March 13, 1928. 1,662,267

W. C. HORNER

WATER COOLER

Filed May 18, 1925

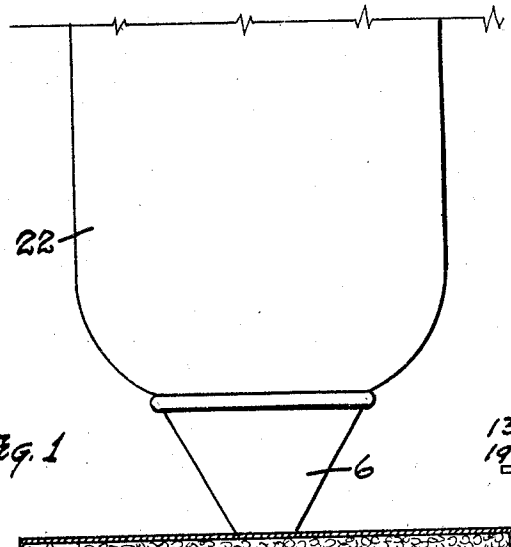


Fig. 1

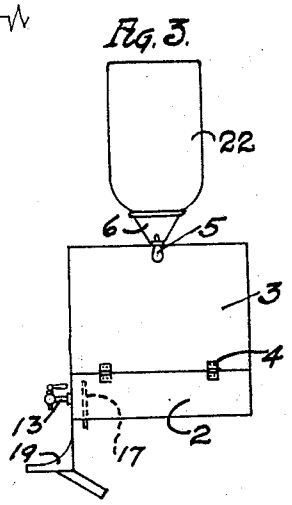


Fig. 3.

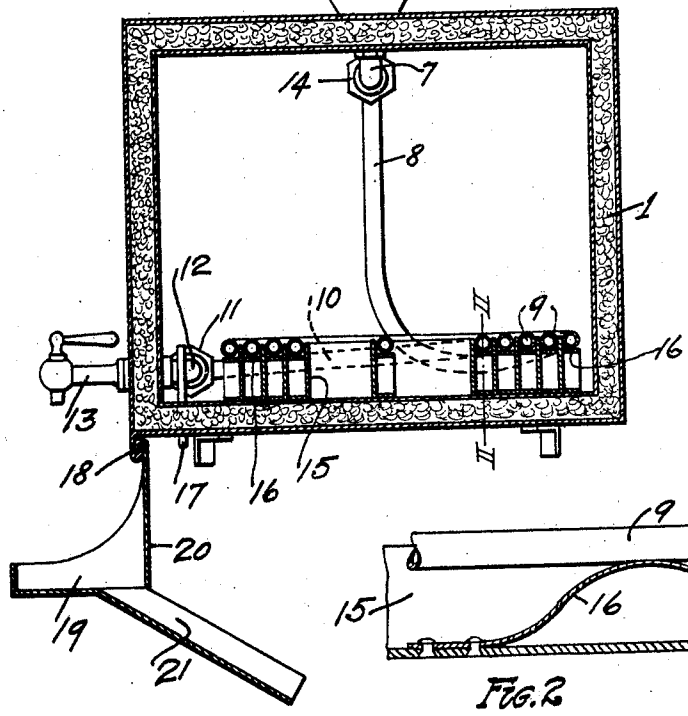


Fig. 2

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UNITED STATES PATENT OFFICE.

WILLIAM C. HORNER, OF MEMPHIS, TENNESSEE.

WATER COOLER.

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My invention relates to means for cooling water for drinking purposes, and has especial relation to that type of water cooler in which water from an inverted bottle is allowed to pass through a continuous coil disposed in a cooling chamber, and in which, therefore, the water is not allowed to come into direct contact with the ice.

In such cooler, it is extremely advantageous that the ice shall be used in a solid block, rather than be broken up into small pieces; that the coil through which the water passes shall be in contact with the ice; that the coil shall be submerged in the ice water; that the coil shall be protected against abuse when the ice is placed in the cooler; and, further, that the water coil shall be readily removable for cleaning, and readily replaceable.

The principal objects of my invention are:—

First, to provide an ice chamber, a large portion of which shall be unobstructed, so that a solid block of ice may be placed therein.

Second, to provide means whereby the major portion of the water coil shall lie in substantially a horizontal plane.

Third, to provide means for rigidly supporting the ice, and for flexibly supporting the coil, so that when the ice is placed on the coil, the same will be readily depressed until the ice rests on the rigid support, and yet the coil will at all times be held firmly in contact with the bottom surface of the ice.

Fourth, to provide means whereby the level of the water in the lower portions of the cooler will be even with the top of the coil at all times when there is ice in the cooler, and will be substantially level with the top of the coil even when there is no ice in the cooler.

