(No Model.) 2 Sheets—Sheet 1.

L. J. PECHNER.

MAIL DELIVERY FOR BUILDINGS.

No. 553,133. Patented Jan. 14, 1896.

Fig. 1.

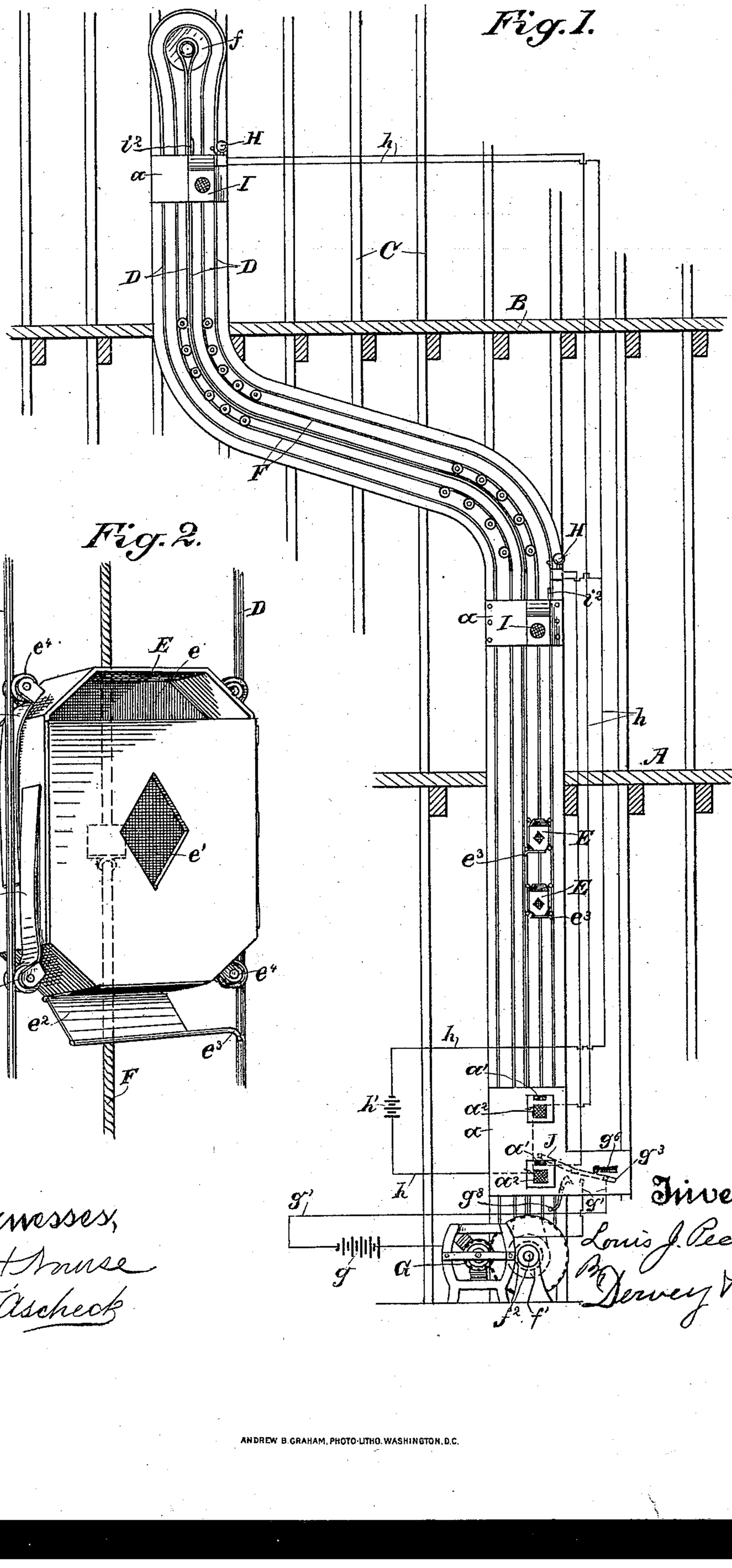

Fig. 2.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 3.

