

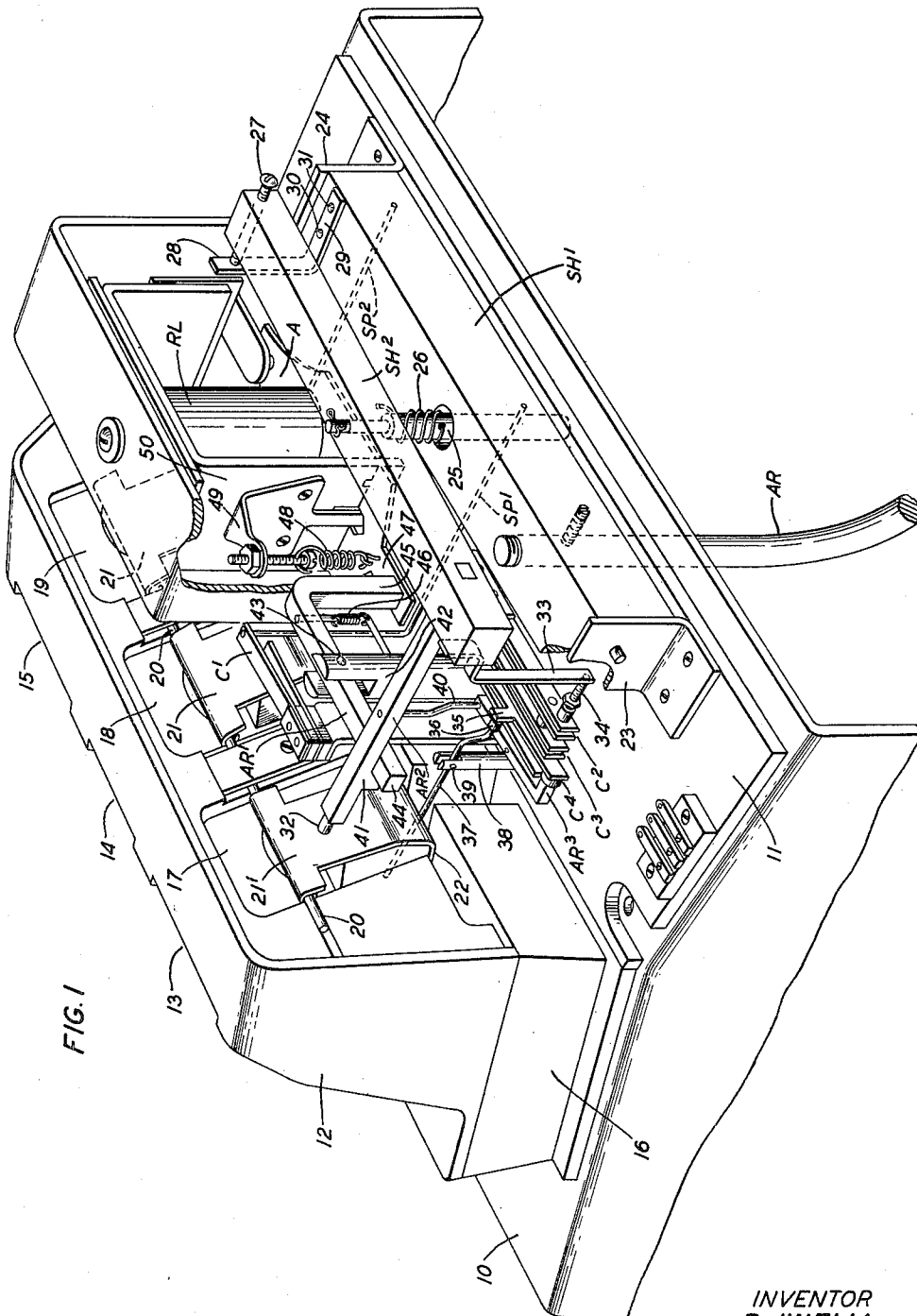
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B. IWEMA
COIN COLLECTOR

