(No Model.)

2 Sheets—Sheet 1.

J. W. HALE.

WATER COOLER.

No. 551,860. Patented Dec. 24, 1895.

Fig. 1.

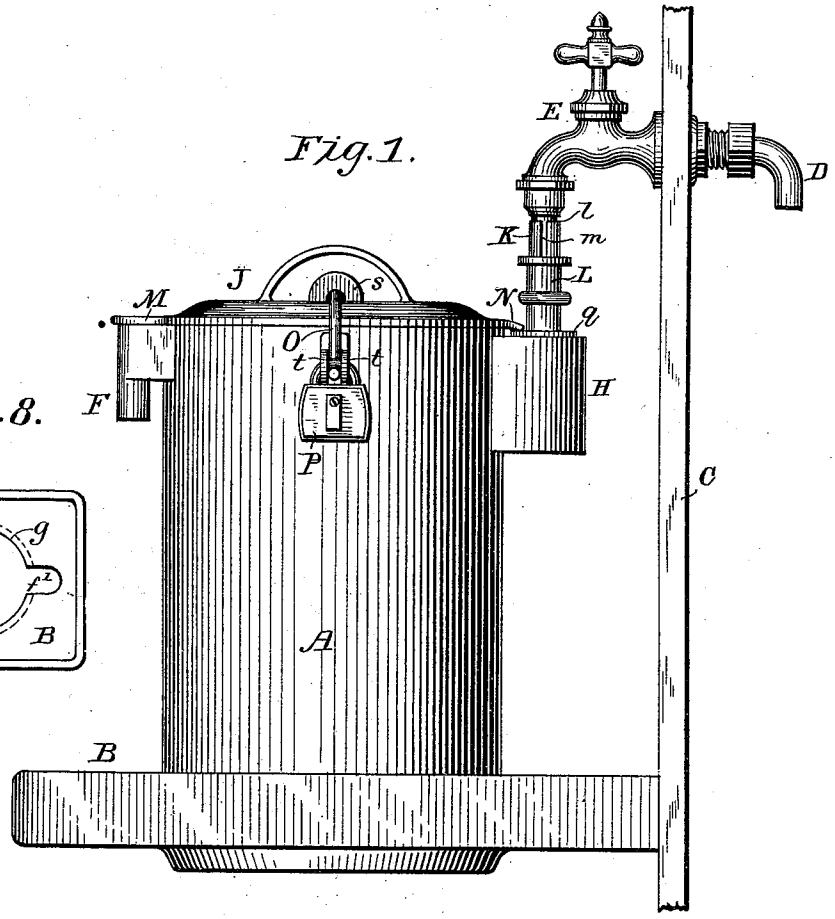


Fig. 8.

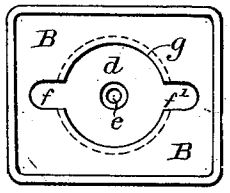
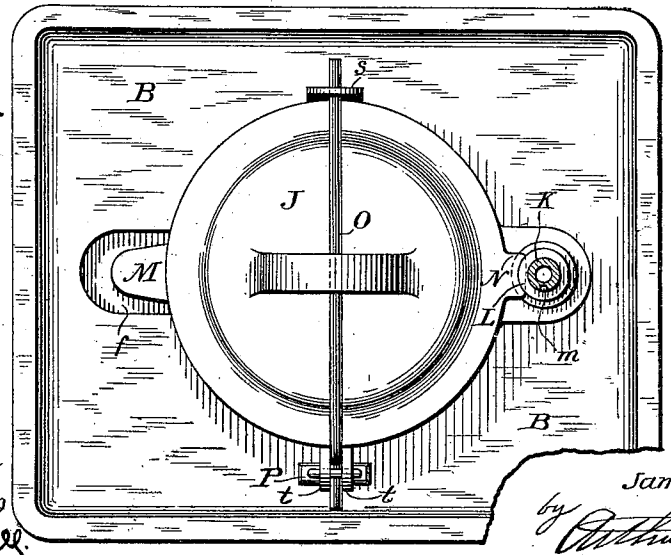


Fig. 2.