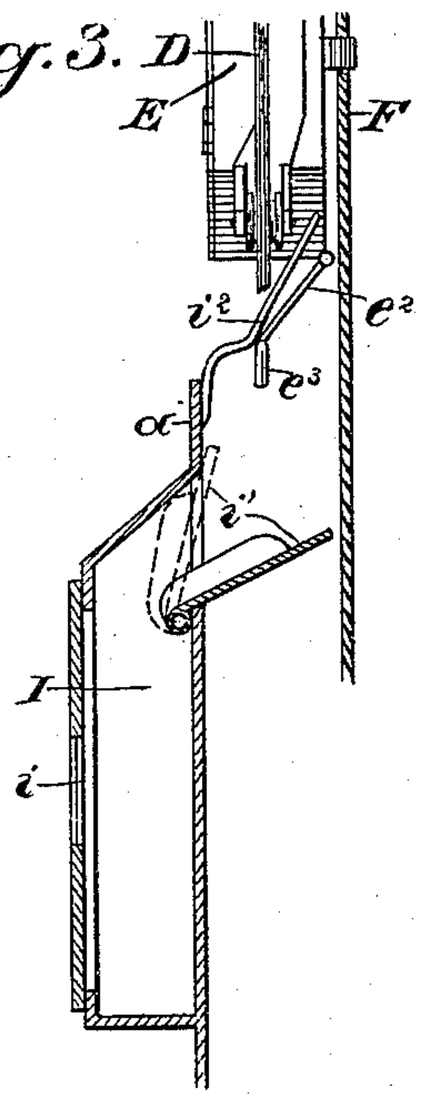


Fig. 4.

