Aug. 18, 1964 R. G. HENDRICKSON 3,144,986

MAILBOX SIGNALLING APPARATUS

Filed March 9, 1962 4 Sheets-Sheet 1

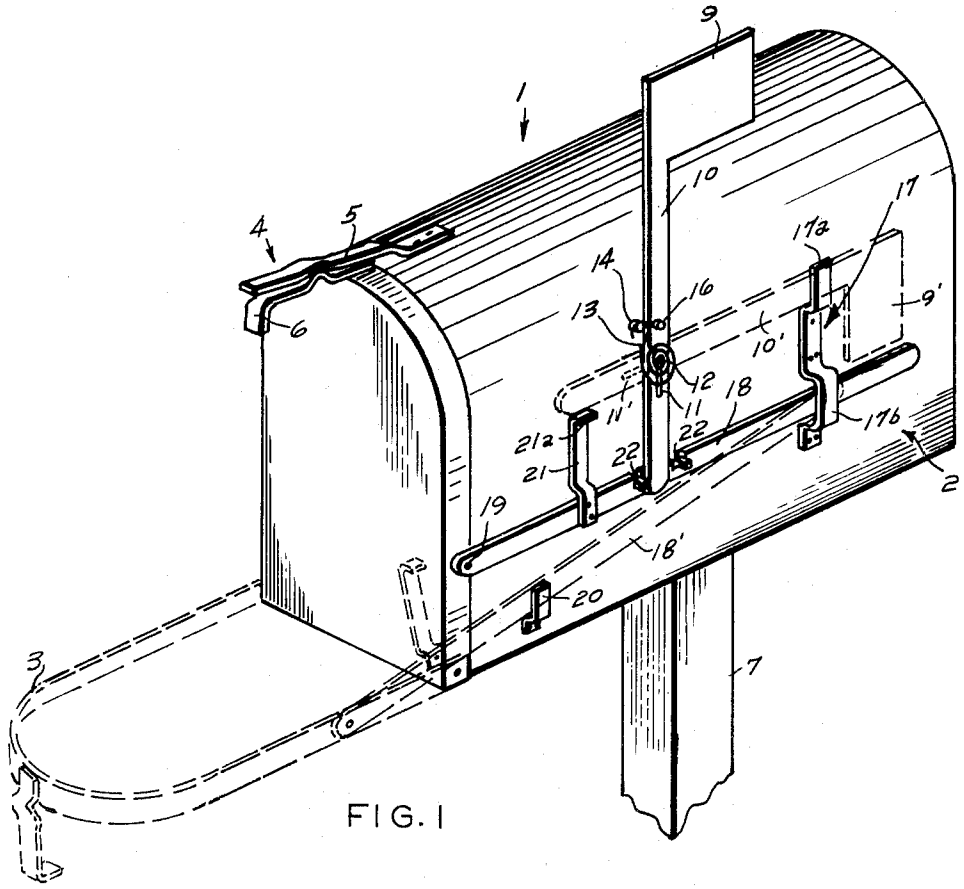


FIG. 1

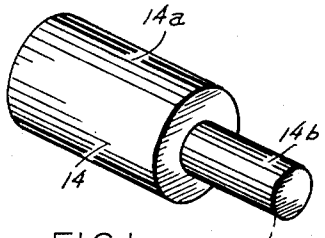


