Nov. 3, 1925. 1,560,385

J. LANG ET AL

COIN OR SLUG ACTUATED SIGNALING DEVICE

Filed June 30, 1924 2 Sheets-Sheet 1

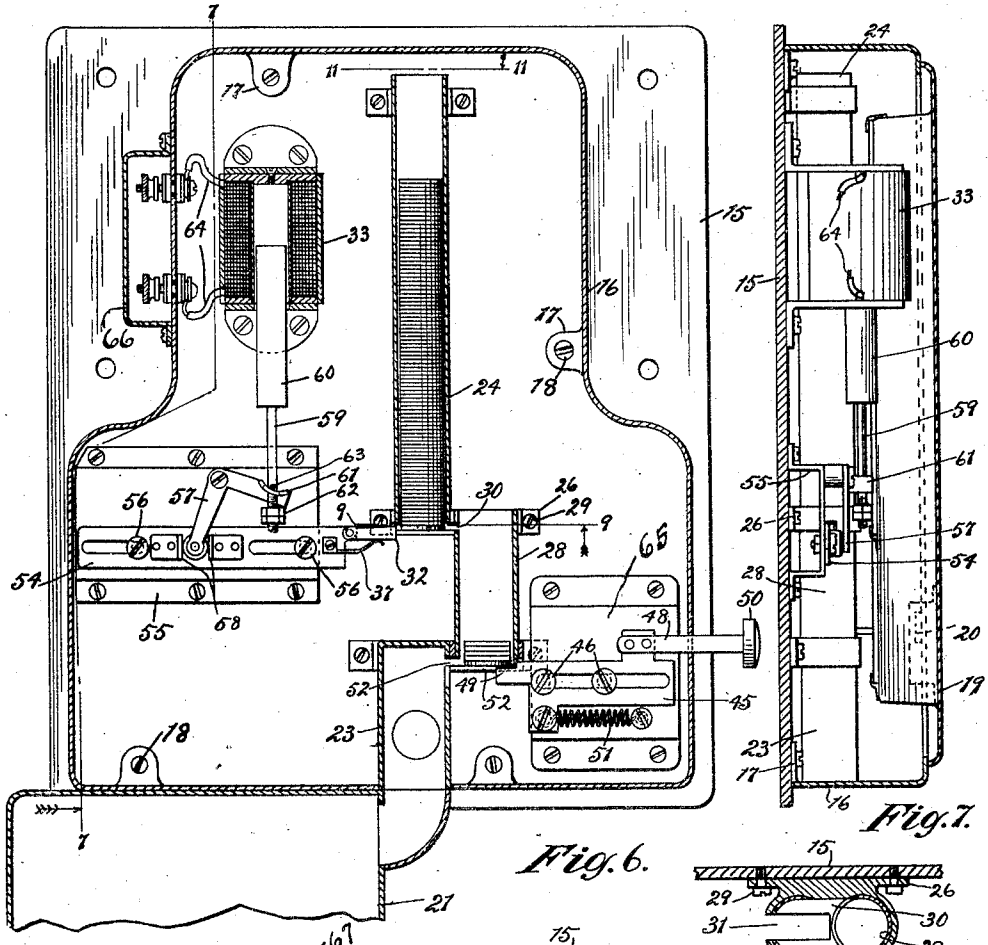


Fig. 6.

Fig. 7.

Fig. 9.

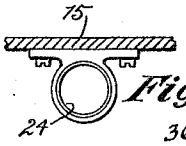


Fig. 11.

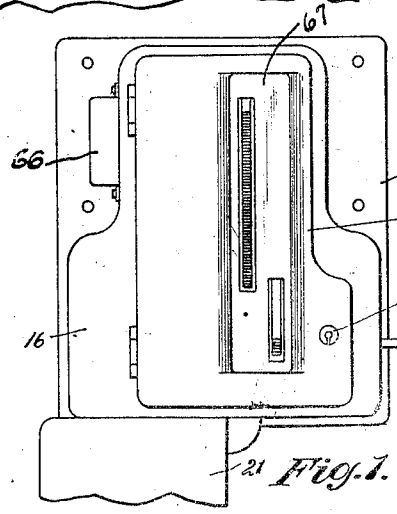


Fig. 1.

