Nov. 2, 1954 C. W. HUNTER 2,693,314

DOOR CONTROLLED MAILBOX SIGNAL

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Fig. 1

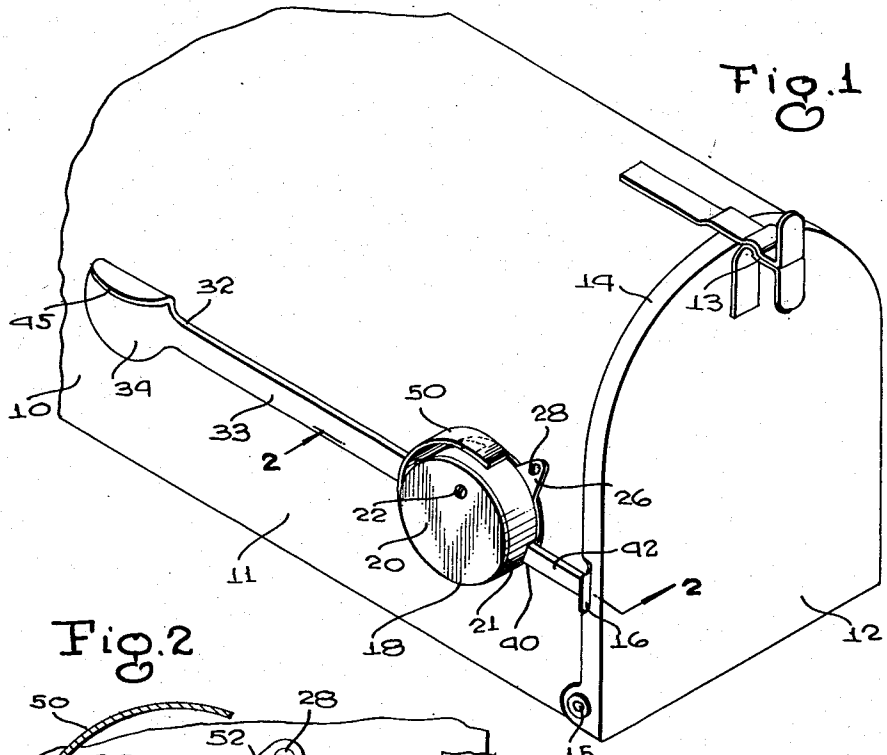


Fig. 2

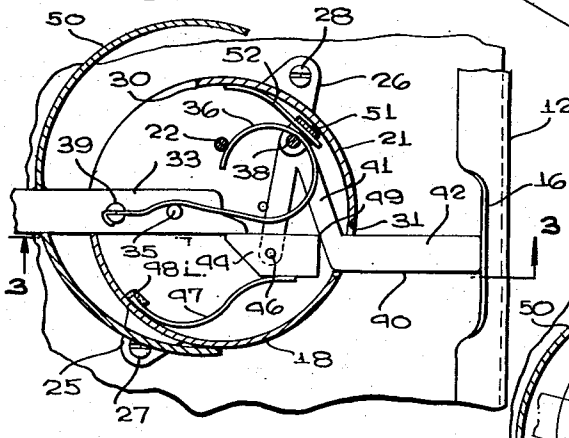


Fig. 4

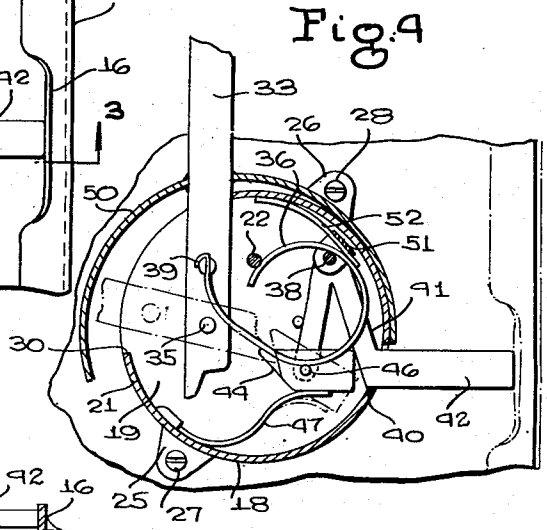
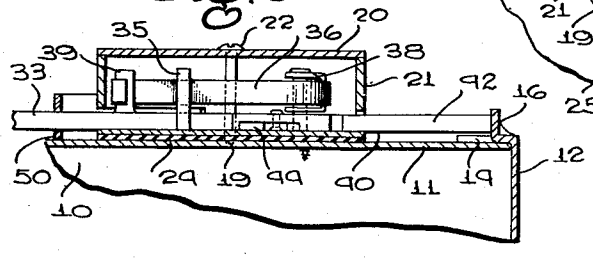


Fig. 3



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DOOR CONTROLLED MAILBOX SIGNAL

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4 Claims. (Cl. 232—35)

This invention relates to mailbox signal flags and more particularly to a signal flag that is held down while the mailbox door is closed and is automatically raised to signaling position when the door is opened to place mail in the mailbox.

