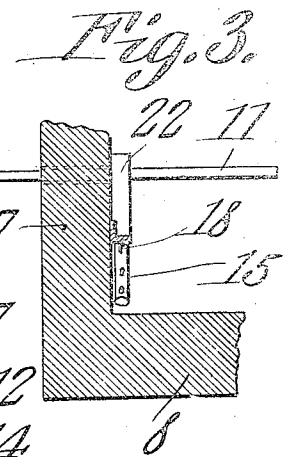
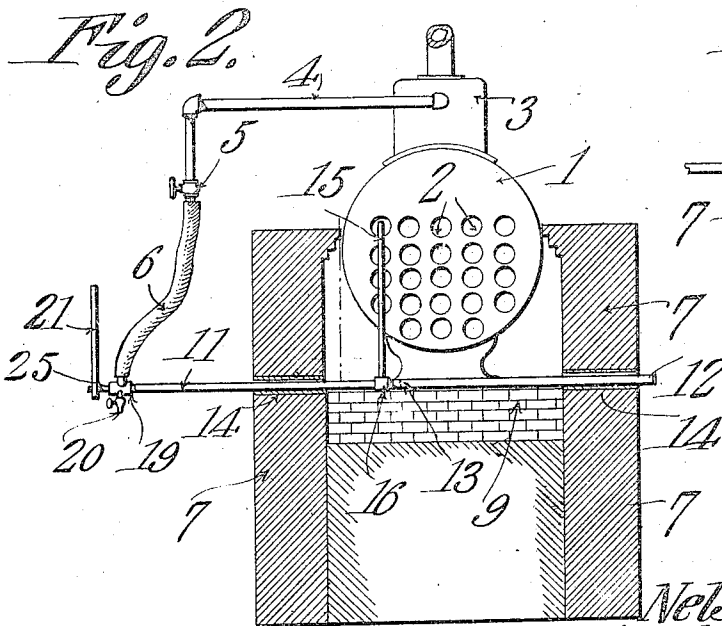
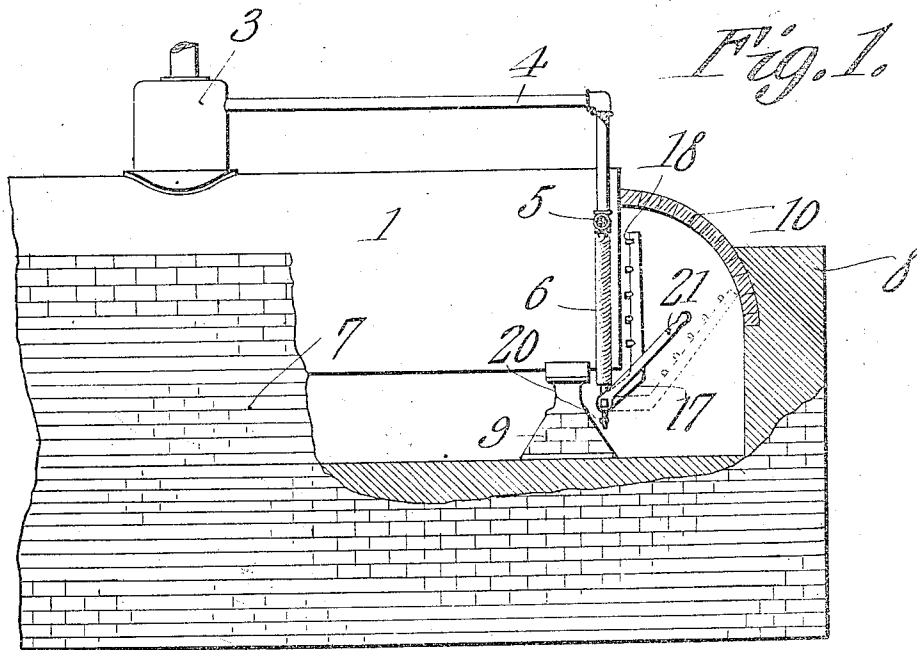


N. E. BARTLES & C. O. HAWKINS.
 DEVICE FOR CLEANING FLUES.
 APPLICATION FILED DEC. 18, 1909.

961,574.

