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Glessner

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[45] **July 24, 1973**

[54] **MOTORIZED SELF-DUMPING ASHTRAY**

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[21] Appl. No.: **177,281**

[52] **U.S. Cl.** ..... **131/240 R,** 131/231

[51] **Int. Cl.** **A24f 15/08**

[58] **Field of Search** 198/65, 69; 221/84, 221/85; 131/231, 237, 240

[56] **References Cited**

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[57] **ABSTRACT**

A housing construction defining a generally straight inclined upwardly opening trough. The sides of the trough are defined by sidewalls of the housing having upwardly opening transverse cigarette butt receiving grooves formed in their upper edge portions and the bottom of the trough is defined by a generally straight inclined reach of an endless flexible conveyor belt constructed of fireproof material and having upstanding transversely extending ribs projecting upwardly therefrom at points spaced longitudinally therealong. The belt is powered by a motor drivingly connected thereto and disposed within the housing and the end of the aforementioned reach of the belt toward which the belt is drivable curves downwardly into the housing and back underneath the aforementioned belt reach whereby cigarette butts disposed on the belt may fall therefrom within the housing and be collected in upwardly opening receptacle provided for this purpose. The receptacle will be removably supported from the housing for ease in emptying the receptacle and the housing is provided with at least one translucent panel having opaque or distinctive colored translucent advertising indicia thereon. An intermittent operable light source is disposed behind the translucent panel within the housing and an electrical power source is also disposed within the housing for flashing the illumination means whenever the motor for the conveyor belt is driving the same.

