W. T. MERCER.

MAIL CATCHER.

APPLICATION FILED FEB. 18, 1914.

1,157,244.

Patented Oct. 19, 1915.

2 SHEETS—SHEET 1.

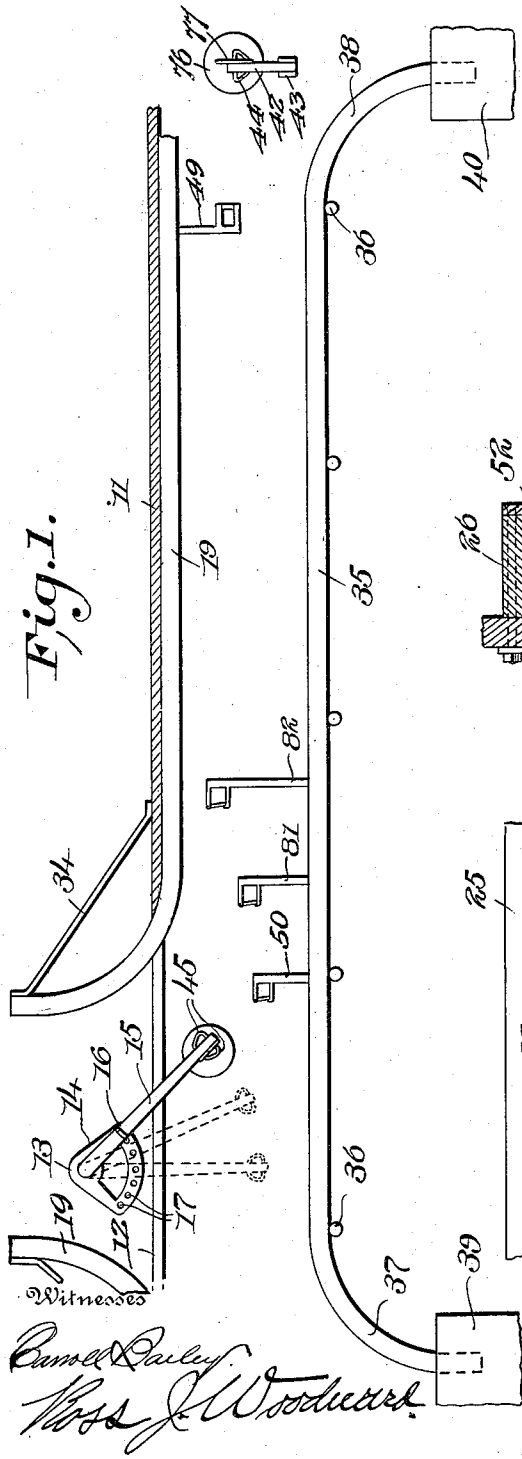

Fig. 1.

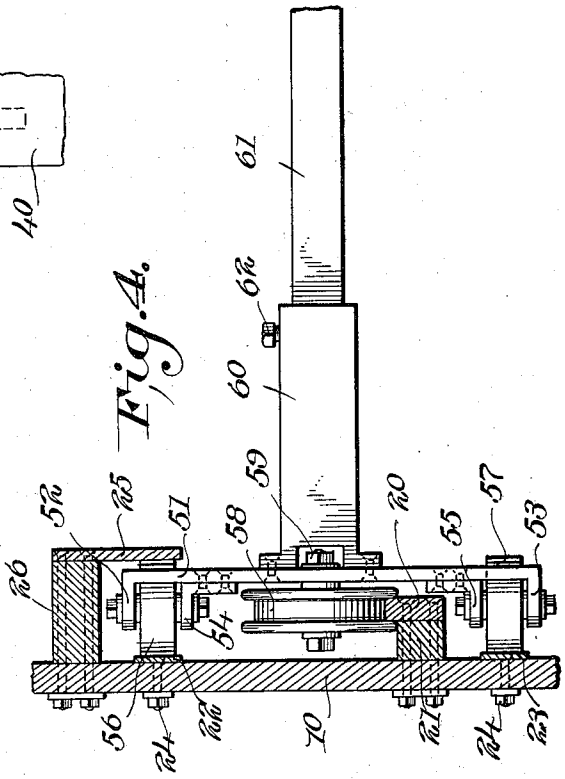

Fig. 4.

