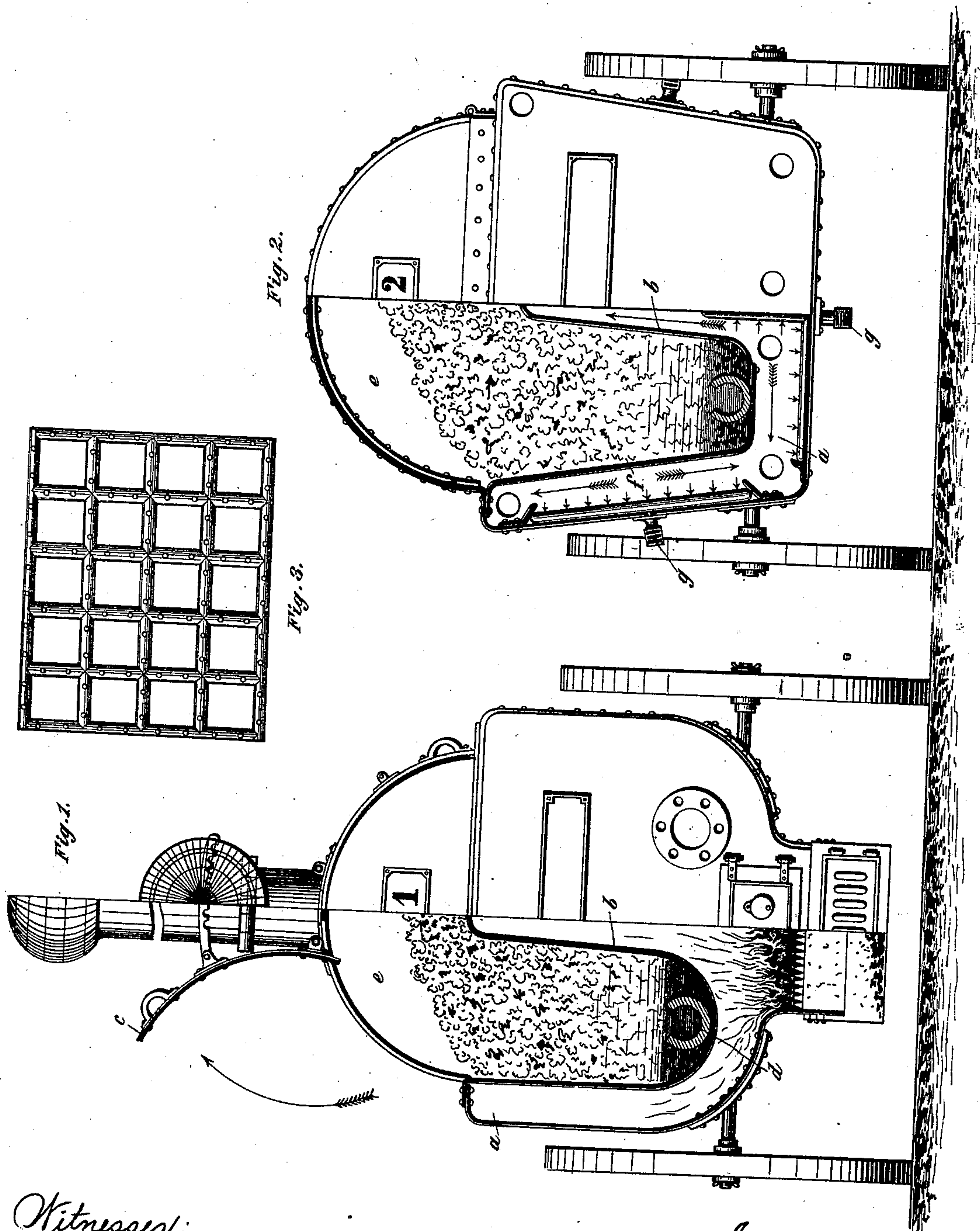


(No Model.)

F. X. VON GARNIER.  
SNOW-MELTING CART.

No. 548,981.

Patented Oct. 29, 1895.



Witnesses:  
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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. 548,981, dated October 29, 1895.

Application filed March 15, 1895. Serial No. 541,951. (No model.)

*To all whom it may concern:*

Be it known that I, FRANZ XAVER VON GARNIER, of 44 Sielwall, Bremen, in the Empire of Germany, have invented new and useful Improvements in Snow-Melting Carts, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to an apparatus for enabling large quantities of snow, the carting away of which has been very expensive heretofore, to be melted down on the spot.

