H. STRATTON.

FLUE CLEANER FOR BOILERS.

APPLICATION FILED JULY 30, 1910.

1,000,453. Patented Aug. 15, 1911.

Fig. 1

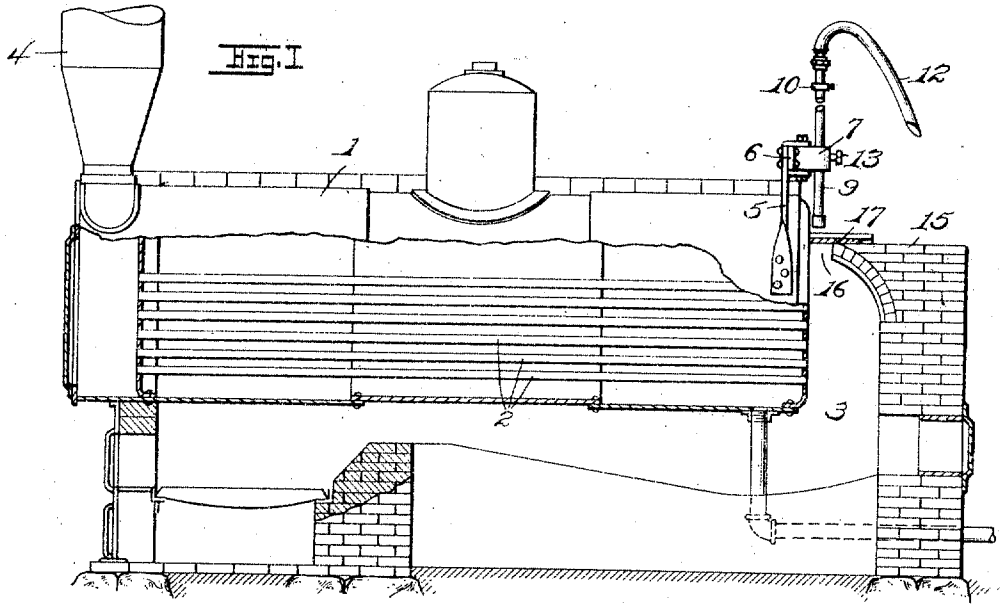


Fig. 2

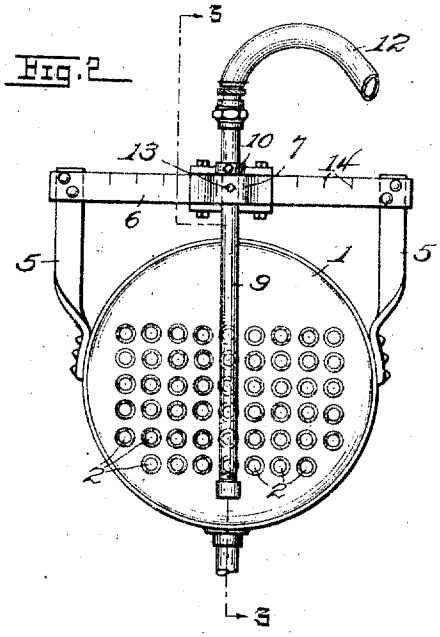
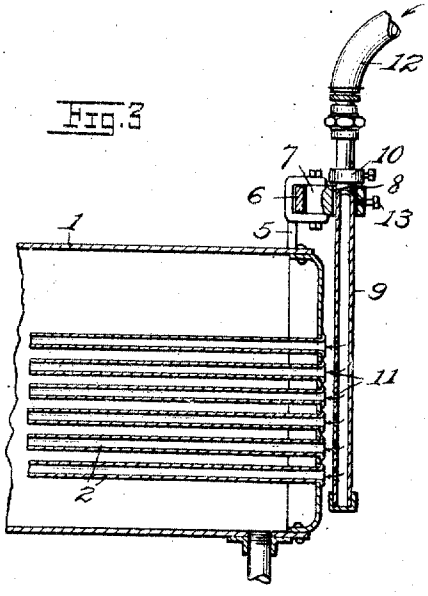


Fig. 3



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FLUE-CLEANER FOR BOILERS.

1,000,453. Specification of Letters Patent. Patented Aug. 15, 1911.

Application filed July 20, 1910. Serial No. 572,823.

To all whom it may concern:

Be it known that I, HARPER STRATTON, a citizen of the United States of America, and resident of Empire, county of Jefferson, and State of Ohio, have invented certain new and useful Improvements in Flue-Cleaners for Boilers, of which the following is a specification.

This invention relates to improvements in flue-cleaners for steam-boilers, and it has for its primary object to provide a simple and efficient device whereby soot and other accumulations may be readily removed from the tubular flues of horizontal boilers.

A further object of the invention is to provide a device of the character mentioned which, when not in use, occupies a position outside the furnace and, consequently, without the range of the fire and heat.

Still further objects are to provide a flue-cleaner mounted directly upon the boiler and which is consequently not affected by sinking or buckling of the furnace walls; and to provide means whereby accumulations of water may be discharged away from the boiler flues prior to directing cleaning blasts into said flues.

With these and other important objects in view, the invention accordingly consists in the features of construction, arrangement of parts, and combinations of elements exemplified in the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a general sectional elevation of a steam-boiler, illustrating the invention applied thereto, the latter being shown in its non-operative position; Fig. 2 is an enlarged elevation of the invention, showing it mounted in operative position, the boiler being shown in rear-end elevation; and Fig. 3 is a section on the line 3—3, Fig. 2.

Referring to said drawings, in which like designating characters distinguish like parts throughout the several views—1 indicates a boiler of an ordinary horizontal type having a plurality of tubular flues 2 for conducting the products of combustion from the combustion chamber 3, at the rear end of the boiler, to the stack 4.

