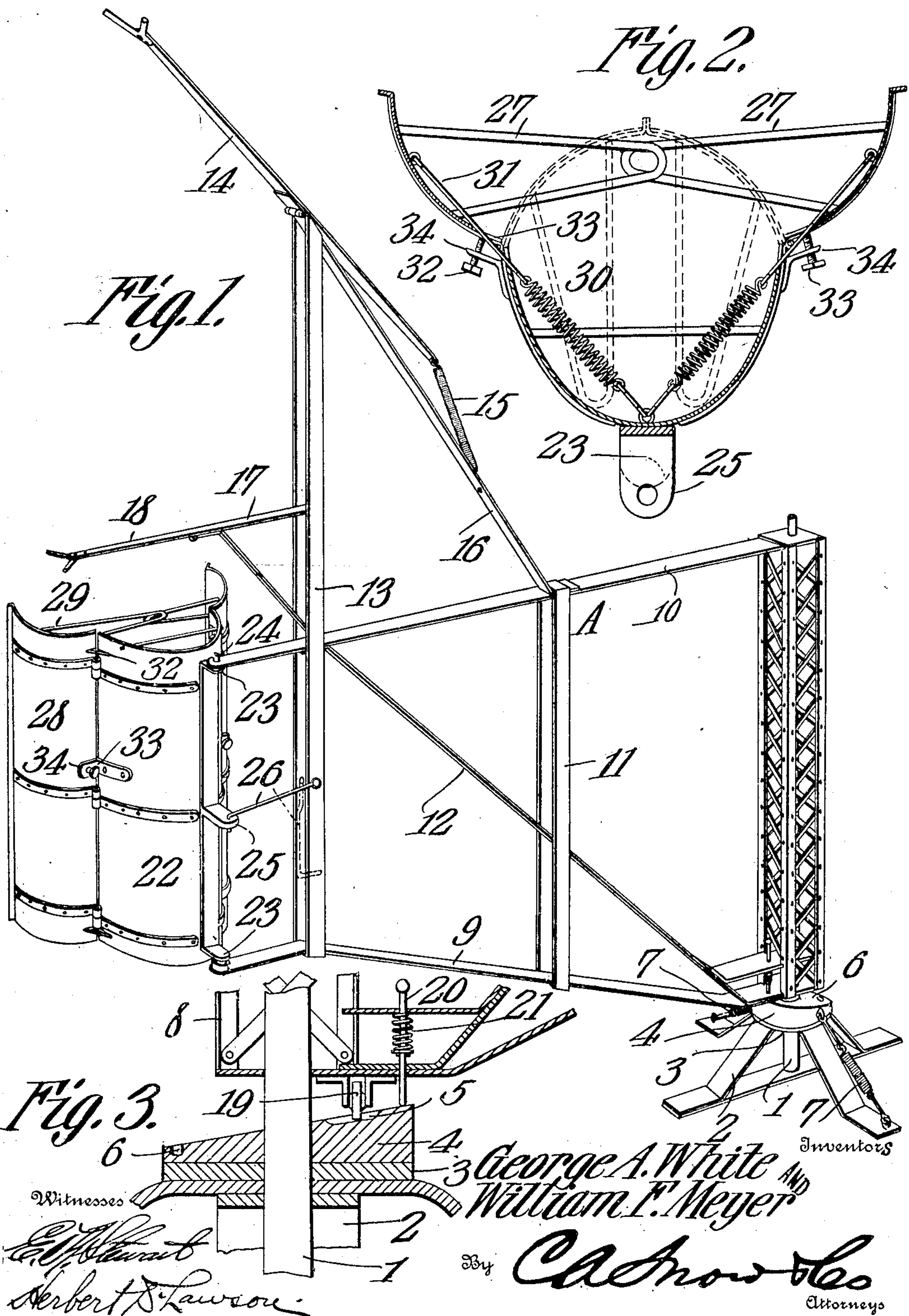


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G. A. WHITE & W. F. MEYER.
MAIL BAG CATCHING AND DELIVERING APPARATUS.
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UNITED STATES PATENT OFFICE.

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MAIL-BAG CATCHING AND DELIVERING APPARATUS.

No. 888,283.

Specification of Letters Patent.

Patented May 19, 1908.

