

May 25, 1926.

1,586,503

E. WILLARD ET AL
DOOR OPERATED SWITCH

Filed June 14, 1924

2 Sheets-Sheet 1

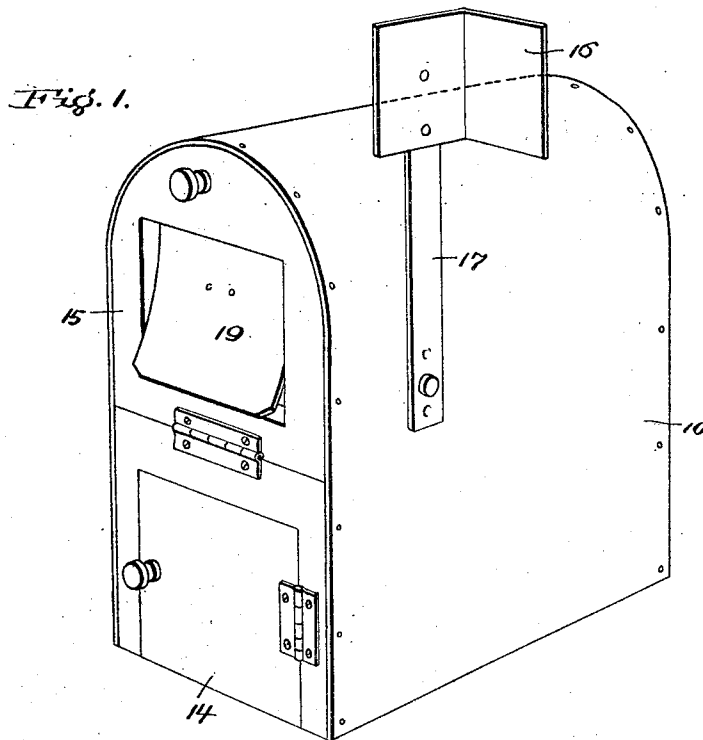
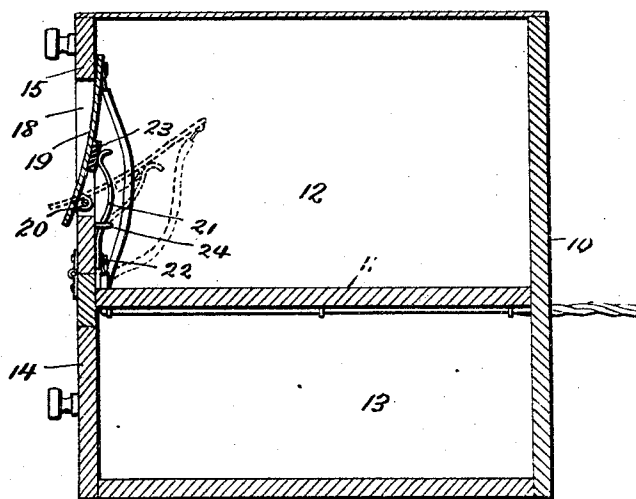


Fig. 2.



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Fig. 3.

