May 13, 1958 P. D. HUDGINS 2,834,540

DOOR-OPENING ATTACHMENT FOR RURAL-TYPE MAILBOXES

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FIG. 2.

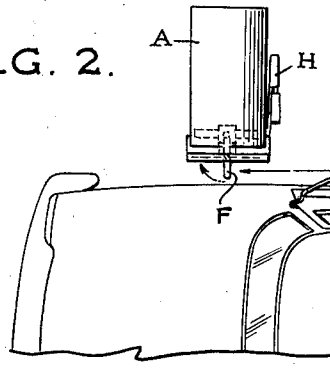


FIG. 3.

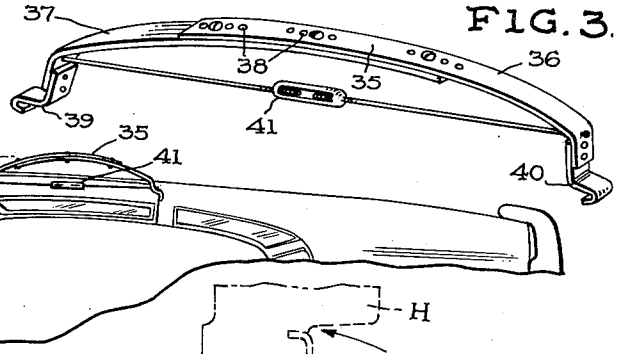


FIG. 4.

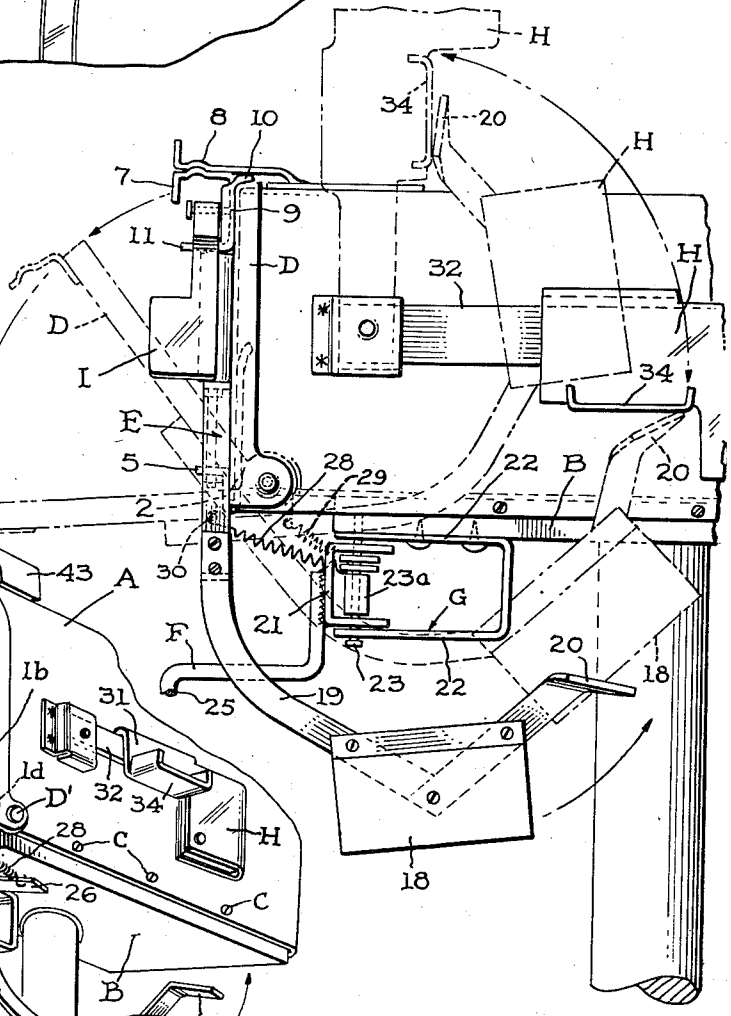
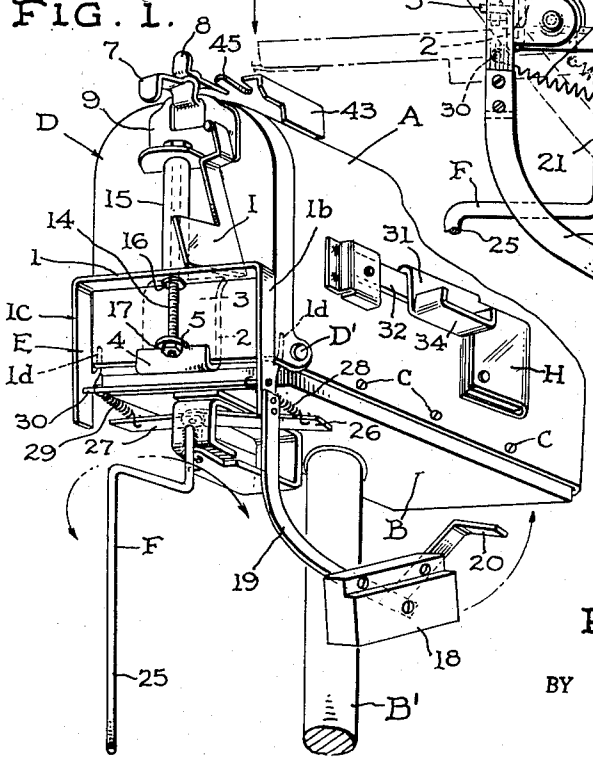