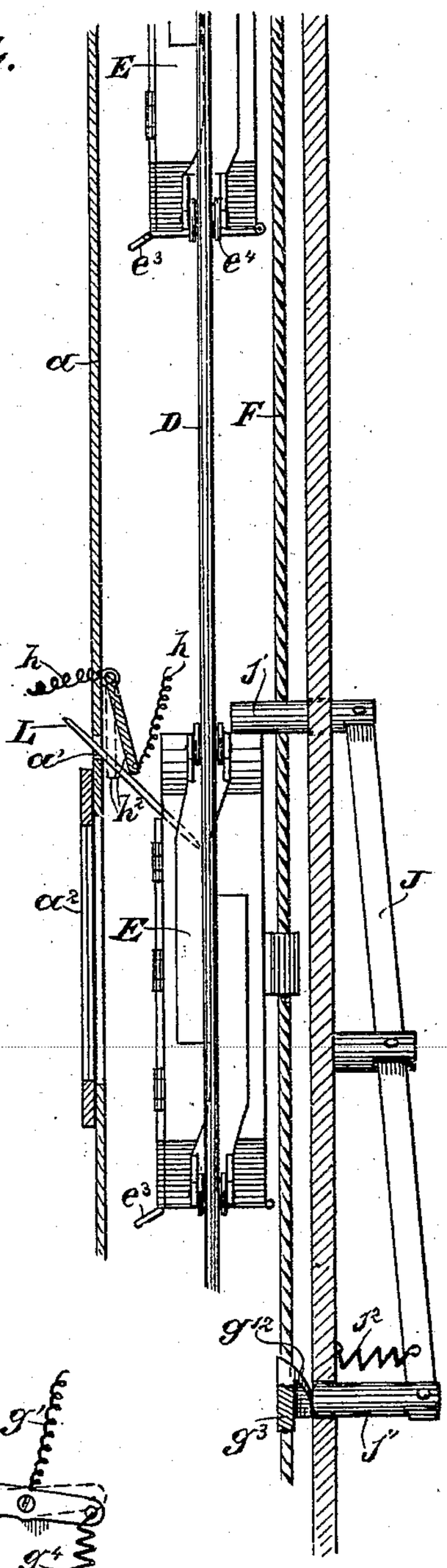
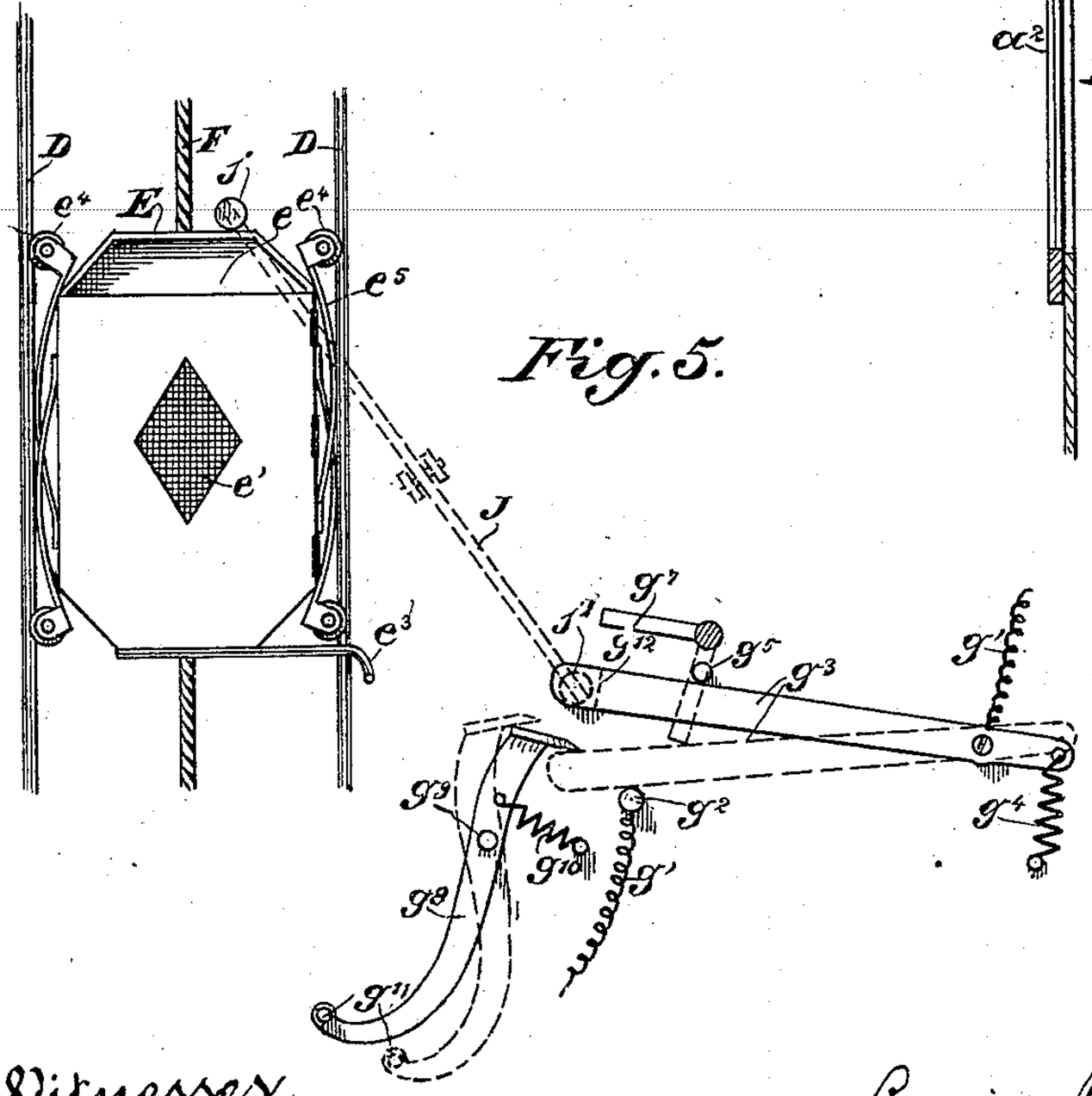


Fig. 5.



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UNITED STATES PATENT OFFICE.

