2 Sheets—Sheet 1.

S. M. LEDERER.

Snow-Melting Machine.

No. 207,970. Patented Sept. 10, 1878.

Fig. 1.

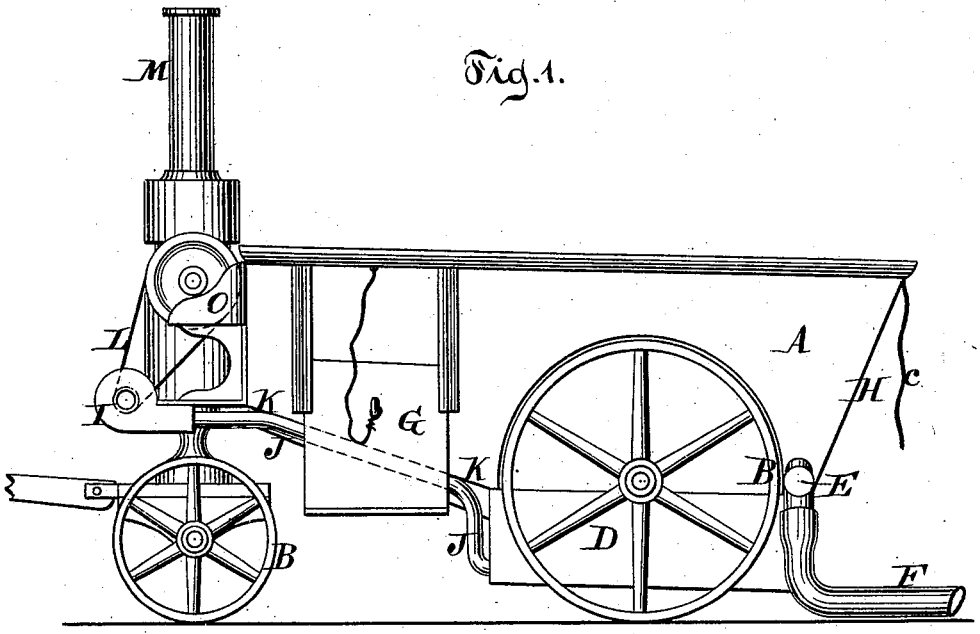


Fig. 2.

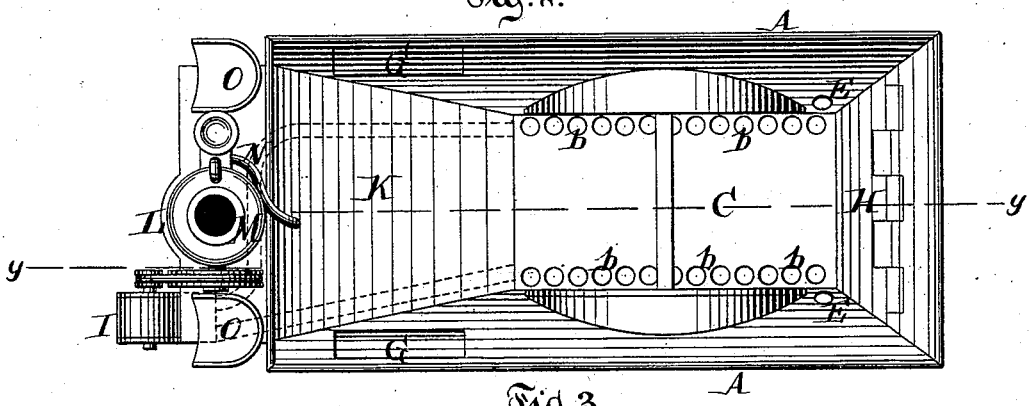
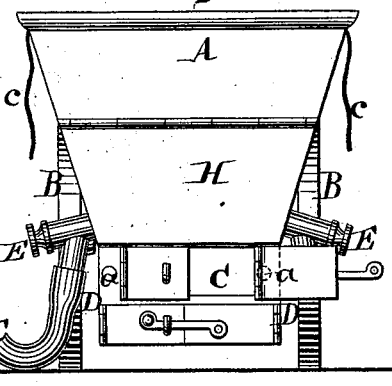


Fig. 3.



