No. 756,397. PATENTED APR. 5, 1904.

M. McNAMARA.

DRAIN PIPE ATTACHMENT FOR REFRIGERATORS.

APPLICATION FILED APR. 28, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

Fig. 1.

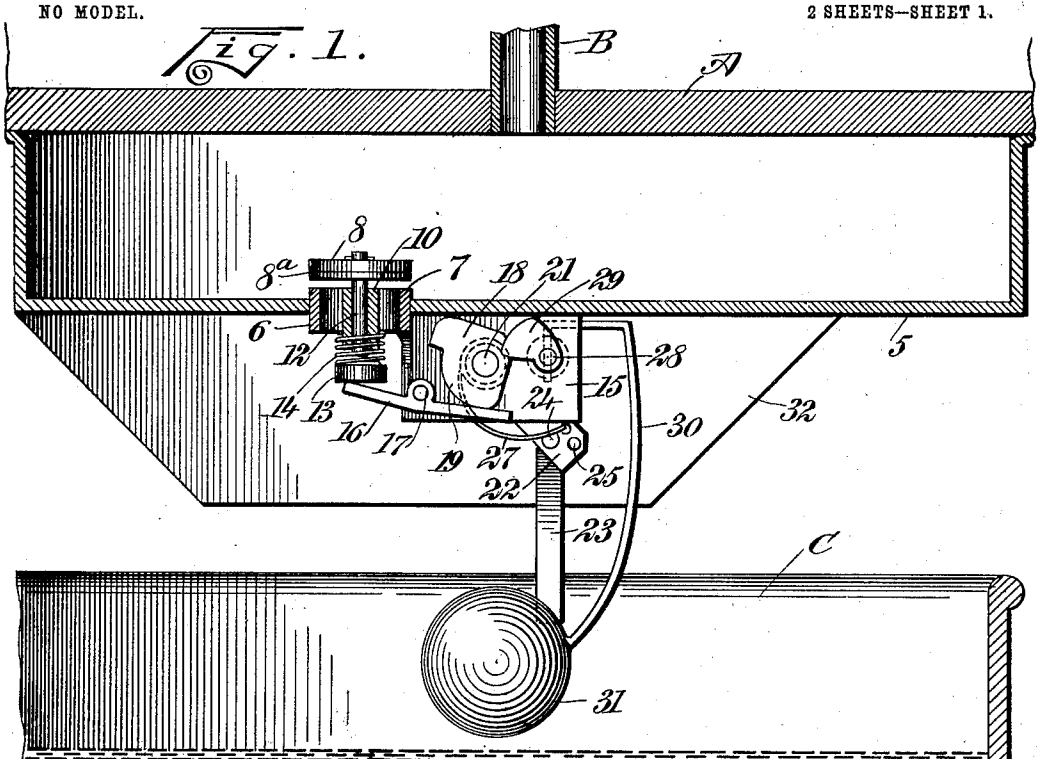


Fig. 2.

