No. 775,208. PATENTED NOV. 15, 1904.

W. DAVIDSON.

MAIL BAG CATCHER AND DELIVERER.

APPLICATION FILED AUG. 20, 1904.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

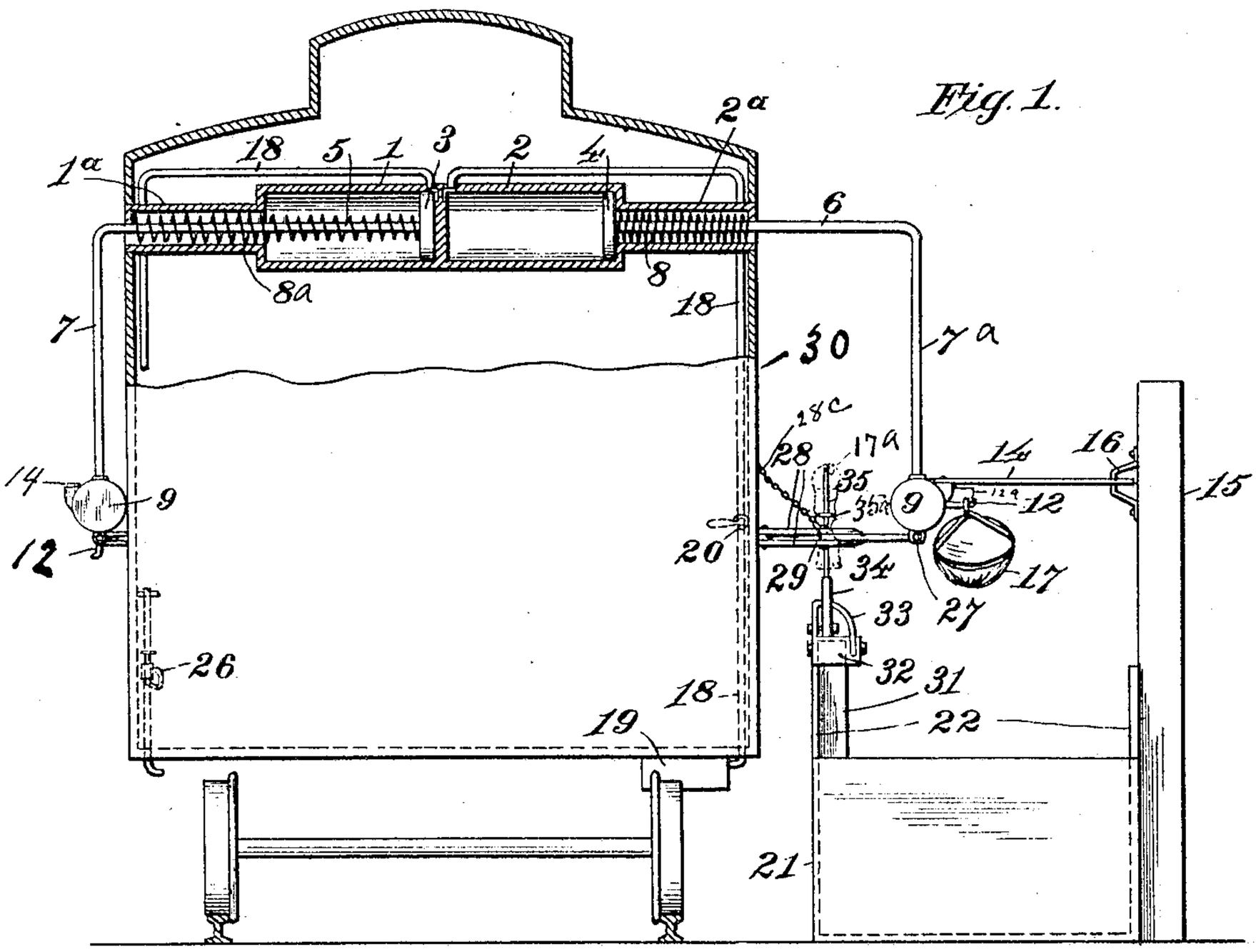
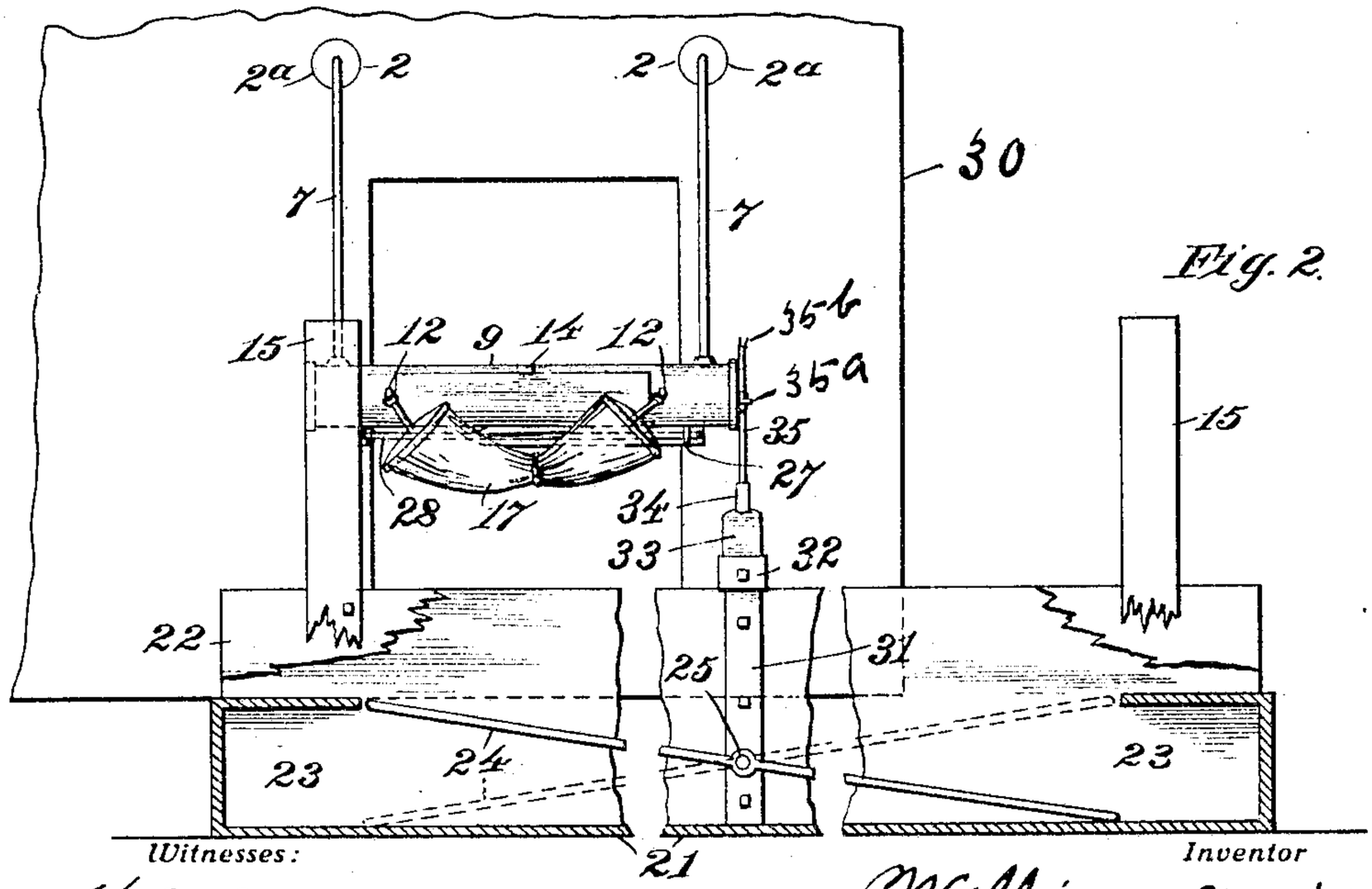


