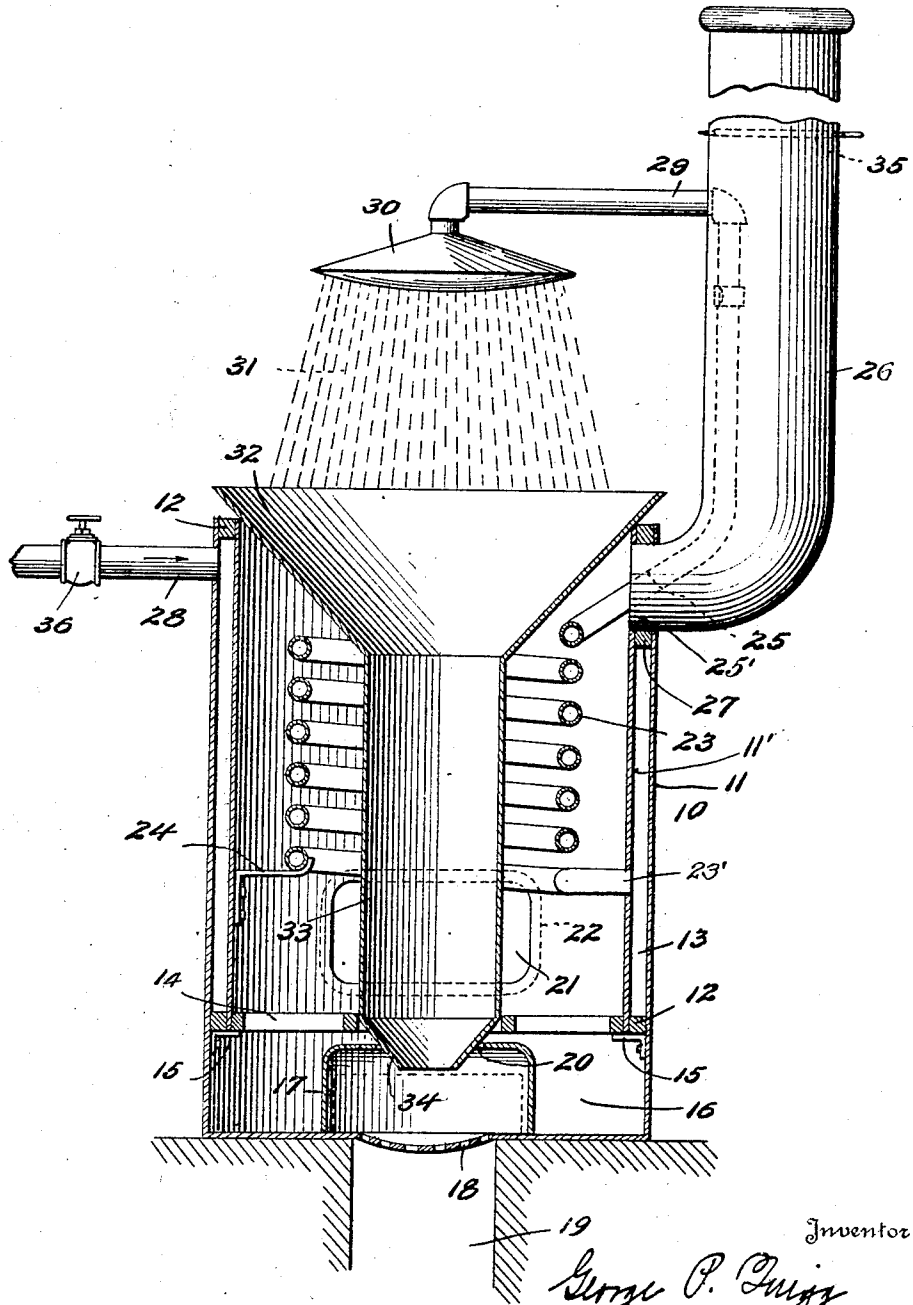
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G. P. QUIGG

SNOW MELTER

Filed July 11, 1922



Inventor

George P. Quigg

By C. J. Strotman

Attorney

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UNITED STATES PATENT OFFICE.

GEORGE P. QUIGG, OF BROOKLYN, NEW YORK.

SNOW MELTER.

Application filed July 11, 1922. Serial No. 574,242.

To all whom it may concern:

Be it known that I, GEORGE P. QUIGG, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Snow Melters, of which the following is a specification.

This invention has relation to a snow melter and to such a device adapted to be readily connected up to a city's water supply and containing means for heating water which is subsequently sprayed over snow which is dumped into the melter.

The invention has for its object the provision of a portable melting device for snow capable of efficiently heating water which is subsequently sprayed upon snow dumped into the melter and further heating the mixture of said water and snow for the purpose of reducing all of the snow to water and depositing it in the sewer. A further object of the invention is the production of a novel construction of snow melter, one in which the material for the several parts has been specially selected and the parts arranged with relation to each other so as to produce an efficiently operating device.

Other objects and advantages of the invention will hereinafter appear in the following description and the novel features thereof will be particularly pointed out in the appended claims.

Like reference numerals indicate like parts whenever they appear upon the drawing, wherein the single figure represents a sectional view through the snow melter with certain of the parts in side elevation.

It will be understood that the form of the invention illustrated and described may be altered materially without departing from the spirit thereof. The form shown, however, is that which I at the present time consider to be a preferable embodiment.

