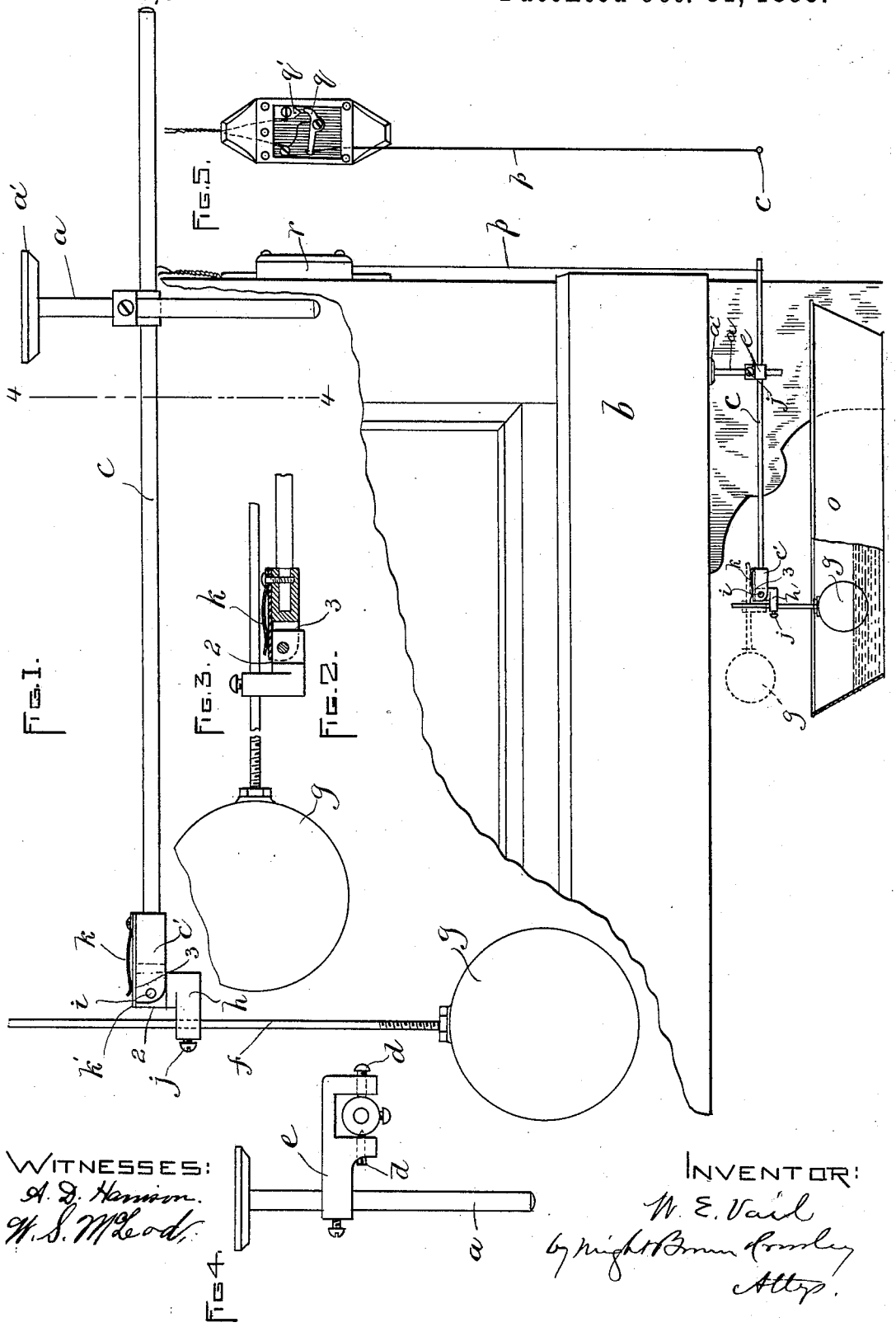
(No Model.)

W. E. VAIL.

OVERFLOW ALARM.

No. 507,570. Patented Oct. 31, 1893.



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UNITED STATES PATENT OFFICE.

WARREN E. VAIL, OF BROCKTON, MASSACHUSETTS.

OVERFLOW-ALARM.

SPECIFICATION forming part of Letters Patent No. 507,570, dated October 31, 1893.

Application filed December 15, 1892. Serial No. 455,294. (No model.)

To all whom it may concern:

Be it known that I, WARREN E. VAIL, of Brockton, in the county of Plymouth and State of Massachusetts, have invented certain new and useful Improvements in Overflow-Alarms for Refrigerators, of which the following is a specification.

This invention has for its object to provide a simple and effective device, adapted particularly to be applied to a portable refrigerator, and to give warning when the water receptacle, usually placed under a portable refrigerator to catch the water resulting from the melting of the ice, needs emptying.