Witnesses
Chas. Wahlers.
W. C. Hauff

Inventor.
Samuel M. Lederer,
by his attys.
Van Santvoord & Hauff

2 Sheets—Sheet 2.

S. M. LEDERER.

Snow-Melting Machine.

No. 207,970. Patented Sept. 10, 1878.

Fig. 4.

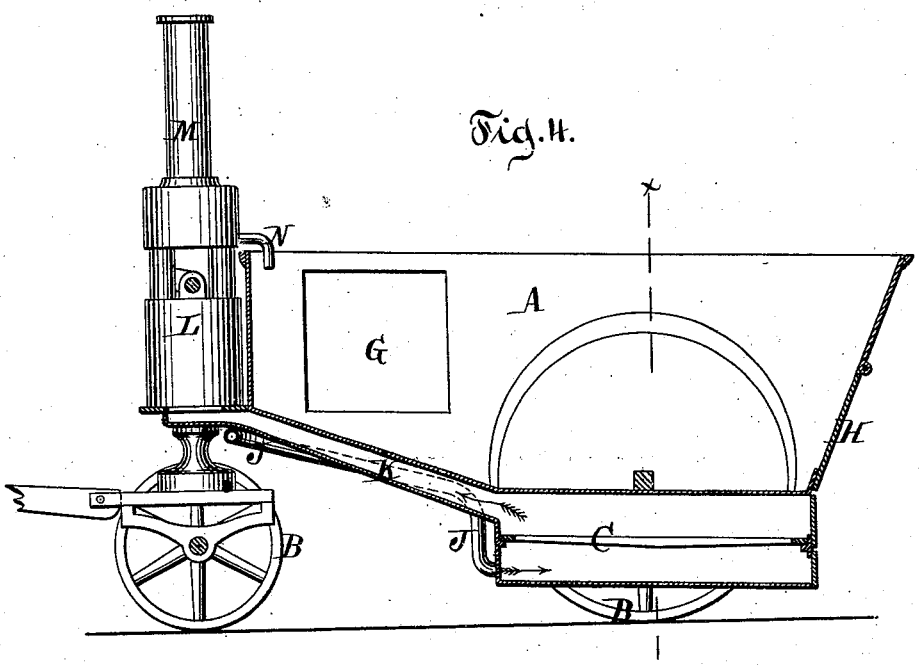
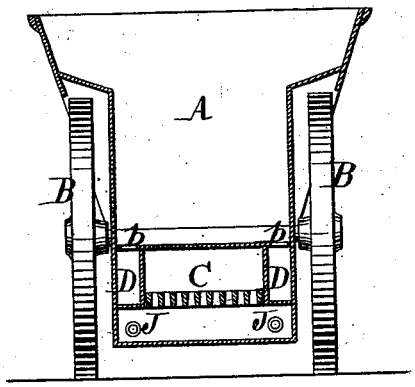


Fig. 5.



Witnesses.
Chas. Wahlers.
W. C. Hauff.

Inventor.
Samuel M. Lederer.
by his Attys.
Van Santwood & Hauff.

UNITED STATES PATENT OFFICE.

SAMUEL M. LEDERER, OF NEW YORK, N. Y.

IMPROVEMENT IN SNOW-MELTING MACHINES.

Specification forming part of Letters Patent No. **207,970**, dated September 10, 1878; application filed August 8, 1878.

To all whom it may concern:

Be it known that I, SAMUEL M. LEDERER, of the city, county, and State of New York, have invented a new and useful Improvement in Snow-Melting Machines, which improvement is fully set forth in the following specification, reference being had to the accompanying drawing, in which—

Figure 1 is a side elevation. Fig. 2 is a plan view. Fig. 3 is a rear view. Fig. 4 is a longitudinal vertical section in the plane *y y*, Fig. 2. Fig. 5 is a transverse section in the plane *x x*, Fig. 4.

