G. T. BUCHANAN.

SIGNAL DEVICE FOR TOLL COLLECTING APPARATUS.

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1,143,356.

Patented June 15, 1915.

Fig 1

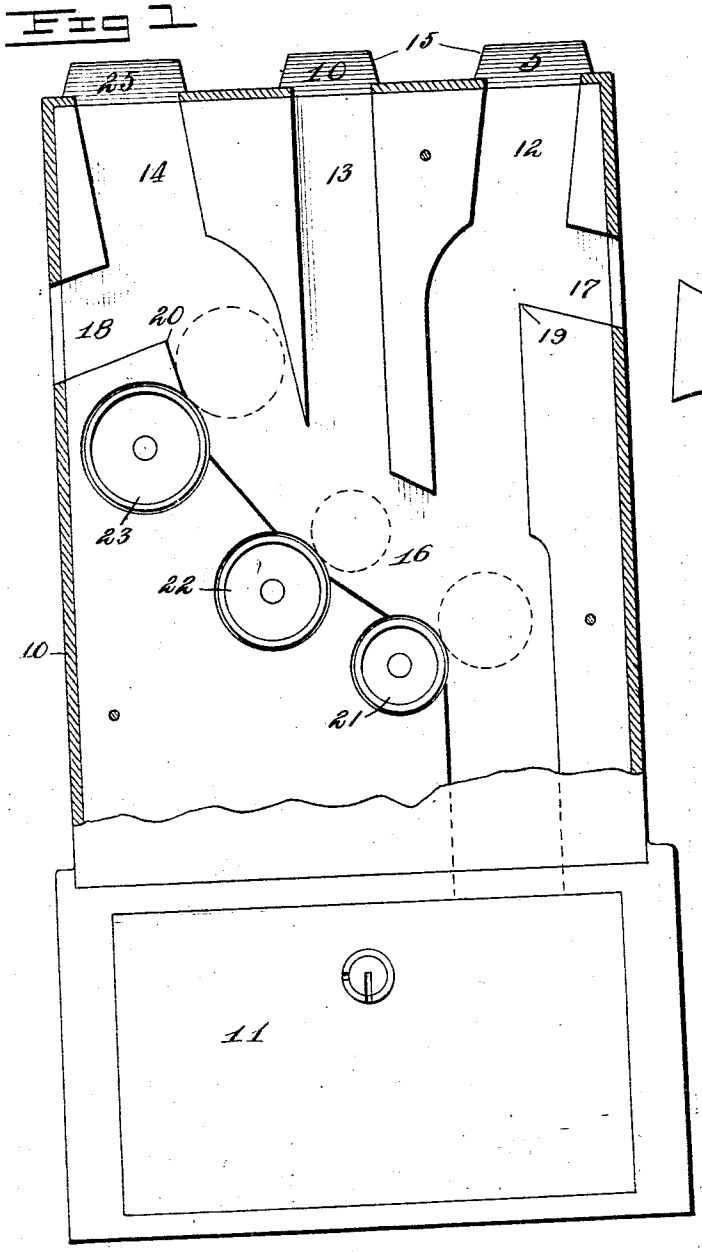
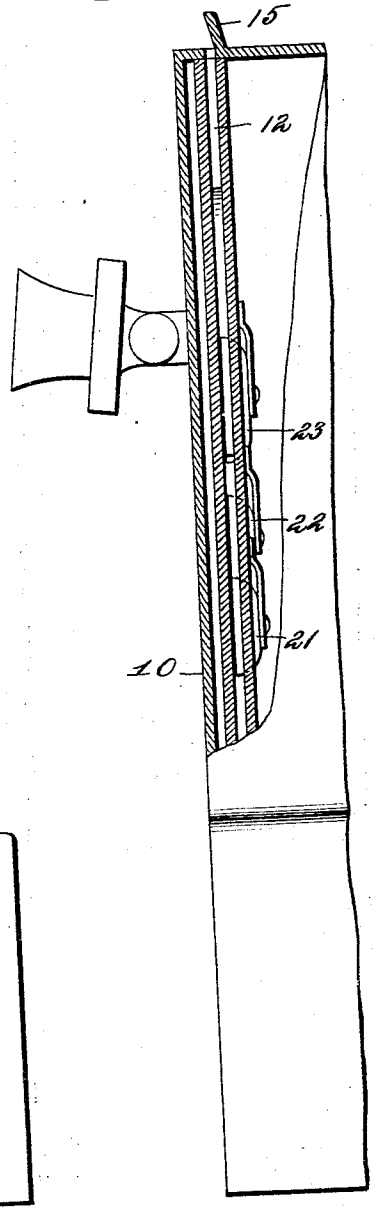


