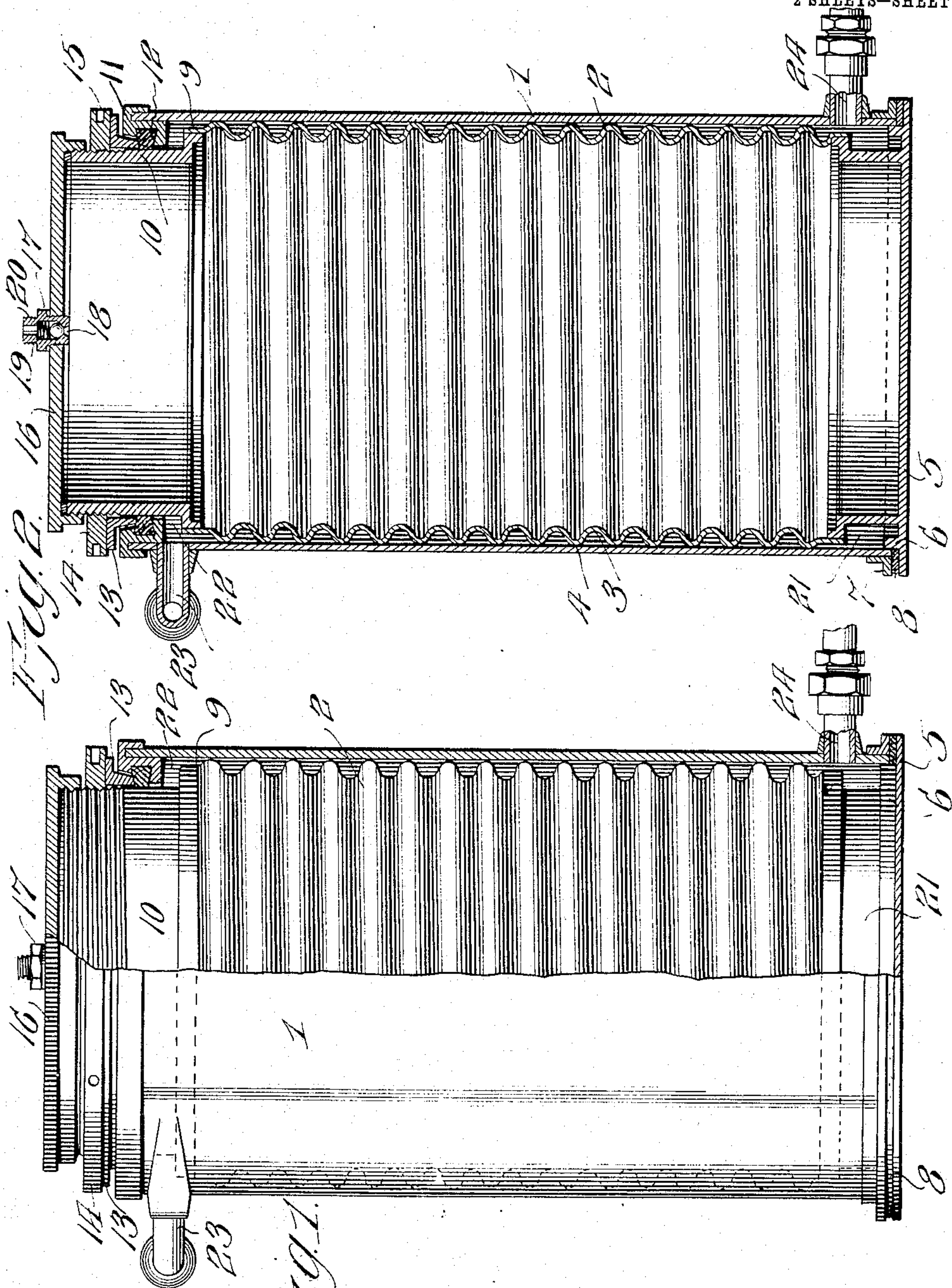


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LIQUID COOLER.  
APPLICATION FILED APR. 1, 1909.

939,021.

Patented Nov. 2, 1909.

2 SHEETS—SHEET 1.



Witnesses  
Frank Hough.  
R. M. Smith.

Inventor  
John D. Hendrix,

By Victor J. Evans.

