

July 3, 1928.

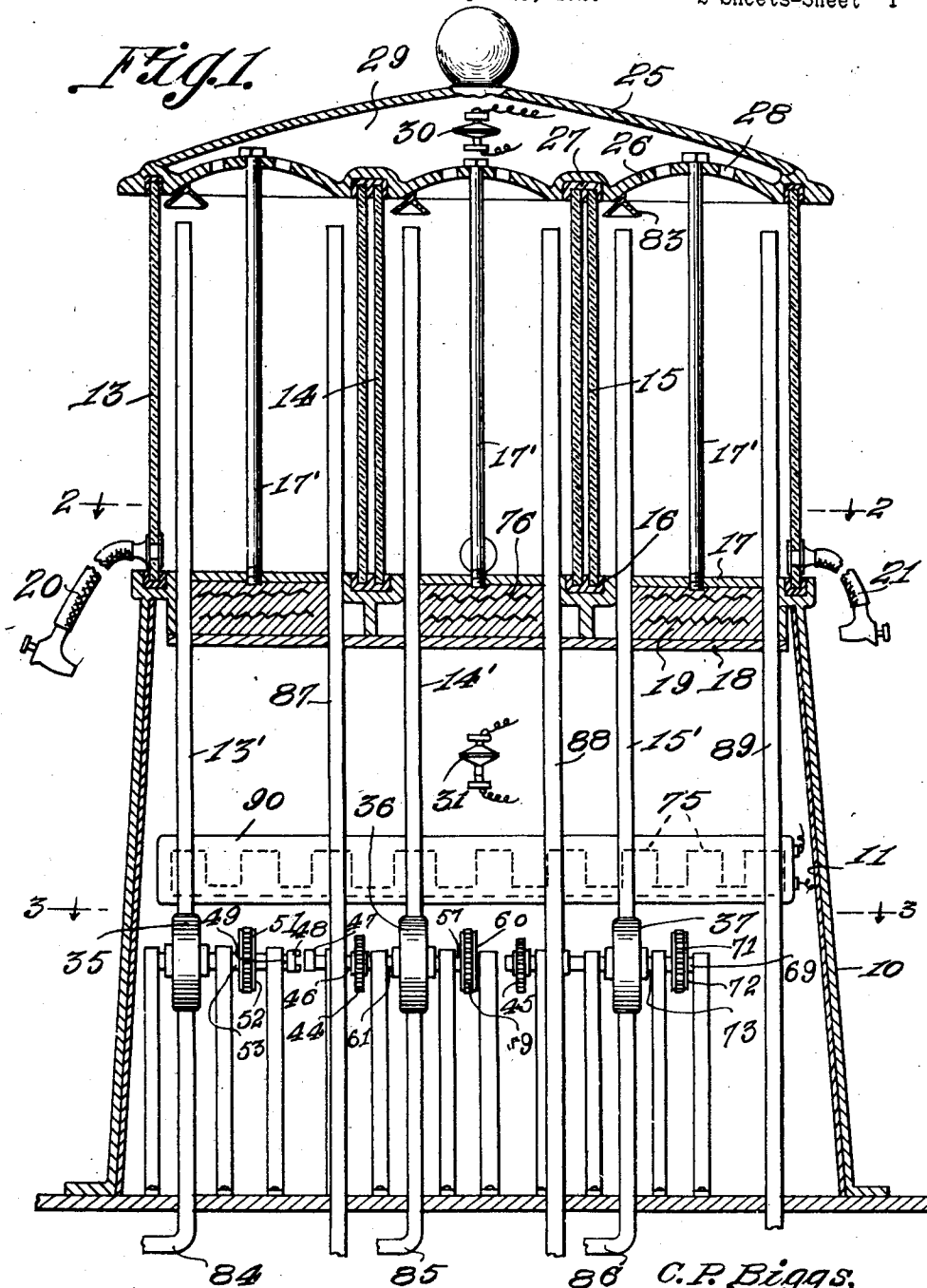
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1,675,689

ELECTRICALLY HEATED DISPENSING PUMP

Filed Sept. 15, 1926

2 Sheets-Sheet 1



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Fig. 2.