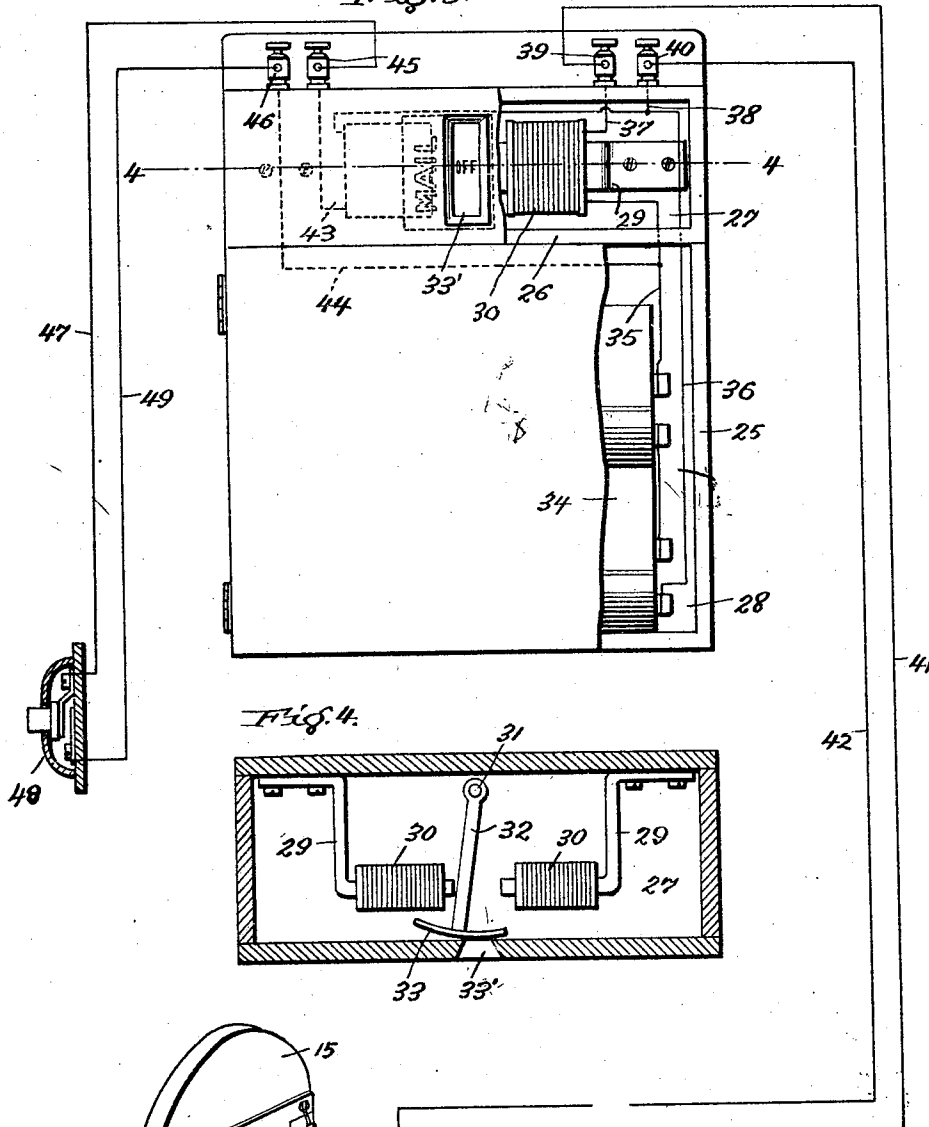
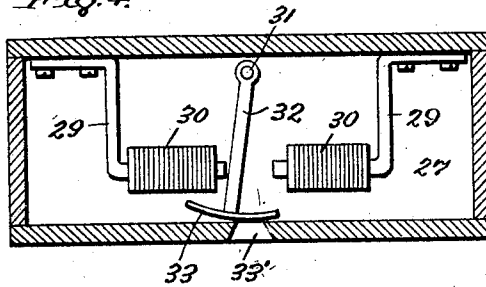
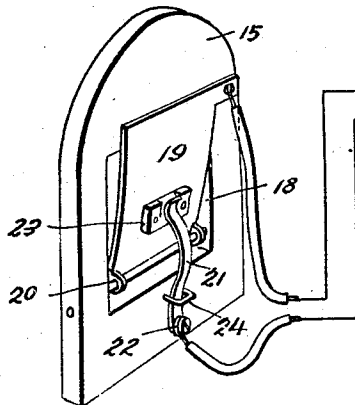


Fig. 4.



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Patented May 25, 1926.

UNITED STATES PATENT OFFICE.

ENOCH WILLARD AND ALBERT WILLARD, OF PAWNEE, OKLAHOMA.

DOOR-OPERATED SWITCH.

Application filed June 14, 1924. Serial No. 720,043.

1,586,503

This invention relates to improvements in signal devices and has for an object the provision of means especially adapted for use in rural districts for indicating at a remote point the presence of mail in a mail box.

Another object of the invention is the provision of a signal device for the above purpose which is electrically operated and includes a novel form of circuit closer which also functions to close the opening in the box through which the mail matter is inserted, so that the said closer provides a combined switch and door.

With the above and other objects in view, the invention further includes the following novel features and details of construction, to be hereinafter more fully described, illustrated in the accompanying drawings and pointed out in the appended claim.

In the drawings:—

Figure 1 is a perspective view of a mail box constructed in accordance with the invention.

Figure 2 is a vertical sectional view of the same.

Figure 3 is an elevation partly broken away showing the signal device and illustrating diagrammatically the controlling means therefor.