Fig. 2.



Witnesses:

H. S. Austin

H. F. Bradley.

Inventor

William Davidson

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NO MODEL. 2 SHEETS—SHEET 2.

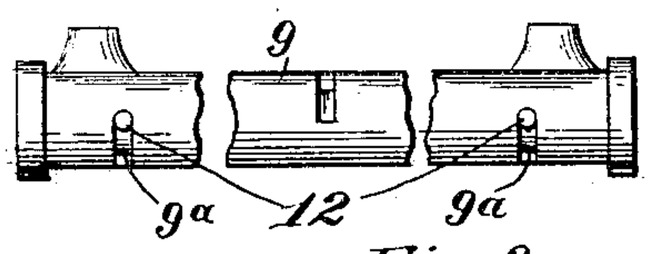

Fig. 3.

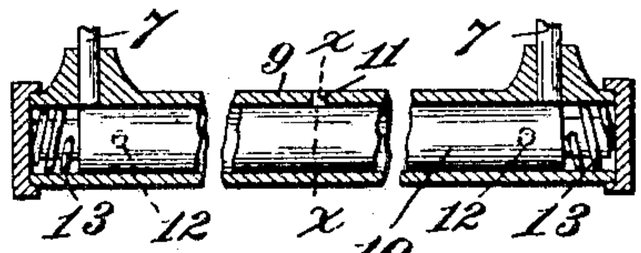

Fig. 4.

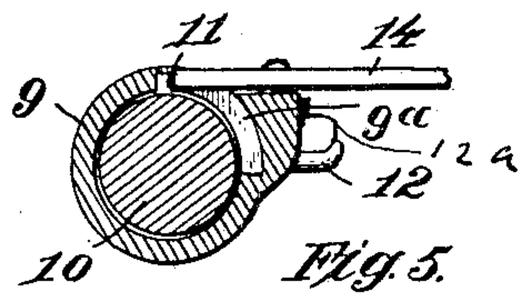

Fig. 5.

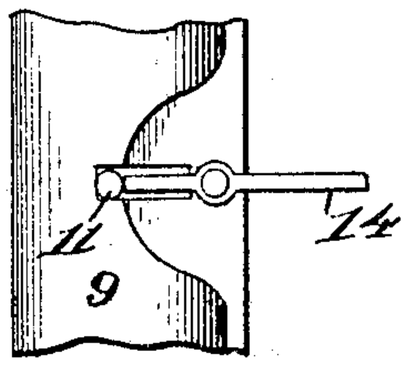

Fig. 6.

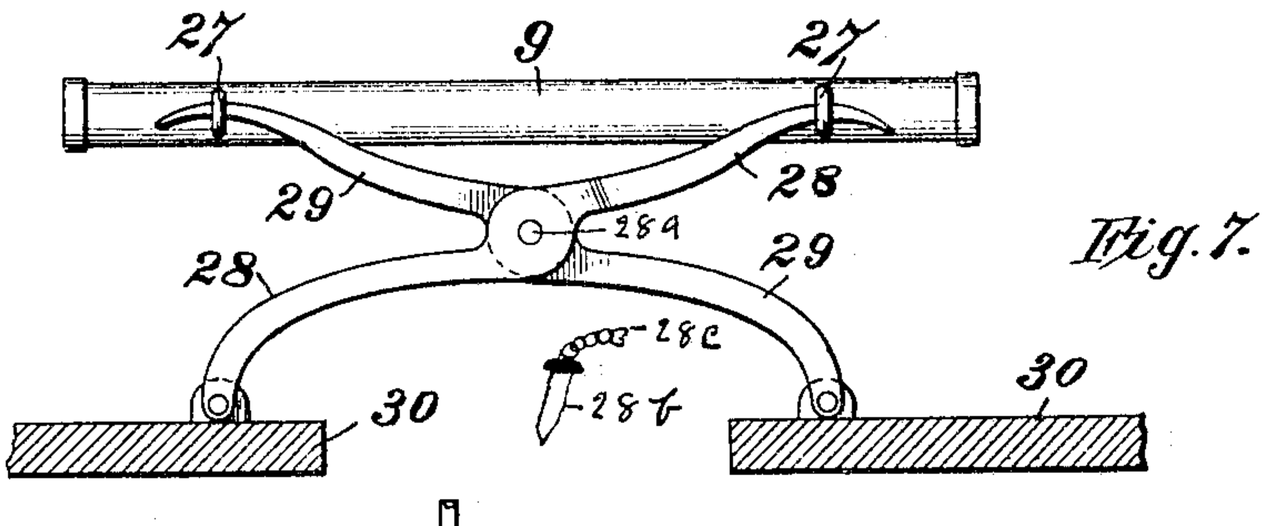

Fig. 7.