LOUIS J. PECHNER, OF SAN FRANCISCO, CALIFORNIA.

MAIL-DELIVERY FOR BUILDINGS.

SPECIFICATION forming part of Letters Patent No. 553,133, dated January 14, 1896.

Application filed July 17, 1895. Serial No. 556,257. (No model.)

To all whom it may concern:

Be it known that I, LOUIS J. PECHNER, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Mail-Deliveries for Buildings; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to a device for delivering mail and other matter to the various floors or flats of large buildings.

My invention consists of the parts and the constructions and combinations of parts which I shall hereinafter describe and claim.

The object of my invention is to provide a simple and effective means, to be set in operation by the postman upon depositing the mail, for carrying said mail to the several floors or flats of large buildings, and depositing it at the proper points, giving notice at the same time of the operation.

Referring to the accompanying drawings, Figure 1 is an elevation of my device. Fig. 2 is a perspective view of the letter-box. Fig. 3 is a vertical section of the receiving-receptacle at one of the floors of the building, showing the automatic operation thereof by the letter-box as it passes. Fig. 4 is a vertical section showing the letter-box in its initial position in a state of rest ready to receive the mail. Fig. 5 is an elevation showing the letter-box in a state of rest and the means for setting the device in operation by the postman.

In Fig. 1, A represents one of the floors of a building, and B another floor thereof.

C are the joists of the building, between any pair of which the device is arranged and is suitably inclosed therein. The general arrangement may be perpendicular throughout, or it may be inclined, or it may bend from one vertical plane to another, the last instance being that in which I have shown it in Fig. 1, simply to illustrate the fact that it may be carried to different positions on different floors. In the space between these joists (which said space may be denominated the "shaft of the device") is suitably mounted the track D. This is an endless track, as shown, and consists of a pair of rails or bars, as is shown in Fig. 2.

As I have for the sake of illustration shown but two floors of the building, I have shown but two letter-boxes. These are both designated by the letter E in Fig. 1, and may be distinguished by calling the first one the "upper box" and the second one the "lower box," as the first is intended for the second story B, while the lower one is intended for the first story A. The construction of these boxes is shown in Fig. 2, wherein it will be seen that it consists of a casing having in its upper front portion an aperture e by which the mail is inserted, and also in its front a screened aperture e' whereby the contents may be observed. It has also a hinged bottom e^2, normally held closed, as by a spring-hinge. The bottom has a contact-arm e^3 by which it is automatically opened, as I shall presently describe. This letter-box is mounted between the rails of the track D by means of the wheels e^4 on each side above and below, said wheels being mounted upon spring-arms e^5, whereby they are held out constantly in firm and constant contact with the rails. To the back of both boxes is firmly secured the endless traveling rope or cable F. This passes upwardly between the rails of an ascending track and turns about a pulley f at the top, and thence down in the descending track to and around a driving-pulley f' at the bottom. This endless cable F is set in operation by means of a motor G, (shown in Fig. 1,) said motor being geared up, as is indicated, to the shaft f^2, upon which the driving-pulley f' is mounted. The motor is an electrically-operated one, the battery being shown at g and the circuit-wires at g'. This circuit g' is normally open at the pole g^2, Fig. 5, and is closed by means of a switch-lever g^3, Fig. 5, held normally out of contact by the spring g^4. A fixed stop g^5 serves to limit the upward movement of the switch-lever g^3. A keyhole g^6 is adapted to receive a turnable key g^7, which in turning is adapted to come in contact with and press down the switch-lever g^3 so that it will come into contact, as is shown by the dotted lines in Fig. 5, with the pole g^2 of the motor-circuit g'. When, therefore, the postman wishes to set the device in operation, he inserts his key g^7 in the keyhole, and by turning it presses down the switch-lever g^3

and closes the motor-circuit, so that the endless cable F is driven and the letter-boxes are started upon their journey.

