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CAN DRIER AND STERILIZER

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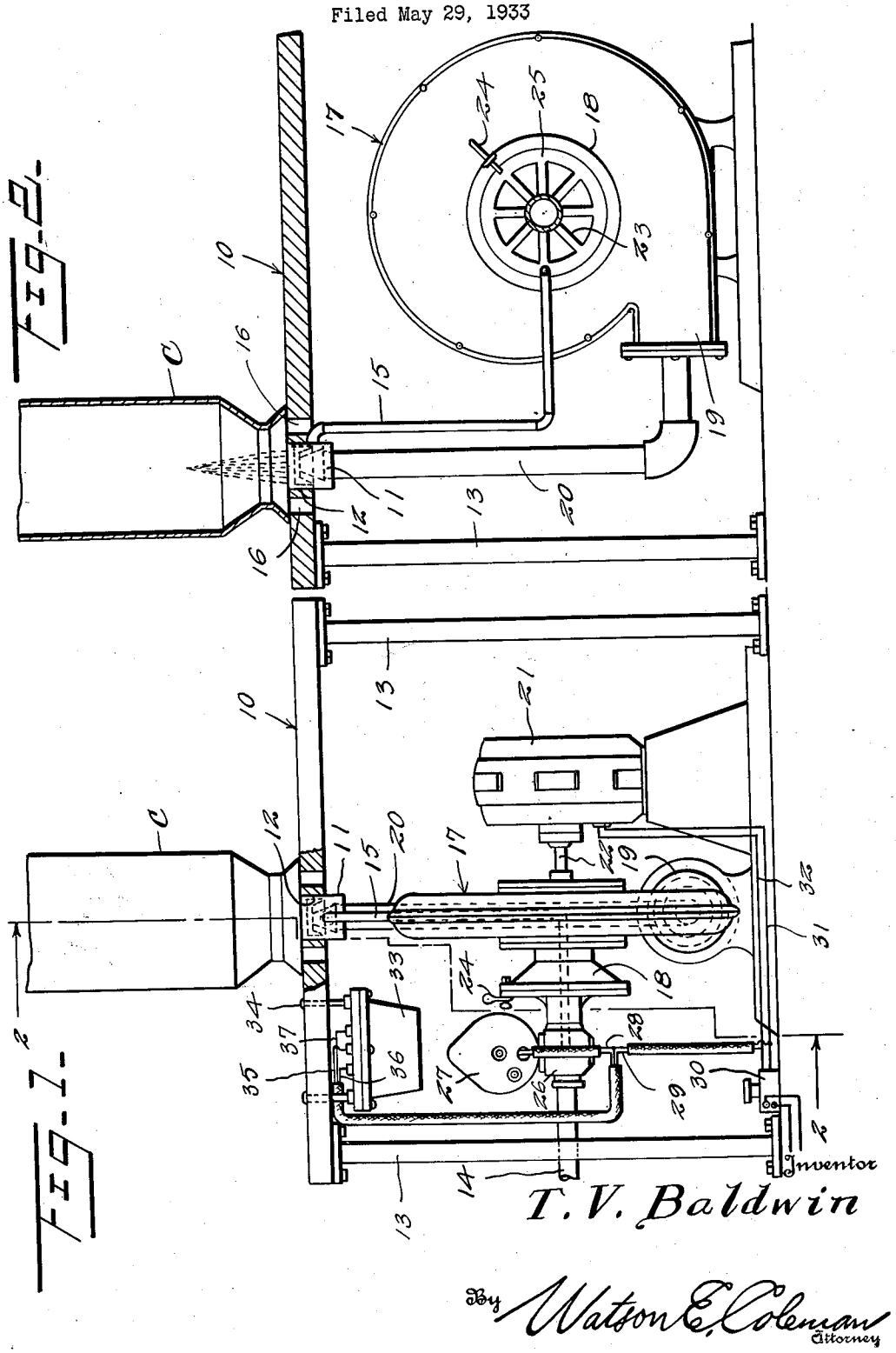


Fig. 1.

Fig. 2.

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CAN DRIER AND STERILIZER

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3 Claims. (Cl. 99—18)

This invention relates to the cleansing and sterilizing of milk cans.

An object of this invention is to provide a means and a method for sterilizing the interior of a milk can and at the same time drying out the interior of the can.

Another object of this invention is to provide an improved method of sterilization of the interior of the milk cans without the use of steam or the like, which method includes raising of the temperature within the interior of the can for a predetermined length of time.

A further object of this invention is to provide an improved combination and method whereby the interior of a milk can can be sterilized through the application of a heat generated by a non-carbonizing flame which is projected into the interior of the can for a predetermined length of time sufficient to raise the temperature of the air within the can to the desired degree for sterilizing the walls of the can and drying any liquids which remain on the can without heating the walls of the can to such a degree as to melt the solder used in securing the parts together or otherwise injuring the construction of the can.

A still further object of this invention is to provide an improved combination and method which will speed up the sterilization of the can and eliminate certain processes now used for sterilizing and for drying the interior of the can.

The above and various other objects and advantages of this invention will in part be described and in part be understood from the following detailed description of the present preferred embodiment, the same being illustrated in the accompanying drawing wherein:

Figure 1 is a diagrammatic view of a device partly broken away and partly in section constructed according to the embodiment of this invention.

Figure 2 is a sectional view taken on the line 2—2 of Figure 1.