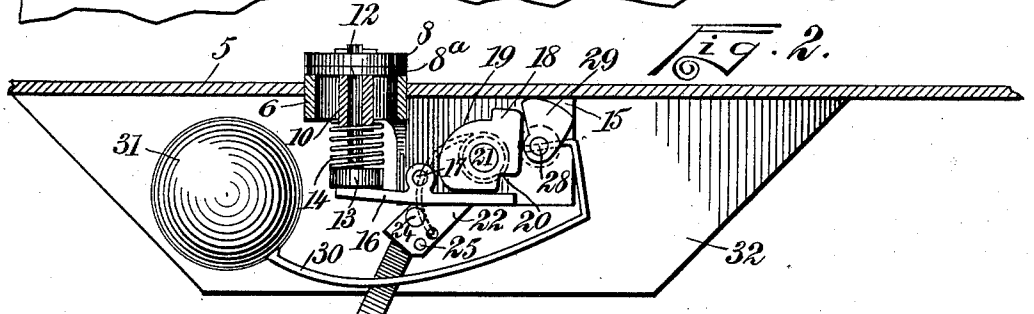
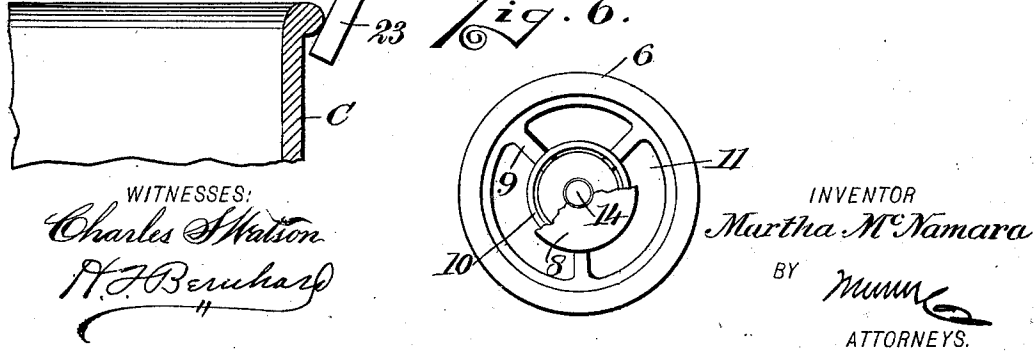


Fig. 6.



WITNESSES:

Charles S. Watson

H. J. Bernhard

INVENTOR

Martha McNamara

BY Munn & Co

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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NO MODEL. 2 SHEETS—SHEET 2.

Fig. 4.

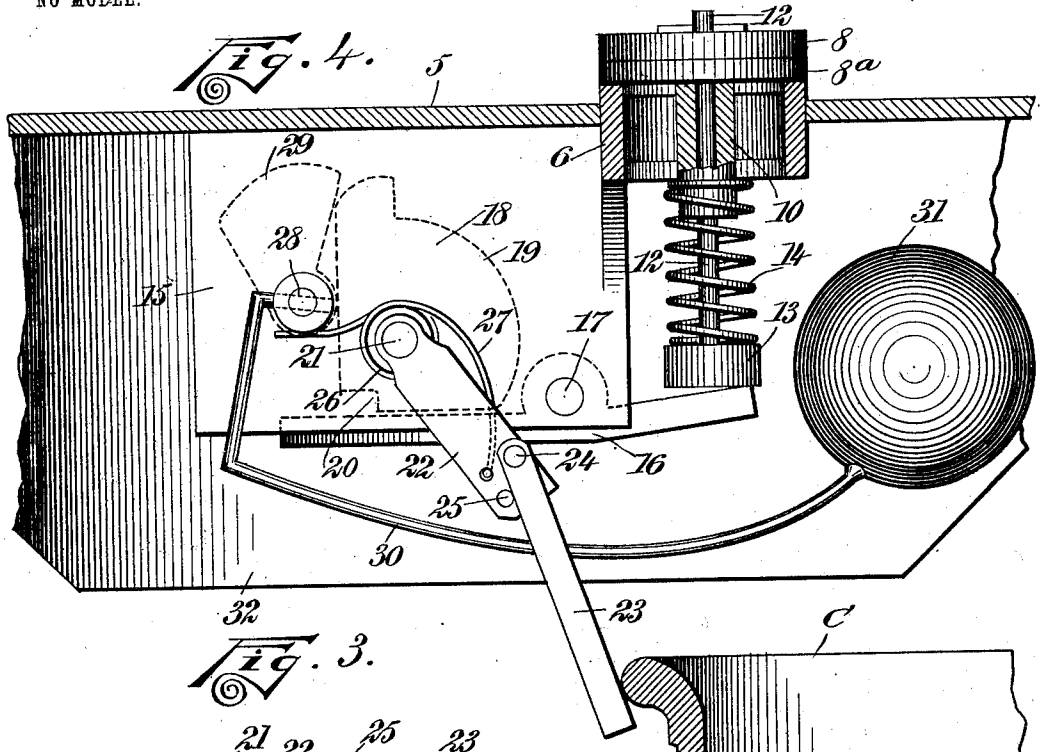


Fig. 3.

