Feb. 12, 1952 W. H. GREENFIELD 2,585,648

RAIL TRACK HEATER

Filed Nov. 2, 1948

Fig. 1.

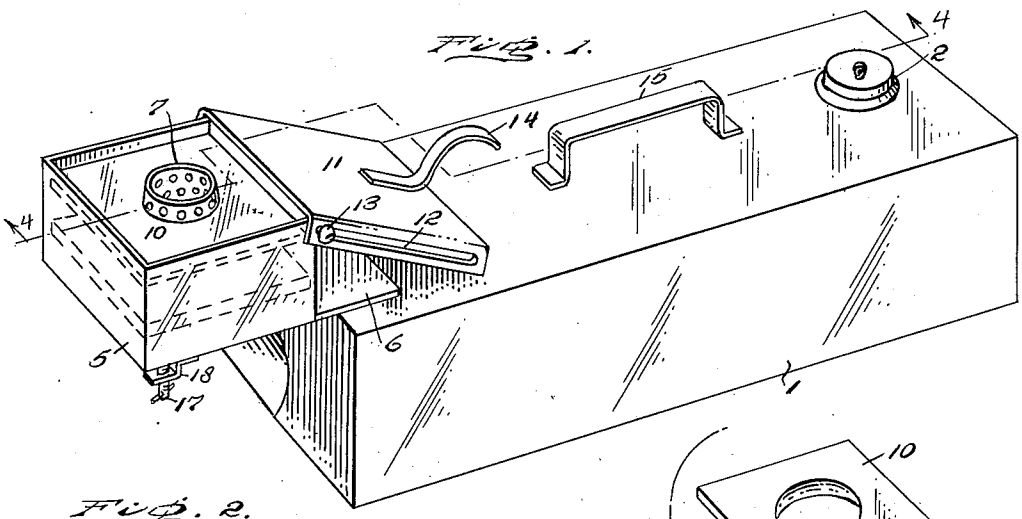


Fig. 2.

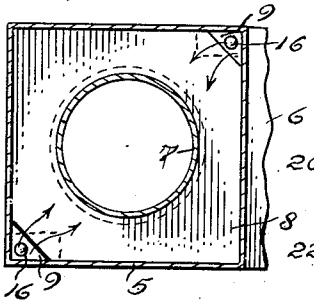


Fig. 3.

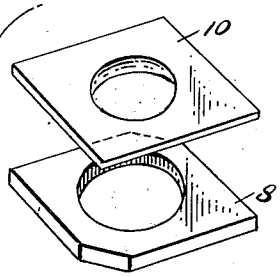
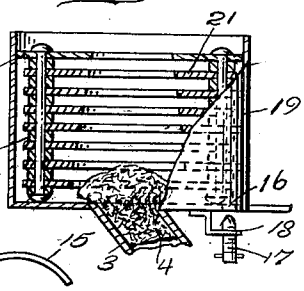


Fig. 5.



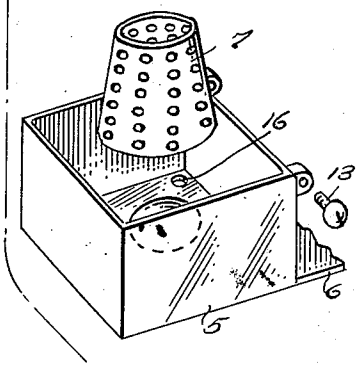
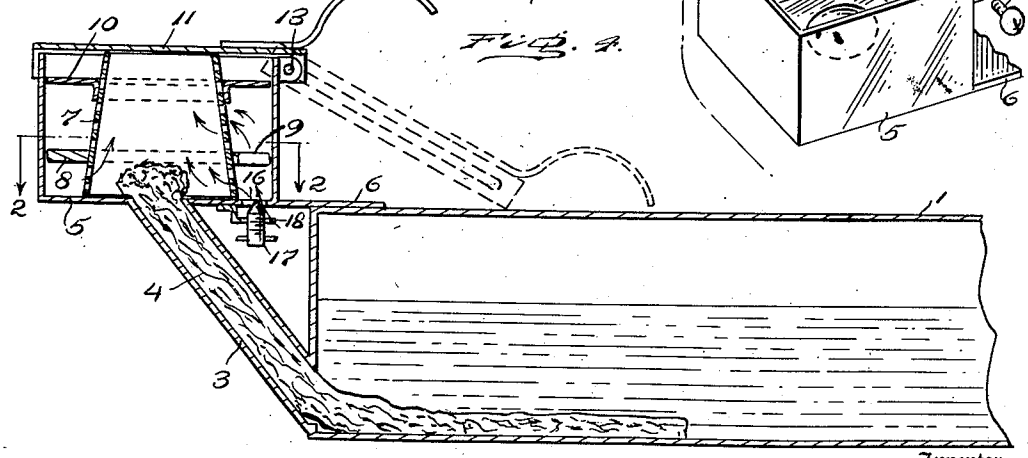


Fig. 4.



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RAIL TRACK HEATER

Walter H. Greenfield, Philadelphia, Pa.

Application November 2, 1948, Serial No. 57,871

2 Claims. (Cl. 158—94)

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The object of this invention is to devise a novel rail track heater having a novel construction and arrangement of a burner which is efficient in operation and by the use of which ignition is maintained.

A further object of the invention is to devise novel means for baffling the air admitted under natural draft and causing it to flow in a novel manner to a foraminated burner.