1 Claim, 10 Drawing Figures

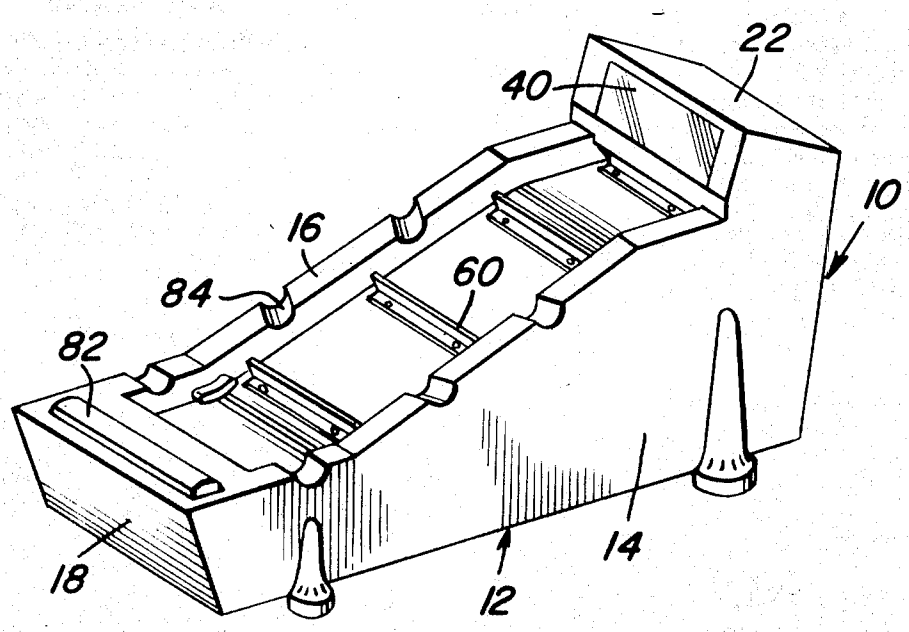


Fig. 1

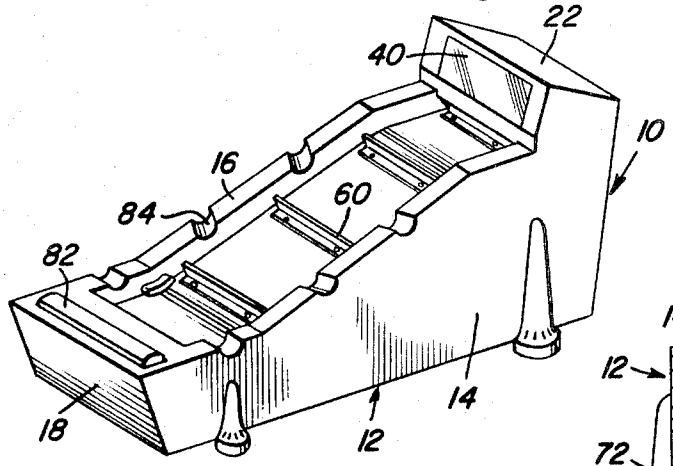


Fig. 4

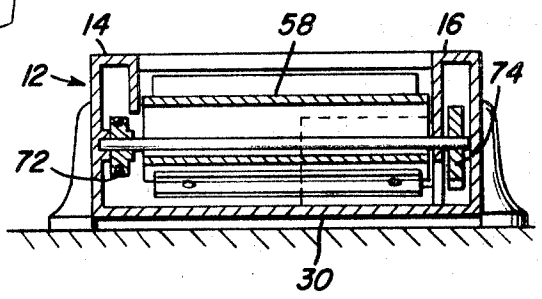


Fig. 2

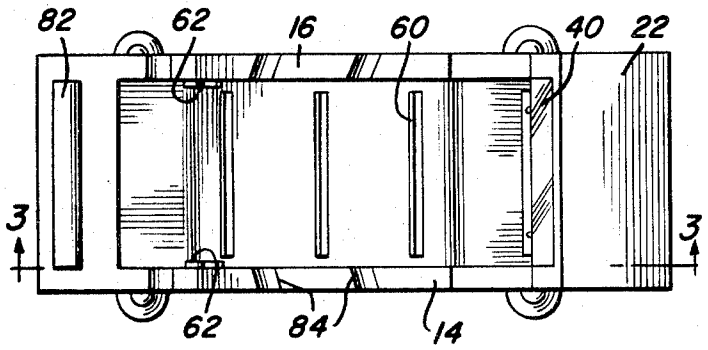


Fig. 5

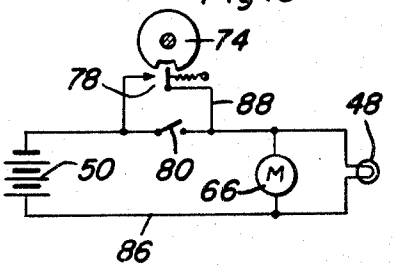


Fig. 3

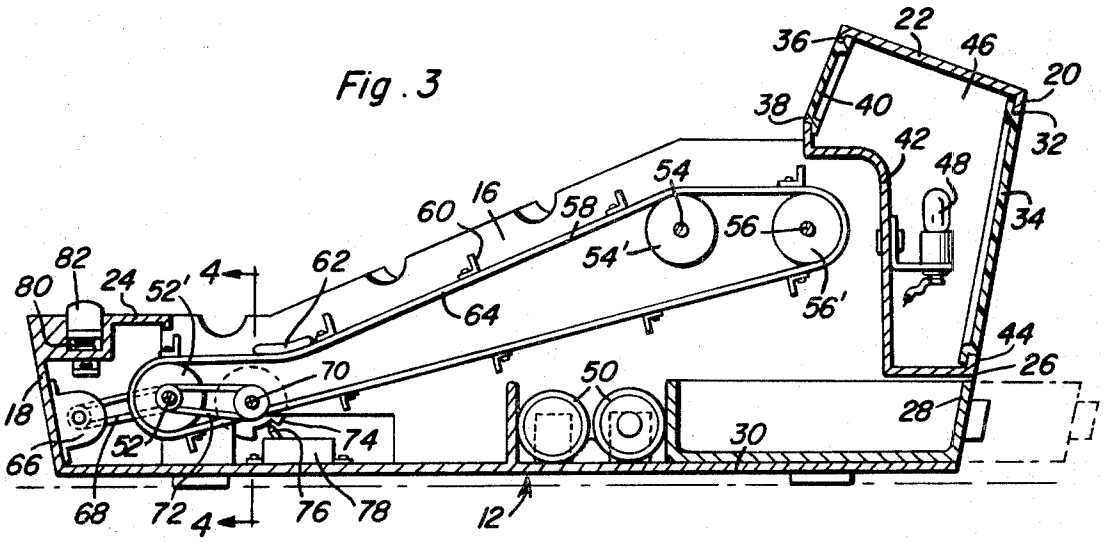


Fig. 6

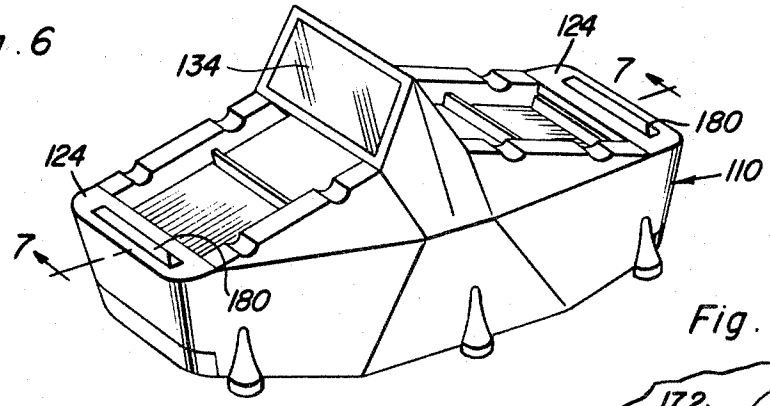


Fig. 9

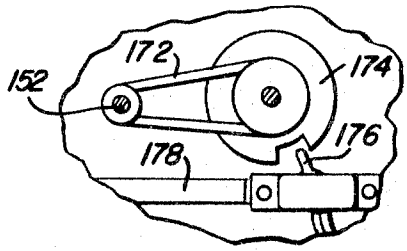


Fig. 7

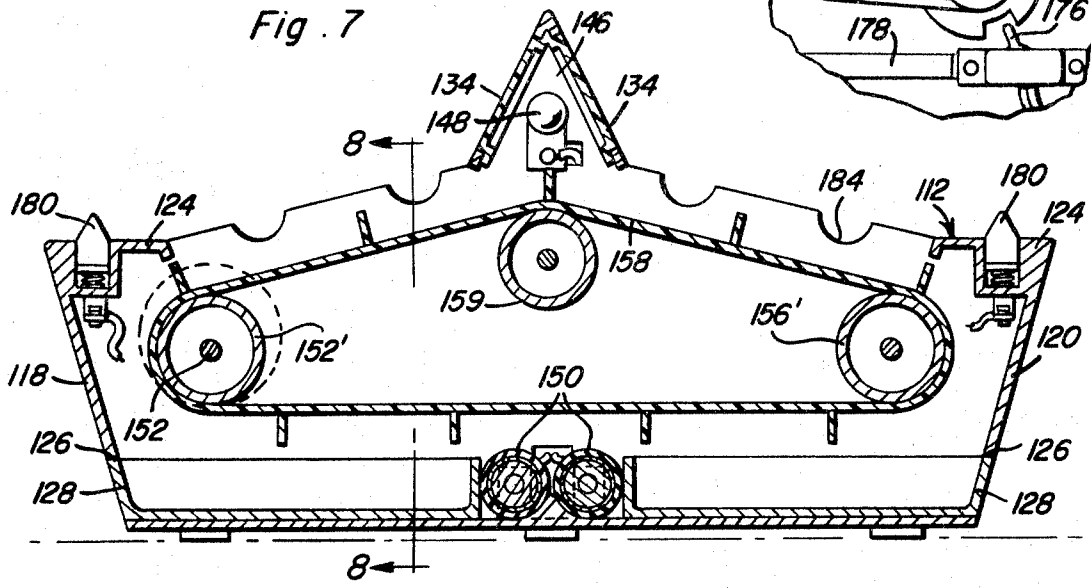


Fig. 8

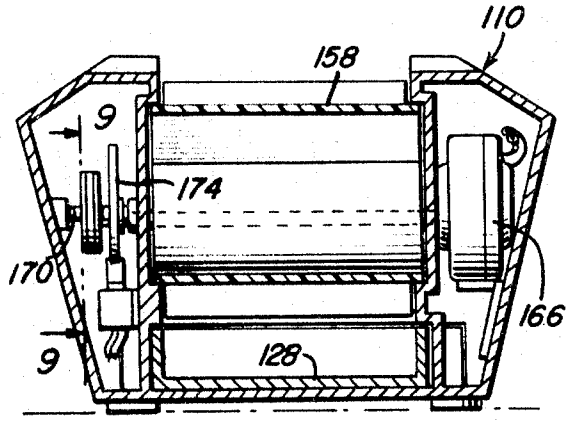
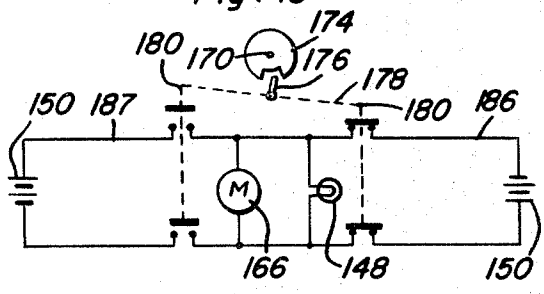


Fig. 10



MOTORIZED SELF-DUMPING ASHTRAY

The motorized self-dumping ashtray of the instant invention has been designed to provide a convenient means disposing of a cigarette butt while at the same time providing an advertising structure including illuminated advertising sign means which is actuated only in response to the conveyor belt portion of the ashtray being actuated. In this manner, when the ashtray is not in use for the purpose of disposing of a cigarette the illuminated advertising sign will be inoperative but automatically actuated whenever a person wishing to dispose of a cigarette actuates the cigarette butt disposing system of the ashtry. Such construction will not only actuate the advertising sign when a person is looking at the ashtray in order to properly place his cigarette therein and to actuate the cigarette butt disposal system of the ashtray whereby the user's attention will be immediately drawn to the advertising sign, but