

Oct. 4, 1938.

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2,132,111

SIGNALING MAIL BOX

Filed June 11, 1937

FIG. 2

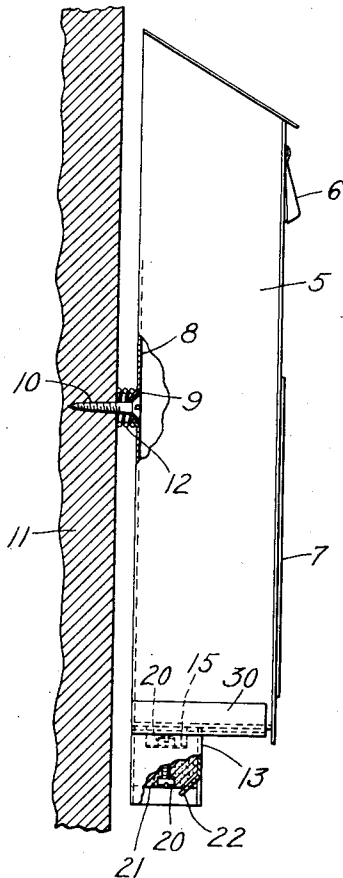


FIG. 1

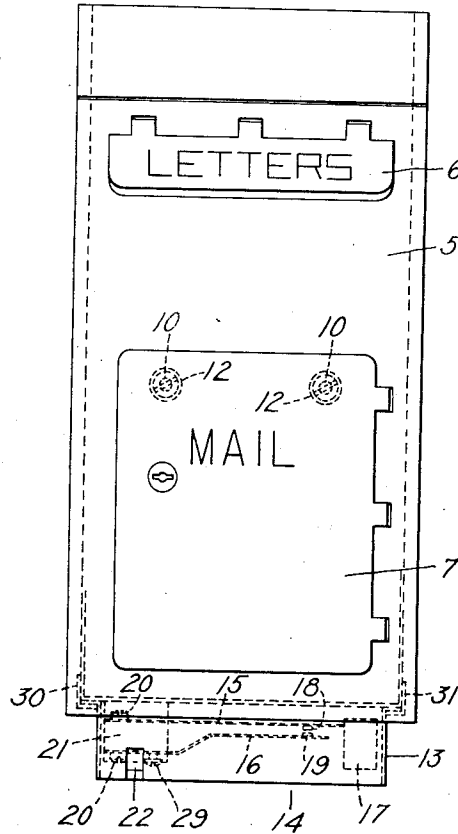


FIG. 3

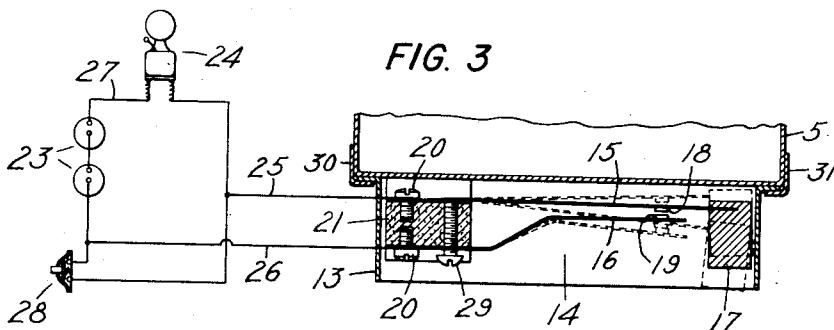
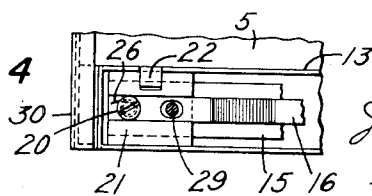


FIG. 4



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2,132,111

SIGNALING MAIL BOX

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Application June 11, 1937, Serial No. 147,669

4 Claims. (Cl. 200—57)

The present invention relates to improvements in mail boxes and particularly to a type of box that automatically notifies the owner of the deposit of mail therein.

5 The invention has for a primary objective to give the owner an interrupted or intermittent signal, extending over a reasonable period of time, when the mailman or carrier has made a delivery. In congested localities, the invention is particularly useful in that an owner so
10 equipped, is relieved of the necessity of waiting and watching for the carrier when he makes his rounds, and from inadvertently mistaking the letter carrier's whistle upon a delivery to a neighbor for a delivery to his own box.

15 A further aim of the invention is to render available a mail box that automatically notifies the owner of receipt of mail in a manner clearly distinct and unmistakably different from the conventional door bell, knocker, and other devices commonly provided to notify the occupant of a caller or visitor. For example, if the householder happens to be in a distant part of the house or in the midst of a task that cannot conveniently be interrupted when the delivery is
20 made, he is at once notified of that fact in a distinctive way and need not go to the door at once, but may complete the particular task with which he was engaged.