FIG. 1a

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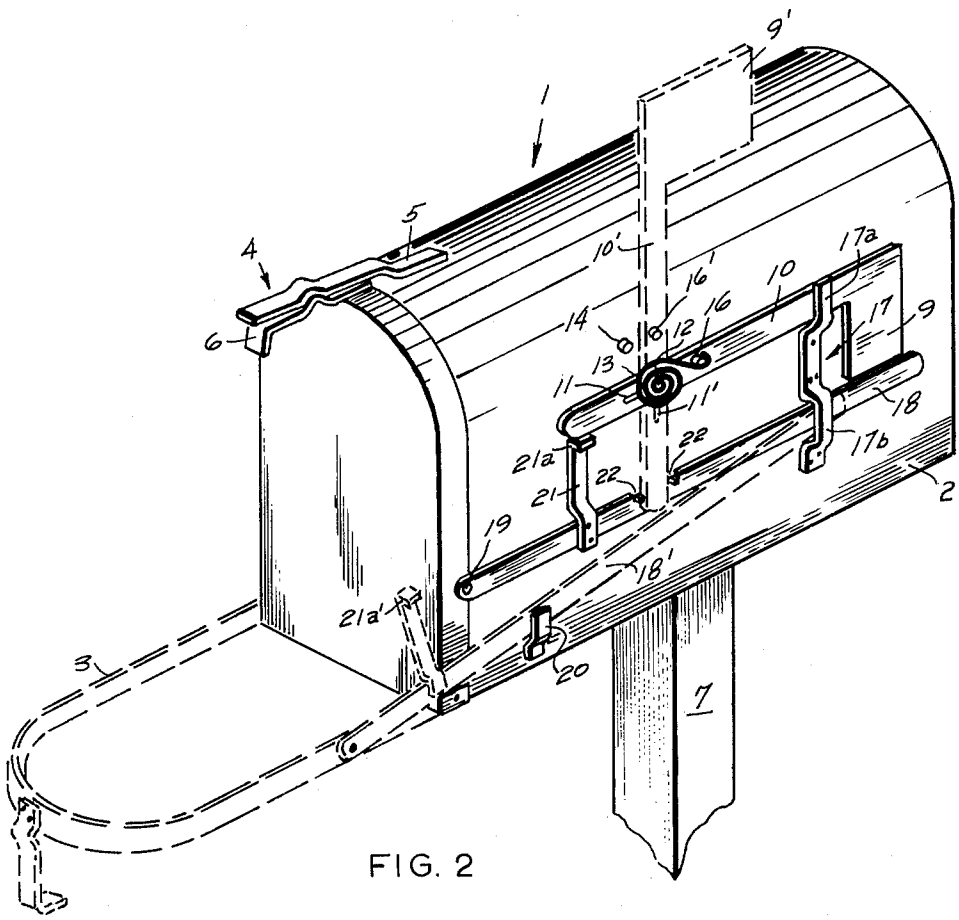


FIG. 2

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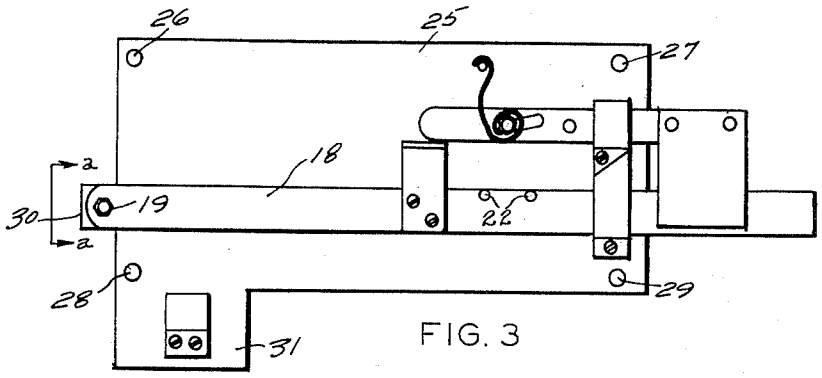


