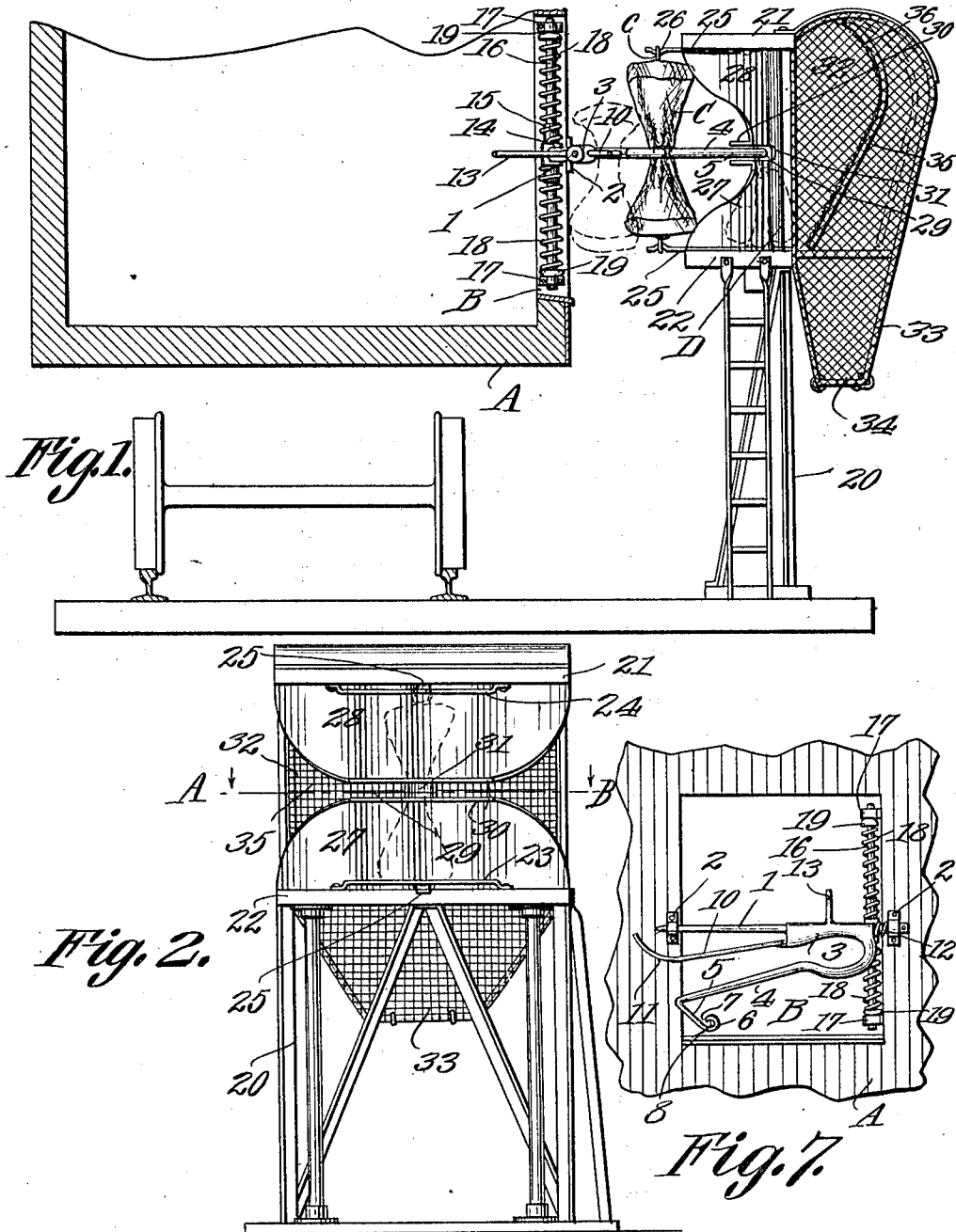


J. D. PERKINS.
MAIL HANDLING APPARATUS.
APPLICATION FILED AUG. 19, 1912.

Patented Dec. 24, 1912.

