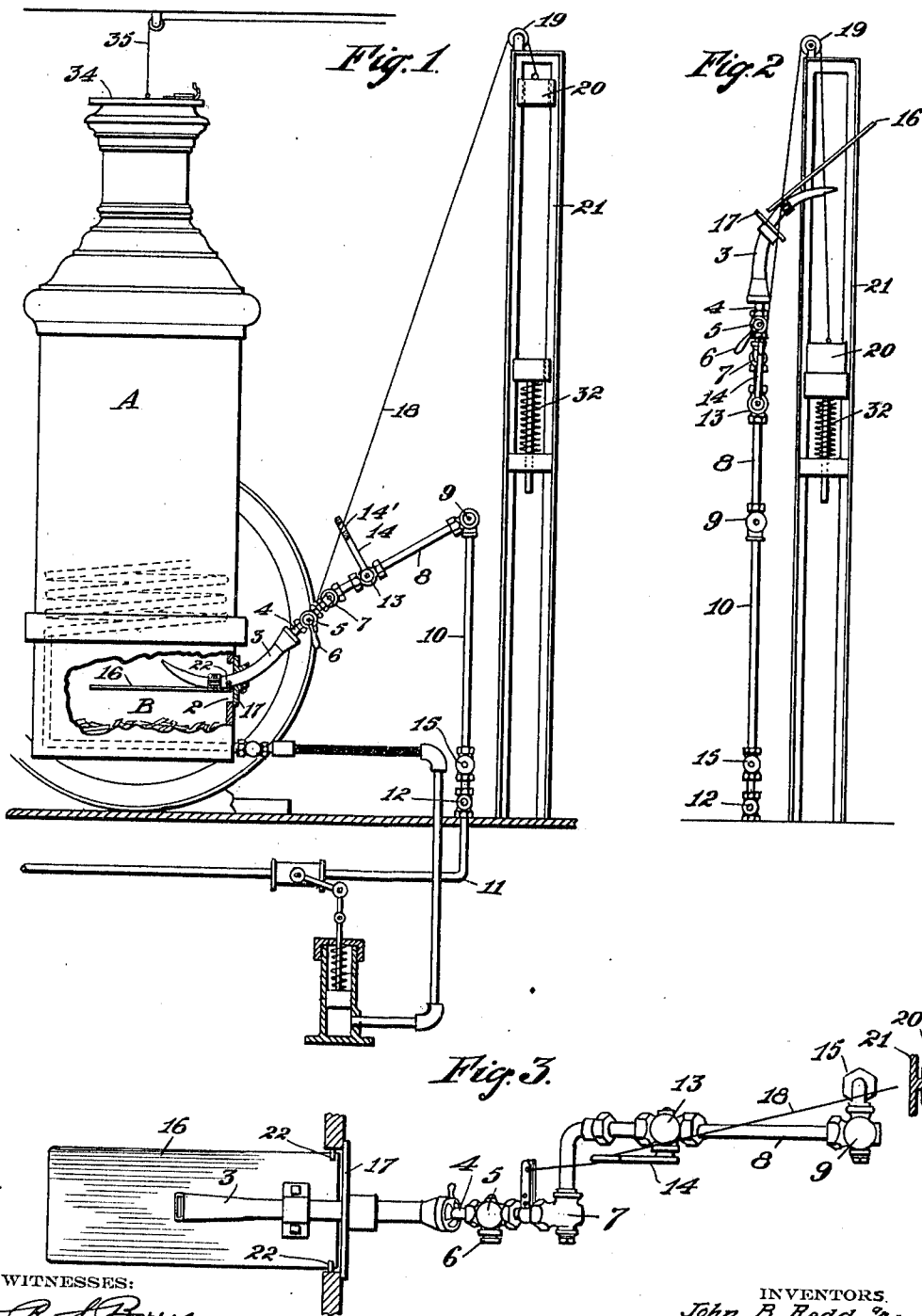


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 AUXILIARY FIRE ENGINE HEATER.
 APPLICATION FILED FEB. 24, 1913.

1,096,458.

Patented May 12, 1914.



WITNESSES:

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AUXILIARY FIRE-ENGINE HEATER.

1,096,458.

Specification of Letters Patent.

Patented May 12, 1914.

Application filed February 24, 1913. Serial No. 750,243.

To all whom it may concern:

Be it known that we, JOHN B. REDD, of the city of Oakland, county of Alameda, State of California, and SAMUEL BERMINGHAM, of the city and county of San Francisco, State of California, citizens of the United States, have invented new and useful Improvements in Auxiliary Fire-Engine Heaters, of which the following is a specification.

This invention relates to an auxiliary heater for fire engines and the like.

It is the object of this invention to provide an auxiliary heater for steam fire engines and the like, which is designed for the purpose of keeping up steam when the engine is at its station and not in use.

A further object is to provide an auxiliary heater which is detachable from the engine and is adapted to be adjusted to various positions to compensate for different positions of the engine.

Another object is to provide a means for automatically cutting off the supply of fuel to the heater when the engine is moved away therefrom, which acts at the same time to remove the heater to a point out of the way of the engine when it is returned to its position in the station. Other objects will appear hereinafter.

The invention primarily resides in a series of jointed gas or oil conduits, leading from a suitable source of fluid fuel supply, a burner thereon, means for regulating the flow of fluid to the burner, means for holding the burner in the fire box of an engine, and means for automatically cutting off the supply of fuel to the burner when the engine is moved away therefrom.

The invention consists of the parts and the construction and combination of parts as hereinafter more fully described and claimed, having reference to the accompanying drawings in which:—

Figure 1 is a side elevation of the invention as applied. Fig. 2 is a side elevation showing the heater in its inoperative position. Fig. 3 is a plan view of the burner and guard plate in operative position.