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(No Model.) 2 Sheets—Sheet 2.

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WATER COOLER.

No. 551,860. Patented Dec. 24, 1895.

Fig. 3.

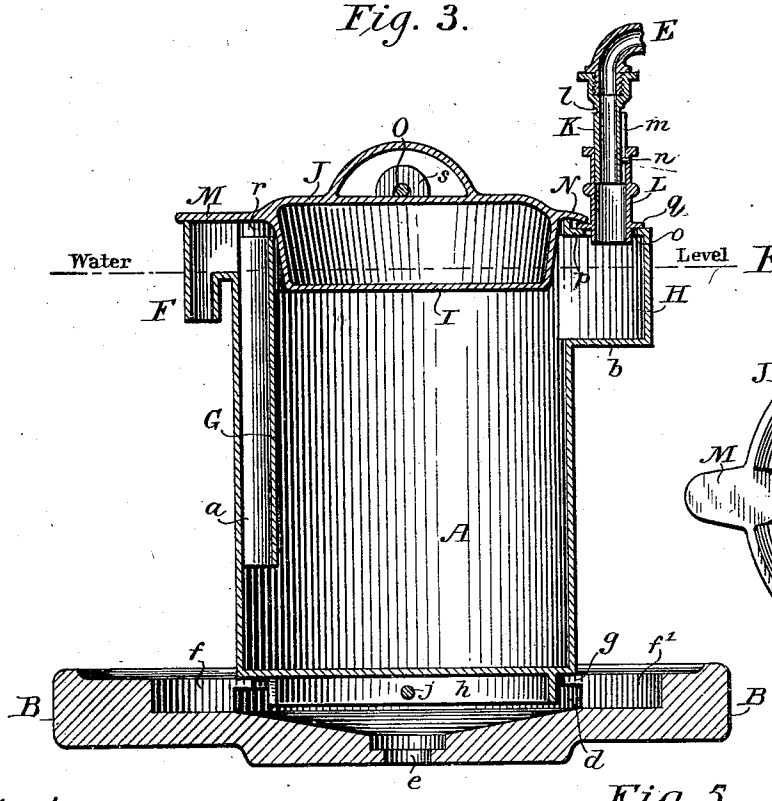


Fig. 6.

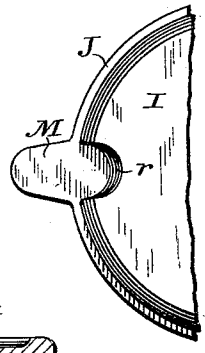


Fig. 4.

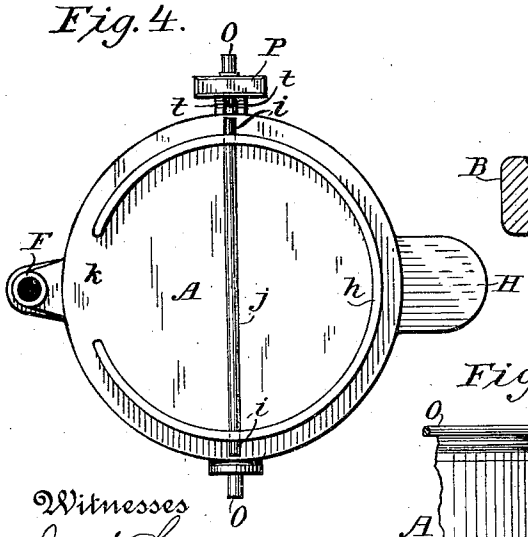


Fig. 5.