the power source (batteries contained within the housing) for powering the motor of the conveyor belt portion of the ashtray and also the advertising sign will be conserved and called upon to actuate the advertising sign only when a user of the ashtray actuates the cigarette disposal components thereof.

The main object of this invention is to provide an ashtray construction that will be at least substantially self-cleaning and readily operable by substantially all persons wishing to dispose of a cigarette butt.

Another object of this invention is to provide an ashtray including a motor driven cigarette butt disposing assemblage driven from an electrical power source and including a control therefor also operative to electrically connect the power source to an illuminated advertising sign for actuation of the latter whenever the motor for the cigarette disposal system is actuated.

Still another object of this invention is to provide an ashtray in accordance with the preceding objects and which will be completely portable and include a self-contained electrical power source.

A still further object of this invention, in accordance with the immediately preceding object, is to provide the ashtray with illuminated advertising sign structure actuatable only when the drive motor for the cigarette disposal assembly of the ashtray is actuated to thereby conserve electrical energy when the ashtray is not in use.

A final object of this invention to be specifically enumerated herein is to provide a device which will conform to conventional forms of manufacture, be of simple construction and easy to use so as to provide a device that will be economically feasible, long lasting and relatively trouble free in operation.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts through-out, and in which:

FIG. 1 is a perspective view of a first form of the ashtray;

FIG. 2 is a top plan view of the first form of ashtray;

FIG. 3 is an enlarged fragmentary longitudinal vertical sectional view taken substantially upon the plane indicated by the second line 3—3 of FIG. 2;

FIG. 4 is a fragmentary enlarged transverse vertical sectional view taken substantially upon the plane indicated by the section line 4—4 of FIG. 3;

FIG. 5 is a schematic view of the wiring circuit for the ashtray illustrated in FIGS. 1 through 4;

FIG. 6 is a perspective view of a second form of ashtray constructed in accordance with the present invention;

FIG. 7 is an enlarged vertical sectional view taken substantially upon the plane indicated by the section line 7—7 of FIG. 6;

FIG. 8 is a transverse vertical sectional view taken substantially upon the plane indicated by the section line 8—8 of FIG. 7;

FIG. 9 is an enlarged elevational view illustrating the manner in which the drive for the conveyor belt of the ashtray is maintained in operation for a predetermined interval after initial actuation of the conveyor belt drive motor; and

FIG. 10 is a diagrammatic view illustrating the wiring diagram of the ashtray illustrated in FIGS. 6 through 8.

