Nov. 3, 1964 M. H. CONGDON 3,154,793

AUTOMATIC TOILET UNIT

Filed Jan. 22, 1963 2 Sheets-Sheet 1

FIG. 1

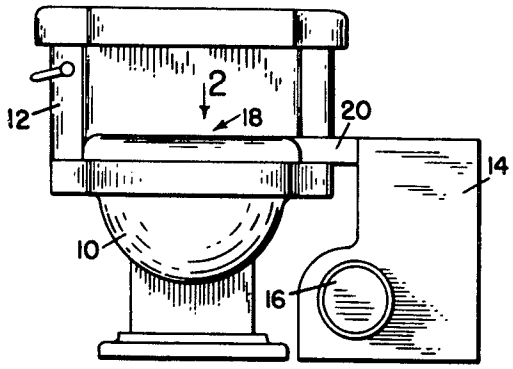



FIG. 4

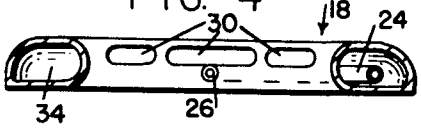



FIG. 5

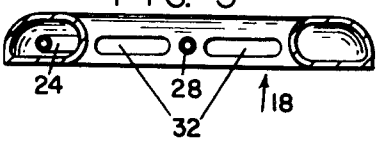



FIG. 3

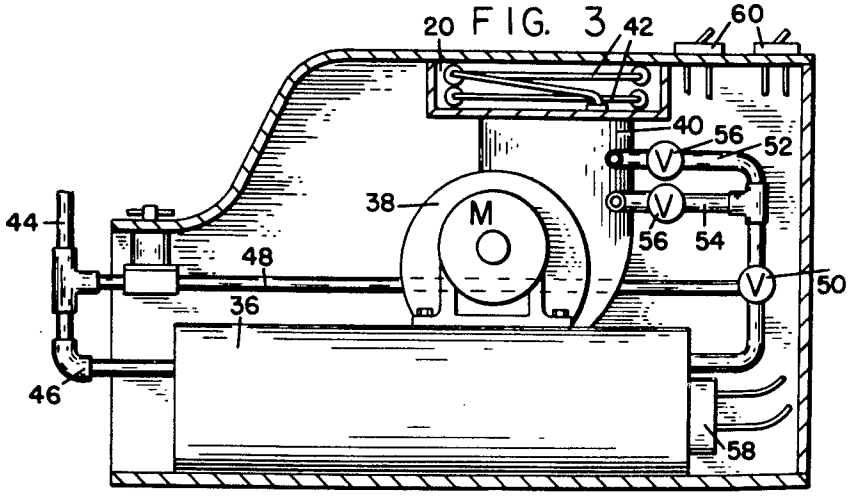
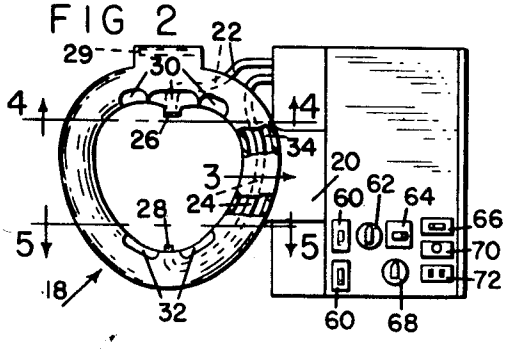