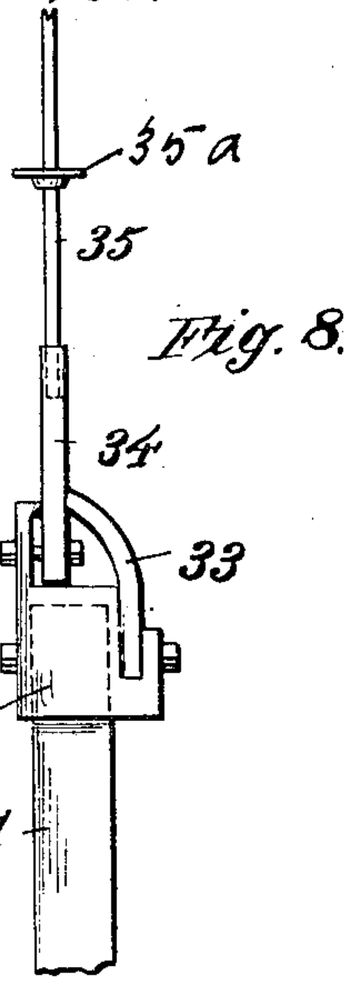

Fig. 8.

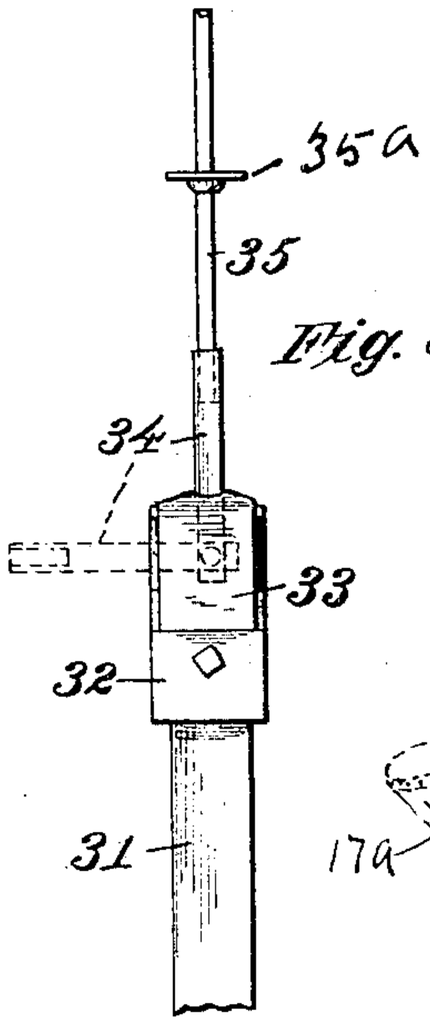

Fig. 9.

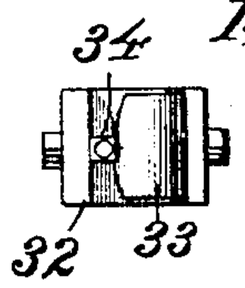

Fig. 10.

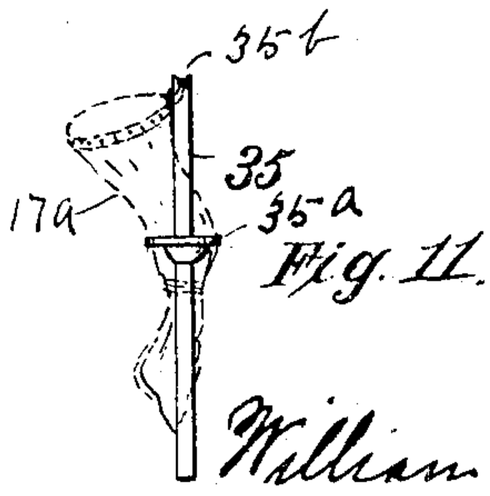

Fig. 11.

Witnesses:

H. S. Austin

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Inventor

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No. 775,208. Patented November 15, 1904.

UNITED STATES PATENT OFFICE.

WILLIAM DAVIDSON, OF ATLANTA, GEORGIA.

MAIL-BAG CATCHER AND DELIVERER.

SPECIFICATION forming part of Letters Patent No. 775,208, dated November 15, 1904.

