Aug. 13, 1957 O. J. STETTNER 2,802,622

MAILBOX SIGNAL

Filed June 17, 1954

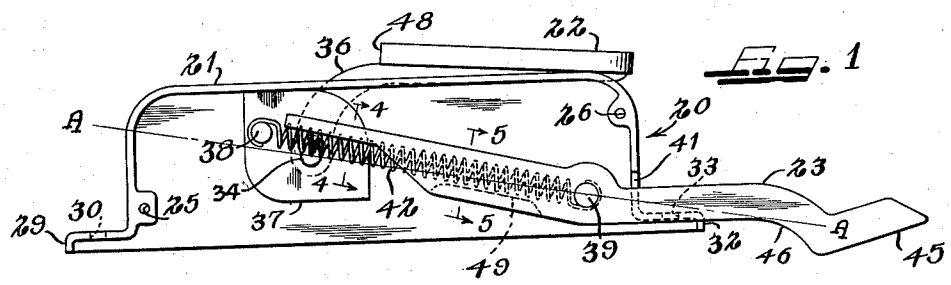


Fig. 1

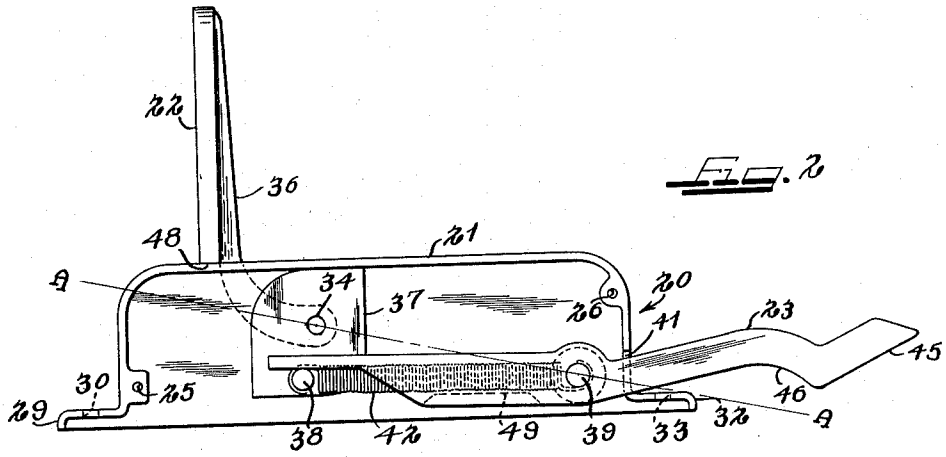


Fig. 2

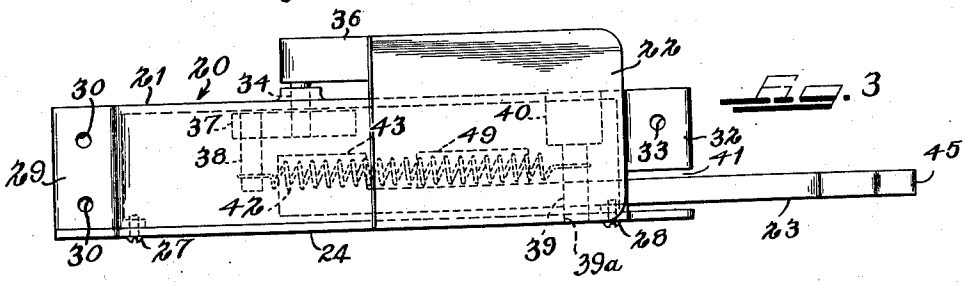


Fig. 3

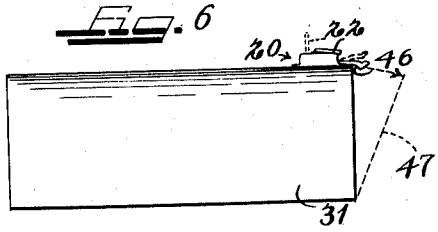


Fig. 6

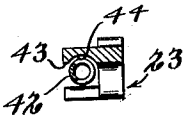


Fig. 4

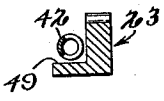


Fig. 5

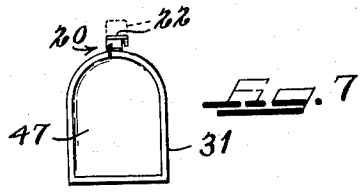


Fig. 7

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MAILBOX SIGNAL

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6 Claims. (Cl. 232—35)

This invention relates to improvements in signal devices and more particularly to that type of signal adapted for use with a rural mail box.

