(No Model.)

M. HANNAN.

SNOW MELTING APPARATUS.

No. 281,500. Patented July 17, 1883.

Fig: 1.

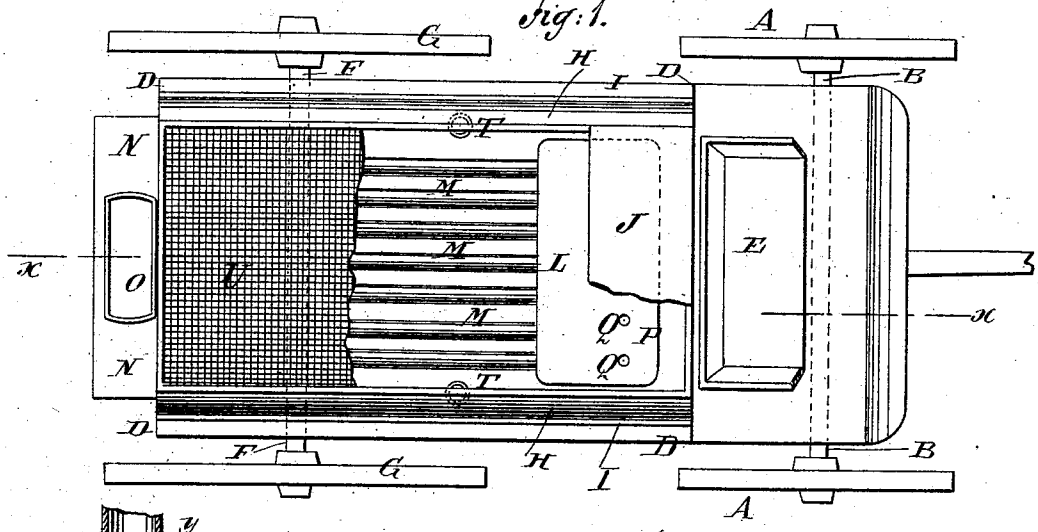


Fig: 2.

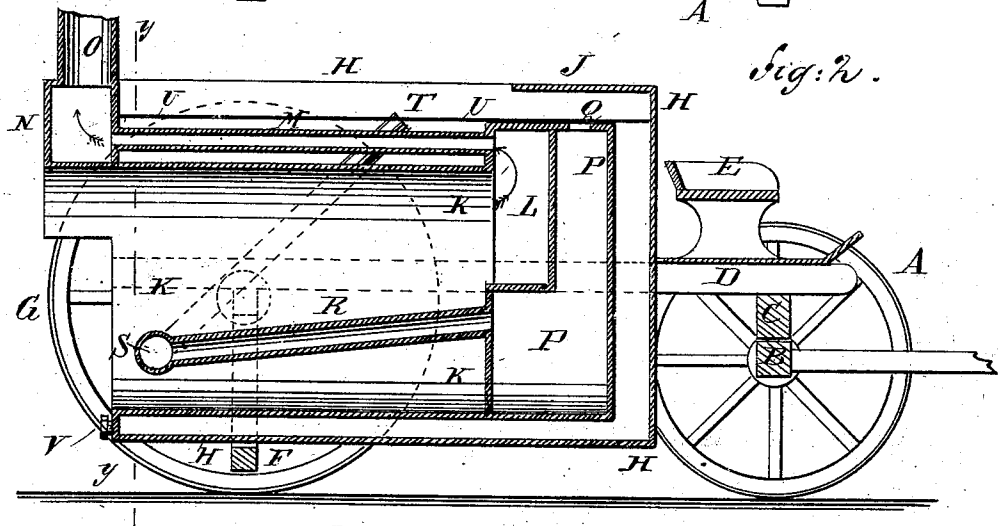
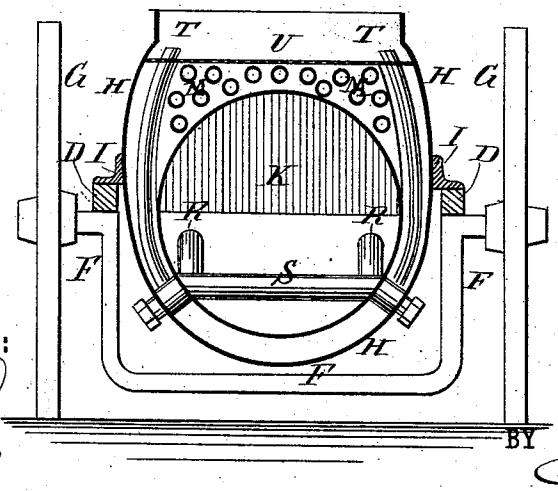


Fig: 3.



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UNITED STATES PATENT OFFICE.

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SNOW-MELTING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 281,500, dated July 17, 1883.

Application filed February 5, 1883. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL HANNAN, of the city, county, and State of New York, have invented a new and Improved Snow-Melting Apparatus, of which the following is a full, clear, and exact description.

