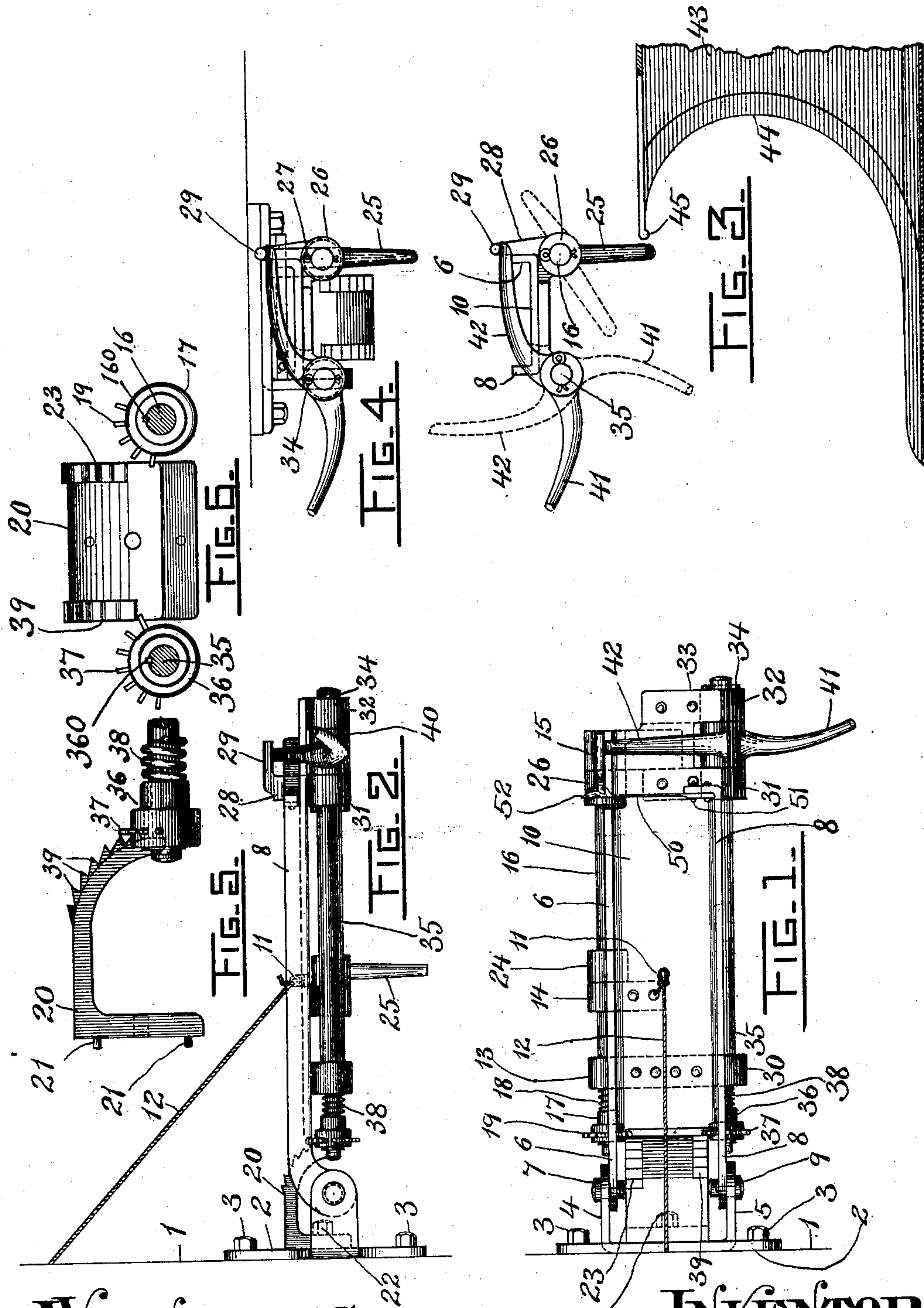


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A. THWING.
MAIL BAG DELIVERING APPARATUS.
APPLICATION FILED NOV. 9, 1907.



WITNESSES

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ALMON THWING, OF NEWTON, MASSACHUSETTS.

MAIL-BAG-DELIVERING APPARATUS.

No. 898,157.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ALMON THWING, of Newton, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Mail-Bag-Delivering Apparatus, of which the following is a specification.

This invention relates to a new and improved mail-bag delivering apparatus and consists of provision of an apparatus adapted to be attached to the side of a car, and arranged to support and deliver a mail or other bag at a predetermined point.

Figure 1, in top plan view, shows an apparatus constructed in accordance with my invention, the apparatus being attached to the side of the car and appearing in position to receive and hold a mail or other bag. Fig. 2 is a side elevation of the apparatus illustrated in Fig. 1. Fig. 3 is an end elevation of the parts as they appear in Fig. 1, showing in full lines the parts in their bag-holding position, and in dotted lines the parts in their bag-discharging position. Fig. 4 is an end elevation of the parts as they appear in Figs. 1 and 2, or in their bag-holding position. Fig. 5 is an enlarged side elevation of the ratchet bracket. Fig. 6 is an enlarged end elevation of the parts shown in Fig. 5, showing the relation of the pins or ratchet wheels with their respective ratchets or racks.

