

J. W. COE, JR.
ELECTRIC ALARM FOR MAIL BOXES.
APPLICATION FILED OCT. 11, 1910.

1,025,738.

Patented May 7, 1912.

Fig. 1.

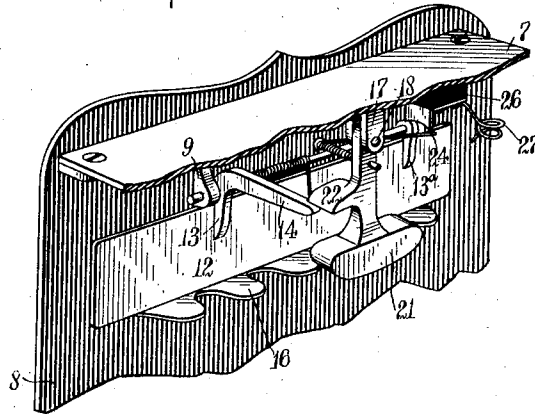


Fig. 4.

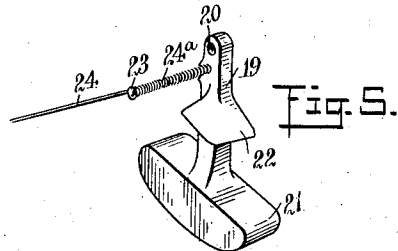
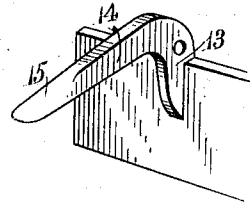


Fig. 2.

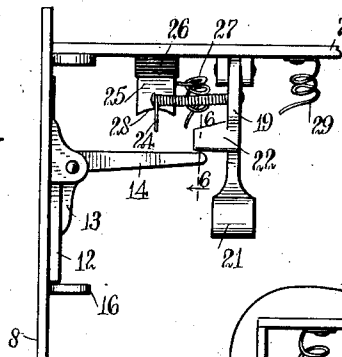


Fig. 3.

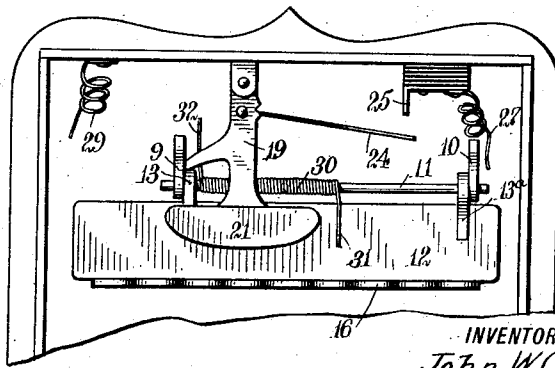
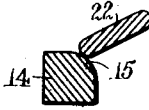


Fig. 6.



WITNESSES

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ELECTRIC ALARM FOR MAIL-BOXES.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, JOHN W. COE, JR., a citizen of the United States, and a resident of Yonkers, in the county of Westchester and State of New York, have invented a new and Improved Electric Alarm for Mail-Boxes, of which the following is a full, clear, and exact description.

My invention relates to electric alarms for mail boxes, my more particular purpose being to provide, for use in connection with mail boxes, an electric alarm operated by movements of the door of the letter drop and comprising an improved contact mechanism including a swinging pendulum for causing the alarm to be energized several times in quick succession.

My invention further comprehends mechanism whereby the total duration of the alarm is prolonged and made to change slightly in character during the time it is energized, in order to attract the attention of the operator.

My invention further comprehends, in a device of this kind, improved means whereby various movable parts, essential to the operation of the contact mechanism, are prevented from sticking or lodging in positions derogatory to the proper action of the various parts.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a fragmentary perspective showing my device as applied to a private mail box; Fig. 2 is a side elevation of the same; Fig. 3 is a fragmentary rear elevation of the device; Fig. 4 is a detail showing in perspective the rounded actuating finger used for starting the pendulum into action; Fig. 5 is a detail showing in perspective the pendulum and contact wire carried by it; and Fig. 6 is a detail showing an enlarged section upon the line 6—6 of Fig. 2, looking in the direction of the arrow.

A mail box 7 is provided with a face plate 8 and mounted inside of this face plate are two hinge members 9, 10 supporting a rod 11.

At 12 is a door which is provided with two hinge members 13, 13^a, the hinge member 13 having the form indicated in Fig. 4 and being provided with an actuating finger 14. This actuating finger has a rounded portion 15, the cross section of which is

shown to advantage in Fig. 6. The rod 11 extends through the hinge members 13, 13^a and by aid of these hinge members the door 12 is suspended from the rod. Below the door 12 and disposed close to one edge of the same is a grid 16 extending slightly inward from the face plate 8. A bracket 17 is mounted inside of the door of the casing and carries a pin 18. A pendulum rod 19 is provided with a hole 20 through which the pin 18 extends. The lower end of the pendulum rod 19 is provided with a weight 21 of substantially arcuate form and integral. The pendulum rod 19 is further provided with an actuating plate 22. The pendulum rod, the actuating plate and the weight are integral with each other and have generally the form shown in Fig. 5. The actuating plate 22 is rounded at its outer edges for a purpose hereinafter described.