Figure 4 is a section on the line 4—4 of Figure 3.

Referring to the drawings in detail wherein like characters of reference denote corresponding parts, the invention which is capable of use in various ways is illustrated in connection with a mail box for which it is especially adapted. This box is indicated at 10 and is preferably divided by a partition 11 into a compartment 12 for holding delivered mail matter and a compartment 13 for holding outgoing mail matter. The compartment 13 is provided with a hinged door 14, while the compartment 12 is provided with a hinged door 15 through which the mail may be removed. The box is further provided with a signal device or flag 16 which is mounted upon the upper end of a pivoted arm 17 so that the presence of outgoing mail in the compartment 13 may be indicated to the collector.

The door of the compartment 15 is provided with an opening 18 and this opening is normally closed by a door or closure 19. This door 19 is pivotally mounted near its lower end as shown at 20 and this end of the door extends outward beyond the outer

face of the door 15 to provide a water shed, while the upper end of the door 19 extends inward and bears against the inner face of the door 15. The door 19 is yieldingly held in closed position by means of a spring arm 21, one end of which is secured to the door 15 as shown at 22 while the opposite end bears upon a block 23 which is formed of insulating material, the purpose of which will be presently apparent. The spring arm 21 extends through a retaining loop or staple 24.

When the carrier desires to deposit mail within the box, the door 19 is pressed inward as shown by the dotted lines in Figure 2 and after being released, the door will return to the full line position in said figure so as to close the opening 18.

The reference character 25 indicates the casing of a signal device which is located at a remote point from the box 10. For example, the box in rural districts is placed at the roadway while the signal device is located within a dwelling or other building. The casing 25 is divided by a partition 26 into compartments 27 and 28, the former having mounted therein upon bracket arms 29, spaced electromagnets 30. Pivottally mounted between these magnets upon a pivot 31 is an arm 32 which carries at its outer end an arcuate plate 33. This plate contains the words "Mail" and "Off" which are visible through a sight opening 33' provided in the casing 27. Both of the magnets are connected in circuit with a source of current, such as a battery 34, conductors 35 and 36 leading from opposite sides of the battery to the magnets 30, while conductors 37 and 38 lead from the magnets to binding posts 39 and 40 respectively. The binding post 39 is connected by a conductor 41 with the securing means 22 of the spring arm 21, while the binding post 40 is connected by a conductor 42 to the door 19. The magnets 30 are also connected by conductors 43 and 44 to binding posts 45 and 46 respectively, while the binding post 45 is connected by means of a conductor 47 with one terminal of a push button switch 48. The other terminal of this switch is connected to the binding post 46 by means of a conductor 49.

When the door 19 is moved pivotally to permit of the insertion of mail into the compartment 12, the spring arm 21 will ride of the insulated block 23 and engage the door 19 whereupon current will flow from

side of the battery 34, through the conductor 35, one magnet 30, the conductor 37, the binding post 39, the conductor 41, the spring arm 21, the door 19, the conductor 42, the binding post 40, the conductor 38 and through the conductor 36 to the opposite side of the battery 34. This will energize the magnet and will cause the arm 32 which acts as an armature, to be drawn over toward the right in Figures 3 and 4 of the drawings so that the word "Mail" will appear before the sight opening 33. The owner of the box will thus be notified of the presence of mail therein. After the mail has been removed, the switch 48 may be operated so as to close a circuit through the battery 34, the conductor 35, the conductor 44, the contact 46, the conductor 47, the contact 45, the conductor 43, the magnet 30 and through the conductor 36 back to the battery 34. This will energize the other magnet and move the arm to the position shown in Figures 3 and 4 of the drawings.

The invention is susceptible of various

changes in its form, proportions and minor details of construction and the right is hereby reserved to make such changes as properly fall within the scope of the appended claim.

Having described the invention what is claimed is:—

The combination with a receptacle having an opening, a metallic door for said opening, said door being connected in an electric circuit and forming the movable contact member of a circuit closer, a spring engageable with the door to yieldingly hold the latter in closed position, said spring being also connected in an electric circuit and forming a relatively stationary yieldable contact member for the circuit closer and an insulating block carried by the door and forming a bearing member for the spring when the door is closed to interrupt a circuit.

In testimony whereof we affix our signatures.

ENOCH WILLARD.
ALBERT WILLARD.