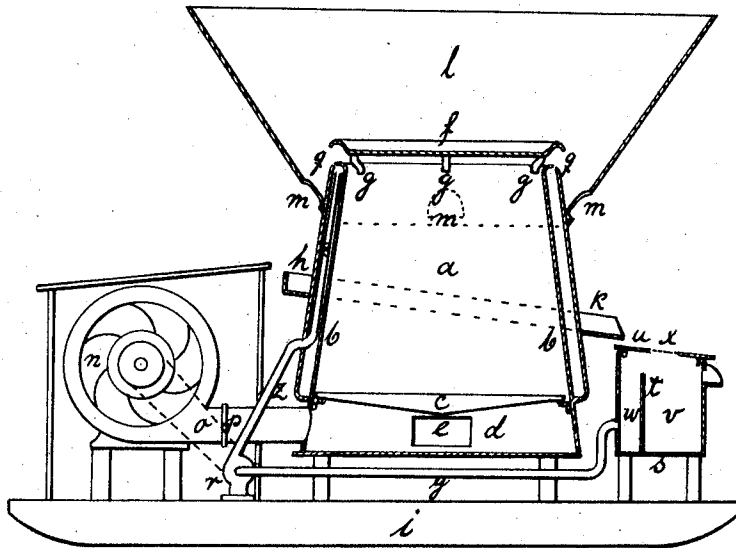


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APPARATUS FOR MELTING SNOW AND THE LIKE.
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1,339,719.

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APPARATUS FOR MELTING SNOW AND THE LIKE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, SIGURD SAVONIUS, a citizen of the State of Finland, residing at Helsingfors, Finland, have invented certain new and useful Improvements in Apparatus for Melting Snow and the like, of which the following is a specification.

This invention relates to an apparatus for disposing of snow through melting it down.

In the accompanying drawings, I have shown a view (partly sectional) through an apparatus embodying my present improvements.

The apparatus comprises a hearth *a*, constituting a heater, and it is surrounded by a water jacket *b*. At the bottom of the hearth there is a grate *c* and under this is a space or pit *d* for ashes, and a door *e* for removing these. The hearth is covered with an overhanging lid *f* resting on and spaced away by supports *g* fitting the upper edge of the hearth. About midway of its height, the water jacket is surrounded by an inclined waterway *h* for collecting water which results from melting snow. Such waterway has an exit spout *k*. Above this waterway, and resting on the water jacket of the hearth, is a snow-receptacle *l* provided with exit holes *m* for the water melted from the snow, these openings being around and near the lower edge. The apparatus further comprises a fan or other device, *n*, for supplying air through a pipe, *o*, below the grate. There is also a water pump *r* driven by the device that drives the air fan *n*. The passage of air through pipe, *o*, is regulated by a shutter or valve, *p*. A water tank *s* is located to receive water from the spout of the waterway, and is divided by a wall, *t*, into two compartments *w* and *v*. The tank is covered by a sloping lid, *u*, in which is cut an opening covered with a gauze *x*. From one compartment, *w*, of the tank a pipe *y* leads to the pump *r*, and from the pump another pipe *z* leads to the upper part of the water jacket *b* of the heater. The upper edge of the water jacket is provided with outlet holes *q*. The parts comprising the apparatus are mounted on a sledge, carriage or handbarrow *i*.

A fire of coke, wood or any other suitable combustible material, is lighted on the grate *c*, the tank *s* is filled with water and the pump *r* worked till the water jacket is filled with water and issues through the holes *q*. The snow receptacle, *l*, is then put in its

place, also the lid *f* covering the hearth *a*. Snow is then shoveled into the receptacle *l* and the fan *n* set to work. The air driven by the fan *n* along the pipe *o* and through the grate *c* causes a lively combustion in the hearth *a* and the hot gases and air are driven underneath the lid *f* and through the snow contained in the receptacle *l* causing the snow to melt. The melting water runs through the holes *m*, in the receptacle *l*, down the waterway *h* and rushes out through the spout *k*, carrying with it sand and dirt, obtained from the snow. Part of the melting water running from the spout *k* filters through the gauze *x* in the lid *u* into the watertank *s*, and the impurities that have not been arrested by the gauze *x* sink to the bottom of the compartment *v* and the water flows over the dividing partition *t* into the other compartment *w* of the water tank *s*. From this compartment *w* the water is drawn by the pump *r* along the pipe *y* and is delivered through the pipe *z* to the water jacket *b*, and afterward spurts out through the perforations *q* of the water jacket into the snow, where its heat, which has been absorbed by cooling the hearth, is utilized to melt the snow contained in the receptacle *l*.

The construction of the apparatus is such as to secure (1) great melting capacity due to forced draft, (2) great economy due to the fact that nearly all the caloric energy created by combustion in the hearth is retained in the apparatus for the sole purpose of melting the snow contained in the snow receptacle, (3) durability, as all the parts in contact with the fire and hot gases in the hearth are water jacketed, (4) great simplicity in use as no special cleaning of the apparatus is necessary, (5) lightness as the parts of which the apparatus consists are few and simple.

I claim:

1. A snow melting apparatus comprising, in combination, a water-jacketed hearth provided at its bottom with a grate; a snow receptacle mounted upon the upper portion thereof and having discharge openings for the water; a lid mounted on the top of said hearth and spaced thereabove to provide an exit into said receptacle for the heated air and products of combustion; a water tank; a waterway mounted beneath the discharge openings in said receptacle and having its spout overhanging said tank;

a supply pipe leading from said tank to the water jacket of the hearth; a pump connected in said pipe; a fan; and an air pipe leading from said fan into said hearth at a point beneath said grate.

- 5 2. A snow melting apparatus comprising, in combination, a water-jacketed hearth provided at its bottom with a grate; a snow receptacle mounted upon the upper portion
10 thereof and having discharge openings for the water; a lid mounted on the top of said hearth and spaced thereabove to provide an exit into said receptacle for the heated air and products of combustion; a
15 water tank; a waterway mounted beneath the discharge openings in said receptacle and having its spout overhanging said tank; a supply pipe leading from said tank to the water jacket of the hearth; a pump connected in said pipe; a fan; a driving connection between the fan and the pump for driving the latter from the former; and
20 an air pipe leading from said fan into said hearth at a point beneath said grate.

- 25 3. In a snow melting apparatus, the combination of a hearth provided at its bottom with a grate; an inverted frusto-conical snow receptacle resting upon the outer wall of the water jacket and inclosing only the

upper portion of the hearth, said receptacle having discharge openings for the water along its lower edge; and a lid for the top of said hearth spaced above the edge thereof to provide an annular exit into said receptacle for the heated air and products
30 of combustion. 35

4. In a snow melting apparatus, the combination of a water-jacketed hearth provided at its bottom with a grate; a snow receptacle mounted upon the upper portion
40 of the hearth and having discharge openings at its bottom for the water, said hearth having an exit at its top into the interior of said receptacle for the heated air and products of combustion; a water tank having an inlet opening at its top and a strainer covering said opening; means for conducting the water discharged from said receptacle openings to the opening in said tank; a pipe leading from the bottom of said tank
50 to the water jacket; and a pump connected in said pipe.

In testimony whereof I have affixed my signature in presence of two witnesses.

SIGURD SAVONIUS.

Witnesses:

ANNA SCHROEDER,

AURA SYRJÄLÄ.