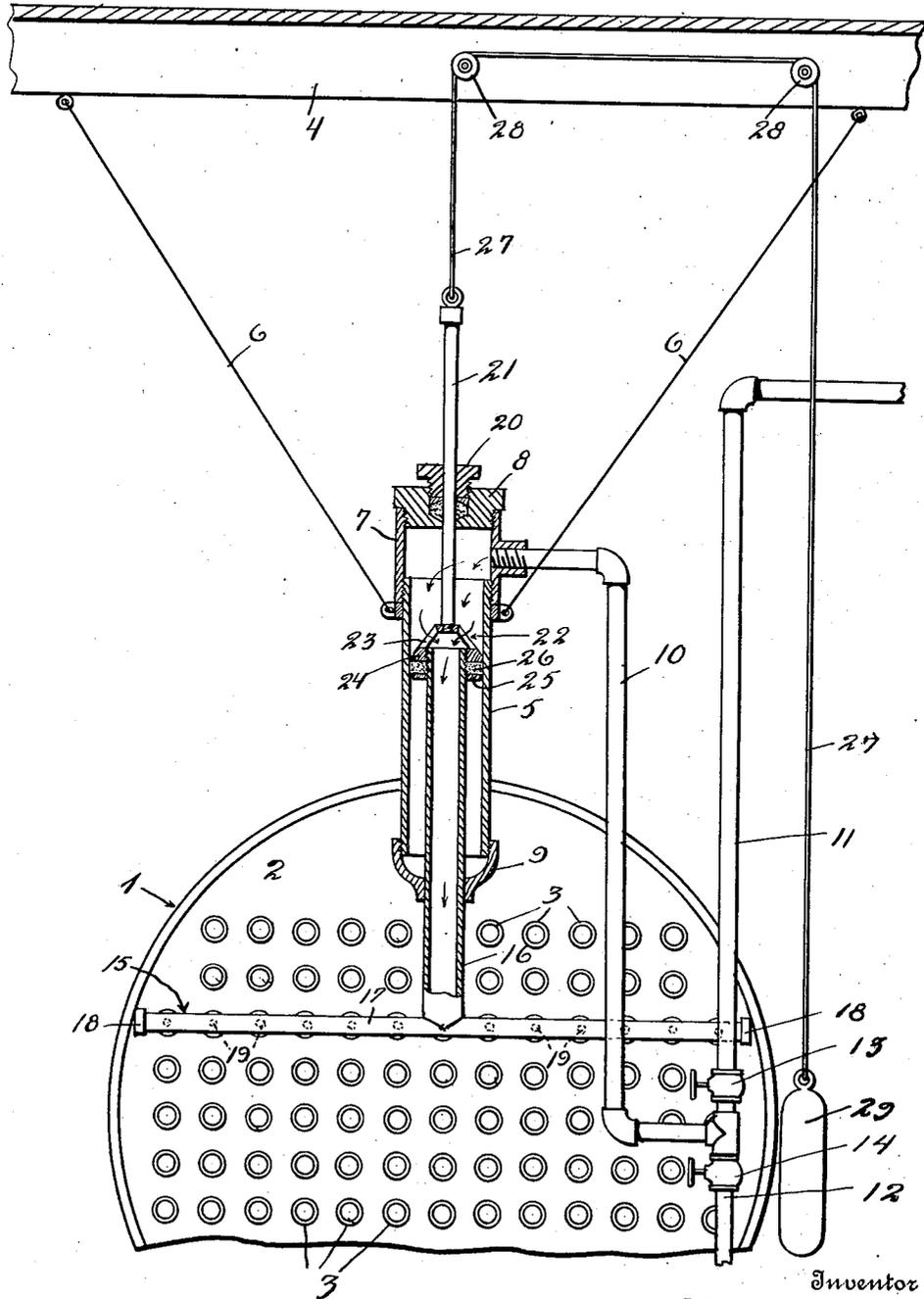


C. M. HALL.
 BOILER TUBE CLEANER.
 APPLICATION FILED NOV. 4, 1912.

1,069,128.

Patented Aug. 5, 1913.



Inventor

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Witnesses
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 [Signature]

By

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UNITED STATES PATENT OFFICE.

CHARLES M. HALL, OF MARION, INDIANA.

BOILER-TUBE CLEANER.

1,069,128.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, CHARLES M. HALL, a citizen of the United States, residing at Marion, in the county of Grant and State of Indiana, have invented certain new and useful Improvements in Boiler-Tube Cleaners, of which the following is a specification.

My invention relates to a boiler tube cleaner and has particular reference to a device of this character wherein novel means are provided to blow compressed air or steam through the tubes for the purpose of removing soot or other deposits therefrom.

