Jan. 19, 1932. P. LEONE 1,842,276

FLUE CLEANER

Filed May 7, 1930

Fig. 1.

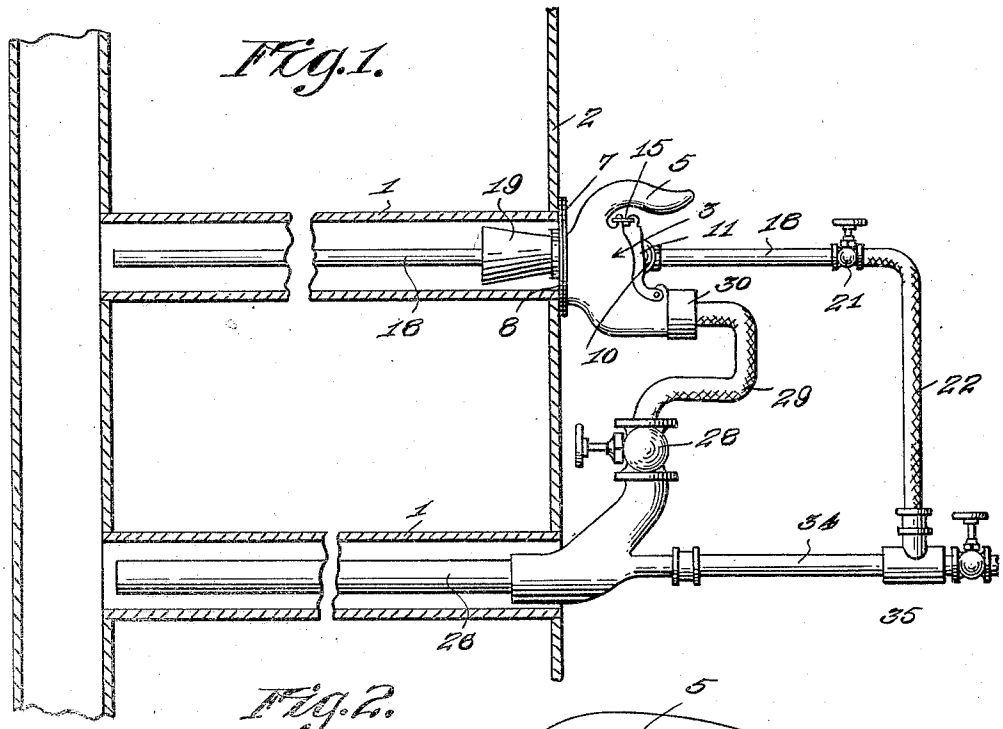


Fig. 2.

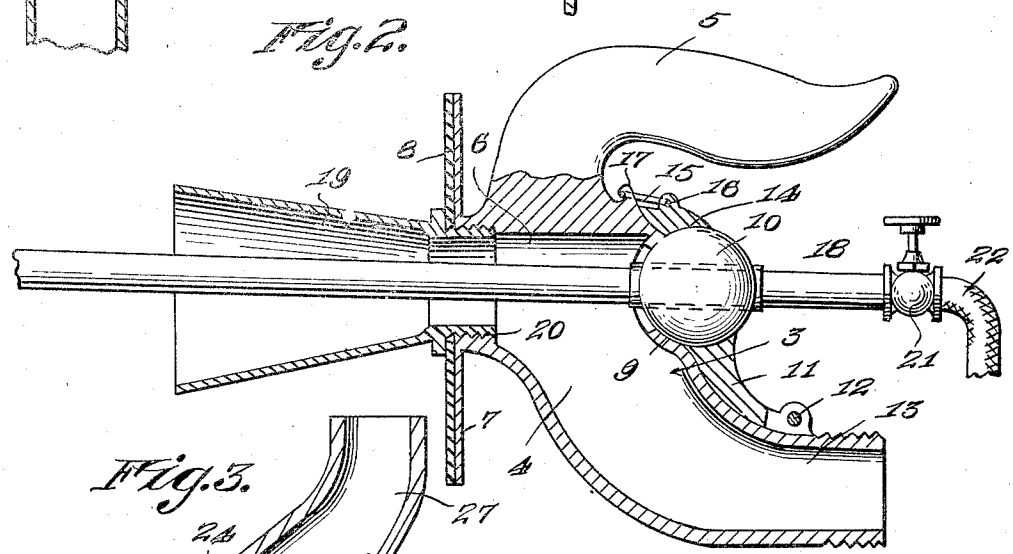
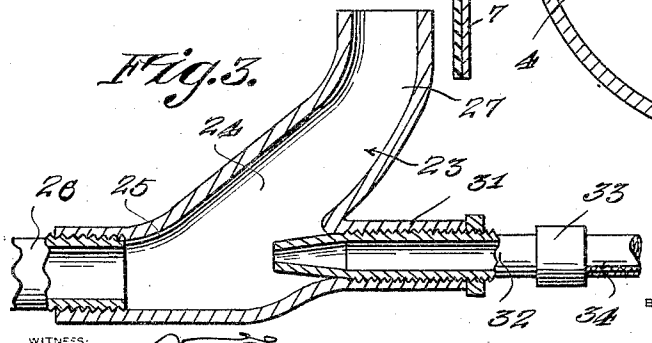


Fig. 3.