Patented June 14, 1910.



Witnesses

E. J. Hunt
 Francis Boyle

Inventors
 Nelson E. Bartles
 Charles O. Hawkins
 By *C. A. Snowles*
 Attorneys

UNITED STATES PATENT OFFICE.

NELSON E. BARTLES AND CHARLES O. HAWKINS, OF IRENE, TEXAS.

DEVICE FOR CLEANING FLUES.

961,574.

Specification of Letters Patent. Patented June 14, 1910.

Application filed December 18, 1909. Serial No. 533,848.

To all whom it may concern:

Be it known that we, NELSON E. BARTLES and CHARLES O. HAWKINS, citizens of the United States, residing at Irene, in the county of Hill and State of Texas, have invented a new and useful Device for Cleaning Flues, of which the following is a specification.

This invention relates to flue cleaners and has for an object to provide a flue cleaner that may be mounted in the combustion chamber of a boiler setting and will blow steam forwardly through the flues so that the soot and corrosion adhering to the inner walls of the flues will be removed and carried off through the smoke stack.

A further object is to provide a flue cleaner that will operate, while the boiler is still in use and will not require the flue doors to be opened at any time during its operation hence the soot will not be blown out into the boiler room.

A still further object is to provide a flue cleaner that when not in use may be rocked out of alinement with the flues and moved in rear of a baffle carried within the boiler setting so as not to lie in the direct path of the heat entering the flues.

With the above and other objects in view which will appear as the description proceeds, our invention embraces certain novel details of construction and combination of parts which will be hereinafter more fully described and claimed.

In the accompanying drawing forming part of this specification,—Figure 1 is a side elevation of a boiler and its setting showing a portion of the latter broken away to expose the flue cleaner. Fig. 2 is a transverse sectional view of the boiler setting showing the boiler in end elevation and the flue cleaner in operative position. Fig. 3 is a fragmentary sectional plan view of a corner of the combustion chamber of the boiler showing the baffle and the flue cleaner rocked to its normal position underneath the baffle.

Referring now to the drawing in which like characters of reference designate similar parts in the views shown, 1 designates a boiler in which the flues 2 are arranged in parallel rows as in the ordinary type of fire tube boilers now in general use. The boiler is provided with an ordinary steam dome 3 from which a steam pipe 4 extends rearwardly and carries adjacent its extremity a valve 5 for regulating the admission of

steam to a flexible tube 6 which communicates with the flue cleaner, as will presently appear. The boiler 1 may be mounted upon any desired form of setting, the setting shown in the drawing comprising side walls 7, end walls 8, a bridge 9, and an arched top wall 10, which latter houses over the combustion chamber of the setting, all of the above mentioned parts being formed of brick or other material suitable for the purpose.

The flue cleaner comprising the subject matter of this invention consists of a steam supply pipe 11 having secured to one end a pipe 12 which latter is provided in its bore with a plug 13. The pipes 11 and 12 are journaled in a pair of tubular bearings 14 which are disposed in the side walls of the setting below the boiler and loosely engage the pipes so that the latter may be freely slid back and forth therethrough.

A steam distributing pipe 15 projects upwardly from the steam supply pipe 11 and is secured thereto by means of a T-coupling 16 which is also employed for attaching the extension pipe 12, or by other suitable means. The distributing pipe is formed with an elbow 17 adjacent its lower end to permit the free extremity of the pipe to extend approximately parallel with the rear end of the boiler while the supply pipe 11 extends across beneath the boiler, as shown. A plurality of nozzles 18 are arranged longitudinally of the pipe 15 and are so spaced as to project into a row of flues when the steam pipe is in operative position.

