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E. BEATTY.

SNOW MELTING MACHINE.

(Application filed June 6, 1900.)

(No Model.)

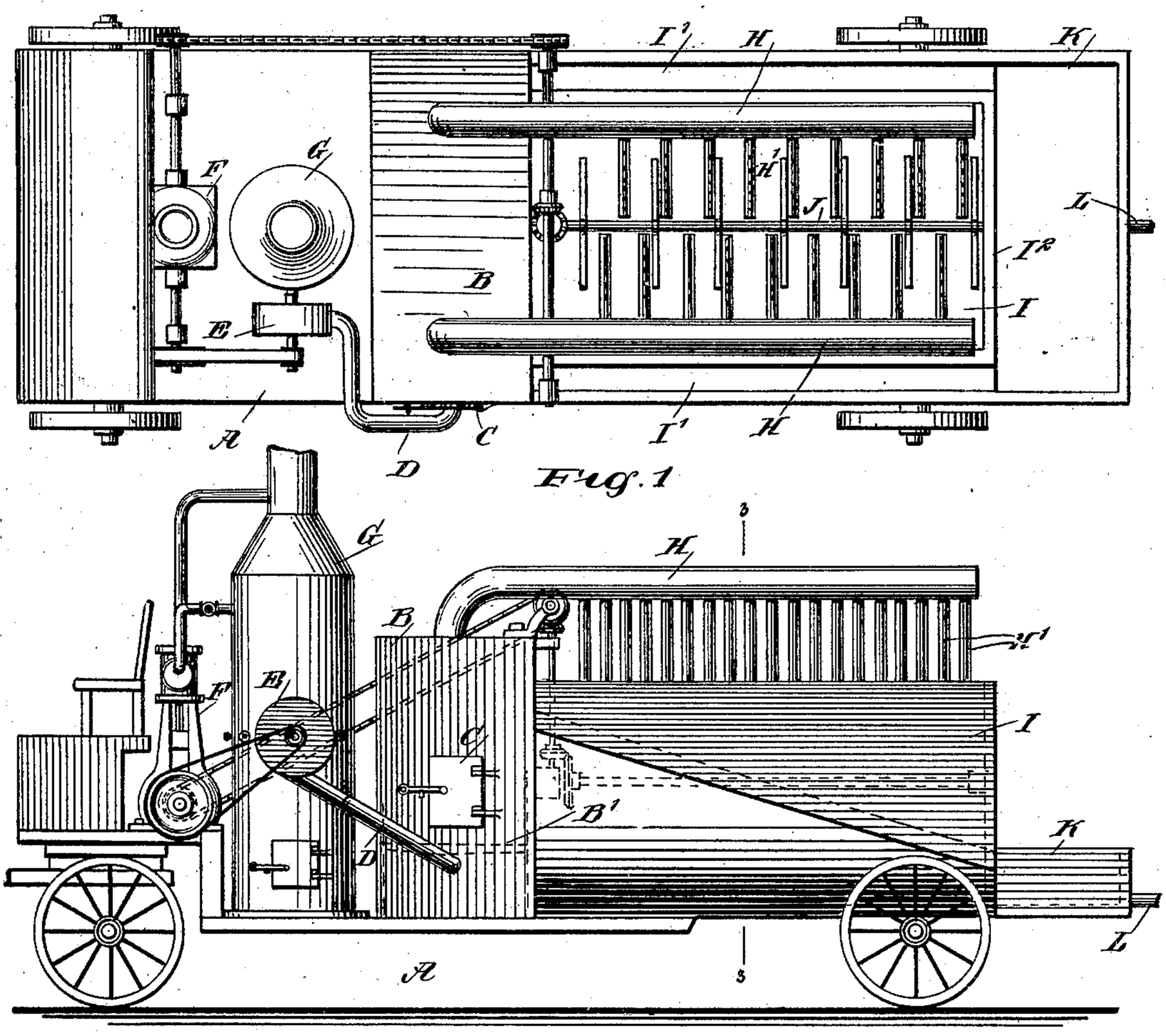

Fig. 1

Fig. 2

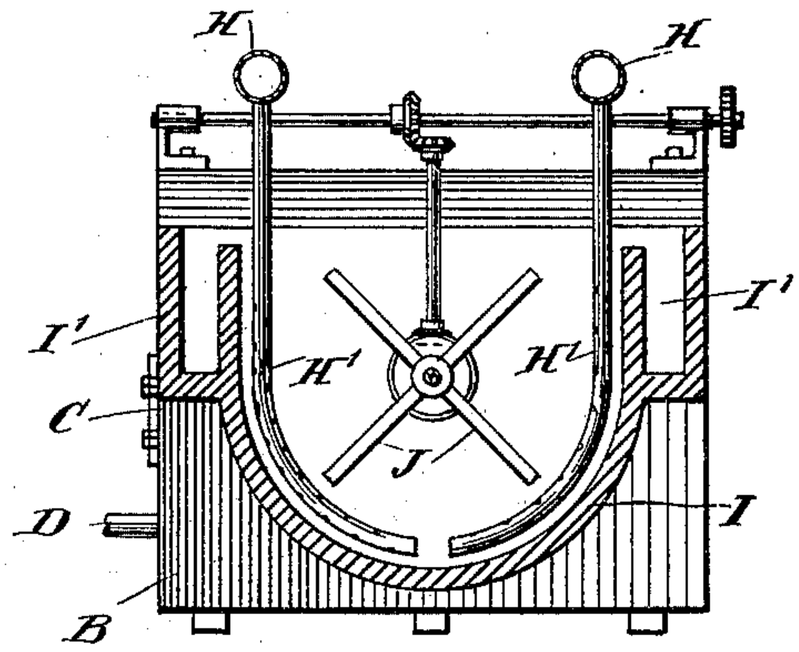

Fig. 3

WITNESSES:

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SNOW-MELTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 663,718, dated December 11, 1900.

Application filed June 6, 1900. Serial No. 19,255. (No model.)

To all whom it may concern:

Be it known that I, EDWARD BEATTY, 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 Snow-Melting Machine, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved snow-melting machine designed for use in cities and other places and arranged to be conveniently moved along the streets and be temporarily located at or near the opening to a sewer, while the machine is in use, to discharge the melted snow directly into the sewer.

The invention consists of novel features and parts and combinations of the same, as will be fully described hereinafter and then pointed out in the claims.

A practical embodiment of the invention is represented in the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a plan view of the improvement. Fig. 2 is a side elevation of the same with part in section, and Fig. 3 is a transverse section of the same on the line 3 3 in Fig. 2.

The improved snow-melting machine is mounted on a wheeled vehicle A, adapted to be drawn or driven through streets or other places in which snow is to be melted. The vehicle A supports a furnace B, having the usual grate B′, and a fuel door C, through which fuel is introduced, and into the ash-pit of this furnace B discharges the pipe D of a blower E, so that an air-blast is forced up through the grate-bars of the furnace to the burning fuel to insure combustion thereof and to force the products of combustion under pressure out of the furnace, for the purpose hereinafter more fully described. The blower E is driven from a suitable engine or motor F, of any approved construction, deriving its motive agent from a boiler G, carried with the engine and blower on the vehicle A.

From the top of the furnace B lead the outlet or discharge pipes H for carrying off the products of combustion under pressure, said pipes extending rearwardly over the sides of a snow-melting box I, supported on the vehicle A at the rear end of the furnace B. From the pipes H lead branch pipes H′ into the snow-melting box I, which latter is preferably semicircular in cross-section, the branch pipes H′ being curved correspondingly in said box, close to the inner surface thereof, the branch pipes being formed with minutely-arranged discharge openings or perforations, so that the hot products of combustion pass under pressure into the water and snow contained in the snow-melting box I.