2,804,502

Filed Feb. 3, 1954

4 Sheets-Sheet 1



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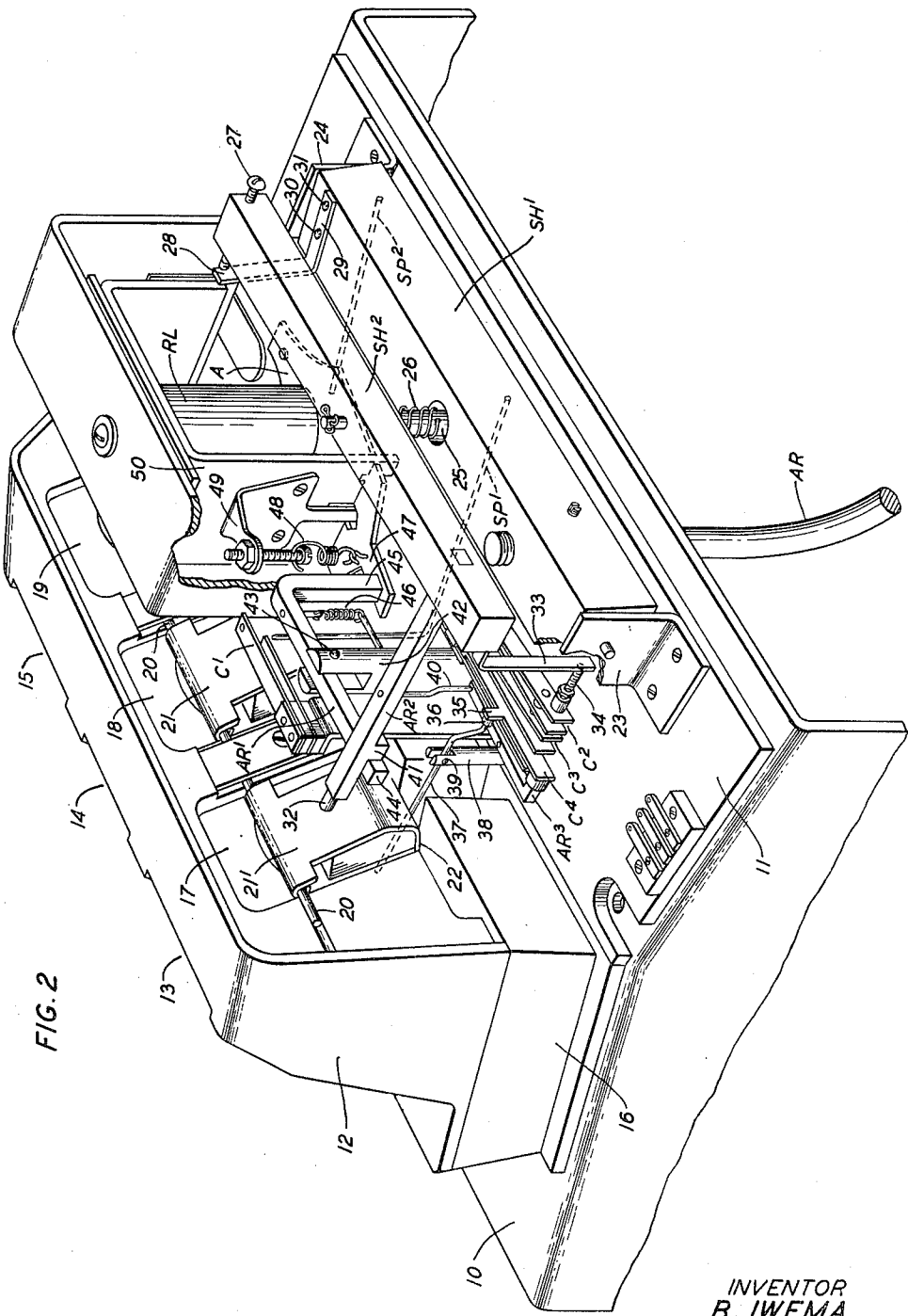


FIG. 2

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2,804,502

COIN COLLECTOR

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6 Claims. (Cl. 179—6.5)

This invention relates to coin collectors for telephone pay stations of the prepayment type and more particularly to an applique coin gauge unit intended to be used in place of the standard three denomination coin gauge.

One object of the invention is the provision of a coin gauge unit wherein the use of a coin of a predetermined denomination is mandatory for initiating a call but which permits the use of coins of lower or higher denomination for additional charges.

Another object of the invention is the provision of a coin gauge unit wherein the use of a coin of a predetermined denomination is mandatory for initiating a call and a coin of lower denomination previously deposited is not accepted until a coin of larger denomination is deposited.

A further object of the invention is the provision of a coin gauge unit which may be readily substituted on existing coin collectors, for the standard coin gauge, to provide a coin collector of the minimum dime prepayment type.

A still further object of the invention is the provision in a coin collector of the minimum prepayment type, of a coin gauge unit wherein a coin of less denomination than the minimum initial charge, will not be accepted but will remain in the coin slot where it may be retrieved by the caller or accepted at a subsequent time.

