

C. W. BROUGHTON.
MAIL POUCH DELIVERY APPARATUS.
APPLICATION FILED JAN. 6, 1909.

938,821.

Patented Nov. 2, 1909.

2 SHEETS—SHEET 1.

Fig. 1.

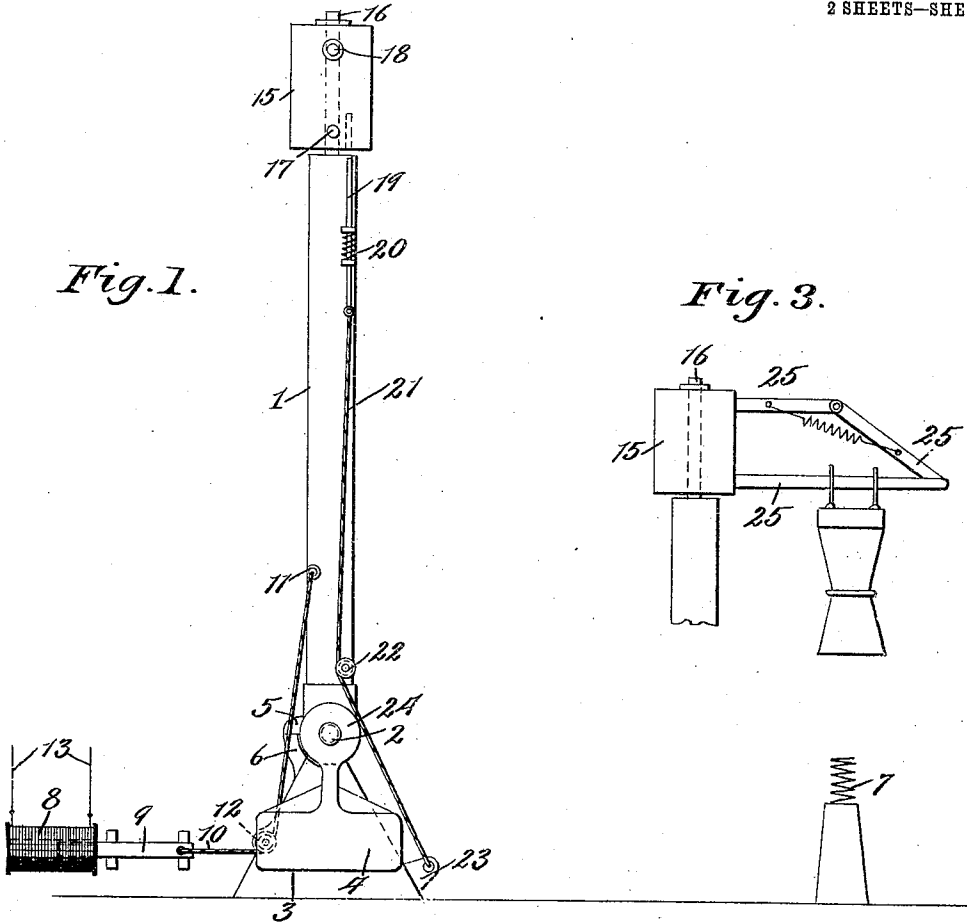


Fig. 3.

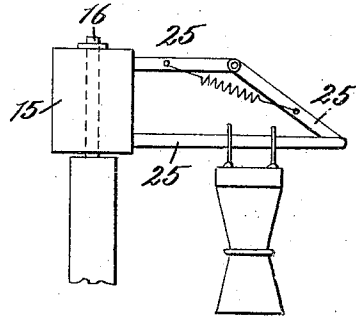
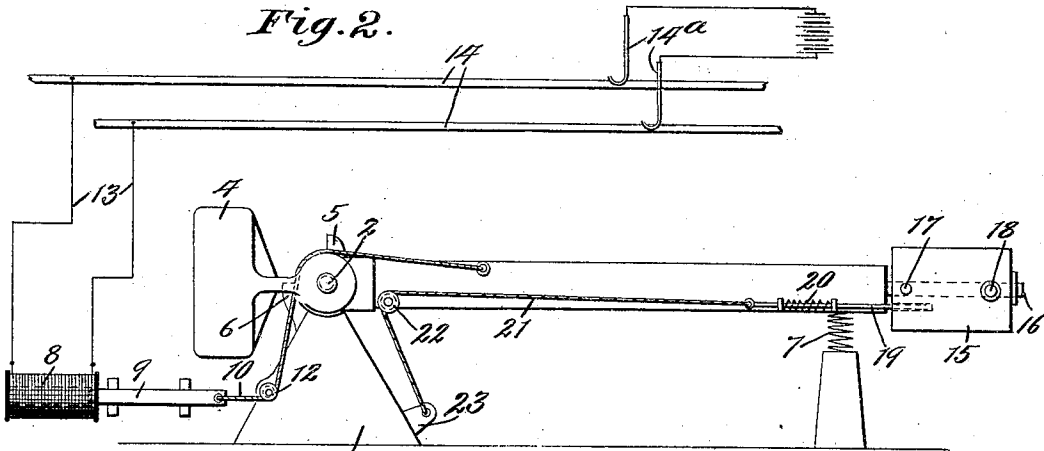


