April 15, 1952 T. F. GENSMER 2,592,555

DOOR-ACTUATED MAILBOX SIGNAL

Filed Feb. 14, 1948

FIG. 1.

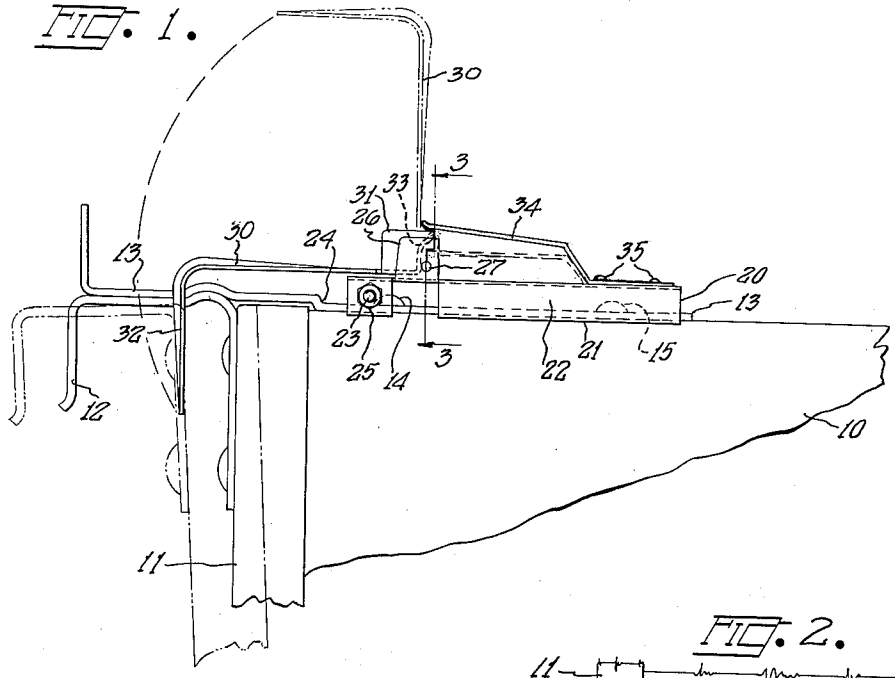


FIG. 2.

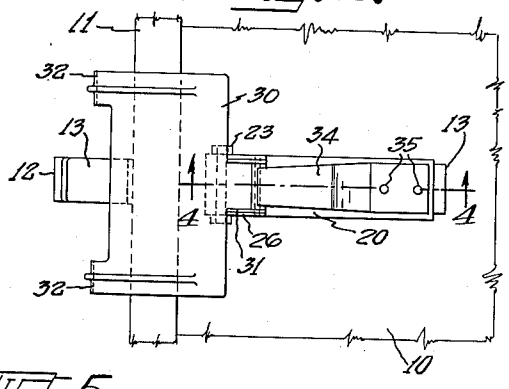


FIG. 3.

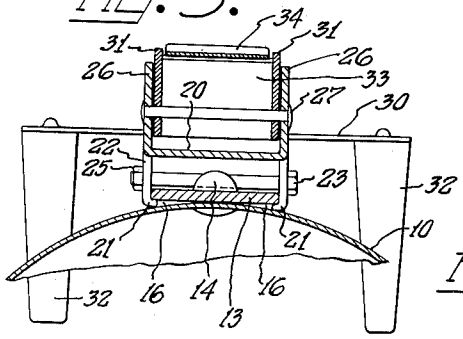


FIG. 5.

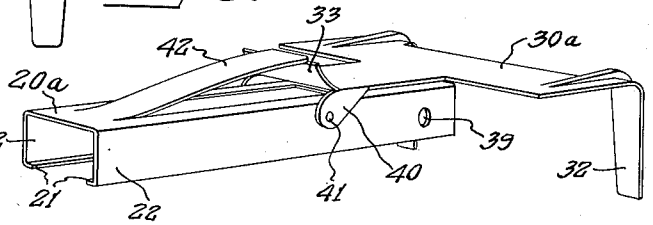
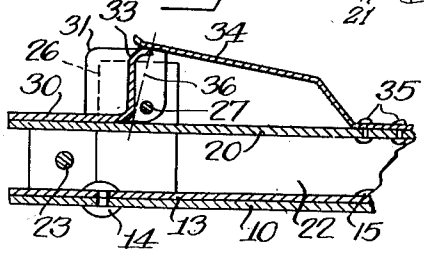


FIG. 4.



