

No. 724,750.

PATENTED APR. 7, 1903.

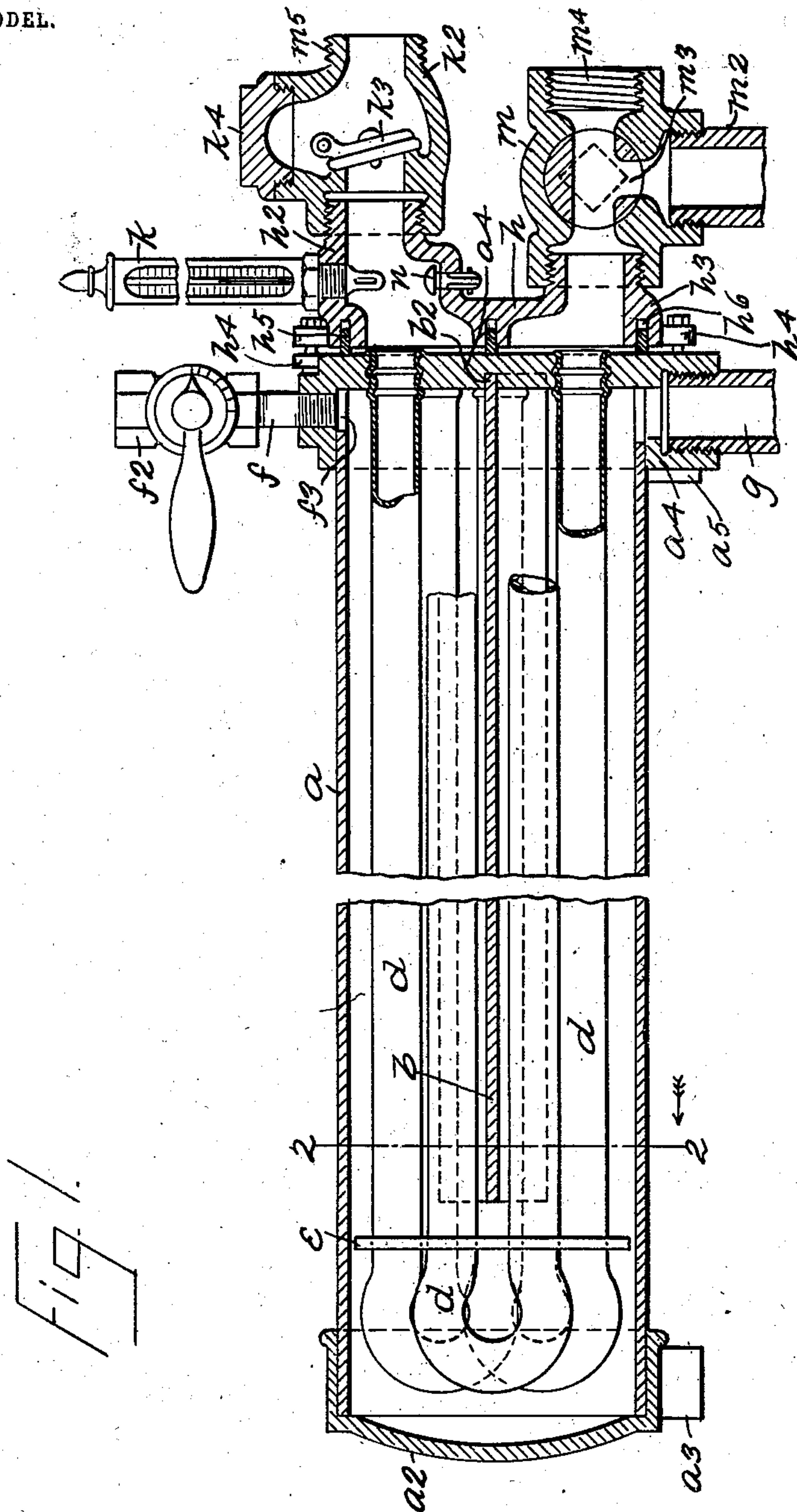
C. SPINDLER.

APPARATUS FOR COOLING BEER OR OTHER LIQUIDS.

APPLICATION FILED APR. 2, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



WITNESSES

J. C. Larsen
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INVENTOR

Charles Spindler

BY

Edgar Tate & Co.