Fig. 2.



Witnesses:

Ed. D. Perry
J. F. Jochem, Jr.

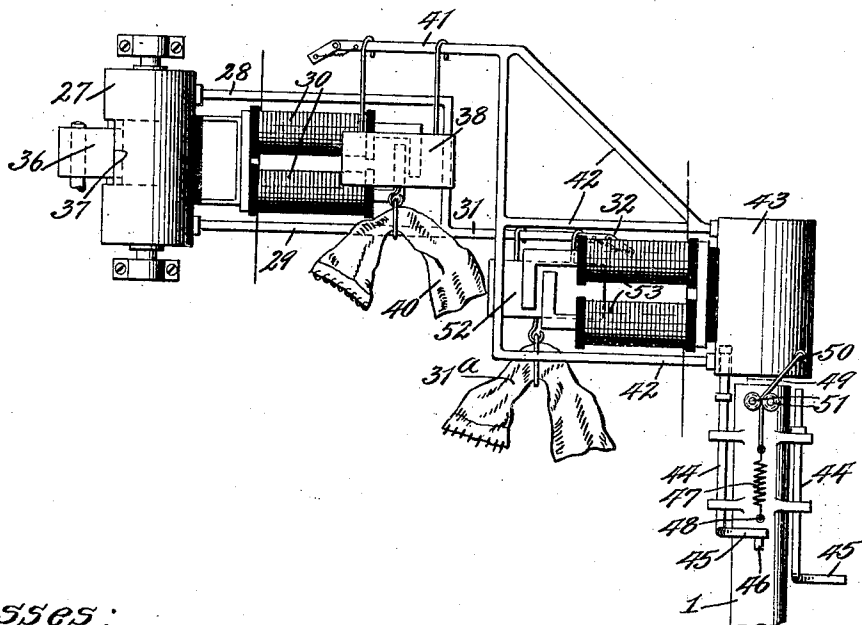
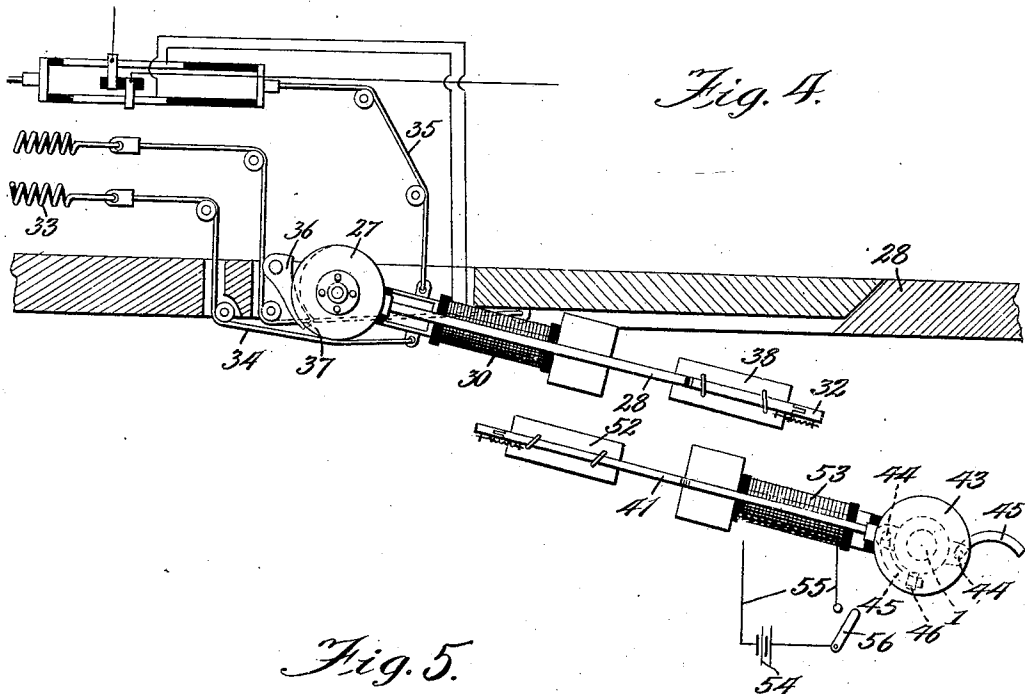
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

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MAIL-POUCH-DELIVERY APPARATUS.

