No. 735,403. PATENTED AUG. 4, 1903.

E. F. OSBORNE.

REFRIGERATOR FOR BOTTLED GOODS.

APPLICATION FILED OCT. 26, 1899.

NO MODEL.

Fig 4

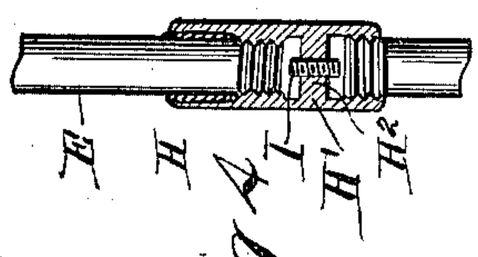


Fig 2

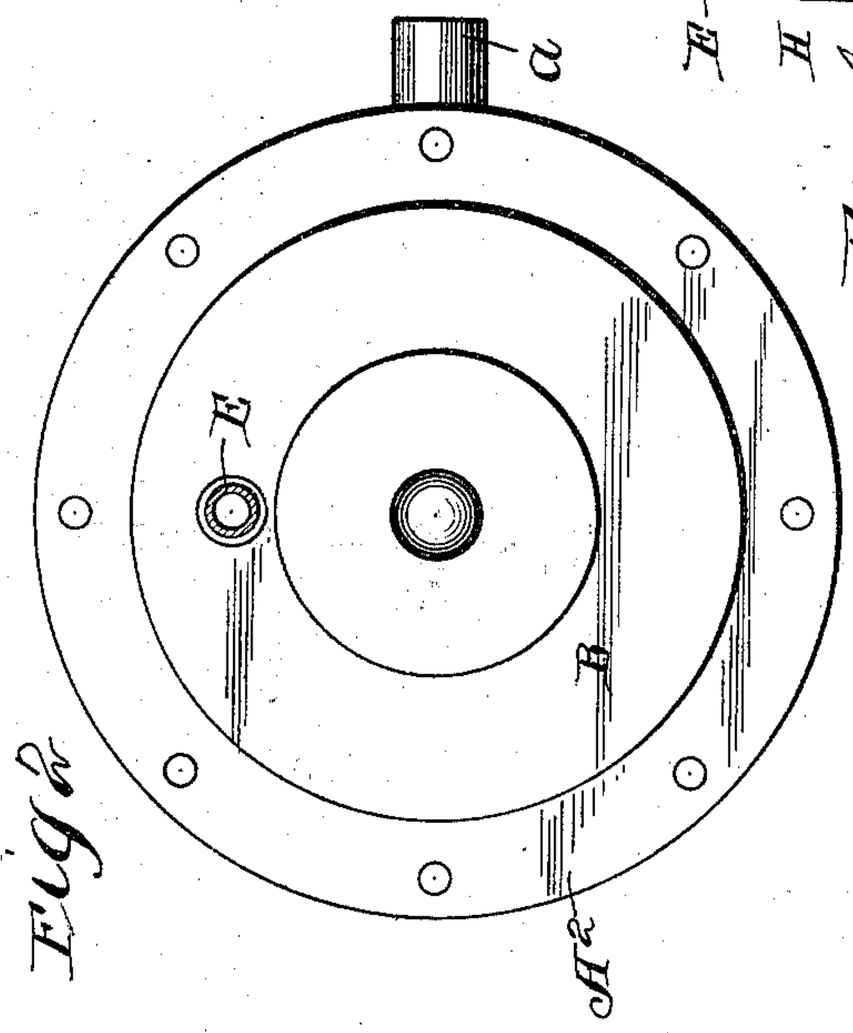


Fig 3

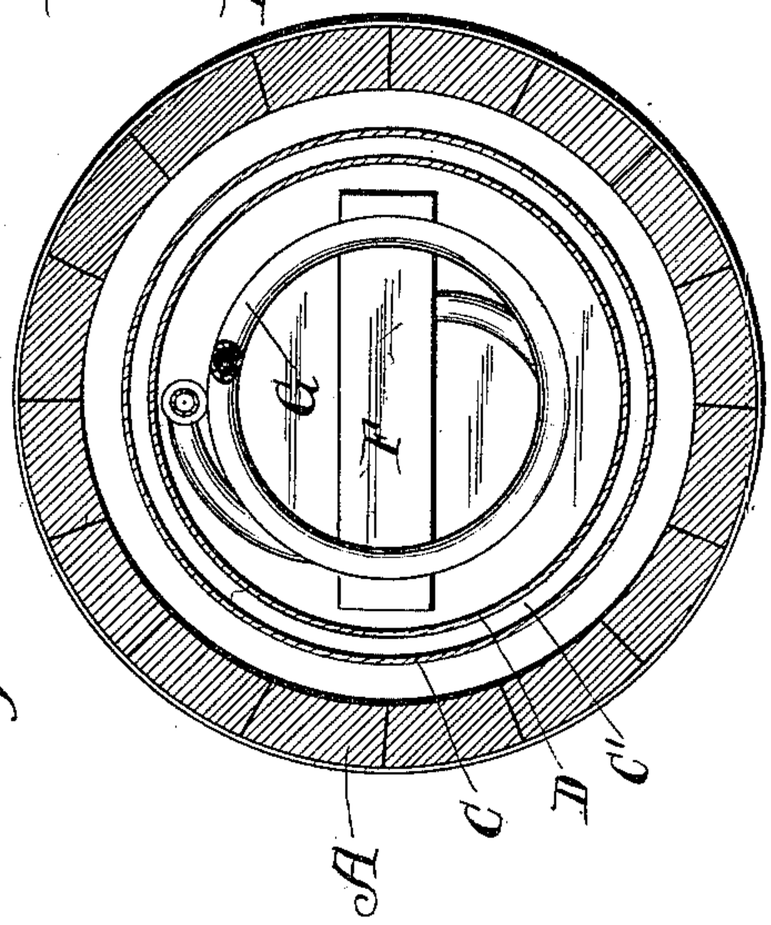
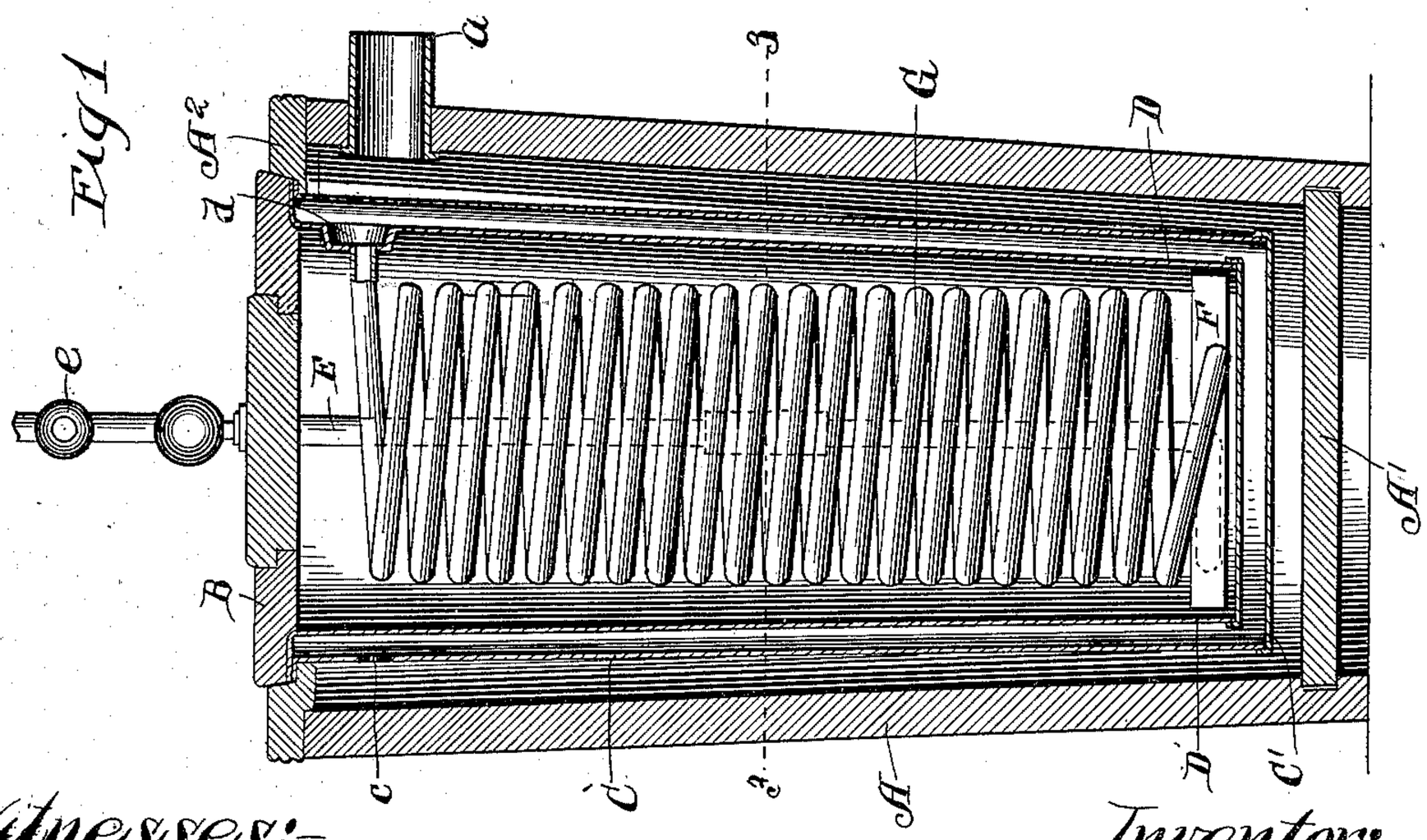


Fig 1



Witnesses:-
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by Poole & Browne
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No. 735,403. Patented August 4, 1903.

UNITED STATES PATENT OFFICE.

EUGENE F. OSBORNE, OF CHICAGO, ILLINOIS, ASSIGNOR, BY MESNE ASSIGNMENTS, TO SAID OSBORNE AND J. MOTTE MARTIN, TRUSTEES, OF CHICAGO, ILLINOIS.

