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H. G. WINTER

2,106,263

COOLING CABINET

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FIG. 1.

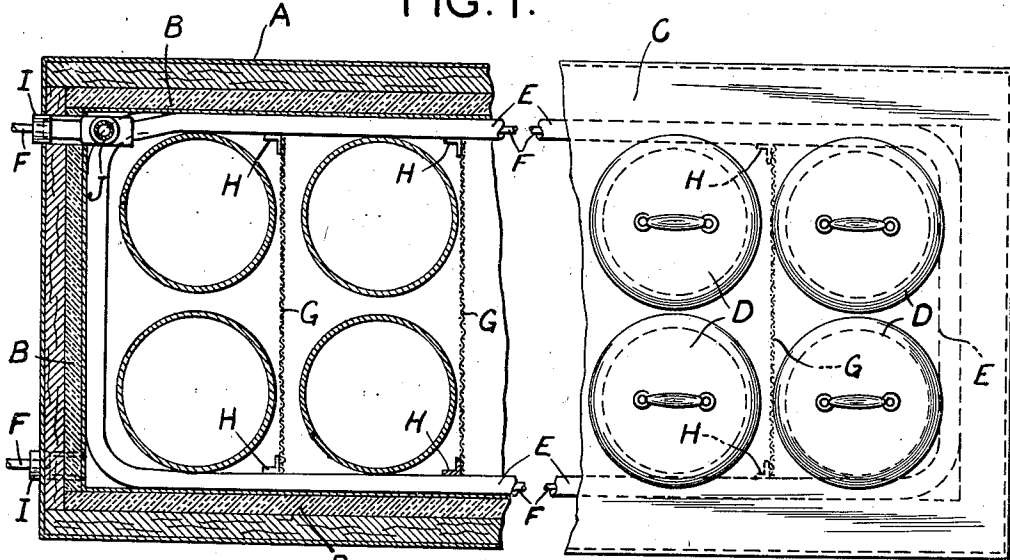


FIG. 2.

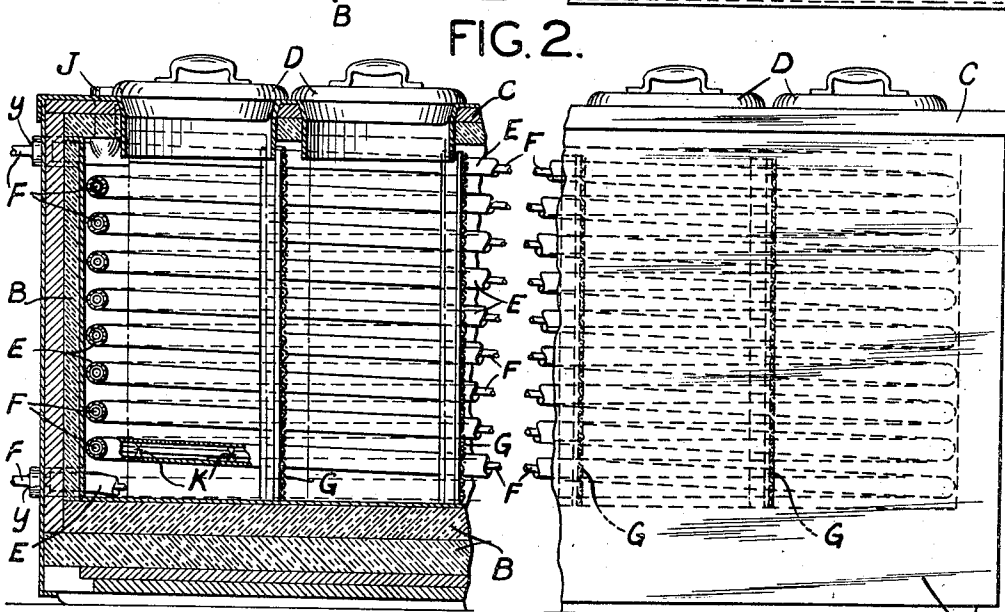


FIG. 3.

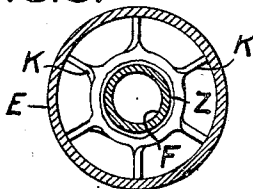
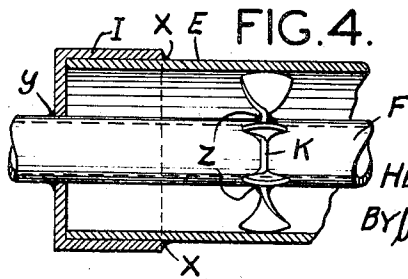


FIG. 4.



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COOLING CABINET

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3 Claims. (Cl. 62-95)

This invention relates to devices of the kind commonly referred to as "cooling cabinets" that are used in retail establishments for maintaining ice cream and bottled beverages in a cold condition.

The main object of my invention is to provide an efficient device of the character referred to, which is of such design and construction that it can be manufactured and sold at a low cost.

Another object is to provide an inexpensive cooling cabinet whose component parts are constructed and combined in a novel manner that practically eliminates the possibility of a leak developing in the portion of the cabinet used to hold the liquid refrigerating medium.

