

May 15, 1962

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3,034,516

ELECTRIC RAZOR RENTAL MACHINE

Filed Feb. 20, 1959

2 Sheets-Sheet 1

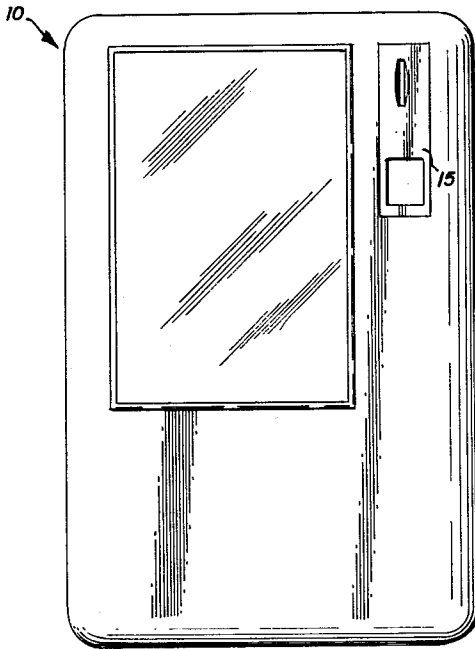


FIG. 1.

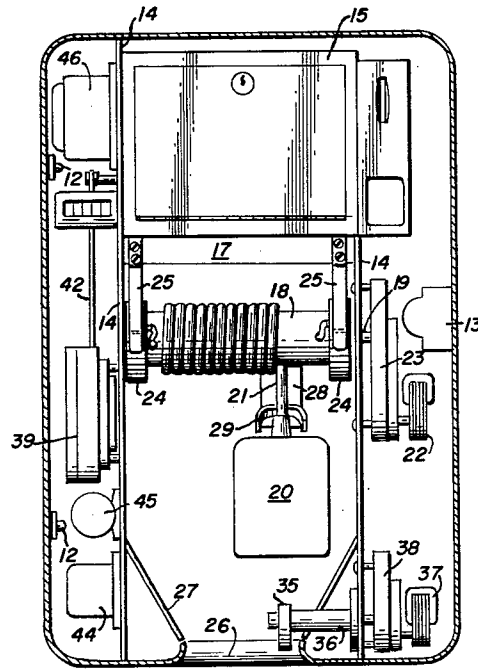


FIG. 2.

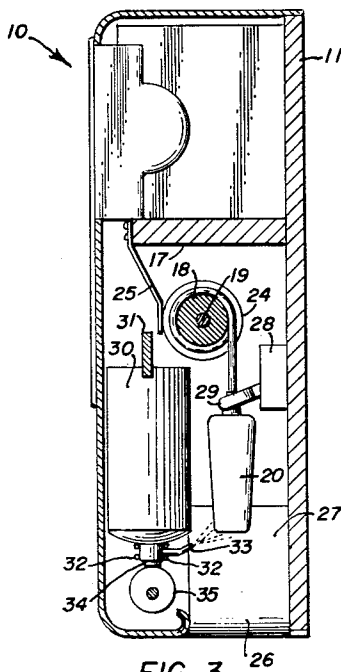


FIG. 3.

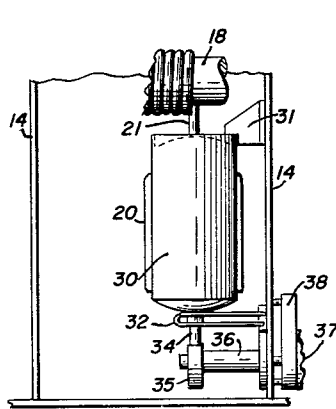


FIG. 5.

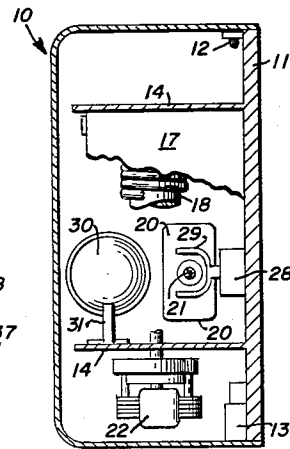


FIG. 4.