The prepayment type of coin collectors for telephone pay stations now in common use follow in general the structure of the coin collector shown and described in United States Patent 1,043,219 of O. F. Forsberg. Coin collectors of this type are constructed to give telephone service when a nickel or a coin of larger denomination is deposited in the coin gauge of the collector.

In those instances where it is desirable to make the initial charge a minimum of a dime, the present coin collector will accept the dime to initiate the call but deposit of a dime will not be mandatory. It is, therefore, necessary to provide some means for converting the minimum nickel type of coin collector into a minimum dime type and it is with this conversion means that the present invention is concerned.

The present invention contemplates a coin gauge applique unit which is intended to replace the standard coin gauge on telephone coin collectors of the minimum nickel type wherein the nickel slot in the coin gauge is temporarily blocked until a dime or a quarter has been deposited to initiate a call. In the structure of this invention, the nickel slot is provided with a shutter or gate which blocks the passage of a nickel but permits the coin to remain in view and so positioned that it may be retrieved by the calling party.

Electrical and mechanical means are operatively associated with the gate for maintaining it closed when nickels should not be accepted and opening it when acceptance of a nickel is proper, for example, to make up additional charges.

The invention will be more clearly understood from

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the following detailed description when read in connection with the following drawings of which:

Fig. 1 is a view in perspective of the device of this invention, in its normal position, that is with the receiver (not shown) on the switch hook and the electrical wiring deleted for the purpose of clarity.

Fig. 2 is a view similar to Fig. 1, but with the receiver (not shown) off the hook and the nickel slot blocked.

Fig. 3 is an exploded schematic view in perspective of the structure shown in Figs. 1 and 2.

Fig. 4 is a fragmentary exploded perspective view of the switch hook operated structure disclosed in Figs. 1 and 2.

Fig. 5 is a fragmentary cross sectional view of the nickel slot with the gate out of the way to permit the nickel coin to pass.

Fig. 6 is a view similar to Fig. 5 but shows the nickel arrested by means of the gate which is moved under the nickel slot.

Fig. 7 is a schematic circuit diagram disclosing the electrical circuit employed in the structure shown in Figs. 1 and 2.

The telephone coin collector to which the present invention is applicable, is of the same general structure as that shown in O. F. Forsberg Patent 1,043,219. It is, therefore, not believed necessary to described or show this structure.

The present invention is primarily concerned with an applique unit for telephone pay station coin collectors wherein by the use thereof, it will be mandatory to deposit a coin of a larger denomination than a nickel to initiate a call, but will permit the subsequent collection of nickels to make up any additional charges.

As shown in Figs. 1 and 2, the numeral 10 designates the top portion of the well known pay station telephone coin collector housing as shown in the O. F. Forsberg Patent 1,043,219 heretofore referred to.

Mounted on the housing 10 by suitable means which are accessible only from the interior of the housing 10, is a base plate 11 upon which the various components which make up the coin gauge applique unit of this invention are mounted. The coin gauge per se comprises a housing 12 provided with the usual coin slots 13, 14 and 15 for the reception of nickels, dimes and quarters respectively, and is mounted on the base member 16 which in turn is secured to the base plate 11. Pivotaly mounted in the recesses 17, 18 and 19, on the common shaft 20, are the magnetized gates 21' and 21, 21 which are provided at their lower or free ends with trough-like projections 22 for the interception of coins of ferrous metal but will permit the passage of coins of non-ferrous metal. The trough 22 on the gate 21', located in the recess 17 which is associated with the nickel slot 13 in the housing 12, also serves to prevent the passage of a nickel when it is moved into position as shown in Fig. 6 by means which will hereinafter be described in detail in connection with the operation of the device of this invention.

Rotatably mounted on the base plate 11 by means of the brackets 23 and 24 is the longitudinally extending shaft SH¹ which is adapted to be actuated by means of the downwardly extending arm AR, the lower or free end of which (not shown) is arranged to be mechanically connected to the usual switch hook arm in the housing so that the removal or replacement of the receiver RC on the hook will cause the shaft 25 to rotate either in a clockwise or a counterclockwise direction. In Fig. 2, the position of the shaft SH¹ indicates that the receiver is off the hook, thus permitting the shaft to rotate counterclockwise under the influence of the springs SP¹ and SP² in cooperation with the armature A and the relay RL, while in Fig. 1, the position of the shaft SH¹ indicates that the receiver is on the hook which is the

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normal or unoperated condition prior to the lifting of the receiver and the depositing of a coin.