Figure 1 of the drawing is a top plan view, partly broken away, and in horizontal section, of a cooling cabinet embodying my invention.

Figure 2 is a front elevational view of said cabinet, partly broken away and in vertical section.

Figure 3 is a detail sectional view of a portion of the coil structure, illustrating one of the spacing devices used to maintain the inner coil in spaced relationship with the outer coil; and

Figure 4 is a longitudinal sectional view of the parts shown in Figure 3.

In the drawing A designates the outer shell or casing of the cabinet, which may be made of metal or any other suitable material and lined with any suitable kind of insulating material B, said casing usually being of substantially oblong shape or form and provided at its upper end with a removable, insulated cover C that constitutes the top wall of the internal space of the cabinet that is adapted to receive the goods which it is desired to maintain in a cold condition. Numerous openings are formed in said cover, so as to provide access to the interior of the storage space of the cabinet, and a separate, removable lid or closure D is provided for each of said openings.

The cooling apparatus of the cabinet comprises a pipe coil E on the interior of the cabinet filled with brine or any other suitable non-circulating liquid refrigerating medium, and a separate and distinct pipe coil F arranged inside of the coil E and connected with a conventional electrically-operated refrigerating apparatus, not shown, that causes a gaseous refrigerating medium to be circulated through the coil F, so as to abstract heat from the liquid in the coil E, the said liquid, in turn, being used to abstract heat from the storage space of the cabinet. For convenience, I will refer to the coil E as the liquid coil, and will

refer to the coil F as the gas coil, but I wish it to be understood that it is immaterial what type or kinds of refrigerating mediums are used in said coils, so long as the refrigerating medium in the outer coil E will abstract heat from the storage space of the cabinet, and the refrigerating medium in the inner coil F will abstract heat from the medium in the outer coil E. The interior of the cabinet is preferably divided into a plurality of compartments by means of vertical, transversely-disposed partitions G that may conveniently be formed from pieces of metal screen material provided at their ends with vertically-disposed angles H arranged in spaced relationship with the front and rear walls of the cabinet. The coil structure extends around the interior of the cabinet, so as to form in effect a lining for the storage space, and is retained in position by attaching the outer coil E to the angles H by spot welding, or in any other suitable way.

The two ends of the outer coil E are closed by caps I attached to same by welds *x*, as shown in Figure 4, and the terminal portions of the inner coil F project outwardly through said caps I and are connected with same by gas and liquid-tight joints, formed preferably by welds *y*. In order that the liquid refrigerating medium may be easily introduced into the outer coil E, the terminal portion of said coil located at the top of the cabinet is provided with any suitable kind of filling device designated by the reference character J in Figures 1 and 2. Usually, the coil structure will be formed or produced by arranging a continuous piece of relatively small bore metal pipe F inside of a continuous piece of metal pipe E of considerably larger bore, and then bending said two pipes into the form of a coil composed of a plurality of substantially oblong-shaped sections arranged in superimposed relationship. Any suitable means may be used to hold the inner coil F in spaced relationship with the outer coil E, the means herein illustrated for this purpose consisting of spacing devices K attached to the exterior of the inner coil by welds *z*, or in any other other suitable manner, and provided with radially-disposed arms that bear against the inner surface of the outer coil, and thus hold the two coils in concentric relationship.

A coil structure of the kind above described can be manufactured quickly and at a low cost, by slipping the spacing devices K over the inner pipe F and attaching them to same, and then feeding said inner pipe into the outer pipe E.

In addition to its low cost of manufacture, a cooling cabinet of the construction above described is easy to maintain in a liquid-tight condition, due to the fact that the brine or equivalent non-circulating liquid refrigerating medium is confined in a continuous tubular coil, instead of in a copper box or rectangular-shaped sheet metal tank whose joints are apt to open up and develop leaks when the cabinet is in use.

10 Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. A cooling cabinet for retail establishments, consisting of an insulated casing having a top, a bottom and side walls, a coil structure on the interior of the cabinet extending around the side walls of same and arranged so as to form in effect a lining for a food or bottle receiving space, said coil structure being composed of a continuous outer pipe, adapted to hold a non-circulating cooling medium, and a continuous inner pipe arranged inside of said outer pipe in spaced re-

lationship with the same, and adapted to hold a circulating refrigerating medium, transverse partitions inside of the cabinet that divide said food or bottle space into a plurality of compartments, the ends of said partitions being rigidly fastened to the coil structure to support and secure the same in position, and removable closures in the top wall of the cabinet that provide access to said compartments.

2. A cooling cabinet of the kind described in claim 1, in which the inner pipe of the coil structure has rigidly attached to the exterior of same in spaced relationship, spacing devices that surround said pipe and which are provided with radially disposed arms that bear against the inner surface of the outer pipe of the coil structure.

3. A cooling cabinet of the kind described in claim 1, in which the transverse partitions are formed from metal screen material combined with vertically disposed angle irons located at the ends of the partitions.

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