

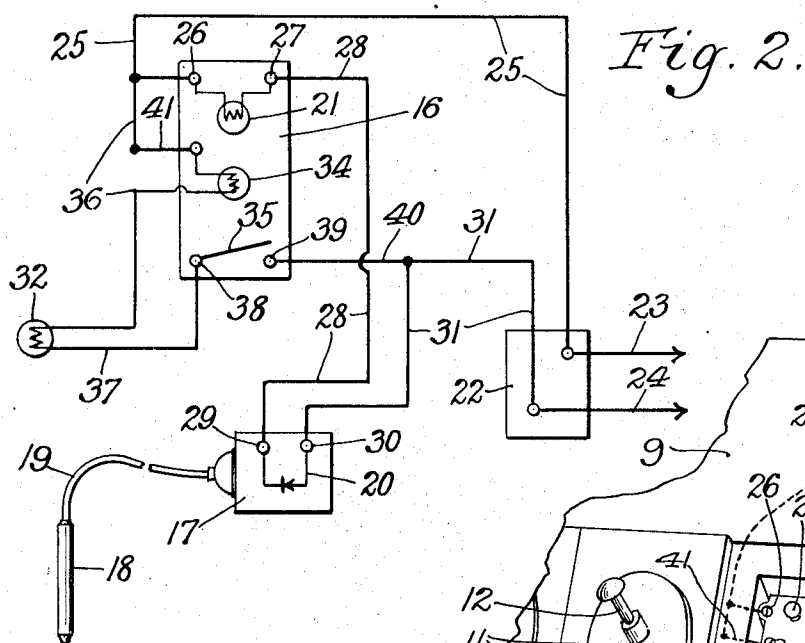
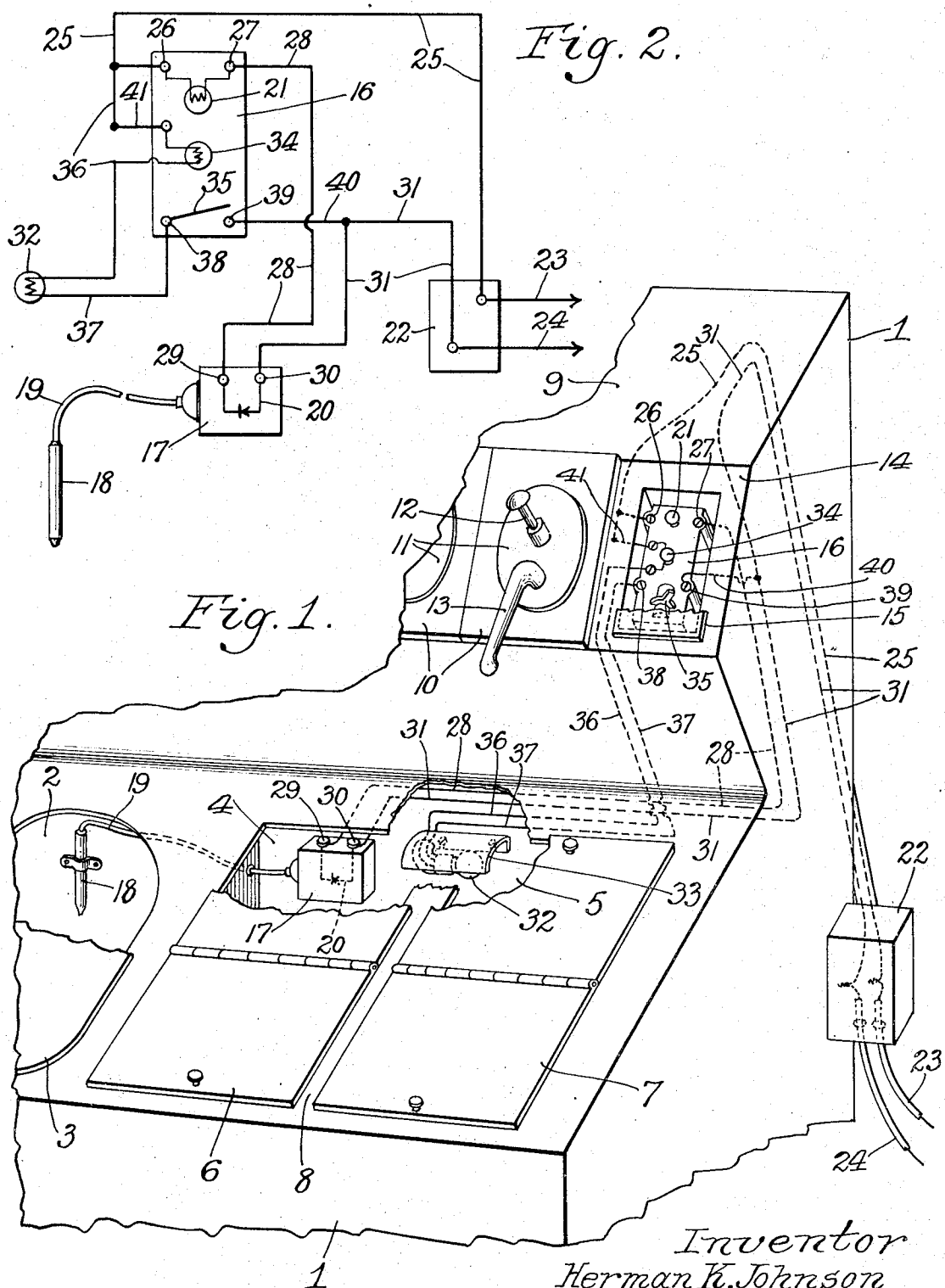
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CONTROL AND WARNING CIRCUIT

