

Nov. 13, 1923.

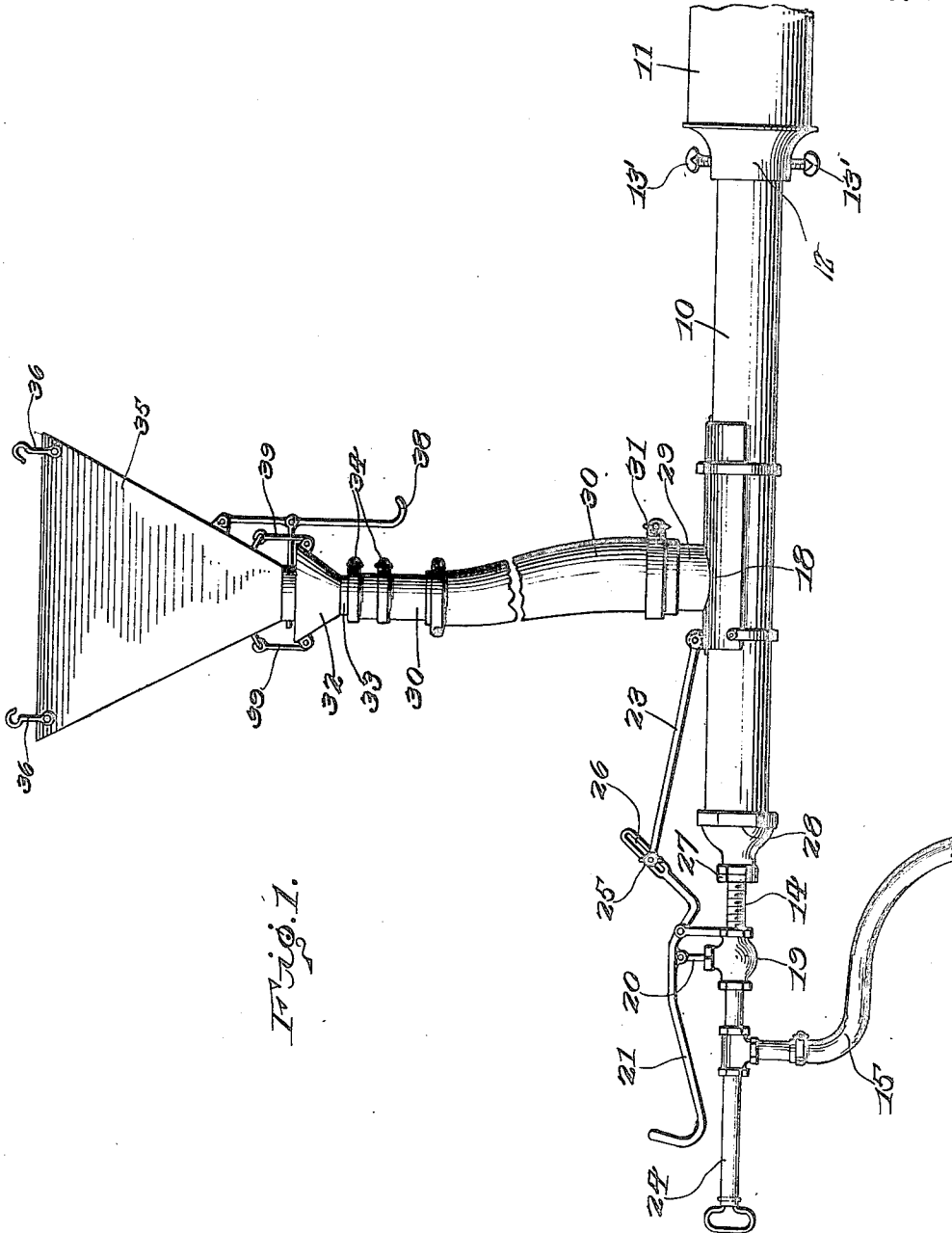
D. J. DORSEY

1,473,757

SOOT BLOWER

Filed April 18, 1922

2 Sheets-Sheet 1



Inventor

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By *Grace C. Hendler*

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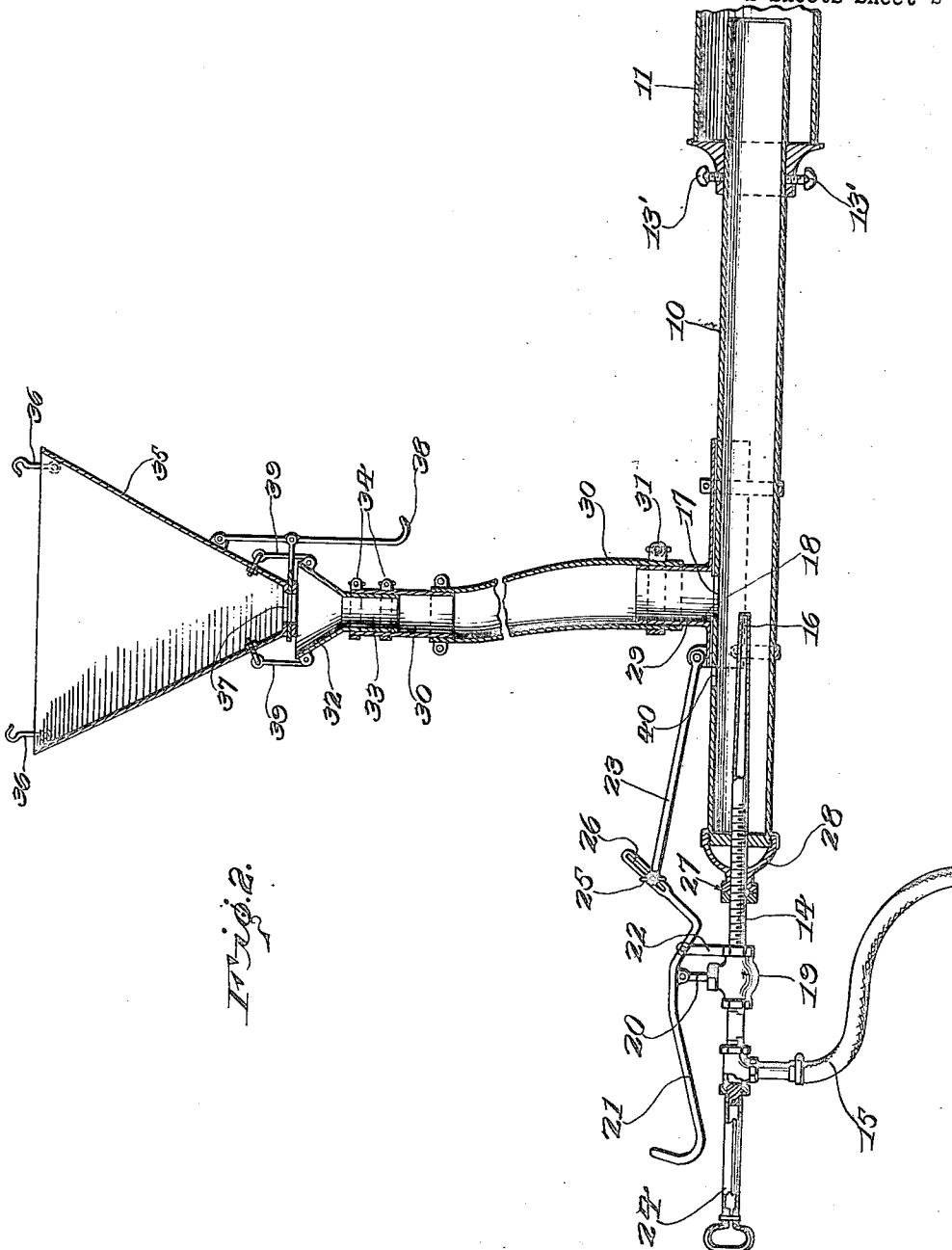


Fig. 2.

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Patented Nov. 13, 1923.

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UNITED STATES PATENT OFFICE.

DAVID J. DORSEY, OF BATON ROUGE, LOUISIANA.

SOOT BLOWER.

Application filed April 18, 1922. Serial No. 554,934.

To all whom it may concern:

Be it known that I, DAVID J. DORSEY, a citizen of the United States, residing at Baton Rouge, in the parish of East Baton Rouge, State of Louisiana, have invented certain new and useful Improvements in Soot Blowers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of the invention is to provide a relatively simple and efficient means for cleaning or removing soot and other accumulations from boiler pipes and flues under conditions adapted to detach the hardened or baked deposit which is not subject to the effect of a simple draft of air or steam however forcibly it may be injected into the tube or flue, with, obviously, the ultimate purpose of restoring at suitable intervals the flues to a condition in which the maximum efficiency of the fuel may be secured; and with these objects in view the invention consists in a construction combination and arrangement of parts of which a preferred embodiment of the invention is illustrated in the accompanying drawings, wherein:

Figure 1 is a side elevation and Figure 2 is a sectional view of the apparatus embodying the invention.