In many rural areas, mail boxes situated along a highway travelled by the mail carrier are located at some distance from the houses being served. Consequently, it is very desirable to provide the boxes with signals for the observance of both the mail carrier and the party being served. The signal indicates to the carrier a pickup of outgoing mail and to the party being served the delivery of mail.

There are many such signals now on the market. Most, if not all, of these signals, however, require the installation of numerous pivots, bolts, rivets, and operating linkages. Such installations are both difficult and expensive to make.

One of the important objects of this invention, therefore, is to provide a simple signal device which is easily and readily installed by anyone without the need of special tools.

Another object of the invention is the provision of a unitary signal device which is easily bolted or otherwise secured in operative position.

A further object of the invention is the provision of a signal device adapted for use with a mail box and which is operable by opening the door of the box.

A still further object of the invention is the provision of means for holding the signal in its adjusted position.

Another and still further object is to provide means for manually operating the signal when desired.

Other and further objects of the invention will become apparent from the following description taken in connection with the accompanying drawings, in which:

Figure 1 is a side view in elevation, with a cover removed, showing details of construction of a signal device embodying principles of this invention and with the parts in an inoperative position;

Figure 2 is a view similar to Figure 1 but showing the relative position of parts when the signal device has been operated to elevate the flag;

Figure 3 is a top plan view of the signal device shown in Figure 1;

Figure 4 is an enlarged vertical cross-sectional view of an actuator bar, with portions shown in elevation, taken along the line 4—4 of Figure 1;

Figure 5 is a view similar to Figure 4 showing another portion of the actuator bar as seen when taken along the line 5—5 of Figure 1;

Figure 6 is a reduced side view in elevation of a mail box with the signal device of this invention secured thereto and the signal being shown in an elevated position in dotted lines and in a lowered position ready for actuation in full lines; and,

Figure 7 is front face view in elevation of the mail box and signal device shown in Figure 6.

Referring now to the drawings, the mail-box signal device **20** of this invention generally comprises a housing **21**, a flag **22**, and a flag actuator lever or bar **23**.

The housing **21** is preferably of rectangular box-like shape open at the bottom and having a removable sidewall **24**. Openings **25** and **26** in vertical end walls of the housing are threaded to receive screws or bolts **27** and **28** for securing the sidewall **24** to the housing. A foot portion **29** extends from one end of the housing and is provided with one or more openings **30**, **30** through which bolts (not shown) extend to secure the housing to a mail box **31**. Similarly, another foot portion **32** extends from the opposite end of the housing and is provided with a mail box connecting bolt hole **33**.

A shaft **34** rotatably extends laterally through a fixed sidewall **35** of the housing. The flag **22** has an actuating arm **36** secured at one end to the shaft **34** on the outside of the housing. The flag is so secured to the arm as to seat on the housing when in a lowered position (Figures 1 and 3). A crank **37** is secured to an end of the shaft **34** within the housing. A pin **38**, secured to the crank and extending therefrom in a direction opposite the shaft **34**, is so located as to be moved to positions above and below the axis of the shaft **34** when the crank is rotated 90° for a purpose to be more fully explained later.

