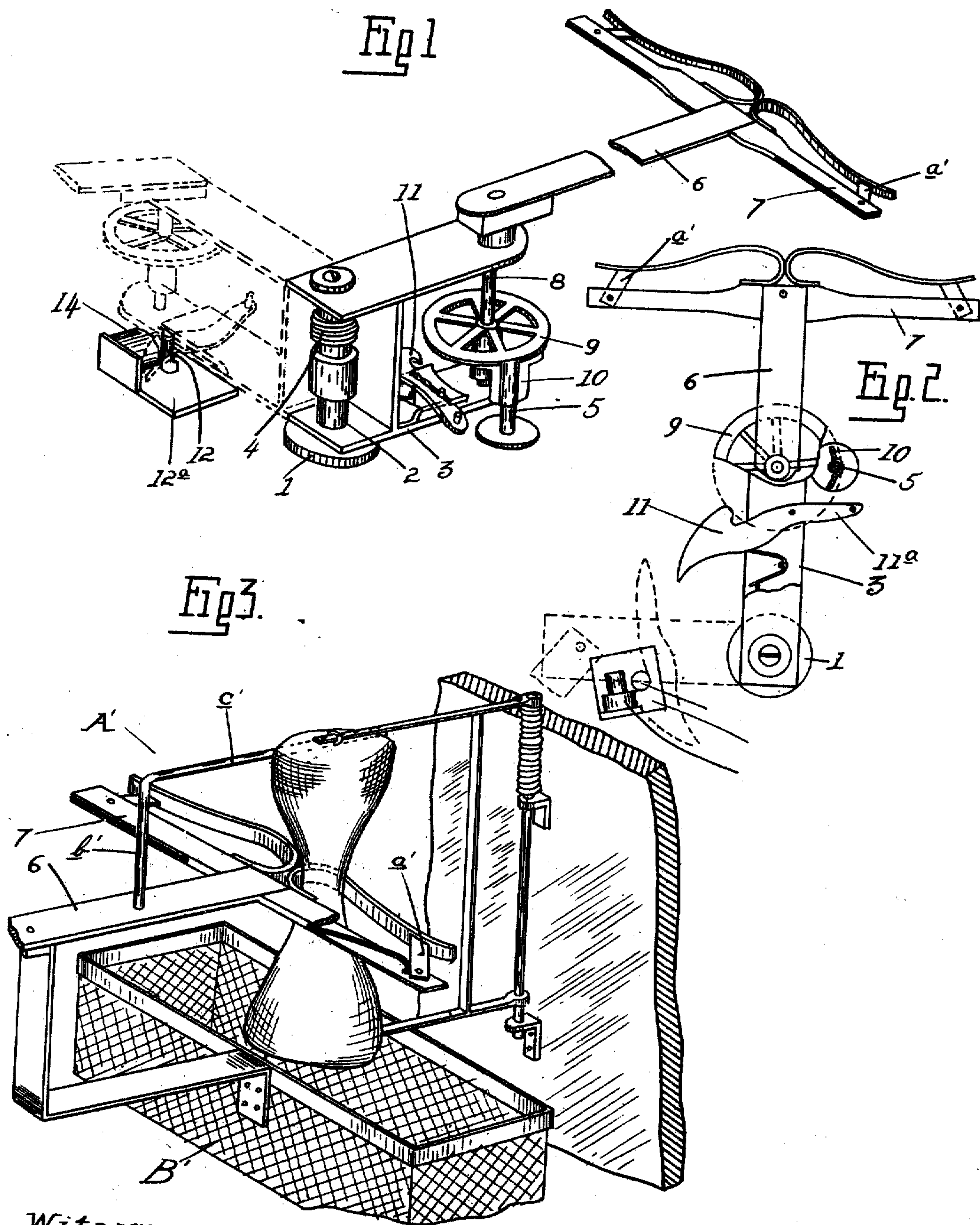


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MAIL HANDLING APPARATUS.  
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# UNITED STATES PATENT OFFICE.

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## MAIL-HANDLING APPARATUS.

No. 912,996.

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*To all whom it may concern:*

Be it known that I, DAVID E. COUGHLIN, a citizen of the United States of America, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Mail-Handling Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

10 The invention relates generally to apparatus for handling mail from moving trains, and consists in means for receiving the bag or pouch from the usual delivery mechanism, including a continuously movable catcher member which by its continuous movement permits gradual dissipation of the energy of momentum imparted to the bag, thereby obviating any appreciable jar or shock to the apparatus.