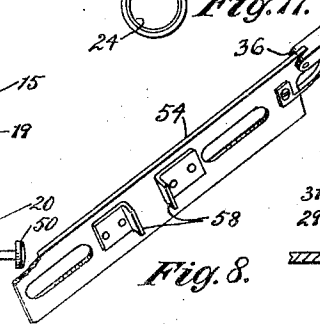


Fig. 8.

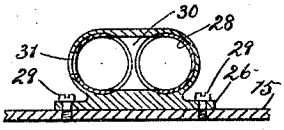


Fig. 10

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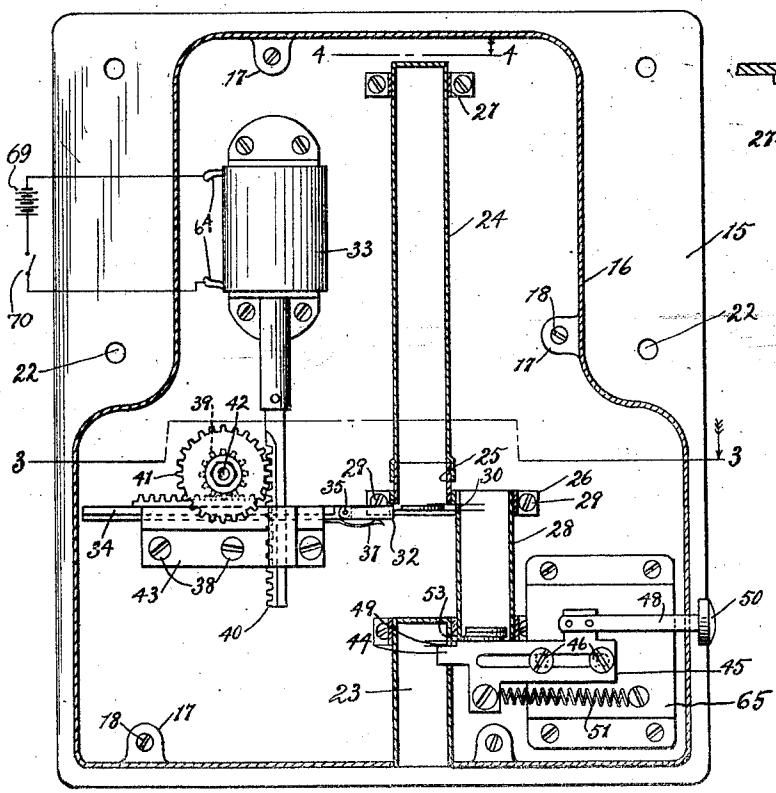


Fig. 2.

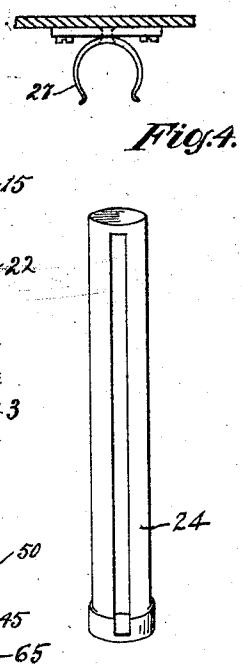


Fig. 4.

Fig. 5.

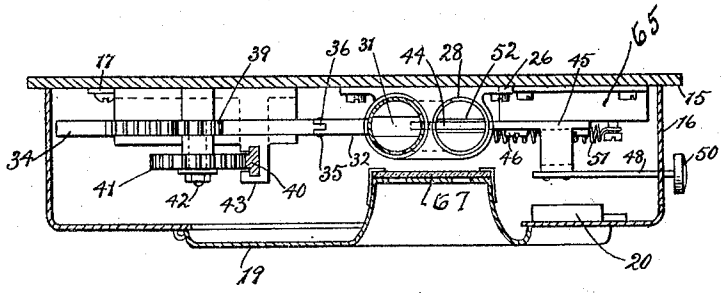


Fig. 3.