FIG 2




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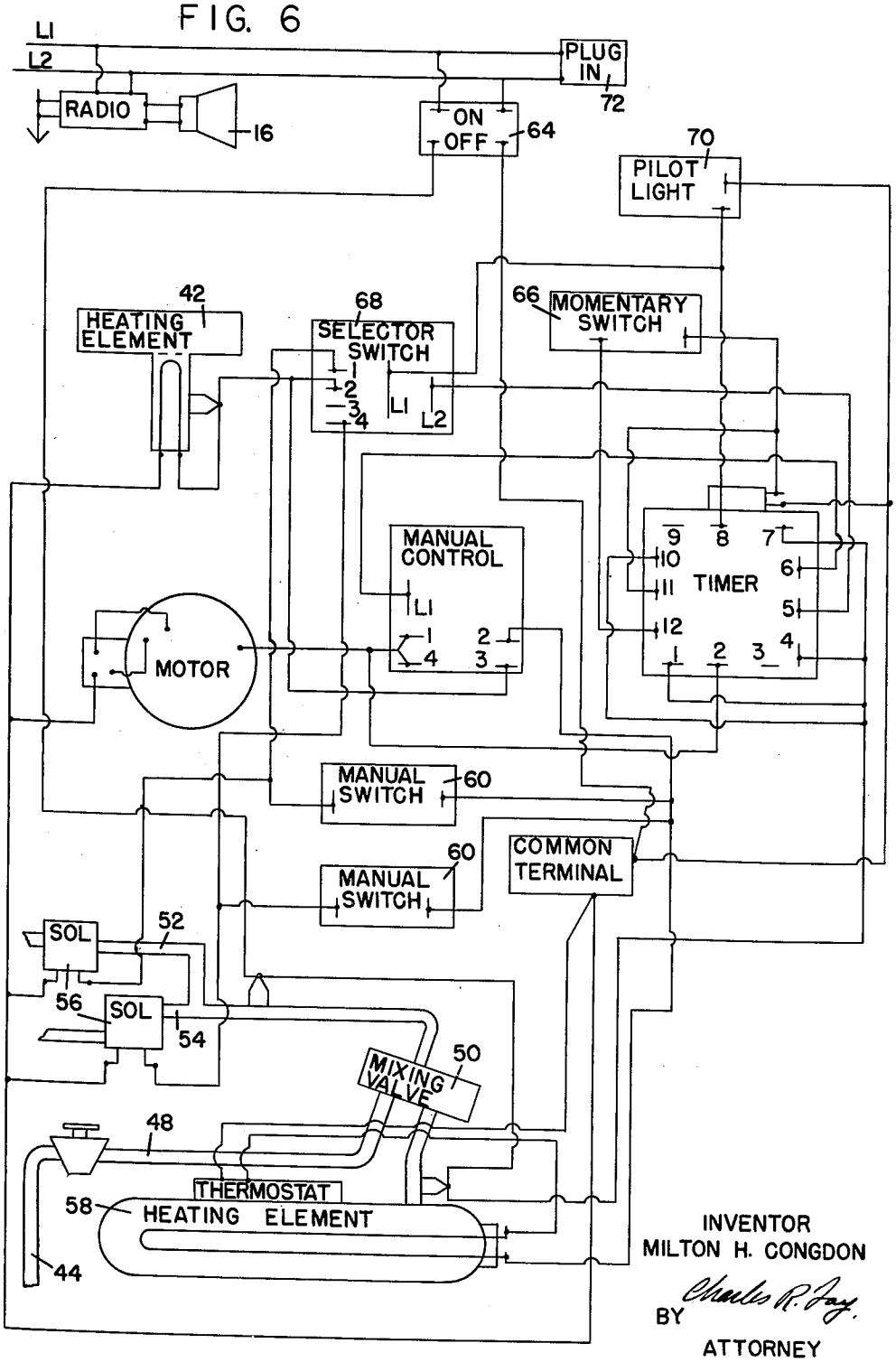
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Nov. 3, 1964 M. H. CONGDON 3,154,793

AUTOMATIC TOILET UNIT

Filed Jan. 22, 1963 2 Sheets-Sheet 2

FIG. 6




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# AUTOMATIC TOILET UNIT

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5 Claims. (Cl. 4—7)

This invention relates to a new and improved automatic toilet unit which is extremely easy to operate and which is under control of the operator or user of the toilet, or which is provided with means for nursing establishments and hospitals where a nurse can determine the time intervals of operation and set the same.