It is among the objects of the invention to provide an improved mailbox signal assembly which can be mounted on a conventional mailbox with no material modification of the mailbox construction; which includes a movably mounted signal flag that is held down in non-signaling position by the mailbox door while the door remains closed and is automatically raised to signaling position when the door is opened to place mail in the mailbox; which permits the door to be closed while the flag is left in raised position; which includes a housing enclosing the flag raising mechanism of the assembly against the weather and against tampering; and which is simple and durable in construction, economical to manufacture, easy to install, and positive and reliable in operation.

Other objects and advantages will become apparent from a consideration of the following description and the appended claims in conjunction with the accompanying drawing wherein:

Figure 1 is a perspective view of a conventional mailbox with a signal flag assembly illustrative of the invention operatively mounted thereon;

Figure 2 is a fragmentary cross sectional view on a somewhat enlarged scale on the line 2—2 of Figure 1;

Figure 3 is a cross sectional view on the line 3—3 of Figure 2; and

Figure 4 is a cross sectional view similar to Figure 2, but showing the parts of the assembly in a different operative position from that illustrated in Figure 2.

With continued reference to the drawing, the mailbox, generally indicated at **10**, is of well known or conventional shape having a flat bottom, spaced apart and substantially parallel flat sides, one of which is indicated at **11**, a partly cylindrical top portion arched upwardly between the sides, and a door **12** disposed in closing relationship to the open end of the box and pivotally connected at its respectively opposite sides and near the lower edge thereof to the corresponding side walls of the box near the lower corners of the side walls at the open end of the box. The door is releasably held in closed position by a suitable spring latch mechanism **13**, one part of which is secured to the top of the box, and the other part of which is secured to the door at the top end of the door, and the door is provided with a flange **14** extending along the side edges and the top edge thereof. At a location adjacent one of the pivotal connections, as indicated at **15**, between the door and the mailbox, the door flange **14** is offset to provide an abutment formation **16** for a purpose to be presently disclosed.

The signal flag assembly of the present invention comprises a housing, generally indicated at **18**, including flat end walls **19** and **20** of circular shape disposed in spaced apart and substantially parallel relationship to each other and a side wall **21** of substantially cylindrical shape extending marginally around the end walls of the housing. The end wall **19** is preferably permanently secured to the side wall **21** of the housing, while the outer end wall **20** is detachably secured to the housing by a screw **22** extending through a hole in the end wall **20** and threaded into a hole in the inner end wall **19**.

The inner end wall **19** is disposed adjacent the side of the mailbox on which the device is mounted, a layer **24** of insulated material being preferably interposed between this end wall of the housing and the adjacent side

of the mailbox, and the end wall **19** is provided with outwardly projecting and oppositely disposed apertured lugs or ears **25** and **26** through which screws **27** and **28** respectively extend, and are threaded into screw holes in the wall of the mailbox to rigidly secure the housing onto the mailbox.

The annular side wall **21** of the housing is provided with an elongated, closed slot **30** extending circumferentially thereof through an angle of approximately 90 degrees and is provided opposite the slot **30** with an opening **31** of less angular extent than the slot.

A signal flag **32** including a stem **33** in the form of a flat metal strip having substantially parallel side edges and a circular enlargement **34** on one end of the stem extends at its other end through the slot **30** in the side wall of the housing **18** and is pivotally connected near this end to the housing interiorly of the housing by a pivot pin **35** extending through an aperture in the stem and secured at one end to the end wall **19** of the housing. This pivotal connection provides freedom of swinging movement of the signal flag **32** relative to the housing through an angle of approximately 90 degrees between a substantially vertical and a substantially horizontal position.

