E. HACK.

MAIL BOX.

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1,310,496.

Patented July 22, 1919.

Fig. 1.

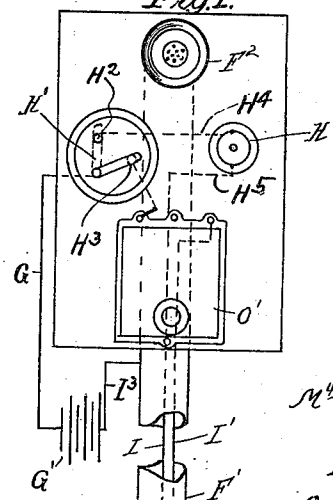
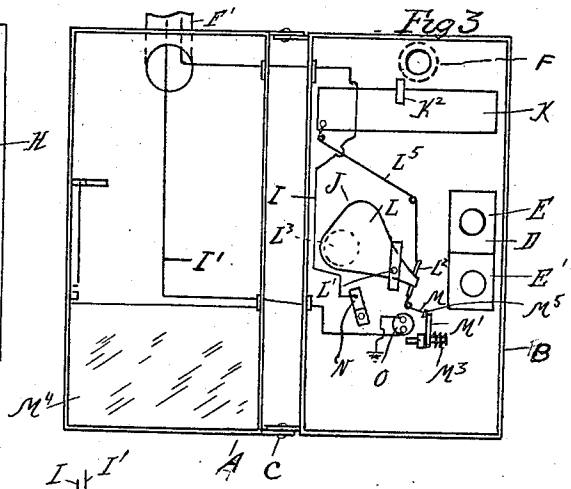


Fig 3



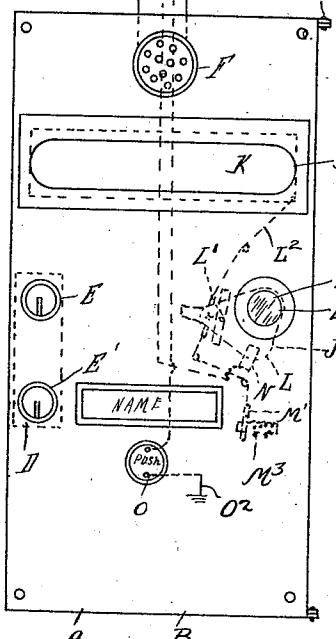


Fig. 4.

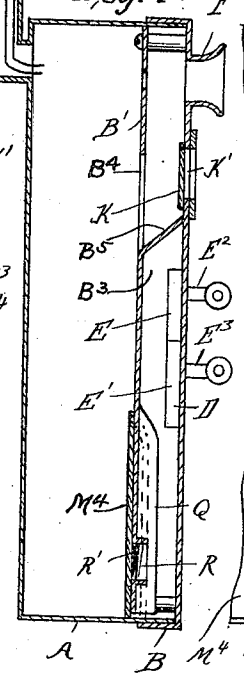


Fig. 2.

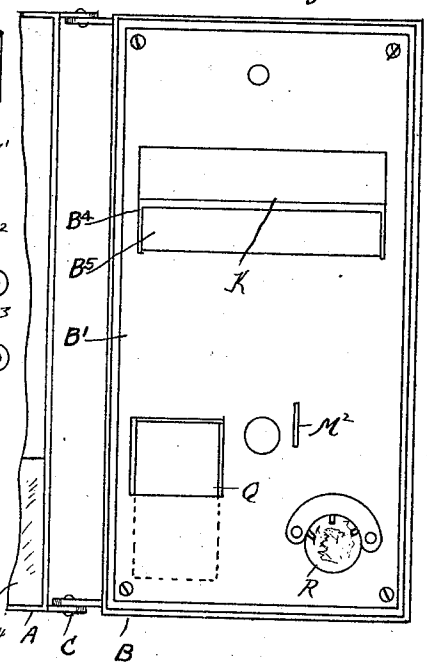
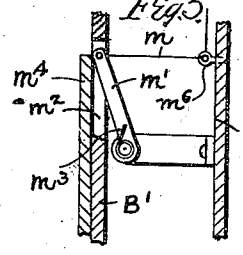


Fig. 5.



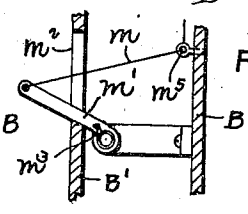


Fig. 6.