FIG. 3

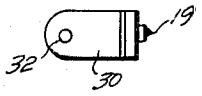


FIG. 3a

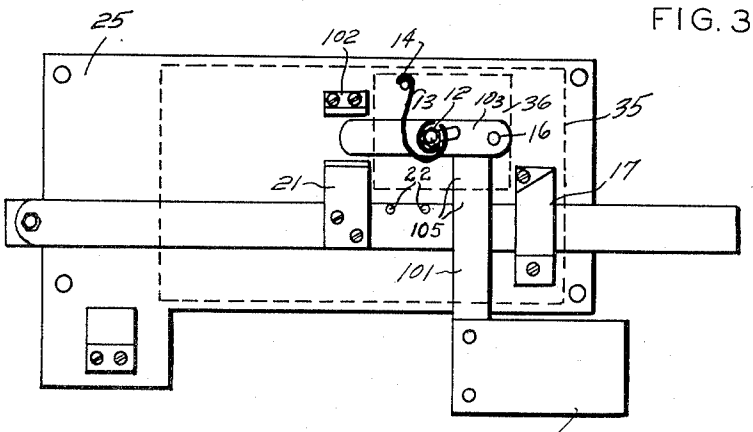


FIG. 4

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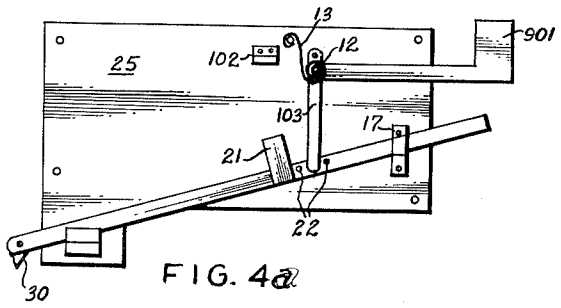


FIG. 4a

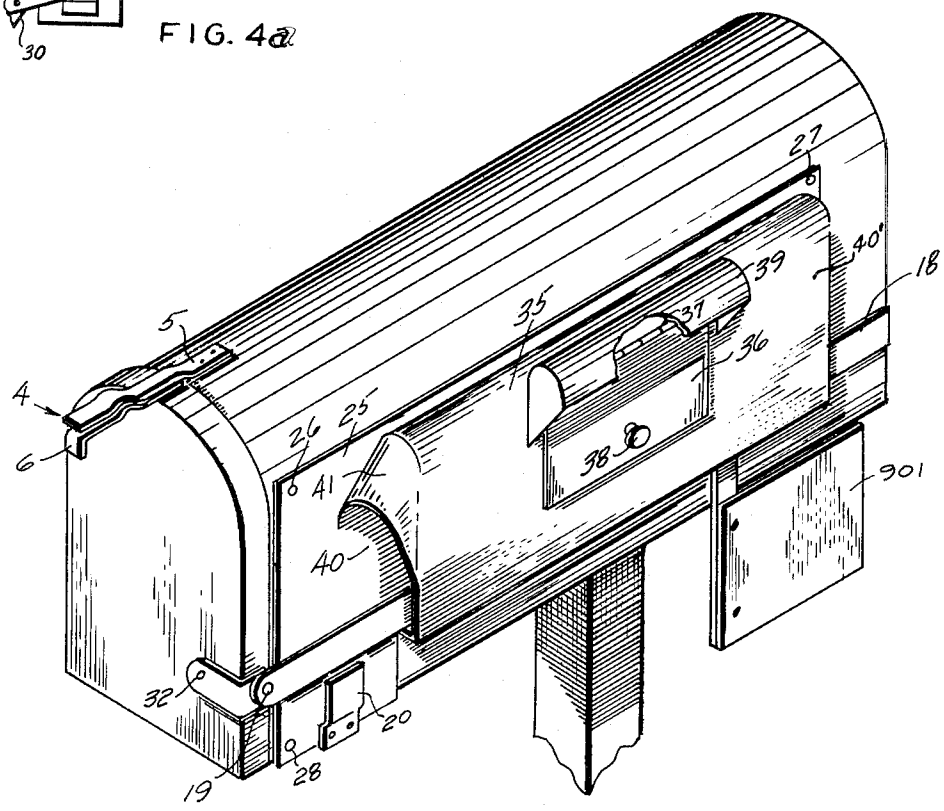


FIG. 5

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MAILBOX SIGNALLING APPARATUS

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3 Claims. (Cl. 232—35)

