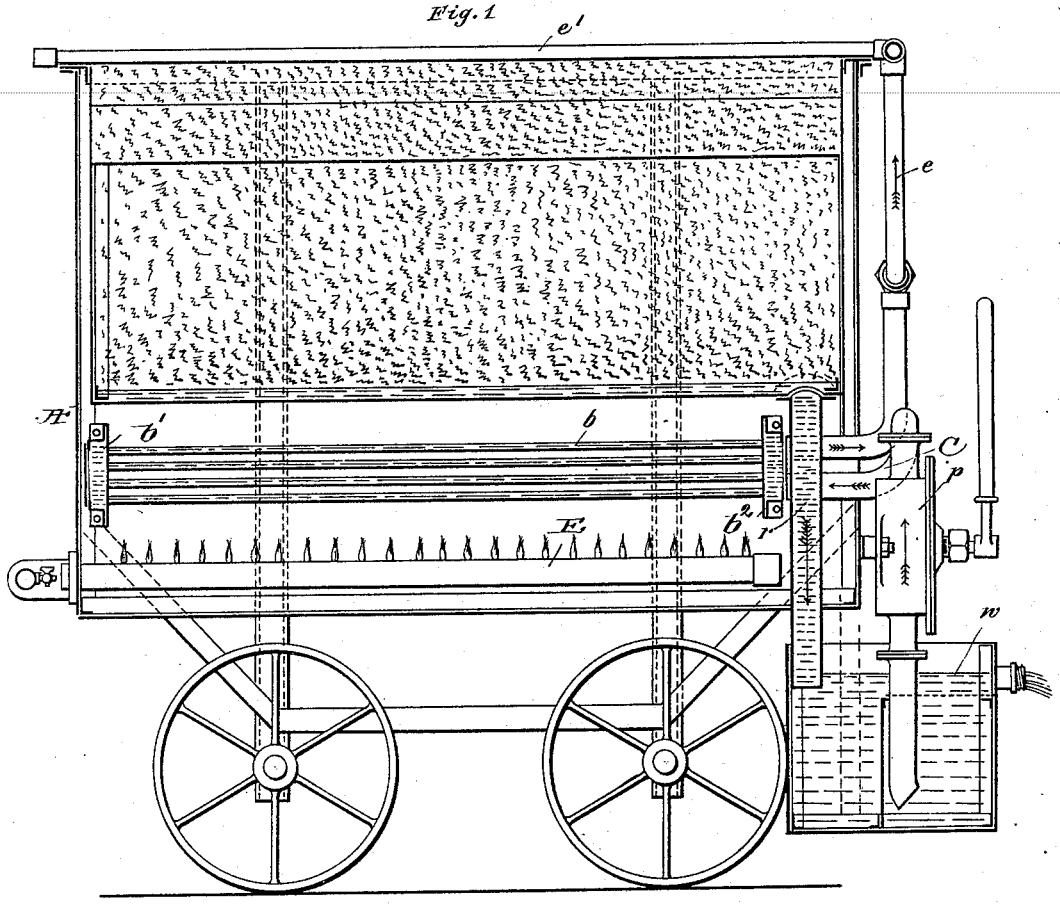
(No Model.) 2 Sheets—Sheet 1.

F. X. VON GARNIER.

SNOW MELTING CART.

No. 553,401. Patented Jan. 21, 1896.

Fig. 1



Witnesses
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James R. Mansfield.

Inventor
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(No Model.) 2 Sheets—Sheet 2.

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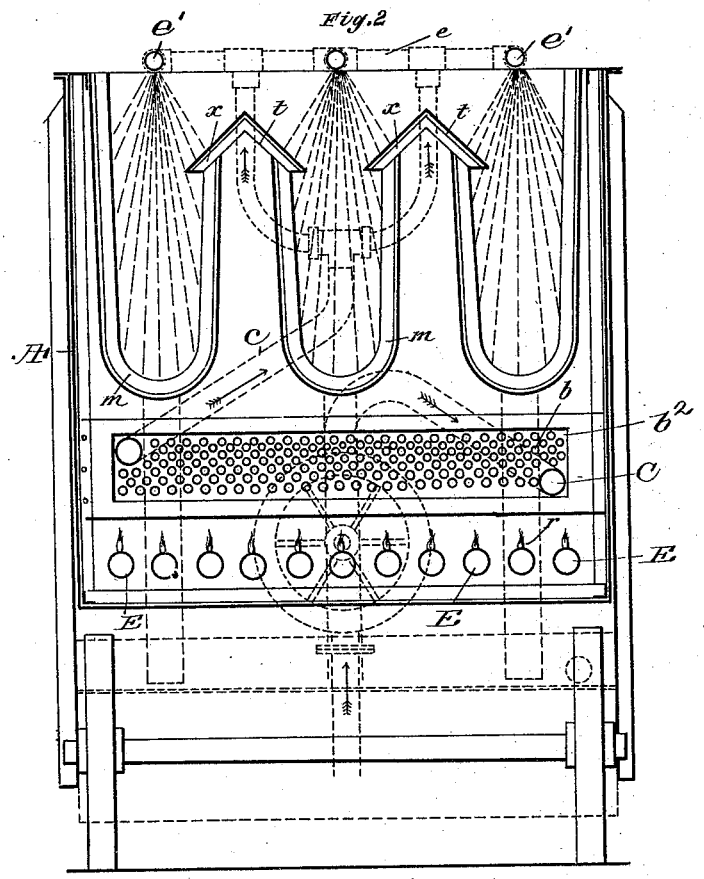
Fig. 2