Application filed August 20, 1904. Serial No. 221,541. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM DAVIDSON, a citizen of the United States of America, residing at Atlanta, in the county of Fulton and State of Georgia, have invented a new and useful Mail-Bag Catcher and Deliverer, of which the following is a specification.

My invention relates to improvements in mail-bag holders, catchers, and deliverers, consisting of an apparatus worked by pneumatic means to deliver and catch the mail-bags and an apparatus, commonly called a "mail-crane," to hold the mail-bag in position to be caught by the catcher, which is operated from the car; and the objects of my improvements are, first, to provide an apparatus that will safely deliver one or more mail-bags at once, and, second, will catch a mail-bag, and, third, will hold the mail-bag in position to be caught, all of which must be done with the train in motion and also to be done without damage being done to the mail-bag or contents, and, fourth, means by which the snow and ice can be immediately removed from the catcher and deliverer in cold weather to allow the catcher and deliverer to work.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical end view of the whole or entire machine. Fig. 1 also shows a sectional view of the two cylinders 1 and 2 and pistons 3 and 4 and piston-rods 5 and 6 and vertical arms 7 and 7^a and springs 8 and 8^a and pipes 18 and spring-pockets 1^a and 2^a and also steam or heater pipe and hose 26, which is used in cold weather to blow the ice and snow from the catcher and deliverer. Fig. 2 shows a side vertical view of the catcher, deliverer, and the receptacle to catch the mail when it is dropped from the pins 12 12, which are carried by arm 9. Fig. 3 shows an enlarged side view of arm 9. Fig. 4 shows a longitudinal sectional view of arm 9 and rotary shaft 10 and pin 12 12 and springs 13 and 13, which are used to rotate shaft 10 and vertical rods 7 7, which carry arm 9. Fig. 5 shows a cross-section of arm 9 with lever 14, which operates rotary shaft 10 by freeing shaft 10 at lug 11. Fig. 6 shows a top plan view of lever 14 and how it connects with arm 9. Fig. 7 shows a bottom plan view of catcher 28 29 and part of the side of car 30 and arm 9, which operates catcher 28 29. Catcher 28 29 is now in position to catch the mail. It also shows pin 28^b, which is dropped into hole 28^a to keep catcher 28 29 in position while mail-bag is caught. Fig. 8 shows an end vertical view of the mail-crane or mail-bag holder. Fig. 9 shows a side vertical view of the mail-crane. Fig. 10 shows a top plan view of cap 32 and spring 33 and bottom stem 34. Fig. 11 shows top stem 35 with mail-bag 17^a fastened to it as it will be when ready to be caught. Figs. 8 and 9 also show the post 31 that cap 32 is fastened to.

Similar characters refer to similar parts throughout the several views.

30 is a car fitted up with my mail-bag catcher and deliverer.

There are two pairs of cylinders 1 and 2 in car 30, and these two pairs of cylinders 1 and 2 extend from one side of the car over to the other side, and the ends of said cylinders are fastened to the inside of the said car 30. The said cylinders are parallel to each other and are placed as high up in the car as possible, so the mail clerk can walk under them. The said cylinders 1 and 2 have pistons 3 and 4 and piston-rods, the said pistons to operate the said piston-rods 6 and 5. The said piston-rods 5 and 6 extend through the sides of the car 30 and extend downward to about the center of the side of said car 30. The said pistons 3 and 4 are held to the ends of the said cylinders 1 and 2 nearest to the center of said car 30 by the springs 8 and 8^a. There is an arm 9, which is fastened to the lower ends of rods 7 and 7^a and located on the outside of car 30 and extends across the side door to the said car, and the said arm 9 is hollow and is carried by the said rods 7 and 7^a.

There is a shaft 10, Fig. 4, extending lengthwise and through the center of arm 9. Arm 9 has slots in it, and shaft 10, Fig. 4, has pins fastened to it and extending through the side of arm 9 at slots 9^a 9^a. The said pins 12, Figs. 1, 2, 3, and 5, are to hang the mail bag or bags on. Shaft 10, Fig. 4, rotates in arm 9. Said shaft 10, Fig. 4, is rotated by springs

13 13. There is a lug 11, Figs. 4, 5, 6, fastened to shaft 10. The said lug extends through the side of arm 9. There is a lever 14, Figs. 1, 2, 5, and 6, pivoted to arm 9 and just over the slot in arm 9 that lug 11 works in.