2 SHEETS-SHEET 1.

1,048,339.

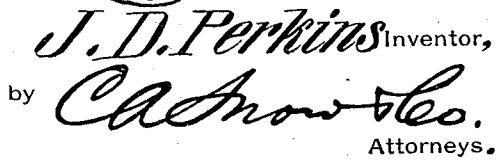


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1,048,339.

2 SHEETS—SHEET 2.



UNITED STATES PATENT OFFICE.

JAMES D. PERKINS, OF ATLANTA, GEORGIA.

MAIL-HANDLING APPARATUS.

1,048,339.

Specification of Letters Patent.

Patented Dec. 24, 1912.

Application filed August 19, 1912. Serial No. 715,929.

To all whom it may concern:

Be it known that I, JAMES D. PERKINS, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Mail-Handling Apparatus, of which the following is a specification.

This invention relates to apparatus for effecting the interchange of mail between railway stations and moving cars, and its object is to provide mechanism which is effective in operation, will not in any way injure the mail bags while being transferred, and which can be used without necessitating any changes in the mail cars now in use.

Another object is to provide mechanism of this character particularly designed for use in connection with fast trains, cushioning means being utilized for reducing the force of the impact of the bags against both the station crane and the car supported crane.

A further object is to provide means whereby the car supported crane can swing vertically to adjust itself to the station crane should the car tilt, as when traveling along a curve.

Another object is to provide improved means for attaching bags to the car supported crane.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a vertical transverse section through the complete apparatus, a portion of the car structure being shown in section. Fig. 2 is a front elevation of the station crane. Fig. 3 is a horizontal section through a portion of the car structure and showing the car supported crane

in plan. Fig. 4 is an enlarged elevation of the cushioning means for controlling the up and down oscillation of the arm of the car supported crane. Fig. 5 is a section on the line A—B Fig. 2. Fig. 6 is a detail view of the bag supporting eye and showing the cutting blade therein and a bag attached to the eye. Fig. 7 is a side elevation of a portion of a car structure and showing the crane thereon in its normal position.

Referring to the figures by characters of reference A designates a portion of a car structure having a door opening B. The car supported crane is mounted in this opening B and includes a bar 1 mounted for rotation in brackets 2 like those ordinarily used on mail cars, said brackets being located at the sides of the door. A block or enlargement 3 is formed on or secured to the bar and has a crooked arm 4 extending therefrom and diverging from the bar 1, said arm terminating in an obliquely disposed finger 5 having a terminal eye 6. A cord receiving opening or passage 7 extends into the eye back of the finger 5 and suitably secured within the eye is a blade 8 the cutting edge 9 of which extends outwardly and slightly rearwardly from the passage 7. A spring retaining finger 10 projects from the block or enlargement 3 and is substantially parallel with the arm 4, the free end of this spring finger being curved inwardly toward the bar 1 as shown at 11. A coiled spring 12 is mounted on the bar 1 between the enlargement 3 and the rear bracket 2 and constitutes a cushion for limiting the longitudinal movement of the bar 1 in one direction while a bag is being delivered to the crane.

An arm or handle 13 extends from the enlargement 3 and into the door opening B, this handle projecting between parallel fingers 14 outstanding from a sleeve 15. Said sleeve is mounted to slide on a guide rod 16, the ends of which are mounted in supporting brackets 17 secured to one side of the door casing. Springs 18 are interposed between the brackets 17 and the respective ends of the sleeve 15 and bear against said ends of the sleeve and also against collars 19 formed on or secured to the rod 16 ad-

jacent its ends. Rod 16 can be removably mounted in the brackets 17 in any suitable manner and it is to be understood that one set of these brackets are to be located at each side of the door opening so that rod 16 can be readily transferred from one side of the opening to the other.

