L. STILES, JR.

TUBE CLEANER.

APPLICATION FILED DEC. 20, 1918.

1,325,543. Patented Dec. 23, 1919.

FIG. 1.

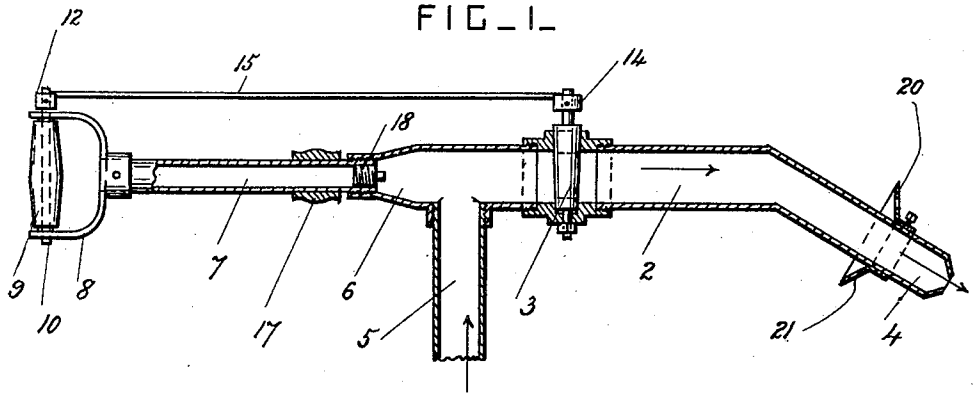
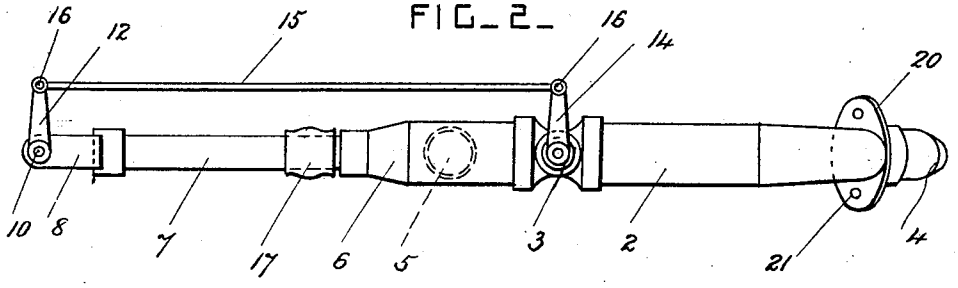


FIG. 2.



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UNITED STATES PATENT OFFICE.

LUSTER STILES, JR., OF EVANSVILLE, INDIANA.

TUBE-CLEANER.

1,325,543. Specification of Letters Patent. Patented Dec. 23, 1919.

Application filed December 20, 1918. Serial No. 267,642.

To all whom it may concern:

Be it known that I, LUSTER STILES, JR., a citizen of the United States, residing at Evansville, in the county of Vanderburg and State of Indiana, have invented certain new and useful Improvements in Tube-Cleaners, of which the following is a specification.

This invention relates to cleaning devices for removing soot from the fire-tubes of steam boilers by means of a blast of steam; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In the drawings, Figure 1 is a longitudinal section through a tube cleaner constructed according to this invention. Fig. 2 is a plan view of the blast pipe and handle bar.

The cleaner is provided with a tubular main portion or blast pipe 2 having at its middle part a regulating valve 3 of any approved construction for the steam. The blast pipe 2 has a blast nozzle 4 at its front end which is preferably arranged at an angle to it, and it has an inlet branch 5 for steam near its rear end. The rear part of the blast pipe has a conical end portion 6, and 7 is a tubular handle bar which is of smaller diameter than the pipe 2, and which is secured in the smaller end of the conical portion 6.

A forked bracket 8 is secured to the rear end portion of the handle bar, and a handle 9 is secured on a spindle 10 which is journaled to revolve or oscillate in the forked bracket 8 and is arranged crosswise of the axis of the handle bar and blast pipe. A crank 12 is secured on the handle spindle 10, and a similar crank 14 is secured on the spindle of the valve 3.

A connecting-rod 15 is pivoted to the cranks 12 and 14 by pins 16, so that the valve is operated by turning the handle 9. A front handle 17 is secured to the handle bar, and is preferably a sleeve which encircles it adjacent to its front end. Both handles are preferably made of non-heat-conducting material.

A plug 18 is secured in the front end of the handle bar so that the rear end of the blast pipe is steam-tight.

A conical baffle plate 20 is secured on the blast nozzle, and is preferably adjustable on it. This baffle plate has holes or perforations 21 to admit a limited flow of air through it. The conical baffle plate is pressed into engagement with the end of the fire-tube when the nozzle is thrust into the tube, and the small holes 21 prevent the formation of a vacuum around the nozzle inside the tube.

The blast is regulated by the right hand which grasps the supporting handle 9, and is shut off altogether when the cleaner is moved from one tube to another. This effects a considerable saving in steam, and the cleaner is operated with great facility as it is not necessary to let go of it with one hand in order to operate its steam valve.

What I claim is:

1. In a tube cleaner, a blast pipe, a regulating valve in the blast pipe provided with an operating lever, a forked bracket supported from the rear end portion of the blast pipe, a handle for operating the blast pipe mounted to oscillate in the forked bracket and provided with a lever which is oscillated by it, and a connecting-rod between the two levers whereby the valve is operated by the said handle.

2. In a tube cleaner, a blast pipe, a regulating valve in the blast pipe provided with an operating lever, a handle bar secured to the rear end portion of the blast pipe and having a front handle on it, a forked bracket secured to the rear end portion of the handle bar, a rear handle mounted to oscillate in the forked bracket and provided with a lever which is oscillated by it, and a connecting-rod between the two levers whereby the valve is operated by the rear handle.

3. In a tube cleaner, a blast pipe, a regulating valve in the blast pipe provided with a laterally projecting operating lever, a forked bracket supported from the rear end portion of the blast pipe, a handle for guiding and operating the blast pipe secured on a spindle which is mounted to oscillate in the forked bracket, a laterally projecting lever secured to the said spindle, and a connecting rod between the two said levers whereby the valve is operated by oscillating the handle.

In testimony whereof I have affixed my signature.

LUSTER STILES, JR.