In the box I is arranged an agitator J, driven from the engine F by suitable mechanism, for stirring up the snow and water and the air to insure a very rapid melting of the snow constantly shoveled or otherwise thrown into the box I. By this arrangement the snow is very quickly melted, and as the water and snow rise in the box the water overflows over the sides of the box into longitudinal channels I′, discharging at their rear ends into a water-receiving box K, connected by a hose L with the fixed sewer-opening, so that the snow-water passes directly from the machine into the sewer. The rear end I^2 of the box adjacent to the water-box K also serves as an overflow for the snow-water contained in the box L.

In using the machine a hose L of sufficient length is used to permit of moving the machine along a city street without disconnecting the hose end from the sewer-opening, and the snow is shoveled into the melting-box, in which it is quickly melted by the escaping products of combustion forced through the snow and water under pressure by the action of the blower.

From the foregoing it is evident that a thorough combustion of the fuel in the furnace B is obtained, and the heat of the escaping smoke and gases is fully utilized by forcing the said smoke and gases directly into the snow and water in the box I, so that the snow and water are subjected to a high degree of heat and the snow is easily melted, the water overflowing into the box K to finally pass by the hose L into the sewer. As the snow-water is of a comparatively high temperature, it is evident that some snow may be shoveled into the box K and melted therein and finally led by the hose L into the sewer, as above

described. Thus both boxes I and K are utilized for melting snow.

By the hose L the water is directly conducted from the box K to the sewer, and when the street has been cleaned to a length corresponding about to that of the hose the hose end is moved to the next-following sewer-opening and the work is continued as above described.

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

1. A snow-melting machine, comprising a snow-melting box having overflow-channels at the sides, a water-box adjacent to one end of the snow-melting box, and arranged to receive the overflow from the snow-melting box by way of said channels, a furnace having the outlet arranged to diffuse the products of combustion under pressure in the water and snow contained in said snow-melting box, and a blower for forcing air into said furnace, to insure combustion of the fuel therein, and to cause the products of combustion to pass under pressure from the furnace to the outlet thereof into the water and snow contained in said melting-box, as set forth.

2. A snow-melting machine, having a snow-melting box or tank provided with a top overflow whereby the tank is kept full of water, a furnace, and means for forcing the products of combustion from the furnace into the water in said tank at a point below the overflow, thereby keeping the water heated and quickly melting the snow placed in said tank, as set forth.

3. A snow-melting machine having a snow-melting tank with a top overflow for the water and having side channels, pipes connected with a furnace and arranged to discharge the hot gases into the melting-tank below said overflow and directly into the water contained in said tank, whereby the water in said tank is kept heated and the snow is quickly melted, and means for forcing the hot gases from the furnace through said pipes, as set forth.

4. A snow-melting machine, having a snow-melting tank with a top overflow and having longitudinal channels at its sides, a furnace, pipes connected with said furnace and discharging directly into said tank at a point below the overflow, and a tank located at the rear of the first tank and into which the side channels of the first tank discharge, as set forth.

5. A snow-melting machine, comprising a wheeled vehicle, a furnace mounted thereon, a blower on the vehicle for forcing an air-blast into said furnace, to insure combustion of the fuel contained therein and for driving the products of combustion under pressure out of the furnace, a snow-melting box mounted on said vehicle, and having overflow-channels at the sides, an agitator in said box, a water-box adjacent to one end of the snow-melting box, and arranged to receive the overflow from the snow-melting box by way of said channels, the said water-box having an outlet for discharging the water, and discharge-pipes leading from said furnace and having perforated branch pipes extending into said snow-melting box, to cause the products of combustion from the furnace to pass directly into the snow and water contained in the box, substantially as shown and described.

6. A snow-melting machine, having a snow-melting tank provided with a top overflow, a furnace, pipes connected with the furnace and extending longitudinally over the sides of the tank, and perforated branch pipes leading from said longitudinal pipes and extending downward into said tank in close proximity to the inner surface of the side thereof, the said pipes discharging the products of combustion from the furnace into the tank below the overflow, as set forth.

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

EDWARD BEATTY.

Witnesses:
THEO. G. HOSTER,
EVERARD BOLTON MARSHALL.