Referring now more specifically to the drawings the numeral 10 generally designates the first form of ashtray constructed in accordance with the present invention. The ashtray 10 includes a housing 12 having opposite side walls 14 and 16 and a pair of opposite end walls 18 and 20 as well as partial top walls 22 and 24 at its opposite ends.

The end wall 24 has a lower opening 26 formed therein through which a removable tray 28 is received. The tray 28 rests upon the upper surface of the bottom wall 30 of the housing 12 which extends between the walls 14 and 16 as well as between the walls 18 and 20.

The end wall 24 also includes an upper housing 32 in which a transparent or translucent panel 34 is removably secured and the housing further includes an upstanding wall portion 36 having an opening 38 formed therein removably closed by means of a second transparent or translucent panel 40. Also the housing 12 includes an opaque partition 42 extending between and interconnecting the lower portion of the wall portion 36 and the section 44 of the end wall 20 disposed between the openings 26 and 32. The top wall 22 and partition 42 as well as the panels 34 and 40 enclose a compartment 46 within the housing 12 in which an electrically actuated illumination source 48 is mounted. The panels 34 and 40 may have opaque or translucent indicia of distinctive colors formed thereon and the indicia may be in the form of an advertisement or selected information to be viewed upon actuation of the illumination source 48.

A source 50 of electrical potential is received within the lower portion of the housing 12 and three transverse shafts 52, 54 and 56 are journaled between side walls 14 and 16 and are provided with corresponding central roller portions 52', 54' and 56'. An endless flexible belt 58 constructed of a suitable fireproof material is trained over and about the rollers 52', 54' and 56' and the belt 58 includes longitudinally spaced and transversely extending elongated ribs 60 which project outwardly of its outer surface.

The opposite side walls 14 and 16 include inwardly directed flanges 62 beneath which the opposite side marginal edge portions of the belt 58 are guidingly engaged and the belt 58 defines a straight inclined reach 64 between the flanges 62 and the roller 54'.

An electric motor **66** is mounted on the end wall **18** and is drivingly coupled to one side of the shaft **52** by means of an endless flexible belt **68.** The opposite side or end of the shaft **52** is drivingly coupled to a further transverse shaft **70** journaled between the side walls **14** and **16** by means of an endless flexible belt **72** and the shaft **70** includes a switch operating cam **74** operatively associated with the actuator **76** of a control switch **78.** In addition, a further control switch **80** is recessed within the top wall **24** and includes a push button actuator **82.**

The upper marginal edge portions of the side walls **14** and **16** project above the reach **64** of the belt **58** and are provided with transversely extending upwardly opening slightly angulated grooves **84** in which cigarette butts having their lighted ends disposed over the reach **64** may be cradled.

With attention invited now more specifically to FIG. **5** of the drawings, it may be seen that the electric motor **66** is connected in parallel to the source **50** across a loop circuit **86** extending from and back to the source **50** and in which the illumination source **48** is connected in series. The switch **80** is also connected in series in the loop circuit **86** and the switch **78** is also connected in series in a second loop circuit **88** connected in parallel to the circuit **86** and bypassing the switch **80.**

In operation, when a cigarette is placed in one of the grooves **84** with its lighted end disposed over the belt **58,** the elevation of the lighted end of the cigarette is below the path of movement of the upper ends of the ridges **60** whereby movement of the belt **58** in a clockwise direction as viewed in FIG. **3** of the drawings upon actuation of the motor **66** will cause any and all cigarettes supported within the grooves **84** to be dislodged therefrom and drawn onto the reach **64** of the belt **58** between the ribs **60.**

In order to actuate the motor **66,** the switch actuator **82** is momentarily depressed so as to complete the circuit connecting the motor **66** to the source **50** whereupon orbiting of the belt **58** in a clockwise direction will commence and the cam disc or wheel **74** will be rotated so as to engage the actuator **76** of the switch **78.** Of course, as soon as the actuator **76** has been engaged by the cam disc **74,** the actuator **82** may be released and operation of the motor **66** will continue until such time as the notch in the disc **74** is again registered with the actuator **76** so as to thereby enable the switch **78** to open and terminate operation of the motor **66.** Of course, whenever the motor **66** is actuated the illumination source **48** will be actuated and the latter may be provided with any suitable means and about the roller **56'** in order to insure that any cigarette resting upon the belt **58** when the motor **66** is actuated will be carried to the top of the conveyor defined by the belt **58** and dropped into the receptacle or tray **28** before operation of the motor **66** is terminated.

