E. RECTOR.

PORTABLE BURNER.

APPLICATION FILED DEC. 2, 1916.

1,341,672. Patented June 1, 1920.

Fig. 1.

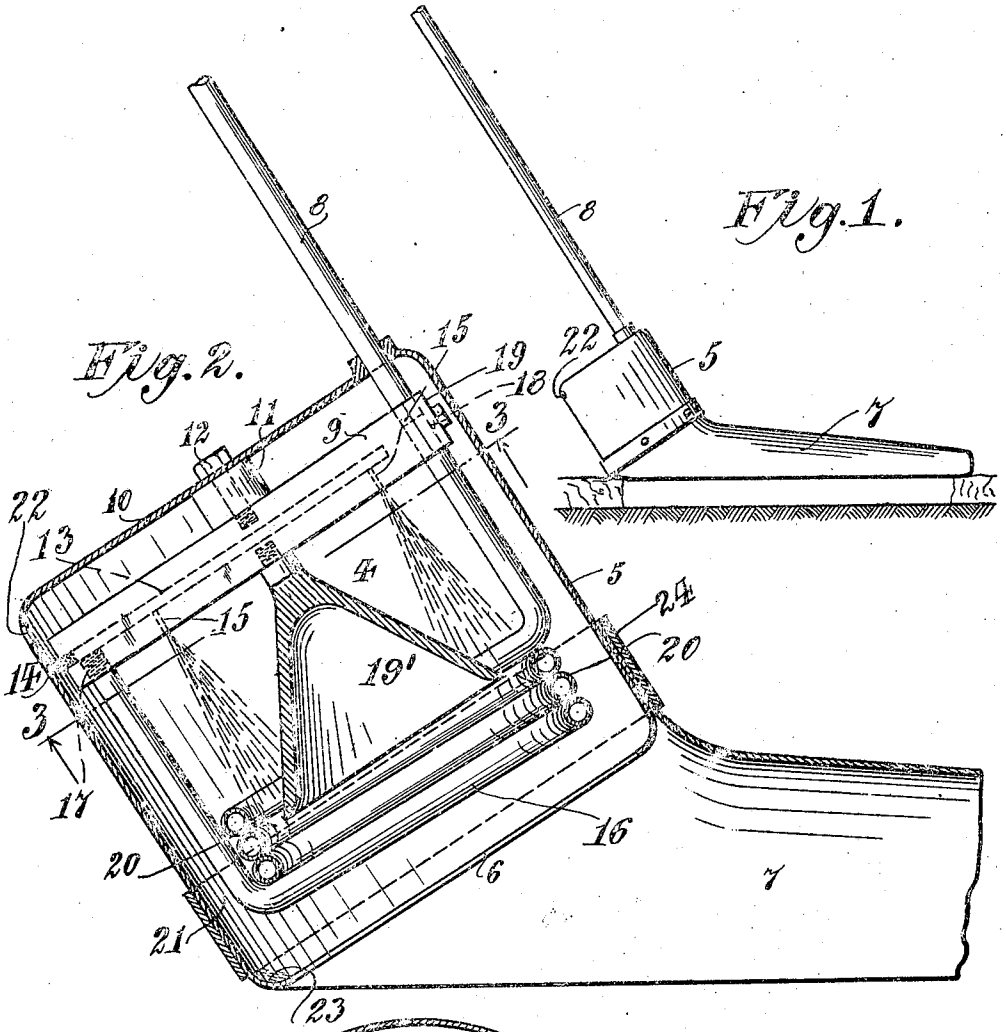
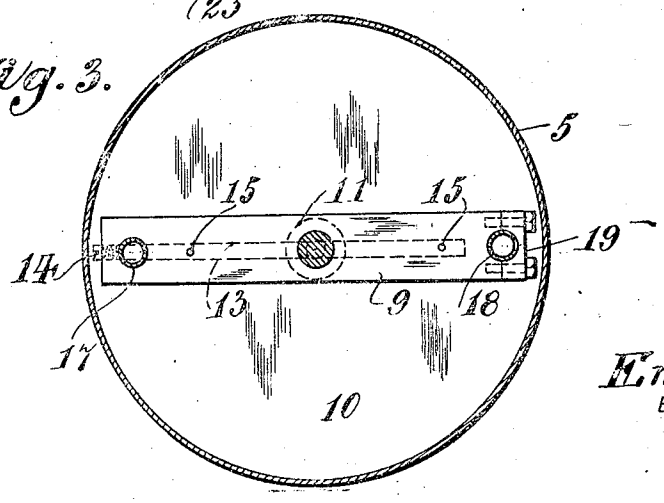


Fig. 2.