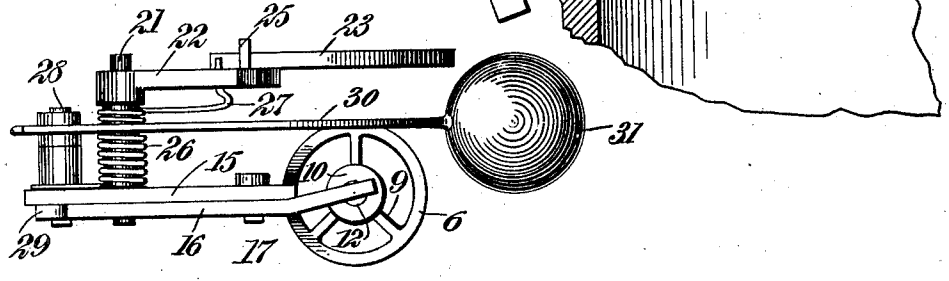
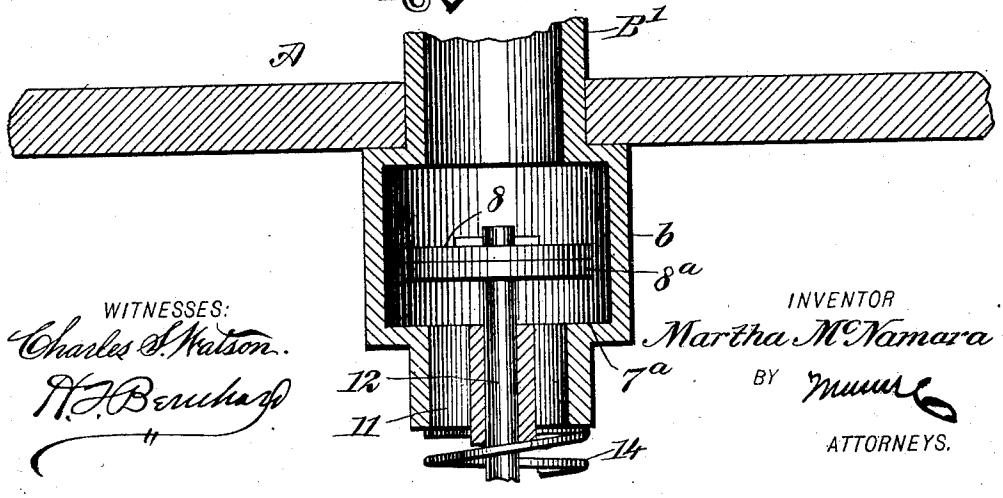


Fig. 5.



WITNESSES:

Charles S. Watson.

H. J. Berchard

INVENTOR

Martha McNamara

BY Munn & Co

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

No. 756,397. Patented April 5, 1904.

UNITED STATES PATENT OFFICE.

MARTHA McNAMARA, OF NEW YORK, N. Y.

DRAIN-PIPE ATTACHMENT FOR REFRIGERATORS.

SPECIFICATION forming part of Letters Patent No. 756,397, dated April 5, 1904.

Application filed April 28, 1903. Serial No. 154,636. (No model.)

To all whom it may concern:

Be it known that I, MARTHA McNAMARA, a citizen of the United States, and a resident of the city of New York, borough of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Drain-Pipe Attachment for Refrigerators, of which the following is a full, clear, and exact description.

My invention relates to improvements in drain-pipe attachments for refrigerators; and the object that I have in view is to provide means for preventing the overflow of the usual drip-pan by the continued accumulation of water after the pan shall have become filled.

A further object that I have in view is to provide means for automatically opening a valve when the drip-pan is placed in position below a refrigerator, said valve being closed by automatic devices when the water in the drip-pan reaches a certain level.