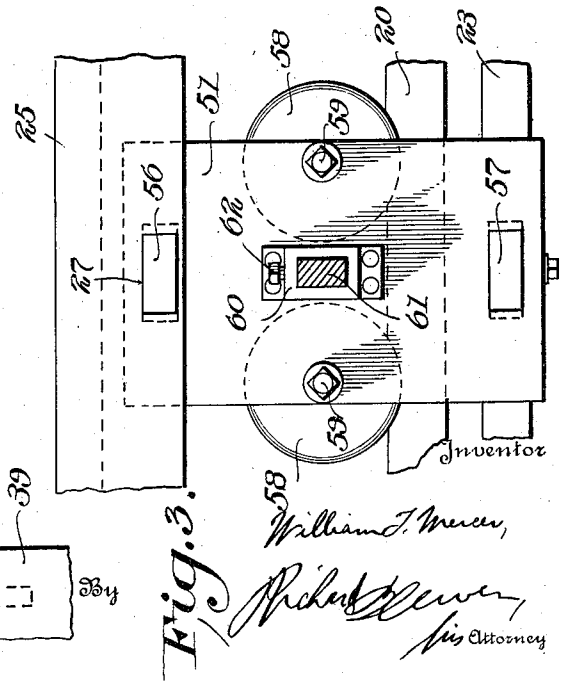

Fig. 3.

Witnesses

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2 SHEETS—SHEET 2.

Fig. 2.

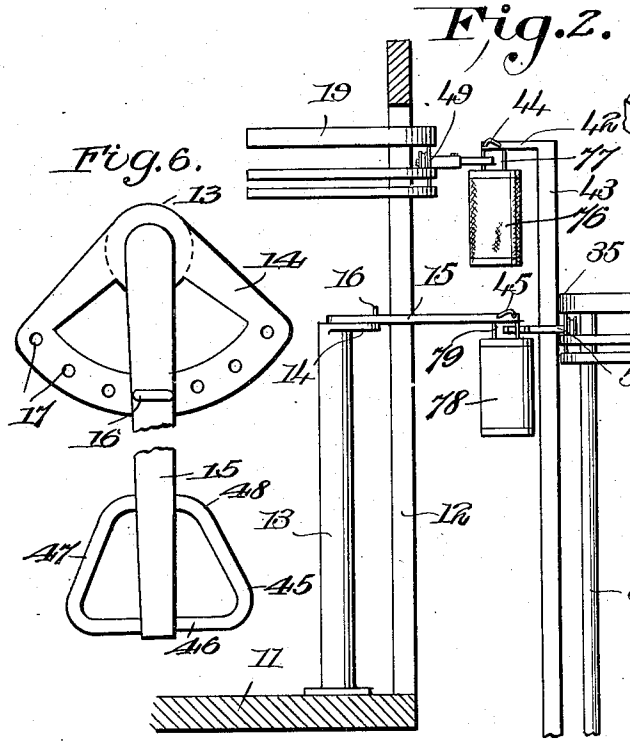



Fig. 6.







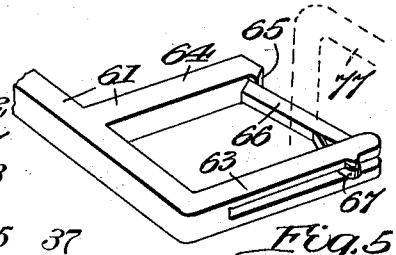



Fig. 5.

Fig. 7.

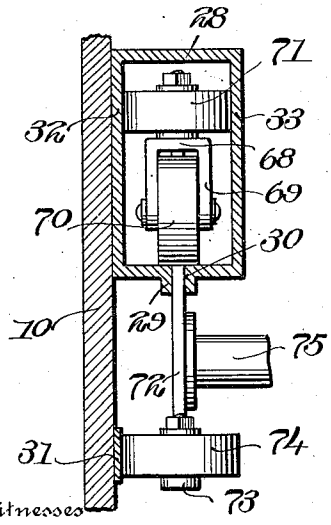
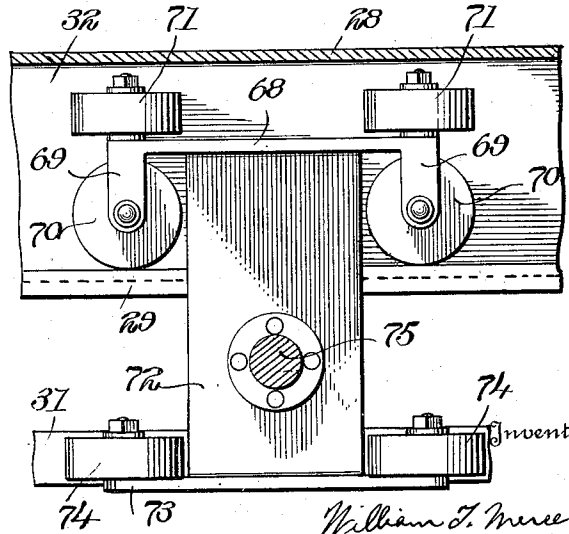



