April 8, 1952 C. GANGEMI ET AL 2,592,267

SNOW MELTING MACHINE

Filed Oct. 28, 1948 2 SHEETS--SHEET 1

Fig. 1.

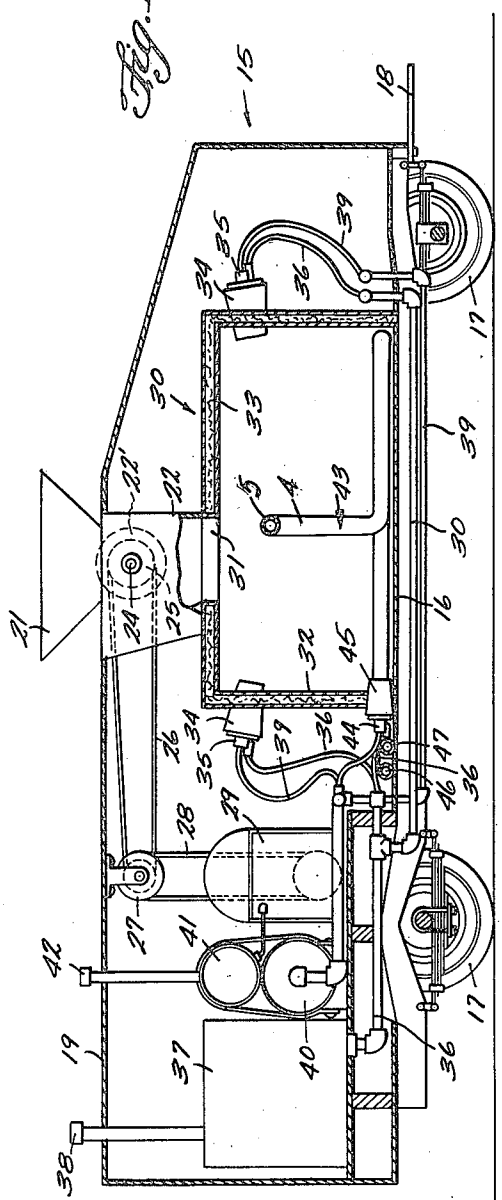
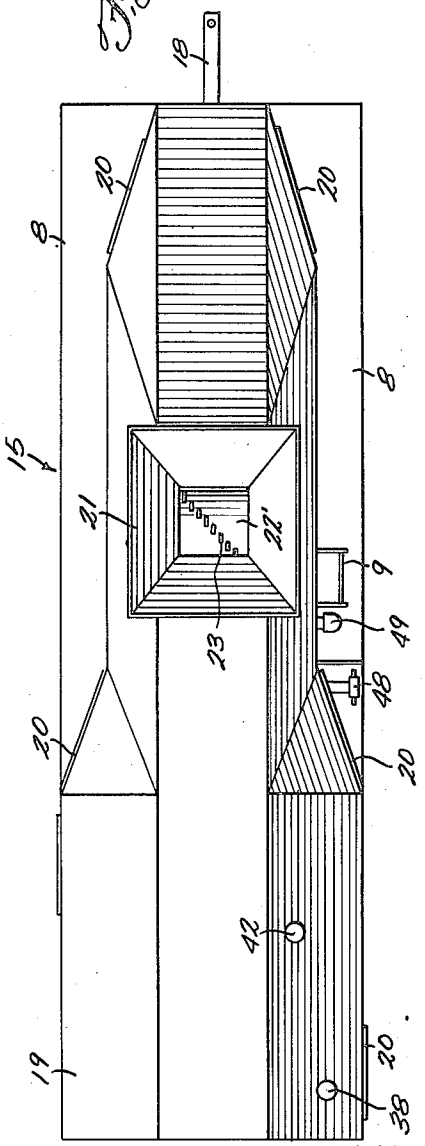


Fig. 2.