FIG. 1.



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FIG. 5.

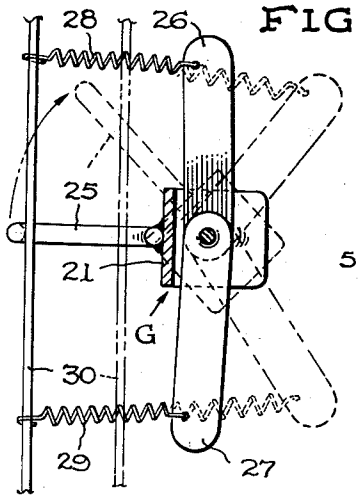


FIG. 7.

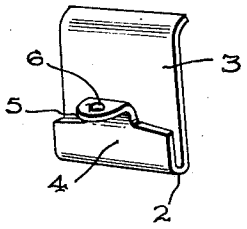


FIG. 6.

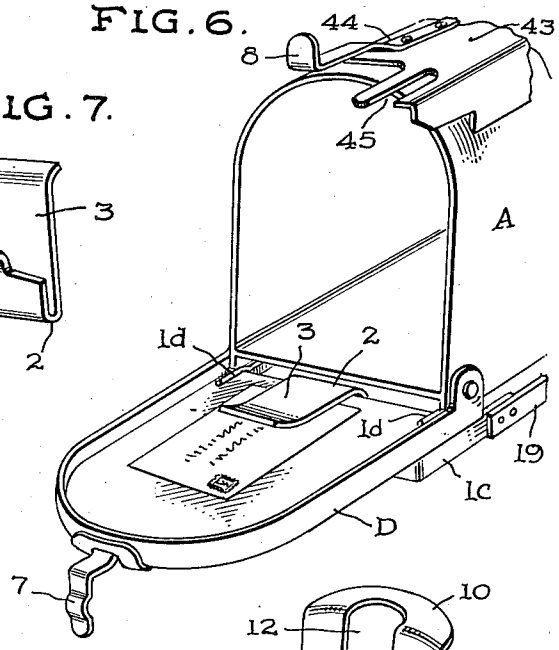


FIG. 8.

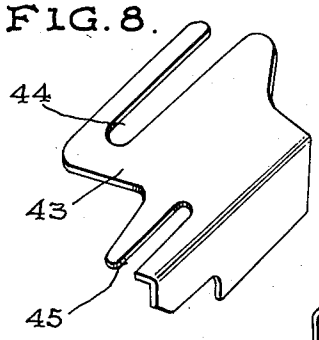


FIG. 10.

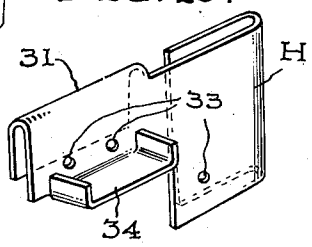


FIG. 9.

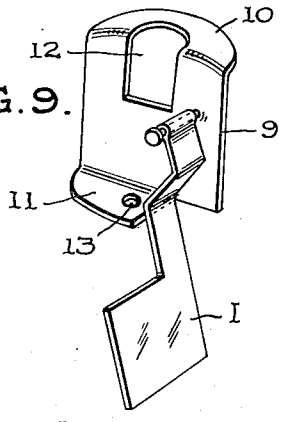


FIG. 11.