There are two arms 28 and 29, Figs. 1 and 7, having one end pivoted to the side of car 30 and so placed that the said arms 28 29 will work just below arm 9, Fig. 1. The ends of the said arms 28 and 29 that are not fastened to car 30 pass through eyebolts 27 27, Fig. 7. The said eyebolts are fastened to the bottom of arm 9, Figs. 1 and 7. The said arms 28 29 are operated by arm 9. The arms 28 29, Figs. 1 and 7, when open will cross near their centers and will form an X, as shown in Fig. 7, which will allow them to catch the mail-bag when the train is moving in either direction.

There is a receptacle 21, Figs. 1 and 2, with an inclined platform 24, Fig. 2, the said platform being pivoted at the center 25, which will allow it to be inclined to catch the mail from either direction the train may be going. The said receptacles are placed alongside of the track at all places where the mail is to be left and taken on by the train without stopping. There are two posts 15, Figs. 1 and 2, one placed at each end of the platform 21 21, Figs. 1 and 2, the said posts 15 having brackets 16, Fig. 1, placed on them. The said brackets 16 are so located that when car 30 passes platform 21 and the mail is to be delivered by arm 9 the lever 14, Fig. 1, will strike on bracket 16, Fig. 1. There is another post, 31, Figs. 1 and 2, placed near the center of platform 21 21, Figs. 1 and 2, and the said post 31 is placed just on a line with the center of arms 28 29, Figs. 1 and 2, when the said arms are in position to catch the mail-bag. There is a cap 32, Figs. 1, 2, 8, and 9, fastened to the top of post 31. The said cap has a flange to it on one side and a slot in it on the other side, and a spring fits in the said slot and extends up so the top edge of the flange and the top edge of the spring come together, as shown in Figs. 1, 8, and 10. There is a stem 34, Figs. 1, 2, 8, 9, and 10, pivoted at one end to cap 32 and between the flange to cap 32 and spring 33. Spring 33 is to hold stem 34 in a vertical position when mail-bag 17^a, Figs. 1 and 11, is hung onto stem 35 to be caught by catcher 28 29. The top end of stem 34 is hollow about four inches of its length, so stem 35 will drop down into the top of stem 34. The top ends of the flange to cap 32 and spring 33 are beveled, so stem 34 can work between them in either direction parallel with the track or in the direction that the train is moving.

When I wish to hang up the mail-bag 17^a to be caught, I catch hold of stem 34 and stand it up between spring 33 and flange to cap 32. I then hang the mail-bag onto stem 35 by letting the ring on the end of the mail-bag hang in the slot 35^b in the top end of stem 35 and then allow the bag to extend lengthwise of rod 35 and then tie a cord around stem 35 and the mail-bag just below the wheels 35^a. I then stand stem 35 into the top of stem 34. The mail-bag is then in position to be caught by the catcher 28 29, Figs. 1 and 7.

22, Fig. 1, represents the sides to the receptacle 21 and platform 24.

Receptacle 21 21, Figs. 1, 2, is to catch the mail-bag 17 when it is dropped by arm 9.

The pistons 3 4, Fig. 1, are operated by air that is taken from the train-line that operates the brakes to the train. There is a reservoir 19, Fig. 1, under car 30 and connected to the train-brake air-line, and the said reservoir 19 is connected to cylinders 1 and 2 by a pipe 18. Said pipe 18 has a three-way valve 20 in it and located near the side of the door to the car. The said valve 20 is used to let the air from reservoir 19 to cylinders 1 and 2 and then from said cylinders out to the atmosphere.

