

No. 634,021.

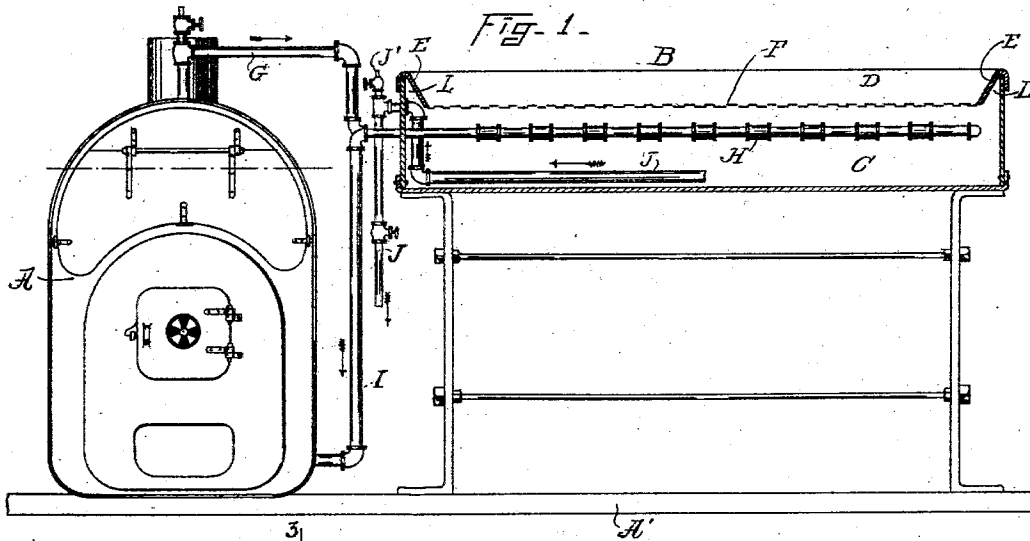
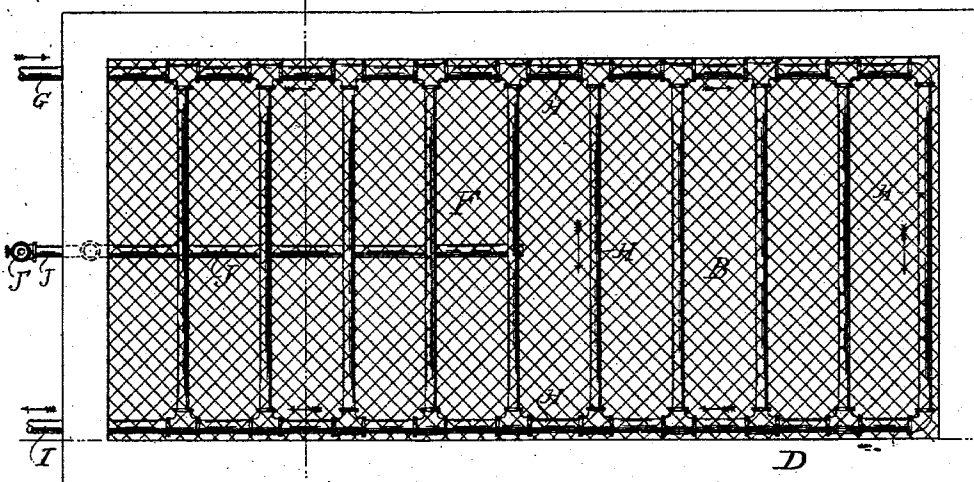
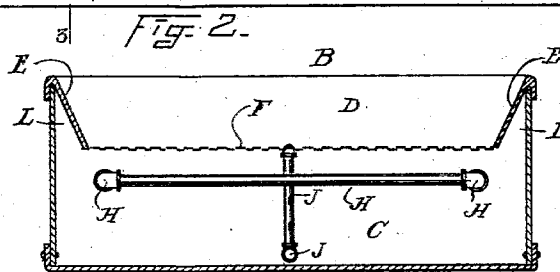
Patented Oct. 3, 1899.

E. S. PALMER.

DEVICE FOR CONVERTING SNOW OR ICE INTO WATER.

(Application filed Nov. 19, 1898.)

(No Model.)



WITNESSES.

C. L. Brown.

Harry M. Rugg.

Fig-3-

INVENTOR-

Emily Stayer Palmer

by her attorney,

Charles V. Gooding

UNITED STATES PATENT OFFICE.

EMILY STRAYER PALMER, OF BOSTON, MASSACHUSETTS.

DEVICE FOR CONVERTING SNOW OR ICE INTO WATER.

SPECIFICATION forming part of Letters Patent No. 634,021, dated October 3, 1899.

Application filed November 19, 1898. Serial No. 696,854. (No model.)

To all whom it may concern:

Be it known that I, EMILY STRAYER PALMER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented new and useful Improvements in Devices for Converting Snow or Ice into Water, of which the following is a specification.

The object of my invention is to provide a device to assist in removing snow or ice from the streets in an expeditious and economical manner.

The invention consists of a receptacle for the snow or ice, in combination with a heating system whereby the snow or ice is converted into water and conveyed while in the liquid state to a suitable and convenient place.

The invention further consists in certain details of construction and arrangement of parts, as set forth in the following specification and in the claims thereof.

Referring to the drawings, Figure 1 is a front elevation, partly in section, of my improved device. Fig. 2 is an enlarged plan view of the "melter" detached from the boiler. Fig. 3 is a vertical transverse section of the same, taken on line 3 3, Fig. 2.