Fixed upon opposite sides of the boiler 1 adjacent to the rear end thereof are upright supports 5 which have mounted thereon the opposite ends of a transversely-extending bar 6. Slidably mounted upon said bar 6 is a tube-holder 7 of any appropriate form having a vertical opening 8 therein in which a vertical blast-tube 9 is supported, said tube having an adjustable collar 10 which rests upon the top of said holder 7 when the tube is lowered to operative position. In one side of said blast-tube 9 is a plurality of vertically alined discharge openings 11 through which live steam, admitted to said tube through a flexible hose 12 connected thereto, is ejected in the form of jets into the tubular flues 2 for cleaning the latter. Said openings 11 are spaced apart to correspond with the spacing of the tubes in the vertical rows of tubular flues 2.

A set-screw 13 is provided for impinging upon the blast-tube 9 to hold the latter in adjusted position. Spacings or markings 14 are preferably provided on the bar 6 for indicating the positions to which the holder 7 must be moved to bring the blast-tube 9 into registering parallelism with the various vertical rows of flues.

Prior to discharging blasts of steam into the flues, the blast-tube 9 may be turned about to remove the discharge-openings from a registering position with relation to said flues, thus allowing any water which may have collected in said tube or the hose 12 to be discharged away from said tubes, after which said tube is turned back to return said openings to positions registering with the flues. This is a very important feature of the invention, since water has a decidedly great deteriorating effect upon the metal tubes of which the flues are formed.

When not in use, the blast-tube occupies a position above the top of the boiler setting, or furnace wall, 15, as is clearly shown in Fig. 1, in which position it is wholly withdrawn from the furnace and is not subject to the deteriorating effect of the intense heat within the combustion chamber. An opening 16 is provided in the furnace wall, which extends across the top of the furnace adjacent to the rear end of the boiler. Said opening is normally closed by a removable metallic slab 17. When it is desired to apply the flue-cleaner, said slab is removed and the blast-tube is lowered through the opening 16, the collar 10 having been previously adjusted to allow the tube to be lowered the requisite distance.

The mounting of the device wholly upon the boiler rather than upon the furnace wall 15 is particularly advantageous, since it is

thus maintained at all times in fixed relation to the boiler; whereas with those cleaners which are mounted upon the furnace wall, any sinking or buckling of the wall alters the position of such cleaners with respect to the boiler, resulting either in partly or wholly destroying their efficiency for cleaning the flues.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A boiler having tubular flues, a furnace combustion chamber, a bar mounted horizontally over the boiler outside said chamber, a tube-holder slidably mounted on and in bonded relation to said bar, and a vertically-movable tube adjustably mounted in said holder, said tube being adapted for lowering into said chamber and having discharge-openings adapted to register with any of the vertical rows of said flues.

2. A boiler having tubular flues, a furnace combustion chamber, a bar fixed horizontally over the rear end of said boiler above and outside of said chamber, a holder adjustably mounted on and in bonded association with said bar, and means carried by said holder and vertically adjustable therein whereby steam-blasts may be directed into said flues, said means being adapted to be lowered into and elevated from said chamber.

3. The combination with a boiler having tubular flues, and a furnace combustion chamber, of a bar fixed horizontally over the rear end of said boiler outside the combustion chamber, a holder adjustably mounted on and in bonded association with said bar, and a blast-tube carried by said boiler and adapted to be lowered into said chamber whereby steam-blasts may be directed into said flues.

4. The combination with a furnace and a boiler having tubular flues, of a bar mounted outside said furnace and over said boiler in fixed relation to the latter, a vertically-movable blast-tube yoked to and laterally adjustable on said bar, said tube having a plurality of vertically-alined discharge-openings therein and being adapted for lowering into the furnace behind the rear end of said bolier to cause said openings to lie in registering parallelism with a vertical row of said flues, said tube being also adapted for having a partial rotary movement imparted thereto for directing said openings away from the boiler.

5. The combination with a furnace and a boiler having tubular flues, of a bar mounted over and in fixed relation to said boiler, a tube-holder yoked upon and adjustably mounted on said bar, and a vertical blast-tube adjustably mounted in said holder and normally held wholly withdrawn from said furnace.

6. The combination with a boiler having flues therein, and a furnace-wall adjoining the rear end of said boiler, of a bar mounted transversely over and in fixed relation to said boiler, a tube-holder adjustably mounted on and in permanent bonded relation to said bar, and a blast-tube carried by said holder, said tube being adapted for lowering through the furnace-wall into proximity to the rear end of said boiler, said furnace-wall having a normally closed transverse opening therein through which said tube is lowered.

7. The combination with a boiler having flues therein, and a furnace-wall adjoining the rear end of said boiler, of a bar fixedly mounted in transverse position upon the top of the boiler adjacent to the rear end thereof, a tube-holder adjustably mounted on said bar, said tube-holder and bar being permanently associated, and a blast-tube carried by said holder, said tube being normally supported by said holder in a position wholly removed from the furnace and being adapted for lowering through the furnace-wall into operative proximity to the rear end of said boiler, said furnace-wall having a normally closed transverse opening therein through which said tube is directed when in lowered position.

8. The combination with a boiler having flues therein, and a furnace-wall adjoining the rear end of said boiler, of a support mounted horizontally over the top of the boiler, a member adjustably mounted on said bar, and a vertically-movable blast-tube adjustably mounted in said member, said tube being permanently held in vertical position and adapted to be lowered into and elevated from said chamber.

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

HARPER STRATTON.

Witnesses:
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