20 The invention further consists in means for shifting the path of movement of the member referred to whereby it will be caused to operate in a position beyond its initial location, and sufficiently beyond the train so as to effectively prevent the moving parts from striking persons within or projections upon a moving car.

25 The invention still further consists in the peculiar arrangement and combination of the various parts of the apparatus, and in various details of construction as more fully hereinafter set forth.

30 In the drawings illustrating my invention,—Figure 1 is a perspective view of an embodiment of my invention; Fig. 2 is a plan view, partly broken away to illustrate the detail construction of some of the parts of the apparatus; and Fig. 3 is an enlarged sectional perspective view of parts of the mechanism.

40 In the accompanying drawings, I have illustrated the preferred form of the apparatus, but it will be understood that various changes may be made in the arrangement and combination of the parts and in the general construction without in any manner departing from the spirit of my invention.

50 The mechanism is intended to be located at or near the station where the mail is to be delivered from a moving train, and comprises in its construction a base, as 1, of any suitable type, upon which is mounted a vertical standard 2.

3 is a movable support in the form of a frame, preferably pivoted for horizontal rotation on the vertical standard 2. 55

4 represents a spring serving to move the frame 3 parallel with the track in the position shown in dotted lines in Fig. 1, the operative position of the support being in right angular relation to the track, as indicated by the full lines. 60

5 is a stationary standard secured upon any suitable base beside the track adjacent to the frame described. 65

The numeral 6 represents the bag catching member mounted on the swinging support for continuous movement preferably in a horizontal plane. The member is preferably in the form of an arm, and is provided at its outer end with bag catching and retaining devices in the form of crotches 7, the crotches being oppositely disposed so that the bag or pouch may be caught in either direction. At its inner end the arm is secured to the vertical shaft 8, which in turn is pivoted in the outer end of the frame 3. On the shaft 8 is a suitable wheel 9 provided with a downwardly projecting shield 10, the central portion of which is slightly concaved so as to fit the pin or standard 5 and serving as a lock to hold the parts of the apparatus in their operative position to catch the bag. 70 75 80

On the frame 3 is a spring-pressed hook 11 adapted to engage and lock upon a pin 12 stationarily secured in operative relation thereto, preferably upon a suitable base 12<sup>a</sup>, and 14 represents a stop upon said base in the form of a yielding buffer, which, together with the pin 12, serves to limit the swinging movement of the rotary frame support 3. The hook 11 described is provided with an extension 11<sup>a</sup> in the form of a handle section, affording means for releasing the hook from the pin 12 when the apparatus is to be reset in its operative position. 85 90 95

Any suitable delivery mechanism may be used upon the car for delivering the bag or pouch to the receiving mechanism, and as the same forms no part of the present invention it is not herein shown or described. 100

The parts of the apparatus being arranged in their operative position as indicated in full lines in Fig. 2, the operation is as fol- 105



lows: Upon the delivery of the mail bag from the moving train, the pouch is caught upon the bag-receiving arm and retained within the crotch 7 thereon by a spring-pressed finger  $a'$  or such other retaining member as may be employed. The energy of momentum imparted to the bag causes the rotation of the catcher arm, and during the initial swinging movement thereof the releasing mechanism is operated, the shield 10 being disengaged from the pin 5. The instant this takes place the spring 4 shifts the rotary support into a position in parallelism with the track, as indicated in the dotted lines in Fig. 1, and the support is held in this position by the engagement of the hook 11 with the pin 12. The fulcrum of the swinging arm is thus moved automatically away from the track, permitting the bag-receiving member to move in a different orbit from that in which it originally traveled in its initial operation. The new path of movement is sufficiently beyond the train to prevent the arm or catcher from striking any person within the moving train, while the continuous rotation takes up the momentum of the bag. In resetting the mechanism, the supporting frame is moved into right angular relation to the track and the wheel 9 turned by the operator to effect the locking engagement between the parts, when the catcher proper will be in proper position to receive the mail bag or pouch.