Located above the shaft SH¹ and in spaced relation therewith and parallel thereto, is the shaft SH². This shaft is pivotally mounted on the shouldered stud 24 and is biased in a counterclockwise direction, as shown by the arrow in Fig. 3, by means of the coiled spring 26. On the righthand end of the shaft SH², as viewed from the rear and shown in Figs. 1, 2, 3 and 4, is a screw 27, the inner end of which bears against the flat spring member 28, the lower portion 29 of which is secured to the upper face of the shaft SH¹ by means of the screws 30 and 31. Adjacent the opposite end of the shaft SH² and projecting forwardly and at right angles thereto and in substantially the same plane is the arm AR². The free end 32 of this arm is in alignment with the gate 21' and is adapted to control the action of this gate as shown in detail in Figs. 5 and 6.

Positioned on the end of the shaft SH² adjacent the arm AR² is a downwardly depending spring member 33, the free end of which is provided with an adjustable stud member 34. The stud 34 is in alignment with and is adapted to close the contact springs C² and C³ when the receiver RC, as shown in Fig. 3, is on the hook H and the arm AR is in its normal position as shown in Figs. 1 and 3 with the contact springs C⁴ open as shown in Fig. 3. The function of these springs in connection with the operation of the device of this invention will hereinafter be described in detail. As shown, the contact spring assembly is provided on one of its members, with an upstanding ear 35 which is in engagement with the end 36 on the offset arm 37 which is pivotally supported on the vertical post 38 at 39. The opposite end of the arm 37 passes under the gate 21' and extends across the slot 13 so that the initial deposit of a nickel will cause the coin to strike this portion of the arm 37, cause it to tilt and raise the end 36 above the ear 35 on the contact assembly thereby closing the contacts and short-circuiting the dial to prevent the initiating of a call by a nickel or a coin having a lesser denomination than the minimum mandatory amount.

Associated with the contact assembly C⁹ is the pivoted arm AR³ which is connected by the link member 40 to the arm AR² thereby permitting the contact assembly C⁴ to open and the consequent removal of the dial short-circuit, when the arm AR² is actuated by movement of the shaft SH².

Projecting from the lower edge of the arm AR² and adjacent its free end, is a boss 41 which as shown in Figs. 1 and 3 under one condition is arranged to engage one side of the L-shaped arm AR¹ and in another condition to engage the opposite side as shown in Fig. 2. The arm AR¹ is pivotally supported on the post 42 by means of the pin 43 and has its straight end portion 44 underlying the arm AR² as shown, and held in contact therewith by means of the spring 46. The opposite or bent over end portion 45 projects downwardly and is held in cooperative engagement with the end 47 of armature A on the relay RL by means of the spring 48. One end of the spring 48 is secured to the end of the armature A at 47 and the other end is secured to the bracket member 49 on the relay mounting bracket 50. Thus the end 44 on the arm AR¹ will always be in engagement with the underside of the arm AR² either on one side or the other of the boss 41 and the end 45 will be in engagement with the end 47 of the armature A. Hence when the relay RL is energized, by the closing of the contact C¹ to permit line current to pass therethrough, by the removal of the receiver from the switch hook which in turn permits the arm AR to rotate the shaft SH¹, the armature A will be held operated as shown in Figs. 1 and 3.

In practice the device of this invention will operate as follows:

With the device in its normal or operable position as

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shown in Figs. 1 and 3, the lifting of the receiver RC from the hook H releases the arm AR and the combined forces of the springs SP¹ and SP² cooperating with the armature A rotates the shaft SH¹ in a counterclockwise direction. This causes the closing of the contact C¹ which permits line current to energize the relay RL and hold the armature A in its operated position as shown, at the same time the spring SP² moves away from the armature A and the stop 28 moves away from the screw 27 in the shaft SH². Since the spring SP¹ is longer than the spring SP², the contact C¹ will close before the spring SP² releases its hold on the armature A.

When the coin of the minimum amount acceptable or a larger amount is deposited, for example, a dime or a quarter, the relay RL is shunted thereby releasing the armature A. The release of the armature A moves the end 45 of the arm AR¹ upwardly against the tension of the spring 48 and the arm AR¹ being pivoted at its midpoint on the pin 43 causes the end 45 to move downwardly thereby unlatching the arm AR² from the end 44 of the arm AR¹ thus permitting the boss 41 to ride over the arm AR¹ and assume the position as shown in Figs. 1 and 3.