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DOOR-ACTUATED MAILBOX SIGNAL

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5 Claims. (Cl. 232—35)

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This invention relates to an improved mail box signal device for automatically raising an indicator when the door of the mail box is opened to deposit mail therein.

The present device is intended as an owner's signal to indicate to the owner when mail has been deposited in the mail box, as distinguished from a letter carrier's signal to indicate to the letter carrier that he should stop at the mail box to pick up mail. Such a signal is desirable on mail boxes which are mounted at a considerable distance from the house but which are visible from the house, so that occupants may be apprised of the mail man's visit without making unnecessary trips out to the mail box. Previous devices proposed for this purpose have not been entirely satisfactory because they have been, for the most part, too complicated and expensive and too difficult to install. Some of the prior devices have also encumbered the mail box and interfered with the expedient opening of the door so that they have not been acceptable to the postal authorities who must approve all such devices on a box for United States mail delivery.

Objects of the invention are to provide an automatic and positive acting signal which will be raised without fail whenever the mail box door is opened without depending on the mail man to operate the signal, to provide a signal device of rugged and inexpensive construction and which will meet with the approval of postal authorities, to provide a signal device of the type described which is readily attachable to a conventional rural mail box without drilling holes or otherwise altering the mail box, and, specifically, to provide a self-contained signal device which may be securely clamped to the spring latch member provided on conventional, rural type mail boxes.

The device is preferably made as a self-contained unit having a base member to clamp on the top of a mail box in engagement with the spring latch member usually provided on rural type mail boxes to hold the door closed. The device is designed to permit easy attachment without alteration of the mail box and to be securely held in place so that it will operate with certainty whenever the mail box door is opened. A signal arm is pivotally mounted on the base member so that portions of the arm extend over the top of the mail box door and into the path of movement thereof when the door is opened. The action of the letter carrier in putting mail into the mail box thereby automatically releases the signal arm for spring actuation to a vertical position, where

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it remains until the signal is reset by the owner upon removing the mail.

The invention will be better understood and additional objects and advantages will become apparent from the following description in connection with the accompanying drawings illustrating two preferred embodiments of the invention. It is to be understood, however, that the invention may take other forms, and all such modifications within the scope of the appended claims are included in the invention.

In the drawings:

Figure 1 is a fragmentary side elevation view of a mail box showing the construction and operation of the present signal;

Figure 2 is a top plan view of the structure shown in Figure 1;

Figure 3 is a sectional view taken on the line 3—3 of Figure 1;

Figure 4 is a sectional view taken on the line 4—4 of Figure 2; and

Figure 5 is a perspective view of a modification.

The mail box 10 shown in the drawings is of the rural type, having an arched top and a door 11 hinged at the bottom to the front end of the box. The top of the door is provided with a spring latch and door pull 12 which is frictionally engageable with a horizontal spring latch member 13 secured to the top of the box by two rivets 14 and 15. Since the top of the mail box is arched and the latch member 13 is made from a flat strip of stiff, heavy gauge metal, there are crevices or spaces 16 between the side edges of member 13 and the top of the box as clearly shown in Figure 3. These crevices, which are present in all conventional mail boxes of the type shown, are utilized in attaching the present signal device without making any alterations in the mail box.