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CONTROL AND WARNING CIRCUIT

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2 Claims. (Cl. 177—311)

This invention relates to a wiring circuit and to an illuminating device and a control and warning signal operated by said circuit.

It has for one object to provide in a unitary device means for indicating the operation of a light and for indicating temperature variation beyond a critical point.

Another object is to provide in a unitary device a warning means for indicating the increase of temperature beyond a critical point in a refrigerated space and for indicating the condition of a lighting means in an adjacent space or device.

Other objects will appear from time to time in the specification and claims.

The invention is illustrated more or less diagrammatically in the accompanying drawing, wherein:

Figure 1 is a perspective view with parts broken away and parts in section;

Figure 2 is a schematic wiring diagram of the circuit of the apparatus indicated in Figure 1.

Like parts are designated by like characters throughout the specification and drawing.

The numeral 1 indicates generally a cooler of the sort used in soda fountains which may contain in one compartment a refrigerated space for ice cream cans or other containers and which has associated with it a compartment, preferably also cooled, in which miscellaneous material, such as food, bottles and the like, is kept for storage and cooling. In the particular form illustrated herewith 2 is a cavity or space situated within the cooler or counter and arranged to receive an ice cream can or other similar container holding material which is to be held below a predetermined temperature in order to be kept in a proper condition for serving and use. Only one such space is shown although a plurality may be used. Means are provided for maintaining this space at the proper temperature. A cover 3, of any desired type, is used to cover this space. 4 and 5 are storage compartments. As shown herewith they are in effect one compartment. Suitable closures 6 and 7 are provided and a dividing member 8 extends across the top of the compartment 4, 5 and covers rest partly on it. The details of the cover construction form no essential part of the present invention and almost any desired covering means may be used.

Formed as a part of the cooler or counter, or else mounted upon and associated with it, is a unit or section indicated generally by the numeral 9. This preferably contains suitable spaces for a plurality of syrup containers and pumps. Ordinarily for each syrup container there is a cover plate 10 and a pump unit 11, including among other structural features a pump handle or plunger 12 and a spout 13. The details of construction of the syrup containers and pumps form no essential part of the present invention and are illustrated merely as showing one suitable location for the warning and indicating lights. A space 14 is preferably provided at the end of a bank of syrup pumps and directly upon this space or upon a cover plate 15 is mounted a switch and lighting base 16.

The several units which form part of the mechanism and are controlled by the circuit of the present invention will now be described.

17 is a cold control or thermostat. As shown it is a type now generally sold and its particular details are not an essential part of the present invention. It includes generally a housing within which means are provided in response to temperature variations for operating a switch. A bulb 18 is situated in the ice cream storage or dispensing compartment 2 and is connected by a tube 19 with the housing of the cold control assembly 17. A switch 20 is mounted within the cold control assembly and is moved to the "off" and the "on" positions in response to pressure variations within the housing of the member 17, which pressure variation results from temperature variations in the compartment 2. Thus when the temperature increases above a predetermined point in the compartment 2, pressure in the bulb 18 increases and this is effective through the tube 19 upon a structure mounted within the housing of the member 17 and operates the switch to close it and complete a circuit the details of which will be described below. When the temperature is again brought down below the predetermined point, the pressure in the bulb 18 is reduced and the mechanism in the housing 17 operates to open the switch 20.

21 is a tell-tale light in circuit with the switch. When the switch is closed so that current passes through the circuit, the light is energized and serves thus as a visual warning to an operator that the temperature in the compartment 2 has risen above the predetermined point and he can then take such steps as are necessary to correct this.

While a number of circuits for connecting the mechanism just described may be used, the one shown is a convenient one. A junction box 22 may be provided on the side or on any other suitable location on the counter or cooler assembly. Current is supplied to the junction box by

wires 23 and 24. A wire 25 is connected to the junction box and to the wire 23 and passes as shown to one pole 26 of a socket for the light 21. From the other pole 27 of the light socket a wire 28 passes to one pole 29 of the switch 20. From the other pole 30 of the switch 20 a wire 31 passes to the junction box and is connected to the wire 24.