Further objects and advantages of the invention will appear in the course of the subjoined description, and the novelty will be defined by the annexed claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a vertical sectional elevation showing a fragment of the bottom portion of a refrigerator and a portion of the drip-pan beneath the same in order to illustrate the application of my improvements, the valve being shown in its open position. Fig. 2 is a view somewhat similar to Fig. 1, illustrating the position of the parts when a drip-pan is thrust below the refrigerator. Fig. 3 is a detail plan view of the parts comprising my improvement. Fig. 4 is a vertical sectional elevation of the invention, the drip-pan being shown in the act of engaging with the valve-controlling mechanism for the purpose of opening the latter. Fig. 5 is a sectional view through a style of drain-pipe adapted to be used in connection with the devices shown by Figs. 1 to 4, inclusive; and Fig. 6 is a detail plan view of one style of valve.

In Figs. 1, 2, 3, and 4 of the drawings I have illustrated one embodiment of my invention adapted for use in connection with certain makes of refrigerators wherein no provision is made for the accumulation of drip-water in the ice-chamber of said refrigerator. In refrigerators of this style I employ a tank 5, which is adapted to be secured in any suitable way below the bottom A of an ordinary refrigerator, said tank being arranged directly below the drain-pipe B, which is shown by Fig. 1 as extending through the bottom A in a position to discharge the water into said tank 5. The tank is shown in the form of a shallow vessel of any suitable material and dimensions, and in the bottom of this tank is provided a short length of pipe or tube 6, the upper end of which is finished to form a seat 7 for a valve 8. The short length of pipe 6 is provided with a series of radial webs 9, which support a central guide-tube 10 within said pipe, the webs 9 being spaced to provide passages 11 for the free egress of water, as clearly represented by Figs. 1, 2, and 6. The valve 8 is provided on its under side with a packing of leather or other suitable material, as at 8^a, and from this valve depends a stem 12, which fits slidably in the guide-tube 10, whereby the valve is limited to movement in a rectilinear path toward and from the seat 7 of the short tube 6. The lower end of said valve-stem 12 is provided with a foot-piece 13, and around the stem is fitted a coiled spring 14, the lower end of which acts against the foot-piece 13 in a way to normally impel the stem in a downward direction and force the valve 8 to its seat 7, thus closing the pipe 6 and preventing the water from passing from the tank 5 into the drip-pan C. The means for actuating and controlling the valve may be supported below the tank of the refrigerator in any suitable way; but, as shown by the drawings, I employ a bracket-plate 15. On this bracket-plate is hung a lever 16, the same being fulcrumed at a point intermediate of its length, as at 17, on the bracket-plate near one corner thereof in order that one arm of said lever may be fitted operatively to the foot-piece 13 of the valve-stem. The other arm of the lever is disposed in the path of a member 18, said member forming a cam and a locking device for the lever 16 and the valve. The mem-

