

(No Model.)

R. BYRNE.
OVERFLOW ALARM FOR RECEPTACLES.

No. 514,116.

Patented Feb. 6, 1894.

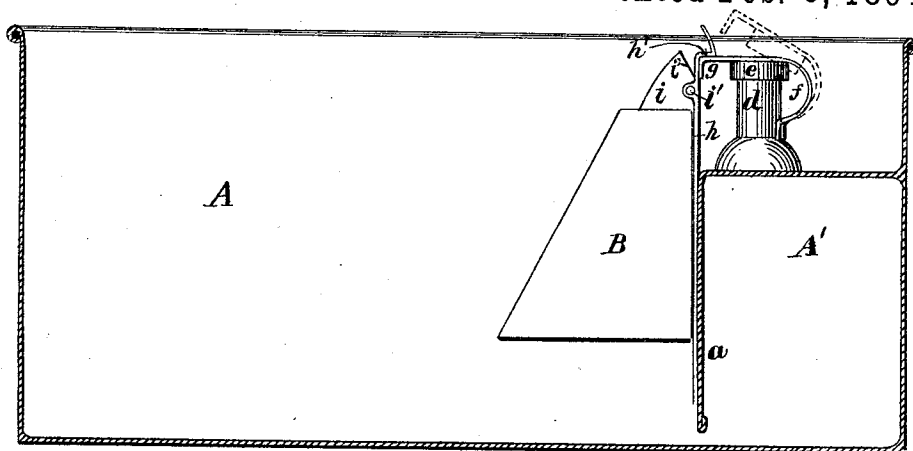


Fig. 2.

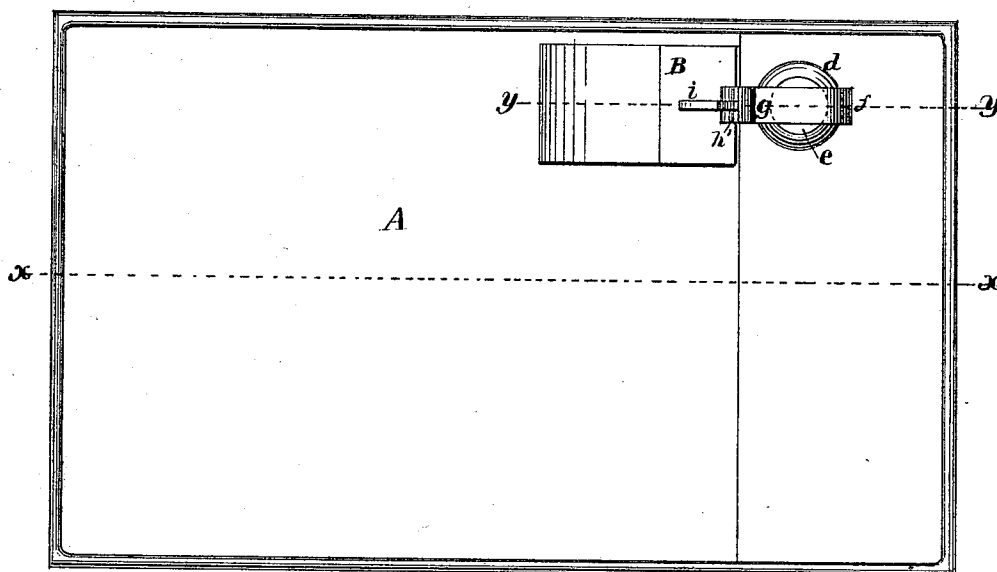


Fig. 1.