938,821.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed January 6, 1909. Serial No. 470,899.

To all whom it may concern:

Be it known that I, CHAUNCEY W. BROUGHTON, a citizen of the United States, residing at Carlton, in the county of Dekalb and State of Illinois, have invented certain new and useful Improvements in Mail-Pouch-Delivery Apparatus, of which the following is a full, clear, and exact specification.

This invention relates to devices for holding a mail pouch in position to be delivered to a passing mail car, and while it is capable of general application or use in connection with mail car apparatus of various forms, it is more especially designed for use in conjunction with mail car apparatus having means for closing an electric circuit at the station or on the road bed as the car approaches the pouch to be received upon the car. An apparatus of the car referred to is shown in my United States Patent No. 880,008, issued February 25, 1908, to which reference may be had for an understanding of the kind of electrical mechanism above referred to.

In many instances all forms of standards or posts or other projections permanently situated between the tracks or adjacent thereto are objectionable and are proscribed by the railroad companies.

One of the objects of this invention, therefore, is to provide an improved mail pouch support which will be capable of holding the mail pouch at the required elevation to be received upon the car while the car is passing and to receive a pouch from the car, and which will assume a reclining position lengthwise of the track after the car has passed, and a further object is to automatically raise the post or support to its erected position by mechanism upon the car in ample time to enable the pouch catching device upon the car to catch a pouch therefrom and to deliver a pouch thereto.

A further object is to provide an improved means for holding the devices at the station and upon the car which are adapted to both receive and deliver the mail pouch substantially parallel with the car so that the devices will not engage each other, and improved means for holding the mail pouches one in advance of the other.

A further object is to provide improved means whereby the device upon the car will be permitted to yield in a direction toward the car.

To the attainment of these ends and the

accomplishment of other new and useful objects, as will appear, the invention consists in the features of novelty in the construction, combination and arrangement of the several parts hereinafter more fully described and claimed and shown in the accompanying drawings illustrating the embodiment of the invention, and in which—

Figure 1 is a side elevation of a mail pouch support embodying this invention, showing it in an elevated position, the electrical devices being illustrated diagrammatically. Fig. 2 is a similar view showing the support in its horizontal position. Fig. 3 is a view of the upper end of the standard showing one form of pouch supporting arms. Fig. 4 is a diagrammatic view showing a modification of the invention and particularly illustrating the relative positions of the devices at the station and upon the car when the car is passing. Fig. 5 is a side elevation of the devices shown in Fig. 4, showing the respective supporting arms for the mail pouch located in different planes and the magnets upon the arms being also located in different planes.

In carrying out the invention there is employed a post or standard 1 which is arranged adjacent to the track upon which the car travels when receiving the pouch. This standard is mounted at its lower end upon a pivot 2 in a suitable base or pedestal 3, and is provided with a counter-weight 4 to counter-balance the upper end of the standard and hold it from moving violently when descending to its horizontal position shown in Fig. 2, the preponderance of weight at the upper end of the standard being sufficient to cause it to gravitate to the horizontal position when not otherwise restrained. When the standard is raised to its full erected position, it will be slightly inclined to the perpendicular so that when not restrained it will automatically gravitate to its horizontal position. To this end it may be provided with a lug 5 adapted to strike a stop 6 on the pedestal 3 when it reaches its full erected position. A spring or cushion 7 on the ground beneath the standard when lowered may also be provided, if desired, to relieve any possible shock resulting from its too sudden descent. Until a mail car approaches the standard lies prone in the position shown in Fig. 2, but upon the approach of the car, the standard is automatically raised by electrical devices which will now be described.

