

W. KRAENNER.
 APPARATUS FOR DELIVERING AND RECEIVING MAIL.
 APPLICATION FILED JAN. 30, 1912.

1,038,600.

Patented Sept. 17, 1912.

2 SHEETS—SHEET 1.

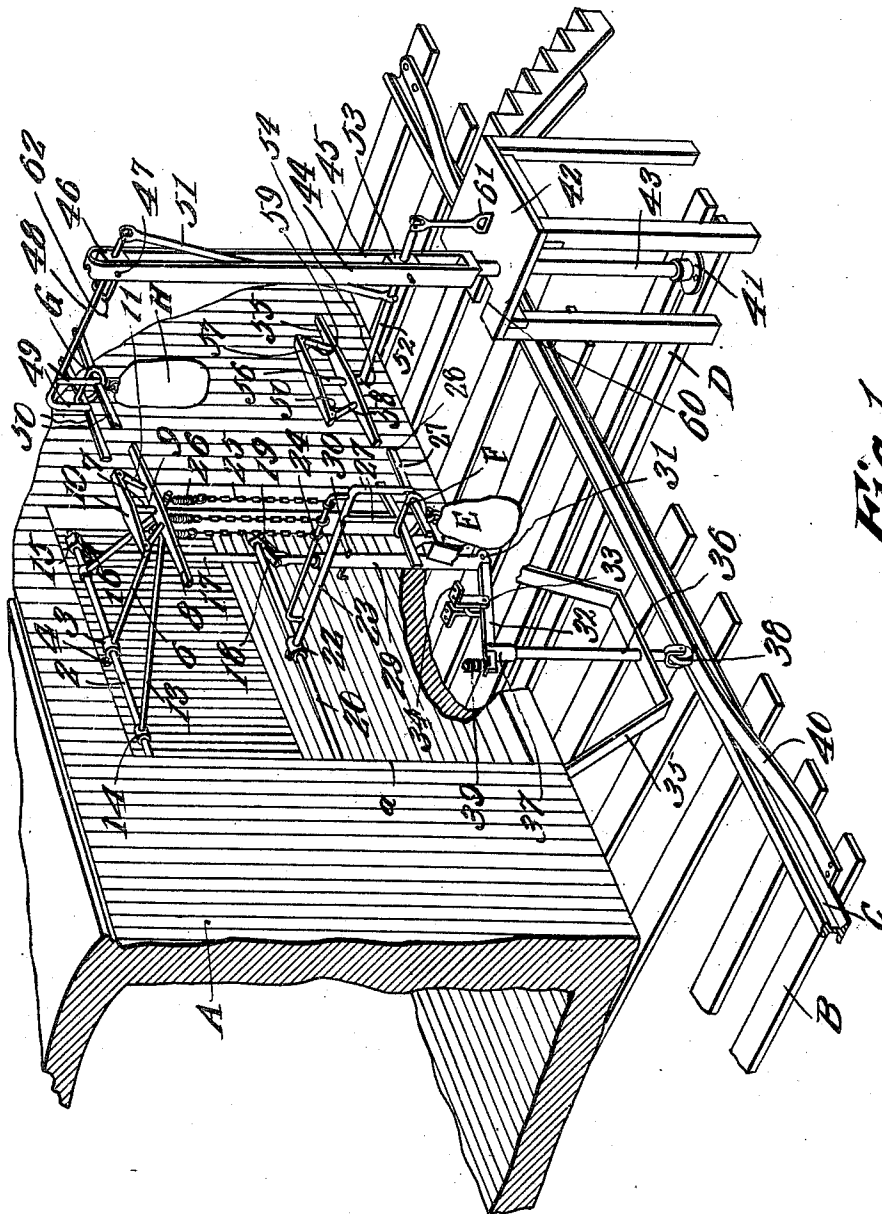


Fig. 1.