The apparatus embodies a blow pipe 10 adapted for insertion in a boiler tube or flue 11 and is provided with a collar 12 to engage the end of the tube or flue to prevent back pressure or escape of the soot, said collar being adjustable relative to the blow pipe by means of set screws 13', and an ejector tube 14 for steam or compressed air supplied from a suitable source by a pipe 15 and having its reduced nozzle 16 arranged adjacent to a lateral feed port 17 in the blow pipe, controlled by a valve 18. A pressure valve 19 is also disposed in the ejector tube and the stem 20 thereof is connected with an operating lever 21 fulcrumed upon a bracket 22, and having an adjustable connection by means of a rod 23 with the valve 18 which controls the inlet port to the end that the operator in grasping the handle or grip 24, which is preferably of wood or heat non-conducting or poorly conducting material, may simultaneously manipulate the pressure and feed valves 19 and 18, in the operation of the mechanism. The adjustable connection between the connecting rod 23 and the

operating lever 21 consists in the construction illustrated of a wing nut 25 engaging a slot 26 in said lever and having the end of the connecting rod attached to the bolt upon which said nut is threaded. The shank of the grip or handle also preferably serves as a plug for closing the lower or outer end of the ejector tube 14 which extends through a stuffing box 27 in a reducer 28 at the lower or outer end of the blow pipe 10, and obviously suitable couplings and joints are employed in the ejector tube to facilitate the connection therewith of the valve 19 and the supply pipe for steam or other agency under pressure.

The inlet port 17 is adapted and designed for the introduction of sand or like abrasive or granular material adapted to be ejected by the jet of steam or other agent under pressure to scour the inner surface of the boiler tube or flue and thereby remove the relatively hardened accumulation of soot, carbon or other material therefrom, and in the construction illustrated the blow pipe is provided around said latter opening 17 with a sleeve 29 upon which is fitted the end of a conveyor 30, held in place by a suitable clamp 31 and in turn fitted with a funnel 32, the spout 33 of which is secured by suitable clamps 34 to the conveyor tube 30 which may be of flexible material. For feeding the funnel there is employed a sand container 35 having suitable supporting hooks 36 and provided at its outlet with a valve 37, controlled by a hand lever 38. The funnel 32 may be suspended from the outlet of the container by means of hooks 39 or the equivalent thereof.

It will be noted that in operation the end of the blow pipe may be inserted successively into the ends of the boiler tubes or flues and pressed forward sufficiently to close such tube or flue by means of the collar 12, whereupon the lever 21 may be manipulated to open the ejector tube and through the exhaust therefrom induce a suction by which sand in the collar 29 is drawn through the port 17 and injected with the blast of steam or air into the boiler tube or flue, the rapidity of the feed of the sand being under the control of the valve 18, which is actuated by the lever 21, which controls the discharge from the ejector tube.

It is preferable however, outside or in the rear of the collar 29 to provide a lateral air inlet port 40, which serves as a means to re-

lieve to some extent the suction as applied to the sand feed port, without however breaking the suction, obviously due to the fact that the outlet of the ejector nozzle is arranged in advance of said port.

What is claimed is:

1. An apparatus for cleaning boiler tubes or flues including a blow pipe provided with a lateral sand feed port, adjustable means on the blow pipe for closing or capping the adjacent end of a tube or flue to be cleaned, means for projecting a blast through the blow pipe, and means whereby sand is supplied to the sand feed port by gravity, said means including a collar extending laterally from the blow pipe in surrounding relation with the sand port, and a sand conveyor flexibly connected with the said collar.

2. An apparatus for cleaning boiler tubes or flues, including a blow pipe provided with a lateral sand feed port, adjustable means on the blow pipe for closing or capping the adjacent end of a tube or flue to be cleaned, means for projecting a blast through the blow pipe, means whereby sand is supplied to the feed port by gravity, and consisting of a collar extending laterally from the blow pipe in surrounding relation with the sand port, a conveyor flexibly connected with said collar, and valve controlled means for supplying sand to the conveyor.

3. An apparatus for cleaning boiler tubes or flues including a blow pipe provided with

a lateral sand feed port, adjustable means on the blow pipe for closing or capping the adjacent end of a tube or flue to be cleaned, means for projecting a blast through the blow pipe, and means for supplying sand to the feed port, and consisting of a sleeve slidable on the blow pipe and having an opening registering with the feed port, said sleeve being provided with a laterally extending collar, a conveyor flexibly connected with said collar, and a funnel secured to said conveyor, and being provided with a valve whereby the supply of sand fed to the feed port is regulated.

4. An apparatus for cleaning boiler tubes or flues including a blow pipe provided with a sand feed port, adjustable means on the blow pipe for closing or capping the adjacent end of a tube or flue to be cleaned, means for projecting a blast through the blow pipe, and means whereby sand is supplied to the sand feed port by gravity, said means including a collar carried by the blow pipe and positioned in surrounding relation with the sand port, and a sand conveyor connected with the said collar.

In testimony whereof, I affix my signature, in the presence of two witnesses.

DAVID J. DORSEY.

Witnesses:

MARION K. SAFF,
FRED G. BENTON,