A solenoid 8 of any required length and strength may be provided having a core 9 which is connected by a cable or other flexible connection 10 to the standard 1 at 11, a pulley 12 being fixed to the pedestal 3 for causing the cable to pull in a downward direction should it be necessary to arrange the core 9 in a horizontal position as shown. From the point where the pulley 12 is situated, the cable 10 passes upwardly and around the lower rounded end of the standard 1, so that when the circuit 13 of the solenoid is closed, the standard will be elevated by the solenoid assisted by the counterweight 4. This circuit 13 may be closed automatically by any suitable device upon the car, such, for example, as shown in my aforesaid patent; and if desired, current may be supplied to the circuit as in that patent, from storage batteries carried upon the car through the brushes 14^a carried on the car and contacting with two track conductors or rails 14, with which the circuit wires 13 are connected respectively, these track conductors or rails 14, as will be understood, being continued throughout that portion of the line of travel of the car during which it is desired to raise the standard 1 and keep it elevated.

The mail pouch may be supported on the standard 1 by any suitable means. In the exemplification of the invention shown in Fig. 3, the upper end of the standard is provided with a rotary head 15 pivoted on a pin 16 and provided with sockets 17, 18, for the introduction of pouch holding arms or devices which will project horizontally toward the car. The purpose of pivoting this head is to enable the pouch holding arms or devices to yield in the direction of movement of the car when the pouch receiving devices upon the car strike the pouch on said arms. As the standard 1 rises from its prone position, however, with the pouch upon the pouch supporting arms, the weight of the pouch would rotate the head 15 and its arm into a position lengthwise or substantially lengthwise of the track, and in order that this may not occur, in this exemplification of the invention the head 15 is provided with some suitable means for locking it in position until it is raised to its erected position. For this purpose, there is provided a bolt 19 mounted upon the standard 1 and forced into position by a spring 20 when the standard leaves its erected position. This bolt is withdrawn as the standard is about to assume its full erected position by a cord or cable 21 attached to the bolt at one end, and after passing around a pulley 22 on the standard, is attached as at 23 to the pedestal 3 or other fixture. As the standard rises, the pulley 22 deflects the cord 21 against the rounded hub 24 of the standard, as shown in Fig. 1 and thereby withdraws the bolt 19.

As in the aforesaid patent, the standard 1 may be utilized as a means both for holding a pouch preparatory for delivery to a passing car and for receiving a pouch from the car. When utilized for the former purpose, the sockets 17, 18 will be used for supporting ordinary pouch supporting arms, such as arms 25 shown in Fig. 3, the same being similar to the supporting arms shown in the aforesaid patent, or any other suitable arms may be employed.

When the standard is used for the latter of the two said purposes, the arms 25 will be removed and the magnets and other necessary circuit wires described in the aforesaid patent will be inserted in their stead.

In the form first described, the arms for supporting the pouch stand at an angle substantially crosswise of the line of movement of the car when either receiving or delivering; but in the exemplification shown in Figs. 4 and 5 there is provided a means whereby the supporting and receiving arms will stand in position almost lengthwise of the track at that time, so that instead of clashing against one another they will pass while in vertical planes substantially lengthwise of the line of movement and the arms of the respective device being arranged in different horizontal planes, the bag to be delivered by the respective arms will be held out of engagement with each other and spaced one slightly in advance of the other as the bags are removed from the respective devices.

In Fig. 4 there is shown diagrammatically the relative positions of the pouch receiving and delivering arms for both the station and the car and from which it will be seen that the arms on the car stand at a slight angle to the side of the car 28 and inclined rearwardly, while the arms at the station also project at a slight angle but not sufficiently to cause the arms on the car to clash therewith. The arms on the car are mounted upon a rotatable head 27 and consist of bars 28, 29, spaced apart to accommodate the magnet 30 between them, and one of these arms, preferably the arm 29, has an extension 31 for supporting the mail pouch 31^a in position to be delivered to the station. The end of this arm 31 may be provided with an elastic figure or stop 32 for preventing the pouch from slipping off accidentally. The head 27 may be mounted rotatably upon the car in any suitable manner, such, for example, as shown and described in the aforesaid patent and it may also be actuated by the means described in said patent, that is, it may be pulled into position shown in Fig. 4 by means of a spring 33 and a cable 34 as described in the patent, or they may be pulled from this position into the car as the door opens inwardly by means of a cable 35 connected

therewith and one end of the cable may be operated in the manner described in the prior patent by automatic means within the car. When in the position shown in Fig. 4 ready to deliver a pouch to and receive a pouch from the station, the arms on the car may be locked against outward movement in any desired or suitable manner, which locking means will permit the arm to yield inwardly toward the car when the mail bag on the station device engages the magnet on the device on the car. For this purpose there may be provided a stop 36 which co-operates with a shoulder 37 on the head 27 so that when the arm is in the position shown in Fig. 4 the shoulder 37 will engage the stop 36 and hold the arm against outward movement but when pressure is exerted upon the arm in a direction toward the car the shoulder 37 will move away from the stop 36 and when the pressure is relieved, the spring 33 will automatically move the shoulder 37 again into engagement with the stop 36.