Fig. 8.




Witnesses

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# UNITED STATES PATENT OFFICE.

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## MAIL-CATCHER.

1,157,244. Specification of Letters Patent. Patented Oct. 19, 1915.

Application filed February 18, 1914. Serial No. 819,565.

*To all whom it may concern:*

Be it known that I, WILLIAM T. MERCER, a citizen of the United States, residing at Wilmington, in the county of New Hanover and State of North Carolina, have invented certain new and useful Improvements in Mail-Catchers, of which the following is a specification.

This invention relates to a mail catcher, and the principal object of the invention is to provide an improved delivering and receiving mechanism by means of which mail sacks may be received from a moving train and delivered to a moving train, the catching means being so mounted that it may move to the place of delivery after catching the sack.

Another object of the invention is to provide the train and the station with catching carriages mounted upon tracks so that after the mail sacks have been caught, the carriages may travel to points where the sacks will be conveniently removed.

Another object of the invention is to so construct the carriages that they may move freely upon the tracks, but will be prevented from having any vertical play while traveling along the tracks.

Another object of the invention is to provide an improved delivering arm for the train, the delivering arm being adjustably mounted so that it may be moved to extend from the train to any extent desired.

Another object of the invention is to so construct this delivering arm that the arm does not have to be longitudinally adjusted, but simply needs to be moved in the arc of a circle to cause its free end to extend from the car the desired amount.

This invention is illustrated in the accompanying drawings wherein—

Figure 1 is a top-plan view of the train device and track device, the car being shown in section; Fig. 2 is a transverse sectional view through a car and shows the manner in which a sack is delivered to a station device and also the manner in which a sack is taken up by the car device, the track device and station device being shown in elevation; Fig. 3 is an enlarged fragmentary view of the carriage, the sack-catching arm being shown in section; Fig. 4 is a vertical sectional view taken through the center of Fig. 3; Fig. 5 is an enlarged top-plan view of the delivering arm carried by the train; Fig. 6 is an enlarged view of the outer-end portion of the catching arm of the carriage; Fig. 7 is a view similar to Fig. 4 and shows a modified form of track and carriage; and Fig. 8 is a view similar to Fig. 3 showing the track and carriage of Fig. 7.

The mail car 11 shown in Fig. 1 is provided with a door-way 12 in which there is mounted a standard 13 carrying a rack 14. A crane arm 15 which constitutes the delivering arm of the train device is pivotally connected with the standard 13 and is releasably held in an extended position by means of a key 16 passing through an opening formed in the crane arm and into one of the openings 17 formed in the rack 14.

The tracks 18 and 19 are carried by the car 11 and extend from the door-way 12 in opposite directions toward the ends of the car. Carriages are mounted upon these tracks, one carriage being used in case the train is moving in one direction and the other carriage being used in case the train is moving in the opposite direction. These tracks may be formed as shown in Figs. 3 and 4, or may be formed as shown in Figs. 7 and 8. The track shown in Figs. 3 and 4 comprises the main supporting rail 20 which is carried by the supporting beam 21 and the upper and lower rails 22 and 23 which are in the form of metallic strips secured to the side of the car by means of bolts 24. A guard strip 25 which is carried by the support 26 extends downwardly and has its lower edge positioned in alinement with the lower edge of the rail 22. This guard strip 25 engages the upper wheels of a carriage which will be described and assists in holding the carriage in place and prevents any danger of the main supporting wheel of the carriage from becoming derailed. The outer-end portion of the guard strip 25 is provided with an opening 27 through which the upper wheel of the carriage is intended to project and releasably hold the carriage at the outer end of the track.