In the drawings, A represents a boiler of a fire engine or similar apparatus, and B represents the fire box thereof, which is provided with the usual opening 2, through which fuel is introduced into the fire box B.

The essence of this invention resides in a

burner 3 which may be of any suitable type or construction, but is here shown as adapted to the burning of a liquid hydrocarbon fuel, and consists of a curved pipe flattened at its outer end and forming a nozzle, and connected at its inner end to a feed pipe 4. The feed pipe 4 connects with a regulating valve 5, which is provided with a hand-lever 6, by means of which the flow of the fuel to the burner may be regulated as desired. The feed pipe 4 and the valve 5 are connected through a swing joint 7 to a pipe 8, which in turn connects through a swing joint 9 to a pipe 10. Pipe 10 connects with a feed pipe 11, leading from any suitable source of fuel supply through a swing joint 12, which is positioned adjacent to the floor. A cut-off valve 13 is disposed in pipe 8 at any convenient point, and is provided with a handle 14, having a perforation 14' at its outer end. An emergency cut-off valve 15 is positioned in the pipe 10 at any desired point. By reason of the swing joints 7, 9 and 12, the pipes 4, 8 and 10 may be disposed at various angles in relation to each other, thereby facilitating the introduction of burner 3 into the fire box B.

Rigidly mounted on burner pipe 3 and extending outwardly therebeneath is a guard-plate 16 which is designed to extend over the kindling in the fire box B to prevent the kindling being ignited when the burner is in operation.

Adjustably mounted on the burner pipe 3 is a plate 17 which serves as a closure for the opening 2 when the burner is in its operative position. Attached to the pipe 4 at any convenient point is a cord 18, which passes upward and over a direction roller 19, and is connected to a counterweight 20. The cord 18 is passed through the perforation 14' in the lever 14 in such manner that when the burner pipe 3 is in its operative position, the cord 18 will act to hold the handle 14 of the valve in such position that the valve 13 will be open to its widest extent. The counterweight 20 is mounted in vertical guides or ways 21; the weight 20 being sufficient to exert an upward pull on the pipe 4, tending to move the latter and the pipes 8 and 10 into a vertically alined position as shown in Fig. 2. The burner is held in place within the fire box B by means of lugs or projections 22 on the side of the opening 2 which extend over the guard-plate 16,

as shown in Fig. 3, and act to hold the burner pipe 3 in its lower-most position in opposition to the weight 20.

In the operation of the invention the burner pipe 3 is inserted in the fire box B, as shown in Fig. 1, with the guard-plate 16 engaged by the lugs 22, and the plate 17 extending over and closing the opening 2. The valve 13 being opened by the action of cord 18 on the lever 14, the fuel from the pipe 11 will be delivered to the burner pipe 3 through the regulating valve 5, and will be ignited at the nozzle of the burner in the usual manner. The extent of the flame of the burner will be regulated by adjusting the valve 5 so as to maintain the desired temperature in the fire box B. By this arrangement steam may be kept up or maintained in the boiler A when the engine is at its station. When the engine is moved away from the apparatus, the plate 16 rides under the projections 22, and is released therefrom. When this occurs the counter-weight 20 acts to elevate the burner pipe 3, and the pipes 8 and 10 into a vertical position as shown in Fig. 2, in which position they are out of the way of the engine when it is returned to the station.

Means are provided for cushioning the fall of the weight 20, which means is here shown as consisting of a spring bumper 32 mounted in the guide-ways 21 at such point as to be in the path of travel of the weight 20 when it nears its lower-most position.

The cord 18 in moving the burner pipe 3 to its uppermost position acts to rock the hand-lever 14 approximately $\frac{1}{2}$ of a revolution, and thereby causes the valve 13 to cut off the supply of fuel to the burner pipe 3, thereby extinguishing the flame thereof.

Means are provided for confining the heat generated by the burner pipe 3 in the boiler A, and consists of a damper plate 34 suspended from the ceiling by a cable or cord 35, which damper plate is adapted to be disposed over the stack of the boiler A to confine the heat therein.

When the engine is returned to its station, the burner pipe 3 is replaced in the fire box

B, and the several valves adjusted to their desired positions.

The flexible or swing joints 7, 9 and 12 admit of the pipes 4, 8 and 10, respectively, being disposed in various positions so that the burner pipe 3 may be disposed in the fire box B irrespective of a slight variation in the position of the engine when in the station.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A portable engine and its fire box, in combination with a hydro carbon burner, foldable fuel conduits leading to the burner, a guard plate on the burner, and means for detachably securing the burner and guard plate within the fire box, said means comprising members on the fire box engageable with the guard plate, and means for holding the guard plate in engagement therewith.

2. The combination of an engine and fire box of the character described, and a hydro carbon burner, foldable conduits leading to the burner, a guard plate on the burner, means for detachably securing the burner and guard plate in the engine fire box, and means for automatically elevating the burner when the engine is moved away from the burner.

3. The combination of a portable engine and fire box of the character described, a hydro carbon burner and foldable conduits leading to the burner, a guard plate on the burner, means for detachably securing the burner and guard in the engine fire box, means for automatically elevating the burner when the engine is moved away from the burner, a cut off valve in the conduit, and means whereby the elevation of the burner will act to close the cut off valve.

In testimony whereof we have hereunto set our hands in the presence of two subscribing witnesses.

JOHN B. REDD.

SAMUEL BERMINGHAM.

Witnesses:

R. S. BERRY,

JOHN H. HERRING.