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

Figure 1 is a plan view of my improvement, parts being broken away. Fig. 2 is a sectional side elevation of the same, taken through the line *x x*, Fig. 1. Fig. 3 is a sectional end elevation of the same, taken through the line *y y*, Fig. 2.

The object of this invention is to facilitate the removal of snow from streets and other places.

A are the forward wheels of the carriage, the axle B of which is connected with a high bolster, C. To the bolster C is attached the forward part of the frame D, to which is attached the driver's seat E. The rear part of the frame D is attached to the rear axle, F, at the inner ends of the hubs of the rear wheels, G. The axle F is made in crank form, to bring its middle part near the ground.

H represents a tank, which I prefer to make of oval form, but which may be made cylindrical or of other suitable shape. To the sides of the tank H, a little above the level of its central line, are attached flanges I, which rest upon the side bars of the frame D, and support the tank H and its contents. The upper side of the tank H, except at the forward end, is open, so that snow can be readily shoveled into the said tank. The forward part of the tank H is covered by a plate, J, to prevent water from splashing out upon the driver, and to cover and protect the inlet-openings of the overflow chamber and pipes.

Within the tank H is placed a cylindrical furnace, K, which is made of such a size as to leave a narrow water-chamber between its lower part and the lower part of the tank H, and a larger space at the upper part of the said tank. The door of the furnace is at the rear end of the vehicle. The lower part of the forward end of the furnace K is closed, and its upper part is open, to allow the products of combustion to pass freely into the chamber L, secured to the upper part of the forward end of the furnace K. The chamber L rises a little above the top of the furnace K, and with its upper part are connected the ends of a number of exterior flues, M, through which the products of combustion pass to the chamber N, secured to the top of the rear end of the furnace K. With the top of the chamber N is connected the smoke-stack O.

To the forward end of the furnace K and the forward side of the smoke-chamber L is connected a water-chamber, P, which has openings Q in its top, and with the inner side of which, a little distance below the bottom of the chamber L, are connected two pipes, R. The pipes R extend with a downward inclination through the side parts of the furnace K, and are connected at their lower ends with a pipe, S, which crosses the furnace K near its door. The ends of the cross-pipe S project through the lower parts of the sides of the tank for the convenient discharge of the water. The projecting ends of the pipe S may be left open, or may be provided with nozzles or hose, so that the discharged water can be directed to any desired place.

With the end parts of the cross-pipe S, between the walls of the furnace K and tank H, are connected the lower ends of inclined pipes T, the upper ends of which are a little above the water-line of the tank H, so as to discharge the steam generated in the pipe S into the snow upon the flues M and assist in melting the said snow.

In using the apparatus the snow is shoveled into the open top of the tank H, and is melted by the heated walls of the furnace K and flues M. As the water rises to the top of the chamber P it flows through the openings Q into the chamber P and pipes R S, and is heated, so that when discharged from the pipe S it will melt any snow left upon the ground or in the gutters as it flows into the sewer.

To the walls of the tank H, above the flues M, is attached a grate, U, of wire or other suitable material, to prevent any coarse rubbish that may be thrown into the tank with the snow from passing down into the space between the walls of the furnace K and the tank H. The end of the tank H below the furnace K is provided with a short pipe, V, closed by a cap or a stop-cock, through which fine dirt

that may pass through the grate U can be washed out.

If desired, the chamber P can be omitted and the pipes R extended forward and curved upward to bring their ends to the level of the water-line of the tank H, to carry off the overflow-water, the said pipes thus forming the overflow-chamber P.

I am aware that it is not new in a snow-melting machine to combine a furnace lined with water-jackets filled by melting snow and ice, a receiver having an inclined bottom and discharge-nozzles, and an engine driven by the steam generated by the heat of the fire which heats the receiver.

What I claim as new and of my invention is—

1. In a snow-melting apparatus, the combination, with the tank H, of the interior furnace, K, provided with the chamber L, and a series of exterior return-flues, M, substantially as herein shown and described, whereby the snow will be melted as it is thrown into the said tank, as set forth.

2. In a snow-melting apparatus, the combination, with the tank H and the interior furnace, K, of the overflow-chamber P and the pipes R S, passing through the said furnace K, substantially as herein shown and described, whereby the overflow-water will be heated and made to melt and wash away any snow that may be left upon the ground, as set forth.

3. In a snow-melting apparatus, the combination, with the tank H, the interior furnace, K, and the overflow-pipes R S, of the steam-pipes T, substantially as herein shown and described, whereby the steam generated in the said overflow-pipes can be made to assist in melting the snow, as set forth.

4. In a snow-melting apparatus, the combination, with the tank H, the furnace K, and the return-flues M, of the grate U, substantially as herein shown and described, whereby coarse dirt is kept from passing down into the space between the said tank and furnace, as set forth.

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Witnesses:
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