The invention comprises a portable heater into which is inserted a hopper resting upon the upper open mouth of the heater. As a part of the heater, there is provided a dome sprayer adapted to be located above the hopper and supported by piping which constitutes an extension of a coil within the heater. These several parts will now be described in detail and their individual functions pointed out after which a recital of their conjoint operation will be given.

The numeral 10 represents a drum heater formed by an outer casing 11 of one-eighth of an inch flange steel plate and an inner cylinder 11′ of three-sixteenths of an inch fire box steel. These two plates are suitably spaced apart by rings 12 to provide a water chamber 13 between them. At the level of the lower ring 12, there is supported in any suitable manner grate bars 14 and I have selected lugs 15 as the means for supporting this grate at the bottom of the casing 10. Below the grate 14 is the ash pit 16. Centrally disposed in the bottom of the casing is a drain outlet 18 which is designed to permit the flow of water to the city's sewer 19, and at the same time prevent any débris from entering the sewer. To protect the drain from being stopped up by the ashes falling from the grate 14, I have provided the drain hood 17 which rests upon the bottom of the casing and is provided in its upper face with an opening 20 to receive the lower end of the snow conduit to be hereinafter described. The heater is provided with the usual ash door (shown in broken lines in the drawing) for the removal of the ashes.

Above the grate, the casing is provided with a fuel door 21 surrounded by a frame indicated in dotted lines by the numeral 22. Supported within the casing is a suitable tube 23, coiled as shown. This tube is suitably connected to the chamber 13 at 23′ and is supported within the heater by the legs 24 attached to the inner wall of the casing. The upper end of the coil is extended as at 25 through the opening 25′ which has been provided for the attachment of the stack 26, said extension of the coil occupying a position within the stack as shown. The stack opening 25′ is protected by the packed spacer 27 formed with the ring 12. The inlet from the city hydrant designated by numeral 28 supplies water to the chamber 13 from whence it flows upwardly through the coil to the extension 25.

The extension 25 proceeds from the stack at the elbow 29 and supports at its outer end the dome sprayer 30 through which a spray of heated water 31 falls upon the snow in the hopper 32.

The hopper 32 is in the form of an inverted cone resting upon the open upper end of the heater casing and provided at its lower end with a conduit 33 lying in its operative position centrally within the coil 23 and with its lower restricted mouth 34 within the opening 20 of the drain cover 17.

From the foregoing description, the operation of my snow melter will be understood. A résumé of this operation will now be given as follows:

The snow melter is brought to the point in the city where it is desired to get rid of any accumulation of snow which may be impeding traffic, together with a supply of fuel. The melter is then connected to a supply of water from the city mains by the pipe 28 and water is permitted to enter the chamber 13 and circulate through the coil 23 and spray upon the upper end of the hopper 32. It will be understood that the manhole cover has been removed and the heater placed in position with the drain section 18 where the manhole cover was. A fire is started within the heater by any suitable means and the water within the heater and coil is raised to a temperature sufficient to assist in the melting of the snow. The snow is then shoveled into the hopper 32 where it is reduced to water by the heat of the spray and the heat within the heater proper. It will be understood that the stack may be provided with a damper 35 and the pipe 28 with a valve 36 whereby a control of the flowing water and of the burning of the fuel is obtained.

The snow is shoveled within the melter as fast as it can be cared for by the melter. The slush which is formed in the hopper 32 descends into the conduit 33 and the water formed by the spray and reduced snow leaves the conduit through the restricted mouth 34 from where it falls into the sewer 19 through the drain 18.

It will be seen that by my construction, I am able to utilize to an efficient extent all of the heat of the fuel and that the spray falling into the hopper at the same time that the snow is dumped therein causes a preliminary melting of the snow so that its passage through the conduit is readily accomplished, and if there should be any stoppage of the flow all that would be necessary would be to turn the valve 36 cutting off the flow of water until the heat generally within the heater had sufficiently melted the accumulated slush and secured the removal of the slush from the conduit 33. The dumping can then be continued.

Having described my invention what I claim as new and desire to secure by Letters Patent of the United States is:

1. In a snow melter, a water-jacketed casing, a coil within the casing, an extension from said coil terminated in a spray dome above the casing, connections between the water jacket of the casing and the water supply and between the water jacket and the coil, a hopper supported by said casing beneath said spray dome, and means for heating the casing, coil and hopper.

2. In a snow melter, a casing, a water coil within the same receiving a constant supply of water, a hopper supported by said casing and provided with a conduit lying within said coil, an extension of said coil adapted to spray water into said hopper and means for heating the coil, hopper and conduit.

3. In a snow melter, a heater comprising a casing provided with an open upper end. a grate within said casing, a water coil above said grate connected to a constant supply of water, and a hopper supported by the open upper end of said casing and provided with a conduit lying within said coil with its lower restricted portion passing through an opening in said grate.

4. In a snow melter, the combination with a water-jacketed heater provided with a drain outlet in its bottom, a grate within the heater, a coil supported above said grate and receiving a supply of water under pressure from the water-jacket of said heater and provided with an extension, a spray dome mounted above said heater and supplied with water from said extension, a hopper supported by the upper end of said casing and having a conduit extending through said coil and emptying into the drain opening of the bottom of the heater, said spray falling upon said hopper, and means for controlling the flow of water and the heat generated within the heater.

In testimony whereof I affix my signature

GEORGE P. QUIGG.