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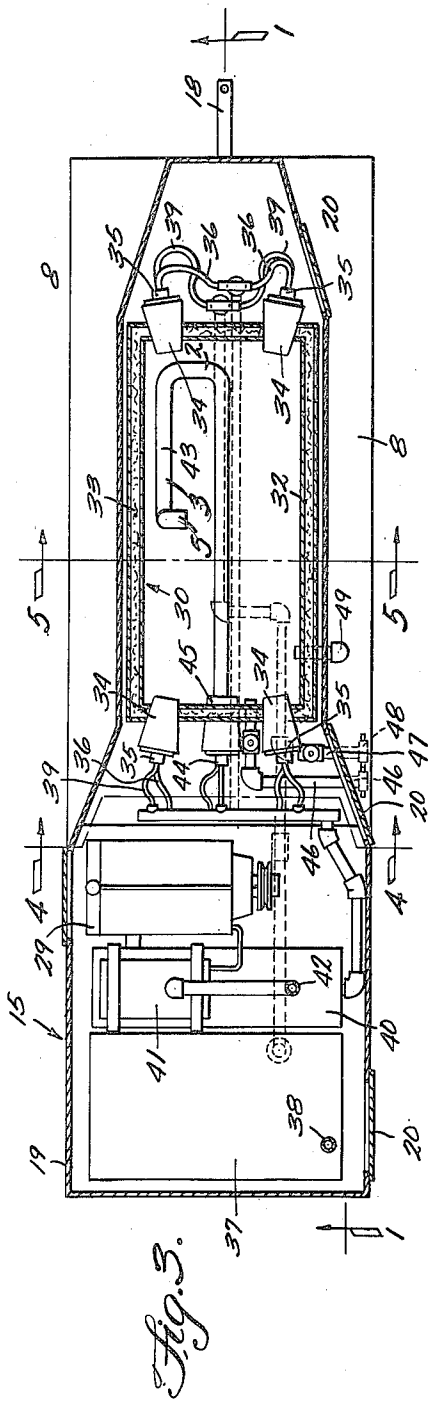


Fig. 3.

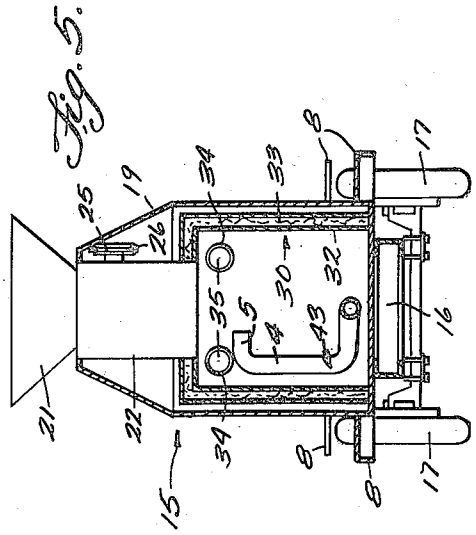


Fig. 5.

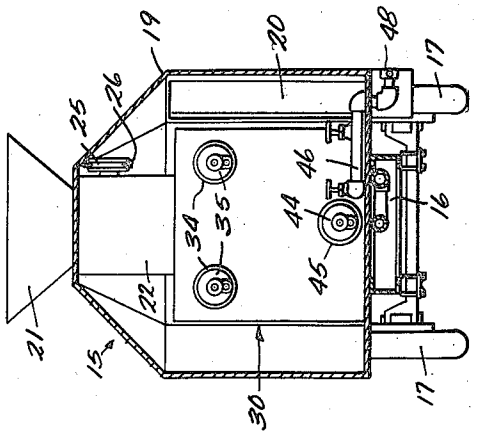


Fig. 4.

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SNOW MELTING MACHINE

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2 Claims. (Cl. 126—343.5)

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This invention relates to a snow-melting machine.

An object of the invention is to provide a machine which will continuously receive snow and ice from the streets of municipalities and subsequently melt and convert the snow and ice to water which can be readily disposed of into sewers, to thereby eliminate the expense of trucking away the snow and ice to a remote place.

A further object of the invention is to provide a snow-melting machine which is easy to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawings forming a part of this application, and in which like numerals are employed to designate like parts throughout the same:

Figure 1 is a sectional view taken on the line 1—1 of Figure 3;

Figure 2 is a top plan view of the snow-melting machine;

Figure 3 is a horizontal sectional view of the snow-melting machine;

Figure 4 is a sectional view taken on the line 4—4 of Figure 3;

Figure 5 is a sectional view taken on the line 5—5 of Figure 3.

The snow-melting machine 15 of the present invention comprises a steel frame 16 supported on wheels 17 and secured to the front end of the frame 16 is a drawbar 18 for connecting the snow-melting machine 15 to the snow loader. A housing 19 fabricated of sheet steel is supported on the frame 16, and the housing is provided with a plurality of hingedly connected doors 20 for gaining access to the interior thereof for adjusting, servicing or lubricating the machine. Suitable catwalks 8 are arranged on each side of the housing 19 and a ladder 9 is provided for reaching the top of the housing.

Supported on the top of the housing 19 is a hopper 21 for receiving the snow and ice from the conveyor spout 14 and arranged below the hopper 21 is an ice breaker 22 for breaking the ice up into small pieces. The ice breaker 22 comprises a rotatable cylinder 22' provided with a plurality of picks 23, Figure 3, and the cylinder 22' is mounted on a shaft 24. For rotating the shaft 24, a pulley 25 is secured thereto, and a belt 26 is trained over the pulley 25 and over a pulley 27. The pulley 27 is rotated by a belt 28, Figure 2, which is driven by a suitable power unit, such as a gasoline engine 29. Suitable

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clutches are provided for controlling the transmission of power from the engine 29 to the ice breaker 22.