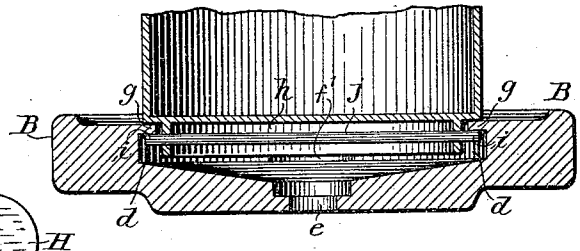
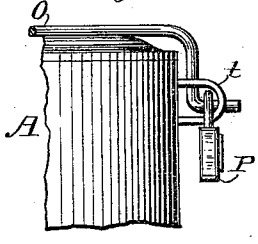


Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES WHITE HALE, OF NEWBURYPORT, MASSACHUSETTS.

WATER-COOLER.

SPECIFICATION forming part of Letters Patent No. 551,860, dated December 24, 1895.

Application filed July 10, 1894. Serial No. 517,090. (No model.)

To all whom it may concern:

Be it known that I, JAMES WHITE HALE, of Newburyport, in the county of Essex and State of Massachusetts, have invented certain new and useful Improvements in Water-Coolers, of which the following is a specification.

Water-coolers consisting of a simple receptacle to receive the water and ice, having a removable cover, and an outlet-faucet at the bottom, such as are almost universally used, have certain serious objections which are especially conspicuous when used in public places. Among these objections may be mentioned the frequent attention required to keep them replenished with water, the location of the outlet at the bottom, so that the settlings (and also the floating impurities when the cooler is nearly empty) are drawn off with the water, and the free access which the public has to the interior of the cooler through the cover, which is notoriously the source of much abuse. Many attempts have been made to design water-coolers to obviate these defects, but none of these improved coolers have gone into any extensive use, so that at the present time the old defective cooler is almost universally and exclusively employed.

Now the object of the present invention is to provide a water-cooler which obviates the above-indicated defects without introducing new defects of its own, and which shall be efficient and easy in action and economical and simple in construction.

The invention in its preferred form is designed more particularly for use in public places, and this preferred embodiment will be selected for detailed illustration and description.

In the accompanying drawings, Figure 1 is a side view of the improved water-cooler. Fig. 2 is a plan view thereof, partly in section. Fig. 3 is a vertical longitudinal section. Fig. 4 is a bottom view of the water-receptacle. Fig. 5 is a vertical cross-section of the bottom portion only of the cooler. Fig. 6 is an under side view of a portion of the cover. Fig. 7 is a detail view of a part of the locking mechanism. Fig. 8 is a plan view, on a smaller scale, of the supporting table or slab.

In Fig. 3 the parts K and L are shown in a slightly-different position from that which they occupy in Fig. 1, for the purpose of more clearly illustrating their construction, either of the two positions being permissible.

A is the water and ice holding receptacle, of any suitable material, which is supported by a suitable table B, (shown as being a marble slab,) and this table is itself shown located against a wall C.

D is a water-supply pipe connected with a water-main or any other source of substantially unfailing water-supply under pressure, and with this pipe is connected a faucet E, which may be of any of the well-known kinds, self-closing or otherwise, but which should be of a kind to be readily understood and operated by the public.

The outlet of the faucet E is not immediately accessible, but is normally in communication with the interior of the receptacle A, so that in the normal operation the water from the supply-pipe flows into the receptacle when the faucet is opened. The outlet F from the receptacle, through which drinking-water is obtained, is located near the top of the receptacle. This outlet is always open and constitutes what may be conveniently termed an "overflow outlet-nozzle," since it is shaped as a nozzle to conduct the water to the drinking-cup, and it constitutes an overflow from the receptacle so that only overflow-water escapes from the receptacle. Consequently the receptacle is always nearly full of water, (or of water and ice,) and the water-level stands a short distance below the top of the receptacle and the inlet from the faucet, which distance is determined by the location of the overflow outlet-nozzle. A person desiring, therefore, to drink has simply to open the faucet, and thereupon water from a practically inexhaustible source flows into the receptacle, thus raising the water-level therein above the overflow-level, and thereupon the overflow flows out through the overflow outlet-nozzle into the drinking-cup. As far as the user is concerned, he has simply to open a single faucet to obtain a drink, just as in the case of the ordinary cooler. When the desired drink of water has been obtained and the faucet again closed, the receptacle is in its original nearly-full condition, just as much fresh water having been introduced as was

taken from the receptacle by the user. Consequently there is never any lack of water from the negligence of an attendant. The attendant may neglect to supply the cooler with ice, which would result in a failure to secure ice-water, but the user is always assured of obtaining a drink of water.