25 Still another objective of the invention is to provide an electrically controlled automatic signal for mail boxes which may be inexpensively manufactured as a separate unit that conveniently may be attached to house boxes now in use, or which may be manufactured complete with the
30 conventional mail box at little added cost. By way of further refinement, the invention aims to provide an electric signaling device for mail boxes with which may be associated or connected the house bell push button, to the end that the owner may provide one mechanism capable of yielding at least two different types of signals, one automatically effective upon deposit of mail in the box and the other manually effective upon
35 manipulation of the door bell push button.

40 In realizing the aims of the invention, it is proposed to mount a movable but normally stable electric contact, in or upon the mail box, and connect the box contacts in series with a set of batteries and a house bell buzzer or other signaling device. The mail box proper is then mounted to have a limited degree of free bodily movement sufficient to destroy the equilibrium of the movable contact when the box is manually
45 opened to deposit or withdraw mail.

The electrical contact, the stability of which is destroyed upon movement of the box, is arranged normally to be in a position of rest with the electrical circuit to the bell or other signaling device open. However, upon movement of the box, the movable contact is caused to vibrate and
5 intermittently makes and breaks the signaling circuit. In this way the householder is given a readily distinguishable notice that a delivery of mail in his box has been made.

10 The invention has for a further object to render available an electrical signaling device for mail boxes that will not be a source of annoyance to the owner nor consume any measurable amount of electricity during its operation. This aim of the invention is attained by constructing the movable contact of resilient material and locating it in spaced relation to its coacting contact so that the normal tendency of the two
15 contacts, after a preselected period of vibration, is to move to their circuit open position. Adjusting means are provided so that a user may control or set the duration of the effective vibrating period to suit his particular conditions or needs.

20 A mail box so equipped, it will be seen, will give the user an intermittent signal each time the mail box is moved, the signal being such that it gradually diminishes in intensity and finally ceases after a reasonable period of time. The user is not, by this invention, given a continuous
25 annoying ring of his bell, and whether he is at home or not, or indisposed at the time of mail delivery, the device automatically functions first, to give a reasonable signal, and then to stop with the circuit open. There is, accordingly, no need-
30 less consumption of current after a reasonable notice has been given.

35 Other objects and advantages will be in part indicated in the following description and in part rendered apparent therefrom in connection with the annexed drawing.

40 To enable others skilled in the art so fully to apprehend the underlying features hereof that they may embody the same in the various ways contemplated by this invention, the drawing depicting a preferred typical construction has been
45 annexed as a part of this disclosure and, in such drawing, like characters of reference denote corresponding parts throughout all the views, of which:—

50 Figure 1 is a front view of a house mail box, one embodiment of my invention.

Figure 2 is a side view thereof illustrating a float-mounting for the box.

55 Figure 3 is a detail view partly in section, illus-

trating more clearly certain portions of the control mechanism.

Fig. 4 is a bottom view of the contact arms and method of mounting.

In general, the mail box 5, shown in Fig. 1, follows standard design and is provided with a letter drop 6, and a door 7, to permit removal of the mail. In the back wall 8 of the box, counter-sunk holes 9 are provided for receiving screws 10 by means of which the box is secured to the house wall 11 or other support. The screw holes in the box are slightly larger than the screws in order to provide the floating movement, hereinafter to be referred to, and between the box and the wall 11, short springs 12 are provided. The functions of the springs are to resiliently maintain the box 5 normally in spaced relation with the supporting wall 11, yet permitting the box to be moved during the ordinary manual operation of inserting or removing mail.

A supplemental box 13, which may be mounted inside of the mail box in a separate compartment or vertically to the outside thereof, or as illustrated in the drawing, encloses the electrical control mechanism 14. In its essential elements, the control mechanism preferably consists of two insulated spaced contact elements 15 and 16 arranged in juxtaposition. The elements 15 and 16 may conveniently be made of spring steel of approximately .008 thickness, and the longer contact 15 provided with a weight 17.

The spring members 15 and 16 carry non-oxidizable contact points 18 and 19 and are held in their proper relation by means of screws 20 to a fiber or hard rubber block 21. The block 21, in turn may be secured to the box 13 by slitting and stamping one or more portions 22 from the walls thereof into complementary recesses in the fiber block.

The upper spring 15 carries a weight 17 of a value such that with a spring of the section indicated, it will be lifted to a position such that contact points 18 and 19 are open. That is to say, the weight 17 substantially balances the strength of the spring with the contact points open. Any disturbance of the state of equilibrium, as by a movement of the box 5, causes the weighted contact to vibrate and establishes intermittently a circuit across contacts 18 and 19. The same action follows if the arms 15 and 16 are arranged in a vertical manner either inside or outside of the mail box 5, movement of the box will unbalance the parts and the circuit is intermittently made.