This invention relates to new and useful improvements in rural mailboxes, and more particularly, to an improved rural mailbox which incorporates improved automatic signalling means. Rural mailboxes commonly and necessarily are frequently mounted along a public roadside, at a considerable distance from the house whose occupants they serve, since homes in rural areas frequently are located far from public roadways for the convenience and enjoyment of the occupants of the houses. In order to avoid the necessity of a fruitless trip from the house to the mailbox in inclement weather, it has long been recognized that rural mailboxes might well carry signalling devices, such as flags, which could be operable by the postman when he delivers mail, so that household inhabitants might be spared the frustrating experience of fruitless trips to the mailbox in inclement weather to determine whether or not the mailman has left any letters or packages in the mailbox.

The signalling device of the present invention may be preadjusted by the boxholder or occupant of the household, either to recede or disappear when the mailman stops to pick up outgoing mail, or to protrude and appear when the mailman stops and inserts incoming mail in the mailbox. While a variety of previous attempts have been made to provide a suitable mailbox signalling device, most of them have been either too complex to build, too complex to operate, or difficult to maintain in operative condition over long periods of time in adverse climatic conditions.

Thus, it is a primary object of the present invention to provide an improved mailbox signalling device which is simple and economical, easy to operate, and easy to maintain.

It is another object of the instant invention to provide an improved mailbox signalling device which may be so housed and disposed on the mailbox to which it is attached as to be largely immune to the deleterious effects of rain, snow, and ice.

It is a further object of the present invention to provide an improved mailbox signalling device which may be added simply and economically to existing installed rural mailboxes, and which also may be included easily in the construction of new mailboxes.

Yet another object of the instant invention is to provide an improved mailbox signalling device which conforms closely to the contours of the conventional type rural mailbox, as specified in the regulations of the United States Post Office Department, and, thus, is to a large degree free from the hazard of injury by accidental engagement with vehicles, such as automobiles, trucks, agricultural implements, and snowplows which characterize many of the prior art devices.

Other objects of the invention will in part be obvious and will in part appear hereinafter.

The invention accordingly comprises the features of construction, combination of elements, and arrangement of parts, which will be exemplified in the construction hereinafter set forth, and the scope of the invention will be indicated in the appended claims.

For a fuller understanding of the nature and objects of the invention reference should be had to the following detailed description taken in connection with the accompanying drawings, in which:

FIGS. 1 and 1*a* are perspective views of an illustrative embodiment of the invention in which certain parts are shown both in full lines and in dotted lines in alternate

positions. The signalling device of the invention is shown in FIG. 1 in its "pickup" condition, i.e., (solid lines) as set by the boxholder to indicate to the rural postman that mail should be collected therefrom and in its corresponding operated condition (dotted lines), i.e., in the condition to which it automatically goes after the mailman has picked up mail in response to the raised "flag."

FIG. 2 is a perspective view of the same embodiment of the present invention as shown in FIG. 1. In FIG. 2 the signalling device of the invention is shown in its "delivery" condition (solid lines) i.e., as set by the boxholder for automatic operation of the "flag" to its vertical, or signalling position when the mailman opens the box to leave mail; and in its operated condition (dotted lines), i.e., in the "flag raised" condition to which it automatically goes after the rural postman has opened the door to deposit mail.

FIG. 3 shown an alternative, or "kit" embodiment of the present invention, which is adapted to be readily fitted to existing rural mailboxes of the present, non-automatic type with a minimum of tools and expense of labor and time.

FIG. 3*a* shows a detail view from FIG. 3 as indicated by arrows *a*—*a'* in FIG. 3.

FIGS. 4 and 5 show yet another embodiment of the instant invention which is characterized by its freedom from the deleterious effects of exposure to rain, and ice and snow and crustation, and from snagging by vehicles, agricultural implements, snow plows, and the like. FIG. 4*a* illustrates the apparatus of FIG. 4 in a "flag-raised" condition.