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UNITED STATES PATENT OFFICE.

JOHN LANG, OF CHICAGO, AND FRANK S. PILARSKI, OF CICERO, ILLINOIS.

COIN OR SLUG ACTUATED SIGNALING DEVICE.

Application filed June 30, 1924. Serial No. 723,288.

To all whom it may concern:

Be it known that we, JOHN LANG and FRANK S. PILARSKI, citizens of the United States, and residents of Chicago and Cicero, in the county of Cook and State of Illinois, respectively, have invented certain new and useful Improvements in Coin or Slug Actuated Signaling Devices, of which the following is a specification.

The invention relates to improvements in telephone attachments in which coins or slugs are used for signaling the central telephone operator. Such devices as now constructed do not give the owner or party responsible for the telephone complete control over what the user may insert for the purpose of signaling the operator and as a result spurious coins or slugs are frequently inserted for the purpose of using the phone without properly compensating the responsible party. The common device of providing a slot with a projecting tip for the reception of slugs with complementary grooves is easily defeated by forcing the tip out of the path of the spurious slug. The effectiveness of such a device is further limited by the fact that the space on the slug for such grooves is limited and as a result there must be a substantial similarity in some of them. This makes it possible that slugs intended for other phones may be successfully used.

The primary object of the invention is to provide in a device of the class described means whereby the owner, or the party responsible for the telephone, has absolute control of the coins or slugs which may be used to signal the telephone operator.

Another object is to provide in a telephone attachment, means which makes impossible the use of any other than the slugs or coins provided by the owner or lessee of the telephone for the purpose described.

Another object is to generally improve signaling attachments for telephones and similar devices which are operable by the insertion of a slug or coin.

A further object is to provide an improved method of control of coin or slug actuated signaling devices.

Other further and more specific objects will become apparent as the specification proceeds.

These objects are attained by the mechanism illustrated in the accompanying drawings, in which,

Fig. 1 is a front elevational view of the device;

Fig. 2 is a sectional elevational view showing the preferred embodiment of the invention;

Fig. 3 is a sectional view taken along the line 3—3 of Fig. 2;

Fig. 4 is a detail view along the line 4—4 of Fig. 2;

Fig. 5 is a detail view of a coin or slug box forming part of the device;

Fig. 6 is a sectional elevational view showing an alternative embodiment of the invention;

Fig. 7 is a sectional view along the line 7—7 of Fig. 6;

Fig. 8 is a detail view of a plunger shaft forming a part of the alternative embodiment of the invention;

Fig. 9 is a view taken in the direction of the arrows along the line 9—9 of Fig. 6;

Fig. 10 is a view taken in the opposite direction of the arrows along the line 9—9 of Fig. 6, and,

Fig. 11 is a detail along the line 11—11 of Fig. 6.

Similar numerals refer to similar parts throughout the views.

The invention resides in the provision of both a supply compartment and a receiving receptacle for coins and slugs, mechanism inaccessible to the user of the telephone which is operable by the owner to feed the coins and slugs contained in the supply compartment into the receiving compartment, and means accessible to the user of the telephone, adapted to feed the coins and slugs so fed into the receiving compartment on into the signaling device of the telephone.

The plate or back wall 15 and the housing 16 form an enclosure and mounting for the various parts of the device. The housing 16 is mounted on the plate 15 by a plurality of inturned lips 17 which are fastened to the plate by the screws 18. A hinged door 19 makes the interior of the housing accessible and is provided with a lock 20 to prevent access by unauthorized persons. The inturned lips make it impossible to remove the housing from the plate when the door is locked.