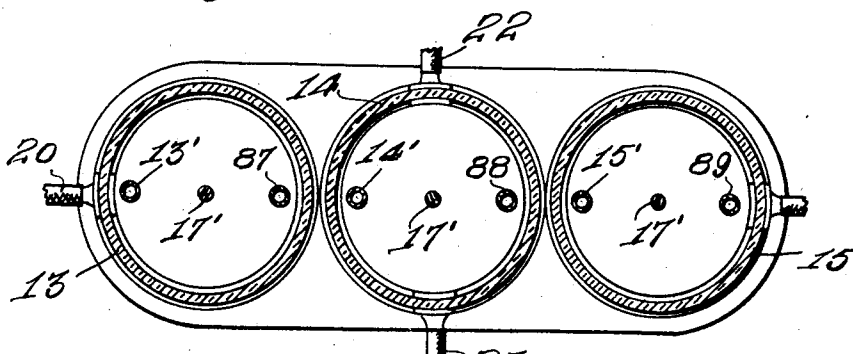


Fig. 3.

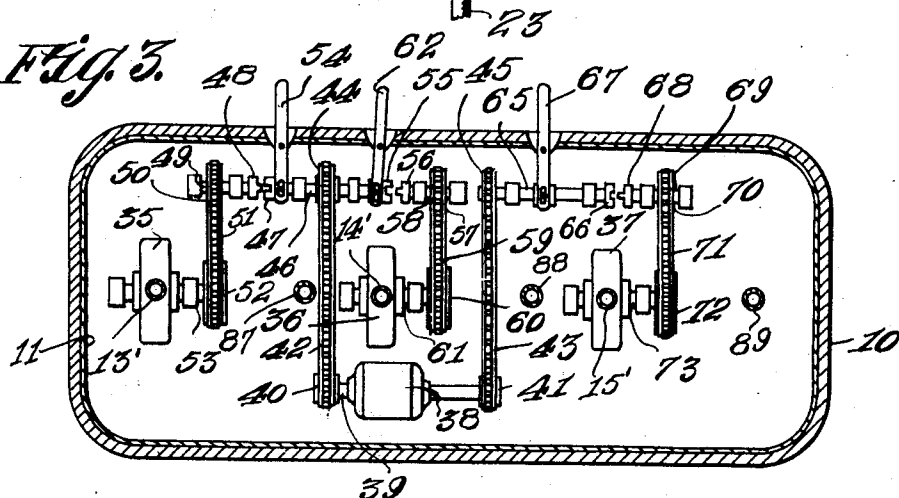
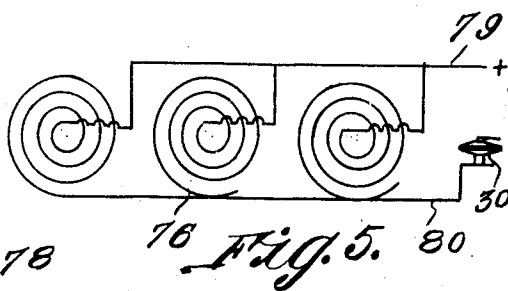
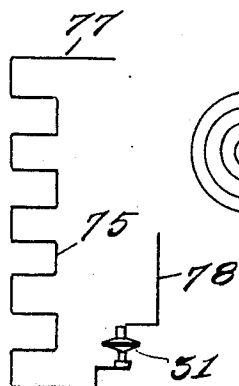


Fig. 4.



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UNITED STATES PATENT OFFICE.

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ELECTRICALLY-HEATED DISPENSING PUMP.

Application filed September 15, 1926. Serial No. 135,624.

The object of this invention is to provide a pump especially adapted to dispense oils during cold weather, and an apparatus in which provision is made for dispensing oil or other fluids of different grades.

A further object is to provide oil containers having transparent walls to be mounted above a housing in which a battery of pumps is installed, these pumps being of the rotary centrifugal type, if desired, and geared for operation from a single motor, any one of the pumps being placed in service at a given time, or two or more being operated.

A further object is to provide thermostatically controlled electric heating apparatus, the heating units being in two groups, so that the housing for the pumps and the transparent oil containers may be heated to different temperatures, if desired.

With the foregoing and other objects in view, the invention consists in the novel construction and arrangement of elements described, illustrated and claimed, it being understood that modifications may be made within the scope of the claims without departing from the spirit of the invention.

In the drawings forming part of this application,

Figure 1 is a view of the apparatus in vertical section.

Figure 2 is a horizontal section on line 2-2 of Figure 1.

Figure 3 is a horizontal section on line 3-3 of Figure 1.

Figure 4 is a diagrammatic view showing one of the thermostatically controlled heating circuits.

Figure 5 is a similar view showing another group of heating units arranged in a circuit thermostatically controlled.

The housing for the pumping apparatus per se is designated 10 and may include a lining 11 of insulation, this housing being adapted to support the oil containers, three of which are shown, by way of illustration, in Figure 1,—it being understood that any suitable number may be employed. The transparent oil or fluid containers are designated respectively 13, 14 and 15, and are mounted in annular channeled elements 16 carried by the top 17 of the lower structure, being retained by rods 17'.