Fig 2



Inventor

George T. Buchanan

Witnesses

H. C. Robinette

S. P. Hollingsworth

By Lyons, Cushman & Reed

Attorneys

UNITED STATES PATENT OFFICE.

GEORGE T. BUCHANAN, OF HIGHLAND PARK, MICHIGAN.

SIGNAL DEVICE FOR TOLL-COLLECTING APPARATUS.

1,143,356. Specification of Letters Patent. Patented June 15, 1915.

Application filed October 22, 1914. Serial No. 868,079.

To all whom it may concern:

Be it known that I, GEORGE T. BUCHANAN, a citizen of the United States, residing at Highland Park, in the county of Wayne and State of Michigan, have invented new and useful Improvements in Signal Devices for Toll-Collecting Apparatus, of which the following is a specification.

This invention relates to toll-collecting devices for use at telephone pay stations and other places where prepayment for service is required, by providing one or more slots or runways of different sizes into which coins of proper value to pay for services rendered is deposited, and if proper payment has been made the coin will cause a signal to be sounded in the device that will be heard at the central station, and indicate by its pitch, the number of tones sounded, and sequence of the tones the value of the coin paid.

The object of the invention is to provide a simple and efficient alarm to be sounded by the coins as they pass through the collecting device to the place of storage. Coins of different values sounding primarily alarms of different pitches, and, secondary, an additional alarm or alarms differing from the primary pitch, the sequence and number of which alarms indicate to the central office operator the amount of toll paid. This object is accomplished by connecting the delivery end of each runway with a common cross-channel, and placed in proper relation with said cross-channel an alarm device, such as a number of gongs equal to the number of runways, and in position to be struck by a coin passing through any one of said runways, and also any other alarm that may lie in the passage of the coin as it descends through the channel.

Referring to the accompanying drawing, Figure 1 is a front elevation partly in section of the improved alarm for toll collecting devices. Fig. 2 is a side elevation of the same partly broken away.

In the drawing, 10 designates the casing of the toll collecting device of well-known construction, within which are a plurality of runways to receive coins or tokens of different values, said runways leading to a drawer 11 at the bottom of the casing into which the coins are deposited after passing through the device. The runways, of which three are shown in the present representation, are indicated at 12, 13 and 14, and are designed to receive respectively coins of the value of five, ten, and twenty-five cents. The runways open at the top of the casing in front of upstanding lugs 15 upon each of which is prominently displayed a number indicating the value of the coin to be deposited. The runways 12, 13 and 14 deliver at their lower end into a cross-channel 16 that extends downwardly and at an angle across the bottom of the runways and thence turns downwardly and opens at its lower end into the drawer 11. The runway 13 for coins of the value of ten-cents is the narrowest of the three, and lies in a vertical position, so that a coin deposited therein falls straight downward into the cross-channel 16 and is delivered therethrough into the drawer 11. The channel 12 at the right of the channel 13 is of a width equal to the diameter of a five-cent coin and inclines for a portion of its length toward the channel 13 as it passes to the cross-channel 16.

