

(No Model.)

R. H. McFERNSON.
DEVICE FOR BURNING AND EJECTING CINDERS.

No. 509,624.

Patented Nov. 28, 1893.

Fig. 3.

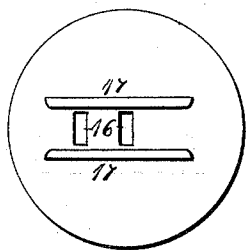


Fig. 1.

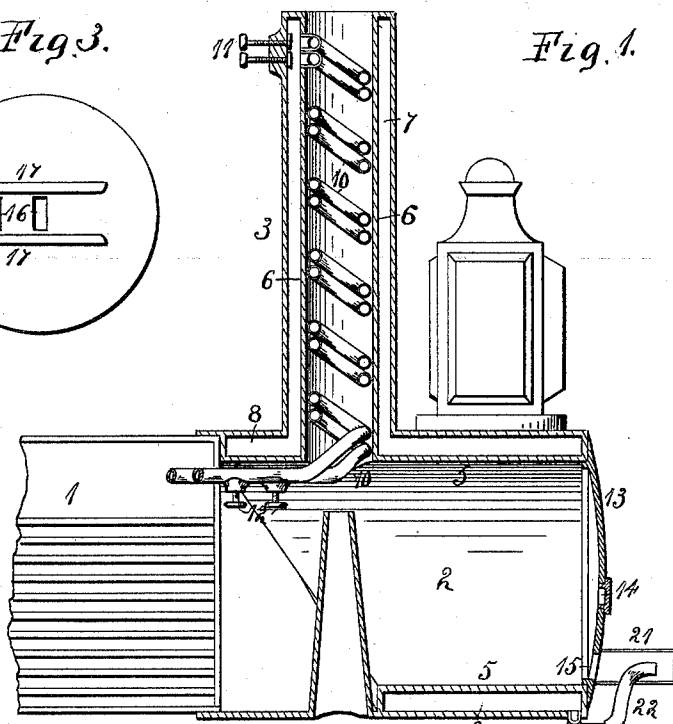


Fig. 4.

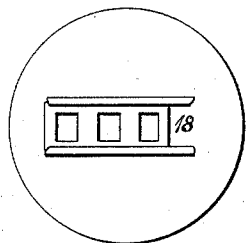


Fig. 2.

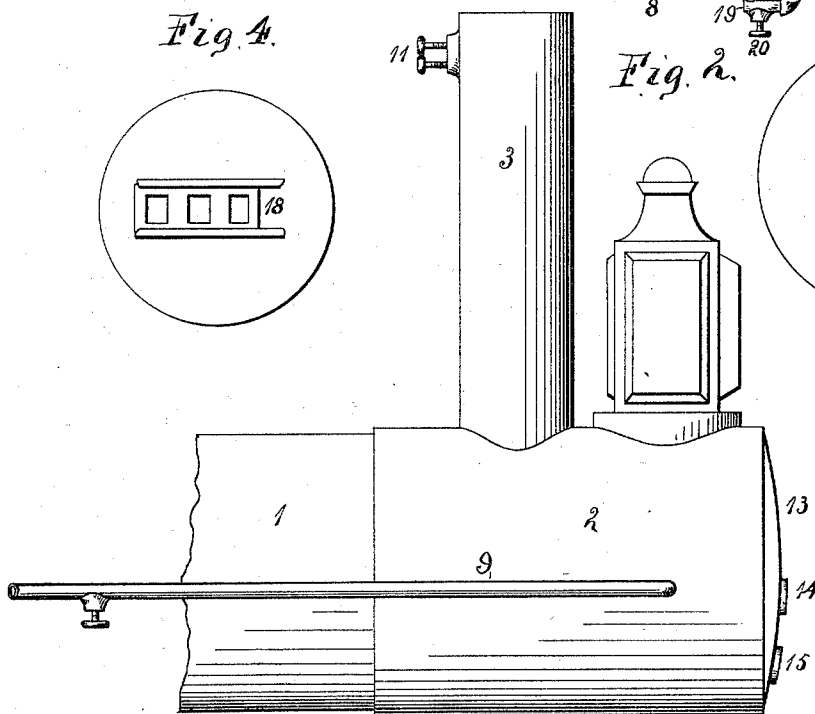
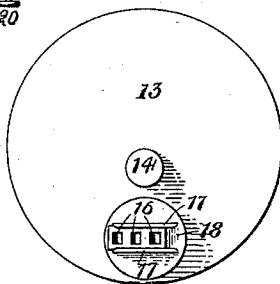


Fig. 5.