Handle 13 normally extends between the fingers 14 so as thus to hold the finger 10 and the arm 4 normally in a substantially horizontal plane, as shown in Figs. 1 and 3. It is to be understood, therefore, that should the outer end of arm 4 be swung upwardly or downwardly relative to the car structure, one or the other of the springs 18 will be placed under stress so as promptly to return the arm 4 to its initial position when released.

The station crane to be used in connection with the car supported crane includes a supporting structure 20 having elongated upper and lower platforms 21 and 22 respectively. A guide strap 23 is arranged longitudinally along the top of the platform 22 and another guide strap 24 is arranged longitudinally along the bottom of the platform 21. Mounted between each platform and the strap secured thereto is a bag supporting arm 25, said arm being pivotally connected to the platform so as to swing relative thereto into or out of active position. Each arm 25 is preferably formed with a recess 26 near its outer end, these recesses being designed to receive rings *c* connected to the ends of a bag or pouch C.

Mounted upon the upper surface of the lower platform 22 is an arcuate deflecting plate 27 and another similar plate 28 is secured to the lower surface of the upper platform 21, said plate 28 being located directly above the plate 27 and the two plates having their near edges converging toward the centers thereof so as to form a contracted throat or passage 29. Flanges 30 extend from the middle portions of the near edges of the plates and constitute the walls of the passage 29 and a web 31 connects the two plates at the center of said passage so as to hold them against relative movement.

Suspended from the top platform 21 and extending downwardly back of the platform 22 is a receiving basket 32 which extends throughout the length of the platforms and is preferably made of strong wire fabric mounted on a suitable frame, as shown. A receptacle 33 is formed by the lower portion of the basket and is supported below the lower platform, this receptacle being likewise formed preferably of a wire fabric and having a trap door 34 constituting the bottom thereof and which may be provided with any suitable means for securing it in closed position. A curved cushioning member or abutment 35 is hingedly connected at

its upper end to the receiver 32 and normally hangs close to the back or convex surface of the plate 27.

When it is desired to effect the interchange of mail at a station, the bag to be delivered to a car is connected to and supported between the arms 25 and said arms swung into position so as to extend toward the path of the car, as shown in Fig. 1. The bag to be delivered to the station is fastened to the eye 6 by passing a strong cord *d* around the middle portion of the bag D and then inserting the cord through the passage 7 in the eye 6 so that it will extend across the cutting edge of blade 8. This position of the parts has been illustrated in Fig. 6. As the car approaches the station the obliquely disposed finger 5 passes between the near edges of the plates 27 and 28, thus bringing the bag D into position against the back or convex faces of the plates 27 and 28. As the movement of the car continues, arm 5 travels through the throat or passage 29 and as the bag cannot pass therein, the blade 8 cuts cord *d* thus freeing the bag D and permitting the eye 6 to travel longitudinally of the throat and finally pass beyond the station crane. As the bag is brought against the convex or rear faces of plates 27 and 28 with considerable momentum, said plates will act as deflectors and will cause the bag to be thrown backwardly into the receiver 32 and against the hinged abutment 35. This abutment is free to swing rearwardly and thus reduces the impact of the bag against the receiver and permits said bag to drop into the basket 33 without injury. By then opening the door 34 the bag can be removed readily. While the bag is thus being delivered to the station crane, the bag C supported by the arms 25 is received between the arm 4 and the spring finger 10 and passes into the space formed between the crooked portion of arm 4 and the enlargement 3. It becomes impossible for the bag to become accidentally dislodged from this position and the force of the impact is considerably reduced by reason of the fact that the block 3 is cushioned by the spring 12. Should the car be slightly tilted during the interchange of mail, as when traveling along a curve, the finger 5 will be guided by the plate 27 or 28 into the throat 31 and the handle 13 will thus swing either upwardly or downwardly and cause a corresponding movement of sleeve 15. When the car is to approach the station from the opposite direction, the bar 1 is reversed and the position of the rod 16 is also changed. The receiver 32 is preferably formed of coarse metal fabric so that snow, etc., will not become lodged therein. If desired, however, a metal shield 36 may be extended

over the top of the receiver for shielding it from the admission of snow, etc.

