

H. GREGG.
LOCOMOTIVE FURNACE DOOR.
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1,058,298.

Patented Apr. 8, 1913.

Fig. 1.

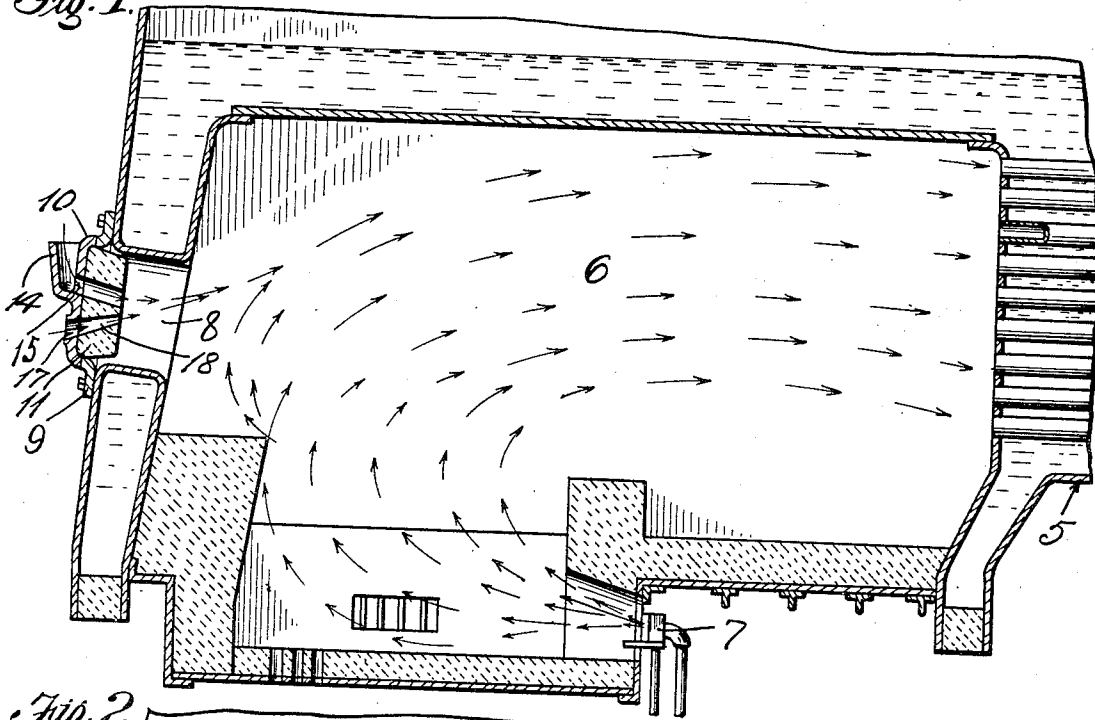


Fig. 2.

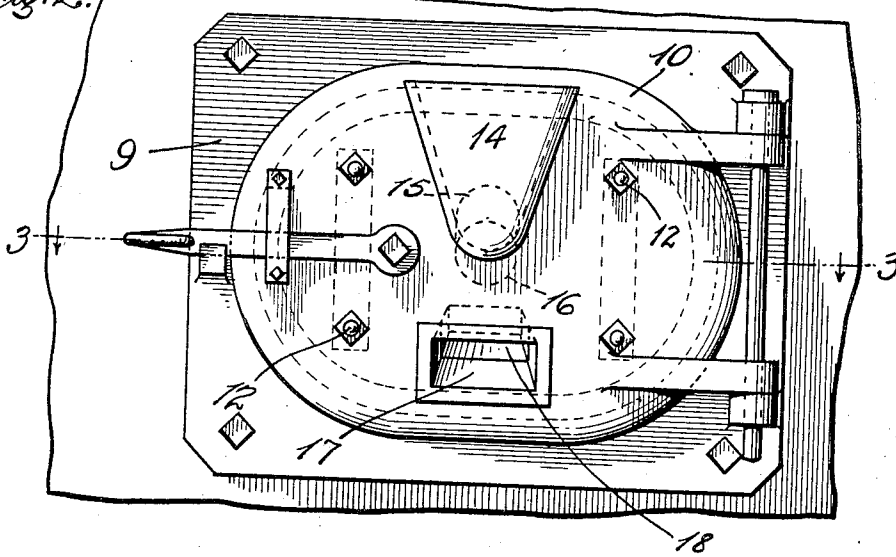
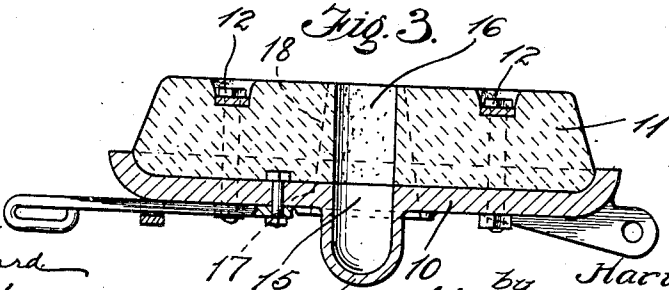


Fig. 3.