A light 32 is mounted within the compartment 4, 5 and may have a shield or reflector 33. The light 32 is connected in series with a warning light 34 mounted on the member 16. Preferably it is of a color different from that of the light 21. For example, the light 21 may be red and the light 34 green. A switch 35 is also mounted on the member 16 and controls the circuit for the illuminating light 32 and the control or telltale light 34. Current is supplied to one pole of the socket for the light 34 by a wire 41 which is connected to the wire 25. From the other pole of the socket for the light 34 a wire 36 is connected to one pole of the socket of light 32. The opposite pole of the socket of the light 32 is connected by wire 37 to one pole 38 of the switch 35. To the opposite pole 39 of the switch 35 is connected a wire 40 which is itself at its other end in circuit with the wires 31 and 24. Thus current is supplied to the lamps 32 and 34 in series when the switch 35 is closed to complete the circuit and both will be illuminated. The light 32 being in a compartment which may be entirely closed, is not normally visible but the light 34, is exposed, as shown particularly in Figure 1, and being in series with the light 32, functions as a control or indicating light. If it is burning, the illuminating light 32 is also burning but if the latter goes out, then the telltale light 34 also goes out and the operator has warning of this fact and can correct the defect.

In general the device may be installed as shown, or in a variety of other ways. The bulb 18 may be put in any part of the compartment 2 or may be outside of the compartment but sufficiently close to it to be affected by its temperature variations to cause the desired response to variations of those temperatures. The location of the member 17 and the parts that it encloses and the location of the junction box 22 or the base 16 with the parts that it supports may be widely varied. As shown the parts are positioned in convenient locations. The invention is not limited to these particular locations.

In general the use and operation of the device and circuit are as follows: Some form of cooling or refrigerating mechanism is associated with the apparatus. The thermostatic elements are set to maintain a temperature which remains constantly below a predetermined upper limit. The details of the particular cooling or refrigerating mechanism form no essential part of the present invention which may be associated with any desired refrigerating means.

Assuming that the device is complete and the refrigerating means are operating, material such as ice cream may be kept in suitable containers in the compartment 2. Other material, such as bottled or otherwise contained drinks and food items, are placed in the compartment 4, 5. So long as the temperature remains below the predetermined limit the thermostatic device does

not operate to complete a circuit and the telltale light 21 is not energized. When the switch 35 is in the proper position the circuit which illuminates the light 32 and the warning light 34 is energized so that both of these lights are illuminated. Should the light 32, for example, burn out and should this circuit otherwise become broken, the warning light 34 will go out and an operator stationed or working near the device will see this and take the necessary steps to restore the circuit to cause reillumination of the light 32.

Should the temperature in the compartment 2 for any reason at all rise above the predetermined minimum temperature, the pressure in the bulb 18 will be sufficiently increased to operate the thermostatic device in the housing 17. The switch 20 will be moved to complete the circuit and the warning or telltale light 21 will be illuminated. The operator will see it and will recognize that the cooling or refrigerating apparatus is not functioning properly, or that it has stopped entirely, or that something else has occurred to permit the undesired high temperature in the compartment 2. He will then take the necessary steps to restore the conditions necessary for proper cooling. The assembly and the circuit shown herewith thus serves as a control and an indicating means, showing an operator conditions both as to illumination and temperature within the enclosed compartments and thus he can at all times determine instantly by a glance at the lights 21 and 34 whether or not all parts of the apparatus are functioning properly and can determine whether or not he needs to do anything to restore and maintain proper operating conditions.

I claim:

1. In combination in a material storage and dispensing apparatus, a storage assembly, a container in said assembly, means for cooling said container and a dispensing assembly, a plurality of dispensing devices in said dispensing assembly, said dispensing devices including manually operable parts and being grouped together, a control panel remote from said storage assembly, grouped with said dispensing devices and immediately adjacent to one of said manually operable parts and visible generally with them, an electric light on said control panel, a temperature responsive device associated with said container, an electrical circuit for said light and means actuated by said temperature responsive device and acting upon said electric circuit to affect said light upon the occurrence of unsatisfactory temperature conditions with said container, said electric light circuit being separate from said cooling means.

2. In combination in a refrigerated soda fountain, a syrup dispensing device including a manually operable means for causing the discharge of syrup, a warning light, electric means for energizing said light and means, responsive to the temperature in said soda fountain, to affect said light, said warning light being in position immediately adjacent the manually operable means of said syrup dispensing device and in position to be closely approached by the hand of the operator when he discharges syrup.

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