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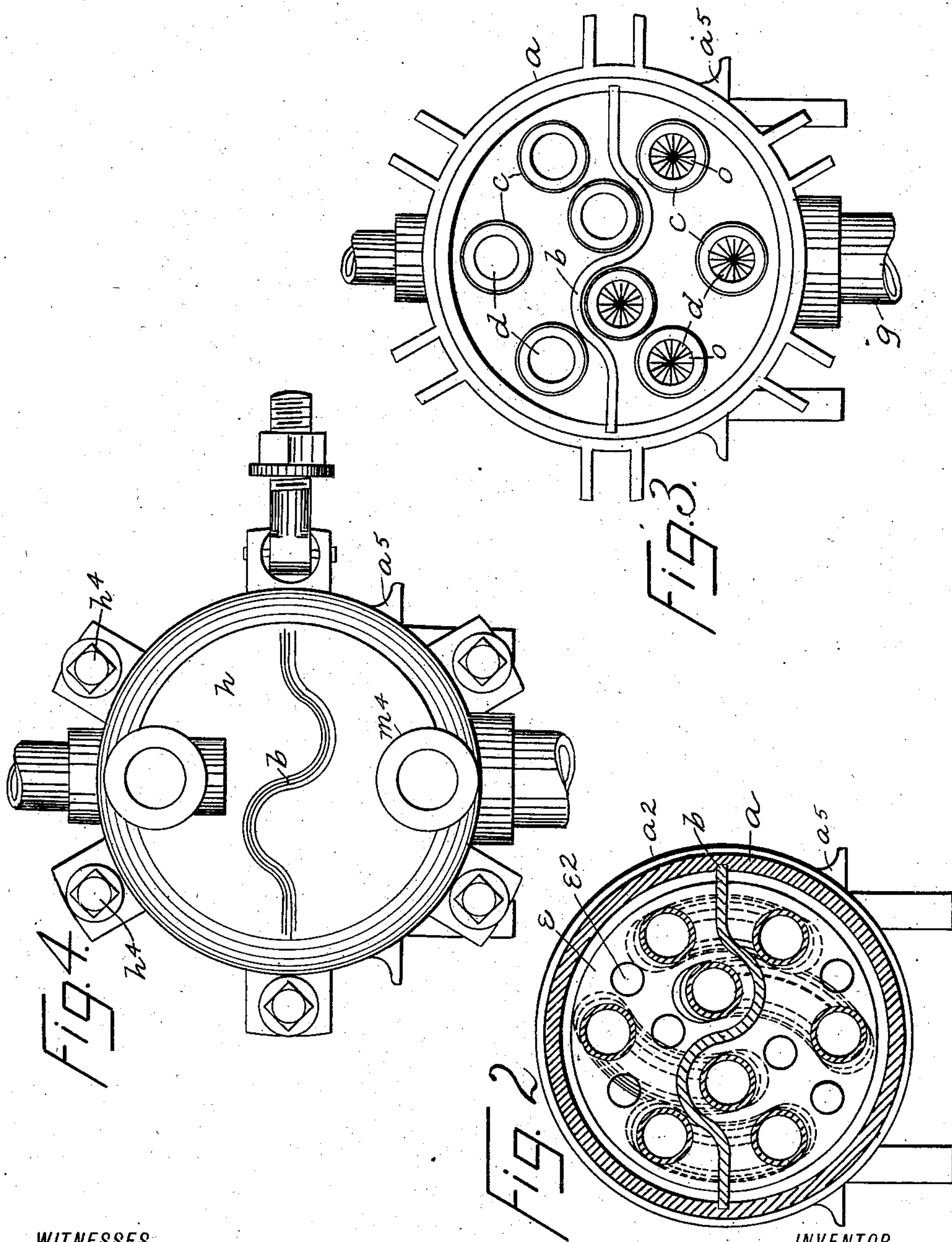
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UNITED STATES PATENT OFFICE.

CHARLES SPINDLER, OF JERSEY CITY, NEW JERSEY.

APPARATUS FOR COOLING BEER OR OTHER LIQUIDS.

SPECIFICATION forming part of Letters Patent No. 724,750, dated April 7, 1903.

Application filed April 2, 1902. Serial No. 101,040. (No model.)

To all whom it may concern:

Be it known that I, CHARLES SPINDLER, a citizen of the United States, residing at Jersey City, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Apparatus for Cooling Beer or other Liquids, of which the following is a full and complete specification, such as will enable those skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in apparatus for cooling beer and other liquids wherein the cooling medium consists of ammonia or carbonic-acid gas or a salt or calcium brine solution, the object of the invention being to prevent the freezing of the liquid to be cooled, which frequently happens whenever irregularities in the flow of said liquid occur, a further object being to provide an apparatus of the class specified which may be quickly and easily drained and cleaned without breaking the joints and disconnecting the parts thereof.

The invention is fully disclosed in the following specification, of which the accompanying drawings form a part, in which the separate parts of my improvement are designated by the same reference characters in each of the views, and in which—

Figure 1 is a central side elevation of the apparatus which I employ; Fig. 2, a section thereof on the line 2 2; Fig. 3, a right-hand end view of the apparatus with the coupling-head detached, and Fig. 4 a similar view with the coupling-head in position.