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MAIL-BOX.

1,310,496. Specification of Letters Patent. Patented July 22, 1919.

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To all whom it may concern:

Be it known that I, ERNEST HACK, 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-Boxes, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to mail-boxes and refers more particularly to a combined mail-box, speaking-tube and signaling device for use in houses, apartments or other buildings.

Among the objects of the invention are to provide a mail-box or system of mail-boxes which are controlled by a lock having a master key and an individual key so that access to all of the mail-boxes can be obtained by the mail carrier having the master key, but the only other person who can open the box is the owner having the individual key; to provide a construction in which when mail is inserted in the box it will automatically show a red light or other signal and preferably there is combined with this signal, an electrically-controlled signal at a distant point whereby the operator by turning a test button can determine whether or not there is any mail in the box; to so construct and arrange the system that the device for indicating whether or not there is any mail in the box can be positioned in any room or rooms desired; to provide a construction having a compartment for stamps, coins or the like, whereby the mail-man can supply the stamps and make his own change; to provide a construction in which the working mechanisms are mostly concealed within a chamber in the door of the box; to provide a speaking-tube so combined with the box as to utilize the latter as a portion of the speaking-tube or sound-transmitting mechanism; and in general to provide a new and improved construction of the character above referred to.

The invention also resides in such features of construction and various arrangements and combinations of parts as will more fully hereinafter appear.

In the drawings:

Figure 1 is a diagramatic view showing a system embodying my invention;

Fig. 2 is a view of the box showing the door in open position;

Fig. 3 is a similar view showing the inner cover-plate for the door removed;

Fig. 4 is a vertical section through the box and part of the other mechanisms.

Figs. 5 and 6 are detail sectional views showing positions occupied by a spring pressed arm corresponding to closed and opened positions of the mail box door.

Describing in detail the particular embodiment of my invention, A designates a mail-box having a cover B hinged thereto at C and provided with a locking mechanism D by means of which the cover is locked in position to the main body portion A of the mail-box. The cover B is provided with a detachable back plate B′ between which and the cover a chamber B^3 is formed as is best seen in Fig. 4, said chamber receiving mechanism presently to be described. Said plate has an opening B^4 therein through which mail inserted through the slot K′ in the cover B passes into the body portion of the box. An inclined tongue B^5 bent forwardly from the lower edge of the opening B^4 supports the mail in passing from the slot K′ to the opening B^4.

It will be noticed that the cover locking mechanism D comprises coöperating locks E and E′ which are actuated by keys E^2 and E^3 respectively. The use of a double key arrangement permits the box to be opened either by the owner who retains the individual key E^3 or by the mail-man who carries a master key adapted to unlock all of the boxes on his route. The cover B is also provided with a mouth-piece F while at the back of the box there is connected a speaking tube F′ leading up to the corresponding mouth-piece and receiver F^2. It will be noticed that while the mouth-piece F is located at the front of the mail-box, the speaking-tube is simply connected into the back of the box and thus permits utilizing the mail-box as a portion of the speaking-tube and greatly simplifies the manufacture and assembling of the device.

The present invention also contemplates a novel arrangement of parts whereby the mail-box has means for automatically showing a red light or other signal to notify the user that there is mail in the box. The mechanism for furnishing this signal is also utilized as part of the novel arrangement whereby at a point located near the mouth-piece and receiver F^2 or at any other suitable point however distant from the mail-box, it can be determined whether or not there is anything in the box. In detail this signal

mechanism comprises an electric circuit G having a battery G′ or other suitable source of current and a flash light or bulb H controlled by a switch H′. Said switch has contact points H^2 and H^3, the latter being normally engaged by the switch arm H′ and said arm being shifted to engage the former when it is desired to ascertain if there is mail in the box. The circuit is connected through suitable wires I and I′ to an automatic switch mechanism J located in the chamber B^3 formed by the cover B and the cover-plate B′.

For automatically operating the switch J, I preferably utilize the swinging movement of the inlet opening flap K so that when the mail is inserted through the inlet opening K′, it will close the circuit to the bulb H provided the switch arm H′ is engaged with contact H^2. If any mail has been inserted in the box through the opening K′, the closing of the switch H′ will complete the circuit to the bulb H and flash a red light or other suitable signal. This switch and light mechanism could be placed in a living room, kitchen or any other part of the building and by the use of my improved mechanism it can be determined at the point where the switch H′ is located whether or not there is any mail.