ber 18 is in the form of a plate having a cam-shaped edge 19 and a notch 20, and this locking-cam 18 is rigidly secured to an end portion of a short horizontal rock-shaft 21, the latter being journaled in the fixed bracket-plate 15. On the other end portion of this rock-shaft is mounted a two-part trip-lever consisting of the members 22 23. The member 22 of this lever is secured rigidly to said rock-shaft 21, so as to turn therewith; but the other member, 23, of said lever is connected pivotally at 24 to the member 22, the movement of said member 23 relative to the member 22 in one direction being limited by a stop pin or stud 25, which is fastened to the member 22 and lies in the path of the member 23. It will be seen that when pressure is applied in one direction to the lower end of the member 23 it will push against the pin 25, so as to make the member 22 move with the member 23 in one direction, thus rocking the shaft 21 and turning the locking-cam 18; but if pressure is applied in an opposite direction against said member 23 it will turn freely on its pivot 24 without actuating the member 22, the rock-shaft, or locking-pin. Around the shaft 21 is coiled a spring 26, one end of which is attached to the shaft and the other end of which is attached to or bears against a fixed part, such as the bracket-plate 15, while the other end of the spring terminates in an arm 27, which is fitted or connected to the member 22, so as to impel the rock-shaft and the parts thereon in one direction. Adjacent to the rock-shaft 21 is a float-controlled shaft 28, the same being loosely journaled in the bracket-plate 15. On one end portion of this shaft 28 is a locking dog or detent 29, which lies adjacent to the locking-cam 18 in a position to engage with the notch 20 thereof under certain conditions, and this shaft 28 is also provided with a curved arm 30, which depends below the plate 15 and is equipped with a float 31 of any suitable construction. The valve operating and controlling mechanism herein described is housed between a pair of plates 32, one of which is shown by Figs. 1, 2, and 4 of the drawings, said plates being disposed on opposite sides of the valve mechanism and serving to protect the same from contact with the refrigerator-pan. The member 23 of the trip-lever and the float 31 are adapted to extend below the guide-plates 32.

The operation of the device as thus far set forth may be described as follows: Assuming that the parts are in the position shown by Fig. 2, the operator thrusts the drip-pan C below the refrigerator in the usual way, and one edge of the drip-pan engages with the member 23 of the two-part trip-lever, thereby pressing said lever member against the stud 25 and turning the rock-shaft 21 in one direction. The continued movement of the pan carries the trip-lever in an upward direction, and as the shaft 21 is turned by said trip-lever the locking-cam 18 is turned in a direction for its cam-shaped edge 19 to ride against the lever 16 and move one end of the latter in an upward direction, thereby lifting the stem 12 and the valve 8 off the seat 7 and against the tension of the spring 14. The cam 18 is turned a sufficient distance for its notch 20 to assume a position wherein the locking-dog 29 will enter said notch, and thus lock the valve in its raised position, thereby allowing the float 31 to be lowered into the pan. The drip-pan C takes a position below the tube 6, and the water from the drain-pipe B passes through the tank 5 and the tube 6 into said drip-pan. When the water in the pan reaches a certain level, the float 31 is raised, and it turns the shaft 28, thereby withdrawing the dog 29 from engagement with the locking-cam and allowing the spring 26 to turn in a direction which will allow the lever 16 to be depressed by the action of the spring 14, whereupon said spring 14 impels the stem 12 and valve 8 in a downward direction. The tube 6 is thus closed against the continued passage of water, which is free to accumulate in the tank 5 in case the operator does not notice that the pan C is nearly filled. The water continues to accumulate in the tank 5, and the pan C is thus prevented from overflowing. Of course the pan should be withdrawn and emptied, after which it should be replaced, and during the operation of withdrawing the pan one edge thereof rides against the member 23 of the trip-lever to move it away from the pin or stud 25, thus allowing said pan to be withdrawn without interfering with the position of the valve-controlling devices. In the event of the drip-pan being withdrawn for the purpose of emptying the same before the water has reached a sufficient height to actuate the valve-controlling devices the inner edge of the drip-pan engages the curved arm 30, raising it and operating the device, the result being the same as if the float were lifted by the rising of the water. This prevents the water from dripping on the floor during the temporary absence of the drip-pan.

There are some styles of refrigerators on the market which do not require the use of the tank 5, because the ice-chamber of the refrigerator can be utilized as an emergency-chamber for the storage of drip-water, and in these styles of refrigerators it is only necessary to use the valve and its operating mechanism. In Fig. 5 of the drawings I have shown an adaptation of my invention to refrigerators of this class. The drain-pipe B′ of the refrigerator should be fashioned in a suitable way to accommodate the valve, and in this figure one way of constructing the drain-pipe for the reception of the valve is shown. This drain-pipe may be provided with a valve-chamber, as *b*, the lower face 7^a of which serves as the seat for the valve 8. The valve-chamber *b* may be made as an integral part of the drain-pipe, or it may be attached