Witnesses:
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UNITED STATES PATENT OFFICE.

ROBERT H. McFERSON, OF TURNER, ILLINOIS.

DEVICE FOR BURNING AND EJECTING CINDERS.

SPECIFICATION forming part of Letters Patent No. 509,824, dated November 28, 1893.

Application filed April 5, 1893. Serial No. 469,220. (No model.)

To all whom it may concern:

Be it known that I, ROBERT H. McFERSON, a citizen of the United States, residing at Turner, in the county of Du Page and State of Illinois, have invented certain new and useful Improvements in Devices for Burning and Ejecting Cinders, of which the following is a specification.

The object of my invention is to provide a damper for the front end of the extension by means of which air is admitted which will allow the cinders and smoke to burn.

In the accompanying drawings, Figure 1, is a vertical central section through the front end of a locomotive showing my improvements. Fig. 2, is a side elevation of the same. Figs. 3 and 4, are views of the cover for a hand hole showing a damper located therein. Fig. 5 is an end view of boiler showing damper on lower hand hole.

The locomotive represented in the accompanying drawings in the main is of the usual construction consisting of a boiler proper 1, extension 2, smoke stack 3, and exhaust escape 4. The extension is provided with an inner lining or ring 5, its ends being closed, the rear end extending from the front of the exhaust pipe escape diagonally upward and rearwardly to the front end of the boiler. This diagonal cut is for the purpose of escaping the various deflectors employed in locomotives for directing the draft current. The smoke stack is also provided with an inside lining 6, the space 7, formed thereby communicating with the annular water space 8, of the extension. Water is admitted to the annular water space 8, through the pipe 9, connected with the ejector carried by the engine and will fill to the top of the smoke stack. Within the smoke stack are located pipes 10, in the form of a double coil, the upper ends communicating with the water space 7, near the top of the smoke stack, the lower ends of these pipes pass into the boiler. I thereby have a water communication between the injector and the boiler, valves 11, are also located so as to close the upper ends of the pipes 10, and valves 12, have a connection

with the pipes near their entrance to the boiler. By means of these valves should each pipe give out, its connections with the water supply and boiler can be cut off and the remaining pipe will feed the boiler. By locating the water space 7, in the smoke stack and the water space 8, in the extension of the locomotive I utilize the heat in its passage from the flues to the outer air to heat the water thereby saving fuel. By locating the pipes in the smoke stack they will accumulate the sticky smut, preventing its escape into the air and annoyance to the passengers on the train, and can readily be cleaned when necessary.

The front 13 of the extension is made movable in order that access may be had to the pipes and flues. Within this front are located two hand holes 14 and 15 through which access can be had to the interior of the extension. Covers are provided for these hand holes, the lower one shown at Figs. 3 and 4 being provided with perforations 16, and guide ways 17. A damper 18, fits into the guide ways 17. By means of this damper air can be admitted to the extension which owing to the heated condition of the cinders will allow them to burn. A pipe 19, communicates with the water space 8, near the front of the extension and by means of the valve 20, the settlements can be blown out. The cover for the lower hand hole can be removed and a pipe 21, placed over it, a hose 22, connected with the pipe 18, and extends within the pipe 20, and when the water is turned on the cinders within the extension will be drawn out by the action of the water, forming an injector.

My improvements can be used in other makes of engines other than locomotives.

I claim as my invention—

A locomotive having an extension, an annular water space an opening in the front of the extension and a damper closing said opening.

ROBERT H. McFERSON.

Witnesses:

THOMAS RILEY,
WILLIAM S. FISH.