The runway 14 for twenty-five cent pieces is at the left of the runway 13, and also inclines toward said runway 13, its lower end entering the cross-channel 16. Midway the length of the runways 12 and 14 are branch channels 17 and 18 respectively, through which coins of less diameter than those designated to be placed in said channel are deflected and caused to escape from the device. Separators or deflectors 19 and 20 are placed in the respective runways 12 and 14 below the branch channels 17 and 18 upon which all the coins deposited in said runways fall, such as are smaller than the properly designated coins are caused by said deflectors to pass through the branch channels because the center of gravity of said smaller coins fall within the edges of the separators, while the proper coins, such as five-cent pieces and twenty-five cent pieces engage the separators with their centers of gravity outside said edges of the separator and continue through the runways.

Mounted in any desired manner at the bottom of the cross-channel 16 are three alarm devices or gongs 21, 22 and 23, each of which gongs is placed below one of the runways, so that a coin traversing the runway will strike the gong immediately below. As arranged, the gong 21 will be struck by the five-cent pieces falling through the runway 12, the gong 22 will be struck by ten-cent pieces falling straight through the runway 13, and twenty-five cent pieces falling

through the runway 14 will sound the gong 23. Five-cent pieces after sounding the gong 21 pass into the cross-channel 16 and thence directly into the drawer 11. Ten-cent pieces after sounding the gong 22 continue down the channel 16, passing the gong 21 which they sound in addition to their own gong 22 before passing to the drawer 11, while twenty-five cent pieces after sounding the gong 23, next strike the gong 22, and then the gong 21, thus producing three distinct alarms before entering the drawer 11, and as the gongs are all of different sizes and produce sounds of different pitch, the central-office operator readily distinguishes the single sound for the five-cent piece, the double sound for the ten-cent piece and the three sounds which indicate the payment of twenty-five cents.

The operation of the alarm is wholly automatic and out of the control of the person depositing the coin or the central-office operator. It is impossible for a user to get service by the payment of a smaller coin than is necessary, as each coin of different value placed in its own slot will sound a distinct alarm, and because of the separating devices in the runways, coins of small denominations placed in the runway indicated for coins of higher value will not cause the alarm to ring because the situation of said alarm is below the separators and, therefore, the improper coins are deflected before they can reach the gongs.

What I claim as new is,—

1. In a signal device for toll-collecting apparatus, a plurality of runways of different widths to receive coins or tokens of different values, a cross channel leading to a place of storage for said coins into which said runways deliver at different points in length thereof, and a plurality of independent signals in said cross channel, said coins operating successively such signals in the channels as lie between the point of delivery of the coin into the channel and the point of delivery of the channel into the place of storage.

2. In a signal device for toll-collecting apparatus, a plurality of runways of different widths to receive coins or tokens of different values, a cross-channel leading to a place of storage into which said runways deliver at different points in the length thereof, and a plurality of independent signals at the bottom of said cross-channel each in line with one of said runways to be operated by the coins passing therethrough, said coins also operating successively such other signals in the channel which they may pass as they travel to the place of storage.

3. In a signal device for toll collecting apparatus, a plurality of runways of different widths to receive coins or tokens of different values, an inclined cross-channel leading to a place of storage into which said runways deliver at different points in the length thereof, a plurality of independent signals in the bottom of said cross-channel each being located in line with a runway in position to be sounded by a coin entering the cross-channel, and also by such coins as contact therewith in their passage through the cross-channel.

4. In a signal device for toll-collecting apparatus, a plurality of runways of different widths to receive coins or tokens of different values, a downwardly inclined cross-channel leading to a place of storage into which said runways deliver at different points in its length, a separating device in one or more of said runways to separate coins of less size from those of proper size and prevent them entering said cross-channel, and a plurality of independent signals situated in the bottom of the cross-channel each below and in line with one of the runways and adapted to be operated by coins of proper size passing therethrough, said signals being so disposed that the coins after sounding their own signal will sound in succession each of the other signals it passes on its way through the cross-channel.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

GEORGE T. BUCHANAN.

Witnesses:
G. C. GROGAN,
M. J. BAKER.