The signaling circuit that is thus intermittently made and broken is illustrated diagrammatically in Fig. 3 and includes a source of current 23, an electric bell 24, and connections 25, 26, and 27. The wires 25 and 26 may be attached to the movable contact elements 15 and 16 at the clamp screws 20. If desired the electrical circuit for the automatic control may also be connected to operate the house bell with the usual door bell push button 28. The one signaling device 24 may, by virtue of the parallel connected manual and automatic control, be used to perform two functions, each function being independent of the other.

In operation the automatic signaling mechanism operates as follows: When the mail man places a piece of mail in the box, the latter necessarily is moved by virtue of the floating mounting. This movement of the box unbalances the equilibrium of the weighted contact and the latter oscillates toward and away from the con-

tact point 19. When the contacts 18 and 19 are brought together, the signal circuit is completed and the bell rings, and when the contacts are apart the bell ringing stops. It will be observed that the ringing action of the bell is not continuous and annoying, but is an intermittent or interrupted ringing that is readily distinguishable from the character of ring given by a caller when the push button is pressed.

The duration of the period of oscillation of the movable contact is determined in the first instance by the deflection characteristics of the spring in relation to the value of the weight, and the spacing of the contacts 18 and 19, when the parts are at rest, determines what portion of the oscillatory stroke is idle or non-effective. In practice it has been found that by making the contact arm 16 also of spring steel, the arm will yield slightly under the oscillatory action of the movable contact 18 and maintain the contact for a slightly longer interval on each oscillation. The effect of the yielding action of the contacts is to cause intermittent or recurring periods of ringing of the bell which gradually diminish in duration as the oscillatory stroke of the weighted contact diminishes.

In order that the user may have a measure of control over the ringing cycle, adjusting means are provided for spreading the contacts 18 and 19 to the point where the desired ringing cycle is attained. In the present embodiment of the invention the adjusting means is illustrated in the form of a screw 29 that is threaded into the block 21 and engages the contact arm 15. The screw 29 is insulated from the arm 16 and by turning it inward or outwardly, the contacts are spread as may be desired. The open bottom of the box 13 permits easy access to the screw 29 for adjusting purposes.

The control box 13 may be welded or bolted to the mail box 5 so as to be movable therewith or removably fastened thereto as by the angular straps or clips 30 and 31. The mail box may be provided initially with such straps and the control unit 13 slid into position or removed therefrom whenever desired.

Without further analysis, the foregoing will so fully reveal the gist of this invention that others can, by applying current knowledge, readily adapt it for various utilizations by retaining one or more of the features that, from the standpoint of the prior art, fairly constitute essential characteristics of either the generic or specific aspects of this invention and, therefore, such adaptations should be, and are intended to be, comprehended within the meaning and range of equivalency of the following claims.

Having thus revealed this invention, I claim as new and desire to secure the following combinations and elements, or equivalents thereof, by Letters Patent of the United States:

1. A signal controlling device for a mail box combining a mail box proper; a support therefor; means for resiliently mounting said box to said support, said means affording a limited amount of bodily movement of said box relative to its support incident to the manual act of delivering mail; and switch means secured to said mail box proper and actuated by the said bodily movement of said box when the latter is manually moved during the act of delivering mail, said actuation continuing for a predetermined period of time.

2. A signal controlling device for a mail box comprising, a mail box proper and a yielding

mounting therefor affording a limited amount of
bodily movement of the box upon delivery of mail
thereto; a circuit closer comprising a pair of rela-
tively movable resilient electro contact elements
5 mounted on the box; said contacts being normal-
ly open and in a state of equilibrium; and means
automatically responsive to a movement of the
box incident to a delivery of mail to the box for
destroying said state of equilibrium and for re-
peatedly closing and opening said contacts for a
10 period of time continuing after the said move-
ment whereby said signal controlling device is
caused to be intermittently closed over a rela-
tively long period following a delivery of mail to
the box.

15 3. An intermittent signal controlling device for
mail boxes combining a mail box proper; a yield-
able mounting for said box whereby said box is
bodily movable relative to its support during the
manual act of delivering mail thereto; a switch
20 comprising a pair of opposed normally open con-

tact elements supported by said box; and means
resiliently mounting at least one of said elements
to respond to the said bodily movement of said
box on its mounting for repeatedly temporarily
closing and opening said contacts for a limited
5 time subsequent to the said initial bodily move-
ment of the box.

4. An automatic signal controlling device for
mail boxes combining, a mail box; a floating
mounting for said box affording a limited amount
10 of bodily movement thereof; a switch comprising
a pair of normally open electrical contacts
mounted to said box and movable bodily there-
with, one of said contacts being movable relative
to the other and to the box and actuated upon
15 movement of the said box on its floating mount-
ing to oscillate to a position repeatedly closing
and opening said contacts for an appreciable
period following said bodily movement.

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