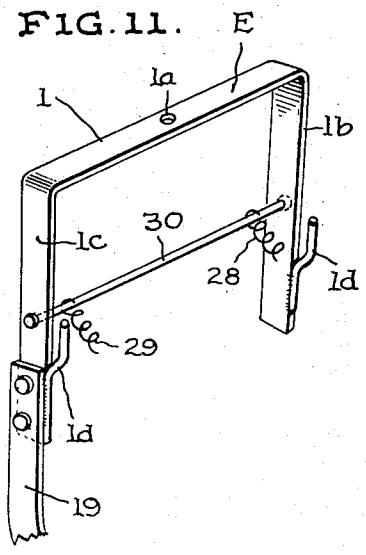
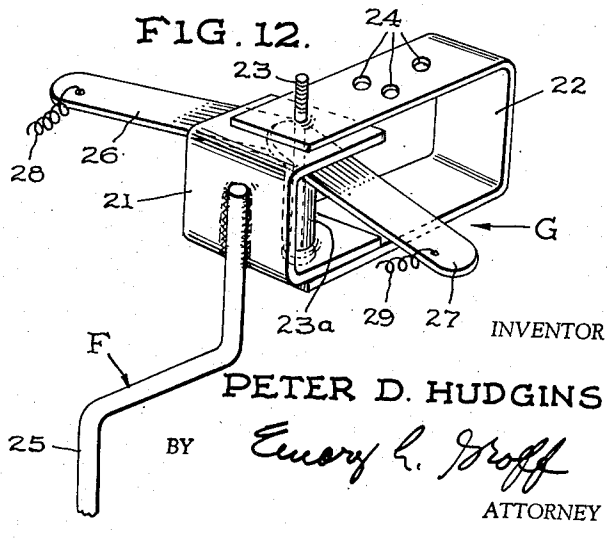


FIG. 12.



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DOOR-OPENING ATTACHMENT FOR RURAL-TYPE MAILBOXES

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Application August 27, 1957, Serial No. 680,574

3 Claims. (Cl. 232—45)

This invention relates to an attachment for rural-type mailboxes and delivery vehicles and comprises means for automatically opening and closing the door of the mailbox and simultaneously actuating a signal flag mounted on the side thereof.

It is now customary for the postman to stop at the patron's mailbox when he has mail to deliver or, even though he has no mail for the patron, he will stop if he sees the signal flag raised, which indicates to him that the patron has mail he wishes to have picked up. When the postman arrives at the box, he will open the door and reach into the box to get the letter or letters. Then if he has any mail to deliver, he places the mail in the box, closes the door and lowers the flag, all by hand. The flag stays down until the patron places more mail in the box to be picked up by the postman. There is no signal flag on present boxes for patrons to see when the carrier has gone, because the flag that the patron raises is lowered after the carrier picks up the mail.

With the apparatus of the present invention attached to the mailbox, and to the delivery vehicle, the following advantages are provided: The opening and closing of the mailbox door and raising of the signal flag are automatic, which saves both time and effort on the part of the postman and affords more efficient and convenient service to the box patron; the postman can serve two or three boxes in one stop when the boxes are close together; the weathertightness of the box is assured by reason of the automatic closing of the mailbox door.

Accordingly, it is a primary object of this invention to provide a device which may be readily attached to existing rural-type mailboxes without the necessity of extensive modifications, and which will only require the use of a few simple tools to install.

Another object of the invention is to provide practical and reliable means for automatically raising a signal indicator flag simultaneously with the opening of the mailbox door.

A further object is to provide means which may be easily attached to the door of a vehicle for the purpose of actuating the door-opening means mounted on the mailbox.

With the above and other objects in view, which will more readily appear as the nature of the invention is better understood, the same consists in the novel construction, combination and arrangement of parts hereinafter more fully described, illustrated and claimed.

A preferred and practical embodiment of the invention is shown in the accompanying drawings in which:

Figure 1 is a perspective view showing the door-opening mechanism as applied to a rural mailbox.

Figure 2 is a top plan view showing a portion of a vehicle carrying the door-mounted attachment, said attachment about to engage the mechanism for opening the door of the mailbox.

Figure 3 is a perspective view of the vehicle-carried attachment illustrated in Figure 2.

Figure 4 is a fragmentary side elevational view of a

mailbox with the door-opening means of my invention attached thereto, showing the door moving from closed to open position and engaging a delivery-indicating flag.

Figure 5 is a top plan view of the actuating levers and crank shown in Figure 1.

Figure 6 illustrates a letter-holding device applied to the mailbox door and also illustrates the keeper means for a pick-up-indicating flag.

Figure 7 is a detail of the letter-holding clip as shown in Figure 6.

Figure 8 is a detail of the keeper means for the pick-up-indicating flag shown in Figure 6.

Figure 9 is a detail of the pick-up-indicating flag and the means for attaching it to the mailbox.

