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COIN SORTER CONTROL MECHANISM

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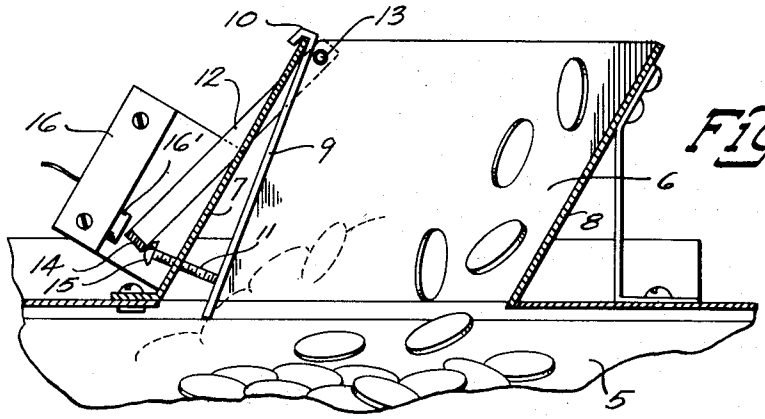


Fig. 1

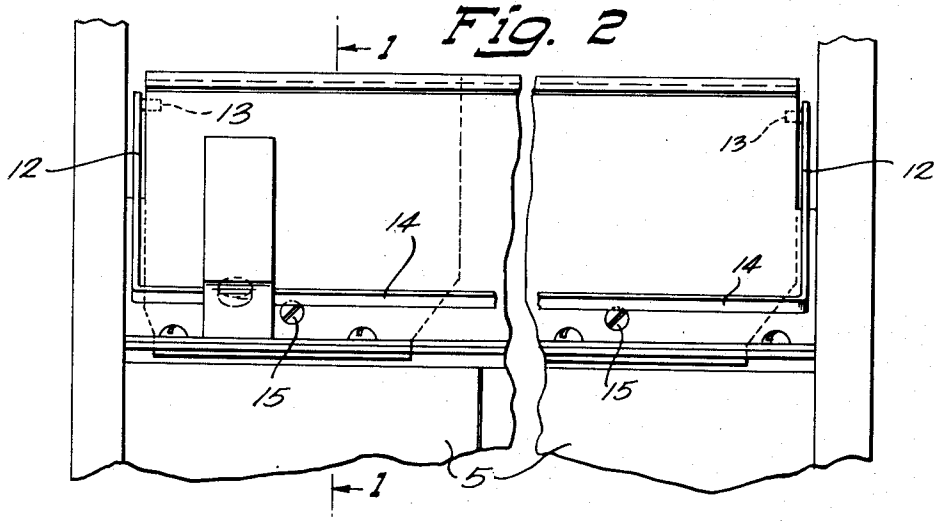


Fig. 2

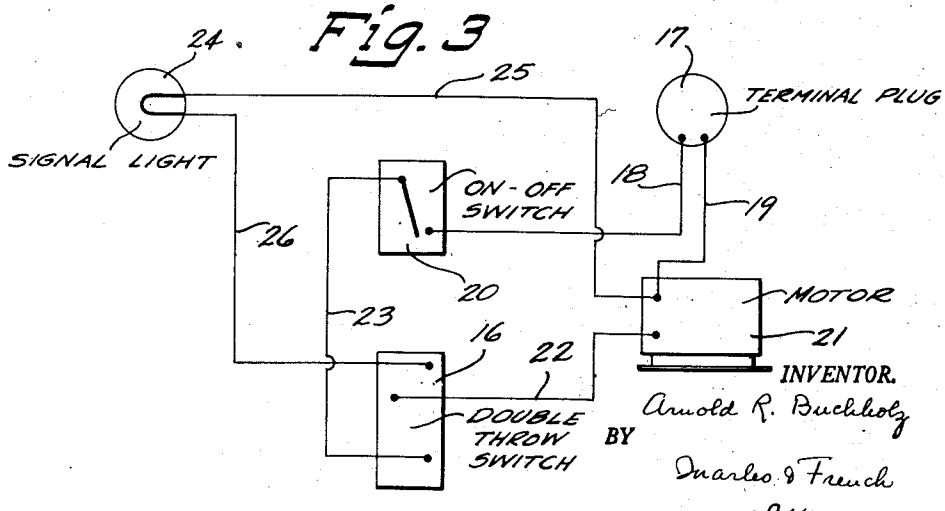


Fig. 3

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COIN SORTER CONTROL MECHANISM

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2 Claims. (Cl. 133—3)

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The invention relates to coin sorting machines and more particularly to coin collection structures of such machines.

In most forms of coin sorting machines, the sorted coins and usually counted coins are discharged in different drawers or receptacles which have to be emptied by the operator when full. Sometimes these receptacles become so full that if they are drawers, they cannot be moved, or if they are temporary coin storage spaces as in the collection structure shown, for example, in U. S. Patent No. 2,348,936, dated May 16, 1944, there is no indication that one or more of these receptacles are full and should be emptied. The object of the present invention is to provide an electrically controlled system for advising the operator when any one of the coin storage receptacles are full and also to preferably shut off the motor which drives the sorter when a coin storage receptacle becomes full, so that the operator does not have the duty of watching to see that the drawers are not overloaded. Without the control such as provided herein, the coins pile up in receptacles and cause the oncoming coins to ultimately jam in their coin chutes to such an extent that ultimately there is a stoppage with the result that when such stoppage occurs, the operator has to cease to wait on customers and has to tip the machine upside down to get these coins extracted and free, and this invariably throws the count off.