The signal device is made as a self-contained unit on a base member 20 in the form of an inverted channel having inwardly directed lips 21 formed on the edges of side flanges 22 and arranged to project into the aforementioned crevices 16. The lips 21 may extend substantially the whole length of the base 20, or they may be of limited extent to engage under the latch member 13 only at certain points. The channel or base 20 has an interior width between its flanges 22 equal to the width of latch member 13 to permit it to slide into position on the member 13, whereupon the flanges 22 may be tightened against the opposite side edges of the member 13 by a bolt 23. Holes are provided in a particular position in the side flanges 22 to place the bolt 23 only a

short distance above the lips 21, so that as long as the bolt is in place the signal device cannot be removed from the mail box. The inwardly directed lips 21, by engaging under the member 13, prevent the base member 20 from being lifted vertically off the mail box, and the bolt 23, if properly placed, prevents the base member from sliding to the front or rear, as well as preventing spreading of the flanges 22. By placing the bolt 23 quite close above the member 13, the bolt is stopped by the head of rivet 14 when the base 20 is slid to the rear, and stopped by a shoulder 24 in the member 13 above the door when the base is moved toward the front.

The base channel 20 is installed on the mail box by sliding it onto latch member 13 from the rear with the bolt 23 removed. When it has been slid forward to the proper position, with the lips 21 engaged in the crevices 16, the bolt 23 is inserted so that it will be disposed between the head of rivet 14 and the shoulder 24. In such position tightening of the nut 25 on the bolt serves to clamp the base member 20 securely to the latch member 13 so that the device is solidly supported and incapable of working loose.

Portions of the side flanges 22 are turned upwardly to form ears 26 to carry a pin 27 on which the signal arm, or flag, 30 is pivotally mounted. The flag 30 has a pair of apertured ears 31 bent into parallel relation to fit between the upstanding ears 26 and provide a bearing for the flag on the pin 27. The outer end of the flag 30 away from the pivot is provided with a pair of spaced arms 32 which extend downwardly in front of the mail box door 11 on opposite sides of the latch members 12 and 13 when the flag is in the lower position as shown in full lines. As best seen in Figure 4, the flag is held in non-signalling position by the over-center action of a leaf spring 34 which bears against an upstanding tongue 33 on the flag between the ears 31. Spring 34 is secured at one end to the top side of base member 20 by rivets 35. Line 36 is drawn perpendicular to spring 34 at the line of contact with tongue 33. Tongue 33 is disposed to position the perpendicular line 36 slightly to the left of the axis of pin 27 when the flag is down in non-signalling position, as shown in Figure 4, in which position of the parts the force of spring 34 tends to produce counterclockwise rotation of the tongue and flag. It will be apparent that if the tongue 33 is moved to the right to shift line 36 to the right of the axis of pin 27 the force of spring 34 will then tend to rotate the tongue and flag clockwise.

The tongue 33 and spring 34, as described above, have an over-center trigger action which operates to hold the flag down in its full line position, as shown in Figure 1, until the door 11 is opened. When the door 11 engages the depending arms 32 in its opening movement, the flag is pushed up slightly, thereby moving the upstanding end of tongue 33 rearwardly or sufficiently to the right of the pin 27 so that the spring 34 then operates to press the tongue 33 downwardly in clockwise rotation to raise the flag to the broken line position shown in Figure 1, in which position it is held by the sprng until it is later reset. The operation of the signal is thereby entirely automatic without depending on the letter carrier to remember to move the flag to raised position. The two depending arms 32 on the flag are spaced apart sufficiently and are at sufficient distance from the downturned extremity of the door pull 12 so that these arms do not interfere with the grasping of the door pull to open the door.

Figure 5 illustrates a modified form of construction employing the same principles of operation. The channel base 20*a* is provided with inturned lips 21 on the edges of its side flanges 22, as in the first embodiment, but the signal flag and spring are mounted in a different manner. The signal arm, or flag, 30*a* is provided with a pair of ears 40 for pivotal mounting on a pin 41 received through the side flanges 22 in the manner shown, so that the horizontal pin 41 is disposed substantially vertically beneath the upstanding end of tongue 33 when the flag is in its lower position. A leaf spring 42 is struck out from the top surface of the channel base member 20*a* and disposed to bear on the upstanding end of tongue 33 in the manner of spring 34 in Figure 4 to hold the flag in its lower position. As in the previous embodiment, the opening of the mail box door engages the depending arms 32 to lift the flag 30*a* sufficiently to cause a perpendicular line from the point of contact between spring 42 and tongue 33 to pass over center to the rear of the pivot 41, so that the spring thereafter acts to raise the flag and hold it in vertical position. Holes 39 are provided in the opposite side flanges 22 to receive the bolt 23 in a low position where it cannot slide over the head of rivet 14 or the shoulder 24 on the mail box. The device is installed on the mail box by inserting the lips 21 in the crevices 16 at the rear end of the latch member 13, and then sliding it forward until the arms 32 will project over the door 11. The holes 39 will then be in a position to receive bolt 23 between rivet head 14 and shoulder 24 whereby the bolt is effective both to clamp flanges 22 against the side edges of member 13 and to prevent the device from sliding any substantial distance along member 13.