In order to hold the lever g^3 down in contact with the pole g^2 for a time sufficient to effect the full travel and return of the letter-boxes, there is a catch-lever g^8 pivoted at g^9, Fig. 5, and controlled by a spring g^{10}. As the lever g^3 descends it forces back the catch-lever g^8 to the position shown in the dotted lines, and as it passes the head of said catch-lever the latter springs in again and holds the switch-lever in the depressed position shown in the dotted lines.

In the front wall of the casing or shaft in which the device is located, which said front wall is in Fig. 4 designated by a, is made an aperture a', which is also seen in Fig. 1. There are as many of these apertures as there are letter-boxes, and I have shown two of them in Fig. 1. Below each of these is a screen-door a^2 by which access may be had to the interior. Through these apertures a' the postman delivers the mail to the letter-boxes. I have shown in Fig. 4 a letter L in the act of passing through one of said apertures a', and when the letter-box is in a position of rest, as is shown in Fig. 4, the letter slips right down from the aperture a' into and through the aperture e in the top of the letter-box. Thus the postman inserts the mail-matter into the letter-box. It is the intention to give warning automatically of this act and of the succeeding one of setting the device in operation, and to do this I have shown in Fig. 1, at each floor, an alarm-bell H from which electric circuit-wires, designated generally by h, extend to and include a battery h', Fig. 1. There are two of these circuits, one for each alarm-bell, and said circuits are broken or opened just behind the letter-receiving apertures a'. At this point one of the poles is a swinging flap h^2, Fig. 4, which normally, as is shown by the dotted lines in said figure, hangs down out of contact with the opposing pole on the end of the wire h; but when the letter is introduced, as is shown, it forces back the flap and causes it to make electrical connection, thereby closing the circuit and sounding the alarm-bell at the proper floor.

In order to receive the letters automatically from the boxes at the several floors, there is located at each floor a receiving-receptacle I. A section of one of these is shown in Fig. 3. The front of this receptacle has a screen-opening i by which its interior may be seen. The upper back portion of the receptacle has an opening which is controlled by a gravity-door i'. This gravity-door is normally open and stands in the path of the uprising letter-box, but is adapted by said passing box to be swung up temporarily to the position shown in the dotted lines, and as soon as said box passes it swings out again, as is shown in the full lines, not only exposing the opening, but serving as a shelf or chute to direct the mail-matter dropped upon it to the interior of the receptacle I. Secured firmly to the top of the box I is a contact-arm i^2, which lies in the path of the contact-arm e^3 of the swinging bottom door e^2 of the letter-box. When, now, the letter-box, as is seen in Fig. 3, has passed upwardly past the receiving-receptacle I, its contact-arm e^3, bearing against the contact-arm i^2, forces the bottom door e^2 of the letter-box open, and the contents of said box will drop down upon the chute or door i', by the inclination of which it will be directed into the receptacle I.

Where a plurality of letter-boxes is used, as I have here shown, it is necessary to provide that each box shall be opened only by contact with its own proper receptacle, and for this purpose I have shown in Fig. 1 the contact-arm e^3 of the lower box as being on one side and the contact-arm e^3 of the upper box as being on the other side, and the contact-arm i^2 of the lower receptacle is shown on one side and the contact-arm i^2 of the upper receptacle on the other side, so that each operates its own letter-box. Now as upon starting the motor both letter-boxes make the full course of travel, it is necessary that the first letter-box shall not throw the motor out of action, but that the second one shall do so, because by that time both shall have reached a position of rest or an initial position. To effect this automatic opening of the motor-circuit, I have the catch-lever g^8 provided with an extension which carries a stud g^{11}, Fig. 5, and with this stud the contact-arm e^3 of the lower letter-box is adapted to come in contact, and thereby to force said catch-lever over to the position shown in dotted lines, which will allow the contact-lever g^3 to rise against its stop g^5, thereby opening the motor-circuit. On account of the reversed position of the contact-arm e^3 of the first letter-box, said arm passes the catch-lever g^8 and proceeds upward to its initial point until arrested by the opening of the circuit, due to the second letter-box. Now, although the motor-circuit is opened, it is necessary to check the momentum of the boxes, so that they shall come accurately to their respective places behind the inlet-apertures a'. To effect this I have, as is shown in Fig. 4, a pivoted lever J having upon its upper end a stud or stop j and upon its lower end a stud j'. A spring j^2 operates upon this lever to hold its lower stud j' projected into the shaft and its upper stud j withdrawn from the shaft. When the lever g^3 is in its normal position, a lug or extension g^{12}, Fig. 4, bears against the lower stud j' and holds it out so that the upper stud or stop j projects into the shaft and lies just above the letter-box, as is shown in Fig. 4, thus holding the box in place; but when the postman depresses the lever g^3, as is shown in Fig. 5 by dotted lines, the stud j' can spring inwardly, and thereby the lever J withdraws the stud j and the letter-box may proceed upon its way; but when in coming