In case the cooler is kept supplied with ice, as is the intention and expectation, the volume of water within the receptacle will be maintained at the proper and desired temperature, and when fresh water is admitted it is in such a comparatively small quantity as not to materially alter the temperature, so that the water discharged from the outlet-nozzle will be of the desired low temperature. To prevent, however, the fresh incoming water floating across the main body of the water and flowing directly out through the outlet-nozzle, the outlet-nozzle is shielded from the surface of the water in the receptacle, and has direct communication only with the middle of the receptacle. In the specific construction illustrated there is a shield G at the front of the receptacle, across the discharge-outlet, extending from above the water-level down to the middle of the receptacle. This shield thus forms an open discharge-outlet or exit-passage *a*, leading from the middle portion of the receptacle to the open outlet-nozzle, through which the water discharged can alone pass. Consequently, when the faucet is opened, the water therefrom cannot flow directly to the discharge-nozzle, but the water discharged comes immediately from the exit-passage and then from the middle of the cooler where the water is of the normal cool temperature. This shielding of the discharge-nozzle has another important advantage in that it prevents any floating impurities from passing out through the discharge-nozzle, and since the receptacle is always nearly full of water the floating impurities can never enter the exit-passage *a*. The entrance to the exit-passage being at the middle of the receptacle, no heavy impurities or settlings can pass through the exit-passage, since they remain in the bottom of the receptacle. Hence the lower portion of the receptacle constitutes a settling-chamber. The receptacle is hence not only a water-cooler but a "gravity-separator" as well, since it separates out the impurities from the water which is used. Since incoming water enters in small quantities at intervals, ample opportunity is given for any impurities therein to become separated by gravity.

Since the water in the water-supply main may be under high pressure, and hence may enter the receptacle with violence when the faucet is opened, it is desirable that it should not set the water within the receptacle into such violent commotion as to agitate and stir up any settlings which may be in the bottom thereof. Consequently the receptacle is provided with a pocket or entrance-chamber II, of small area and contents, preferably at one side. This entrance-chamber has its bottom *b* above the bottom of the receptacle and below the overflow-level, so that it is in the plane of clear water. At the same time the incoming water enters the entrance-chamber in a vertical line above the bottom *b*. Hence if the incoming water enters with violence it strikes against the bottom *b* and is thence diverted in horizontal or upwardly-directed paths into the receptacle, so that the sediment which may be in the bottom of the receptacle is not disturbed.

It will be noted that the water is discharged through the outlet-nozzle when the faucet is opened, by reason of the elevation of the surface of the water, and the rapidity of the flow of water from the discharge-nozzle is due to the height or head of the water above the overflow-level. Now since only a cupful of water is ordinarily introduced at a time through the faucet, it is evident that with so small a quantity compared with the area of the water-surface in the cooler only a small head would be secured, and consequently the water would flow out through the discharge-nozzle with exasperating slowness, especially at first, so that the impatient traveler would be apt to hastily conclude that the cooler was not in working order, which is the normal condition of the ordinary cooler. Hence provision is made in the present instance for rapidly raising the head of water, thus insuring a prompt and copious flow from the discharge-nozzle. This result is obtained by blocking out the greater portion of the area of the water-surface in the receptacle by means of a platen I, which is maintained below the overflow-level and covers the greater portion of the area of the water-surface. Conveniently this platen constitutes the depressed double bottom of the cover or lid J, which is fastened down upon the top of the cooler, as will be hereinafter set forth, so that the platen occupies a determined position below the water-level. As the result of this arrangement, the incoming water rapidly fills up the entrance-chamber II, thus insuring an immediate and sufficient head of water and the prompt filling of the cup.