thereto in any suitable way. The bracket-plate 15 may be secured to the bottom of the refrigerator by any preferred means, and this plate carries the rock-shafts 21 28, which are equipped with the devices heretofore described. The operation of the valve and its controlling mechanism in the construction adapted for use in connection with Fig. 5 is the same as in the devices in Figs. 1 to 4, inclusive, except that on closure of the valve by the accumulation of water in the drip-pan and the elevation of the float the water will gradually accumulate in the drain-pipe B' until it reaches the ice-chamber, in the bottom of which the water will continue to accumulate until the drip-pan is emptied and replaced.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. A device of the class described having a normally closed drip-valve, means controllable by the insertion of a drip-pan for opening the valve and locking the same in its opened position, and means for releasing said valve-locking devices, said releasing means being actuated by accumulation of water in the drip-pan and by the withdrawal thereof.

2. A device of the class described, having a normally closed drip-valve, means controllable by the movement of the drip-pan in one direction for opening said valve and locking the same in an open position, one member of the valve opening and locking means being yieldable to the movement of the drip-pan in an opposite direction, and means for releasing the valve-locking devices, said releasing means being actuated by the accumulation of water in the drip-pan.

3. In a device of the class described, the combination of a valve, a locking means therefor, means operated by the movement of a drip-pan for opening the valve and locking the same in its opened position, and a float-actuated releasing device for closing said valve.

4. In a device of the class described, the combination of a normally closed valve, means controllable by the movement of a drip-pan for opening said valve and for locking the valve in its opened position, and a float-controlled releasing device disposed to actuate the valve-locking means and permit said valve to be closed.

5. In a device of the class described, the combination of a normally closed valve, a locking-cam, a lever connection between the valve and said cam, a trip device controllable by the movement of a drip-pan for actuating the cam, and a float-controlled locking-detent in operative relation to said locking-cam.

6. In a device of the class described, the combination of a valve, a lever for moving said valve in one direction, a pivoted member arranged to act against said lever, a trip device controllable by the movement of a drip-pan for turning the pivoted member, a locking-dog in operative relation to said pivoted member, and a float for controlling said dog.

7. In a device of the class described, the combination of a spring-pressed valve, a lever acting against said valve, a locking-cam acting on said lever, a spring-actuated trip device movable in one direction by the insertion of a drip-pan and connected operatively with said cam, and a float-controlled dog in operative relation to the cam.

8. In a device of the class described, the combination of a valve, a two-part trip having one member controllable by the insertion of the drip-pan and disposed for movement in one direction independently of the other member, a locking device operatively related to said valve, and a float for releasing said locking device.

9. In a device of the class described, the combination of a tank arranged to receive water from a refrigerator drain-pipe, an outlet from said tank, a valve controlling said outlet, means for locking said valve in an open position, means operated by the movement of a drip-pan to open said valve, and a float-controlled device for releasing the locking mechanism and closing said valve.

10. The combination of a tank attached to a refrigerator and arranged to receive drip-water therefrom, a normally closed drip-valve connected to said tank, and means controllable by the insertion and withdrawal of a drip-pan below said tank and valve for opening, locking and closing the valve.

11. The combination of a normally closed valve, a lever tending to open the valve, locking devices controllable by the movement of a drip-pan for holding the valve in an open position, and float-controlled releasing devices coöperating with said locking devices.

12. The combination of a valve, a lever acting on said valve, a locking-cam riding on said lever, a yieldable trip for turning said cam and moving said lever, and a float-controlled dog coöperating with said cam and withdrawable therefrom by the elevation of a float to a predetermined point.

13. The combination of a valve, a shouldered cam for locking said valve, a two-part trip having its members yieldably connected, one member being fast with the cam and the other member lying in the path of a drip-pan, a dog disposed for engagement with the cam, and means for actuating the dog.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

MARTHA McNAMARA.

Witnesses:
JOHN McNAMARA,
J. HARRY FOSTER.