An important object of this invention is to provide a device of the above mentioned character, which is simple in construction, easy to operate, and will quickly cleanse the boiler tubes.

A further object of the invention is to provide a device of the above mentioned character, which is formed of few and simple parts that are readily detachable for the purpose of repair or the like.

Other objects and advantages of the invention will be apparent during the course of the following description.

In the accompanying drawing forming a part of this specification, the figure is a front view of the device, parts thereof being shown in section.

In the drawings wherein for the purpose of illustration, I have shown a preferred embodiment of my invention, the numeral 1 designates the shell of a horizontal boiler, provided with tube sheets or heads 2, for receiving boiler tubes 3, as is customary. These boiler tubes are shown as disposed in horizontal rows.

The numeral 4 designates a horizontal support or beam disposed near and above the rear end of the boiler. The device comprises a relatively stationary vertical main shell or body portion 5 attached to cables 6 or the like, which in turn are connected with the support 4. Any other suitable means may be employed in addition to these cables to hold the shell 5 against movement.

Having screw-threaded engagement with the upper end of the shell 5 is a sleeve 7, having its upper end closed by a plug 8, which in turn has screw-threaded engagement therewith. The lower end of the main shell 5 is partly closed by a cap 9 having screw-threaded engagement therewith.

Leading into the sleeve 7 is a pressure

supply pipe 10, having suitable connection with steam or compressed air supply pipe 11. A valve 13 is employed to control the passage of steam or compressed air into the pipe 10, as shown. Connected with the pipes 10 and 11 is a drain or drip pipe 12, provided with a valve 14, as shown.

The numeral 15 designates a T-shaped pipe including vertical and horizontal arms 16 and 17. The vertical arm 16 passes through the apertured cap 9 and is mounted to reciprocate within the main shell 5, as shown. The horizontal arm 17 has its ends closed by caps 18 and such horizontal arm is provided upon its side adjacent the boiler tubes 3 with suitably spaced openings or apertures 19.

The head 8 is provided with a stuffing box 20, through which operates a reciprocatory rod 21 having its lower end connected with the vertical arm 16 by means of a coupling 22. This coupling comprises a spider portion 23 formed upon a ring 24, which has screw-threaded engagement with the upper end of the vertical arm 16, as shown. The numeral 25 designates a clamping ring also having screw-threaded engagement with the upper end of the arm 16 and cooperating with the ring 24 to retain a packing ring 26 in place. Connected with the rod 21 is a cable 27, passed about pulleys 28, which are mounted upon the support 4. A counter-weight 29 is attached to the lower free end of the cable.

The operation of the device is as follows:—By opening valve 13, compressed air or steam will be fed through the pipe 10 into the sleeve 7 and hence through the spider portion 23 into the vertical arm 16 of the T-shaped pipe 15. The horizontal arm 17 being disposed adjacent a horizontal row of the boiler tubes 3, the steam or compressed air will be blown through said tubes to properly cleanse them. The T-shaped pipe 15 may be vertically moved to bring the horizontal arm 17 thereof adjacent another horizontal row of boiler tubes. It is obvious that the counter weight 29 will retain the T-shaped pipe 15 in its new position when moved thereto. It is also obvious that the main shell 5 is relatively stationary while the vertical arm 16 and associated elements telescope or reciprocate therein. The rings 24 and 25, together with the packing ring 26, prevent the compressed air or steam from escaping

into the lower end of the main shell 5. It is obvious that the sleeve 7, head 8, rod 21, T-shaped pipe 15, and associated elements, may be easily and quickly detached and assembled for the purpose of repair or the like. By opening valve 14 water of condensation contained in either pipe 10 or 11 would discharge through pipe 12.

It is to be understood that the form of my invention herewith shown and described is to be taken as a preferred example of the same, and that certain changes in the shape, size, and arrangement of parts may be resorted to without departing from the spirit of the invention or the scope of the subjoined claim.

Having thus described my invention, I claim:—

A device to blow out the tubes of a boiler which has such tubes arranged in horizontal rows, comprising the combination with a support disposed above the boiler, of a vertical relatively stationary main shell sus-

pended from the support, a T-shaped pipe including a horizontal perforated arm and a vertical arm passing into the main shell, a rod passing into the upper end of the main shell, a spider-coupling connecting the rod with the vertical arm of the T-shaped pipe, pulley or pulleys mounted upon said support, a cable passed about the pulleys and connected with said rod, a counter weight connected with the cable, a pressure supply pipe connected with the main shell, steam or air pressure supply pipe connected with the pressure supply pipe, a valve connected in the steam or compressed air supply pipe and a valved drain pipe connected with the steam or air pressure supply pipe.

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

CHARLES M. HALL.

Witnesses:

GEORGE W. BROWN,
LEW E. THORN.