The employment of the inlet flap K is also utilized for actuating a signal which can be seen from the front of the mail-box so that a person returning to his house can determine by looking at the mail-box whether or not there is any mail in it without opening the box. This last indicating mechanism comprises a plate L which is pivoted at L′ upon the cover B and actuated by a wire or cord connected to its link L^2 and to the edge of the inlet flap K. This plate carries a red signal L^3 which is registrable with a sight opening L^4 in the mail-box cover. The arrangement is such that whenever the mail is inserted through the opening K′ the flap acting through the flexible connection L^5 and link L^2 will rock the plate L to a position where the red signal L^3 will show through the sight opening L^4. From the lower end of the link L^2 there extends a second wire or cord M which is connected to a rock arm M′. Normally this rock arm is drawn outward through the slot M^2 in the cover-plate B′ by the connection of a spring M^3. When the cover is shut the end of this rock arm M′ strikes against an abutment plate M^4 and moves it back against the tension of the spring M^3. Upon opening of the door to remove the mail, the rock arm M′ will be released and the action of the spring M^3 will then force it away from the eyelet M^5 through which the wire M extends, drawing the wire M downward and through the action of the link L^2, rocking the plate carrying the red signal L^3 out of registration with the sight opening. Normally the inlet flap K is held closed by a spring K^2.

From the above description it will be apparent that normally the signal L^3 is not shown but that upon the insertion of any mail through the inlet opening K′, the resulting rocking movement of the inlet flap K will swing the plate L to a position where said signal will show, and that the mechanism when once adjusted to this position will be frictionally held from returning to normal or inoperative position until the door is opened, allowing the spring M^3 to rock the arm M′ and thus adjust the plate L to shift said signal out of registration with the sight opening.

The same mechanism is also utilized for closing the circuit to the bulb H. Thus when the plate L is rocked about its pivot L′ in a direction to register the signal L^3 with the opening L^4 its lower edge is moved into engagement with the stationary contact N which is carried by the cover B but insulated therefrom and to which cover in turn there is grounded one of the wires in the circuit G. Thus in effect the plate L and stationary contact N form an automatic switch which is governed by the same mechanism as the red signal L^3. The only other place where the circuit is open is through the switch H′. Therefore whenever the operator wishes to determine whether or not there has been any mail inserted in the box A, he simply closes the switch H′ and if there is mail in the box the circuit will be completed, flashing the signal bulb H. If, however, no mail has been inserted through the opening K, the light bulb H will not be flashed as the circuit is open at the gap extending between the stationary contact N and the plate L when the latter is in its normal position. The circuit of the bulb H may be traced as follows: battery G′, wire G, switch arm H′, contact H^2, wire H^4, bulb H, wire I, contact N, plate L, ground to cover B at L′ and through speaking tube F′, and wire I^3.

In addition to the signaling mechanism above described, the mail-box is also preferably provided with a push button O by means of which the bell O′ or other suitable device can be closed irrespective of the insertion of mail into the box. The bell or other signaling device O′ uses the same battery and a portion of the same circuit as the signaling light bulb H. The bell circuit may be traced as follows: battery G′, wire G, switch arm H′, contact H^3, bell O′, wire I′, push button O, wire O^2, ground circuit formed by cover B, box A and tube F, and wire I^3. In addition to the mechanism previously described, my invention also contemplates an arrangement of parts whereby the stamps can be provided and the mail-man can make his own change. For this purpose a stamp-carrying pocket Q is located in a re-

cessed portion of the cover-plate B′, which cover-plate is also provided with a coin-receiving recess R for receiving coins which are spring-pressed toward the front by means of a coil spring R′ so that the mail-man can leave the stamps desired and secure the pay for the stamps by placing his thumb over the coins until the necessary number are obtained.

Various changes, however, in this particular detail and in various other details of construction and arrangements and combinations of parts can be made within the scope of my invention.

What I claim as my invention is:

The combination with a mail-box, of a door therefor, a cover-plate for the door and automatic signaling mechanism positioned in the chamber formed by the cover and cover-plate.

In testimony whereof I affix my signature.

ERNEST HACK.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."