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2 Sheets-Sheet 2

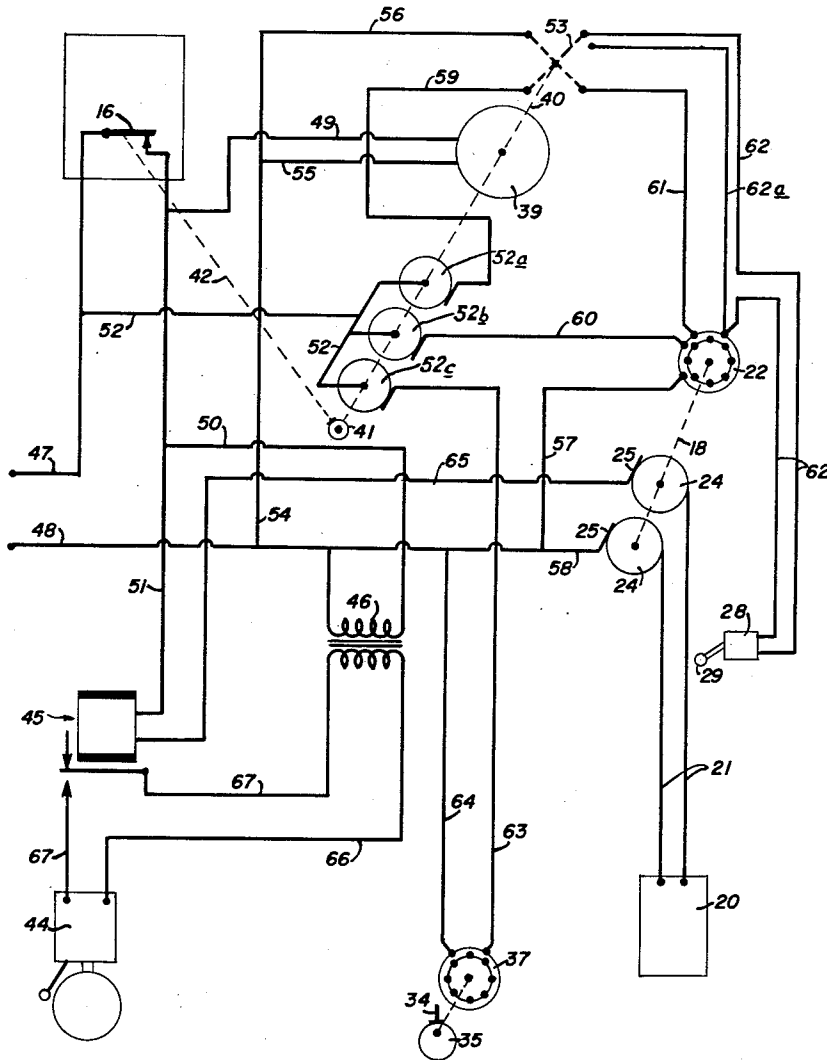


FIG. 6.

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1

3,034,516

ELECTRIC RAZOR RENTAL MACHINE

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1 Claim. (Cl. 132-80)

This invention relates to shaving apparatus and has reference to a coin operated device suitable for use in public places.

Generally, the invention is directed to an electric razor mounted on a reel within a cabinet and including a coin operated switch box and electric timing means for energizing the razor for a predetermined length of time. The referred to apparatus is particularly intended for use by travelers who find it inconvenient to carry their own shaving equipment. The device may be installed in public rest rooms, on trains and airplanes, and other likely places where it would be a convenience.

An object of the invention is to provide improved apparatus having vending machines characteristics for furnishing shaving service to customers.

Another object is to provide shaving equipment for public use which is simple and convenient in its operation.

Another object is to provide coin operated shaving apparatus which automatically extends an electric razor on a cord when a coin is placed in a coin receiving receptacle and one which automatically retracts the razor after a time interval.

Another object is to provide shaving apparatus of the described class which is automatically sterilized after each use.

A further object is to provide alarm means which will sound in the event the razor is severed from the remainder of the apparatus.

These and other objects will become apparent from the following description and accompanying drawings, wherein:

FIGURE 1 is a front elevation of a cabinet housing the razor and apparatus comprising the invention.

FIGURE 2 is a front elevation with the cabinet in section so as to illustrate the internal arrangement of parts.

FIGURE 3 is a vertical sectional view of that portion of the device including the sterilizing means and razor mounting.

FIGURE 4 is a transverse sectional and broken top plan view taken just below the coin receptacle in the upper part of the cabinet and showing the relation of the razor supporting reel, razor, limit switch thereabove, germicide container and motor for operating the latter.

FIGURE 5 is a broken front elevation showing cam means for operating the germicidal device, and

FIGURE 6 is a wiring diagram of an electric circuit for operating the present device.

In the drawings, the reference numeral 10 generally designates a rectangular cabinet mounted on a back 11 by means of fasteners 12 and secured in place by means of a lock 13 accessible from the cabinet side.

Within the cabinet 10 there are spaced vertical partitions 14 having a coin operated switch box and coin receptacle 15 mounted between the upper ends thereof. Since such switch boxes 15 are commercially available the same are not herein described, except to point out that the switch 16 (FIGURE 6) is of the type which is closed by the deposited coin and remains closed until acted upon by a mechanical force. The box 15 is supported on a transverse support 17 between the vertical partitions 14, and beneath the partition there is a reel 18 mounted on a transverse shaft 19 for supporting an electric razor 20. The cord 21 of the razor 20 is wound and unwound on the reel 18 by means of a reversible elec-

2

tric motor 22 mounted on the outer surface of one vertical partition 14 and connected with the reel shaft 19 through a housed gear train 23. Electrical contact is made with the razor 20 through contact rings 24 on the ends of the reel 18 and leaf spring contacts 25 mounted on the transverse support 17. As shown in FIGURE 2, the ends of the cord 21 extend through the body of the reel 18 to make contact with the contact rings 24.