around again to its place it trips the lever g^3, as heretofore described, said lever forces outwardly the stud j' out of the way and allows the stud j to come in again and serve as a stop to instantly arrest the movement of the letter-box.

The general operation of the device is as follows: The postman deposits his mail for the several floors into the respective boxes E, through the respective apertures a', and in so depositing them the electric circuits h are closed by the flap h^2 and notice is sounded upon the several alarms H at the different floors. As soon as the mail is deposited, he operates his key g^7, thereby depressing the lever g^3 and closing the circuit g' to the motor. In thus depressing the lever g^3 the stop j is removed from the letter-boxes and the motor beginning to operate causes the travel of the endless cable F, and so starts upon their journey all the letter-boxes. As each box reaches its own receiving-receptacle I, it automatically discharges its contents, as heretofore described, and all the boxes pass around the entire course and come back to the initial point, upon which the last box throws the motor-circuit open and stops the operation, and by so doing throws the stop j in again, thereby arresting them all with accuracy.

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

1. A mail delivery device for buildings, consisting of a box for the mail, an endless traveling cable connected with said box, and adapted to transfer it to an upper floor of the building and return it to its initial point, a means for operating said traveling cable, a receiving receptacle at said upper floor and automatic connections whereby the box, upon reaching the receiving receptacle, automatically discharges its contents into said receiving receptacle.

2. A mail delivery device for buildings, consisting of an endless track extending up to and down from an upper floor of the building, a letter-box mounted and adapted to travel in said track, an endless cable connected with said box, whereby it is caused to travel around said track, a means for operating the cable, a receiving receptacle at the upper floor, automatic connections whereby the box in passing its receiving receptacle, automatically discharges its contents into the receiving receptacle.

3. A mail delivery device for buildings, consisting of an endless track extending up to and down from an upper floor of a building, a letter-box adapted to receive the mail, an endless traveling cable connected with said box, and adapted to transfer it to an upper floor of the building, means for operating said cable, a receiving receptacle at said upper floor, connections whereby the passing letter-box is adapted to automatically discharge its contents into the receiving receptacle, an alarm device at said upper floor, and connections operated by the delivery of the mail to the letter-box, for sounding the alarm.

4. A mail delivery device for buildings, consisting of a letter-box adapted to receive the mail, an endless traveling cable connected with said box and adapted to transfer it to an upper floor of the building and return it to its initial point, end drums for the cable, a motor for operating said cable, means under the control of the postman for setting the motor in operation upon depositing the mail in the letter-box, a receiving receptacle at said upper floor and connections whereby the passing letter-box is adapted to automatically discharge its contents into the receiving receptacle.

5. A mail delivery device for buildings, consisting of an endless track extending up to and down from an upper floor of the building, a letter-box adapted to receive the mail, and to travel on said track, an endless traveling cable for effecting the transfer of said box to and from said upper floor, a motor for operating said cable, means under the control of the postman for setting the motor in operation upon depositing the mail in the letter-box, a receiving receptacle at the upper floor, connections whereby the passing letter-box is adapted to automatically discharge its contents into the receiving receptacle, and means operated by the returning letter-box for throwing the motor out of operation.