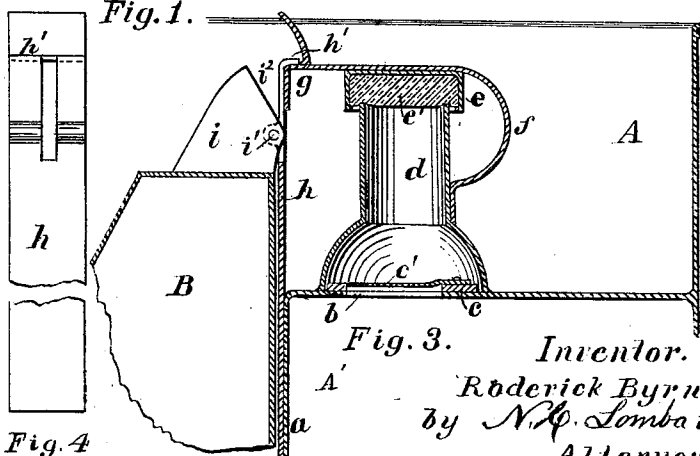


Fig. 3.

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Fig. 4

UNITED STATES PATENT OFFICE.

RODERICK BYRNE, OF CAMBRIDGE, MASSACHUSETTS.

OVERFLOW-ALARM FOR RECEPTACLES.

SPECIFICATION forming part of Letters Patent No. 514,116, dated February 6, 1894.

Application filed May 16, 1893. Serial No. 474,457. (No model.)

To all whom it may concern:

Be it known that I, RODERICK BYRNE, of Cambridge, in the county of Middlesex and State of Massachusetts, have invented a new and useful Alarm for Liquid-Holding Receptacles, of which the following, taken in connection with the accompanying drawings, is a specification.

My invention relates to alarms for liquid holding receptacles, is especially adapted for use on receptacles for receiving the drainage from refrigerators or ice chests and may be used to advantage in oil cans to prevent overflow when filling the same, and it consists in certain novel features of construction, arrangement and combination of parts which will be readily understood by reference to the description of the drawings and to the claims hereinafter contained and in which my invention is clearly pointed out.

Figure 1 of the drawings is a plan of tank or pan for receiving the water from the melting ice in a family refrigerator or ice-chest with my invention applied thereto. Fig. 2 is a sectional elevation of the same the cutting plane being on line *x, x*, on Fig. 1. Fig. 3 is a partial section on line *y, y*, on Fig. 1 drawn to an enlarged scale and Fig. 4 is a side elevation of the float supporting spring catch also drawn to an enlarged scale.

A great many refrigerators are used in places where it is not convenient to provide for conveying the waste water, resulting from the melting of the ice placed in the refrigerator outside of the building and consequently a pan or receptacle, of some kind has to be placed beneath the refrigerator in a position to receive the waste water which drips from the discharge pipe provided for the purpose. These waste water receptacles have however been a source of considerable annoyance, due to the liability of the water overflowing said pan and doing damage to the building by wetting down the ceilings of the rooms below as well as the floor of the room containing the refrigerator, for lack of proper attention at the proper time. The water is discharged from the refrigerator very slowly, usually in drops and it takes considerable time to fill a pan that will hold eight or ten quarts, and this slowness of the discharge is perhaps one of the prime causes of the pan being overlooked

or forgotten by the servant until water is seen running across the floor.

The object of my present invention is to obviate this difficulty, by arranging a whistle alarm in connection with said pan so that the rising of the water in said pan to within a certain predetermined distance from the top thereof will cause said alarm to whistle sufficiently loud to be heard in any part of the house.

To this end I make a tank or pan A preferably rectangular in form and of sufficient capacity to hold two or three gallons more or less of water, and across one end of said tank or pan I partition off a chamber A' which communicates at its bottom with said main chamber A by virtue of the fact that the inner side wall *a* of said chamber A' does not extend to the bottom of the tank or pan, as shown in Fig. 2. The chamber A' extends only about two thirds of the height of the tank or pan, its top or cover being located about one third of the depth of said tank from its upper edge and has cut through it an opening *b* over which is soldered a reed frame *c* having a musical reed *c'* such for instance as are used in melodeons and other musical instruments, said reed being located in the expanded base of the pipe like chamber *d*, also soldered to said top plate of the chamber A', the upper end of said pipe *d* having fitted thereto the valve *e* which is connected to said pipe by the curved spring *f* so constructed and arranged that its tension will tend to hold said valve in a raised position as shown in dotted lines in Fig. 2.