A pin 23 is mounted upon the pendulum rod 19 and is parallel with the pin 18. A contact wire 24 is provided with a portion 24^a wound upon this pin and secured directly to the pendulum rod 19. The wire 24, including the portion 24^a wound upon the pin 23, is of considerable length. This is for the purpose of practically increasing the resiliency of the contact wire 24. If each loop of the portion 24^a wound upon the pin is bent only to a slight extent, the wire, after being so bent and being released, can readily regain its normal shape. This being the case, the wire will last a long time before being worn out or being greatly distorted.

A contact plate 25 is mounted upon a block 26 of insulating material, the latter being secured against the under side of the top of the casing. An insulated wire 27 is connected with the contact plate 25 which is provided with a curved edge 28 against which the contact wire 24 is adapted to lodge. The purpose in curving the edge 28 is to center the contact wire 24, and also in a measure to correct distortion of said wire should it happen, from any accidental cause, or from use, to bend away from a vertical plane passing centrally through the contact plate 28.

At 29 is a wire which is connected with the casing 7. A coiled spring 30 is provided with a straight portion of wire 31 which engages the door 12 and with a similar portion 32 which rests against the face plate 8. The door 12 covers a letter slot

(not shown) in the face plate 8. The wires 27, 29 are connected with a source of electricity and with an alarm device, such as an electric bell.

5 The operation of my device is as follows: The door 12 is normally closed—that is, by action of the spring 31, pressed gently against the inner surface of the face plate 8 so as to maintain the letter slot closed.

10 In order to drop a letter into the mail box, the door 12 is swung inward (to the right according to Fig. 2) until the lower edge of the door clears the grid 16, the letter being passed directly downward through

15 the slot and over the grid. The dropping of a letter into the mail box, therefore, necessitates tripping the door, and consequently an upward rocking movement of the actuating finger 14. This actuating finger

20 being normally just below one edge of the actuating plate tilts this plate upward, and in so doing causes the pendulum to oscillate. The contact wire 24 is therefore moved away from the contact plate 25 by

25 the upward movement of the actuating finger 14. In order, however, for the door 12 to move with sufficient amplitude to allow the letter to be deposited, the upward movement of the actuating finger 14 must

30 be continued to a sufficient extent to enable the rounded portion 15 of this actuating finger to completely clear the actuating plate 22. This being done and the actuating plate 22 being now free, the pendulum

35 swings in the opposite direction to the one in which it was tilted by the upward movement of the actuating finger. During this movement the contact wire 24 first moves away from the contact plate 25, the distance and speed of its travel being controlled entirely by the mechanical movement

40 of the door 12. When, however, the pendulum is released from control of the actuating finger 14, the pendulum in oscillating

45 causes the contact wire 24 to be first raised into engagement with the contact plate 25, then drawn out of engagement with said plate, next again brought into engagement with the plate, and then carried out of engagement with it. A number of successive

50 contacts are thus made between the wire 24 and the plate 25, the total duration of the several contacts being controllable by the number of effective oscillations to which the pendulum is subjected. When, however,

55 the pendulum stops swinging and hangs in its normal position, the contact wire 24 is slightly out of engagement with the plate 25. Each time the contact wire 24 engages the

contact plate 25, an electric circuit is completed as follows: source of electricity, bell or other alarm (these parts not being shown), wire 27, contact plate 25, contact wire 24, casing 7, wire 29 to ground, thence back to source of electricity. The restoration of the door 12 to its normal position, after the letter is dropped into the mail box, while causing the pendulum to oscillate slightly, does not occasion any great movement of the pendulum, and consequently does not bring the contact wire 24 into engagement with the plate 25. Neither does the downward movement of the actuating finger 14 have any marked tendency to disturb the swinging of the pendulum. This is because the pressure of the spring 30 upon the door 12 is quite gentle, and consequently the actuating finger 14 is forced downward with a mild degree of yielding pressure, and moreover the rounding of the portion 15 of the actuating finger and of the edges of the contact plate 22 enable the actuating finger in returning to its normal position to pass by the actuating plate 22 without interfering, to any material extent, with the swinging of the pendulum.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. A device of the character described, comprising a movable door, a pendulum adapted to swing, means for enabling movements of said door to start said pendulum swinging, a pin carried by said pendulum, a contact wire wound upon said pin and provided with a straight portion extending from said pin, and a contact plate disposed partially within the path of travel of said straight portion for the purpose of being engaged and disengaged by said portion as said pendulum swings.

2. The combination of a swinging door, an oscillating pendulum to be actuated thereby, a contact wire carried by said pendulum, and a contact plate provided with a surface of arcuate concave form to be engaged by said contact wire for the purpose of correcting the position of said wire and thereby preventing distortion of the wire, and electrical connections for said contact plate and said contact wire.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN W. COE, JR.

Witnesses:

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PHILIP D. ROLLHAUS.