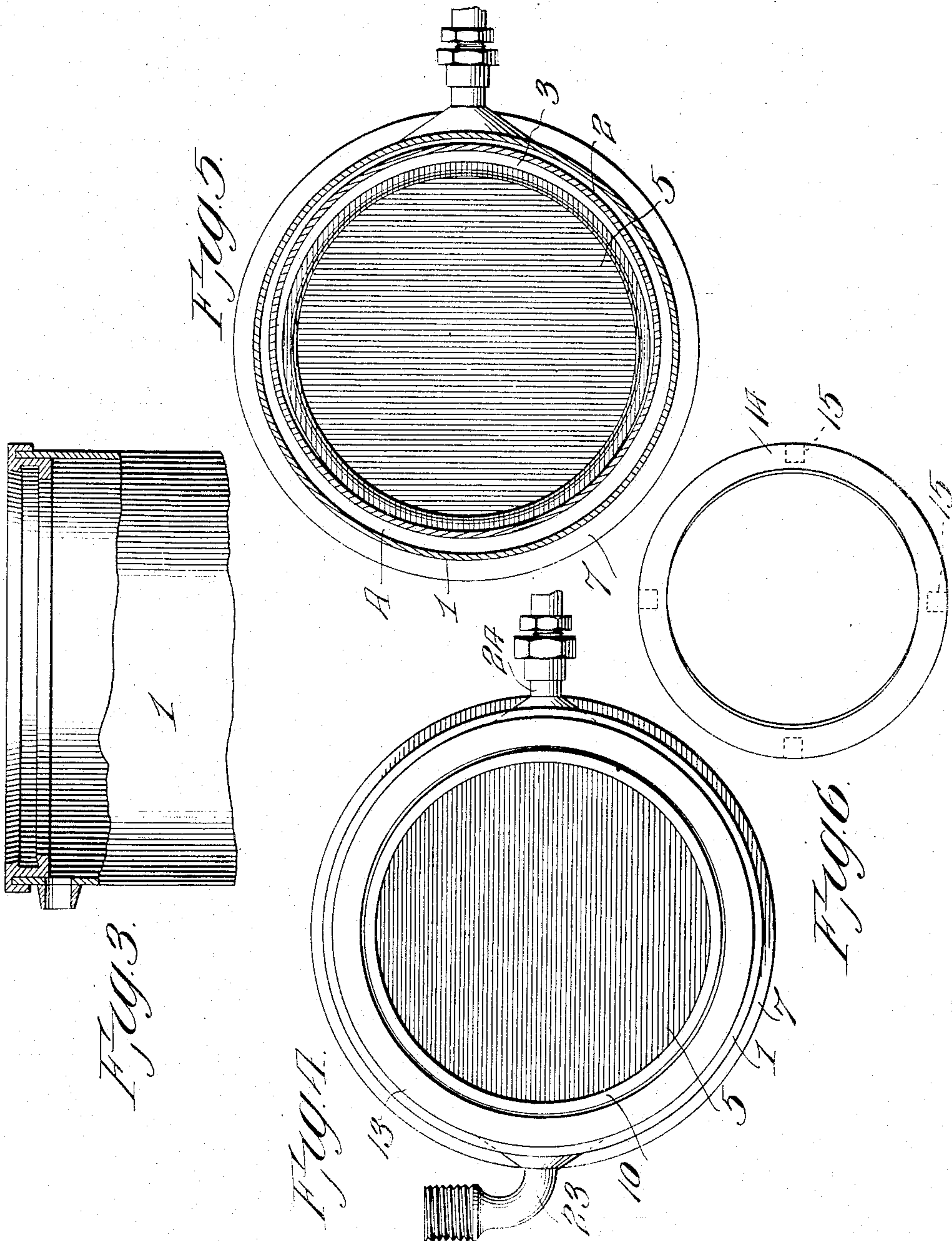
Attorney.

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# UNITED STATES PATENT OFFICE.

JOHN D. HENDRIX, OF ATLANTA, GEORGIA.

## LIQUID-COOLER.

939,021.

Specification of Letters Patent.

Patented Nov. 2, 1909.

Application filed April 1, 1909. Serial No. 487,167.

*To all whom it may concern:*

Be it known that I, JOHN D. HENDRIX, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Liquid-Coolers, of which the following is a specification.

This invention relates to liquid coolers, the object of the invention being to provide a refrigerator or cooler especially adapted for beer and like beverages, the construction allowing the beer or other beverage to pass in a circuitous way through the body of the cooler and be subjected to the cooling influence of the ice or other refrigerating medium contained in the body of the cooler without such liquid coming in contact with the refrigerating agent.

A further object of the invention is to provide a cooler of sectional construction, the parts of which are so combined as to enable them to be easily and quickly disassembled for the purpose of thoroughly cleansing the channels and various portions of the passages through which the beverage courses in its travel from the inlet to the outlet, thus rendering the device sanitary.

A further object of the invention is to provide a cooler of the class described with means whereby a portion of the air may be extracted from the refrigerant compartment.

With the above and other objects in view, the nature of which will more readily appear as the description proceeds, the invention consists in the novel construction, combination and arrangement of parts as herein fully described, illustrated and claimed.

In the accompanying drawings:—Figure 1 is a side elevation, partly broken away in section, illustrative of the improved cooler. Fig. 2 is a vertical diametrical section through the same taken in line with the inlet and outlet. Fig. 3 is a side elevation partly in diametrical section through the upper portion of the outer shell. Fig. 4 is a plan view of the cooler with the top cap removed. Fig. 5 is a horizontal section through the cooler. Fig. 6 is a detail plan view of the locking ring or nut.