Referring now to the drawings, reference numeral 1 indicates a mailbox having a compartment 2 for holding the mail and a door 3 pivotally connected at one end thereof. The door 3 is normally held shut by latch 4 comprising a first part 5 mounted on the main body of the mailbox and a second part 6 mounted on door 3 having an outer and downwardly depending protrusion adapted to the grasp in opening and closing the box.

The conventional mailbox, so far described, will be adapted to be mounted either on a post 7, as when intended to serve a single boxholder, or on a horizontal rail, when a plurality of mailboxes are grouped together.

Reference numeral 9 indicates the signalling flag according to the instant invention, which will be generally analogous in size, shape, location, and operation to the manually operated flags conventionally employed in cooperation with existing rural mailboxes. This flag may, if desired, be adapted to more ready visibility from a remotely located rural dwelling by being dipped in, sprayed with, or otherwise coated with highly reflective materials of the type now well known in the art.

As illustrated in FIG. 1, signal staff 10 may be comprised of generally flat stock and includes an elongated slot 11 by means of which the entire signal is rotatably and slidably mounted on pivot pin 12 which is affixed at its rearward end to mailbox body 2. Thus, as illustrated in FIG. 1, flag, or other signal, 9 may, during a part of its operating cycle, be moved from its signalling position wherein it is designated 9 and shown in solid lines to its retracted position wherein it is designated 9' and shown in dotted lines.

Reference numeral 13 indicates a spiral spring, or other resilient biasing means, which will, in a preferred embodiment of invention, be comprised of flat spring stock. The inner end of spring 13, as shown in FIG. 1, is fixedly engaged to the outer portion of pivot pin 12 beyond staff 10 by a sufficient small amount to clear staff 10 and, thus, to allow signal 9 to be moved from its signalling position 9 to its retracted position 9' without interference from spring 13. In a preferred embodiment of the

invention the inner end of spring 13, for instance, may be disposed in a slot formed in the outer end of pivot pin 12, the plane of this slot being substantially coincident with the axis of pivot pin 12, and there riveted, welded, or otherwise fastened as manufacturing convenience and maintenance considerations dictate.

Reference numeral 14 indicates a stop post which will be fixedly secured to the side of mailbox body 2 in carrying out the embodiment of the invention illustrated in FIG. 1, and which may, if desired, comprise a larger diameter inner portion 14*a* and a smaller diameter outer portion 14*b*. Portion 14*a* may extend outward from the surface of mailbox body 2 by an amount sufficient to act as a stop preventing flag staff 10 from turning further counterclockwise about pivot pin 12 than is indicated in solid lines in FIG. 1. Outer portion latching post 14*b* of stop pin 14 will extend outward from the surface of mailbox body 2 by a sufficient distance beyond the end of portion 14*a* as to be readily engageable by the outer end of spring 13, which will be provided with a loop, or curved portion, adapted to be readily engageable with, or disengageable from, latching post portion 14*b*.

As further shown in FIG. 1, a short pin or latching post 16 is provided upon staff 10, in such a position as to be readily engageable by the outer end of spring 13, the loop, or curved portion, described hereinabove as being made a portion of the outer end of spring 13 being adapted to engage latching post 16, or to be disengaged therefrom, by the boxholder in accordance with the type of operation desired.

Nearer the rearward portion of box body 2, as shown in FIG. 1, a bracket generally designated 17 is rivetedly or otherwise affixed to box body 2. The upper end of bracket 17 is so formed as to provide a recess 17*a* in which staff 10 will be disposed when signal 9 is in its retracted position shown in phantom at 9'. Bracket 17 also provides a lower loop 17*b* which guides beam 18 between its forward and rearward positions as shown in solid and in phantom in FIG. 1. The forward portion of beam 18 is provided with pivot 19 which is affixed to the edge portion of door 3. Thus, when door 3 is in its closed position beam 18 will be disposed as shown in solid lines in FIG. 1, while at such time as door 3 is drawn to its forward position, by the rural postman or by the boxholder, stop bracket 20, which is affixed to box body 2, will hold beam 18 in the phantom, or dotted, position, thereby also restraining door 3 from further forward motion.