Fig. 3.



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PORTABLE BURNER.

1,341,672. Specification of Letters Patent. Patented June 1, 1920.

Application filed December 2, 1916. Serial No. 134,564.

To all whom it may concern:

Be it known that I, ENOCH RECTOR, a citizen of the United States, and resident of the city, county, and State of New York, have invented certain new and useful Improvements in Portable Burners, of which the following is a specification.

My invention in general relates to a portable burner for use wherever such devices are employed and particularly relates to a light heat generator designed for melting the ice and snow which becomes caked in between the switches, frogs and other parts of railroad track constructions.

Such a device primarily contemplates the designing of a flame or heat generator arranged to direct its heat so as to reach down in between the track parts and thus act directly on the caked ice and snow.

With such devices now known it has been found that where the climatic conditions were favorable to the operation, some degree of satisfaction has been obtained but in a rain, wind or snow storm these burners frequently went "cold" after they had been in use for a short time.

Accordingly, one of the objects of this invention is to provide a simple form of portable burner designed to generate a high degree of heat economically and to direct and confine the same in such a manner that a material length of track construction or other area to be heated may be subjected to a heat action with the least possible waste of the generated heat.

A further object is to provide a casing for protecting the heat generating means from falling snow and rain and to conserve heat which might otherwise be radiated without doing effective work and at the same time to insure a free supply of air to the generating means.

Still another object of the invention is to design a burner of the class described, so that without any additional parts for the purpose, it can be kept cool thus permitting it to rest on the wooden ties without danger of burning the same.

Various other objects and advantages of the invention will be in part obvious from an inspection of the accompanying drawings and in part will be more fully set forth in the following particular description of one form of mechanism embodying my invention, and the invention also consists in certain new and novel features of construction and combination of parts hereinafter set forth and claimed.

Referring to the accompanying drawings:

Figure 1 is a view in side elevation showing a preferred embodiment of my invention in operative position close to the ground;

Fig. 2 is an enlarged vertical sectional view taken axially through the casing shown shown in Fig. 1 and with parts of the shield broken away; and

Fig. 3 is a transverse sectional view taken on the line 3—3 of Fig. 2 looking in the direction indicated by the arrow.

In the following description and in the claims, parts will be identified by specific names for convenience of expression but they are intended to be as generic in their application to similar parts as the art will permit.

In general the device illustrated includes a flame and heat generating means 4, demountably positioned within an open bottom cylindrical casing 5, the open bottom 6 of which has a shield 7 extending forwardly therefrom. The device is conveniently moved along the ground by means of a handle 8, which in the device illustrated also constitutes a feed pipe for supplying fuel to the heat generator. The generator illustrated is particularly designed for use in a device for melting ice out of track construction in that it can project a long tongue of flame through the opening 6 into the crevices holding the ice.

The particular generator illustrated includes a rear supporting and vent bar 9 fastened centrally to the upper wall 10 of the casing by means of a spacing sleeve 11 and through bolt 12, the head of which is accessible from the outside of the casing. The bar is recessed from one end (as shown in Fig. 3) to provide a straight fuel passageway 13, the end of which is closed by a screw plug 14. Removing the plug permits of an easy cleaning of this passageway. The passageway is designed to convey fuel to a plurality of vents 15 two of which are shown adjacent opposite ends of the bar and facing toward the opening 6. The passageway is supplied with fuel from the feed pipe 8 through a vaporizing coil 16 positioned within the casing, concentric with and adjacent the opening 6. The coil is con-

veniently braced from the bar so as to form a unit therewith by threading the end of the feed pipe into a socket 17 opening through the side of the bar into the passageway 13 adjacent the plugged end and by positioning a portion of the pipe 8 within a socket 18 formed partly in the opposite end of the bar and partly in a keeper plate 19 removably fastened thereto.