In Figs. 7 and 8 the track comprises a sheet metal housing 28 which is provided with depending flanges 29 forming a slot 30. This housing takes the place of the main rail 20 shown in Fig. 4 and the lower rail 31 corresponds with the lower rail 23 shown in Fig. 4. In this form it is not necessary to provide the upper rail 22 since the inner wall 32 of the housing takes the place of the rail 22. It should be noted that the outer wall 33 of the housing takes the place of the

guard 25. These tracks in both of the forms shown are secured to the outer face of the car wall and have their inner end portions curved in through the door-way and held in place by the braces 34.

The track 35 which is mounted near the railroad track is supported by the post 36 and has its end portions 37 and 38 curved away from the railroad track and leading into houses 39 and 40, supported by means of posts 41. This station track may be formed as shown in Figs. 3 and 4 or may be formed as shown in Figs. 7 and 8. The delivering arm 42 which extends from the upper end of the standard 43 is provided with upwardly inclined sack-supporting hooks 44 which are similar in construction to the hooks 45 carried by the crane arm 15 and shown very clearly in Fig. 5. From an inspection of Fig. 5 it will be seen that each of these hooks comprises an outer arm 46 which extends at right angles to the crane arm 15 and is then bent to form an arm 47 which extends at an incline from the outer end of the arm 46 toward the crane arm 15 with its free-end portion 48 curved inwardly and connected with the crane arm.

A carriage 49 is mounted upon each of the tracks 18 and 19, and the carriage 50 is mounted upon the track 35. These carriages are so mounted that when the mail sack is caught, the carriage will travel along its track and move to the curved end of the track so that the mail sack may be conveniently removed. In Figs. 3 and 4 there has been shown one form of carriage and in Figs. 7 and 8 there has been shown a modified form of carriage. These carriages while operating in the same manner have been provided with modified constructions so that the carriages will accommodate themselves to the modified forms of tracks shown in the two sets of figures.

In Figs. 3 and 4 the carriage comprises a body portion or plate 51 which has its end portions bent to form bearings 52 and 53, which bearings coöperate with the journal brackets 54 and 55 to rotatably support the rollers 56 and 57. These rollers extend through openings formed in the plate 51, the upper roller 56 being of such size that when the carriage mounted upon one of the car tracks such as 19 reaches the outer end of the track, the roller will extend through the opening 27 and releasably hold the carriage in a set position. The main supporting wheels 58 which are provided with grooved edges as shown in Fig. 4 are mounted upon the main track 20 and rotatably connected with the plate 51 by means of the axles 59. An arm 60 extends from the plate 51 and is provided with a telescoping outer-end portion 61 which is held in an adjusted position by means of the set screw 62. This permits the outer section 61 of the supporting arm to be adjusted so that the catching arms may be extended the proper distance to engage the mail sacks and remove them from the holding devices. The outer end of each of these arms 61 is provided with fingers 63 and 64 which extend at right angles to the arm 61, the outer end of the arm 64 being provided with an abutment lip 65 and the arm 63 carrying a pivot latch 66 which is yieldably held in engagement with the lip 65 by means of the leaf spring 67.

The carriage shown in Figs. 7 and 8 comprises the body portion 68 which has its end portions provided with the depending bearings 69 between which the supporting rollers 70 are rotatably mounted. This body portion is mounted in the housing 28 with the supporting rollers resting upon the bottom of the housing and bridging the slot 30 and carries upper guiding rollers 71 which engage the inner and outer walls 32 and 33 of the housing to prevent transverse movement of the body portion in the housing. A plate 72 which is in the nature of a hanger bracket extends downwardly from the body portion 68 through the slot 30 and is provided at its lower end with arms 73 with which the guiding rollers 74 are rotatably connected, the rollers 74 resting against the rail strip 31 and prevent the plate 72 from binding against the sides of the flanges 29. The sack-supporting arm 75 is secured to the plate 72 beneath the housing 28 and has its outer end portion constructed in the same manner as the outer-end portion of the arm shown in Fig. 6. This arm may be provided with a telescoping outer-end portion, or if desired, may be rigid.