Arranged in the housing 19 is an oven 30 which is provided with an opening 31 in its top for receiving the snow and ice from the ice breaker 22. The oven 30 serves to melt the snow and ice to water so that it can be readily disposed of into a sewer, catch basin or the like. The oven 30 is provided with a lining of fire clay 32, there being a suitable layer of insulation 33 arranged around the exterior of the oven.

For heating the oven 30, a pair of metal sockets 34 are arranged in each end of the oven 30 and supported in each of the sockets 34 is an inclined torch 35 for shooting flames into the oven. Each of the torches 35 is operatively connected by suitable conduits 36 to a tank 37 holding fuel oil, there being a pipe 38 projecting upwardly from the tank 37 for filling the tank with oil. Each of the torches 35 is also connected by suitable conduits 39 to a tank 40 holding compressed air therein, the air for the tank 40 being supplied by a suitable air compressor which is driven by the gasoline engine 29. A fuel tank 41 having a filling line 42 is also provided for supplying fuel to the gasoline engine 29. Arranged in the oven 30 is an open-ended pipe 43 which is used for heating the bottom of the oven 30. The pipe 43 includes a horizontal section 1 which extends substantially across the oven, and a transverse section 2 projects from the horizontal section 1. A straight portion 3 extends from the transverse portion 2, and a vertical portion 4 extends upwardly from the straight portion 3, there being a horizontal portion 5 arranged on the upper end of the vertical portion 4, the horizontal portion 5 being spaced below the hopper. An auxiliary torch 44 is connected to one end of the pipe 43 and is supported in a socket 45. The torch 44 is also connected to the fuel and air-supply tanks.

For discharging the water from the oven 30, a pair of drain pipes 46 and 47 communicate with the exterior of the oven. The pipes 46 and 47 terminate on the curb side of the snow-melting machine and are each provided with couplings 48 for quickly connecting a hose (not shown) to the pipes 46 and 47 so that the water can be conveyed to a sewer, catch basin, or the like. An additional pipe 49 is arranged above the pipes 46 and 47 and is connected to the oven 30 to serve as a safety drain pipe if needed.

In use, snow and ice is removed from the street and deposited in the hopper 21. The snow and

ice will be broken up by the ice breaker **22** and delivered to the oven **30** where it is melted and discharged through the drain pipes **46** and **47**. Thus, the cost of removing snow from the streets will be greatly reduced, since there is no necessity for trucking away the snow and ice to a remote place.

As many embodiments may be made of this inventive concept, and as many modifications may be made in the embodiment hereinbefore shown and described within the scope of the appended claims, it is to be understood that all matter herein is to be interpreted merely as illustrative and not in a limiting sense.

I claim:

1. In a snow melting machine, a wheeled frame, a housing supported on said frame, a hopper arranged on the top of said housing for the ingress therethrough of snow and ice, an ice breaker positioned below said hopper for breaking up said ice, means in said housing for melting and converting said snow and ice to water, said last-named means comprising an oven arranged in said housing for receiving the ice and snow from said breaker, a pair of sockets arranged in each end of said oven, a torch positioned in each of said sockets and supported by the latter for heating the oven, said oven being lined with fire clay, a layer of insulation arranged in surrounding relation with respect to said oven, an open-ended pipe arranged in said oven, and an auxiliary torch connected to one end of said pipe for supplying additional heat to said oven, said open-ended pipe including a horizontal section extending substantially across said oven, a transverse section projecting from said horizontal section, a straight portion extending from said transverse portion, a vertical portion extending upwardly from said straight portion, and a horizontal portion arranged on the upper end of said vertical portion and spaced below said hopper.

2. In a snow-melting machine, a wheeled frame, a housing supported on said frame, a hopper arranged on top of said housing for the ingress therethrough of snow and ice, means in said housing for melting and converting said snow and ice to water, said means comprising an oven arranged in said housing for receiving the ice and snow from said hopper, a pair of sockets arranged in each end of said oven, a torch positioned in each of said sockets and supported by the latter for heating the oven, said oven being lined with fire clay, a layer of insulation arranged in surrounding relation with respect to said oven, an open-ended pipe arranged in said oven, an auxiliary torch connected to one end of said pipe for supplying additional heat to said oven, said pipe including a horizontal section extending substantially across said oven, a transverse section projecting from said horizontal section, a straight portion extending from said transverse portion, a vertical portion extending upwardly from said straight portion, and a horizontal portion arranged on the upper end of said vertical portion and spaced below said hopper, a fuel tank arranged in said housing and operatively connected to each of said torches for supplying fuel to the latter, and means arranged in said housing for supplying compressed air to each of said torches.

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