The magnets 30 may be energized in any suitable manner such as the manner shown in the aforesaid patent so that when the magnets are energized they will attract the armature or magnetic mass 38 carried by the pouch 40 on the station device while the magnets 30 are passing the latter.

The station device is also provided with a plain supporting arm 41 similar to the arm 31 and upon which the pouch 38 hangs when it is to be delivered to the magnet 30 on the car. This arm 37 is preferably connected by supports or arms 42 with a rotatable head 43 pivotally mounted upon the standard 1 so as to be capable of rotation whereby it may be presented in either direction according to the direction of travel of the car to which or from which the pouch is to be delivered. To the end that the head may be held in the proper position the standard 1 is provided with bolts or stops 44 slidably mounted thereon in such a way that either may be lifted to the plane of rotation of the arms 42 for limiting their outward swing. The lower end of each bolt 44 has a projection 45 capable of being passed over a stop 46 on the standard for holding the bolt against dropping down out of engagement with the arm 38. Any suitable means may be provided for automatically returning the head 43 and arm 41 to a normal position parallel with the track when the bolts 44 are out of operative position. For this purpose there may be provided an elastic member 47, one end of which may be secured as at 48 to the standard 1 and to the other end is secured a flexible member 49 such as a cable or the like which is secured as at 50 to the head 43 and suitable pulleys 51 may be provided through which the cable 49 passes so that when the head 43

is rotated, the cable 49 will be drawn through the pulleys 51 to create a tension on the elastic member 47 so that when the bolts 44 are moved to release the head, the tension on the elastic member 47 will automatically move the head to its normal position.

The device at the station is substantially a duplicate of the device on the car excepting that the arm 41 is set in a higher plane than the arm 31 so that the arm 31 will pass under it and the armature of the pouch while supported by arm 37 will be in position to be attracted by the magnet 30. The armature 52 of the pouch 31^a when supported by the arm 31 will be in a position to be attracted by the magnet 53 carried by the head 43 at the station and which magnet 53 is located in a lower plane than the magnet 30 whereby the magnets will pass each other without affecting each other and the arms will pass each other without clashing.

Fig. 4 also shows diagrammatically a circuit and source of electrical energy for the magnet 53, and the battery being indicated at 54, the circuit wires at 55, and a switch at 56.

It is, of course, understood that the present invention is not concerned with the means of energizing the magnets on either the car or on the station devices and hence instead of the manual switch 56 the automatic mechanism of the patent above referred to may be employed if desired.

When the post or standard 1 lies prone, as shown in Fig. 2, the head 43 is of course rotated until the arm 41 stands crosswise of the line of movement of the car in the same position as the arms 17, 18 in Fig. 2.

With this improved construction it will be apparent that when the automatic mechanism in the car is operated to set the device upon the car, the spring 33 will draw the receiving and delivering arm to such a position as to cause the shoulder 37 on the head 27 to engage the stop 36 and this spring will also serve to hold the arm against wind resistance and the stop also serves as a means to prevent the arm on the car from moving past its operative position.

It will also be apparent by placing the arms on the car and at the station substantially parallel they will not clash as the car is passing, and furthermore the mail pouches will be held one in advance of the other for some distance, thereby preventing the wind from blowing the mail pouches together, which might be the case if they were held directly opposite each other and in a line at right angle to the car.

I claim:

1. In a device for the purpose described, the combination of a mail pouch support adapted to hold the mail pouch at an elevated position and to also approach a position close to the ground when not in use,

means for automatically raising the said support to its elevated position, and means on the car for actuating said elevating means.

2. In a device for the purpose described, the combination of a mail pouch support adapted to hold a mail pouch in an elevated position and also to descend to a position close to the ground when not in use, electro-magnetic devices for raising said support to its elevated position, and means on the car for actuating said electromagnetic devices.

3. In a device for the purpose described, the combination of a pivoted standard for supporting a mail pouch, adapted to turn downwardly when not in use, means for elevating the standard to its erected position, and means on the passing car for actuating said elevating means automatically.

