The object of this invention is to devise a novel switch heater adapted to be placed along the tracks at a switch to prevent the switch being inoperative under cold and icy conditions, and to also devise a novel fuel feeding system which will provide a free flow of fuel to spaced wicks in one or more burner casings of novel construction.

A further object of the invention is to devise a novel burner casing supported in a novel manner so that it can be moved towards or away from the track and novel means for maintaining a predetermined supply of fuel in the casing to supply a plurality of spaced wicks so that under flow of fuel to the burner casing each wick will be sufficiently supplied with fuel without overflow of fuel at the discharge end of the casing and to permit overflow if too much fuel is being fed to the casing.

A further object is to devise a novel float controlled feed of fuel from a main fuel supply tank to a nipple at the intake of the burner casing, such nipple having an orifice with a selected restriction. The control is such that a predetermined amount of fuel can be maintained in a casing to supply the last wick in line in the casing or in a number of connected casings arranged end to end.

With the foregoing and other objects in view as will hereinafter clearly appear, my invention comprehends a novel railroad switch heater and fuel feeding system therefor.

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, except by the scope of the appended claims, to the exact arrangement and organization of these instrumentalities as herein set forth.

Figure 1 is a perspective view of a rail track heater embodying my invention in assembled condition along a railroad track.

Figure 2 is a perspective view, on an enlarged scale, of a heating unit partly broken away to show details of construction.

Figure 3 is a sectional elevation of a heating unit in assembled condition with a rail.

Figure 4 is a side elevation, on an enlarged scale, of a portion of a heating unit, and partly broken away to show details of the construction.

Figure 5 is a perspective view of a wick and clip.

Figure 6 is an exploded view of the screen, clip and wick. Similar numerical of reference indicate corresponding parts.

Referring to the drawings:

A main fuel supply tank is positioned at a convenient location along the railroad track as shown at 1, and has a discharge line 2 having a controlling valve 3 and leading to a float controlled auxiliary tank 4. The tank 4 is blocked up to a desired height relatively to the rails, and thereby provide for a desired constant flow of fuel. A flexible pipe 5 leads from the float controlled tank 4 to a T fitting 6 connected with a nipple 7 having an orifice with a selected restriction, the nipple being connected to the intake end of a burner casing 8. Any desired number of such casings 8 can be connected in series, two being shown in Figure 1.

The burner casing 8 is formed from a sheet of material deflected upon itself to form a rounded bottom, a lower inner side 9 and a higher outer side 10 with closed ends to form a fuel and wick receiving chamber. Near the upper portion of the lower side, spacers 11 are welded to the sides in spaced relation to provide wick receiving openings for wicks 12. If desired, a U shaped screen 13 to receive the wicks and spring clips 14 can be provided to space the wicks above the bottom of the casing or casings 8.

The U shaped spring clips 14 contact the sides of the bottom or lower portion of the wicks 12 and the assembled wicks and clips are inserted as a unit into the U shaped screen 13. It will be apparent that the height of the wicks can be adjusted by raising or lowering the clips on the wicks to vary the distance between the bottom of the screen and fuel chamber and the wicks or to determine the heights of the wicks in the burner casings.

The clips are shown as being of the same screen material as the U shaped screen. The discharge end of the last casing in line has an elbow fitting 15 with its open end directed upwardly to provide an overflow if too much fuel is being fed and to control the depth of fuel within the fuel casing by turning the elbow. By adjustment of the T fitting 6 and the elbow 15 a substantially constant level of fuel can be obtained in the burner casing so that all of the wicks from the first to the last wick will have the proper supply of fuel.

The burner casings are supported by strips 16 fixed at their upper ends to the casings and having their lower ends pivotally supported on fastening devices 17 driven into selected ties 18. Stops 19 and 20 are provided on the ties for limiting the swinging movement of the burner casings in two directions.

A valve controlled pipe 21 from the pipe 5 furnishes the fuel for the burners at the other side of the railroad track.

When the burner casings are assembled in operating position, the higher sides 10 terminate at one side of the head of the rail about half way between the top and bottom of such head and are spaced therefrom to permit escape of products of combustion and the flame is directed against the web of the rail.

The fuel flows from the main supply tank 1 to the float controlled tank 4, which is blocked up to a desired height, and therefrom to the T fitting 6 and the nipple 7 to the first burner casing 8. The purpose of the T fitting 6 is to permit air induction so that line 5 does not become a suction line.

The purpose of the restriction in the orifice of the nipple 7 is to obtain a uniform feed where a number of burner casings are employed, the arrangements shown being adapted to feed fifteen burner casings. The elbow fitting 15 can be turned to position the open end upwardly at a desired angle and permit the building up of a higher head pressure.

There is preferably a tolerance between the wicks and the walls of the burner casing to permit any gas generated in the burner chamber to pass up around the wicks and burn in suspension rather than on the wicks.

The angular setting of the elbow fitting 15 controls the depth of fuel in the burner casing or casings so that all of the wicks will be supplied with the proper amount of fuel, and if for any reason there is an excess of feed of fuel, such excess can overflow through the elbow fitting 15.
It will now be apparent that I have devised a novel fuel feeding and heating which is foolproof and safe and will provide for the requisite amount of fuel being fed to one or more burners assembled along a rail track.

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

A rail switch heater, comprising a plurality of burner casings in longitudinal alignment with adjacent casings interconnected at their lower portions, each casing consisting of a metal sheet deflected upon itself to form a fuel chamber with a low side, a high side and closed ends, spacers longitudinally spaced from each other and welded to the sides of the fuel chamber, U shaped screens in said fuel chambers, wicks in said fuel chambers, U shaped spring clips vertically adjustable on the wicks, said wicks and their clips being received within said U shaped screen, the clips spacing the wicks from the bottom of the U shaped screen and from the bottom of the fuel chambers, means to feed fuel to the first burner casing in line, and a control means for discharge of fuel from the last burner casing in line.

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