A further object is to devise novel means for regulating the amount of air admitted for combustion.

With the foregoing and other objects in view as will hereinafter clearly appear, my invention comprehends a novel rail track heater.

It further comprehends a novel construction and arrangement of a burner.

For the purpose of illustrating the invention, I have shown in the accompanying drawings a preferred embodiment of it which I have found in practice to give satisfactory and reliable results. It is, however, to be understood that the various instrumentalities of which the invention consists can be variously arranged and organized, and the invention is not limited to the exact arrangement and organization of these instrumentalities as herein shown.

Figure 1 is a perspective view of a rail track heater, embodying my invention.

Figure 2 is a section on line 2—2 of Figure 4.

Figure 3 is an exploded view of component parts of the burner.

Figure 4 is a section on line 4—4 of Figure 1.

Figure 5 is a sectional elevation of another embodiment of the invention.

Similar numerals of reference indicate corresponding parts.

Referring to the drawings:

The rail track heater has a tank 1 which is preferably of rectangular formation and formed from sheet metal. The tank has a conventional, controllable filling opening 2. The tank has at its forward end a forwardly and upwardly extending spout 3 which is in open communication with the interior of the tank near the bottom of the tank. A wick 4 extends through the spout and into the tank for a desired distance.

A burner casing 5 has a plate extension 6 which is fixed to the top of the tank in any desired manner, for example by welding, and is apertured at its bottom to receive the upper end of the spout which is welded to said casing bottom. The burner casing 5 may have any desired contour in cross section. In Figures 1 to 4, the burner casing is shown as rectangular, while in Figure 5 it is shown as being circular.

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A foraminated combustion chamber forming member 7 is preferably cone-shaped, and is positioned on the bottom of the casing 5 to surround the wick. Supported on the member is a lower baffle plate 8 apertured to fit on the burner and be spaced thereby a desired distance above the bottom of the burner casing, and at opposite locations it is cut away to form with the burner casing air opening 9. Also supported on the member 7 is an upper baffle plate 10 which is apertured to receive the combustion chamber forming member and is spaced from the lower baffle plate 8 and from the top of the burner casing.

A flame extinguisher 11 is adapted to be moved over the top of the burner casing and has opposite side portions deflected downwardly and slotted as at 12 to receive fastening devices 13 secured to the casing. The extinguisher has a grasping handle 14. The tank 1 has a carrying handle 15.

The bottom of the burner casing 5 has air intakes 16 and these openings are positioned at opposite sides and are preferably provided with regulating valves 17 in threaded engagement with brackets welded to the burner casing and shown at 18. These valves are shown as having tapered ends to enter the openings 16

In Figure 5, I have shown another embodiment of the invention wherein a burner casing is round as shown at 19, it being apparent that the casing may have any desired contour in transverse section. A baffle 20 has a close fit in the burner casing beneath its top, and superimposed combustion chamber forming baffles 21 have a clearance with the inner wall of the casing. These baffles are retained in spaced relationship by a spacing device 22 consisting of rods extending through the baffles and swaged over the juxtaposed baffles. The baffles are in the form of washers and while their central openings may be the same in diameter I have preferred to show them as decreasing in diameter from bottom to top since such construction has been found to give excellent results.

In the embodiments of the invention as herein shown, the burner is designed to vaporize the fuel and automatically mix with it the proper amount of air to obtain complete combustion of the fuel, thereby obtaining a greater heat conduction to the rail and a minimum of carbon.

The air passes in a lateral direction and substantially at right angles to the path of the flame in both of the embodiments of the invention herein shown.

In Figure 4 the air enters the intake openings 16, passes laterally through the bottom openings

in the burner 7, passes upwardly through openings 9 in the baffle 8, is prevented by the upper baffle 10 from passing upwardly, and passes laterally to the openings in the burner between the baffles 8 and 10.

In Figure 5, I employ a plurality of superimposed baffles, and the air passes from the intake openings 16 of the casing laterally beneath the first baffle 21 to the path of the flame, and also upwardly between the baffles 21 and the inner wall of the casing and then laterally between juxtaposed baffles to the path of the flame of the burner.

It has been found in practice that by baffling the air passage as herein shown, a better combustion is obtained and the burner does not blow out but is continuously ignited.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent is:

1. In a rail track heater, a burner casing having in its bottom a wick receiving opening and air intake openings, a wick in the wick receiving opening, a fuel supply for the wick, a lower baffle within the casing above the intake openings comprising a transversely extending flat plate having a clearance with the inner surface of the casing wall and having a central opening axially aligned with the opening receiving the wick, an upper baffle comprising a transversely extending flat plate having a close fit in the upper portion of the casing and having a central opening axially aligned with said lower baffle opening and said bottom wick receiving opening, and pervious wall means having clearance with the inner surface of the casing wall and forming a combustion chamber registering with the openings in the baffles.

2. In a rail track heater, a casing, a plurality of superimposed baffles within the casing, each comprising a transversely extending flat plate having a central opening, a burner casing having a wick receiving opening and air intake openings, a wick in the wick receiving opening, a fuel supply for the wick, the lowermost baffle being spaced from the bottom of the casing above the intake openings and having clearance at opposite sides with the inner surface of the casing wall, and the top baffle having a close fit in the upper portion of the casing below the upper end thereof, said baffles having openings axially aligned with the bottom wick receiving opening, and pervious wall means having clearance with the inner surface of the casing wall and forming a combustion chamber registering with the openings in said baffles.

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