Witnesses

J. T. Tomlin
L. H. Wickow

William Kraenner,
 Inventor

by

C. A. Snow & Co.
 Attorneys

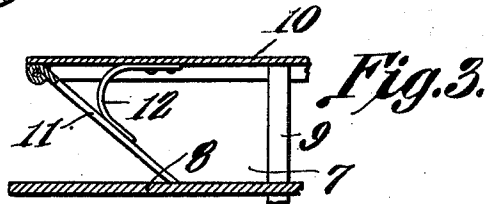
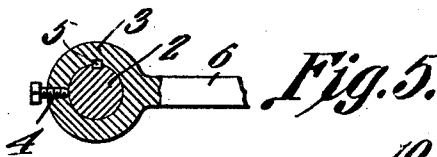
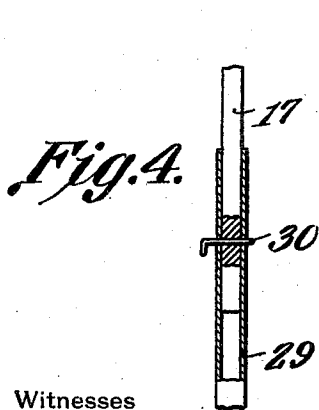
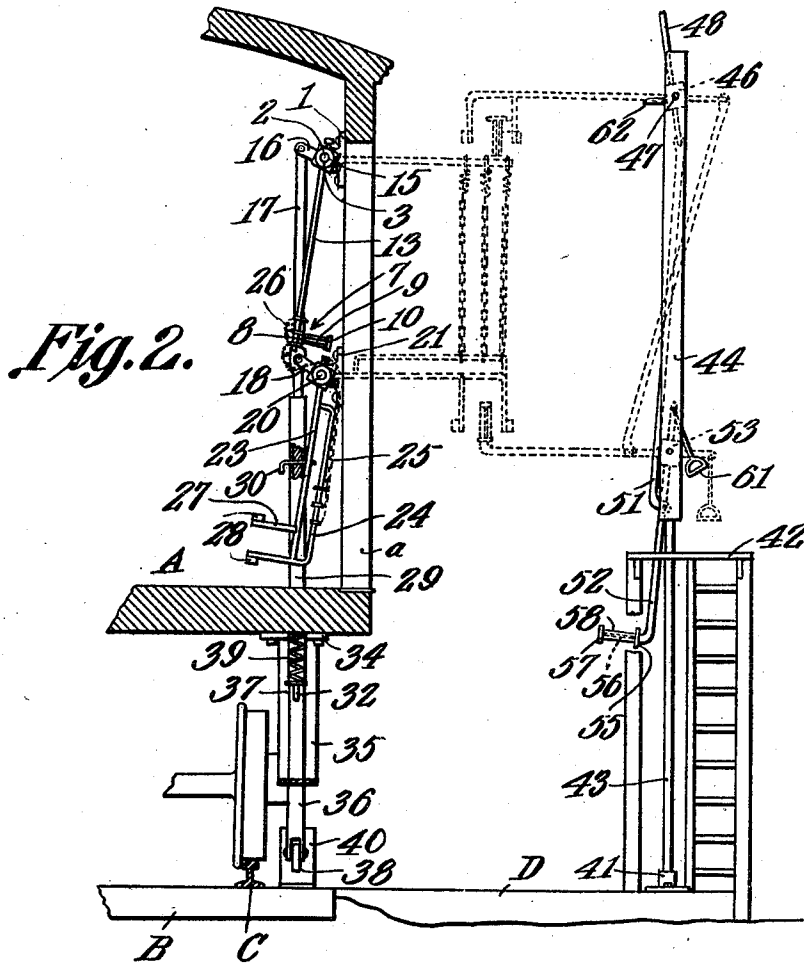
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Witnesses

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C. A. Snow & Co.
 Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM KRAENNER, OF RIPLEY, OHIO.

APPARATUS FOR DELIVERING AND RECEIVING MAIL.

1,038,600.

Specification of Letters Patent. Patented Sept. 17, 1912.

Application filed January 30, 1912. Serial No. 674,325.

To all whom it may concern:

Be it known that I, WILLIAM KRAENNER, a citizen of the United States, residing at Ripley, in the county of Brown and State of Ohio, have invented a new and useful Apparatus for Delivering and Receiving Mail, of which the following is a specification.

This invention relates to apparatus for effecting the interchange of mail between stations and moving cars, one of the objects of the invention being to provide a car supported crane which is normally supported out of active position where it can be conveniently reached for the purpose of placing a mail bag or pouch thereon or for removing the same therefrom, means being employed adjacent the points where the interchange is to take place, for actuating the crane so as to shift it to active position.

Another object is to provide novel means for engaging the ring of the mail pouch or bag when delivered to the crane, said means being so constructed as positively to prevent the pouch or bag from becoming dislodged accidentally from the crane to which it has been delivered.