For reasons which will be clearly set forth hereafter in describing the operation of the present invention, beam 18 is equipped with an upwardly extending arm 21. The upper end of arm 21, as shown in FIG. 1, is equipped with an outwardly extending stop 21*a* which, when beam 18 is in its rearward, or door closed position, will serve to restrain flag staff 10 in its horizontal position if flag staff 10 is maintained in its horizontal position while door 3 is being closed, and thereby beam 18 moved through loop 17*b* rearwardly to the solid line position shown in FIG. 1.

In addition, beam 18 is provided with means generally forming releasable engaging means, or detaining means, wherein the lower end of staff 10 may be engaged, or from which it may be released by opening door 3. This releasable engaging means may comprise, for instance, two protuberances 22 disposed on the top beam 18 at a distance apart approximately equal to the width of staff 10, these protuberances being formed integral with the top of beam 18, or affixed to the top of beam 18 by welding, riveting, or otherwise.

As will be apparent when the operation of the present invention is described hereinafter, the embodiment is shown in FIG. 1 as set for the pickup of mail, and for automatic operation upon the opening of door 3 by the postman. Thus, flag 9 is shown in its upward, or signalling position in solid lines; the "operated" position of the flag after actuation of door 3 by the postman being indicated in phantom as 9'.

FIG. 2 is a perspective view of the embodiment of the invention shown in FIG. 1, but with the view of flag 9 shown in solid lines indicating the position of flag 9 and disposition of the other portions of the invention, when the signalling device of the invention is set to raise the flag upon actuation of door 3 by the rural postman, thereby indicating to the boxholder at a remote position that mail has been deposited therein. The phantom, or dotted, view of flag, or other signal, 9, designated 9', shows the flag as it will be raised, and the operation of the other parts of the invention, after actuation of door 3 by the postman.

The reference numerals used in FIG. 2 to designate particular parts are the same as those employed in FIG. 1 to designate corresponding parts, in order to facilitate understanding of the operation of the invention as described hereinbelow.

Operation

Referring, now, to FIG. 1, the invention operates to automatically lower signal 9 upon actuation of door 3 by the postman in the following manner.

The boxholder, when depositing mail to be picked up by the postman in mailbox 1, disengages the outer end of spring 13 from pin 16, if it is so engaged, and engages the outer end of spring 13 with the outer portion of stop pin 14*b*. The boxholder then raises signal 9 to its vertical, or signalling (solid lines) position, and closes door 3, thus simply and expeditiously engaging the lower end of flag staff 10 with the socket formed by protuberances 22, or other means, upon the top of beam 18, and locking flag 9 in its vertical position until such time as door 3 is opened.

Upon the opening of door 3 by the rural mail carrier for the removal of the mail deposited in the box by the boxholder, the forward motion of the rear protuberance 22 on the top of beam 18, or the other socket means provided, and the downward movement, and ultimate disengagement of the socket means with the bottom portion of staff 10, permits signal 9 to be actuated by gravity into its retracted (dotted lines) position wherein it is supported by brackets 17*a*.

As will be evident from FIG. 1, the closing of door 3 by the postman cannot result in the re-raising of signal 9 because the lower portion of staff 10 is now in its horizontal position 10' completely out of engagement with beam 18. Thus, after the rural postman has closed door 3, the device of the invention will have automatically retracted signal 9, and the boxholder will thereby be able to determine from his remotely located dwelling that the mail which he deposited in the mail box has been picked up, without any effort or thought on the part of the rural postman, and without the possibility that the rural postman may have failed to retract the flag, necessitating a trip to the box by the boxholder after the normal time of the postman's rounds to determine whether the mail has, in fact, been picked up.

Referring now to FIG. 2. The manner of setting the device of the invention to automatically indicate, by raising the flag 9, when door 3 of box 1 has been opened by the postman is shown.