4. In a device for the purpose described, the combination of a pivoted standard for supporting a mail pouch adjacent to a railway track adapted to turn downwardly lengthwise of the track, means for elevating said standard to its erected position, and means on the car for actuating said elevating means as the car passes.

5. In a device for the purpose described, the combination of a pivoted standard for supporting a mail pouch adjacent to a railway track, said standard being adapted to turn downwardly when not in use and provided with a yielding member adapted to move in the direction of movement of the mail car, means for locking said yielding member against yielding motion when the standard is out of its erected position, and means for unlocking said yielding member as the standard is erected.

6. In a device for the purpose described, the combination of a pivoted standard for supporting a mail pouch adjacent a railway track, a rotary head pivoted on the end of said standard and provided with mail pouch supporting means, said standard being adapted to turn downwardly when not in use, a lock for locking said head against rotary movement when the standard is turned downwardly, and means for automatically unlocking the said head as the standard is erected.

7. In a device for the purpose described, the combination of an electromagnet adapted to be carried on a moving car, a pouch provided with an armature, and means for holding said armature out of but adjacent the line of movement of the magnet on the car.

8. In a device for the purpose described, the combination of an electromagnet adapted to be supported on a moving car, a mail pouch provided with an armature adapted to be attracted by said magnet, and an arm for holding said pouch loosely while the car is passing, projecting in the direction of movement of the car.

9. In a device for the purpose described, the combination of a magnet adapted to be supported upon a moving car, an arm supported in unison with said magnet for loosely sustaining a mail pouch to be delivered to a station, a magnet supported at the station for receiving a mail pouch from said arm, said magnet being arranged in a lower plane than said arm, and an arm at the station for supporting a mail pouch to be delivered to the magnet on the car, the last said arm being in a plane above the magnet on the car.

10. In a device for the purpose described, the combination of a magnet adapted to be supported upon a moving car, and an arm supported in unison with said magnet for loosely sustaining a mail pouch to be delivered to a station, said arm being also adapted to catch another mail pouch otherwise supported.

11. In a device for the purpose described, the combination of an electro-magnet, a support for the magnet pivotally mounted on a moving car, a stop for limiting the pivotal movement of the support in one direction, means for yieldingly holding the support in engagement with the stop, a mail pouch provided with an armature adapted to be attracted by said magnet, and an arm for holding said pouch loosely while the car is passing, projecting in the direction of movement of the car.

12. In a device for the purpose described, the combination of an electro-magnet, a support for the magnet pivotally mounted on a moving car, a stop for limiting the pivotal movement of the support in one direction, means for yieldingly holding the support in engagement with the stop, an arm supported in unison with the magnet, a mail pouch provided with an armature supported loosely by the arm, a magnet supported adjacent the track, a mail pouch provided with an armature, an arm supported in unison with the magnet for loosely holding the pouch while the car is passing, said arms being substantially parallel with each other, and one of the arms projecting in the direction of movement of the car.

13. In a device for the purpose described, the combination of an electro-magnet, a support for the magnet pivotally mounted on a moving car, an arm supported in unison with the magnet, a mail pouch provided with an armature supported loosely by the arm, a magnet supported adjacent the track, a mail pouch provided with an armature, an arm supported in unison with the magnet for loosely holding the pouch while the car is passing, said arms being substantially parallel with each other, and one of the arms projecting in the direction of movement of the car, one of said arms being supported in a plane above the other arm.

14. In a device for the purpose described, the combination of an electro-magnet, a support for the magnet pivotally mounted on a moving car, an arm supported in unison with the magnet, a mail pouch provided with an armature supported loosely by the arm, a magnet supported adjacent the track, a mail pouch provided with an armature, an arm supported in unison with the magnet for loosely holding the pouch while the car is passing, said arms being substantially parallel with each other, and one of the arms projecting in the direction of movement of the car, one of said magnets being supported in a plane below the other magnet.

15. In a device for the purpose described, the combination of an electro-magnet, a support for the magnet pivotally mounted on a moving car, an arm supported in unison with the magnet, a mail pouch provided

with an armature supported loosely by the arm, a magnet supported adjacent the track, a mail pouch provided with an armature, an arm supported in unison with the magnet for loosely holding the pouch while the car is passing, said arms being substantially parallel with each other, and one of the arms projecting in the direction of movement of the car, one of said arms being supported in a plane below the other arm and one of said magnets being also supported in a plane below the other magnet.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 4th day of January A. D. 1909.

CHAUNCEY W. BROUGHTON.

Witnesses:

J. H. JOCHUM, Jr.,
M. W. CANTWELL.