The invention further consists in the several features hereinafter described and more particularly defined by claims at the conclusion hereof.

In the drawings:

Fig. 1 is a vertical sectional view through a portion of the coin collection structure of a coin sorting machine taken on the line 1—1 of Fig. 2;

Fig. 2 is an elevation view of a part of the coin collection structure of a coin sorting machine and embodying the invention;

Fig. 3 is a diagrammatic view of a control circuit embodying features of the invention.

Referring to the drawings, the numeral 5 designates a series of receptacles, boxes or drawers, each drawer adapted to receive its sorted designation of coins from a chute 6 above the receptacle, there being a separate chute above each drawer into which the sorted coins are discharged by sorter mechanism of any suitable form which is usually operated by an electric motor.

Each chute 6 includes a front side 7 and a rear side 8. Hung from the upper edge of the front side 7 of each chute 6 is a plate 9 having a hooked upper edge 10 engaging over said upper edge of

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said side 7, said plate 9 being substantially coextensive in width with said side and being of a length to project below the bottom of the chute and be normally carried at an angle to said side 7 as shown in Fig. 1 and carrying a projection 11, here shown as a screw working in a suitable opening in the side 7.

The chutes 6 and their cooperative receptacles are arranged in a row on the frame of the sorter, and a U-shaped stirrup or lever L has the outer ends of its legs 12 provided with pins 13 pivotally mounted in end walls of the end chutes of said row, the transverse portion 14 of this lever being disposed to engage the head 15 of the screw projection 11 of each chute and also adapted to engage parts of a control switch mechanism 16.

Referring to Fig. 3, the numeral 17 designates a terminal plug for connection of current supply wires 18 and 19 with any suitable electric current supply wires. The wire 18 is connected to a starter or on and off switch 20. The wire 19 is connected to one terminal of an electric drive motor 21 for the sorter. The circuit through the motor is completed through the switch mechanism 16 by conductors 22 and 23. A signal light 24 has one of its terminals connected by a conductor 25 with the supply wire 19 and the other of its terminals connected by a conductor 26 with the switch mechanism 16.

The switch mechanism 16 is of a known double throw switch structure by which the conductors 22 and 23 are normally connected together so that on closing the switch 20 current passes to the motor 21 through conductors 18, 23, 23 and 19 for operating the machine. When, however, one of the receptacles 5 becomes loaded to such an extent that coins passing down through its supply chute 6 act on its plate 9 to push the lower end of said plate toward the front side of the chute, the movement of this plate is transmitted through its projection 11 to the lever L whose transverse portion 14 moves into engagement with an operating part 16' of the switch 16 causing a break in the circuit between the conductors 23 and 22 and a make in the circuit or connection between the conductors 23 and 26 so that the motor 21 is stopped and current from the supply then flows through wire 18, switch 20, conductors 23 and 26 to the light 24 and then through conductor 25 to wire 19, thus completing a circuit through the signal light 24 and advising the operator that one of the coin receptacles is full. As soon as this receptacle is emptied of its contents, the plate 9 causing movement of the U-shaped lever to motor cut-out position is free to drop back with said

lever into the position shown in Fig. 2, and the motor 21 is again operated through the restored switch mechanism 16 to drive the sorter.

It will be noted from the above described construction that through a single switch controlling lever and a single control switch mechanism with auxiliary coin operated levers, one for each receptacle, that the motor is stopped and the signal lighted when any one of the receptacles becomes full. There is one receptacle 5 for each denomination of coins sorted by the machine.

I desire it to be understood that this invention is not to be limited to any particular form or arrangement of parts except in so far as such limitations are included in the claims.

What I claim as my invention is:

1. In a coin sorting machine having a series of coin receptacles arranged in a single row, one for each denomination of sorted coin, an electric motor for driving said sorter, a current supply circuit for said motor, and a chute for each receptacle to direct sorted coins thereto, said chutes being arranged in a row above the row of receptacles, of a plate pivotally hung from the top of a side of each chute and extending the length of said side and operable by the coins when they reach a predetermined height within the associated receptacle, said plate having a projection working through an opening in the side of the receptacle from which it is hung, a control switch to cut off the supply of current to the motor, and single switch operating means disposed exterior of and extending along the entire

row of said chutes and adapted to be moved by any one of said projections, so that movement of any one of said plates will move said control switch to motor stopping position.

2. In a coin sorting machine having a series of coin receptacles, one for each denomination of sorted coin, an electric motor for driving said machine and a current supply for said motor, the combination of a control switch in said supply circuit, and means for operating said switch to cut off the supply of current to said motor when any one of said receptacles becomes filled to a predetermined amount with coins comprising a single lever engageable with said switch and separate actuators for said lever comprising an auxiliary coin operated lever in each receptacle having a part working through an opening in the wall of its receptacle and engageable with said single lever.

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