Thus the principles of the invention are illustrated in two specific embodiments, and still other forms of construction may be devised by persons skilled in the art without departing from the spirit of the invention. The device in its various forms has the outstanding advantage of being manufactured and sold as an assembled unit requiring only a screw driver for installation, and the advantage of automatic operation without the attachment of any parts to the door itself, in addition to other advantages, in part pointed out hereinabove, and in part obvious.

Having now described my invention and in what manner the same may be used, what I claim as new and desire to protect by Letters Patent is:

1. A signal device for a mail box and the like having a door and a latch member of flat strip metal extending longitudinally of the top of said box; said signal device comprising a base member having a channel shaped portion provided with inwardly turned flanges arranged to grip said latch member, means for drawing said inwardly turned flanges towards each other in gripping relation to said latch member, said means being arranged to permanently hold said flanges in gripped position, and a signal flag pivotally mounted on said base member and activated for movement from horizontal to vertical position by the opening of said door.

2. A signal device for a mail box and the like having a door and a latch member of flat strip metal extending longitudinally of the top of said box; said signal device comprising a base member having a channel shaped portion provided with inwardly turned flanges arranged to grip said latch member, means for drawing said inwardly turned flanges toward each other in grip-

ping relation to said latch member, said means being arranged to permanently hold said flanges in gripped position, a signal arm pivotally mounted on said base member for rocking movement between vertical signalling and horizontal non-signalling positions, spring means engaging said signal arm adjacent said pivot and having one over-center position for holding said arm in said non-signalling position and having a second over-center position for raising said arm to signalling position, the front end of said arm having cooperative engagement with said door to release said signal arm from said non-signalling position in response to opening movement of the door.

3. A mail box signal device arranged to cooperate with a mail box provided with a hinged door at one end and a strap member on its upper side; said signal device comprising a supporting member arranged to be positioned on the upper side of said mail box and having gripping means for gripping opposite marginal edges of said strap member, a signalling flag pivoted on said supporting member for rocking movement between vertical and horizontal positions, an end portion of said flag arranged to be disposed in the path of movement of said door, the other of said end portions having one over-center position relative to said pivot for holding said flag in horizontal non-signalling position and having a second over-center position relative to said pivot for holding said flag in vertical signalling position, and spring means for biasing said flag to its respective positions.

4. A mail box signal device arranged to cooperate with a mail box comprising a housing having an open front end, and a hinged door normally closing said open front end; said signal device comprising a support member arranged to be mounted on the upper side of said mail box, a signal arm pivotally mounted on said support for rocking movement between vertical signalling and horizontal non-signalling positions, spring means engaging an end portion of said signal arm and having one over-center position relative to said arm biasing said arm to non-signalling position and having a second over-center position relative to said arm biasing said arm to signalling position, the opposite end of said arm arranged to be disposed in the path of movement of said door for cooperative engagement by said door to release said arm from non-signalling position.

5. A mail box signal device arranged to cooperate with a mail box provided with a hinged door at one end and a strap member on its upper side; said signal device comprising a supporting member arranged to be mounted on the upper side of said mail box and having a channel shaped portion provided with inwardly turned flanges arranged to grip beneath said strap member, means for drawing said inwardly turned flanges toward each other in gripping relation to said strap member, said means being arranged to permanently hold said flanges in gripping position, a signalling member pivoted on said supporting member for rocking movement between vertical and horizontal positions, and spring means mounted on said supporting member for biasing the horizontally disposed signalling member to non-signalling position and for biasing the signalling member to vertical position when released from said horizontal position.

THEODORE F. GENSMER.

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