March 8, 1960 E. H. KREIDER 2,927,727

AUTOMATIC ACTUATOR FOR MAIL BOX SIGNAL

Filed April 8, 1958

FIG. 1

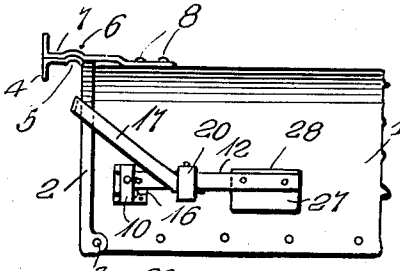


FIG. 2

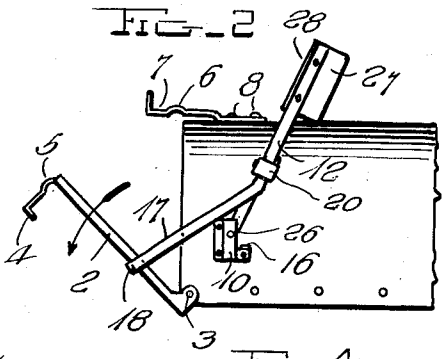


FIG. 3

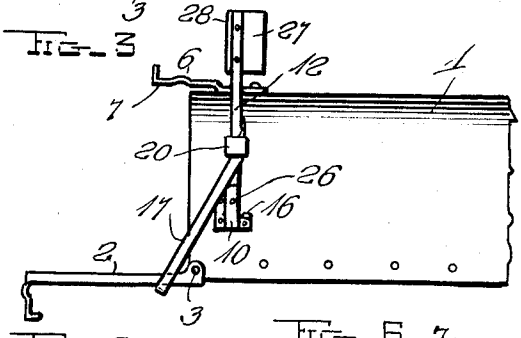


FIG. 4

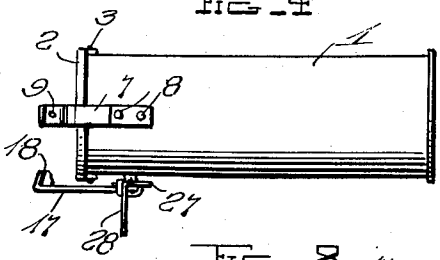


FIG. 5

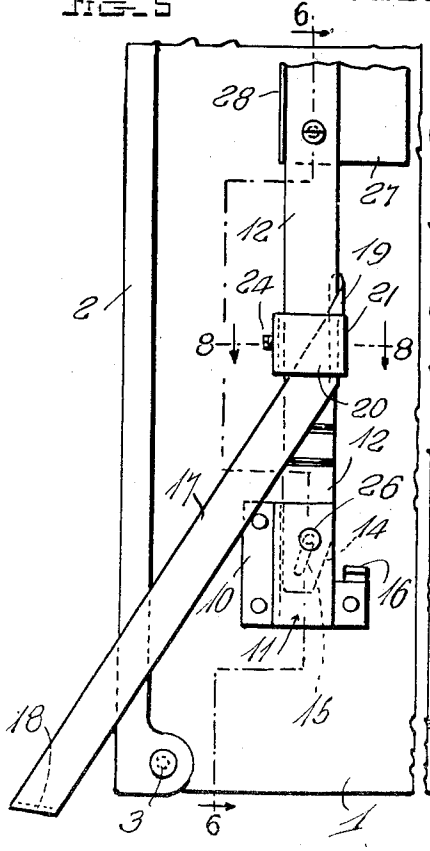


FIG. 6

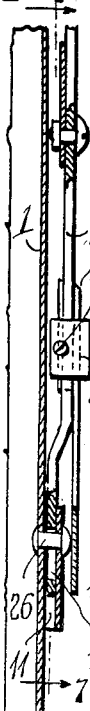


FIG. 8

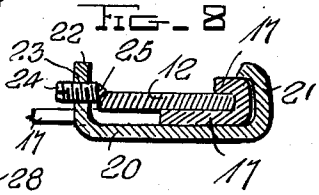


FIG. 9

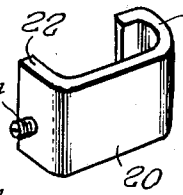


FIG. 10

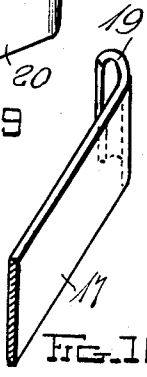


FIG. 7

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AUTOMATIC ACTUATOR FOR MAIL BOX SIGNAL

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2 Claims. (Cl. 232—35)

My invention relates broadly to a rural delivery type of mail box, and more particularly to an automatic actuator for mail box signals.