Another object is to provide an improved form of cushion for engagement by the pouch or bag when delivered to the crane on the car.

A further object is to provide a car supported crane which, when not in use, is suspended within the door opening.

A still further object is to provide an improved form of station crane designed to cooperate with 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 perspective view of the apparatus constituting the present invention, the parts being shown in the positions assumed thereby immediately

prior to the interchange of mail. Fig. 2 is a transverse section through a portion of the car structure and showing the two cranes in their normal positions, the positions of the parts during the interchange of mail, being indicated by dotted lines. Fig. 3 is an enlarged central longitudinal section through one of the receiving heads of a crane, said section being taken through one end portion of the head. Fig. 4 is a view partly in section and partly in elevation showing the detachable connection between the car supported crane and its operating mechanism. Fig. 5 is an enlarged section through one of the shafts and showing the method of attaching a sleeve thereto.

Referring to the figures by characters of reference A designates a portion of a mail car having the usual door opening *a*. Brackets 1 are secured to the wall of the car at opposite sides of the opening close to the top thereof and a shaft 2 is journaled at its ends in these brackets and has a central sleeve 3 mounted thereon. This sleeve is held against rotation upon the shaft by means of a set screw 4 and a key 5, as shown in Fig. 5. An arm 6 extends radially from the sleeve and is provided, at its outer end, with a head indicated generally at 7. This head consists of an elongated bottom strip 8 preferably tapered toward its ends and mounted at its center upon the arm 6, said strip being at right angles to the arm. A stem 9 extends upwardly from the middle portion of the bottom strip and is connected to the middle portion of a top strip 10 arranged longitudinally above the strip 8 and tapered toward its ends. The top strip is preferably somewhat shorter than the bottom strip and has dogs 11 pivotally connected to its ends and converging downwardly, the lower or free ends of these dogs normally bearing on the bottom strip 8. Springs 12 are preferably attached to the top strip 10 and bear against the dogs 11 so as to hold them yieldingly in contact with the bottom strip. Stem 9 is perpendicular to the bottom strip 8 and it will be seen that the bottom and top strips cooperate to form oppositely extending forks for the purpose hereinafter set forth. Braces 13 diverge from the outer end portion of arm 6 and are provided at their inner ends with sleeves 14 secured to the

shaft 2 in the same manner as is the sleeve 3 hereinbefore described. Another sleeve 15, which is attached to the shaft 2 in the same manner as illustrated in Fig. 5, has a radial arm 16 extending therefrom and pivotally connected to a downwardly extending rod 17. Said rod is located close to one side of the door opening *a* and is pivotally connected, adjacent its lower end, to an arm 18 extending radially from a sleeve 19. Said sleeve is mounted on a shaft 20 and is secured thereto in the manner illustrated in Fig. 5. Shaft 20 extends transversely of the door opening at a point preferably midway between the top and bottom of the door opening and the ends of the shaft are journaled in suitable brackets 21 secured to the wall of the car A close to the sides of the opening *a*. Arms 16 and 18 are parallel and thus it will be seen that, by reason of the rod 17 connecting the two arms, shafts 2 and 20 will rotate in unison.

A sleeve 22 is secured to the shaft 20 in the same manner as illustrated in Fig. 5 and has an arm 23 extending radially therefrom, there being a rod 24 mounted on said arm and spaced therefrom for the greater part of its length. A series of chains 25 or other suitable flexible devices is fastened at its lower end to the rod 24 and at its upper end to a series of coiled springs 26 fastened to the arm 6 at points close to and under the strip 8. Springs 26 serve to hold the chains 25 taut when the crane is in active position, as illustrated in Fig. 1.

Parallel arms 27 extend downwardly from the outer end portion of arm 23 and each of these arms is provided, at its lower end, with a spring strip 28 constituting a support for a bag or pouch. Each of these supports is preferably bowed slightly, the two strips or supports being oppositely disposed, as clearly indicated in Fig. 1.

The lower end portion of the rod 17 projects into a tubular member 29 which is slidably mounted in the floor of the car structure A and is detachably connected to the rod 17 by a pin 30 or any other suitable means. The lower end of the tubular member 29 is pivotally connected, as at 31, to one end of a lever 32 fulcrumed, as at 33, in a bracket 34, said bracket being secured to and depending from the bottom of the car structure A. A guide bracket or hanger 35 extends downwardly from the car structure and a stem 36 is slidably mounted therein, said stem being pivotally connected at its upper end to lever 32, as shown at 37, while its lower end carries a wheel 38 normally supported close to one side of one of the rails on which the car is mounted. A spring 39 is interposed between the bottom of the car structure and one end of lever 32 so as to hold the stem 36 normally pressed downwardly with wheel 38 close to but out

of contact with the upper faces of the ties on which the rail is mounted. These ties have been indicated at B and the rail at C.