Now to operate the mail-bag deliverer and receiver I catch hold of pin 12, Fig. 1, and force it around to the position that it is now in, Fig. 5. I then turn lever 14 around so the end of said lever will come in contact with lug 11, Figs. 5 and 6. I then loosen pin 12, and the end of lever 14 will hold pins 12 12 in a horizontal position, as shown in Figs. 1, 2, and 5. Spring 12^a is to hold the bag 17 onto pins 12 12 and keep the wind from blowing the said bag off before it should drop. I then hang mail-bag 17 on the pins 12 12, and if I have more than one bag I hang on as many at once as I wish to deliver at one time or at one place. I then turn air into cylinder 1 and the one that works with 1, and the air forces pistons 4 and 4^a and rods 6 and rods 7 and 7, Fig. 2, out, and they carry arm 9 out about thirty-six inches from the side of the car. Now as the ends of the cross-arms 28 29 work in the eyebolts 27 27, Fig. 7, when arm 9 moves out it carries the ends to the said cross-arms out and crosses the said arms 28 29, as shown in Fig. 7. I then drop pin 28^b into the hole 28^a, so as to hold the cross-arms in the position shown in Fig. 7 while the mail-bag 17^a, Fig. 1, is caught. Now, as I explained before or above, mail-bag 17^a is in position to be caught, so when the car gets even with the platform 21 the lever 14 will strike bracket 16 on post 15 and loosen lug 11, Figs. 5, 6, and the springs 13 13 will cause the shaft 10, Figs. 4, 5, to turn about on-third around, which will cause the pins 12 12 to turn down, and the mail-bag 17 will drop on the platform 24, Fig. 2, and then the said bag will slide to one end of the said platform and lodge in the receptacle 23, Fig. 2. The car will then go on, and the cross-arms 28 29, Fig. 7, will catch the mail-bag 17^a, Fig. 1, just below the wheel 35^a, Figs. 1, 2, 8, 9, and 11, which is fastened onto stem 35. As the wheel 35^a is a circle and about

four inches in diameter and the opening or angle in the arms 28 29 at the cross is only about three inches, thus the wheel 35[a] cannot slip through the angle to the cross-arms 28 29. So the said cross-arms 28 29 will pull stem 35 out of stem 34 and carry the rod 35 and the mail-bag 17[a] on with the cross-arms or mail-bag catcher. The mail clerk will then remove the bag 17[a] from the cross-arms or catcher and then take pin 28[b] out of the hole 28[a] and then let the air out of cylinder 2 at valve 20, Fig. 1, and the spring 8 will force piston 4 in and the arm 9 will go up against the side of the car and fold up the cross-arms 28 and 29 as they appear on the left side of the car 30 in Fig. 1.

Hose and pipe and valve 26, Fig. 1, are connected to the heater to the car and are used only in cold weather to remove ice and snow from the catcher and deliverer.

Now in order that all stations that are equipped with a mail-crane as hereinbefore described may have a stem 35, Fig. 11, on hand to hang the mail-bag on, the mail clerk on each train that catches and leaves mail at a station will always drop one of the said stems 35 in the mail-bag 17 and leave it at each station. As mail-bags many times have nothing in them and the wind blows them under the train, the stem will cause the bag to go to the ground.

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

1. A mail-bag catcher and deliverer, the combination, comprising cylinders, pistons and piston-rods in said cylinders, an arm carried by said piston-rods, the said arm provided with means for catching holding and delivering mail-bags, substantially as described.

2. The combination, in a mail-bag catcher and deliverer, comprising cylinders, each having a piston and piston-rod therein, a hollow arm carried by said piston-rods, said arm provided with slots, a shaft within said arm, provided with pins projecting through said slots for holding and delivering mail-bags, said shaft to have a lug to project through the said arm, a lever to engage said lug, and means for operating said pistons, shaft and lever, substantially as described.

3. The combination, in a mail-bag catcher and deliverer, comprising cylinders, each having a piston and piston-rod, the said piston-rods to extend through the side of the car and have downward-extending ends, a hollow arm carried by said piston-rods provided with slots, an axially-rotatable shaft within said arm, provided with pins and a lug projecting through said slots, a lever to engage said lug, means for operating said hollow arm, shaft and lever, substantially as described.

4. The combination, in a mail-bag catcher and deliverer, comprising cylinders provided with springs, pistons and piston-rods with downwardly-extending ends, pneumatic means for operating the pistons, a hollow arm carried by the downwardly-extending ends of the said piston-rods, provided with slots, an axially-rotatable shaft within said arm, provided with pins and a lug which project through said slots, a lever to engage said lug and hold said shaft in its normal position when carrying the mail-bag, springs for rotating said shaft when released by said lever and means for operating said lever, substantially as described.

