

No. 767,586.

PATENTED AUG. 16, 1904.

J. G. MATTHEIS.

HEATER FOR STEAM FIRE ENGINES.

APPLICATION FILED MAY 11, 1904.

NO MODEL.

FIG. 2.

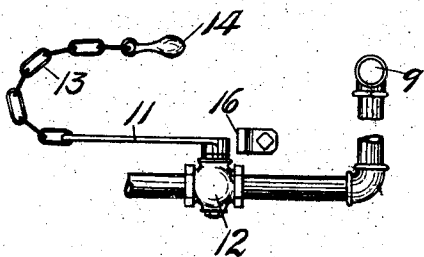
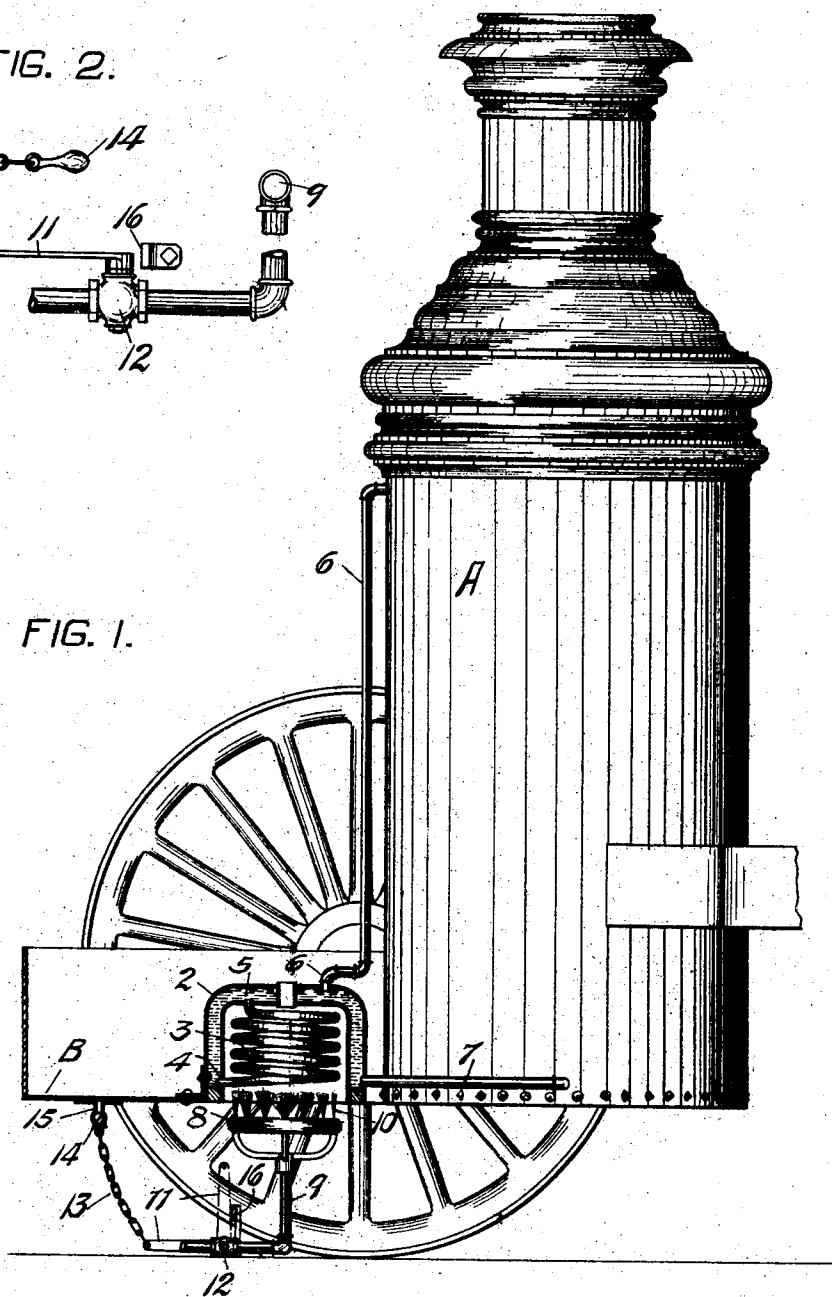


FIG. 1.



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HEATER FOR STEAM FIRE-ENGINES.

SPECIFICATION forming part of Letters Patent No. 767,586, dated August 16, 1904.

Application filed May 11, 1904. Serial No. 207,405. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. MATTHEIS, a citizen of the United States, residing at Alameda, in the county of Alameda and State of California, have invented new and useful Improvements in Heaters for Steam Fire-Engines, of which the following is a specification.

My invention relates to an apparatus designed for heating and maintaining the temperature of water in the boilers of steam fire-engines while they are standing out of use, so that by reason of the high temperature maintained the engine will be in readiness for use very shortly after lighting the fire beneath the boiler.

My invention consists of a supplemental water-heater compartment carried upon the engine-frame, having connections with the main boiler and a stationary exterior burner, into relation with which the portable machine is brought, and means for automatically shutting off the flame of the burner when the apparatus leaves its position with relation thereto.

Referring to the accompanying drawings, Figure 1 shows the application of my invention. Fig. 2 is a plan view of gas cock and stop.

