

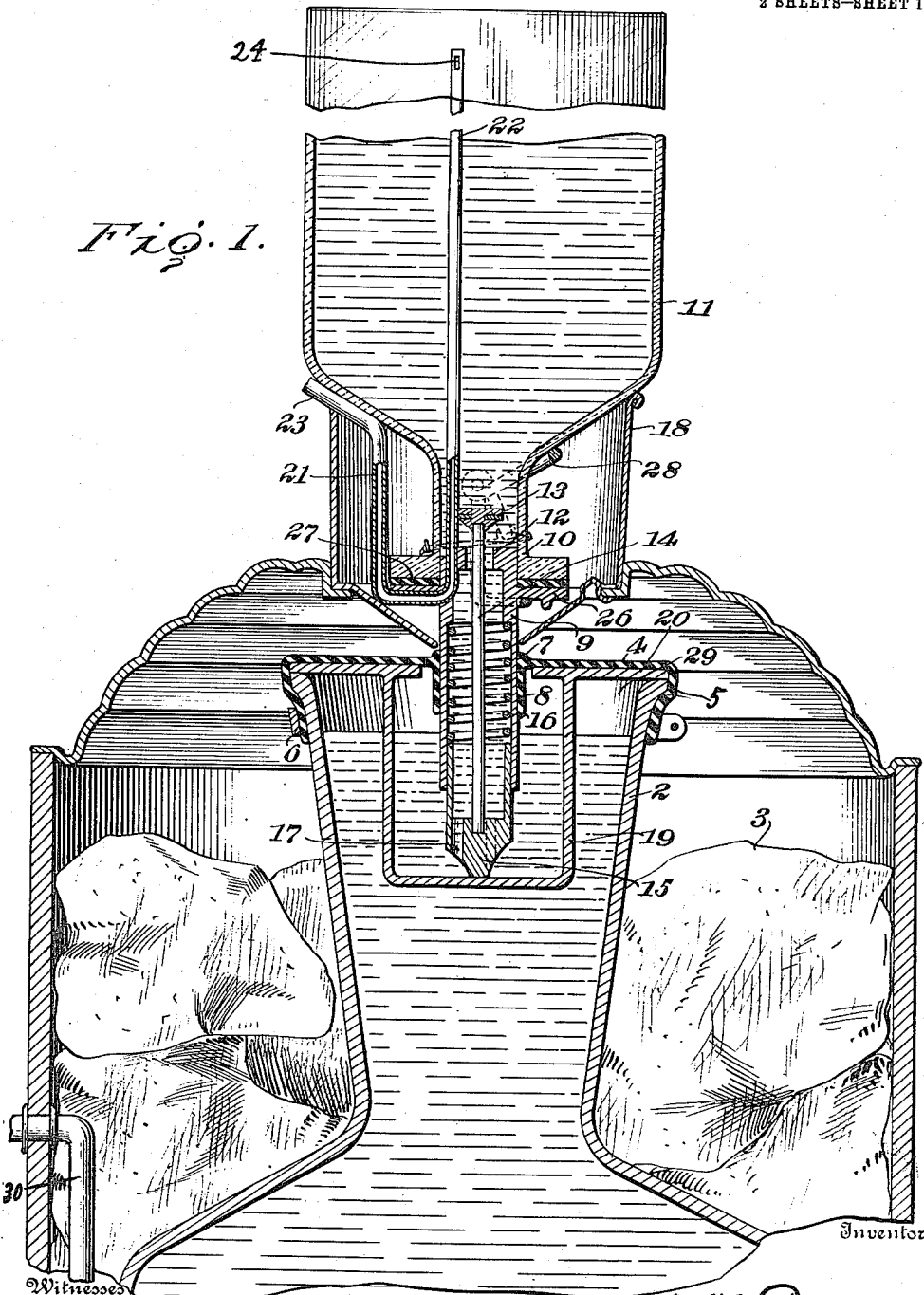
W. E. PATNAUDE.
LIQUID COOLER.
APPLICATION FILED JUNE 9, 1910.

996,127.

Patented June 27, 1911.

2 SHEETS—SHEET 1.

Fig. 1.