With attention invited now more specifically to FIGS. **6** through **10** of the drawings, there will be seen a modified form of ashtray referred to in general by the reference numeral **110** and which is generally similar to the ashtray **10** except that the upper reach of the belt **158** thereof is upwardly deflected centrally intermediate its opposite ends by a center roller **159.** In addition, both end walls **118** and **120** of the housing **112** of the ashtray **110** include openings **126** through which ashtrays **128** are receivable. In addition, the housing **112** includes a pair of mirror image opposite end partial top walls **124** from which a pair of switch actuator bars **182** corresponding to the switch actuators **82** are supported. The central portion of the housing **112** includes a downwardly opening chamber **146** whose opposite sides are closed by means of panels **134** similar to the panel **34.** An illumination source **148** is housed within the chamber **146** and the central lower portion of the housing **112** includes sources **150** of electrical potential corresponding to the source **50.**

In addition to passing about the rollers **159,** the belt **158** is trained over opposite end rollers **152'** and **156'** corresponding to the rollers **52'** and **56'** and the roller **152'** is mounted on a shaft **152** driven by a motor **166.** The shaft **152** comprises an extension of the rotary output shaft of the motor **166** and shaft **170** corresponding to the shaft **70** is driven from the shaft **152** by a belt **171** and has a cam wheel or disc **174** mounted thereon corresponding to the cam disc **74.**

With attention now invited more specifically to FIG. **10** of the drawings it may be seen that the motor **166** and illumination source **148** are connected in parallel to a pair of interconnected loop circuits **186** and **187** electrically connected to the power sources **150** through a double pole, double throw switch **178** including an actuator **180** connecting the bars **182** and engagable by the cam wheel or disc **174.**

The motor **166** is of the reversible type and therefore depression of one actuator bar **182** will cause rotation of the shaft **152** in one direction while depression of the other actuator bar **182** will cause rotation of the shaft **152** in the opposite direction In operation, if a cigarette is placed in one of the grooves **184** corresponding to the grooves **84** and the adjacent actuator bar **182** is depressed, the belt **158** will be driven in a direction to move the cigarette toward the adjacent end of the housing **112** for depositing in the corresponding receptacle or tray **128.** In addition, whenever the motor **166** is actuated, the illumination source **148** will also be actuated and the latter may be provided with means (not shown) for causing the illumination source to blink during operation of the motor **166.**

It may thus be seen that the operation of the ashtray **110** is quite similar to the operation of the ashtray **10** and therefore that cigarettes resting in either the grooves **84** or the grooves **184** may be carried toward and deposited in the corresponding trays **28** or **128** by actuation of the appropriate actuators **80** or **180.**

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention.

What is claimed as new is as follows:

1. An ashtray including a generally horizontally disposed endless flexible conveyor member supported for intermittent advancement about a predetermined closed path including an upper generally straight reach toward one end of which said conveyor member is movable, said one end of said upper reach including an end segment thereof curving downwardly and back under said one end of said reach, a support housing from which said conveyor member is guidingly supported and at least partially enclosing an area beneath said segment, and a receptacle in said area removably

supported from said housing and opening upwardly toward said segment for receiving elements falling from said conveyor member during its movement through said segment, said one reach being downwardly inclined toward said one end thereof, said path including a second generally straight reach inclined upwardly toward the other end of said one reach, said housing including means defining a pair of generally parallel upstanding sides between which said reaches are disposed, said sides including upper marginal edge portions projecting at least slightly above said reaches, said upper marginal edge portions including means defining a plurality of upwardly opening transversely extending recesses at points spaced longitudinally therealong, said endless conveyor member including outwardly projecting transversely extending lugs spaced longitudinally thereof, motor means supported from said housing and drivingly connected to said conveyor member, said motor means including control means having a control actuator portion and operative to initiate operation of said motor means upon actuation of a control actuator portion and means to thereafter maintain said motor means in operation for a predetermined interval before thereafter automatically terminating operation of said motor means.

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