A pivot pin **39**, having a base portion **40** extending laterally within the housing from the sidewall **35**, is located adjacent an opening **41** in the forward end wall of the housing. The free end of the pivot pin is seated in an opening **39a** in the removable sidewall **24**. The flag actuator bar **23** is intermediately mounted for swinging movement on the pivot pin **39**. A coiled spring **42** has one end secured to the crank pin **38** and its other end secured to the pivot pin **39**. With the parts positioned as shown in Figure 1, the pin **38** is above a dead center line A—A drawn through the axes of shaft **34** and the pivot pin **39**. Tension of the spring then maintains the flag **22** in a lowered position. With the flag elevated, or rotated approximately 90°, the crank pin **38** is moved below dead center in which position (Figure 2) the parts are maintained in adjusted position by the tension of spring **42**.

The actuator bar **23** is so shaped as to move the flag from lowered to elevated positions. One end of the bar (see Figures 3 and 4) has a laterally offset portion **43** the underside surface **44** of which is curved as a bearing to seat against a portion of the coiled spring adjacent to the pin **38**. The other or actuating end **45** of the bar has a downwardly extending curved cam surface **46**.

With the parts positioned as shown in Figure 1, the end **45** of the actuator bar is in its lowermost position. When the actuator bar is rocked on the pivot **39** by raising the end **45**, the offset end **43** exerts a downward pressure on that portion of the coiled spring adjacent to the pin **38**. The pressure exerted through the pin rocks the crank **37** on its shaft **34** thereby moving the pin from one side of dead center to the other. As the crank rotates the flag is elevated.

As best shown in Figures 6 and 7, the signal device **20** is applied to the mail box **31** adjacent the end thereof having a swingable door **47**. The signal device may be attached to the top or a sidewall of the mail box it being necessary only to so position the device as to locate the actuator bar end **45** in the path of movement of the door. When the door is opened, as shown in the dotted lines of Figure 6, an edge of the door cams along the surface **46** to rock the actuator bar and move the flag from lowered to elevated position. As the pin **38** is moved below dead center, tension of the coiled spring pulls the crank pin to its lowermost position. This position is reached when the edge **48** of the flag seats against the top of the housing **21**.

In order that the end **45** of the actuator bar be held in elevated position out of the path of the return movement of the mail box door **47**, a laterally extending ledge portion or bearing **49** is provided on a side of the actuator bar (see Figure 5). The ledge is positioned to engage the underside of the coiled spring **42**.

Manual actuation, to lower the flag as shown in Figure 1, resets the signal device for operation by opening the

mail box door. When the mail box door is opened to place mail therein, either by the patron or the carrier, the signal flag is automatically elevated to act as a visual reminder of the presence of mail. Upon removing the mail, the flag is lowered merely by pushing against the flag until the crank pin 38 is moved to the opposite side of dead center. This depresses the free end of the actuator bar for future actuation by an opening of the mail box door.

From the foregoing description it is seen that a simple, durable, compact, efficient, easily fabricated and quickly applied signal structure is provided having particular utility when mounted on a mail box. Once installed, the device is very easily operated and will give no trouble for maintenance and repair.

It will, of course, be understood that various details of construction may be varied through a wide range without departing from the principles of this invention and it is, therefore, not the purpose to limit the patent granted hereon otherwise than necessitated by the scope of the appended claims.

I claim as my invention:

1. A signal device for a mail box or the like having a swinging door, comprising a housing adapted to be mounted on the box, a flag pivotally mounted on said housing and movable to two positions, a crank mounted for rotation with said flag, a pin on said crank and so located as to be on one side of the flag pivotal mounting when the flag is in one position and on the other side thereof when the flag is in another position, an actuator bar pivotally mounted on said housing, and spring means connecting said crank pin and the pivot of said bar, one end of said bar engaging said spring means adjacent said crank pin for rotating said crank and moving the pin from one to the other of said sides of the flag pivotal mounting, the other end of said bar being arranged for location in the path of movement of said swinging door to rock said bar on its pivot, said spring means being arranged to exert continued tension on the crank pin wherever disposed on either side of the flag pivotal mounting.