In order to set the device of the invention for automatic delivery indication, the boxholder merely maintains flag staff 10 in a horizontal position (solid lines), closes door 3, and engages the outer end of spring 13 with pin 16. As will be apparent from FIG. 2, the outwardly extending upper end, stop 21*a*, of arm 21 will then engage the lower edge of staff 10 and prevent staff 10 from being actuated into its vertical (dotted lines) position 10' by the action of spring 13 pulling against pin 16. When, however, door 3 is opened by the rural postman making a delivery, stop 21*a* is actuated into its forward position 21*a*', thereby freeing the lower end of staff 10 to be impelled into its vertical position by the action of spring

13. When door 3 is closed by the postman the rearward and upward movement of beam 18 will cause the socket means 22, 22 to engage the lower end staff 10 and firmly retain staff 10 in its vertical position 10', thus maintaining flag 9 in its vertical, or signalling position 9', and thereby notifying the boxholder that the delivery has been made.

It will thus be seen that the device of the instant invention operates expeditiously, simply, and automatically to notify the boxholder at a remote location either of the pickup of mail which has been deposited in the box, or of the delivery of mail when no mail has been left in the box.

As may be seen from FIG. 3, taken in conjunction with the respective views of FIGS. 1 and 2, the device of the instant invention is uniquely adapted for a supply to owners of existing rural mailboxes in "kit" form whereby the invention may be simply, quickly, and expeditiously installed on existing rural mailboxes employing a minimum of tools, and time. As shown in FIG. 3, the entire operating mechanism of the instant invention, with the exception of pivot 19, may be supplied to rural box holders pre-mounted upon a plate 25. Plate 25 will, in this embodiment, be equipped with 4 mounting holes 26, 27, 28, and 29. In a preferred embodiment of this "kit" form of the invention, the rural boxholder will also be supplied with self-tapping sheet metal screws such that plate 25 may be disposed against the side of the mailbox to be equipped with bracket 30 (see FIG. 3*a*) disposed against the front of the closed door thereof, and lower guide edge 31 of plate 25 maintained in alignment with the lower edge of the mailbox, at which time the position of holes 26, 27, 28, and 29, may be scribed, or otherwise marked, on the side of the mailbox, and the position of hole 32 marked on the door of the mailbox with beam 18 maintained horizontal. The five holes so located may be punched or drilled in the mailbox and its door, and plate 25 re-positioned and screwed to the mailbox with the aforementioned self-tapping screws. Then, upon fastening bracket 30 to the door of the mailbox with a further, supplied, self-tapping screw through hole 32 into the fifth drilled hole in the door of the mailbox, the installation of the "kit" embodiment of the invention will have completed with an absolute minimum of labor, tooling and expended time.

In FIGS. 4 and 5 is shown an additional embodiment of the instant invention incorporating all of the advantages of the embodiments shown in FIGS. 1, 2, 3 and 3*a*, while at the same time being relatively impervious to the deleterious effects of rain, and snow and ice and crustation. FIG. 4 is a view of this embodiment showing generally its mechanical operation in which shield 35, shown more particularly in FIG. 5, and operating door 36, also shown more particularly in FIG. 5, are indicated by phantom lines. As will be apparent from FIG. 4, this embodiment differs from that of FIGS. 1 and 2, and more particularly from that of FIG. 3, only in the construction of flag staff 10, and the addition of a stop 102 which is substituted for stop 17*a* of the prior embodiments. The flag staff of this embodiment consists of a first portion 103 which corresponds in structure and function to the lower portion of flag staff 10 of the previous embodiments. It will be noticed that the righthand end of stub flag staff 103 is equipped with pin 16, in a position corresponding to the position of pin 16 on staff 10 of the previous embodiments. Between the location of pin 16 and pivot pin 12, and so located as to clear spring 13, auxiliary flag staff 101 is fixed to stub staff 103 at right angles thereto. Also, auxiliary staff 101 is bent outwardly as shown at 105 by a small amount which is of sufficient length as to insure that flag 901 clears bracket 17 when stub staff 103 is rotated about pivot pin 12 from its retracted position as shown in FIG. 4 to its "flag raised" position, as illustrated in FIG. 4*a*.