One of the objects of my invention is to provide a construction of automatic actuator for mail boxes which is adjustable to control the movement of a flag indicator according to the opening and closing of the mail box closure.

Another object of my invention is to provide an attachment which may be readily applied to the staff of a mail box flag-staff and extending in the path of the mail box closure for insuring the automatic operation of the indicator according to the movement of the mail box closure.

Still another object of my invention is to provide a construction of flag for the flag-staff of a mail box indicator which is proportioned to render the flag visible from positions around a wide orbit over which the mail box is visible to enable the position of the flag indicator to be readily discernible.

Still another object of my invention is to provide a structure for mounting the flag-staff of a mail box and an arrangement of actuator associated therewith and correlated with the movement of the mail box closure for insuring the reliable operation of the flag-staff according to the movement of the mail box closure.

Other and further objects of my invention reside in the structural assemby of adjustable actuator and mail box flag-staff and the pivotal mounting thereof as set forth more fully in the specification hereinafter following by reference to the accompanying drawing, in which:

Fig. 1 is a fragmentary side elevational view showing the automatic actuator for mail box signals associated with the door of the mail box and the actuator for correlating the movement of the flag-staff with respect to the door of the mail box;

Fig. 2 is a view similar to the view shown in Fig. 1 but illustrating the manner in which the flag-staff is elevated to raised position as the door of the mail box is opened;

Fig. 3 is a view similar to the views shown in Figs. 1 and 2, but illustrating the flag-staff moved to raised position with the door closure of the mail box moved to a completely open position;

Fig. 4 is a top plan view of the mail box and associated signal arranged according to my invention and showing particularly the actuator arm associated with the flag-staff in such a position that the arm is displaceable according to the movement of the door closure;

Fig. 5 is an enlarged fragmentary side elevational view showing the adjustable actuator associated with the flag-staff and correlated with the movement of the door closure;

Fig. 6 is a vertical sectional view taken on line 6—6 of Fig. 5;

Fig. 7 is a fragmentary rear elevational view of the flag-staff and the actuator associated therewith and illustrating particularly the manner in which the actuator may be raised or lowered with respect to the flag-staff in correlating the movement of the flag-staff with the movement of the door closure;

Fig. 8 is a transverse sectional view taken on line 8—8 of Fig. 5, and illustrating particularly the manner in which the actuator arm is adjustably locked in position with respect to the flag-staff;

Fig. 9 is a perspective view of the strap which encircles the actuator arm and the flag-staff for adjustably locating the actuator arm in position with respect to the flag-staff; and

Fig. 10 is a fragmentary perspective view of the upper extremity of the actuator arm which may be selectively moved into position along the flag-staff and locked in such position by the strap of Fig. 9.

My invention is directed to an arrangement of automatic actuator applicable to mail boxes of the rural delivery type for operating the signal of such a mail box in correlation with the door closure of the mail box so that opening of the door closure of the mail box automatically raises the flag-staff of the signal indicator to give visual notice from a distance that mail has been left in the box. For example, the mail man approaching the mail box may find the indicator flag down. As the mail man opens the box, the movement of the door closure automatically raises the signal which is maintained in elevated position. The mail man closes the box, leaving the signal indicator flag-staff in raised position, which enables the mail box to be observed from a distance by the property occupants who are put on notice to call for the mail. When the mail is called for, the indicator flag is lowered by manipulation of the actuator arm.

On other occasions, with the indicator flag in down position, the property occupant opens the closure door, puts in the mail, closes the mail box door, giving notice to the mail man to stop at the box for collection of mail because, in the initial opening of the mail box door, the flag indicator is raised by engagement of the door closure with the actuator arm.