The same reference characters indicate the same parts in all of the figures.

1 represents the side of the car, to which, near the bottom of the door thereof, is secured a plate 2, by means of bolts 3, 3. Ears 4, 5, are bent up from the ends of said plate to an even length, and are perforated to form bearings.

10 represents an arm or plate having a flange 6 upon one side, and a flange 8 upon the other side. The rear ends of the flanges 6 and 8 are curved, as shown, (see Fig. 2) and pivoted respectively to the ears 4, 5, by means of bolts 7 and 9, the said ears forming bearings on which the plate 10 swings through an arc of 90°, or from a perpendicular to a horizontal position.

11 represents an I-bolt secured to the plate 10 midway its ends. 12 represents a cord, one end of which is connected to said I-bolt 11, the other end being arranged inside the car and secured in any desired way, not shown, to maintain the apparatus in the position shown in Figs. 1 and 2—the position of

use—or to maintain the apparatus in a vertical position when the apparatus is not in use.

13 represents a perforated lug secured to the under side of plate 10, near the rear end thereof.

15 represents a complementary perforated lug secured to the under side of the plate 10, at the front end thereof.

14 represents a complementary perforated lug secured to the under side of the plate 10, between the lugs 13 and 15.

16 represents a shaft arranged in the lugs 13, 14, and 15, as bearings.

17 represents a hub slidingly secured on the shaft 16, by means of a spline or key 160 (Fig. 6), at the rear of the lug 13.

18 represents a coiled spring arranged on the shaft 16 between the sliding hub 17 and lug 13, tending to throw the hub 17 to the left in Fig. 1, the hub 17 sliding on the key or spline 160. The hub 17 as shown, is formed with a series of pins or teeth 19.

20 represents a bracket secured by means of dowel pins 21, 21, and a bolt 22, to the plate 10 between the ears 4, 5. The side of the bracket 20 adjacent the arm 6 is formed with a series of ratchet teeth 23, adapted to engage the pins 19 of the hub 17, to rotate the shaft 16 as the plate 10 is swung in an upward direction on its pivots 7, 9.

24 represents a hub secured to the shaft 16, just to the right of the lug 14, (Fig. 1,) said hub being formed with a downwardly depending arm 25 (Figs. 2, 3, and 4).

26 represents a hub secured to the shaft 16 just to the rear of the hub 15. A cotter pin 27 is inserted in the outer end of the shaft 16 against the face of the lug 15. The hub 26 is formed with an arm 28, provided at its end with a pin 29, extending toward the front end of the shaft 16, over the hub 15.

30 represents a perforated lug secured at the under side of the plate 10, opposite the lug 13.

31 represents a perforated lug secured to the under side of the plate 10, opposite the hub 26.

32 represents a perforated lug secured to the under side of an extension 33 of the plate 10.

35 represents a shaft arranged in the lugs 31 and 32.

36 represents a hub secured at the inner end of the shaft 35, and formed with a series

of pins or teeth 37, said hub being slidably arranged on said shaft by means of the spline or key 360.

38 represents a coiled spring arranged around the shaft 35, between the hub 36 and lug 30, and tending to press the hub 36 to the left against the cotter pin 34 on the outer end of the shaft 35 (see Figs. 1, 3 and 4.)

The pins 37 are arranged to engage teeth 39 on the side of the plate 20, adjacent the arm 8, and turn the shaft 35 as the latter is carried in an upward direction by the pivotal motion of the plate 10.

40 represents a hub secured to the shaft 35, between the lugs 31 and 32. This hub is shown as formed with two arms 41, 42. The arm 41 on which the mail-bag is hung, as shown, curves upward and outward from the side of the car, to resist the tendency of the bag to slip off the arm, as a result of the current of air caused by the rapid motion of the train. The outward curve becomes an upward curve when the arm is in a vertical position, or position to receive the bag. The arm 42 is adapted to be engaged by the pin 29, thereby maintaining the arm 41 in the bag-holding position.

43 represents a box or receptacle adapted to be located at the side of the track near the station. This box may be provided with curved projecting sides 44, of considerable length, to receive the bag against its forward end, which may also have a spring buffer, if desired, to diminish the shock. The top of the box is provided with a projection 45, adapted to be arranged on a plane to engage the lower end of the arm 25.

Referring to Fig. 1, a spring 50 is shown, secured at one end by pins 51, to the end of the flange 8. The free or outer end of said spring 50 (Fig. 1) is formed with a notch 52, adapted to engage a tooth from the arm 28, when the latter is in the position shown in Figs. 1, 2, and 3, in order to hold said arm against accidental displacement and thereby maintain the shafts 35 and 16 against accidental rotation, or rotation due to causes other than the described motion of the arm 25.