2. A signal device for a mail box or the like having a swinging door, comprising a housing adapted for mounting on the box adjacent said swinging door, a flag, a shaft mounting said flag for rotation between signalling and non-signalling positions, a crank secured to said shaft for co-movement with said flag, a pin on said crank and located on one side or the other of said shaft when the flag is in one of the positions to which it may be rotated, a pivot on said housing spaced from said shaft, spring means connecting said pin and pivot, and an actuator bar intermediately mounted on said pivot for rocking movement, one end of said bar engaging said spring means adjacent said crank pin and the other end being arranged in the path of movement of the swinging door to cam thereon and rock the bar, said bar when rocked on its pivot in one direction rotating said crank pin from one side of the shaft to the other side thereof and moving the flag to one of its said positions, the spring means being arranged to exert continued tension on the pin wherever disposed.

3. A signal device for a mail box or the like having a swinging door, comprising a housing adapted to be mounted on the box adjacent the swinging door, a shaft on said housing, a signal flag secured to and arranged to be raised or lowered by rotation of said shaft, a crank secured to said shaft, a pin on said crank and so located as to be on one side or the other of the shaft when the flag is raised and lowered, a pivot on said housing in spaced relation to said shaft, a coiled spring having one end connected to the crank pin and its other end connected to said pivot, and an actuating lever intermediately mounted on said pivot and having bearing portions engaging the spring on opposite sides thereof to hold the lever in alignment with the spring, one bearing portion being located as one end of the lever to engage said coiled spring adjacent the crank pin to rock the pin from one side to the other of the shaft, the other end of said lever having a cam surface for engagement by an edge of the swinging door of the mail box to rock the lever on its pivot.

4. A signal device for a mail box or the like having a swinging door, comprising a housing adapted to be mounted on the box adjacent the swinging door, a shaft on said housing, a signal flag secured to and arranged to be raised or lowered by rotation of said shaft, a crank secured to said shaft, a pin on said crank and so located as to be on one side or the other of the shaft when the flag is raised and lowered, a pivot on said housing spaced from said shaft, a coiled spring having one end connected to the crank pin and its other end connected to said pivot, said spring being arranged to exert continued tension on the crank pin whether disposed on said one side or the other of the shaft, an actuating lever intermediately mounted on said pivot, one end of said lever having a bearing disposed against said coiled spring adjacent the crank pin to rock the pin from one side to the other of the shaft, the other end of said lever having a cam surface for engagement by an edge of the door of the mail box when the door is swung in one direction to rock the lever on its pivot, and another bearing on said lever engaging the coiled spring on the side thereof opposite the first mentioned bearing whereby to hold the cam end of the lever out of the path of movement of the door when the door is swung in the opposite direction.

5. A signal device for a mail box or the like having a movable door, comprising a housing adapted to be mounted on the box adjacent the movable door, a shaft on said housing, a signal flag secured to and arranged to be raised and lowered by rotation of said shaft, a crank secured to said shaft, a pin on said crank and so located as to be on one side or the other of the shaft when the flag is raised and lowered, a pivot on said housing in spaced relation to said shaft, a coiled spring having one end connected to the crank pin and its other end connected to said pivot, and an actuating lever intermediately mounted on said pivot and having bearing portions engaging the spring to hold the lever in alignment with the spring, one bearing portion being located to engage said coiled spring adjacent the crank pin to rock the pin from one side to the other of the shaft, the other end of said lever having a surface for engagement by the movable door of the mail box to rock the lever on its pivot.

6. A signal device for a mail box or the like having a movable door, comprising a mounting adapted to be attached to the box adjacent the movable door, a shaft on said mounting, a signal flag secured to and arranged to be raised and lowered by rotation of said shaft, a crank secured to said shaft, a pin on said crank and so located as to be on one side or the other of the shaft when the flag is raised and lowered, a pivot on said mounting in spaced relation to said shaft, a coiled spring having one end connected to the crank pin and its other end anchored in alignment with a center line extending between the shaft and pivot, and an actuating lever intermediately mounted on said pivot and having bearing portions engaging the spring to hold the lever in alignment with the spring, one bearing portion being located to engage said coiled spring adjacent the crank pin to rock the pin from one side to the other of the shaft, the other end of said lever being located for engagement by the movable door of the mail box to rock the lever on its pivot.

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