WITNESS:

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Patented Jan. 19, 1932 1,842,276

UNITED STATES PATENT OFFICE

PATSY LEONE, OF YOUNGSTOWN, OHIO

FLUE CLEANER

Application filed May 7, 1930. Serial No. 450,526.

This invention relates to an apparatus for cleaning boiler tubes and, in view of the fact that this work, when manually performed is dirty and troublesome, the present invention has as its primary object to provide an apparatus whereby the tubes of a boiler may be thoroughly cleansed and any accumulations and the accumulations disposed of in a manner to effect their complete removal from the tubes.

Another object of the invention is to provide an apparatus which may be readily and quickly applied and removed from a boiler in position to flush the tubes thereof and without any likelihood of leakage and without the necessity of employing mechanical means for preventing leakage.

This invention also consists in certain other features of construction and in the combination and arrangement of the several parts to be hereinafter fully described, illustrated in the accompanying drawings, and specifically pointed out in the appended claim, it being understood of course that minor changes may be made so long as they fall within the scope of the claim.

In describing my invention in detail, reference will be had to the accompanying drawings, wherein like characters denote like or corresponding parts throughout the several views, and in which:—

Figure 1 is a view partly in side elevation and partly in section, illustrating the apparatus embodying the invention temporarily installed upon a tube boiler.

Figure 2 is a detail vertical sectional view through one unit of the device.

Figure 3 is a similar view through the other unit.

In the drawings and more particularly in Figure 1, the numeral 1 indicates two of the tubes of a tube boiler and the numeral 2, one of the boiler heads in which the ends of the tubes are mounted, and the numeral 3 indicates one unit of the apparatus, which unit is designed for the injection of compressed air into a boiler tube which is clogged, and this unit 3 comprises a hollow body 4 provided at its upper side with a handle 5 below which the body is provided with a horizontal outlet port 6 and a flange 7 surrounds this port and a washer 8 of rubber or other suitable packing material is applied to the face of this washer. Opposite the port 6, the body is provided with a seat 9 of nearly semi-spherical contour to accommodate one side of a ball 10, and a cap member 11 is hinged as at 12 upon a downwardly and rearwardly curving spout 13, which leads from the lower side of the body 4 and this cap 11 is formed with an opening 14, the wall of which is adapted to embrace the ball 10 when the cap member is in the closing position shown in Figure 2 of the drawings, a locking link 15 being pivotally mounted as at 16 upon the free or upper side of the cap member 11 and engageable with a hooked shaped lug 17 upon the upper side of the body 4. A compressed air conducting pipe 18 is led through the spherical or ball head 10 and this pipe extends through the port 6 and axially through a funnel 19 which has a threaded neck 20 fitted in the end of the said bore 6.

The pipe 18 at its other end is connected by a coupling 20, in which is mounted a manually adjustable cut-off valve 21 with a pipe 22 which will presently be again referred to.

Another unit for delivering air under pressure into another one of the tubes of the boiler is indicated in general by the numeral 23 and this unit comprises a hollow body 24 having a branch 25 into which is threaded one end of a pipe 26 which pipe extends into the boiler tube to be supplied with compressed air. The body 24 further comprises an upwardly extending branch 27 and this branch is fitted into the lower end of a cut-off valve casing 28 and a pipe 29 is connected to the upper branch of the valve casing and likewise by a coupling 30 to the branch 13 of the body 4 of the unit 3. The body 24 of the unit 23 is further provided with a horizontally extending nipple 31 which is interiorly threaded and a nozzle 32 is fitted into this nipple and has its tapered delivery end projecting into the body 24 and presented toward the intake end of the tube 26. The coupling 33 connects the nozzle with the pipe 34 leading to a T-union 35 to the upper branch

of which the pipe 22, previously described, is connected.

This apparatus is a sanitary flue cleaner which is operated by compressed air to create force and suction drafts through the flues. The blast of air passing through the pipe 26 is passed under the dirt and cinders in the flue and carries the same towards the smoke box of the locomotive (not shown). The blast of air which enters the body 24 through the nozzles 32 creates a return suction draft through the pipe 29 and air conducting pipe 18 and the flange 7 closes one end of the flue whereby the dirt and cinders cannot reach the operator. The device is provided with a handle so that it may be readily removed from the flues of one locomotive and applied to the flues of another.

What I claim is:—

A boiler flue cleaning apparatus comprising a hollow body having a passageway therethrough, a funnel extending from one end of said passageway, a member mounted for universal movement opposite the inner end of the funnel, a compressed air supply pipe supported by said member and extending axially within the funnel and beyond the outer end thereof and slidable relatively to said universally mounted member, a packing element constructed to surround the inner end of a flue to be cleaned, a branch outlet leading from the bottom of the body, a second hollow body having forwardly, rearwardly and upwardly extending branches, a delivery pipe leading from the forwardly extending branch of said body to extend into a flue below the first mentioned flue, a pipe extending between and connecting the said branch outlet of the first mentioned body and the upwardly extending branch of the second mentioned body, a manually operable cut-off valve in said pipe, a nozzle in the rearwardly extending branch of the last mentioned body and so positioned relative to the forwardly extending branch as to create a reduction of pressure within the body, and a pipe connecting the said nozzle with the compressed air supply pipe.

In testimony whereof I affix my signature.

PATSY LEONE.