

Feb. 5, 1935.

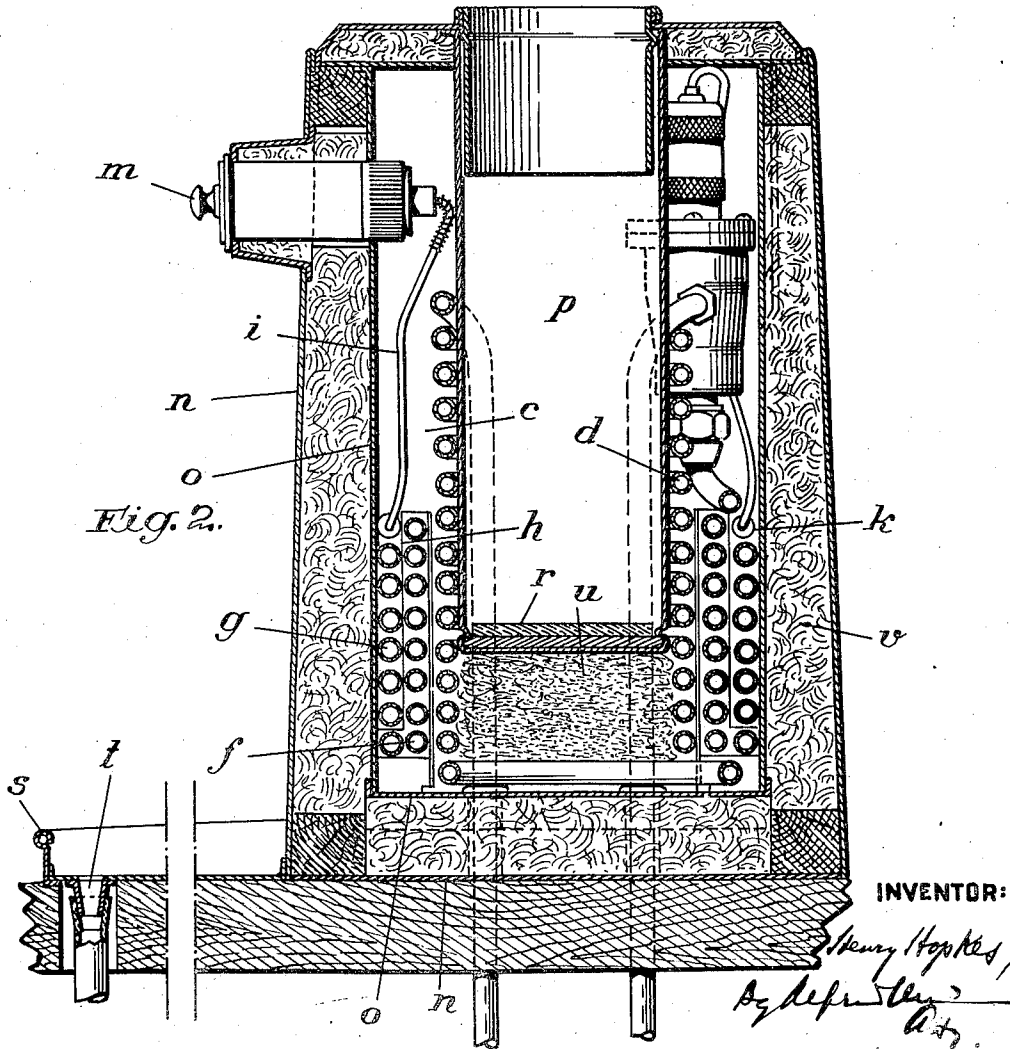
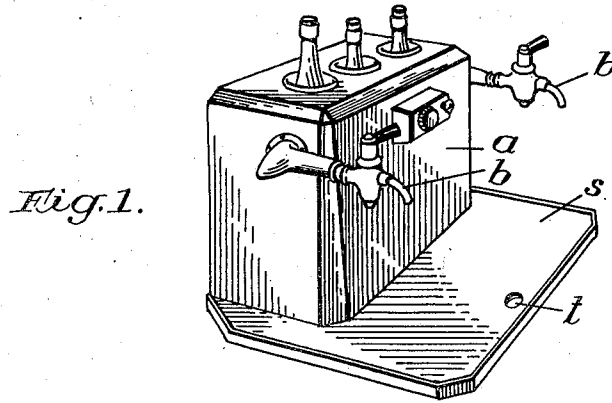
H. HOPKES