REFRIGERATOR FOR BOTTLED GOODS.

SPECIFICATION forming part of Letters Patent No. 735,403, dated August 4, 1903.

Original application filed July 26, 1899, Serial No. 725,151. Divided and this application filed October 26, 1899. Serial No. 734,856. (No model.)

To all whom it may concern:

Be it known that I, EUGENE F. OSBORNE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Refrigerators for Bottled Goods; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to a novel form of refrigerator for bottled goods—such as champagne, beer, and the like—of that class in which the refrigerating agent consists of a liquefiable gas which is delivered to the refrigerating device under pressure and is therein expanded, with the result of absorbing the heat from the liquor contained within the bottle.

The invention consists in the matters hereinafter set forth, and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is an axial section of a refrigerating device made in accordance with my invention. Fig. 2 is a top plan view thereof. Fig. 3 is a section taken on line 3 3 of Fig. 1. Figs. 4 and 5 are details of a reducing-valve forming part of the refrigerator.

As shown in the drawings, A designates an inclosure which is of circular form in cross-section and which is provided with a bottom wall A′ and a top wall A^2. Said top wall is provided with a removable cover B.

C designates a cylindric casing depending from the top wall of the inclosure and extending almost to the bottom of said inclosure and provided with a bottom wall C′.

D designates an inner cylindric casing arranged concentric with the casing C and which is suspended from the top wall of the inclosure and is also closed by a bottom wall C′, which is located above the bottom wall A′ of the outer casing.

E designates a pipe which leads from a suitable source of liquefiable-gas supply to the refrigerating device. Said pipe passes downwardly through the upper wall of the receptacle and is connected at its lower end near the lower end of the casing with a head F. G designates a coiled pipe which is located within said inner cylindric casing C and at its lower end is connected with the head F, with which it is in communication and through which it is connected with the delivery-pipe E. Said delivery-pipe is provided adjacent to the refrigerator with a cut-off valve *e*. The opposite end of the coil G is connected, through an opening *d* at the upper end of the casing D, with the space between the outer and inner casings C and D. The outer casing C is provided on the side of the device opposite to the opening *d* with an opening *c*, through which the space between said casings C and D has communication with a space between the casing C and the outer inclosure.

The inlet-pipe E is provided about midway between the length of its part within the inclosure with an expansion-valve H. (Shown in dotted lines in Fig. 1 and in detail in Figs. 4 and 5.) Said valve consists of a coupling-sleeve H′, with which the adjacent ends of the pipe-sections forming the inlet-pipe are connected. Said sleeve is provided with an apertured diaphragm H^2, the aperture of which is screw-threaded and is engaged by a screw-threaded plug I. Said plug I is provided on one side thereof with a slot *i*, which is wider at one end thereof than the other. With this construction the turning of the plug into and out of the diaphragm varies the size of the passage through said diaphragm and therefore the quantity of fluid which may pass through the pipe.

The refrigerating mixture, medium, or agent passes through the coil G to the opening *d*, thence into the space between the casings C and D, and from said space through the opening *c* in the outer casing C to the space between said outer casing and the side wall of the inclosure. From said last-mentioned space it is discharged through a short pipe *a* to any suitable point for disposal. In this construction the refrigerating agent will desirably be conducted to the refrigerating device in the form of liquid and gasified at the reducing-valve within the delivery-pipe, as hereinbefore described.

I claim as my invention—

1. A refrigerator for bottled goods comprising an inclosure, a coil therein which incloses a central space open at one end of the coil, a door in the inclosure at the open end of the coil, a pipe connected at one end with the coil for supplying a refrigerating agent under pressure, said coil having an outlet at its other end, said inclosure being constructed to provide outside of the coil a plurality of spaces which have communication with each other, one of said spaces communicating with the outlet end of the coil and another discharging outside the inclosure.

2. A refrigerator for bottled goods comprising an inclosure, a centrally-arranged coiled pipe therein, an inlet-pipe for the refrigerating agent provided with an expansion-valve and connected at its lower end with said coiled pipe, a casing surrounding said coiled pipe, a similar casing surrounding said first-mentioned casing, said coiled pipe opening at its discharge end into the space between the two casings and the said outer casing being provided with an opening which communicates with a space between said outer casing and the wall of the inclosure, and said inclosure being provided with an exhaust-opening.

3. A refrigerator for bottled goods comprising an inclosure, an inlet-pipe which passes through the upper wall thereof to the lower end of the inclosure and is provided between its ends with an expansion-valve, a coiled pipe located in said receptacle and connected with said inlet-pipe, said coiled pipe being provided at its upper end with a discharge-opening, said expansion-valve comprising a sleeve which is screw-threaded at its end for engagement with the adjacent ends of the inlet-pipe and provided between its ends with apertured, screw-threaded diaphragm, and a plug having screw-threaded engagement with said aperture of the diaphragm and provided with a tapered groove in its side.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 19th day of October, A. D. 1899.

EUGENE F. OSBORNE.

Witnesses:

WILLIAM L. HALL,

GERTRUDE BRYCE.