Due to the pressure of the contact springs C² and C³ and the coil spring 26, the arm AR² will immediately be restored to normal. This action opens the nickel gate 21', opens the contacts C² and C³, moves the end 36 of the arm 37 out of contact with the ear 35 on the contact spring C⁴ thereby permitting the subsequent deposit of a nickel which will operate the contact springs with the boss 41 on the arm AR² in contact with the opposite side of the arm AR¹ as shown in Figs. 1 and 3. Thus the depositing of nickels in addition to dimes and quarters will be accepted but the deposit of a nickel to initiate a call will cause the operation of the short-circuiting springs C³ and C⁴ and will not permit the call to be initiated.

While I have shown and described the preferred embodiment of my invention, it is to be understood that various changes and modifications may be made therein without departing from the spirit of the invention.

What is claimed is:

1. A coin gauge applique unit for telephone pay station coin collectors comprising in combination, a coin gauge having a plurality of slots therein for the reception of coins of different denominations, means adjacent the lowest denomination coin slot for blocking said slot to prevent the passage of a coin into said slot and the subsequent acceptance of the coin deposited therein, and means actuated by deposit of a coin of a larger denomination in one of the remaining coin slots to permit an arrested coin in said lowest denomination slot to be released and accepted.

2. A coin gauge applique unit for telephone pay station coin collectors comprising in combination, a coin gauge having a plurality of coin receiving slots therein, a gate mounted adjacent the lowest denomination coin slot to provide a barrier therein for preventing the passage of a coin into said slot and the subsequent acceptance of the coin deposited therein, and means in operative engagement with said gate for opening said gate to permit the coin to be accepted, said means operable by the deposit of a coin of a larger denomination in one of the remaining coin slots.

3. A coin gauge for telephone pay station coin collectors comprising in combination, a coin collector housing, a switch hook mounted in said housing, a telephone receiver operatively associated with said switch hook, a coin gauge mounted on the top of said housing, said coin gauge having therein a plurality of coin receiving slots for the reception of coins of different denomination, a gate pivotally mounted in the coin slot adapted to receive the coin of lowest denomination, means in operative engagement with said gate for maintaining said gate closed, said means operative by the removal of the receiver from the switch

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hook, and electromagnetic means operable by the depositing of a coin of a larger denomination for opening said gate to permit the acceptance of the coin of lower denomination.

4. A coin gauge for telephone pay station coin collectors of the minimum dime initial rate comprising a coin gauge having therein a plurality of coin slots adapted to receive nickels, dimes and quarters, means in said nickel slot for preventing the passage of a nickel into said slot and the subsequent acceptance thereof, said means holding said coin in a retrievable position and removed by the depositing of either a dime or quarter in their respective slots whereby the nickel will be accepted and subsequent nickels to make up additional charges, will be accepted.

5. A coin gauge applique unit for a telephone pay station coin collector comprising in combination a coin collector housing, a switch hook mounted in said housing, a telephone receiver operatively associated with said switch hook, a coin gauge having therein a plurality of slots for the reception of coins of different denominations, a gate pivotally mounted in one of said slots to provide a barrier therein for preventing the acceptance of a coin deposited therein, a rotatable shaft connected to said switch hook, a pivoted bar adjacent said shaft and in operable engagement therewith, an arm extending from said bar, the free end thereof in engagement with said gate, said rotatable shaft operated by the removal of the receiver from the switch hook, to actuate said bar to cause said extending

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arm to engage and close said gate, and electromagnetic means operable by the depositing of a coin of a larger denomination for opening said gate to permit the acceptance of a coin of lower denomination.

6. A coin gauge applique unit for telephone pay station coin collectors comprising in combination a coin collector housing, a switch hook mounted in said housing, a telephone receiver operatively associated with said switch hook, a coin gauge mounted on said housing and having therein slots for the reception of nickels, dimes and quarters, a gate pivotally mounted in said nickel slot to provide a barrier therein for preventing the acceptance of a coin deposited therein, a rotatable shaft connected to said switch hook, a pivoted bar adjacent said shaft and in operable engagement therewith, an arm extending from said bar, the free end thereof in engagement with the lower portion of said gate, said rotatable shaft operated by the removal of the receiver from the switch hook to actuate said bar and said arm to cause the closing of said gate, and electromagnetic means operable by the depositing of a dime or quarter for opening said gate in said nickel slot to permit the acceptance of a nickel deposited therein.

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