The housing 16 is shown as mounted upon

the upper part of a telephone housing 21 and is fastened to the wall of the room by screws or bolts 22. A slug conduit 23 leads from the enclosure formed by the housing 16 and the plate 15 down into the telephone housing 21. A coin traveling down the conduit 23 into the telephone housing 21 actuates the usual central operating signaling device. A view of the signaling device is omitted as unnecessary to the proper disclosure of the invention.

A tube 24 provides a supply compartment for coins or slugs. The tube has a closed upper end and a lower flared end adapted for a tight fit over a short tube 25 which is mounted on a supporting member 26. The upper end of the tube is held in position by a resilient clamp member 27 which partially encircles the tube and permits its easy removal for loading when the door 19 is opened.

A tube 28 is also mounted in the member 26 adjacent to the tube 25 and extends downwardly therefrom to provide a receiving compartment for coins and slugs which are fed therein from the tube 25, as hereinafter more particularly described. The member 26 is mounted upon the plate 15 by screws 29 and provides a passage 30 for coins and slugs from the tube 25 to the tube 28, the adjacent walls of the tubes being slotted for that purpose, as best shown in Figs. 2, 9 and 10.

A recess 31 in the member 26 immediately under the tubes 24 and 25, provides a runway for a reciprocating plunger 32. The plunger is positioned to engage the bottom coin contained in the tube 25. Movement of the plunger 32 to the right, as viewed in Fig. 2, forces the coin with which it engages, through the passage 30, out of the tube 25, and into the receiving tube 28. Upon completion of each return stroke, the plunger 32 is in position to engage the following coin which has moved by gravity into the path of the plunger and by repeated reciprocations, it successively feeds coins from the supply tube 25 into the receiving tube 28.

The plunger 32 is operated by a rack and pinion which is actuated by a solenoid 33. The plunger is pivotally mounted upon the outer end of a bar 34 by means of a pin 35, which extends through a tongue and groove mounting 36. A leaf spring 37 yieldingly holds the plunger in a slightly upwardly sloping position. The tongue and groove joint 36 has a square bearing at its upper portion, as is best shown in Fig. 8. This bearing serves as a stop to limit the upward slope of the plunger produced by the spring 37. This upward slope is of advantage in preventing a tendency of the plunger to slide under the coin or slug as it actuates the same. The lower corner of the tongue is rounded to permit the plunger to tilt downwardly on its return stroke and thereby minimize the friction between the plunger and the coin which has moved down to replace the coin last fed out.

A member 43 which is fastened to the plate 15 by screws 38, provides a runway for the bar 34 and a support for the actuating elements connecting the plunger 32, with the solenoid 33. These elements include a vertical rack 40, which is also mounted in a runway in the member 43, and is connected at its upper end to the core of the solenoid 33. A pinion 41 is engaged by the rack 40, the pinion being rigidly mounted upon one end of a stud shaft 42. This shaft is journalled in the member 43 and has a relatively smaller pinion 39 mounted on its other end which engages teeth on the bar 34 and forms with the bar a horizontally reciprocating rack and pinion. Coins or slugs which have been fed into the tube 28 from the tube 25, are delivered into the conduit 23 by a manually operable plunger 44. This plunger reciprocates in a groove 52 which is formed in the bottom of the tube 28, as is shown in Fig. 2 and Fig. 6. The plunger comprises a bar 45 which is slotted for mounting on a supporting member 65, by means of screws 46. Operation of the plunger is accomplished by a stem 48 which projects through the housing and is provided with a push button 50 mounted on its outer end. A spring 51 normally maintains the plunger 44 in the position shown in Fig. 6, in which position the lowermost coin in the tube 28 rests in a recess 49 formed on the outer end of the bar 45. Upon pushing the plunger to the left against the resiliency of the spring 51, the coin is carried through a slot 53 in the wall of the tube 28, and dropped into the conduit 23, whence it travels down into the signaling apparatus of the telephone (not shown). Upon release of the pressure on the button 50, the spring 51 pulls the plunger back to its normal position where it receives the following slug in the recess 49.