1,990,325

DISPENSING DEVICE

Filed May 16, 1933

2 Sheets-Sheet 1



INVENTOR:

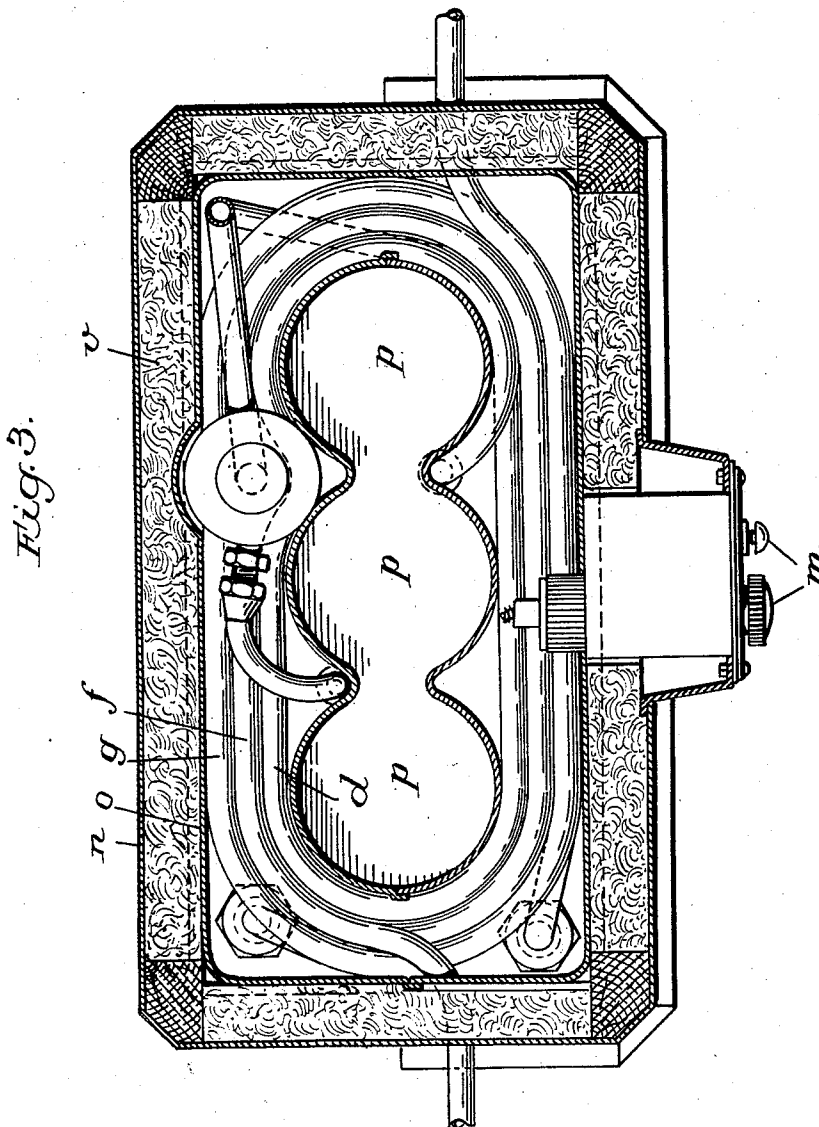
Henry Hopkes,
By defender
A. J.

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INVENTOR:

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Att.

UNITED STATES PATENT OFFICE

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DISPENSING DEVICE

Henry Hopkes, Scharfenstein, Germany

Application May 16, 1933, Serial No. 671,299
In Germany January 6, 1933

1 Claim. (Cl. 62-141)

My invention relates to devices for dispensing beverages.

In existing devices of this kind, the artificial cooling means is a separate unit from the dispensing means involving the drawback that, if the dispensing of the beverage has been for some time interrupted, the beverage as it flows from the cooling section of the device toward the tap, its temperature is raised. In order to overcome this defect, I have so designed my dispensing apparatus that the evaporating coil, together with the cold storage means, is combined with the dispensing means to constitute therewith a self-contained unit, whereby the beverage to be dispensed is subjected to the effects of the cooling means immediately prior to its being discharged from the tap.