A longitudinally curved leaf spring **36** is disposed in the housing **18** and has one end secured to the stem **33** by means of an anchoring pin **39** and has the portion adjacent the other end bearing against the screw **22**, the portion of the spring **36** inwardly of the screw **22** passing over an anchoring pin **38**. This spring **36** also extends over the pivot pin **35** and, when the signal flag **32** is in its substantially horizontal, nonsignaling position, as illustrated in Figure 1, the spring **36** is distorted and exerts a resilient force on the stem **33**, urging the stem in a direction from the corresponding end of the slot **30** to the opposite end of the slot and to its substantially vertical, signaling position. The corresponding end of the slot **30** provides a stop which limits movement of the signal flag **32** by the spring **36** toward the vertical position of the signal flag.

A bell crank lever **40** extends through the opening **31** in the side wall **21** of the housing, and is pivotally mounted at one end on the spring anchor pin **38**. This anchor pin is mounted in a U-shaped clip **51** secured to one end of a leaf spring **52**, the other end of which is secured to the annular wall of the housing at a location spaced from the pin **38**.

This lever **40** has a leg **41** of inverted, V-shape disposed within the housing, and a straight leg **42** projecting out of the housing to the abutment formation **16** on the mailbox door and disposed at an angle to the leg **41**.

A latch dog **44** is pivotally mounted on the leg **41** of the lever **40** adjacent the proximal end of the leg **42** and engages the adjacent end of the flag stem **33** when the flag is in its substantially horizontal, nonsignaling position, as illustrated in Figure 2, to hold the flag in this position against the force of the spring **36**. The pressure exerted by the adjacent end of the stem **33** on the dog **44** by the force of the spring **36** urging the stem to the raised position of the signal flag urges the leg **42** of the lever **40** outwardly of the housing and the latch dog **44** away from the adjacent end of the stem. As long as the mailbox door **12** remains closed, however, the abutment formation **16** bearing on the outer end of the lever leg **42** holds this leg against such outward movement, and holds the latch dog **44** in latching engagement with the adjacent end of the flag stem **33**, so that the spring **36** cannot raise the flag to its signaling position.

When the door **12** is opened to place mail in the mailbox, the pressure of the abutment formation **16** against the outer end of the lever leg **42** is relieved, and the lever **40** then swings about its pivotal connection with the pin **38**, the leg **42** moving outwardly of the housing, and the dog **44** moving away from the adjacent end of the stem **33** and freeing the stem to be swung about the pivot pin **35** by the spring **36** to the raised position of the signal flag. After the flag has been raised by the opening of the door, the door can be reclosed without interference by the signal flag mechanism, the parts then being in the operative position illustrated in Figure 4.

The flag can be lowered to its substantially horizontal, nonsignaling position by manual pressure on a tab 45 provided by bending a portion of the flag enlargement 34 to a position substantially perpendicular to the remainder of the enlargement. This manual pressure overcomes the force of the spring 36 and, as the end of the stem 33 adjacent the dog 44 contacts the dog, the dog is tilted about its pivotal connection 46 with the lever 40, permitting the adjacent end of the stem to pass the dog. The dog is resiliently urged to its stem engaging position by a longitudinally curved, flat spring 47 secured at one end to the side wall 21 of the housing 18, as indicated at 48, and having its opposite end portion in engagement with the adjacent side of the dog. As soon as the end of the lever passes the adjacent end of the dog 44, the spring 47 snaps the dog back to its lever engaging position, the tilting movement of the dog to this position being limited by the engagement of the end of the dog remote from the stem 33 with the adjacent portion of the leg 41 of the lever 40, as indicated at 49.

After the flag has been manually reset to its nonsignaling position, it will remain in this position until the door 12 is again opened.

A rain or weather guard 50, in the form of an elongated strip arcuately curved longitudinally thereof is mounted at a location intermediate its length on the stem 33 adjacent the side wall 21 of the housing and extends partly around the housing side wall in covering relationship to the slot 30 in the housing side wall, so that rain, snow or sleet cannot enter the housing through the slot 30 and moisture will be prevented from entering the housing and freezing therein to render the mechanism inoperative.

The invention may be embodied in other specific forms without departing from the spirit or essential characteristics thereof. The present embodiment is, therefore, to be considered in all respects as illustrative and not restrictive, the scope of the invention being indicated by the appended claims rather than by the foregoing description, and all changes which come within the meaning and range of equivalency of the claims are, therefore, intended to be embraced therein.