5. The combination, in a mail-bag catcher and deliverer, comprising cylinders, each cylinder having a piston, spring and piston-rod, the said rods to extend through the side of the car and extend downwardly, the ends of the said rods on the outside of the car carrying a hollow arm provided with slots, a shaft within said arm, having pins and a lug extending through the said slots, a lever to engage said lug, safety-springs to engage said pins to prevent the mail bag, or bags, from falling from the said pins before the said lever frees the said lug, the springs within said cylinders to force the said pistons back and keep the said pistons in their proper position when not in use, substantially as described.

6. A car or other vehicle provided with a mail-bag catcher and deliverer comprising cylinders provided with pistons, springs and piston-rods, the said rods to extend laterally from said car and their outer ends provided with a hollow arm having slots, a rotatable shaft within said arm, provided with pins and a lug extending outward through said slots, a lever designed to engage said lug, means for operating said lever, in combination with a receptacle for catching and protecting the mail-bags after their delivery, substantially as described.

7. The combination, in a car or other vehicle, provided with a mail-bag catcher and deliverer, comprising cylinders, provided with pistons, springs and piston-rods, the said rods projecting laterally from said car, means for operating said pistons, the outer ends of said rods provided with a hollow arm having slots, a rotatable shaft within said arm provided with pins and a lug projecting through said slots, a lever designed to engage said lug, means for operating said lever in conjunction with means for catching and protecting the mail-bags after their delivery, comprising a receptacle, provided with an adjustable floor or platform, substantially as described.

8. The combination, in a mail-bag crane, catcher, deliverer and receiver, means for operating the said catcher and deliverer, the said catcher comprising two arms, one end of said arms being pivoted to the side of the car, the other end being carried by the said deliverer, the said arms when in position to catch the mail are crossed near their center and held in that position by an adjustable

pin, one of the said arms to slide in a slot in the other arm and said arms will close up by the side of the car when not in use, substantially as described.

9. The combination, in a car equipped with a mail-bag catcher and deliverer, the said catcher and deliverer being operated by pneumatic means, a mail-crane and receptacle on the side of the track to work in conjunction with the said catcher and deliverer, the said mail-crane consisting of a post, a cap on said post, the said cap having a flange on one side and a spring on the other, with a stem pivoted at one end to the said cap between the said flange and spring, the said stem being adapted to move through a half-circle and parallel with the track, the loose end of the said stem is hollow and adapted to receive another stem, substantially as set forth.

10. The combination, in a mail-bag catcher and deliverer, a mail-crane and a receptacle, the said mail-bag crane and receptacle being located on the side of the track, the said mail-bag crane consisting of a post, a cap on the post, the said cap having a flange on one side and a spring on the other, the top edges of the said flange and spring coming together forming a clamp, the said cap has a stem bolted or pivoted to it between the said flange and spring and adapted to move through a vertical half-circle, the loose end of the said stem being hollow, the said stem standing in a vertical position between the said flange and spring, and the said flange and spring holding the said stem in a vertical position while another stem standing in the hollow of the first stem and the second stem holding the mail-bag until caught by the catcher, the said second stem having a wheel on it and the mail-bag being tied to the stem below the said wheel and hung from the top of the said second stem the said second stem being pulled from the hollow in the top of the bottom stem and going with the mail-bag, the said second stem being dropped off with the mail-bag at the next station, substantially as described.

11. The combination, in a car, a heater within said car, a mail-bag catcher and deliverer, a pipe and valve connecting with the said heater, the said pipe being used to convey heat to the said catcher and deliverer to remove the snow and ice from the said catcher and deliverer, substantially as described.

12. The combination, in a mail-bag crane, a receptacle, a catcher and a deliverer, provided with cylinders, having pistons, springs and piston-rods within said cylinders, the said piston-rods extending through the sides of the car and carrying a hollow arm provided with slots, a rotatable shaft within said arm, having pins and a lug extending through the said slots, a lever pivoted to said arm and designed to engage said lug, and means for operating said lever, the said receptacle having a post at each end of it, the said posts having brackets on them, the said brackets being located in the path of the said lever and designed to engage the said lever, thereby freeing the said lug and allowing the said shaft to drop the mail on the said receptacle, substantially as described.

I hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM DAVIDSON.

Witnesses:
W. I. BENHAM,
E. P. HEALD.