Beverage dispensing columns provided with ice cooling are old but the constant renewal of the ice is a bothersome and time-consuming operation, aside from the fact that uniform cooling is not attained thereby. Moreover, ice-cooled beverage dispensing columns are very expensive.

The dispensing device, according to the present invention, consists of a closed box-like container equipped with taps for the dispensing of the beverage and having installed therein an artificial cooling system so that the entire outfit can be placed on any table or surface and can be easily moved to any desired location.

Because of the simple and compact type of my dispensing device, the cost of production and therefore also the purchasing cost are reduced to a fraction of those of the old-time equipment.

The compact construction of the apparatus, according to this invention, due to the combination of the artificial cooling means with the dispensing column is rendered possible also by the employment for the accumulation of the cold of a substance which freezes at approximately +2° centigrade. For this purpose, a chemically homogeneous substance e. g. ammonium nitrate, or a mixture of substances which are miscible also in the solid state is preferred so as to prevent disintegration during solidification. Substances best suited are those whose solidification takes place within narrow temperature limits and which give off as much heat as possible, without, preferably, expanding during solidification.

To insure the actual utilization of the entire refrigerating liquid, particularly in intermittent operation, the invention provides that the cold storage space is provided with substances that are good heat conductors, such as copper wool.

One embodiment of the invention is shown, by

way of illustration, on the accompanying drawings, in which Figure 1 is a perspective view of a beer tapping device; Fig. 2, a vertical section thereof drawn to a larger scale; and Fig. 3, a horizontal section.

As shown in Fig. 1, *a* is the boxlike container replacing the usual dispensing column or fountain and having, for instance, two taps *b* laterally disposed so that purchasers may observe the pouring out of the beverage. The box *a* is provided with a tray *s* having a discharge opening *t* and serving as catch for overflow beer. The box together with the tray may be placed on a table, or the like, as shown in Fig. 2. A hollow space *c* in the box intended for receiving the refrigerating liquid contains an evaporating coil *d* provided with an injection valve (not shown) and furthermore two coils *f*, *g* (Fig. 2) through which the beer flows to either tap *b*. According to this invention, the two pipes *f*, *g* differ in length, the inner one *f* having more coils than the outer one *g* in order to provide for the different cooling of the beer flowing towards the two taps *b*. For example, if light beer is passed through the coil *f* and dark beer through the coil *g*, the dark beer, in normal operation, will flow out at a slightly higher temperature than the light beer, which is usually desired.

The difference in temperatures, in addition to being brought about by the different length and position of the pipes *f* and *g*, may be attained also in other ways, such as the employment for the pipes *f* and *g* of material that differs in heat conductivity. If the beer is to flow out of one tap at a higher temperature than out of the other, even after longer interruptions, the hollow space *c* may be divided by the partition *h* shown in Fig. 2 into two compartments containing accumulator means having a different freezing point.

The space *c* contains, particularly in the parts not directly adjacent to the evaporator and beer pipes, copper wool *u*, or a similar substance possessing a large surface and good heat conductivity so as to insure complete utilization of the heat capacity of the accumulator during heavy fluctuations of load.

i indicates the feeler of a thermostat stopping the refrigerating plant as soon as the entire contents of the accumulator are frozen and the temperature begins to fall below the freezing point. A second thermostat with the feeler *k* regulates the injection of the refrigerating medium through the injection valve into the evaporator coil *d*. *m* indicates adjusting means for the thermostats. The amount of refrigerating medi-

um to be injected into the evaporator coil may be controlled also by other means than thermostats.

The entire outfit is surrounded by a double wall *n*, *o*, the outer wall *n* of which consists, for instance, of nickeline or other non-corrosive substance while the inner wall *o* is of tinned sheet copper. The space between the two walls is filled with an insulator or heat insulating means *v* of known type.

In its center, the device is provided with one or several cooling spaces *p* for cocktail or other bottles. The bottom of this cooling space is

preferably provided with a soft rest or pad *r* consisting of rubber or the like.

I claim:—

A self-contained beverage dispensing device comprising a closed container having a cold storage space, an evaporator coil surrounding said space and adapted to receive a refrigerating medium, a plurality of separate beverage conducting pipes in different spaced relationship to said evaporator coil, and a dispensing tap provided on the outwardly projecting end of each of said pipes.

HENRY HOPKES.