Inventor

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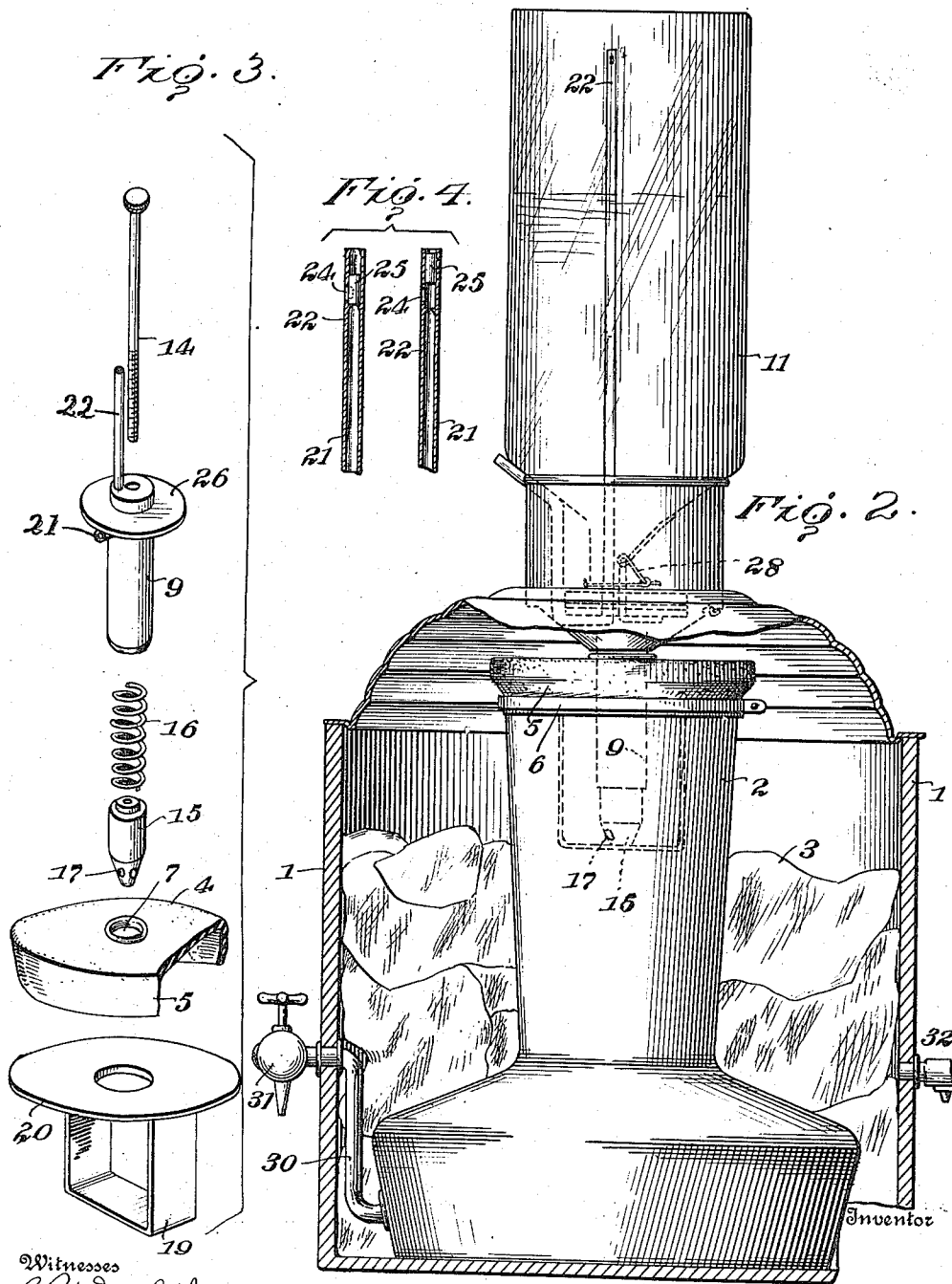
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LIQUID-COOLER.

996,127.

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To all whom it may concern:

Be it known that I, WILLIAM E. PATNAUDE, a citizen of the United States, residing at Merrimac, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Liquid-Coolers, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in liquid coolers, and is of that type in which the liquid to be cooled is taken from an inverted bottle or container, from which the liquid passes to a liquid receiving vessel
15 that is surrounded by ice or a cooling agent, and from which liquid receptacle the cooled liquid is drawn as required, the amount withdrawn being automatically replaced in the receptacle from the inverted bottle or
20 container.

The object of the present invention is to provide a cooler especially adapted for cooling those liquids from which a gas emanates when they are in closed receptacles such, for
25 instance, as cider, though it is capable of being used with those liquids from which there is no generation of gas such, for instance, as water.

In the accompanying drawings—Figure 1
30 is a vertical central longitudinal sectional view of a cooler embodying my present invention. Fig. 2 is a view showing the container and the liquid receiving receptacle in side elevation with the ice chamber in section. Fig. 3 is a perspective view of the co-
35 operating inverted bottle and liquid receptacle closing member shown in separated relation. Fig. 4 is two sectional views of the upper end of the vent pipe showing the
40 valve in one view closed, and in the other open.

In carrying out the present invention, a vessel 1 is provided in which is located a liquid receiving and cooling receptacle 2.
45 The receptacle 2 is made smaller in cross-sectional area than the vessel 1 to provide a space for receiving a cooling agent such, for instance, as ice 3.