Like numerals or letters refer to like parts throughout the several views thereof.

In the drawings, A is a boiler or heater of any desired construction or type. B is a tank or receptacle into which the snow is thrown, said tank and boiler being carried from place to place upon a wagon or sled, the top of which is indicated at A'. Said tank B consists of a reservoir C, having a top D, formed with inwardly and downwardly extending flanges E, the lower edge of said flanges being connected by a netting F, the upper edges of said flanges being turned over to rest upon the top of the sides of the tank B.

The boiler A is connected by a pipe G to one end of a coil H, said coil being placed above the water-line in the boiler and below the screen F. A return-pipe I connects the other end of the coil H with the boiler, as shown. An overflow-pipe J forms an outlet for the melted snow and ice, which may be connected to a cesspool by hose and thence to the sewer. Said overflow-pipe J starts at the center of the bottom of the reservoir C, passing upward and out through the end of the

tank, the center of said pipe at the point where it passes out of the tank being on a level with the netting F. Thus it will be seen that as the overflow-pipe J passes out of the tank at a point on a level with the netting F the coil H will at all times in the operation of the device be covered with and surrounded by a bath of hot water, and, further, it will be seen that as the snow is thrown upon the said netting it will fall thence into a bath of hot water. The hottest portion of the water derived from the melting of the snow will evidently be at the top, the cooler and heavier portion descending in the reservoir C and passing out from the bottom of the reservoir upward through the overflow-pipe J and out of the reservoir at a level with the screen F. Hence it will be seen that there is a continuous circulation of water in the reservoir C and out through the overflow-pipe J, and also a constant circulation of the steam from the boiler A through the inlet-pipe G, coil H, and return-pipe I to the boiler. After passing out of the tank the pipe J turns down and is connected, as described, by a hose to a street-cesspool or any convenient and desirable place. The overflow-pipe J is provided at J' with an air-vent. Said cock J' is kept open to a slight extent in order to prevent siphoning. As the pipe J extends to a point at the outlet below the point in the reservoir C at the inlet of said pipe, it is evident that without the air-vent or cock J' the water would be siphoned out of the reservoir C as fast as the snow or ice is melted. In operation said cock J' is kept open to break the siphon, and when it is desired to empty the reservoir C of water the cock J' is closed and the pipe J, acting as a siphon, empties said reservoir.

It will be observed that by the construction of the top D a pocket or chamber L is formed which prevents the hot water in the tank from splashing over when the vehicle upon which the device is placed is moved. It will also be observed that the top D can be readily lifted off the reservoir C in order to cleanse said reservoir or to repair the same.

The operation of the device as a whole is as follows: The steam passes from the boiler A through the pipe G in the direction of the arrows and through the coil H, condensing and returning to the boiler through the pipe I.

The snow and ice are thrown into the top D upon the screen F directly over the coil H, the heat from which melts said snow or ice, the water resulting therefrom being carried out of the reservoir C by the overflow or outlet pipe J, as hereinbefore described.

It is evident that the top D might be made of sheet-iron with holes or perforations therein, to take the place of the netting F, without departing from the spirit of my invention.

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

1. A device for converting snow or ice into water, consisting of a reservoir C provided with an outlet-pipe J, so arranged as to take the water in the reservoir C from near the bottom thereof and to conduct it out of said reservoir at a point near the top thereof, in combination with a heating-coil H having an inlet-pipe G and a return-pipe I said pipes G and I connecting said heating-coil with a boiler A, substantially as described for the purpose specified.

2. A device for converting snow or ice into water, consisting of a reservoir C, provided with an outlet-pipe J having a vent-cock J'; in combination with a heating-coil H, having an inlet-pipe G and a return-pipe I, said pipes G and I connecting said heating-coil with a boiler A substantially as described for the purpose specified.

3. A device for converting snow or ice into water, consisting of a reservoir C, provided with an outlet-pipe J, and a top D, having a netting F attached thereto, in combination with a heating-coil H, having an inlet-pipe G and a return-pipe I, said pipes G and I connecting said heating-coil H with a boiler A, substantially as described, for the purpose specified.

4. A device for converting snow or ice into

water, consisting of a reservoir C, provided with an outlet-pipe J, and a top D, having inwardly and downwardly extending sides or flanges E, and a netting F, attached to said flanges E, in combination with a heating-coil H, having an inlet-pipe G and a return-pipe I, said pipes G and I connecting said heating-coil H with a boiler A, substantially as described, for the purpose specified.

5. A device for converting snow or ice into water, consisting of a reservoir C, provided with an outlet-pipe J, and a top D, having inwardly and downwardly extending sides or flanges E, the lower edges of said flanges being connected by a netting F, the upper edges of said flanges being turned over to rest upon the sides of said reservoir C, in combination with a heating-coil H, having an inlet G and a return-pipe I, said pipes G and I connecting said heating-coil H with a boiler A, substantially as described, for the purpose specified.

6. A device for converting snow or ice into water, consisting of a reservoir C, provided with a top D having a netting F attached thereto, and an overflow-pipe J so arranged as to take the water in the reservoir C from near the bottom thereof and to conduct it out of said reservoir at a point substantially on a level with said netting, in combination with a heating-coil H, arranged below said netting F, having an inlet-pipe G and a return-pipe I, said pipes G and I connecting said heating-coil with a boiler A, substantially as described for the purpose specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

EMILY STRAYER PALMER.

Witnesses:

CHARLES S. GOODING,
HARRY M. RUGG.