There are occasions when the mail man stops to collect the mail and, at the same time, has mail to deliver, in which event the mail man leaves the flag raised and the property occupant, by judging the time for pick-up and delivery and being put on notice by the raised flag, goes to the mail box to obtain the delivered mail. The flag indicator on the flag-staff of my invention, is so proportioned in length and width that it is readily observable from a distance in various directions both by the property occupant and the mail man.

I provide a flag-staff assembly which includes a pivotal mounting at the lower end thereof and an indicator flag at the other end thereof with an adjustable actuator arm connected with the flag-staff and extending in an angular direction beyond the door closure of the mail box and in the path of the door closure so that, as the door is moved to open position, the door engages the actuator arm, moving the actuator arm in an arcuate path for orienting the flag-staff about its pivot for raising the indicator to elevated position. A special feature of the assembly of my invention is the adjustable connection which I provide between the actuator arm and the flag-staff in association with the slotted connection of the end of the flag-staff with the pivot structure on the mail box, enabling the flag-staff to be raised by engagement of the

actuator arm with the door closure and moved from a horizontal position to a vertical indicating position. I have found the assembly of my invention very effective in operation and, while I have described my invention herein in one of its preferred embodiments, I realize that modifications may be made, and I desire that the showing herein be considered in the illustrative sense and not in the limiting sense.

Referring to the drawings in more detail, Reference character 1 indicates the mail box having a pivotally connected door closure 2 at one end thereof pivoted adjacent the bottom of the mail box as indicated at 3. The top portion of the door 2 has a composite handle and outstruck resilient lug member 4 connected therewith. The resilient lug is indicated at 5 and coacts with a resilient recess 6 formed in the strap 7 which is secured to the top of the mail box 1 as indicated at 8. The composite handle and lug 4 and the strap 7 are apertured as indicated at 9 for the passage of a lock.

I provide a fitting on one side of the mail box 1 as indicated at 10 constituted by an outstruck channel providing an offset or socket space 11 with respect to the sidewall of the mail box 1 through which the lower end of the flag-staff 12 extends. The lower end of the flag-staff 12 is cut on a bias at one edge thereof as represented as 14, and there is a slot 15 formed in the lower end of the flag-staff 12 extending in an angular direction which is substantially parallel with the edge 14 of the flag-staff, permitting the flag-staff to be oriented from a horizontal position to a vertical position with substantial lost motion to insure movement of the flag-staff under control of a force imparted thereto from the hinged door 2 for gravitating the lower end of the flag-staff into the socket formed by the channel constituting the fitting. The fitting 10 is shaped to allow orientation of the flag-staff 12 from a horizontal position to a vertical position by cutting away one side of the channel 11 in the corner that is remote from the pivot 3 of the door. This cut-away portion of the fitting 10 terminates in an outwardly projecting lug 16 which serves as a stop for the flag-staff 12 for maintaining the flag-staff 12 in a horizontal position free for movement to a vertical position under control of the movement of door closure 2 at 3. This movement is correlated by means of the actuator arm 17 which is adjustably connected to the flag-staff and extends at an angle thereto adjacent one side of the door closure 2 and terminates in a laterally extending extension 18 at the end thereof projecting in the path of movement of door closure 2. The upper end of the arm 17 is formed into a hook 19 which engages the side and edge of flag-staff 12. The actuating arm 17 may be raised or lowered with respect to the flag-staff 12 to properly correlate the laterally extending extension 18 with the door 2 to insure the movement of the flag-staff 12 under control of the movement of door 2. In order to selectively set actuator arm 17 with respect to flag-staff 12, I provide a strap member 20 which has a curved portion 21 at one end thereof embracing the hook 19 on actuator arm 17 when fitted around flag-staff 12 and which is provided with a laterally extending end portion 22 projecting beyond the plane of flag-staff 12 as shown more particularly in Fig. 8. The laterally extending end portion 22 is provided with a screw-threaded aperture 23 therein through which the adjustable screw 24 extends. The adjustable screw 24 is provided with a conical shaped end 25 adapted to bear against one edge of flag-staff 12 for locking the upper portion of actuator arm 17 in a selected position on flag-staff 12 when assembled in the relationship shown in Fig. 8. The connection afforded by the conical shaped end 25 of the adjustable screw 24 insures the correlation of the actuating arm 17 with the movement of door closure 2 for raising flag-staff 12 to the vertical position illustrated in Figs. 3 and 4–7. The rivet member 26 that extends through the sidewall of the mail box 1 and through the offset channel portion 11 of fitting 10 provides a pivot for the lower end of flag-staff 12 with respect to which flag-staff 12 has composite translatory and rotative movement permitted by the arrangement of slot 15 on a bias as indicated in Figs. 5 and 7. By virtue of the slotted arrangement at 15, flag-staff 12 may be oriented from the horizontal position shown in Fig. 1 to the vertical position shown in Fig. 3 as the door closure 2 engages the laterally extending projection 18 of actuator arm 17 at the position indicated in Fig. 1 and moves the flag-staff to the position indicated in Figs. 3, 5, and 7. There are occasions when the assembly of my invention is applied to mail boxes of different manufacturers where it is desirable to shift the actuating arm 17 in position with respect to the flag-staff 12. This is readily accomplished by my invention by loosening screw 24 and raising or lowering actuating arm 17 with respect to flag-staff 12.