As shown in FIG. 5, weather shield 35 is equipped with a slot 40' at its rearward portion whereby flag 901 may,

when stub flag staff 103 is locked in its vertical position, protrude a considerable distance above the upper edge of the mail box, thus providing a signal to the remotely located boxholder, without necessitating a slot or other hole in the upper "roof" portion of weather shield 35 which would permit water to drip directly down into the operating mechanism of the device and thereby impair its operation. Similarly, a slot 40 is provided in the forward edge of weather shield 35 which is sufficient to provide clearance for the movement of the forward end of beam 18 and arm 21 (not shown in FIG. 5), without necessitating a break in the top "roof" portion of shield 35 which would permit the dripping of water onto the moving parts of the device such as to impair its operation. A pressed, or otherwise formed, "roof" 41 may be provided for slot 40 and its rearwardly located counterpart. Door 36, as will be evident, is provided to enable the boxholder to engage and disengage spring 13 with stop 14 and pin 16. This door 36 may be conveniently provided with a raising handle 38, and may be hinged along its top edge as indicated at 37, a "roof" 39 being provided such that direct drippage of water will not impair the operation of hinge 37.

It is to be understood that the various forms of my invention, herewith shown and described, are to be taken as preferred examples thereof, and that various changes in the shape, size, and arrangement of parts may be resorted to, without departing from the spirit of my invention, or the scope of the subjoined claims.

Having thus described my invention, I claim:

1. An automatic signalling device for a mailbox having a door at one end hinged to open outwardly, comprising: a beam hinged at its forward end to said door and slidably disposed in a loop affixed to a side of said mailbox at a location remote from said door; a pivot affixed to said mailbox; a staff rotatably mounted on said pivot and longitudinally slidable with respect to said pivot; signal means mounted upon said staff and adapted to be carried thereby from a displayed position to a retracted position; resilient biasing means having one end thereof affixed to said mailbox and the other end thereof selectively engageable with first anchoring means affixed to said mailbox or second anchoring means affixed to said staff; detaining means on said beam for selective engagement with said staff; and stop means mounted on said beam for alternative engagement with said staff.

2. An automatic signalling device for mailbox having a door at one end hinged to open outwardly, comprising: a mounting plate adapted to be mounted on the side of said mailbox; a beam having a pivot at one end adapted to be attached to the door of said mailbox and arranged to slide through a loop affixed to said plate; a pivot affixed to said plate; a staff rotatably and slidably mounted on said pivot; signal means mounted upon said staff and adapted to be carried thereby from a displayed position to a retracted position; resilient biasing means having one end thereof affixed to said plate and the other end thereof selectively engageable with first anchoring means affixed to said plate or second anchoring means affixed to said staff; detaining means on said beam for selective engagement with said staff; and stop means mounted on said beam for detaining said staff against the action of said resilient biasing means.

3. An automatic signalling device for a mailbox having a door at one end thereof hinged to open downwardly, including an operating mechanism comprising: a beam hinged at its forward end to said door and slidably disposed in a loop affixed to the side of said mailbox at a location remote from said door; a pivot affixed to said mailbox; a staff rotatably and slidably mounted on said pivot and comprising two sections disposed substantially at right angles to each other; signal means mounted upon one of said sections and adapted to be carried from a displayed position to a retracted position thereby; resilient biasing means having one end thereof fixed with respect

to said mailbox and the other end thereof selectively engageable with first anchoring means affixed to said mailbox or second anchoring means affixed to the other of said sections; detaining means on said beam for selective engagement with said other of said sections; stop means affixed to said beam for selective engagement with said other of said sections; and shield means substantially covering said operating mechanism and having clearance openings for said beam and said one of said sections, and having an unperforated top portion.

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