There is an opening 26 in the lower rear center portion of the cabinet 10 large enough to accommodate the razor 20, and which opening has inclined guides 27 secured to opposing inner surfaces of the vertical partition 14 for assuring passage of the razor through the opening when the reel 18 is unwound. Mounted on the cabinet back 11, and at a level just lower than the reel 18, there is a limit switch 28 having a forked lever 29 thereon for contact with the razor 20 when the latter is raised. It is to be noted that the forked lever extends to opposite sides of the razor cord 21 and serves as a guide therefor.

Referring now to FIGURES 3, 4 and 5, there is an inverted aerosol bomb containing a liquid germicide 30 mounted forwardly of the razor 20 when the latter is in its raised position. The end of the bomb 30 is engaged by a bracket 31 on the adjacent partition 14, whereas the lower end or neck is engaged between springs 32 extending from the vertical partition. The bomb nozzle 33 is directed toward the razor 20, and the button 34 of the bomb extends downwardly for coaction with a cam 35 mounted on a horizontal shaft 36 which is driven by a motor 37 and gear train 38. Like the first described motor 22, the cam driving motor 37 is mounted on the outer surface of the adjacent vertical partition 14 through which the shaft 36 extends.

On the outer surface of the vertical partition 14 opposite the partition supporting motors 22 and 37 there is an electric timer 39, the purpose of which is to energize the motor 22 operating the reel 18, and the motor 37 operating the aerosol bomb 30. The components of the timer 39 will be described in connection with the wiring diagram, FIGURE 6, but it is pointed out that the driven shaft 40 of the timer 39 includes a cam 41 which, in turn, operates mechanical linkage 42 connected with the previously referred to coin operated switch 16. An alarm 44, relay 45 and transformer 46 are also mounted on the outer surface of the last referred to vertical partition 14. As will become apparent in the description of the wiring diagram to follow, the alarm system is activated only in the event that the leads to the razor 20 are severed.

Referring now in detail to FIGURE 6, a pair of leads 47 and 48 are connected with a source of electric current, one of which leads (47) is connected with the coin operated switch 16, and thence with the motor of the timer 39, the primary of the transformer 46 and the coil of the relay 45 by wires 49, 50 and 51. An additional wire 52 is connected with the first lead 47, between the source of current and coin switch 16 and with corresponding terminals of intermittent rotary contacts 52a, 52b and 52c on the timer shaft 40. The second lead 48 is connected with the motor of the timer 39, a contact of a reversing switch 53 operated by the timer shaft 40, the aerosol bomb operating motor 37, with the reel actuating motor 22 and with one of the spring contacts leading to the razor 20 by means of wires 54, 55, 56, 57 and 58. The contacts of the reversing switch 53 are arranged so that one is connected with the first motor 22 through the intermittent rotary contacts a and b by means of wires 59, 52 and 60, whereas other contacts of the reversing switch are connected with the field of the motor for changing the phase thereof by means of wires 61 and 62. Since the wire 62 includes the limit switch 28 which may be initially opened by reason of its contact with the razor 20, there is an additional contact in the reversing switch 53

3

and an auxiliary line 62a connected with the same terminal of the motor 22 as wire 62 so as to initially bypass the limit switch 28 until the latter is out of contact with the razor.

The motor 37 operating the aerosol bomb 30 is energized by contact with the third intermitting rotating contact c of the timer 39 by a lead 63 and return lead 64 connected with the second referred to lead 48 at the current source. The current supply to the remaining reel spring contact 25 is by a connection 65 with the coil of the relay 45.

The transformer 46 supplies current to the alarm 44 by wires 66 and 67, one of which (67) is connected with the armature of the normally open relay 45.

In operation, the razor 20 is initially received within the cabinet 10, but when a coin of the required denomination is placed in the coin receptacle 15 the switch 16 thereof is closed, thus energizing the reel operating motor 22 and causes the razor 20 to extend downwardly beneath the cabinet. At the same time, the razor 20 is energized through the described connections and contacts, but by reason of the function of the timer 39 and the reversing action of the reel operating motor 22, the razor 20 is retracted after a time interval. At the completion of the timer cycle the cam 41 is actuated, thus opening the coin operated switch 16 through the mechanical linkage 42. Also, just before the completion of the time cycle the aerosol bomb actuating motor is actuated through the intermittent rotary contact 52c of the timer 39, thus causing the retracted razor 20 to be sprayed with germicide

4

from the bomb 30. In the event the cord 21 supporting the razor 20 is severed, the coil of the relay 45 is de-energized and since the relay thereof is normally open, de-energization of the said coil closes the relay and causes the alarm to sound.

The invention is not limited to the exemplary construction herein shown and described but may be made in various ways within the scope of the appended claim.

What is claimed is:

10 An electric razor rental service machine including a cabinet having an opening in the bottom thereof and including a switch electrically connected with a timer controlled apparatus, said timer controlled apparatus comprising a reel within said cabinet and mounted on a horizontal axis therein, a reversible electric motor connected with and actuating said reel, an electric cord wound on said reel and having a depending extending end, an electric razor mounted on the extending end of said cord and adapted to move through the opening in said cabinet, a motor driven electric timer within said cabinet, electric means connected with said switch energizing said razor and said electric timer motor, and means connected with said timer energizing said reversible motor.

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