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To all whom it may concern:

Be it known that we, GEORGE A. WHITE and WILLIAM F. MEYER, citizens of the United States, residing at Wellsville, in the county of Montgomery and State of Missouri, have invented a new and useful Mail-Bag Catching and Delivering Apparatus, of which the following is a specification.

This invention relates to apparatus for catching mail bags delivered from cars in motion.

One of the objects of the invention is to provide a movably supported bag gripping member designed to be directed away from the car as soon as a bag is engaged thereby, there being means of novel construction for automatically locking the bag gripping member and its support in inoperative position.

Another object is to provide yieldable means for gradually stopping the support immediately subsequent to the locking operation, thus bringing the support to a gradual stop and reducing the danger of injury to the parts such as might result from the sudden stopping thereof.

A further object is to provide a support for the bag gripping member which can be caused to swing out of operative position when subjected to a very slight lateral pressure thus reducing to the minimum the danger of seriously injuring any person who might inadvertently strike the bag catcher while passing it upon a car.

A still further object is to provide a gripping member designed to automatically embrace and support the bag directed thereinto, simple means being utilized for holding the gripping member in both opened and closed positions.

Another object is to provide a gripping member which can be quickly adjusted and secured so as to receive a bag from a car moving in either direction. This is particularly desirable where there is but a single track.

With these and other objects in view the invention consists of certain novel features of construction and combinations of parts which will be hereinafter more fully described and pointed out in the claims.

In the accompanying drawings is shown the preferred form of the invention.

In said drawings: Figure 1 is a perspective view of the apparatus embodying the present improvements, the gripping member being shown open. Fig. 2 is an enlarged plan view

of the gripping member, one of the hinge members thereof being removed and the relative positions of the parts when closed being indicated by dotted lines. Fig. 3 is a vertical section through a portion of the frame and showing the locking mechanism used in connection therewith.

Referring to the figures by characters of reference, 1 designates a tapered standard circular in transverse section and constituting the pivot of the frame hereinafter described, said standard being mounted at its lower end within a suitable supporting frame 2 carrying a table 3 preferably in the form of a flat horizontal disk. Revolvably mounted on this standard 1 and supported by the table 3 is a combined guide and locking member 4 the upper face of which is inclined relatively to the table 3. A notch or recess 5 is formed within the inclined face of this member 4 near the uppermost portion thereof and another recess 6 is formed within said face at a point diametrically opposite the recess 5. These two recesses are at different distances from the standard 1 as clearly indicated in Fig. 3. Springs 7 are connected to the peripheral portion of member 4 at diametrically opposite points and are fastened to the base 2. These springs pull in opposite directions and downwardly so as to maintain the two recesses 5 and 6 normally on a line extending at right angles to the railroad track adjacent which the apparatus is located.

Slidably and revolvably mounted on the standard 1 is an elongated housing 8 constituting the pivotal end of a crane A made up of superposed arms 9 and 10 which are connected by braces 11 and 12 and by upstanding strips 13 which project above the arm 10 and have a bag engaging arm 14 hinged thereon. The outer or bag engaging end of the arm is held normally elevated by a spring 15 which connects the inner end of the arm with a brace 16 connecting strips 13 with arm 10. The bracket 17 is supported by the arms 13 and has a lower bag engaging arm 18 hingedly connected thereto. This arm normally assumes a vertical position but in Fig. 1 it has been shown elevated, as when engaging a bag, so as not to obscure the bag gripping member thereunder.

A roller 19 is connected to the lower end of the housing 8 and moves therewith and said roller is designed to travel in a circle upon the upper inclined surface of the member 4, the recess 5 being so positioned as to consti-

tute a seat for the roller and thus hold the crane A projected toward the track. A locking pin 20 is slidably mounted within the lower portion of the crane and above member 4 and a spring 21 serves to hold this pin normally pressed against the inclined surface of said member 4. This pin is designed, when the crane is swung out of operative position, to move into recess 6 and thus lock the crane and the member 4 against independent rotary movement.