What is claimed is:—

1. In apparatus of the class described the combination with a car supported crane, of a stationary crane including upper and lower members converging toward their centers and forming a passage therebetween for the reception of a portion of the car supported crane, a receiver back of said members, the said members constituting means for detaching a bag from the car supported crane and deflecting it into the receiver, and movably supported means within the receiver for receiving the impact of the bag.

2. In apparatus of the class described the combination with a car supported crane, of a stationary crane including upper and lower members converging toward their centers and forming a passage therebetween for the reception of a portion of the car supported crane, a receiver back of said members, the said members constituting means for detaching a bag from the car supported crane and deflecting it into the receiver, and a hinged abutment suspended in the receiver.

3. In apparatus of the class described, the combination with upper and lower platforms, of relatively fixed arcuate members having their adjoining edges converging toward their centers to form a throat or passage, means movable into and through the passage for conveying a bag against the back or convex faces of the members.

4. In apparatus of the class described, the combination with upper and lower platforms, of relatively fixed arcuate members having their upper edges converging toward their centers to form a throat or passage, means movable into and through the passage for conveying a bag against the back or convex faces of the members, and a receiver, said members constituting means for detaching the bag from its conveying means and deflecting said bag into the receiver.

5. In apparatus of the class described, a stationary crane including relatively fixed converging members, means for conveying a bag against the rear faces of the members, a receiver, said members constituting means for deflecting the bag into the receiver, and a hinged abutment in the receiver and in the path of the bag.

6. In apparatus of the class described, upper and lower longitudinally curved members converging to form a passage therebetween, means for directing a bag against the convex faces of the members, said means being movable past the members, a receiver, said members constituting means for deflecting the bag into the receiver and an abutment movably mounted in the receiver and in the path of the deflected bag.

7. In apparatus of the class described, the combination with upper and lower platforms, of relatively fixed arcuate members having their upper edges converging toward their centers to form a throat or passage, means movable into and through the passage for conveying a bag against the back or convex faces of the members, a receiver, and a movable abutment in the receiver and in the path of the deflected bag.

8. In apparatus of the class described, the combination with a car supported crane including an outstanding finger, an eye thereon, and a cutting blade within the eye, said eye constituting means for receiving a cord for tying a bag thereto, of upper and lower stationary platforms, relatively fixed arcuate members between the platforms and having their adjacent edges converging toward their centers to form a passage for the reception of the eye, the convex faces of the members constituting means for engaging the bag and shifting the cord along the blade to sever it.

9. In apparatus of the class described, the combination with a car supported crane including an arm mounted for sliding movement and up and down oscillation, and cushioning means for retarding the movements of the arm, of a stationary crane including relatively fixed converging members for the reception of the arm therebetween, said arm constituting bag holding means and said members constituting means for removing the bag from the arm.

10. In apparatus of the class described, the combination with a car supported crane including an arm mounted for sliding movement and up and down oscillation, and cushioning means for retarding the movements of the arm, of a stationary crane including relatively fixed upper and lower arcuate members converging toward their centers for receiving a portion of the arm therebetween, said arm constituting bag holding means and the convex faces of the members being adapted to engage the bag, removed from the arm, and deflect it rearwardly from the crane.

11. In apparatus of the class described, the combination with a car supported crane including a bag holding eye and a cutting blade within the eye, of a stationary crane including relatively fixed upper and lower members having their near edges converging toward their centers to form a passage for the reception of the eye, said members being arcuate and disposed one above the other, the convex faces of the members constituting means for engaging the bag, shifting it relative to the blade to release the bag, and for deflecting the bag backwardly from the members.

12. In apparatus of the class described the

combination with a crane including a cutting blade, said blade constituting means for supporting a cord used for tying the bag to the crane, of means adjacent the path of
5 the crane for engaging said bag to shift the cord along the blade and sever it.

In testimony that I claim the foregoing

as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES D. PERKINS.

Witnesses:

SELINA WILLSON,
JULIA S. STEVENS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."