Other objects of the invention include the provision of a toilet including a toilet seat which is of substantially normal size, shape and appearance, but which is hollow and is provided with fore-and-aft water jets and air orifices so that the cleaning operation can take place either at the rear, at the front, or at both the front and the rear of the device, and incorporating a unit provided with its own source of warm water controlled by thermostats, etc. as well as a blower and heater thermostatically controlled for warm air so that a cycle of operation is provided for thoroughly cleaning the user and drying the parts also in a completely sterile manner.

Another object of the invention resides in the provision of a self-contained unit which can be installed on the side of a completely ordinary toilet bowl, with the seat normally swingable thereon in the usual position, and with the controls conveniently placed, and also with an electric outlet as for instance electric razors or other electrical appliances as may be desired, there being no exposed pipes or air ducts so that the entire device is relatively small and is neat and clean in appearance.

Other objects and advantages of the invention will appear hereinafter.

Reference is to be had to the accompanying drawings, in which

FIG. 1 is a view in front elevation illustrating the invention;

FIG. 2 is a plan view with parts broken away and in section;

FIG. 3 is a vertical section illustrating the mechanism of the device;

FIG. 4 is an enlarged section on line 4—4 of FIG. 2.

FIG. 5 is an enlarged section on line 5—5 of FIG. 2, and

FIG. 6 is an electric wiring diagram.

In illustrating the invention, the same is shown as applied to a conventional toilet bowl 10 having the usual tank 12, etc. The mechanism for supplying the heated air and water is indicated as being in a cabinet 14 and the controls are located on top of this cabinet. The reference numeral 16 indicates a speaker for a radio should this be desired to be provided. The toilet seat itself is shown by the reference numeral 18 and this is connected to an air conduit 20 which is hollow. Flexible pipes such as at 22 and 24 convey water respectively to a rear nozzle 26 and a front nozzle 28. These nozzles can be of any description which may be found to be convenient.

The seat swings on the usual hinge at 29 and is provided at the rear portion thereof with air vents indicated at 30 and at the front portion thereof for the air vents indicated at 32 and these communicate directly with the interior of the toilet seat which is indicated at 34. Warmed air is intended ot be provided under pressure in the chamber in the toilet seat so that it can exit through the openings 30 and 32 for drying the parts as will be apparent. Both the nozzles and the vents are located in such a way as to provide for optimum function of these members.

In the cabinet 14 there is located a hot water tank 36 and an air blower 38. The blower 38 may be a conventional blower and blows air through a conduit 40 into the chamber or passage 20 wherein are located heating units 42 or the like for heating the air just prior to its entry into the interior chamber 34 of the toilet seat.



In providing for the water warmed to the desired temperature, a cold water inlet can be provided at 44. Through one branch 46 this supplies the tank 36 and the other branch 48 is directed to a mixing valve 50 and then flows to the two branches 52 and 54, one of which is connected to the pipe 22 and the other to pipe 24, each of these pipes being provided with an electrically operated solenoid shut-off valve 56, 56. If manual operation is desired, such as in hospitals, sanitariums, etc., cold water feed line 44 is fed directly to the mixing valve 50 and a hot water line 46 is connected directly to the tank with no common connection between water line 44 and 46.

It is to be understood that the mixing valve is thermostatically operated and that there are safety thermostats and shutoff thermostats, pressure regulators, etc., as will be required on any kind of water heating arrangements of the class described. However, the "on" and "off" valves 56 are controlled directly by the person using the toilet as by "on" and "off" electric switches 60, one for each valve 56, so that either the front or rear of nozzle 26 or 28 may be used alone or they may both be used together.

Referring now to FIG. 2, the reference numeral 26 indicates a transfer switch so that the blower can be switched if desired from automatic operation to manual control. The numeral 64 indicates an "on" and "off" switch for the entire apparatus if this should be desired to be used. Reference numeral 66 indicates a momentary contact starting switch. The switch 68 if desired to be used is a selector switch for automatic control of the nozzles 26 and 28. The reference numeral 70 indicates a pilot light and the reference numeral 72 indicates a socket for electric razors, etc. if such may be desired. The required pressure and temperature relief valves are applied to the circuit also as may be needed.