The bag gripping member used in connection with the crane consists of a vertically disposed trough-like body 22 having ears 23 outstanding from the middle portion thereof adjacent its upper and lower ends and each of these ears carries a pintle 24 which projects into one of the arms 9 and 10. An arm 25 extends from the body at a point between these ears and has an opening therein designed to receive either one of a pair of hooks 26 pivotally connected to opposite sides of the crane. These hooks are designed, when engaging the arm 25, to hold said arm projected in either direction at right angles to the crane. One or more cross bars 27 connect the side portions of body 22 at each end thereof.

Hingedly connected to each vertical or longitudinal edge of the body is an arcuate gripping jaw 28 having arms 29 extending from the inner face thereof adjacent the upper and lower ends and the arms of the two jaws are designed, when the jaws are open, to lap at their terminals. Springs 30 are fastened to the inner or concaved surface of body 22 adjacent the upper and lower ends of the center thereof and each of these springs has a rod 31 fastened to it and pivotally connected to one end portion of one of the jaws 28. Slots 32 are formed in the meeting edges of the jaws and body so as to receive these rods when the jaws are swung open to their fullest extent. The springs will therefore exert a pull upon the jaws and along lines extending outside of the hinges so as to hold the jaws yieldingly in open or extended position. The same springs also operate efficiently to pull the jaws into closed position after they have been swung past the dead center.

When it is desired to set the apparatus so as to catch a mail bag carried by a moving car the jaws 28 are swung apart as far as possible and will thus be held by the springs 30 as clearly indicated in Fig. 2. This opening movement of the jaws can be limited by stop screws 33 mounted in brackets 34 on body 22. The bag gripping member is then swung either to the right or to the left of the crane and secured by means of one of the hooks 26. The crane is then positioned with roller 19 in the upper recess 5.

When a mail bag carried by a moving car assumes a position between the jaws 28 the

straps ordinarily employed for connecting the bag to its supporting structure will strike the arms 29 and push them toward body 22. Jaws 28 will thus be swung inwardly, their movements being completed by the springs 30 and the bag will therefore be securely held within the body. The impact of the bag against the gripping member will be sufficient to slightly swing the crane A and cause roller 19 to move upwardly out of recess 5. The weight of the crane will cause this roller to travel downwardly in an arc upon the member 4 until the crane has moved about one-hundred-eighty degrees whereupon the locking pin 20 will be directed into recess 6. In order that the crane may be prevented from coming to a sudden stop, the member 4 will partly rotate with the crane after the pin 20 becomes seated in notch 6 and this movement of member 4 will be gradually stopped by the springs 7. These springs also serve to clamp the member 4 downwardly upon table 3 so that friction is also utilized to retard the rotation of member 4. Obviously, the frictional engagement of the parts 3 and 4 will increase in proportion to the stress of the springs 7, and to the degree of rotation of the member 4. It is of course to be understood that the arms 14 and 18 are to be utilized in the ordinary manner for holding a bag in position to be delivered to a car.

One important advantage in having the upper surface of member 4 inclined is that when a train is moving slowly and the impact of the mail sack is not great enough to forcibly swing the crane out of the way the roller 19 will move downward upon this inclined surface so that the crane will be positively shifted backward until the pin 20 engages member 4. Importance is attached to the frictional engagement of the member 4 and plate 3 because this, in addition to the action of the springs 7, results in the gradual stopping of the crane should the same receive a bag from a rapidly moving train and by producing this gradual stop there is no possibility of damaging mail contained in the bag, some of which may be of a delicate nature and could not withstand the crush produced by a sudden stop. By mounting the gripping member so that it can be turned either to the right or to the left and so securing it it is possible to use it for catching the bag from either direction according to the direction of movement of the train. It will be noted that the body 22 is so formed as to present no rough edges or corners which might injure the mail matter. Although the gripping member has been shown mounted upon a crane at the side of the track, it is to be understood that with slight modifications the same may be connected to a mail car so as to receive mail from a delivery crane.

Various changes in the construction and general arrangement of the parts may be

made without departing from the spirit of the invention. For instance, the lattice work shown upon the housing 8 can, if preferred, be extended therefrom to the upstanding strips 13.

What is claimed is:

1. The combination with a bag gripping member and a swinging support therefor; of means having an inclined face and cooperating with the support to swing said support by gravity and shift it out of a predetermined position, said support being mounted to travel upon the inclined face.