What is claimed is:

1. A mailbox signal assembly comprising a housing adapted to be mounted on one side of a mailbox adjacent the mailbox door and having a closed slot in the wall thereof and an opening opposite said slot, a signal flag having a stem extending into said housing through said slot and pivotally connected adjacent one end thereof to said housing internally of the housing for swinging movements through an angle of approximately 90 degrees relative to said housing, spring means mounted in said housing and engaging said stem resiliently urging said stem to a position at one end of said slot corresponding to the signaling position of said signal flag, said stem being movable by manual pressure thereon toward the other end of said slot against the force of said spring, a lever extending through said opening into said housing and pivotally connected at one end to said housing internally of the latter, a dog pivotally mounted on said lever within said housing and engaging said one end of said stem to hold the latter in position adjacent said other end of the housing slot against the force of said spring means, said lever being urged outwardly of said housing to release said dog from said stem by the spring pressure of said one end of the stem on said dog and being held against movement outwardly of said housing when the outer end thereof is engaged by an associated mailbox door, said dog being tiltable on said lever to permit said one end of said stem to pass the dog when the stem is manually moved from said one end toward said other end of said housing slot, and a spring engaging said dog and resiliently urging the dog to its stem engaging position relative to said lever.

2. A mailbox signal assembly comprising a housing adapted to be mounted on one side of a mailbox adjacent the mailbox door and having a closed slot in the wall thereof and an opening opposite said slot, a signal flag having a stem extending into said housing through said slot and pivotally connected adjacent one end thereof to said housing internally of the housing for swinging movements through an angle of approximately 90 degrees relative to said housing, spring means mounted in said housing and engaging said stem resiliently urging said stem to a position at one end of said slot corresponding to the signaling position of said signal flag, said stem being movable by manual pressure thereon toward the other end of said slot against the force of said spring, a lever extending through said opening into said housing and pivotally connected at one end to said housing internally of the latter, a dog pivotally mounted on said lever within said housing and engaging said one end of said stem to hold the latter in position adjacent said other end of the housing slot against the force of said spring means, said lever being urged outwardly of said housing to release said dog from said stem by the spring pressure of said one end of the stem on said dog and being held against movement outwardly of said housing when the outer end thereof is engaged by an associated mailbox door, said dog being tiltable on said lever to permit said one end of said stem to pass the dog when the stem is manually moved from said one end toward said other end of said housing slot, a spring engaging said dog and resiliently urging the dog to its stem engaging position relative to said lever, and a rain guard in the form of a longitudinally curved strip mounted intermediate its length on said stem adjacent said housing and extending partly around said housing in covering relationship to said housing slot.

3. A mailbox signal assembly comprising a housing adapted to be mounted on a mailbox adjacent the mailbox door, a signal flag having a stem pivotally mounted near one end thereof within said housing and extending outwardly of the housing and movable relative to the housing between two limiting positions, a spring in said housing resiliently urging said stem to one of said limiting positions relative to said housing, said stem being manually movable to the other of said limiting positions against the force of said spring, a lever pivotally mounted at one end in said housing and projecting from said housing for engagement by an associated mailbox door to hold the lever in a predetermined position relative to the housing, a latch dog pivotally mounted on said lever within said housing and engaging the adjacent end of said stem when said stem is in said other limiting position to preclude movement of said stem by said spring to said one limiting position as long as said lever is held in said predetermined position relative to said housing and freeing said stem for movement to said one limiting position when said lever is released to move away from said predetermined position relative to the housing, said latch dog being tiltable on said lever for the passage of the adjacent end of said stem past said latch dog when the stem is moved from said one to said other limiting position while said lever is held in said predetermined position relative to said housing, and a spring engaging said latch dog and resiliently urging the latch dog to its stem engaging position relative to said lever.

4. A mailbox signal assembly comprising a support adapted to be mounted on a mailbox adjacent the mailbox door, a signal flag having a stem pivotally mounted near one end thereof on said support and movable relative to the support between two limiting positions, a spring connected between said support and said stem resiliently urging said stem to one of said limiting positions relative to said support, said stem being manually movable to the other of said limiting positions against the force of said spring, a lever pivotally mounted on said support and engageable at one end by an associated mailbox door to hold the lever in a predetermined position relative to the support, a latch dog pivotally mounted on said lever and engaging the adjacent end of said stem when said stem is in said other limiting position to preclude movement of said stem by said spring to said one limiting position as long as said lever is held in said predetermined position and freeing said stem for movement to said one limiting position when said lever is released to move away from said predetermined position, said latch dog being tiltable on said lever for the passage of the adjacent end of said stem past said latch dog when the stem is moved from said one to said other limiting position while said lever is held in said predetermined position, and a spring engaging said latch dog and resiliently urging the latch dog to its stem engaging position relative to said lever.

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