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UNITED STATES PATENT OFFICE.

FRANZ XAVER VON GARNIER, OF BREMEN, GERMANY.

SNOW-MELTING CART.

SPECIFICATION forming part of Letters Patent No. 553,401, dated January 21, 1896.

Application filed June 22, 1895. Serial No. 553,754. (No model.)

To all whom it may concern:

Be it known that I, FRANZ XAVER VON GARNIER, a subject of the King of Prussia, Emperor of Germany, and a resident of Bremen, Germany, have invented an Improvement in Snow-Melting Carts, of which the following is a specification.

This invention is an improved apparatus for rapidly melting large quantities of snow, so that where it is desired to remove snow, as from streets of cities, instead of carting it off (which is very expensive) the snow can be melted in the streets and the resultant water run into the sewers. The heating of the apparatus can be effected by gas or coal, and it is important that the gases of combustion be equally divided under the whole apparatus.

The essential features of the invention are, first, the novel construction of the heating apparatus or melting-cart, and, second, the employment of hot water to expedite the melting of the snow in the apparatus; and the invention is best summarized in the claims and described in detail as follows:

The accompanying drawings represent a snow-melting cart with gas-burners.

Figure 1 is a longitudinal section through the cart, and Fig. 2 is a cross-section through the same.

The apparatus consists of a metallic fire-box A, of any suitable construction, in which is suspended a series of U-shaped metal pockets m, into which the snow to be melted is thrown. The spaces between the intermediate pockets are closed by roof-shaped covers t, which overlap the edges of the pockets and leave small passages x thereover, through which the fire-gases can escape. Beneath the pockets m is a longitudinal series of water-heating pipes b, connected to headers b' b^2 at the ends of the fire-box, header b^2 being connected at one end by a pipe C with a pump p, which takes water from tank w, and at the other end being connected by a pipe c to a pipe e, which has longitudinal branches e' overlying hoppers m, as shown. Below the pipes b is a gas-burner E, which is supplied with gas from any convenient source. (Not indicated in the drawings.)

The gases of combustion are obliged to first pass through the system of pipes b, then they play around the hoppers m, and finally escape through the passages x into the snow masses on top of the covers t. The water gathering in the receptacles m is led through pipes r into the box w, wherefrom it is lifted by pump p and forced through pipes b, (wherein it is heated,) and then ejected through the pipes e' over the snow masses in hoppers m. It will be seen that by this process not only the heating power of the fire-gases is fully employed, but that the melting process is accelerated by the injection of warm water into the snow masses in the form of spray.

The water melted in hoppers m escapes through pipes r into a tank w below the fire-box.

Having thus described my invention, what I claim as new is—

1. In a snow melting apparatus, the combination of a heater, a tank for containing snow to be melted, and a water heater located above the heater and between it and the tank, and means whereby the water is circulated through the heater to the snow melting tank, substantially as described.

2. The combination of a fire box, the snow melting tanks thereover, and the water heating coils below the tanks and above the fire, and means whereby the water is circulated through the heater to the snow melting tank, substantially as and for the purpose set forth.

3. In a snow melting apparatus, the combination of a heater, a tank for containing snow to be melted, and a water heater located above the heater and between it and the tank; with the water tank, and means for forcing water from said water tank through the heater and ejecting it into the snow melting tanks, substantially as and for the purpose set forth.

4. The combination of a fire box, the snow melting tanks thereover, and the water heating coils below the tanks and above the fire, with a water tank, and mechanism for forcing water therefrom through the heater and spraying it into the snow melting tanks, substantially as described.

5. The combination of the fire box, the series

of pockets *m*, thereover; the series of water heating pipes *b* below the pockets; the tank *w;* the pipes *r* for conducting water from the pockets into tank *w;* the pipes C, *e*, *e'*, and pump *p* for returning water through the heating pipes and spraying it into the pockets; all substantially as and for the purpose described.

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

FRANZ XAVER VON GARNIER.

Witnesses:
ADOLPH ALTMANN,
WILHELM PATAKY.