The valve *e* has secured thereto the arm *g* the end of which is bent downward at right angles to its main body as shown, and said valve is provided with the packing *e'* of rubber or other suitable material arranged to bear upon the upper end of the pipe *d* so as to close the same air tight. A leaf spring *h* is secured at its lower end, by rivets, or solder, or both as may be desired, to the side wall *a* of the chamber A' and extends upward to a point slightly above the top edge of the tank and has formed near its upper end the offset *h'* which engages the free or movable end of the arm *g* to hold the valve *e* firmly upon its seat as shown in Figs. 2 and 3.

B is a hollow float provided with the plate

i secured to and projecting upward from the upper end thereof, and pivoted at *i'* to the spring *h* in such a manner that as the water rises in said tank A said float will be moved about said pivot and cause the inclined surface *i*² of said plate *i* to act upon the downwardly projecting portion of the arm *g*, as an abutment, and gradually force the top of the spring *h* toward the left of Fig. 2 until the arm *g* is released and the valve *e* is raised by the tension of the spring *f*. The spring *h* has cut through it the slot *j* to permit the passage of the plate *i* so that it may come in contact with the arm *g* as described.

In the drawings the valve *e* is shown as connected to the pipe *d* only by the spring *f* but it is obvious that the valve may be pivoted to said pipe by a hinge like joint and the spring be applied thereto so as to lift said valve when released from the catch *h'* of the spring *h* independently of the pivotal connection of said valve to the pipe *d*, and different forms of valves may be used, and any form of whistle that can be sounded by the passage of air may be employed instead of the reed *c* *c'* without departing from the principles of my invention, the operation of which is as follows: The valve *e* being closed and the arm *g* being engaged by the catch *h'* the tank or pan is placed beneath the drip pipe of the refrigerator in position to receive the water being discharged therefrom. As the water accumulates in the tank or pan it rises in the chamber A' as fast as outside of it until it rises above the lower edge of the inner side wall of said chamber A', after which the tendency of the water to rise in the chamber A' to the level of the water in the main chamber of the pan will cause the air in said chamber A' to be compressed which compression continues to increase as the water accumulates and at the same time the float is being lifted by the water causing it to move about its pivot *i'* until the inclined surface *i*² of the plate *i* comes in contact with the end of the arm *g*, when a continued rise of the water in the pan or tank will cause the catch *h'* to be moved gradually toward the left of Fig. 2 until just before the water in the tank has reached the danger line said catch is disengaged from the arm *g* and the valve is raised by the action

of the spring *f* thereby permitting the escape of the compressed air in the chamber A' through the opening in the reed plate *c* causing the reed *c'* to vibrate and thus sound an alarm which continues until the air has all escaped from said chamber or the water in the two compartments of the tank has found a common level.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination of a liquid holding receptacle,—a chamber therein communicating at its bottom with the main body of said receptacle and adapted to have the air therein compressed by the rise of the liquid in said receptacle,—an opening in the top of said chamber,—a musical reed or other sound producing device adapted to be operated by the passage of air though the same,—a pipe or chamber inclosing said sound producing device, and projecting upward therefrom,—a valve for closing the passage of said pipe,—a spring catch for holding said valve in closed position,—a spring for opening said valve when released,—and a float constructed and arranged to disengage said catch and release said valve by the lifting action of the liquid thereon when the liquid has risen in said receptacle to the desired height.

2. The combination of the tank or pan A,—the chamber A' communicating at its bottom with the main body of said tank or pan and provided with an opening in its top,—a sound producing device placed in or over said opening,—the pipe *d* inclosing said sound producing device,—the valve *e* connected to said pipe by the spring *f* and provided with the arm *g*,—the spring *h* provided with the catch *h'*,—and the float B provided with the upwardly projecting plate *i* having the inclined surface *i*² and pivoted to said spring *h*, all constructed arranged and operating substantially as described.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 11th day of April, A. D. 1893.

RODERICK BYRNE.

Witnesses:

N. C. LOMBARD,
L. S. LOMBARD.