Fifth, to provide an easily attachable and detachable drip-pan for both the faucet and the overflow pipe.

I accomplish these objects as will be more fully hereinafter set out in the drawings, specification and claims.

In the drawings:

Fig. 1 is a sectional elevation through the ice box, slightly in front of the center line of same.

Fig. 2 is a fragmentary sectional detail, taken on the line II—II of Fig. 1, showing a portion of the ice support, of the pipe, and of a spring supporting the pipe.

Fig. 3 is a front elevation, of the cooler, on a small scale.

Referring now to the drawings, in which the various parts are indicated by numerals, 1 is the ice box, preferably made up of two similar boxes of thin metal, having the bottom, top and sides spaced apart, and filled with insulating material, such as cork, sawdust or mineral wool. The top, three sides, the bottom, and the lower portion 2 of the fourth side are integral, this portion of the fourth side extending slightly above the desired water level. The remainder of this side is closed by a door 3, hinged to the lower portion 2 by hinges 4, and provided with a latch 5 by which the top of the door is fastened when the door is closed. 6 is a funnel of usual type, having its lower end connected to an elbow 7 within the tank, from which elbow a pipe 8 extends rearwardly to the back wall,—that is, the wall opposite the door, and thence downward therealong. 9 are loops or turns of this same pipe, disposed in a horizontal position, and 10 is a continuation of the same pipe, leading to a union 11, through which connection is made to the elbow 12, which elbow in turn is connected through one of the side walls with a faucet 13. A union 14 provides means for connecting or disconnecting the upper end of the coil. 15 is the ice support, which is made up of an angle-iron or irons, bent to conform to the convolutions of the coil 9, so that the vertical legs of the angle-iron may extend upward between the various turns of the coil, the horizontal leg of the angle-iron being secured to the bottom of the tank in any desired manner; or, if it be so desired, to an intermediate plate or base (not shown). Disposed at intervals between the coil 9 and the horizontal leg of the angle-iron, are springs 16, one end of each of which is secured to the horizontal end of the angle-iron, the other end being free.

The level of the water in the lower portion of the box is regulated by the height of a drip-pipe 17, which extends within the box to such height as may be desired, preferably to the height of the vertical leg of the ice support. The relation of this drip-pipe to the top of the bottom portion 2 of the front side of the box is shown in Fig. 3.

The side of the box which carries the faucet 13 is provided with a downwardly-extending member 18, reversely bent to form

a U-shaped channel disposed parallel with, and slightly below, the bottom of the box. 19 is a drip-pan, which has a vertical rear wall 20 having its upper edge similarly bent to form a U which may be slidably engaged with the U on the member 18 to support the drip pan. This drip-pan may therefore be removed from the box for shipping, or may be slidably engaged with, and supported by, the member 18 beneath the faucet 13. 21 is a V-shaped channel to carry the drip from the pan 19 to any suitable receptacle (not shown). In placing the drip-pan beneath the faucet 13, this channel 21 is brought below the drip-pipe 17, so that it receives the drip from such pipe. 22 indicates an inverted bottle of water.

In use, the door 3 is opened and a cake of ice slid horizontally into the ice box. The ice thus placed will depress the coil 9 until the ice rests on the top of the ice-supporting channels 15, and the spring 16 will at all times hold the coil in contact with the ice. As the ice melts, the iced water will fill up the lower portion of the box until it reaches the level of the top of the overflow pipe 17, after which such level will be maintained. The top of the coil will at such times be held in contact with the bottom of the ice, and, at the same time, will be entirely submerged in the ice water therebeneath. The bottle of water is opened and inverted in the usual manner in the funnel 6, and water will flow from the bottle through the coil 9 and be cooled without at any time coming in contact with the ice itself, water in the coil being replenished from the bottle as it is drawn off through the faucet 13. The drip-pan is slid in from one side until properly centered beneath the drip-pipe 17 and the faucet 13.

It will be understood that the drawings are for illustrative purposes only, and that many of the details may be changed without in any way departing from the spirit of my invention. It is not intended to limit this invention to the specific form of ice support, or to the specific form of spring here shown, the essential features being the water coil disposed in the horizontal plane and held in contact with the under-surface of the ice.

Having thus described the invention, what is claimed is:—

1. A water cooler, comprising an ice chamber, a water pipe therewithin having a horizontally-coiled section disposed above the bottom, an ice support disposed between the convolutions of the coil, and resilient means for supporting said coil.

2. A water cooler, comprising an ice chamber, a water pipe therewithin having a horizontally-coiled section disposed above the bottom, an ice support, and resilient means for supporting said coil substantially flush with the top of said ice support.

In testimony whereof I have hereunto set my name.

WILLIAM C. HORNER.