In the practice of my invention I provide a cylindrical casing a , which is permanently closed at one end by means of a cap a^2 , and this cap is preferably provided with legs a^3 , and the opposite end of the casing a is also provided with a cap a^4 , having legs a^5 , and by means of the legs a^3 and a^5 the casing a may be supported on any suitable brackets or supports of any kind or class.

The casing a is provided with a longitudinal partition b , which is preferably grooved longitudinally in cross-section, as shown in Figs. 2, 3, and 4, and the end thereof is countersunk in the cap a^4 , as shown at b^2 , and said head is also provided on the opposite sides of the partition b with a plurality of openings c , which are four in number in the construction

shown or eight in all, and arranged within the casing a are a plurality of loop-shaped pipes d , both ends of which are secured in the head a^4 , and these loop-shaped pipes d are four in number and are expanded in said head, as shown in Fig. 1, and by means of the partition b the ends of the said pipes which extend through the cap a^4 are divided into separate series, one of which is above and one below said partition. The inner ends of the loop-shaped pipes d are supported in a disk or plate e , through which the said pipes pass, and this disk or plate is also perforated or provided with holes or openings e^2 , as shown in Fig. 2.

The head a^4 is provided at its upper side with a branch pipe f , having a valve f^2 , which is in communication with the interior of the casing a , as shown at f^3 , and said head is also provided at its lower side with a branch pipe g , which is in communication with the bottom portion of the casing a .

The apparatus is also provided with a detachable head h , composed of separate parts or casings h^2 and h^3 , and this detachable head h is bolted to the head a^4 , as shown at h^4 in Fig. 4, and said head a^4 is provided with an annular flange or rim h^5 , which fits in a corresponding groove h^6 in the detachable head h . The top part h^2 of the detachable head h is provided on its upper side with a thermometer k and at its outer end with a valve-casing k^2 , in which is placed a check-valve k^3 , and the top portion of which is provided with an opening closed by a cap k^4 . The bottom portion of the detachable head h is provided with a three-way coupling m , having a downwardly-directed tubular escape-pipe m^2 and a three-way valve m^3 , by which the separate passages in the three-way coupling m are controlled, and the upper part h^2 of the head h is also provided in the bottom side thereof with an air-vent valve n , which opens inwardly, and said bottom part h^3 of the detachable head h forms an inlet, and the top part h^2 of said detachable head forms an outlet by means of which the liquid to be cooled enters the pipes d in the casing a and leaves the same, and said coupling m is provided with an extension m^4 and the valve-casing k^2 with an extension m^5 , by means of which suitable pipes may be connected with the de-

tachable head h for conveying liquid to and from the pipes d in the casing a . I also place in the inlet ends of the pipes d spirally-arranged plates o , which are shown in Fig. 3, and the object of which is to give a whirl to the liquid as it passes into the pipes d and to cause the same to expand therein and to come more fully in contact with the walls thereof.

It will be understood that the cooling medium enters the casing a through the pipe f and leaves through the pipe g , while the liquid to be cooled enters through a pipe connected with the extension m^4 of the coupling m and leaves through the part h^2 of the removable head and the valve-casing k^2 . In case of a stoppage of the flow of the liquid to be cooled the cooling medium is generally shut off quickly; but there is always cold temperature enough left in the cooling-pipes to freeze the liquid therein, and to avoid this I provide the check-valve k^3 and air-vent n and the three-way coupling m , so that when the latter is opened into the discharge-pipe m^2 the liquid remaining in the cooling-pipes d will flow out, thus avoiding the necessity of thawing out the ice frozen therein, which frequently occurs with the apparatus now employed and which causes much delay and renders expensive repairs necessary.

I claim—

1. In an apparatus of the class described,

a casing closed at one end and provided at the opposite end with a head, a longitudinal partition secured to said head and extending approximately to the opposite end of said casing, a plurality of looped tubes arranged in said casing and the ends of which are secured in said head and separated by said partition, one end of the said tubes forming inlets and the other outlets, and a detachable coupling-head secured to the first-named head and provided with a three-way inlet adapted to serve as an emergency-outlet for said tubes, and an outlet for the outlet ends of said tubes provided with a check-valve and an air-vent, substantially as shown and described.

2. In an apparatus of the class described the combination with a cooling-casing having inlet and outlet ports or passages, of a divided and detachable head having a three-way inlet adapted also to serve as an emergency-outlet and an independent outlet provided with a check-valve and an air-vent, substantially as shown and described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of the subscribing witnesses, this 28th day of March, 1902.

CHARLES SPINDLER.

Witnesses:

F. A. STEWART,
F. F. TELLER.