Figure 10 is a detail view of the delivery-indicating flag to be mounted on the side of the mailbox as shown in Figure 4.

Figure 11 is a detail of the door-mounted bracket which supports the counterweight.

Figure 12 is a perspective view of the door-actuating arm and its related parts shown in Figure 5.

Similar reference characters designate corresponding parts throughout the several figures of the drawings.

Referring to Figure 1 of the drawing, A designates a rural-type mailbox mounted on a support B, including post B^1, by means of screws or other fastening members C. Box A has the usual door D pivotally mounted on a horizontal axis D^1 at its lower edge.

The door D is provided with an attachable frame designated generally as E which functions primarly in opening and closing of door D by a manually or otherwise actuated crank F which in turn controls a door-operating unit designated generally as G shown in Figures 1, 4, 5, and 12.

The invention also contemplates the practical use and operation of a delivery indicator flag designed generally as H and a pick-up indicator flag I.

The U-shaped frame E comprises a web or base portion 1 provided with an opening 1*a* therein and a pair of parallel arms 1*b* and 1*c*, each having at their inner edges the offset prongs 1*d* for embracing the bottom edge of the door. Said frame is mounted on the lower portion of door D by means of a clamping arrangement, including a resilient sheet metal letter clip 2 which embraces the lower edge of said door. Letter clip 2 has a pair of legs 3 and 4 adapted to engage the inner and outer sides of door D. The inner leg 3 serves as a means for holding letters (Figures 6 and 7) to be picked up by the postman, while the outer leg 4 is provided with a lateral projection or ear 5 having an opening 6 therein, all of which forms part of the means for clamping frame E in position.

At the top edge of door D and the top edge of box A, there is mounted the usual spring arm type of latch designated by the numerals 7 and 8.

A hanger plate 9 having an upper flange 10 and a lower flange 11 bent in opposite directions, is provided with an elongated opening 12 to permit it to be slipped over the latch member 7. When thus arranged, flange 10 will rest on the upper edge of door D and flange 11 will extend outwardly from door D in the same vertical plane as ear 5 of clip 2. Flange 11 is provided with an opening 13 which is in registry with opening 1*a* in bracket 1 and opening 6 in ear 5.

The assembly thus described is clamped to door D by passing a threaded bolt 14 downwardly through the aligned opening 13, reinforcing sleeve 15, opening 1*a*, and opening 6. By applying nuts 16 and 17 to bolt 14 and tightening them, the parts are rigidly secured to door D.

The door D is normally biased to closed position by means of the counterweight 18 mounted on an arcuate shaped arm 19 attached at one end to arm 1*b* of frame

E and extends downwardly therefrom. Although the arm 19 is shown as a separate member, it is understood that it could be an integral part of frame E and merely form an extension thereof. In either case, said arm is so designed that in following an arcuate, upper path of travel, it will swing clear of the side wall of box A. Arm 19 is located on the same side of box A as the delivery-indicating flag H and at its free end is provided a projection 20 disposed at a right angle thereto for a purpose to be later described.

Located beneath the mailbox and mounted on support B is the door-opening means G which comprises a pair of mating U-shaped coupling members 21 and 22 joined to each other by a bolt or other fastener 23. Coupling member 22 is provided with a plurality of fastener receiver openings 24 in one of its arms so that it may be rigidly attached to support B. Coupling member 21 is pivotally connected to coupling member 22 and has secured thereto a crank F having a striker arm 25, projecting outwardly beyond the plane of door D. A pair of levers 26 and 27 are pivotally mounted at their inner ends of bolt 23 and spacer sleeve 23*a* and connected to the outer ends of said levers are a pair of springs 28 and 29, which in turn are loosely mounted on cross bar 30 of bracket of the frame E.

Forming part of the means for automatically indicating to the mailbox patron that the postman has left mail for him, there is provided a delivery indicating flag H having a staff portion 31 for attachment to an arm 32 pivotally mounted on the side wall of box A. Said staff portion 31 has a plurality of fastener receiving openings 33 to secure the two parts together. The staff portion 31 is also provided with an abutment 34 formed at a right angle thereto and projecting outwardly away from the side wall of box A.

The vehicle-attached actuating means forming part of the invention consists of a bumper 35 comprising a pair of overlapping bowed straps 36, 37, each having a plurality of fastening receiving adjustment openings 38 in their overlapping portions and also having hook-like free ends 39, 40, adapted to engage the vertical edges of a vehicle door. The adjustment openings 38 afford a means for adapting the bumper to vehicle doors of varying widths and, as a means of tightening the bumper after it has been fitted to the door, there is provided a turnbuckle 41.