In operating this mail catcher, the sack 76 which is to be delivered to the train is suspended from the arm 42 by placing its supporting eye 77 over one of the hooks 44. The mail sack 78 which is to be delivered to the station is suspended from the crane arm 15 by passing its eye 79 over one of the hooks 45 carried by the crane arm 15. The carriage 50 is placed as shown in Fig. 1 at the end of the track 35 with the fingers 63 and 64 extending in the direction in which the train is coming. It should be noted that the outer end portion 61 of the arm carried by the carriage 50 may be removed from the inner-end portion and replaced with the fingers extending in the opposite direction if necessary. The carriage 49 is pushed upwardly from the interior of the car and travels along its supporting track until it reaches the end of the track and at this point the carriage will remain until the mail sack is caught. When the train passes the station, the eye of the sack 76 is engaged by the fingers of the arm extending from the carriage 49 and the sack will be removed. The force of the blow received will cause the carriage 49 to travel along the track 19

and into the interior of the car where the sack can be removed by the mail clerk. When the eye of the sack 78 is engaged by the fingers of the arms extending from the carriage 50, the carriage will be moved along the track 35 until it reaches the curved end of the track. As soon as this curved end is reached, the carriage will move away from the train and will remove the eye 79 from the supporting hook. The construction of the supporting hooks shown very clearly in Fig. 5 prevents any danger of the eyes binding since the inner ends of the arms 47 are curved as shown in Fig. 5 and thus prevent the eyes of the mail sacks from being caught and causing either the carriages to be damaged or the eyes of the mail sacks to be broken. If desired the station track may be provided with a plurality of carriages as shown in Fig. 1, the sack-engaging arms thereof being designated by 81 and 82. This is provided so that more than one sack may be caught, or so that sacks may be caught from successive trains without it being necessary for the station master, to remove each sack as soon as delivered. In this form the mail clerk in the car 11 sets the crane arm 15 at the desired angle in order to engage the desired catching arm. It should be noted that the arms 50, 81, and 82 are of different lengths so that there will be no danger of the mail sack being caught by the wrong arm. When the mail sack is caught by the station device, the carriage moves into the housing at the end of the track. This housing may be provided with a suitable automatically closing door which will prevent the sack from being removed from the housing by an unauthorized person. The housing will protect the sacks from the weather and prevent the mail in the sacks from being injured by rain or snow and also prevent danger of the mail being stolen. It should be noted that if desired the train device may be provided with the form of track shown in Figs. 3 and 4 and the station device provided with a form of track shown in Figs. 7 and 8. It is, of course, obvious that the train device and the station device may be provided with either form desired or that both devices may be provided with the same type of track according to the wishes of the person constructing the mail catcher. It is thought, however, that it would be better to provide the train device with the form shown in Figs. 3 and 4 so that the upper wall 56 may enter the opening 27 and thus hold the carriage at the outer end of the track. The station device can be operated equally well with either form of track.

What is claimed is:

1. In a mail catcher a track comprising a main rail, upper and lower rails, and a guard extending in alinement with said upper rail, and a carriage slidably connected with said track, said carriage including a body portion, main supporting wheels mounted upon said main rail, a lower guiding roller engaging said lower rail, and an upper roller engaging said upper rail and the inner face of said guard.

2. In a mail catcher a track, and a catching element mounted upon said track, said catching element comprising a carriage including a plate forming a body portion and having its upper and lower end portions provided with pivot ears, guiding rollers rotatably mounted between said pivot ears and extending through an opening formed in said plate, main supporting wheels rotatably connected with said plate intermediate said guiding rollers.

3. In a mail catcher a track comprising a main rail, upper and lower guiding rails extending parallel to said main rail, a supporting strip extending above said upper guide rail, a depending guarding strip carried by said supporting strip and extending parallel to said upper guide rail, and a carriage provided with supporting wheels mounted upon the main rail of said track and having upper and lower guiding rollers engaging said guide rails with the upper guide rollers engaging said guard strip.

4. In a mail catcher a track comprising a main rail, guiding rails positioned above and below said main rail and extending parallel to the same, a supporting strip extending above said upper guide rail, and a guard strip carried by said supporting strip and extending parallel to said upper guide rail.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM T. MERCER.

Witnesses:
S. R. ADAMS,
W. J. SPOONER.