Referring to the drawing wherein like characters of reference designate corresponding parts throughout the views, the numeral 10 designates generally a table or platform which is mounted on legs or supporting members 13. A burner or nozzle 11 projects through an opening 12 provided in the table top 10, and this burner 11 is connected to a fuel supply pipe 14, which fuel supply is in the form of gas or the like. The burner 11 is constructed in the form of a Bunsen burner and a pilot pipe line 15 is connected at one point to the burner 11 and at another point to the supply pipe 14 so that a constant flame will be maintained in a position to light the burner 11. A milk can C is adapted to be positioned on top of the table 10 in an inverted position and disposed above the top of the burner 11 so that the flame from the burner 11 will project upwardly into the interior of the can C and heat the air within this can.

The table top 10 is also provided with a plurality of drain openings 16 disposed about the burner 11 so that steam or the like, which is generated within the interior of the can will readily pass out therefrom. A blower 17 has the intake side 18 thereof connected to the supply pipe 14 and the outlet side 19 of this blower 17 is connected as by a pipe 20 to the burner 11. A motor or power member 21 is connected direct by means of a shaft 22 to the blower 17, although I, of course, do not wish to be limited to any particular type of power means for this blower 17, as any conventional power means may be used for the operation of this blower. The blower 17 is provided with air intake openings 23 about the pipe 14 and the connection of this pipe with the intake side 18 of the blower. A lever 24 is carried by the blower 17 and operates a damper 25 of conventional construction, which is adapted to partially rotate so as to close the openings 23 or to leave these openings partly open so that the desired quantity of air will be mixed with the fuel passing through the supply pipe 14 and the pipe 20 into the burner 11.

A valve 26 is interposed in the fuel supply line 14 at a point adjacent the blower 17 and a valve operating member 27 is connected to this valve and to a source of electric current supply by means of conductors 28 and 29. This valve operating member 27 is preferably an electrically operated member of conventional structure, and it is believed that further description of this valve operating member is unnecessary. The conductors 28 and 29 are connected to a switch 30 disposed below the table 10 and adapted to be operated by the pressure of a foot or the like.

This switch 30 is interposed in the conductors 28 and 29, which are in turn connected to a source of electric current supply. The motor 21 is connected as by conductors 31 and 32 to the switch 30 so that the closing of this switch 30 will not only automatically open the valve 26 but will also start the motor 21 which operates the blower 17.

In order to provide a means whereby the flame from the burner 11 will be automatically cut off after a predetermined length of time of burning, I have provided a time operated cut off means 33

which is supported from the table 10 as by bolts 34. This cut off member 33 is interposed in the conductors 28 and 29 by means of conductors 35, 36 and 37. This time operated cut off member 33 is of conventional structure and is shown here as is the valve operating member 27 only diagrammatically.

In the use and operation of the structure herein disclosed, the can C is inverted over the top of the burner 11 with the rim of the can engaging about the drain openings 16. The can C, when placed on this table 10, has initially passed through a cleansing process and when positioned over the burner 11, the interior of the can C is thoroughly cleansed of all solids but is still moist. The closing of the switch 30 by pressure of a foot or the like will automatically open the valve 26, start the motor 21 and set the timing cut off member 33 into operation. The fuel discharged from the burner 11 will be ignited through the medium of the pilot light constantly burning at the tip of the burner 11.

Through the medium of the blower 17 and the air control 24, a non-carbonizing flame will project into the interior of the can C for a considerable distance, and this flame will be maintained in the can C so as to raise the temperature of the atmosphere in the can to a sufficiently high degree so that all moisture within the can will turn to a vapor, which vapor will pass downwardly through the vent openings 16 and the temperature will be sufficient to kill and remove the bacteria adhering to the inner surface of the walls of the can. Preferably, the flame of the burner 11 is maintained within the can for a period of from ten to fifteen seconds whereupon the cut off member 33 will cut off the current to the valve operating member 27, thereby permitting this member to automatically close the valve 26. If desired, this cut off member may also be interposed in the conductors connected to the motor 21 so that not only the valve but also the motor will be cut off when the flame has burned for the desired length of time within the can.

It is, of course, understood that various changes and modifications may be made in the details of construction and design of the above specifically described embodiment of this invention without departing from the spirit thereof, such changes and modifications being restricted only by the scope of the following claims.

What is claimed is:—

1. A sterilizing and drying means for cans, comprising a table, a burner secured to the table and having the upper end thereof flush with the top of the table, the flame from the burner extending upwardly into the interior of an inverted can resting on the top of the table, said table having openings therethrough adjacent said burner and within the circle of the inverted top of the can, a pipe connecting the burner to a source of gas supply, a blower interposed in said pipe, an electrically operated cut off valve in said pipe, an electric motor for said blower, a periodic cut off means connected to said electrically operated valve and to said motor, and a manually operable switch connected to said periodic cut off means.

2. A sterilizing and drying means for cans, comprising a table, a burner secured to the table and having the upper end thereof flush with the top of the table, the flame from the burner extending upwardly into the interior of an inverted can resting on top of the table, said table having openings therethrough adjacent said burner and within the circle of the inverted top of the can, a pipe connecting the burner with a source of gas supply, a pilot means for said burner, a blower connected to said pipe and adapted to mix air with the gas flowing to the burner, a motor for said blower, a valve in said pipe, electrically operated means for said valve, a periodic cut off means connected to said valve operating means and to said motor, and a manually operable switch connected to said periodic cut off means.

3. A sterilizing and drying means for cans, comprising a table, a burner secured to the table and having the upper end thereof flush with the top of the table, the flame from the burner extending upwardly into the interior of an inverted can resting on top of the table, said table having openings therethrough adjacent said burner and within the circle of the inverted top of the can, a pipe connecting the burner to a source of gas supply, a blower interposed in said pipe and adapted to mix air with the gas flowing to the burner, a damper controlling the quantity of air drawn through the blower, a motor for said blower, a valve in said pipe, electrically operated means for operating said valve, a periodic cut off means connected to said valve operating means and said motor, and a manually operable switch connected to said cut off means.

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