The indicator flag in the assembly of my invention is proportioned to afford maximum visibility from all directions. Where installations of mail boxes are made along the roadway with the axes of the mail boxes extending laterally of the roadway, the indicator flag is proportioned so that part 27 thereof is shorter than the part 28 thereof as viewed in Fig. 4. This insures visibility of the flag to the mail man who requires only a relatively small portion of the indicator flag to be visible to him as his approach is relatively close to the mail box, whereas the property occupants, located at a substantial distance from the mail box, has the advantage of viewing the larger portion of the flag 28 from a distance. I have found the proportion of the flag, when distributed in this manner, more useful in producing uniform visibility to everyone concerned.

There are occasions in production runs of mail boxes of certain types wherein the actuating arm may be permanently welded to the flag-staff, and I desire to embrace this modification within the scope of my invention.

While I have described my invention in one of its preferred embodiments, I realize that modifications may be made, and I desire that it be understood that no limitations upon my invention are intended other than may be imposed by the scope of the appended claims.

What I claim as new and desire to secure by Letters Patent of the United States is as follows:

1. In a mail box signal, a mail box flag-staff, a pivot for mounting the lower end of the flag-staff, an actuator arm, both said flag-staff and said actuator arm being constituted by flat strips lying in flat overlapping relation, with said actuator arm extending at an angle to the axis of said flag-staff and beyond the pivot thereof, a lateral extension on one end of said actuator arm, an adjustable connection between the other end of said actuator arm and said flag-staff in a position above the pivot comprising a diagonally disposed hook portion having a linearly extending section slidably engaging one edge of said flag-staff with the surface of the actuator arm extending in surface contact with the surface of said flag-staff, whereby said actuator arm is slidable to selected adjusted positions with respect to said flag-staff with the diagonally disposed hook portion engaging the edge of the flag-staff in the selected position, a laterally extending slidable clamp having a curved portion on one end thereof and a laterally disposed end portion on the other end thereof, the said curved portion of said clamp engaging the hook portion of said actuator arm for maintaining said actuator arm in a selected position on said flag-staff and a locking screw extending through the laterally disposed end portion of said clamp and adjustable therein for engaging the opposite edge of said flag-staff for frictionally maintaining said actuator arm in a selected position on said flag-staff for correspondingly controlling the position of the lateral extension on the first mentioned end of said actuator arm with respect to the location of the pivot of said flag-staff.

2. A mail box signal as set forth in claim 1 in which said locking screw is cone-shaped on the end thereof and presents an inclined face to the last mentioned edge of said flag-staff for orienting said clamp laterally with respect to both said actuator arm and said flag-staff for maintaining said actuator arm in a selected adjusted position with respect to said flag-staff.

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