It is the custom to provide apparatus in the houses of steam fire-engines for the purpose of keeping the water in the boilers at nearly boiling-point when the engines are not in use, so that when a fire-alarm is sounded and the fire lighted in the engine-furnace steam is almost instantly formed and the engine is ready for use. This class of apparatus usually comprises a stationary heater having temporary connection with the engine-boiler, so that a circulation may be maintained, and a secondary boiler, with which the heating apparatus is also connected, and means for disengaging the heater from the engine and opening communication between the heater and the stationary boiler, so that circulation will continue in the new direction after the engine has left.

It is the object of my invention to provide an apparatus carried upon the engine-frame and a stationary burner located in the engine-house, with means for controlling the burners, so that when the engine is hauled out the fire is automatically put out.

As shown in the accompanying drawings, A represents the boiler of any steam fire-engine, and B is a footboard extending to the rear, containing fuel, and serving to support the fireman and engineer when the machine is proceeding to the fire. At a suitable point upon this footboard or in close relation to the boiler I have shown a supplemental heater, which in the present case consists of a double-walled hollow boiler, as at 2, having an interior chamber, within which is located a coil of pipe, as shown at 3. The lower end of this pipe may communicate with the water-leg, as at 4, and the upper part of the coil may connect with the upper portion of the chamber, as at 5, thus providing for the circulation through the coil and the heater 2.

From the upper part of the heater a pipe 6 extends and connects with the upper part of the main boiler A, and from a point near the bottom of the boiler A or the water-legs surrounding the furnace a pipe 7 returns into the preliminary heater 2. It will be manifest that with this construction whenever heat is applied to the coil 3 and the interior of the heater 2 a circulation will be maintained through this heater and through the boiler, and the water in all parts may be raised to any required or desired temperature. In order to provide for this heating, I have shown a burner 8. This burner may be of any suitable description, as in the form of a ring or one or more tubular passages which are supported upon the floor of the engine house or station and may have connection with a gas-main, as at 9.

Burner-tips are suitably arranged upon the apparatus, as shown at 10, and this device being fixed to the floor at a suitable height it will be seen that the engine can be backed to a position where the coil 3 and heater 2 will stand directly above the burners at 10. The heat of these burners acting upon the coil and the heater will raise and maintain the temperature, as previously described.

In order to close the gas-burners when the apparatus leaves its position, I have shown a lever 11, controlling the gas-cock, as at 12, through which the gas is admitted to the burners 10. The end of this lever is connect-

ed by a chain or other flexible connection 13 with a plug 14. This plug is inserted into an elastic cap 15, which is carried upon the engine in suitable relation with the lever 11, so that when the lever is turned to open the gas-cock the position of the lever may be, as here shown, substantially horizontal lying upon the floor. The connection being made through the flexible chain 13 and plug 14 with the engine-frame, it will be seen that when the engine starts the first operation will be to pull the lever 11 up into a position substantially at right angles with its open position. At this point it will contact with a stop 16, suitably located for the purpose, and the further tension upon the chain will pull the plug 14 from its clasp 15, thus leaving the apparatus free to continue its journey, and the gas will be shut off without any attention from any person. The water being thus heated in the boiler, the main fire within the engine-boiler being started will commence to make steam almost instantly, so that the apparatus will be in condition for use as soon as it arrives at the point where its services are needed. The circulation may continue through the preliminary heater in reduced quantity, depending only upon the difference in temperature between the upper and lower part of the main boiler; but as soon as the apparatus returns to its house and is backed over the preliminary heater the gas can be again lighted, and the circulation from the preliminary heater to the main boiler will be maintained after the fire has been withdrawn from the main furnace. The apparatus will thus be always kept in readiness for instant use.

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

1. The combination with a portable steam-engine and the boiler thereof, of a supplemental heater carried upon the engine-frame, connections between said heater and the main boiler, a burner permanently and normally maintained in a plane below the bottom of the engine-frame, over which burner the heater is placed, and connections whereby the burner

is automatically extinguished when the apparatus is moved.

2. The combination with the main boiler of a steam fire-engine, of a heater comprising a double hollow shell having an interior chamber open at the bottom, said shell being carried upon the frame with the main boiler and having circulating connecting-pipes therewith, a burner fixed upon the floor over which burner the hollow shell of the heater may be placed, connection between said burner and a gas-main, a valve controlling said supply and connection between said valve and the movable engine-frame whereby the gas-supply is cut off when the engine leaves its position.

3. The combination with a boiler of a steam fire-engine of a preliminary heating apparatus portable in common with the main boiler, having connecting-pipes by which water may be circulated between said apparatus and the main boiler, a stationary burner above which the preliminary heater may be located when the apparatus is standing, a pipe connecting said burner with a source of gas-supply, a cock having a lever, flexible connection with said lever and a detachable connection with the engine-frame whereby the lever is moved to first close the gas-supply, and the connection with the engine-frame is disengaged after said closure.

4. The combination with a portable engine-boiler of a supplemental heater movable with and in permanent circulatory connection with said main boiler, a fixed burner into operative connection with which the supplemental heater may be placed, said burner being permanently and normally maintained in a plane below the under side of the engine-frame, and connections between the portable apparatus and the burner-supply whereby said supply is cut off when the apparatus leaves its station.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN G. MATTHEIS.

Witnesses:

S. H. NOURSE,
JESSIE C. BRODIE.