6. In a mail delivery device for buildings, the combination, of an endless track extending up to and down from an upper floor of the building, a letter-box adapted to travel over said tracks, having spring arms with friction rollers to engage the tracks, an endless carrier connected with the box and end drums over which the cable passes whereby the box is returned to its initial point after discharging its contents.

7. In a mail delivery device for buildings, the combination of a letter-box having a hinged bottom with a contact arm, means including an endless traveling cable for causing said letter-box to travel to an upper floor of the building and to continue its journey and be returned to its initial point, and a receiving receptacle at said upper floor, having a contact arm in the path of the contact arm of the swinging bottom of the letter-box whereby said bottom is automatically opened to discharge the contents of the letter-box.

8. In a mail delivery device for buildings, the combination of a letter-box having a hinged bottom with a contact arm, means including an endless track and an endless traveling cable extending up to and down from an upper floor of the building, for causing said letter-box to travel to an upper floor of the building and be returned to its initial point, a receiving receptacle at said upper floor, having a contact arm in the path of the contact arm of the swinging bottom of the letter-box whereby said bottom is automatically opened to discharge the contents of the

box, and a gravity door to said receiving receptacle lying in the path of the passing box whereby the contents of said box are discharged upon the door and directed into the receiving receptacle.

9. In a mail delivery device for buildings, the combination of a letter-box, means for causing it to travel to an upper floor of the building, an alarm device at said upper floor, an electric circuit including said alarm, an entrance aperture at the ground floor by which the mail is delivered into the letter-box, and a means for closing the alarm circuit by the insertion of the mail through the entrance aperture, consisting of the swinging flap adapted to close and open said circuit.

10. In a mail delivery device for buildings, the combination of a track leading up to and down from the upper floor of the building, a traveling letter-box, an endless traveling cable connected with said box whereby it is caused to travel, an electric motor, a circuit therefor, and connections from the motor for operating the cable, and the means for throwing the motor circuit into and out of action, consisting of the switch lever under the control of the postman, and adapted to open and close said circuit.

11. In a mail delivery device for buildings, the combination of a letter-box, a traveling cable connected with said box whereby it is caused to travel, an electric motor, a circuit therefor, and connections from the motor for operating the cable, the means for throwing the motor circuit into and out of action, consisting of the switch lever under the control of the postman, and adapted to open and close said circuit, and a spring-controlled catch for holding said lever down to keep the circuit closed during the travel of the letter-box.

12. In a mail delivery device for buildings, the combination of a letter-box, a traveling cable connected with said box whereby it is caused to travel, an electric motor, a circuit therefor, and connections from the motor for operating the cable, means for throwing the motor circuit into and out of action, consisting of the switch lever under the control of the postman, and adapted to open and close said circuit, a spring-controlled catch for holding said lever down to keep the circuit closed during the travel of the letter-box, and a stud on said catch, and an arm on the traveling box whereby when said box reaches its initial position, it makes contact with the stud and throws the catch out of engagement with the switch lever, to open the circuit.

13. In a mail delivery device for buildings, the combination, of an endless carrier, a letter box connected therewith, a motor and electric circuit for operating the carrier, and means for holding the box in its initial position and relieving it, consisting of a spring controlled lever having studs at its opposite ends, one of which acts as a stop for the box, and a switch lever in the circuit engaging the other lug to hold the stop lug against the box, said switch lever adapted to be operated to close the circuit and simultaneously release the stop from the box.

14. In a mail delivery device for buildings, the combination of a traveling letter-box an electric motor and a motor circuit, a means for holding said box or carrier in its initial position, and relieving it, consisting of the spring-controlled lever with its oppositely moving studs, one of which acts as a stop for the box, and means for vibrating said lever, consisting of the switch lever of the motor circuit, and the lug on said lever operating against the lower stud of the stop lever.

In witness whereof I have hereunto set my hand.

LOUIS J. PECHNER.

Witnesses:
S. H. NOURSE,
WM. F. BOOTH.