This top for the housing 10 includes upper and lower walls 17 and 18, and an inter-

mediate filling material 19 in which one group of heating coils is mounted.

Sections of hose 20 and 21 are connected with containers 13 and 15 and the middle container 14 is provided with connections 22 and 23, permitting hose to be attached to either side of the apparatus or both sides.

An upper structure includes the cap 25 and the wall 26 having annular channels for the accommodation of annular insulated or packing elements 27, into which the walls of the oil containers extend. The wall 26 is provided with apertures 28, and a chamber 29 between the elements 25 and 26 provides space for the installation of a thermostat 30 adapted to control the heating coils for the oil containers. The thermostat 31 controls the coils for heating the pump housing, and further reference to these coils will be made below.

The pumping apparatus includes rotary and centrifugal pumps shown conventionally at 35, 36 and 37, and these pumps are to be driven thru suitable shafts and gearing, from motor 38. The armature shaft 39 of motor 38 carries sprocket wheels or driving wheels 40 and 41 on opposite ends thereof, and chains or belts 42 and 43 are driven by the wheels just referred to, and impart rotary movement to wheels 44 and 45. Wheel 44 is on shaft 46 and splined clutch element 47 on this shaft cooperates with clutch element 48 on shaft 49 carrying wheel 50 by means of which chain or belt 51 is driven, this element last named imparting rotary movement to wheel 52 on shaft 53 by means of which pump 35 is operated when the clutch element 47 is thrown in by lever 54.

Also on shaft 46 is a splined clutch element 55 cooperating with clutch element 56 on shaft 57 carrying a sprocket wheel 58 for driving chain 59 and wheel 60 on shaft 61 of pump 36. The clutch element is controlled by a lever 62.

Wheel 45 already referred to is keyed on shaft 65 and clutch element 66 on this shaft is controlled by lever 67, this clutch element cooperating with clutch element 68 on shaft 69. The shaft carrying a sprocket wheel 70 driving chain 71 for imparting movement sprocket wheel 72 on shaft 73 of pump 37.

It will be observed therefore that the pumps may be individually controlled by

the levers 54, 62 and 67, and that all of the pumps are driven from shaft 39 of motor 38.

The thermostat 31 in pump housing 10 is illustrated in Figures 1 and 4 and controls the circuit including the resistance elements 75, suitably positioned within housing 10, and it is the intention that the circuit including the resistance units just referred to shall be completed when a predetermined low temperature within the housing 10, is reached.

The thermostat 30 in the upper portion of the apparatus controls the resistance units 76 for the individual oil containers, these resistance units 76 being imbedded in the material 19 between walls or plates 17 and 18.

In Figure 4 the positive and negative portions of the circuit including resistance elements 75 are designated 77 and 78, and corresponding portions of the circuit of Figure 5 are designated 79 and 80. The circuit for the motor 38 is not illustrated, but will of course be controlled by a suitable switch, and oil will be pumped by the individual elements of the pumping apparatus, to the individual containers, 13, 14 and 15 thru pipes 13', 14' and 15', and will be discharged into the upper portions of containers 13, 14 and 15, and at points just below the inverted funnel-shaped elements 83. The pipes leading to the housings of the pumps 35, 36 and 37 are designated 84, 85 and 86, these pipes leading from sources of supply, such as underground tanks or other containers. Over-flow pipes for the individual containers 13, 14 and 15, are designated 87, 88 and 89.

The resistance units 75 may be mounted

in or imbedded in an element 90, positioned adjacent to the pumps 35, 36 and 37, and the pipes 13', 14' and 15' may extend thru element 90, so that the heating effect will be manifest throughout the housing 10, and especially adjacent to the pumps and the pipes leading therefrom to the oil containers 13, 14 and 15.

Having described the invention what is claimed is:—

1. In an apparatus of the class described, a housing, containers therein for dispensing fluid, electric resistance units within the upper portion of the housing and below the containers, means defining a chamber above the containers and communicating with the interior thereof, and thermostatic means within the chamber for controlling, when influenced by outside temperature and temperature within the containers, the resistance units for all of the containers.

2. In heating means for dispensing apparatus of the class described, a housing, pumping means in the housing, containers for dispensing fluid, mounted in the housing, electric resistance units within the upper portion of the housing and below the containers, means defining a chamber above the containers and communicating with the interior thereof, thermostatic means within the chamber for controlling the resistance units for all of the containers, and thermostatically and electrically controlled means for heating the pumping means.

In testimony whereof I affix my signature.

CHARLES P. BIGGS.