Witnesses.

E. R. Pollard

W. T. Keene

Inventor.

by Harry Gregg.

Hazard & House

Attest.

UNITED STATES PATENT OFFICE.

HARRY GREGG, OF LOS ANGELES, CALIFORNIA.

LOCOMOTIVE-FURNACE DOOR.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, HARRY GREGG, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Improvement in Locomotive-Furnace Doors, of which the following is a specification.

This invention relates to furnace doors and more particularly to doors used on railroad locomotives, and the principal object of the invention is to provide a door with suitable means for admitting sand there-through into the furnace chamber.

It is a further object to provide a furnace door with a fireproof lining provided with a plurality of apertures extending there-through, one of which connects with the hopper, and the other providing a draft at all times in the operation of the invention.

In the drawings accompanying this specification: Figure 1 is a central longitudinal section through the rear end of a locomotive boiler, and its furnace, showing the invention applied thereto and in general operation. Fig. 2 is an enlarged front elevation of the door shown in closed position on its supporting bracket. Fig. 3 is a cross section on the line 3-3 of Fig. 2, looking in the direction of the arrows.

Heretofore in the operation of locomotive boilers or other boilers where oil of a crude character is used as fuel, any condensation of the heated products or incomplete combustion in the tubes of the boiler results in the clogging of the same, and to clean out the tubes when this latter occurs, sand has been used and thrown into the furnace, which is carried by the draft into and through the tubes to clean the latter. This method of introducing the sand has resulted in unequal distribution of the latter resulting in inefficiency in the object desired to be obtained, and this invention overcomes the above by supplying means to more equitably distribute the sand in relation to the boiler tubes.

More specifically in the drawings, 5 designates the rear portion of a locomotive boiler having a furnace 6, to the lower part of which the burner 7 is mounted, which is

adapted to use crude oil in a common and well known manner. This furnace is provided with the door way 8 in the rear wall of the boiler which is incased by the door frame 9 on which is mounted the furnace door 10. This door is of the general elongated rectangular type with suitable hinges and a securing latch, its inner face exposed to the action of the heated burning gases, being preferably covered by the fire brick 11 secured thereto by suitable bolts 12 passed through the metal of the door and preferably counter sunk in the fire brick.

The door is usually cast of metal, and is thus shown, provided with a hopper 14 of the usual hopper form, and of sufficient capacity to carry the amount of sand necessary for one treatment of the boiler tubes. The lower converged end 15 of the hopper registers with and is inclined to form a smooth outlet through the inclined bore 16 in the fire brick 11.

Below the hopper is a second aperture in the door, preferably rectangular in cross section, and slightly converging inwardly, this aperture 17 registering with a bore 18 in the fire brick, this latter being preferably inclined in an upward direction, and of smaller cross section at its inner end than the aperture 17 in the metal door.

It will thus be seen in the operation of the device that at periodic or at any desired times, or when it is found necessary to sand the tubes, a quantity of sand is placed in the hopper, and the draft occasioned in the ordinary operation of the locomotive produced by the projection of the fuel there-through, and the draft through the bore 18, will carry the sand in an evenly distributed spray across the furnace, and more efficiently reach all the tubes of the boiler which it is desired to clean. This invention only temporarily obstructs the draft opening of which it forms a component part, and results in economy, convenience and efficiency in the sanding process.

What I claim is:

A furnace door construction, comprising a frame, a door suitably mounted in said frame provided with a plurality of inclined apertures, a lining for said door provided

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with apertures registering with said apertures in said door, and a hopper communicating with the uppermost of said apertures, whereby communication is afforded through said door for sand in said hopper and air through the other aperture to commingle within the furnace.

In witness that I claim the foregoing I have hereunto subscribed my name this 7th day of Oct., 1912.

HARRY GREGG.

Witnesses:

M. BATTEY,
EARLE R. POLLARD.