The invention consists in an alarm device, comprising a standard adapted to be attached to the bottom of a refrigerator, a lever pivotally connected to said standard, and a float-carrying arm hinged or pivoted to one end of said lever and adapted to project downwardly therefrom into the water receptacle, so that the rise of water in said receptacle will communicate motion through the float to the lever. The end of the lever opposite that to which the float-carrying arm is connected is adapted to operate a circuit-closing device, so that, when the float is raised to a given height by the water in the receptacle, an electric circuit will be closed and caused to ring a suitable bell. The hinge or pivotal connection between the float-carrying arm and the lever enables the float to be raised and held by the lever above the water receptacle while the latter is being removed, emptied and replaced, all of which I will now proceed to describe.

Of the accompanying drawings, forming part of this specification: Figure 1 represents a side elevation of an alarm-operating device embodying my invention. Fig. 2 represents a side elevation of the same on a smaller scale, applied to a refrigerator, and showing its connection with a circuit-closing device and its relation to the water receptacle. Fig. 3 represents a side elevation, partly in section, of a portion of the device, showing the float raised and held above the water receptacle. Fig. 4 represents a section on line 4—4, Fig. 1, looking toward the right. Fig. 5 represents a view of the circuit-closing device and the connection between the same and the lever.

The same letters of reference indicate the same parts in all the figures.

In Fig. 1 of the drawings, I show the alarm-operating device which comprises my improvement, the same including a vertical rod or stud *a*, formed upon or attached to a plate *a'*, which is adapted to be screwed to the bottom of a refrigerator *b*, as shown in Fig. 2; a lever *c*, which is connected by means of centers or screws *d d* with an arm or bracket *e* adjustably secured to the stud *a;* an arm *f*, having secured to one end a float *g;* and an angular connecting-piece or bracket *h*, pivoted at *i* to a piece *c'* affixed to one end of the lever *c*. The arm *f* is adjustably secured, by means of a set-screw *j*, to one arm of the connecting-piece *h*. Said connecting-piece is adapted to be held in either the position shown in Fig. 1 or that shown in Fig. 3, by means of springs *k k'*, each affixed at one end to the piece *c'*. The free end of the spring *k'* bears upon one arm of the bracket *h*, and its pressure thereon is augmented by the other spring *k*, said arm having two faces 2 3, so arranged that, when the spring *k'* bears on the face 3, as shown in Fig. 1, its pressure will hold the float-carrying arm *f* in a vertical position; and, when the spring bears against the face 2, its pressure will hold the float-carrrying arm in a horizontal position, as shown in Fig. 3 and in dotted lines in Fig. 2, said spring being sufficiently yielding to permit the plate-carrying arm and the bracket *h* to move from one position to the other.

It will be seen, by reference to Fig. 2, that the end of the lever *c* to which the float-carrying arm is connected is located under the refrigerator, in such position that, when the float-carrying arm is turned to a vertical position, its float will be within the pan or receptacle *o* which receives the water from the melting ice within the refrigerator, the opposite end of the lever projecting toward the back of the refrigerator and occupying such position that it can be connected by a vertical cord *p* with a circuit-closing arm or lever *q*, which is or may be located in a box or casing *r* affixed to the rear wall of the refrigerator. When the float *g* is raised by the water in the pan *o*, the end of the lever *c* connected with the cord *p* is depressed, so that motion is communicated from the lever, through said cord, to the circuit-closing lever *q*, the latter being thus caused to make contact with a

contact-piece q' within the casing r, thus closing an electric circuit, which may include a bell or other signaling device. When the pan o has been filled with water and an alarm has been given, the float-carrying arm may be turned to a horizontal position, as shown in dotted lines in Fig. 2, so that the pan may be removed, the float being held above the pan. After the pan has been emptied and replaced, the device may be made operative by swinging the float down into the pan, as shown in full lines in Fig. 2.

It will be seen that the described device constitutes a simple and convenient means for operating an alarm.

The device is not limited to use in connection with refrigerators, but may be used with other devices and contrivances where it is desirable to give notice of the rise of water in a receptacle.

I claim—

1. An alarm-operating device, comprising a holder adapted for attachment to a refrigerator or other article, an arm e vertically adjustable on said support, a lever c pivotally connected to said arm, a hinge secured to one end of said lever and provided with a device whereby its swinging member may be held in either of two positions, and a float-carrying arm adjustably secured to said swinging member and adapted to be held by the hinge either in a vertical or a horizontal position, as set forth.

2. The combination of a holder or support such as a, a lever c pivotally connected with said support, a hinge at one end of said lever adapted to be held in either of two positions, a float-carrying arm secured to the swinging member of said hinge, and a circuit-closing device connected with the opposite end of said lever, as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of December, A. D. 1892.

WARREN E. VAIL.

Witnesses:
ARTHUR C. JOHNSON,
MARY E. JOHNSON.