Referring to Figs. 1 and 2, the main body of the cooler is seen to comprise an outer cylindrical shell 1 and an inner shell 2 having a general cylindrical shape but corrugated or fluted spirally to form a spiral conduit or liquid passage 3 extending continuously and unbroken from one end to the other of

the shell 2 with the outwardly extending ridges 4 between which the grooves 3 intervene, touching or lying in close contact with the inner wall of the outer shell 1. The inner shell 2 is connected by a liquid-tight joint at the bottom edge thereof and with a cup-shaped base 5, the said base being provided within its outer marginal edge with a concentric flange 6 which acts as a centering rest for the outer shell 1, the said outer shell fitting around the flange 6 as shown in Figs. 1 and 2. The outer shell 1 has secured to its lower edge and upon its outer side, an angle iron ring 7 forming a flange between which and the bottom or base 5 there is interposed a gasket 8 to form a liquid-tight joint between the outer and inner shells at the bottom of the body. At the top the inner shell is connected by a liquid-tight joint at 9 with a cylindrical neck 10 and in order to provide a tight joint between the top portions of the inner and outer shells, a gasket-holding ring 11 is fitted over the top edge of the shell 1 and extended downward within the upper portion of the shell 1 where it is provided in its inner face with a groove in which is seated and held a gasket 12 adapted to be pressed into firm contact with the outer surface of the neck 10. The gasket 12 is pressed against the neck 10 by means of a gland 13 above which is arranged a threaded ring or nut 14 screwed upon the threaded upper portion of the neck 10 as shown in Figs. 1 and 2, the said nut being provided at suitable intervals with spanner sockets 15 to enable said ring or nut to be tightened or loosened. On the upper end of the neck 10 there is screwed an internally threaded cap 16 which is provided at a suitable point with a small valve casing 17 in which is arranged a check valve 18 shown for convenience in the form of a ball held to its seat by means of a spring 19, the valve casing being threaded as shown at 20 to enable a pipe to be attached thereto from a suitable exhaust pump thus enabling any desired amount of air to be exhausted from the interior of the body of the cooler.

The cup shaped base 5 is formed with a circular outlet channel 21 formed by offsetting inwardly a portion of the periphery or rim thereof as clearly shown in the diametrical section, Fig. 2. In like manner the neck 10 is inwardly offset to form an annular inlet chamber 22 into which the beer or other beverage is led by means of an inlet



connection 23. Extending off from the annular outlet channel 21 is an outlet connection 24. The inlet and outlet connections 23 and 24 may be attached to the outer shell 1 in any convenient manner.

The liquid entering through the connection 23 passes around the circular inlet channel 22 and is thence directed in a spiral course between the outer and inner shells 1 and 2, until it finally reaches the circular outlet channel 21 from whence it passes through the outlet port 24 to the point of delivery. The interior or main body of the cooler is designed to be filled with ice or refrigerating medium and thus the liquid or beverage is subjected for a considerable length of time to the cooling influence of such agent. In addition to this the outer and inner shells may be readily separated by removing the cap 16 and the nut 14 and drawing the inner shell downwardly through the bottom of the outer shell. The parts may be then thoroughly cleansed and readily reassembled for further use. By exhausting a portion of the air from the central refrigerant chamber from time to time, the refrigerating agent is prevented from melting too rapidly.

I claim:—

1. A cooler for the purpose specified comprising an outer cylindrical shell, an inner shell having a spirally corrugated body of such diameter that the outwardly extending ridges of the corrugations bear against the inner wall of the outer shell to form a spiral passage way between the outer and inner shell, a cup-shaped base at the lower end of the inner shell flanged to overlap the bottom edge of the outer shell, a neck at the upper end of said inner shell, and means for producing a tight joint between the upper portion of the outer shell and said neck consisting of a gasket holding ring, a gland, and a threaded ring or nut screwing around said neck, substantially as described.

2. A cooler for the purpose specified comprising an outer cylindrical shell, an inner spirally corrugated shell the outwardly extending ridges of which lie in contact with the inner surface of the outer shell, a cup-shaped base secured to the lower end of the inner shell and having the outer body portion or rim thereof inwardly offset to form an annular outlet channel, and a flange which overlaps the bottom edge of the outer shell, an outlet connection communicating with said outlet channel, a neck at the opposite end of the inner shell reduced in diameter to form an annular inlet channel, an inlet connection leading to said channel, and means for producing a tight joint between the outer shell and said neck consisting of a gasket-holding ring on the outer shell, a gland embracing the neck, and a nut screwing upon said neck and cooperating with the gland, substantially as described.

3. A cooler for the purpose specified comprising an outer cylindrical shell, an inner spirally corrugated shell the outwardly extending ridges of which lie in contact with the inner surface of the outer shell, annular inlet and outlet channels arranged at opposite ends of the spiral passage-way thus formed between the two shells, inlet and outlet connections leading to said annular channels, joint-forming means for effecting a liquid tight connection between said shells at or near the opposite ends thereof, a permanent closure for one end of the inner shell, and a detachable closure for the other end of said shell, the joint forming means at one end of the cooler being removable to permit the shells to be separated one from the other.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN D. HENDRIX.

Witnesses:

JOHN L. FLETCHER,  
K. ALLEN.