The table B, upon which the water-receptacle rests, is preferably a marble slab and is so shown, but the material of which it is composed is immaterial. This table is provided with a central circular chamber *d*, having a central waste-outlet *e* adapted to be in communication with a waste-water receptacle or a sewer, and having also at front and back respectively outwardly-extending recesses *f f'* located beneath the nozzle F and faucet E respectively to receive drip-water. The central chamber *d* has at its upper margin an overhanging annular flange *g*, which does not, however, extend across the recesses *f f'*. The receptacle A has a depending annular flange *h*, which fits in the chamber *d*, within its flange *g*, and also has studs *i i*, which are preferably the projecting ends of a rod *j* extending through the flange *h*. These studs

i i engage beneath the flange *g*, and prevent the receptacle from being removed from the table B except when the receptacle is so turned as to bring said studs in register with the recesses *f f'*. When the receptacle A is in operative position and in communication with the faucet E, the studs *i i* are in a position at right angles to that which they occupy when registering with the recesses *f f'*. The flange *h* is not continuous, but is interrupted, (see Fig. 4,) so that a space *k* is formed, which is opposite the front recess *f* when the apparatus is in use, so that drip-water or water poured into recess *f* has a free passage to the waste-outlet *e* unobstructed by the flange *h*.

The receptacle A is connected with the faucet E by a movable connection consisting of a pipe K (which may be an integral portion of the faucet) having on its exterior a bayonet-groove with a lateral portion *l* and a longitudinal portion *m*, and of a sliding sleeve L, having a pin *n* which works in said bayonet-groove. The lower end of the sleeve L enters an aperture *o* in the top *p* of the entrance-chamber H, and it has a stop-flange *q*, which seats on said top *p* surrounding and covering said aperture *o*. The cover J of the cooler has an extension M, which covers the nozzle F, and a lip N, which extends over the flange *q* on the sleeve L. The platen I and the wall connecting it with the cover J are recessed at *r*, so as to accommodate the shield G.

The cover is locked by any convenient locking mechanism. That shown consists of a locking-bar O, one end of which extends through an ear *s* on one side of the receptacle and the other bent end of which extends between two ears *t t* on the other side of the receptacle, where it is locked in place by a padlock P. Access can be had to the receptacle A only by unlocking the padlock P, after which the cover can be removed for the purpose of replenishing with ice. No special care is necessary in replenishing with ice, since any overflow caused thereby will flow out through the outlet-nozzle F, and thence into the recess *f* and to the waste-outlet.

To remove the receptacle A for cleaning or other purposes, the cover is first unlocked and removed, thus freeing the sleeve L. The sleeve L is then lifted until the pin *n* registers with the lateral groove *l*, when the sleeve is turned and is supported by the pin *n* in its uplifted position, where said sleeve is entirely clear from the receptacle A. The receptacle A can then be turned until its studs *i i* register with the recesses *f f'*, when the receptacle A can be lifted away from the table B. When the apparatus is in its operative position, the sleeve L, engaging the aperture *o*, prevents the receptacle from being turned, the cover prevents the sleeve from being uplifted, and the lock prevents the removal of the cover, so that a single lock suffices to maintain the receptacle in position to keep it in communication with the faucet and to prevent the unauthorized removal of the cover.

There is sufficient play between the aperture *o* and the sleeve L to compensate for any irregularities in locating the faucet E and the table B with reference to each other.

It will be noted that the interior of the receptacle is always in communication with the outer air through the nozzle F, and around the cover and the sleeve L, which need not be air-tight. Consequently the only pressure within the receptacle is that due to the weight of the contained water. The receptacle is not subjected to the pressure of the water in the communicating water-main, and does not require the strength or the water and air tight connections which would be thereby necessitated. In case the receptacle is removed the faucet is still accessible for supplying water.