An alternative actuating means connects the plunger 32 with the solenoid, 33, as shown in Fig. 6, wherein the plunger 32 is mounted upon a slotted bar 54. The bar 54 is mounted upon a supporting member 55 by the screws 56 which project through the slots and permit the bar to be reciprocated by a bell crank lever 57. One arm of the lever 57 is positioned between lugs 58, which are shown in detail in Fig. 8. The other arm of the lever 57 is connected by the bolt 59 to the core 60 of the solenoid. The threaded end of the bolt 59 projects through an opening in a laterally extending lug 61 with the lock nuts 62 spaced at sufficient distance that the bolt has gained some momentum in its upward movement before the

nuts strike the lug. A pin 63 on the bolt 59 moves the lever 57 back to its initial position.

A pair of conductors 64 are connected to the solenoid 33 and to a source of electrical supply 69, with a switch 70 operable to open and close the circuit. The switch 70 is preferably operated by pushing buttons which may be placed at any convenient point or points where they are accessible to the party in control of the phone, as for example, the cashier in a hotel, drug store and other places where public telephones are installed.

The party desiring to use the telephone can only do so by consent of the party in charge who, instead of delivering a slug to the would be user of the phone, presses the button which energizes the solenoid by closing the circuit through the conductors 64. This causes the core of the solenoid to rise carrying with it the bolt 59. In the embodiment shown in Fig. 2, the racks and pinions are thereby moved to force the plunger 32 to the right and to deliver a coin or slug into the tube 28, where it is available to the user who has purchased the right to use it, and can do so by actuating the manually operable plunger 44. Upon opening the circuit the core drops back and moves the rack and pinions in the opposite direction carrying with them the plunger 32 to its initial position where it is available for delivery of the following coin or slug. In the embodiment shown in Fig. 6, the bolt operates the bell crank lever and the plunger in the same way, the bolt having gained some momentum before the lever is actuated by contact with the lock nuts 62 in its upward movement and with the pin 63 in its downward movement, whereby the plunger is started rapidly and the retarding effects of friction are minimized.

Thus it will be seen that we have provided a coin or slug delivering device which prevents the use of a telephone or similar device by unauthorized persons, or the use of spurious coins or slugs therein and eliminates any possibility of the person responsible for the telephone being defrauded by the users.

We claim:

1. In a device of the class described, the combination of a closed receptacle having two compartments for coins, means for retaining a supply of coins in one compartment, electrical means for delivering one of said coins into the other compartment, manually operated means for ejecting said coin from the last mentioned compartment, and means for operating said electrical means from a distance.

2. In a device of the class described, the combination of a closed receptacle having two compartments for coins, means for retaining a supply of coins in one compartment, a plunger operable for delivering one of said coins into the other compartment, manually operated means for ejecting said coin from the last mentioned compartment into the signaling apparatus of a telephone, and means for actuating said plunger which positioned so as to be inaccessible to a person actuating said manually operated means.

3. A telephone attachment of the class described, comprising a closed receptacle having two compartments for coins, means for retaining a supply of coins in one compartment. electrical means operable to deliver one of said coins into the other compartment, said means being inaccessible for operation by the user of the telephone, manually operated means accessible to the user for ejecting said coin from the last mentioned compartment into the signaling apparatus of the telephone, and means for operating said electrical means from a distance.

4. In a device of the class described, the combination of a closed receptacle having two compartments for coins, means for retaining a supply of coins in one compartment, electrical means for delivering one of said coins into the other compartment, comprising a solenoid, a reciprocating plunger adapted to engage a coin in one of said compartments and to carry and deposit the coin in the other of the compartments, and elements connecting said plunger with said solenoid, whereby energizing of the solenoid moves the plunger in one direction and deenergizing of the solenoid moves the plunger in the opposite direction, manually operable means for ejecting said coin from the last mentioned compartment into the signaling apparatus of a telephone and means for energizing said solenoid positioned so as to be inaccessible to a person actuating said manually operated means.

Signed at Chicago, Ill., this 27th day of June, 1924.

JOHN LANG.
FRANK S. PILARSKI.