With the parts described properly attached to the mailbox and to the door of a vehicle the operation is as follows: referring especially to Figures 1, 4, 5 and 12, it will be seen that as bumper 35 on the moving vehicle strikes arm 25, the arm swings out of the path of the bumper towards the mailbox A in either direction, depending upon the path of travel of the vehicle. Coupling member 21 being rigidly secured to arm 25 of crank F and pivotally mounted on bolt 23, swings with the crank and the leading edge of said coupling engages whichever of levers 26 and 27 lies in its path and forces said lever rearwardly. The rearward movement of the lever exerts pressure on cross bar 30 on frame E through related spring 28 or 29 connecting that particular lever to the cross bar. The degree of force thus applied is sufficient to overcome the effect of counterweight 18 keeping door D in closed position, and thus causes the door to swing downwardly into open position.

Arm 19, being attached to bracket E, will move with it and travel an arcuate, upward path, causing projection 20 to strike abutment 34 of staff 31, thereby raising the delivery-indicating flag H to vertical position.

The door D will remain open as long as crank 25 is engaged by bumper 35 so that the postman can insert mail into the box and remove any letters to be picked up from leg 3 of clip 2. When the vehicle moves away, and the pressure on arm 25 of crank F is thus released, the door will automatically close due to counterweight 18 resuming its normal position.

As an added convenience for both patron and postman, the invention also includes a pick-up-indicating flag I pivotally mounted on hanger 9. Referring to Figure 8, a keeper 43 is attached to the top of the mailbox A by means of slot 44 straddling spring arm 8 and being slid between said arm to the top of the box. Extending beyond the vertical plane of the front of the box is a notched portion 45 of the keeper. The purpose of this arrangement is when the patron has placed letters in the door letter clip 2 for collection by the postman, the patron raises flag I and secures it in a raised position by inserting it in notch 45. When door D is opened in the manner previously described by the postman's vehicle, the flag will be automatically withdrawn from notch 45 and will swing downwardly and remain in inactive position until re-set by the patron.

I claim:

1. In a mailbox, a door hinged on a horizontal axis thereof and normally biased to closed position, and means supported beneath the bottom of the box for moving said door to an open position to permit access to the box, said means comprising a vertical shaft, a pair of door-operating levers having their inner ends coaxially mounted on said shaft for independent movement and having their outer ends free to swing, springs connected with the outer free ends of the levers and also connected to the door below the said hinged axis thereof, and means for selectively actuating one or the other of said levers, said means comprising a substantially U-shaped bracket having a vertical web and its opposite end portions offset in the same direction to straddle the levers, said member being horizontally swingable on said shaft, the edges of said web extending laterally to either side of the axis of said shaft and engaged by said levers, and crank means having one end rigidly carried by the web of said U-shaped bracket and its other end adapted to be engaged to turn the crank, whereby the rotating of the crank in one direction will turn and actuate a related lever to yieldingly pull the door to open position through its related spring while the other spring is relaxed.

2. Means for opening and closing the door of a rural-type mailbox adapted to be actuated by a moving vehicle comprising, counterbalancing means mounted on said door normally to retain said door in closed position, means connected to said door for opening the same against the action of said counterbalancing means when engaged by a striking member mounted on a moving vehicle, said door-opening means comprising a door-mounted frame having a web portion and a pair of parallel arms, each of said arms having an offset prong adapted to engage the bottom edge of said door, a cross bar carried by said arms and disposed parallel to but lower than the axis of said door, resilient means connecting said cross bar to a pair of pivoted levers mounted beneath said mailbox and means for engaging either of said levers to move them in a direction away from said frame and thereby exert pressure on said cross bar through said resilient means, causing the door to pivot on its axis to open position.

3. Apparatus for opening and closing the door of a rural-type mailbox mounted on a support and having a letter signal device pivotally secured to one side thereof comprising, in combination, a frame mounted on said door, said frame having a web portion and a pair of parallel arms, each of said arms having an offset prong adapted to engage the bottom edge of said door, means for mounting said frame comprising a hanger plate secured to the upper edge of said door, said hanger plate having upper and lower laterally offset flanges extending in opposite directions, each of said flanges having an opening, a clip member embracing the lower edge of said door and also having a laterally offset flange provided with an opening, the opening in said clip and the opening in the lower flange of said hanger plate being in align-

ment with an opening located in the web of said frame, and connecting means passing through each of said openings to thereby clamp said frame to the mailbox door.

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