I may and preferably do employ in connection with the catcher arm means preferably in the form of an angle-shaped member  $A'$  adapted to engage the bag near its point of attachment with the holder and serving to remove the bag from its support without tearing the loops or other similar devices at the bag ends. As indicated in Fig. 3, this member is arranged with its vertical portion  $b'$  upon the arm proper, and with its transverse portion  $c'$  extending in parallelism with the arm at a considerable distance above the latter at a point where it will strike the bag near where the loop engages the delivery mechanism. It is also desirable at times to provide a receiver beneath the crotch or crotches on the catcher arm for small articles that might possibly fall through the crotches or such other bag-receiving means as may be employed. I therefore employ a basket or other suitable receptacle, as  $B'$ , which is connected to the arm as shown and depends therefrom in proper position.

What I claim as my invention is,—

1. In mail handling apparatus, the combination of a continuously movable bag receiving member, and spring-actuated means for shifting its orbit of movement.

2. In mail handling apparatus, the combination of a continuously movable bag receiving member, and spring-actuated means

for shifting its orbit of movement after its initial operation by the delivered bag or pouch.

3. In a mail bag catcher, the combination with a movable bag receiving member having a shiftable fulcrum, and spring-actuated means for automatically shifting the fulcrum after the initial movement of the receiving member has been effected.

4. In a mail bag catcher, the combination with a bag receiving member fulcrumed for swinging movement, and spring-actuated means controlled by said member for automatically shifting its fulcrum point.

5. In a mail bag catcher, the combination of a catcher arm fulcrumed for continuous horizontal rotation, and spring-actuated means controlled by the arm for automatically shifting its fulcrum.

6. In a mail bag catcher, the combination of a laterally projecting bag receiving member fulcrumed for continuous rotary movement in a horizontal plane, the distance between one end of the bag receiving member and the fulcrum point remaining constant and mechanism acting upon the initial rotation of said member to automatically shift its fulcrum point.

7. In a mail bag catcher, the combination with a movable support, of a bag receiving member fulcrumed thereon for continuous rotary movement, and spring-actuated means for automatically shifting the support during the rotation of said member.

8. In a mail bag catcher, the combination with a spring-actuated rotatable support, of retaining means for holding the support against the tension of its spring, a bag catching member pivoted upon the support, and releasing mechanism for the support controlled by said member.

9. In a mail bag catcher, the combination with a spring-actuated rotatable support, of means for holding the support against the tension of its spring and for limiting its rotary movement, a bag catching member pivoted upon the support for continuous horizontal rotation, and releasing mechanism for the support controlled by said member.

10. In a mail bag catcher, the combination with the spring-actuated rotatable support, of means for holding the support against the tension of its spring, means for limiting the rotary movement of the support and for locking the latter after its partial rotation has been effected, a bag catching member pivoted upon the support for continuous horizontal rotation, and releasing mechanism for the support controlled by said member.

11. In a mail bag catcher, the combination with a vertically pivoted spring-pressed frame, of a catcher arm fulcrumed thereon for continuous rotary movement in a horizontal plane, means for holding the frame



and arm in substantially axial alinement against the tension of the frame spring, means controlled by the arm for releasing the frame, and a stop limiting the swinging movement of said frame.

12. In a mail bag catcher, the combination with a rotatable catcher arm, a bag receiving and retaining device at the extremity thereof, and means associated with the catcher arm for engaging the bag near its point of attachment to the holder.

13. In a mail bag catcher, the combination with a catcher arm, of a bag receiving and retaining device at the extremity thereof, and a receptacle carried by the arm beneath the bag receiving mechanism.

14. In a mail handling apparatus, the combination of a support, a bag receiving member fulcrumed upon the support for independent and continuous rotary movement, and means for automatically shifting the support.

15. In a mail handling apparatus, the combination of a shiftable support and a bag receiving member mounted thereon for continuous rotary movement independent of said support.

16. In a mail bag catcher, the combination

with a laterally projecting member fulcrumed for continuous rotary movement in a horizontal plane and provided with means for catching and retaining a mail bag or pouch, the connection between the fulcrum point and the laterally projecting member being such as to prevent relative lateral movement between the parts, and means for shifting the fulcrum.

17. In a mail handling apparatus, the combination with a continuously movable bag receiving member, means for shifting its orbit of movement, and means for holding said bag receiving member in locked position.

18. In a mail handling apparatus, the combination with a continuously movable bag receiving member, spring actuated means for shifting its orbit of movement, and retaining means for holding said bag receiving member against the tension of the spring.

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

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Witnesses:

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