The apparatus as thus illustrated and described I at present consider the best embodiment of my invention for general purposes. Numerous modifications in form, location, and construction are, however, admissible without departing from the principles of the invention, and in some situations many of the features may be omitted without affecting the effectiveness of other features.

I claim as my invention—

1. A receptacle adapted to hold water and ice, a cover therefor which is not water tight, said receptacle having an ever open overflow outlet nozzle therefrom, said outlet nozzle being below the top of said receptacle and below the joint between said receptacle and cover, said receptacle being always nearly full of water when in use, and an inlet to said receptacle, in combination with means for controlling by hand the passage of water through said inlet into said receptacle, substantially as set forth.

2. A receptacle adapted to hold water and ice, and a cover therefor which is not water tight, said receptacle having an inlet or entrance chamber, in combination with an ever-open overflow outlet nozzle for said receptacle below the top of said receptacle and the joint between said receptacle and its cover, and a manually-opened supply faucet in constant communication with a source of water supply under pressure, said supply faucet discharging into said inlet entrance chamber from a point above said receptacle and the joint between it and its cover, substantially as set forth.

3. A receptacle adapted to hold water and ice, and having an open overflow outlet nozzle near the top and at one side from which nozzle water is drawn for consumption, and a shield secured to the side wall of the receptacle opposite said outlet, said shield extending both above and below the water level, and being open at top and bottom, substantially as set forth.

4. A receptacle having an open overflow outlet nozzle from which water is drawn for consumption, an exit passage leading from the middle of said receptacle to said outlet, in combination with an entrance chamber

communicating with said receptacle having its bottom above the bottom of said receptacle, a water inlet discharging into the upper part of said entrance chamber, and means for controlling the passage of water through said inlet into said entrance chamber, substantially as set forth.

5. A receptacle having an open overflow outlet, an entrance chamber having a small area of water surface relatively to that of said receptacle, a water inlet to said entrance chamber, and means for controlling said water inlet, in combination with a platen in said receptacle located below the overflow level and blocking out the water surface in said receptacle, substantially as set forth.

6. A water receptacle, and a faucet supplying water thereto, in combination with a pipe integral with or rigidly secured to said faucet, a sleeve connecting said pipe and entrance chamber, through an aperture in the top of said entrance chamber, said sleeve sliding upon said pipe, and provided with a flange which rests upon the top of said entrance chamber, the portion of the sleeve below said flange entering said entrance chamber and preventing the rotation of said receptacle, substantially as set forth.

7. The combination of a water receptacle, a table supporting the same, reciprocally engaging provisions on said receptacle and table, a faucet, a movable connection between said receptacle and faucet, a cover for said receptacle which unites said movable connection to said receptacle, and a locking mechanism for said cover, substantially as set forth.

8. The receptacle, the outlet nozzle thereof, and the filling faucet thereof, in combination with a table supporting said receptacle having a waste outlet, and waste water recesses below said nozzle and faucet respectively communicating with said waste outlet, substantially as set forth.

9. The table having waste water chamber, and an interrupted overhanging flange, in combination with the water receptacle supported on said table having studs which enter the interruptions in said flange and engage beneath said flange, and means for locking said water-chamber from rotation when the studs are engaged beneath said flange, substantially as set forth.

10. The table having waste water chamber, recesses communicating therewith, and an overhanging flange which is interrupted at said recesses, in combination with a water receptacle resting on said table having a flange which enters said waste water chamber within the flange thereof, studs on said receptacle which engage beneath the flange on said table, the flange on said receptacle being interrupted opposite the front recess in said table when said receptacle is in its operative position, substantially as set forth.

11. The receptacle having an entrance chamber, the supply faucet, and a movable sleeve connecting said faucet and entrance chamber, said sleeve entering said entrance chamber and having a projecting flange above said entrance chamber, in combination with a cover for said receptacle having a projecting lip which engages said flange, and a locking device for said cover, substantially as set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES WHITE HALE.

Witnesses:
ELLA W. MACE,
CHARLOTTE E. HALE.