Similar letters indicate corresponding parts.

This invention consists in the combination, in a snow-melting machine, of a receptacle for receiving snow and ice, a furnace arranged in or under the bottom of the apparatus, the sides of the furnace being lined with water-jackets kept full of water by means of the melting snow and ice in the receiver, and a blast-fan for creating a draft in the furnace; also, in the combination, in a machine for melting snow and ice, of a receiver having an inclined bottom and provided with discharge-nozzles, a furnace for heating the receiver, a blast-fan for supplying air to the furnace, and an engine for working the blast-fan, said engine being actuated by steam produced by the heat of the fire which heats the receiver.

In the drawing, the letter A designates the receiver, mounted on wheels B B. The front wheels turn about a king-bolt, and are provided with a shaft, so that horses can be hitched to the machine and draw it along. Of course any other suitable motor can be used for this purpose.

The letter C designates a furnace under or in the bottom of the receiver A, which heats said receiver, and thus melts all the snow and ice thrown into it. To prevent the sides of said furnace from burning through I arrange water-jackets D D on the sides of said furnace. Said water-jackets are kept full of water by the melting snow and ice in the receiver A, since perforations *b b*, Fig. 2, in the bottom of said receiver allow the water to flow in the jackets D D. Should it be necessary to empty and clean out the jackets D D, it can be done by taking off or opening the water-tight covers *a a*, Fig. 3, which close openings in the ends of the jackets D D.

The water resulting from the melting of the snow and ice in the receiver discharges through valves or nozzles E E. The bottom of the receiver is inclined, so as to cause all the water to flow out through said nozzles. To each of the nozzles E is attached a hose, F. The loose end of this hose is passed into the sewer or man-hole, and discharges the water from the receiver. This hose is made so long that the emptying of the receiver A can go on while the whole apparatus is moving through the street, thus causing no delay. The water discharging from the apparatus may also be utilized for cleaning the streets.

The doors or openings G G in the receiver allow the snow to be easily shoveled into or introduced into the receiver. These doors, however, can, in general, be dispensed with, and the snow thrown in over the top of the receiver. The door H, Fig. 3, which is water-tight when closed, allows the receiver A to be cleaned out. The chains *c c* are to hold the door H open while the receiver is being cleaned out.

The furnace C is supplied with air by means of a blast-fan, I, and tubes J J, which lead the air into the ash-pit. The flame and products of combustion from the furnace C pass up the flue K, through the boiler L, and out at the chimney M. The fire from the furnace C is thus made to melt the snow and also work an engine. This engine, in the example shown in the drawing, is made to drive the blast-fan I; but it can also be made to propel the apparatus through the street. Should it be desirable to dispense with the boiler L the blast-fan could be connected with one of the wheels B, and be worked in that way or in any other desirable manner. The waste-pipe N from the boiler L passes into the receiver A, thus causing the waste steam to melt the snow more rapidly.

The fuel for the furnace C can be carried in any suitable receiver attached to the machine, or it can be kept in a detachable tender.

The letters O O designate the seats for the driver and any other attendant.

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

1. The combination, in a snow-melting machine, of a receptacle for receiving snow and ice, a furnace arranged in or under the bottom of

the apparatus, the sides of the furnace being lined with water-jackets D D, kept full by the melting snow and ice in the receiver, and blast-fan for causing a draft in the furnace, substantially in the manner and for the purpose set forth.

2. The combination, in a machine for melting snow and ice, of a receiver having an inclined bottom and provided with discharge-nozzles E, furnace for heating the receiver, blast-fan for supplying air to the furnace, and an engine for working the blast-fan, said engine being actuated by steam produced by the heat of the furnace which heats the receiver, substantially as described.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 5th day of July, 1878.

SAMUEL M. LEDERER. [L. S.]

Witnesses:

J. VAN SANTVOORD,

E. F. KASTENHUBER.