The teeth 39 and 23 on the bracket 20 are equal in number, although the teeth 39 begin relatively earlier and end relatively earlier than the teeth 23. It will, however, be seen that there are more pins 37 on the hub 36 than there are pins 39 on the hub 17. The above construction permits the pin 29 of the arm 28 to arrive in position to engage the end of the arm 42. The shaft 35 requires more travel than the shaft 16. A corresponding greater number of pins is required on the hub 36 than is necessary on the hub 17.

The spring 50 having the notch 52, locks the parts in operative position by engaging the tooth on the side of the arm 28.

In raising the plate 10 the pins on the hub

36 encounter the first tooth on its corresponding ratchet, causing it to begin its rotation before the hub 17 starts. This brings the arm 42 to its normal or operative position on the top of the flange 6, before the finger 29 ceases to travel, allowing the latter to come to its locking position (Fig. 3), after the arm 42 is at rest. The action of the spring 50 locks the whole mechanism into this position, sustaining the mail-bag.

The parts being in the position shown in Fig. 1, or in full line position of Fig. 3, the bag being suspended from the arm 41, assuming the car to be moving to the right in Fig. 3, as the end of the arm 25 engages the projection 45, said arm 25, as well as the arm 28, will be thereby swung to the dotted line position in Fig. 3, thus pulling the pin 29 off the arm 42, permitting the weight of the bag to rotate the shaft 35 to swing the arm 41 into its dotted line position in Fig. 3, discharging the mail-bag into the front end of the box, which, as above stated, may be provided with any desired mechanism for reducing or minimizing the impact of the bag. As the plate 10 is swung upward on the pivots 7 and 9, from the horizontal position shown in Fig. 1, to the vertical position, such movement as heretofore described brings the arm 42 to the position shown in Fig. 3, with the pin 29 over the end of said arm, the arm 28 in engagement with the spring 50. In this position the bag can be hung on the arm 41, when desired, and thereafter the plate lowered to its horizontal position. In the downward movement of the plate 10, the pins 19 and 37 merely slip over their respective teeth 23 and 39, the springs 18 and 38 permitting the necessary sliding movements of the hubs 17 and 36, for this purpose.

Having thus explained the nature of my invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made, or all of the modes of its use, what I claim and desire to secure by Letters Patent is:—

1. A mail-bag apparatus comprising an arm adapted to be carried by a car, a pivoted hub on one side of said arm formed with a bag-holding member and a detent member, a movable detent finger arranged to engage said detent member, a spring member arranged to engage said detent finger to maintain said bag-holding member in a bag-holding position, a movable trip arm carried by said first-mentioned arm, a relatively stationary receptacle having a member arranged to engage said trip arm as the latter approaches said receptacle, and connections between said trip arm and said detent finger whereby the latter releases said detent member and permits the bag to drop from said bag-holding member.

2. A mail-bag apparatus comprising a

mail-bag holder, a stop member, a relatively movable trip, arranged to engage said stop member to operate said trip, a detent member, a detent arranged to engage and hold
5 said detent member, connections between said detent and trip, and means for supporting and carrying said trip, detent and bag-holding member.

3. A mail-bag apparatus comprising a
10 pivoted arm, a shaft carried by said arm, a bag-holding member and a detent member carried by said shaft, a second shaft supported by said arm, a detent finger and a trip
15 mounted on said shaft, said detent finger being arranged to engage the detent member, a relatively stationary stop for engaging said trip, and means for rotating said shafts as
20 said arm is thrown upward to position said parts with the detent member, detent finger and spring in engagement.

4. In an apparatus of the class specified, a movable carrier adapted to be moved into active and inactive positions, a bag-holder and a detent member connected therewith, a
25 trip and a detent connected therewith, and means for moving said detent and detent member into interlocking position automatically upon the movement of the carrier to an inactive position.

30 5. A mail-bag apparatus comprising a

movable mail-bag holder, a trip, locking connections between said holder and trip including a member rigidly connected to and movable with said holder and adapted to be released by the movement of the trip, and a
35 stop member arranged to engage and operate said trip.

6. A mail-bag apparatus comprising a pivoted support, a shaft carried by said support, a bag-holding member and a detent member
40 carried by said shaft, a second shaft carried by said support, a detent finger and a trip carried by said shaft, said detent finger being arranged to engage the detent member, a relatively stationary stop for engaging said
45 trip, a yielding toothed member mounted on the rear end of each shaft, a stationary rack member for engaging each toothed member, arranged to operate said toothed members as
50 the support is moved to an inactive position to move said detent and detent member into interlocking position, but to permit said toothed members to remain inactive as the support is moved in the opposite direction.

In testimony whereof I have affixed my
55 signature, in presence of two witnesses.

ALMON THWING.

Witnesses:

C. F. BROWN,
P. W. PEZZETTI.