Secured to certain of the ties B close to the rail C is an actuating strip 40 which is bowed so that its intermediate portion is supported higher than its end portions whereby, during the movement of the car A past the point of delivery, the wheel 38 will move onto and ride over the strip 40, thereby shifting the stem 36 upwardly for the purpose hereinafter set forth.

It is to be understood that one of the strips 40 is to be located at each station where the interchange of mail is to be effected and at the said station certain of the ties B are extended laterally beyond the strip 40, as indicated at D, these ties serving to support a socket member 41. A platform 42 is erected over the socket member 41 and a standard 43 is secured, at its lower end, in the socket member 41 and extends upwardly through the platform. The upper end of this standard is enlarged, as shown at 44 and has a longitudinal slot 45. A block 46 is mounted in the upper portion of the slot 44 and has trunnions 47 extending through the walls of the slot whereby the block is permitted to rotate freely. An arm 48 extends through the block and is connected fixedly thereto, this arm being provided at one end with downwardly extending parallel arms 49 each of which is secured, at its lower end, to the middle portion of a bowed bag supporting strip 50. The two strips are oppositely disposed and formed preferably of spring metal.

A rod 51 is pivotally connected to the other end of arm 48 and extends downwardly through the slot 45 and is pivotally connected, at its lower end, to an arm 52 extending through a block 53. This block is supported in the lower portion of the slot 45 and is mounted for rotation. One end of arm 52 is extended upwardly as at 54 and is connected to the middle portion of a bottom strip 55 preferably tapered toward its two ends. A stem 56 extends upwardly from the middle portion of this bottom strip and is secured to the middle portion of a top strip 57. Dogs 58 are pivotally connected to the end portions of this top strip and converge downwardly, the free ends of the dogs being held, by springs 59, normally in contact with the bottom strip 55. The two strips 55 and 57 and the parts connected thereto cooperate to form a head which is similar in all respects to the head 7 hereinbefore described. Rod 51 is arranged diagonally within the slot 45 and is connected to arm 48 back of its block 46 and to arm 52 in front of its block 53. Thus it will be seen that when arm 52 swings downwardly motion will be transmitted therefrom through the rod 51 to arm 48 and said

arm will swing upwardly. The weight of the head on arm 52 is sufficient to hold the two arms 48 and 52 normally in said positions. The platform 42 is preferably cut away as at 60 to receive the arm 52 when it is in its normal position. A stirrup 61 is connected to the arm 52 at that end farthest removed from the head on the arm and by means of this stirrup the operator can shift the arms 48 and 52 out of normal and into active positions. A stop 62 extends from the upper portion of the standard and is arranged in the path of the arm 48 so as to limit the downward movement of said arm and, consequently, the upward movement of arm 52, while the parts are being shifted out of their normal positions.

As heretofore stated the arms 6 and 23 of the crane carried by the car structure normally hang downwardly from their respective shafts and the wheel 38 is normally projected downwardly to its lowest position. With the parts thus located the arms 27 extend inwardly, as shown in Fig. 2 and the chains 25, which slidably engage the rod 24, are located close to the inner or upper end of the rod. With the parts thus positioned a mail bag or pouch to be delivered can be placed easily on the bowed supporting strips 28. This pouch which has been indicated at E, has a ring F at one end adapted to be slipped on those ends of the strips 28 extending in the direction opposite to the direction of movement of the car. After the pouch has thus been attached to the car supported crane the apparatus is ready for use.

When it is desired to deliver a pouch or bag to the car from the station crane, the operator depresses the stirrup 61. This causes arm 48 to swing downwardly and thus bring the supporting strips 50 within reach of the operator. The ring G of the pouch H to be delivered to the car is then placed in engagement with those ends of the strips 50 extending in the direction in which the car A is moving. The bag or pouch H after being thus positioned, acts as a weight to hold arm 48 in contact with stop 62 and to hold the arm 52 elevated to active position.