The steam pipe 11 is provided near its outer extremity with a T-coupling or similar connector 19 which communicates with the before mentioned flexible tube 6 and may be provided with a drip cock 20 through which the condensed steam may be drawn off after each operation of the device. An operating lever 21 is secured to a plug 25 which closes the extremity of the coupling by means of which the pipe may be slid forwardly through the tubular bearings 14 so that the distributing pipe 15 may be brought successively into alinement with each row of flues, and may be retracted through the tubular bearings and rotated until the distributing pipe is in abutting contact with the adjacent inner wall of the combustion chamber, as shown in Fig. 3.

An angular housing or baffle 22 is secured to the inner wall of the combustion chamber

and is adapted to conform to the outline of the pipe 15, which latter while in released position stands beneath the baffle and is protected when in this position from the heat currents entering the flues.

In operation the valve 5 is opened, thereby permitting steam to enter the steam pipe 11 and escape from the distributing pipe 15 through the nozzles 18. The operating lever 21 is then grasped and shoved forward slightly until the distributing pipe 15 clears the baffle 22 when the lever is given a quarter turn so that the distributing pipe is rocked to the position shown in Fig. 1 in which position the steam escaping from the nozzles 18 is carried partly by its own pressure and partly by the fire draft through the flues and loosens the soot and corrosion adhering thereto and emerges into the smoke box of the boiler from whence the soot laden steam and heat are drawn upward and discharged from the smoke stack.

By blowing out one row of flues at a time the steam is blown through the tubes under much higher pressure than would be the case were a plurality of distributing pipes employed to blow a number of rows at the same time. It will further be noted that, by equipping the steam pipe with an extension pipe 12 through which no steam is allowed to enter and which simply performs the function of a guide to promote the sliding movements of the steam pipe, no portion of the steam pipe proper will be in the path of the fire entering the boiler flues when the flue cleaner is in its normal position, in which position the distributing pipe 15 arranged upon the inner extremity of the steam pipe is held in abutting contact with the side wall of the combustion chamber, as clearly shown in Fig. 3. Further, the housing or baffle 22 operates to shield the distributing pipe from direct contact with the heat currents so that when the device is in normal position no portion of the distributing pipe will be in the direct path of the heat, the only portion of the device that is in the direct path being the extension pipe 12, which latter should it become

fractured by the action of the heat will in no way impede the function of the device as no steam is at any time permitted to enter it.

From the foregoing description, taken in connection with the accompanying drawings, it is thought that the construction and operation of our device will be easily understood without a more extended explanation, it being understood that various changes may be made in the form, proportion and minor details of construction without sacrificing any of the advantages or departing from the spirit of the invention.

What is claimed is:

1. In a flue cleaner, the combination with tubular bearings in the boiler setting, a steam pipe and an extension thereof journaled and slidable in said bearings, a distributing pipe at right angles to and communicating with said steam pipe and having a series of nozzles, a plug in the extension pipe beyond the other two pipes, and a lever on the outer end of the steam pipe; of flexible connections between the latter and a source of steam supply, and a baffle within one side wall of the setting behind and beneath which the distributing pipe may be disposed when not in use.

2. In a flue cleaner, the combination with a tubular bearing in the boiler setting, a steam pipe journaled and slidable in said bearing, a distributing pipe at right angles to and communicating with said steam pipe and having a series of nozzles, and a T coupling at the outer end of the steam pipe; of a plug closing the outer arm of the coupling, a lever secured to the plug, a flexible pipe leading from the stem of the coupling to a source of steam supply, and a drip cock in the coupling opposite said flexible pipe.

In testimony that we claim the foregoing as our own, we have hereto affixed our signatures in the presence of two witnesses.

NELSON E. BARTLES.
CHARLES O. HAWKINS.

Witnesses:

J. J. MILLER,
GEO. HAMMOCK.