2. The combination with a bag gripping member and a swinging support therefor; of means having an inclined face and cooperating with the support to swing said support by gravity and shift it out of a predetermined position, an anti-friction device carried by the support and disposed to travel upon the inclined face, and means for locking the support in a predetermined elevated position upon said face.

3. The combination with a bag gripping member and a swinging support therefor; of cooperating means for holding the support in a predetermined position, one of said means operating by gravity upon the other means to actuate the support when moved out of said predetermined position, and means for automatically locking said cooperating means together subsequent to such movement.

4. The combination with a bag gripping member and a swinging support therefor; of cooperating means for holding the support in a predetermined position, said means cooperating to swing the support by gravity when moved out of said predetermined position, and yieldable means for stopping the swinging movement of the support.

5. The combination with a bag gripping member and a swinging support therefor; of cooperating means for holding the support in a predetermined position, said means cooperating to swing the support by gravity when moved out of said predetermined position, a movable stop device, and means for automatically coupling together the support and stop device.

6. The combination with a bag gripping member and a swinging support therefor; of cooperating means for holding the support in a predetermined position, said means cooperating to swing the support by gravity when moved out of said predetermined position, a spring controlled stop device, and means for automatically coupling together the support and stop device.

7. The combination with a bag gripping member and a swinging support therefor; of cooperating means for holding the support in a predetermined position, said means cooperating to swing the support by gravity when moved out of said predetermined position, a revoluble locking member, a support there-

for, elastic means for binding said member upon the support in proportion to its rotation, and means for automatically coupling together the swinging support and the locking member.

8. The combination with a bag gripping member and a swinging support therefor; of a spring controlled locking member normally fixed relatively to the support, and means for automatically coupling together the support and locking member during the movement of said support.

9. The combination with a bag gripping member and a swinging support therefor; of a revoluble locking member, elastic means for holding said member normally fixed relatively to the swinging support, means for automatically coupling together the support and locking member during movement of the support, and means for frictionally engaging the locking member to retard its movement, the said frictional engagement being proportioned to the stress of the elastic means.

10. The combination with a movable locking member having an inclined face; of a crane mounted to swing thereabove and about the axis thereof, means carried by the crane for engaging said inclined face to hold the crane and locking member in a predetermined relation, said means being movable upon the inclined face by gravity when shifted out of said predetermined relation.

11. The combination with a movable locking member having an inclined face; of a crane mounted to swing thereabove and about the axis thereof, means carried by the crane for engaging said inclined face to hold the crane and locking member in a predetermined relation, said means being movable upon the inclined face by gravity when shifted out of said predetermined relation, and means for automatically coupling together the crane and locking member during the movement of said crane.

12. The combination with a movable locking member having an inclined face and elastic means for controlling the movement of said member; of a crane mounted to swing thereabove and about the axis thereof, means carried by the crane for engaging said inclined face, to hold the crane and locking member in a predetermined relation, said means being movable upon the inclined face by gravity when shifted out of said predetermined relation, and means for automatically coupling together the crane and locking member during the movement of said crane.

13. The combination with a locking member having an inclined face, there being a recess in the upper portion of said face; of a crane mounted to swing above said member and about the axis thereof, and an anti-friction device movable with the crane and disposed to be seated within the recess, said device when shifted from the recess being mov-

able by gravity upon the inclined face to swing the crane.

14. The combination with a support; of a bag gripping device comprising a body, oppositely disposed jaws hingedly connected thereto, elastic means for holding the jaws either in open or closed position, and means carried by the jaws for engagement by a bag to close the jaws.

15. The combination with a support; of a bag gripping device comprising an upstanding trough-like body connected to the support, oppositely disposed jaws hingedly connected to the body, elastic means for holding the jaws in open or closed position, arms carried by the jaws and disposed to be contacted by a bag directed into the body, and adjustable members for limiting the opening movement of the jaws.

16. The combination with a support; of a bag gripping device comprising an upstanding trough-like body pivotally connected to the support, means for holding the body against movement relative to the support and at either side thereof, jaws hingedly connected to opposite portions of the body, elastic means for holding the jaws in open or closed positions, inwardly extending arms carried by the jaws.

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

GEO. A. WHITE.
WILLIAM F. MEYER.

Witnesses:

W. W. BARRETT,
E. A. BARRETT.