In the operation of the device, when the user desires automatic control he sets transfer switch 62 to automatic and selector switch 68 to the desired nozzle. If the user wishes one nozzle only to operate, the selector switch is turned to this nozzle, or if it is desired to have only the other nozzle operate, then this selector switch is set to indicate that; but if it is desired to have both nozzles, then the selector switch is set in a third position, after which he then operates the switch 66 to the "on" position and holds the same until the pilot light 70 lights up, at which time he releases the starter switch which then of course snaps back to its "off" position. At this point the unit has become energized and fully automatic and the spray nozzles or either one of them are now in operation. These nozzles run for a predetermined length of time and are controlled by an automatic timer in the system, and when the predetermined time has elapsed, the water shuts off and the hot air blower automatically starts the drying action by forcing warm air through the seat and out through the outlets above described from the rear and front of the seat. This dryer also runs for a predetermined time and is also controlled by its own timer and then shuts off. The entire operation is complete and the individual using the unit is clean and dry and is ready for the next user.

If manual operation is desired such as in hospitals and sanitariums where a nurse is in attendance and for manual operation of the unit, the selector switch 68 is placed in the "off" position and the person using the unit or a nurse utilizes the switches 60 either one or both and as long as these switches are left on, the water will be sprayed from either nozzle or both as desired. Sometimes it is desired to keep the water treatment operat-

ing for a period of several minutes rather than the relatively short time used for more ordinary action. The switches can then be turned off manually and the switch 62 is usually turned from "automatic" to the "dryer" position, and as long as this switch is left in this position, hot dry air will flow through the seat and out through the orifices. Cool air can also be circulated simply by turning switch 62 to a third position to shut off the electric heating units 42 but to keep the blower going.

Having thus described my invention and the advantages thereof, I do not wish to be limited to the details herein disclosed, otherwise than as set forth in the claims, but what I claim is:

1. An automatic toilet seat construction comprising the combination with a conventional toilet bowl and flush tank of a new and improved toilet seat hinged to the toilet bowl, said toilet seat being hollow and arranged in normal position on the toilet bowl to be raised and lowered, and having a front portion and a rear portion, an enclosure adapted to be mounted on the floor adjacent the seat, said enclosure containing a water source and a source of air, means to heat the water, means to heat the air, a conduit in the enclosure for the heated air, a conduit on the seat leading to the interior portion of said hollow seat, said conduits being in alignment when the seat is down, flexible hoses leading into said hollow toilet seat adjacent the hinge of the seat, the hollow toilet seat forming a chamber for the heated air, orifices at the inside of the toilet seat at the front portion thereof and at the rear portion thereof, said orifices generally pointing in a direction toward each other and being adapted to direct streams of heated air in a direction diametrically across



the toilet seat front to rear and vice-versa, and nozzles connected to said pipes, there being a nozzle adjacent the forward portion of the seat and another nozzle adjacent the rearward portion of the seat at the inside edges of the seat, said nozzles pointing in the direction of the stream of heated air, control means on said casing, valves for said pipes and said conduit, said control means operating said valves for opening and closing the same, and means providing for a time sequence first of the heated water to operate for a predetermined period of time and then to shut off and for the air to operate for a predetermined period of time thereafter, with means to then shut it off.

2. The automatic toilet seat of claim 1 including means to vary the time sequence of the water and air.

3. The automatic toilet seat of claim 1 including means to control the time sequences of the water and air manually.

4. The automatic toilet seat of claim 1 including automatic thermostatic valves for controlling and maintaining the desired degree of temperatures of the water and air.

5. The automatic toilet seat of claim 1 including a source of cold water and hot water and an automatic mixing valve for the same to provide a desired warm water temperature.

References Cited in the file of this patent

UNITED STATES PATENTS

| | | |
|---|---|---|
| 2,875,450 | Umann | Mar. 3, 1959 |
| 2,917,175 | Toma | Dec. 15, 1959 |