With the parts set in the manner described it will be seen that as the car passes the point where the interchange of mail is to be effected the wheel 38 rides up onto the strip 40 and thus causes the stem 36 to swing lever 32. This lever in turn pulls downwardly on the tubular member 29 and the rod 17 and as said rod is connected to the arms 16 and 18 it will be seen that the two shafts 2 and 20 will be rotated simultaneously and thus cause the arms 6 and 23 to swing outwardly and upwardly to the positions shown in Fig. 1. The bag or pouch E will thus be suspended beyond the side of the car and the

chains 25 will be pulled taut by the springs 26. The parts are maintained in these positions by the strip 40 until the station crane has been passed. In passing said crane the bottom strip 55 is received between the supporting strips 28 and enters the ring F. This ring finally contacts with stem 56 and is thus stripped off of the strips 28 and becomes lodged back of one of the spring pressed dogs 58. Said dog prevents the ring from becoming dislodged from the strip 55. Arms 27 pass along opposite sides of the head on arm 52. While the foregoing operation is taking place the bottom strip 8 passes between the strips 50 and into the ring G and said ring is pulled off of the strips 50 and becomes seated back of one of the dogs 11. The bag or pouch H, while thus being transferred to the car supported crane is brought violently into contact with the chains 25. Springs 26 yield under this excessive strain and thus prevent injury both to the bag or pouch and to the car supported crane. Immediately after the interchange of mail has been effected the wheel 38 rides off of the strip 40 and all of the parts of the two cranes move by gravity back to their initial positions, the bag or pouch supported by arm 52 swinging downwardly to position under the platform 42 while the pouch received by the head 7 swings downwardly into the door opening *a* where it can be easily reached by the occupant of the car and removed from the crane. Should it be desired to pass a station without causing the car crane to shift out of normal position, it is merely necessary to remove the pin 30. Thus it will be seen that as the wheel 38 is elevated by strip 40, the tubular member 29 will slide on the rod 17 without actuating it.

What is claimed is:—

1. In apparatus of the class described the combination with a car structure having an opening, of a receiving member and a delivering member normally suspended within the opening, and means for automatically swinging the members about parallel axes to elevate them simultaneously when passing a point of exchange.

2. In apparatus of the class described the combination with a car structure having an opening, of an upper receiving member and a lower delivering member normally suspended within the opening, means for automatically swinging the members about parallel axes to elevate them simultaneously when passing a point of exchange and a cushion movably connecting the members.

3. In apparatus of the class described, the combination with a car structure having an opening, of upper and lower shafts mounted for rotation within the opening, receiving and delivering members fixedly connected to and movable with the respective shafts, elastic cushioning means connecting the

members, mechanism for simultaneously rotating the shafts to elevate the members and cushioning means; said members being normally suspended within the opening, and
 5 fixed means in the path of a portion of said mechanism for automatically actuating the mechanism while passing a point of exchange.

4. Apparatus of the class described including a car structure having an opening, an upper receiving member and a lower delivering member normally suspended within the opening, cooperating means upon the car structure and adjacent the path of the car
 15 for automatically shifting said members out of the opening and into active positions while passing a point of exchange, and means for detachably connecting said means to the members.

20 5. A car structure, a receiving member and a delivering member normally suspended therefrom out of active positions, means for simultaneously swinging the members upwardly into active positions while passing
 25 a point of exchange, and a pouch cushioning connection between the members.

6. A car structure, a receiving and a delivering member, normally suspended therefrom out of active positions, one of said
 30 members being arranged above the other member, elastic pouch cushioning connections between and movably engaging one of

the members, and means for automatically elevating the members to active positions when passing a point of exchange. 35

7. A car structure, upper and lower shafts journaled thereon, receiving and delivering members normally suspended therefrom out of active positions, an actuating element adjacent the path of the car structure, means
 40 on the structure adapted to be elevated by said element, a lever actuated by said means, a connection between the shafts for causing simultaneous rotation thereof, and a detachable connection between the first mentioned
 45 connection and the lever.

8. A car structure, a receiving member and a delivering member normally suspended therefrom out of active positions, said members being arranged one above the other,
 50 means for simultaneously elevating the members to active positions when passing a point of exchange, elastic cushioning means suspended from one of the members, and a slidable connection between said means and the
 55 other member.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

WILLIAM KRAENNER.

Witnesses:

HENRY SACKER,
 CHARLES A. LINN.