Means is provided for hermetically closing the open upper end of the receptacle 2, and this means consists of a rubber cup-shaped cap 4, which has its flange 5 extending around the side wall of the receptacle 2, and preferably clamped thereto by a suitable
55 band 6. This cap or cover 4 has a central

opening 7, from which depends a flange 8, and this flanged opening is adapted to hermetically embrace a tubular stopper 9, which projects from the mouth 10, of an inverted bottle or container 11. This stopper 9, has
60 its inner end provided with a valve-seat 12, against which a valve 13, is adapted to seat and close the inner end of the tubular stopper. A stem or rod 14 extends from this
65 valve 13 longitudinally of the tubular stopper 9, which has a valve operating head 15, attached thereto. This head 15 projects beyond the lower end of the stopper 9, and is held extended with the valve 13 seated by
70 means of a suitable spring 16, which is located within the stopper. This head 15 is provided with a suitable number of liquid outlet openings 17.

When the tubular stopper is extended through the flanged opening 7, of the cover
75 4, until the inverted container is seated upon a suitable support 18, as shown in Fig. 1, the valve operating head 15 engages a stationary yoke 19, which causes the head to be retracted within the tubular stopper 9 and the
80 valve 13 unseated. This yoke 19 is supported and carried by a flange 20, which flange is placed between the upper end of the receptacle 2 and the cover 4, as clearly shown in Fig. 1.

A vent tube 21 passes through and is carried by the stopper 9, the inner end 22 extending up into the bottle a suitable distance while the outer end 23 communicates
85 outside of the bottle, the tube being doubled upon itself, as clearly shown. A vent hole 24 is formed in the upper end of the vent tube, and this hole is normally closed by a valve 25. This stopper 9 has a flange 26
90 between which and the mouth 10 of the bottle a rubber packing 27 is located, and the stopper is clamped to the mouth of the bottle by any well-known stopper clamping device such, for instance, as shown at 28.

The operation of the described structure
100 is as follows: The stopper with its valve and vent-pipe are clamped to the mouth of the bottle while the bottle is in its upright position. The bottle is then inverted and the closed valve 13 will prevent the liquid from
105 passing from the bottle until it has been inverted and the stopper forced through the flanged opening to carry the head 15 against the yoke 19. When in this position the liquid flows from the inverted bottle until
110

it reaches about the point shown in Fig. 1. It will not entirely fill the receptacle 2, because the air which was in the receptacle 2 will form a cushion between the liquid and the covering forming an air-space such, for instance, as indicated at 29. With the parts in this position, the hole 24 is closed and the liquid cannot flow out of the vent-tube, nor can air flow through it into the bottle. The cool liquid is drawn from the receptacle 2 through a pipe 30, which has its inner end in communication with the bottom of the receptacle, and its upper and outer end extending through the ice containing vessel 1 and carrying any suitable form of faucet 31. When any liquid is drawn from the receptacle 2 the liquid in the inverted container will flow into the receptacle to supply the same amount thereto automatically that has been taken from the receptacle. The flow of liquid from the bottle 11, tends to form a vacuum therein and this will cause the valve 25 to move up, as shown in the left-hand view of Fig. 4, and open the vent-opening 24, thus letting air into the bottle and permitting the liquid to flow therefrom.

Attention is directed to the fact that by this construction the inverted bottle and the receptacle 2 are normally hermetically closed and that the communication between the two is also hermetically closed. Owing to this construction any pressure caused by gas emanating from the liquid, either in the receptacle 2 or in the inverted bottle 11, can not force the liquid out of either the receptacle or the bottle by causing the liquid receptacle 2 to overflow.

Any suitable outlet pipe 32 may be provided for drawing the water from the vessel 1, caused by the melting of the ice therein.

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

1. In a cooler of the type described, the

combination of a liquid cooling receptacle having an open top, an elastic cover hermetically engaging the wall of said opening, the elastic cover having an opening, of an inverted container provided with a projecting tubular stopper passing through the said opening in the elastic cover, the wall of the cover opening hermetically fitting the exterior of the stopper, a valve normally closing the said tubular stopper, and a valve operating member within the cooling receptacle adapted to open the valve when the tubular stopper is forced through the opening in the elastic cover, and means for drawing liquid from the cooling receptacle.

2. In a cooler of the type described, the combination of a liquid cooling receptacle having a cover hermetically fitting the receptacle, an inverted container having an air-tight communication with the receptacle, a vent-pipe having one end within the container, an air actuated valve controlling the said end of the vent-pipe, the opposite end of the vent-pipe communicating outside of the container.

3. In a cooler of the type described, the combination of a liquid cooling receptacle having an open top, a cover hermetically fitting the top of the receptacle, an inverted container having a tubular outlet passing through the cover and hermetically engaged thereby, a valve controlling the said tubular outlet, and a member resting on the top of the receptacle and held in place by the said receptacle cover, the said member adapted to actuate the valve when the tubular outlet of the container is passed through the said receptacle cover.

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

WILLIAM E. PATNAUDE.

Witnesses:

JOSEPH E. KIMBALL,
JAMES A. TURRILL.