In the accompanying drawings, which illustrate this invention, Figure 1 is an end view, partly in elevation and partly in section, of an apparatus provided with coal-burning devices. Fig. 2 is a view, partly in elevation and partly in section, of an apparatus with gas-burning devices; and Fig. 3 is a view in plan of one of the gas-burners in Fig. 2.

Throughout the views similar parts are marked with like letters of reference.

The apparatus consists of a boiler *e* and a fire-chamber *a*, the latter being below and partly surrounding the boiler. The sides of the fire-chamber are formed of a metal plate or plates *a'*, and the top of the fire-chamber and bottom of boiler are formed of a plate or plates *b*, which are bent roughly in **W** shape, and are fast at their sides and ends to the sides and ends of the fire-chamber. The top of boiler is formed by a plate or plates *e'*, as shown. The peculiar shape of the plate *b* increases the heating-surface. The grate *Z* is situated just below the central space *y*, formed by the central bend of plate *b*. Thus the boiler is shaped like an inverted letter **U** in cross-section and has openings *c'* in top plate *e'*, closed by means of flap-doors *c*, which are adapted to be conveniently opened and closed by means of any suitable operating device.

The snow which has been swept together on the roads is thrown into the space closed in by the flap-doors, and thus becomes melted by the action of the heated walls of the boiler, the melted snow being then discharged through openings *d* in the under side of the apparatus and through hose-pipes into the sewers or otherwise gotten rid of.

In order to prevent the openings *d*, through which the snow-water is run out into the hose-pipes, becoming choked by the dirt and mud

contained in the snow, they may be provided with sieves or strainers.

Either coal-firing, gas-firing, or any other suitable heating agents may be employed for producing the requisite heat.

When gas-firing is used, I prefer to construct the burners in the form of a grating **T**, as shown by Fig. 3, the said burners being adapted to lie along the sides and bottom of the fire-chamber, so that the jets or flames act directly against the internal wall *b*, thereby more completely utilizing the gaseous fuel burned.

When the apparatus is to be heated by gas-firing, it is provided with gas-supply unions *g*, by which the burners can be connected to the gas-mains, so that it is not necessary to have to carry a supply of fuel along with the apparatus.

If desired, in order to prevent unnecessary loss of heat, the outer walls of the boiler may be provided with a covering of any suitable non-conductor of heat; but obviously a supply of compressed gas or a gaseous hydrocarbon may be carried with the apparatus. The parts may also be so constructed as to allow of the whole apparatus being conveniently mounted upon the under frame of existing water-carts, so that the first cost of the apparatus may be considerably reduced.

What I claim, and desire to secure by Letters Patent, is—

1. A snow melting furnace, consisting of a fire box formed of a metal plate or plates bent longitudinally so as to be **U**-shaped in cross section; the partition plate therein, said plate being bent longitudinally so as to be **W**-shaped in cross-section and secured at its sides to the sides of the fire-box, and a curved top plate superimposed over the partition plate and provided with doors; whereby a water chamber inverted **U**-shape in cross section is formed over and depending into a fire chamber **W**-shaped in cross section, substantially as described.

2. A snow melting furnace consisting of a fire box formed of a metal plate or plates bent longitudinally to be **U**-shaped in cross section; the partition plate therein, said plate being bent longitudinally so as to be **W**-shaped in cross-section and secured at its sides to the sides of the fire-box, and a curved top

plate superimposed over the partition plate, and provided with doors; whereby a water chamber inverted **U**-shape in cross-section is formed over and depending into a fire chamber **W**-shaped in cross section; in combination with the drain pipes in the lower legs of the water chamber, and gas burners, secured in the fire-box, all substantially as and for the purpose described.

10 3. The herein described apparatus for melting snow, consisting of the boiler and fire box *a*, formed of bottom plate *a'*, curved top plate *e'*, and intermediate partition plate *b*, bent longitudinally so as to be **W**-shaped in cross-

section, all so connected as to make a fire 15 chamber **W**-shaped in cross section, and a water chamber or boiler inverted **U**-shaped in cross section; the doors *c*, in plate *e'*, the pipes *d* having openings in their upper sides, and means for heating the fire chamber, all constructed and arranged substantially as and 20 for the purpose described.

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

FRANZ XAVER VON GARNIER.

Witnesses:

WM. HAUPT,

CHAS. KRUGER.