The bar also provides a support for a spreader or baffle 19' in the form of an inverted hollow funnel shaped member, the lower large end of which is positioned within the coil 16 and spaced a short distance therefrom to provide an annular passageway 20 facing the vents 15. This spreading device is so positioned that the fuel ejected from the vents is projected partially onto the surface of the spreading device and is partly directed in straight lines directly through the passageway. The coil is so positioned relative to the inner wall of the inclosing casing that there is formed an annular air passageway 21 between the casing and the coil.

In the preferred form of this invention the casing is entirely inclosed except for the opening 6 and this opening is designed not only to provide an outlet for the flame, heated air and products of combustion but also provides an inlet for the supply of air necessary to support the combustion of the fuel ejected from the vents 15.

In order to prevent any assumption that the rear portion of the casing must be absolutely closed, the side of the same is provided with an air inlet 22 opening into the interior of the casing in rear of the vents 15. This inlet is disposed in such a position on the underside of the casing that the possibility of water or snow falling into the interior of the casing is reduced to a minimum.

When disposed in an operative position with the casing on or near the ground the opening 6 is inclined thereto to form an angle of about 30° with the ground, as shown in Fig. 2, and when in this position the generating device is arranged so that the cylinder of flame formed thereby is directed to extend through the opening to engage the portion of the ground facing the opening in advance of the burner. This portion of the ground is inclosed by means of the long forwardly projecting hood or shield 7 the rear portion of which is fastened to the lower end of the casing by means of an encircling spring band 24.

The outlet 6 is defined by means of an inturned flange projecting integrally from the side of the casing, which flange rounds off from the casing so as not only to enhance the appearance of this part of the casing and to facilitate the insertion of the band 24 but also to provide a receiving ledge 23 adapted to hold an amount of oil or other fuel sufficient to prime the burner and thus start its operation.

With the burner in active operation, it will be understood that air in passing in through the opening 6 not only supplies the vents, but forms an insulation between the vaporizing coil and the casing thus maintaining the casing at a relatively low temperature. The casing thus maintained cooled can be moved about the ties without danger of burning the same and thus eliminates any possibility of the operator burning either himself or other objects nearby.

The closed casing not only acts to confine the heat generating parts but coacts with the forwardly extending shield to confine the heating operation to a limited area thus minimizing radiation and other heat losses. These parts are so proportioned and designed that a maximum heated area is covered and subjected to the heating operation and at the same time the parts are designed so as to have the least possible weight and size consistent with an economical use of the fuel used.

Of vital importance to the successful operation of this device is the possibility of using the same in any kind of weather. Even if there should be several air inlets, such as the inlets 22, the device will not go "cold." Wind conditions can have little, if any, effect upon the operation of the device and falling water, snow, ice, ballast or other material will merely flow or slide off the upper portions of the casing and shield without affecting the operation of the device. As the air is largely if not entirely taken in from the underside of the casing, the possibility of the incoming air drawing in pieces of ice and snow is minimized and the movement of the air into the casing and past the out-coming flame has the effect of pre-heating or at least somewhat warming the air before it comes into the combustion zone of the burner.

The device may be supported on the ground and the heat generating means may be so designed that when in such supported position the most effective utilization of the generated flame is attained. It is to be understood that the heat generator illustrated is largely illustrative of one efficient type of generator suitable for the device disclosed and any of the hydrocarbon burners usual with portable devices of this character may be substituted therefore with the obvious mechanical changes.

Having thus described my invention, I claim:

1. A portable burner including an inclosing casing having a lower end provided with an opening, said casing when in operative position adapted to be inclined at an angle to the horizontal so that the opening will

face a surface to be heated, flame creating means in said casing, means confined within the casing for directing the flame from said flame creating means through said inclined opening and a shield extending horizontally from the casing containing the flame directing means and adapted to be positioned over the portion of said surface facing said opening and in advance of the casing.

2. A portable burner including a cylindrical casing having a lower end provided with an opening, the axis of said casing being inclined at an acute angle to the horizontal, the lower end of said casing being inturned to form a flange outlining the opening and adapted to receive a burner priming fuel, a burner confined within the casing, and means for directing the flame from the burner through said opening, said burner adapted to be primed by the burning of fuel on said flange.

Signed at New York city, in the county of New York and State of New York this 25th day of November, A. D. 1916.

ENOCH RECTOR.