

No. 838,898.

PATENTED DEC. 18, 1906.

C. H. PRESCOTT.
BOILER CLEANER.
APPLICATION FILED AUG. 15, 1906.

Fig. 1

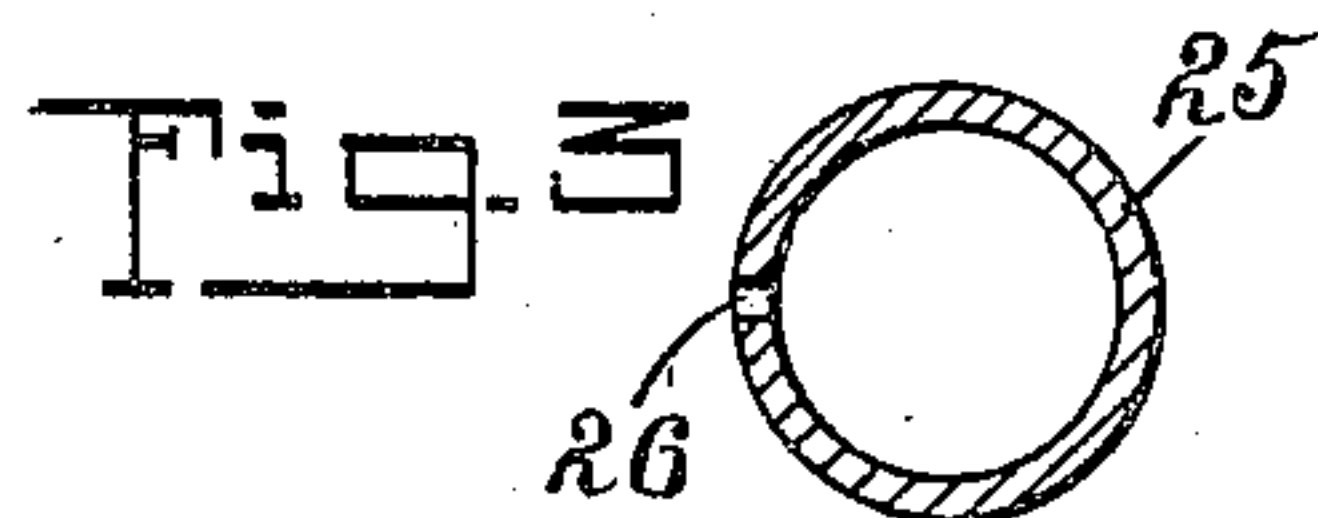
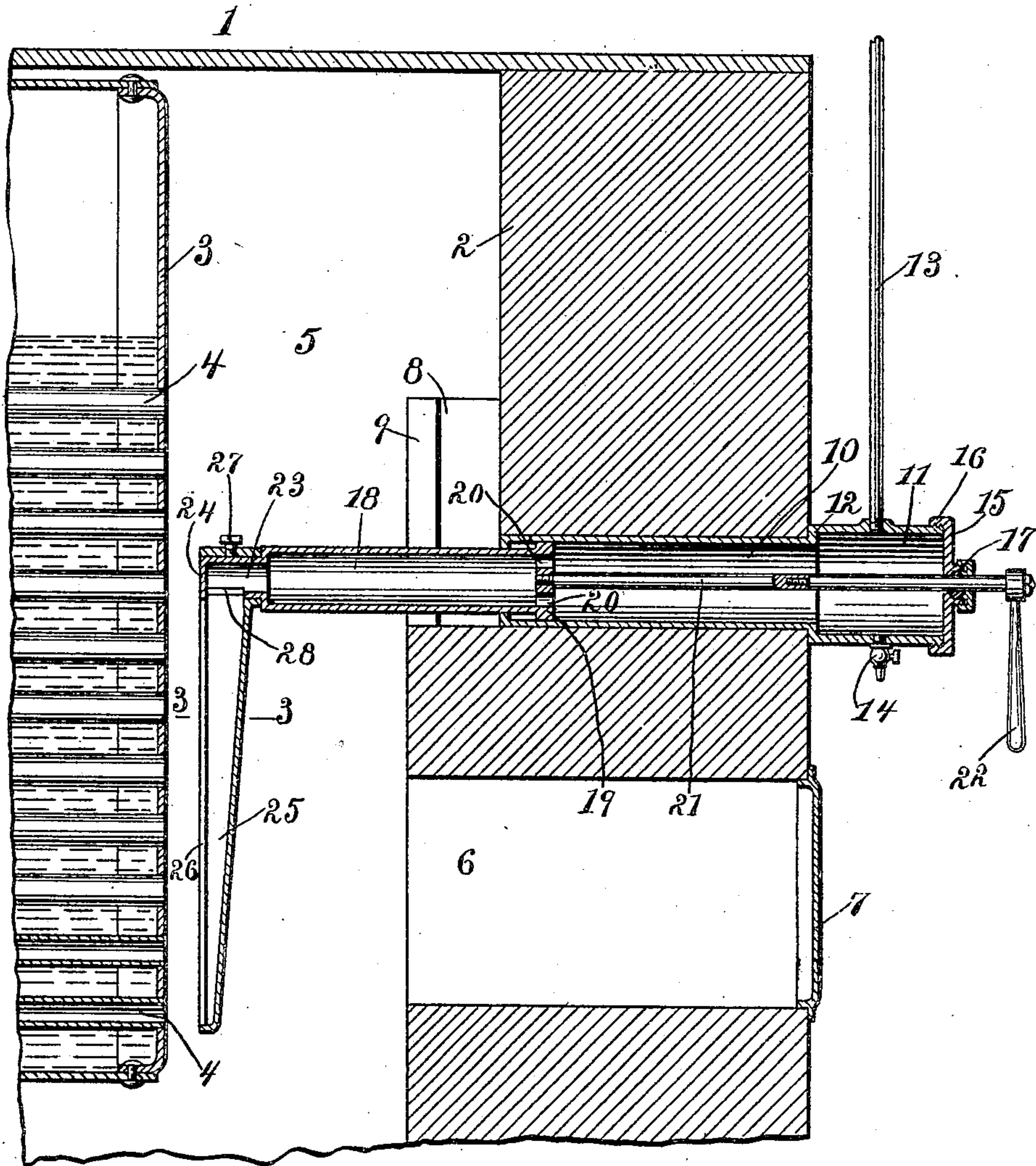
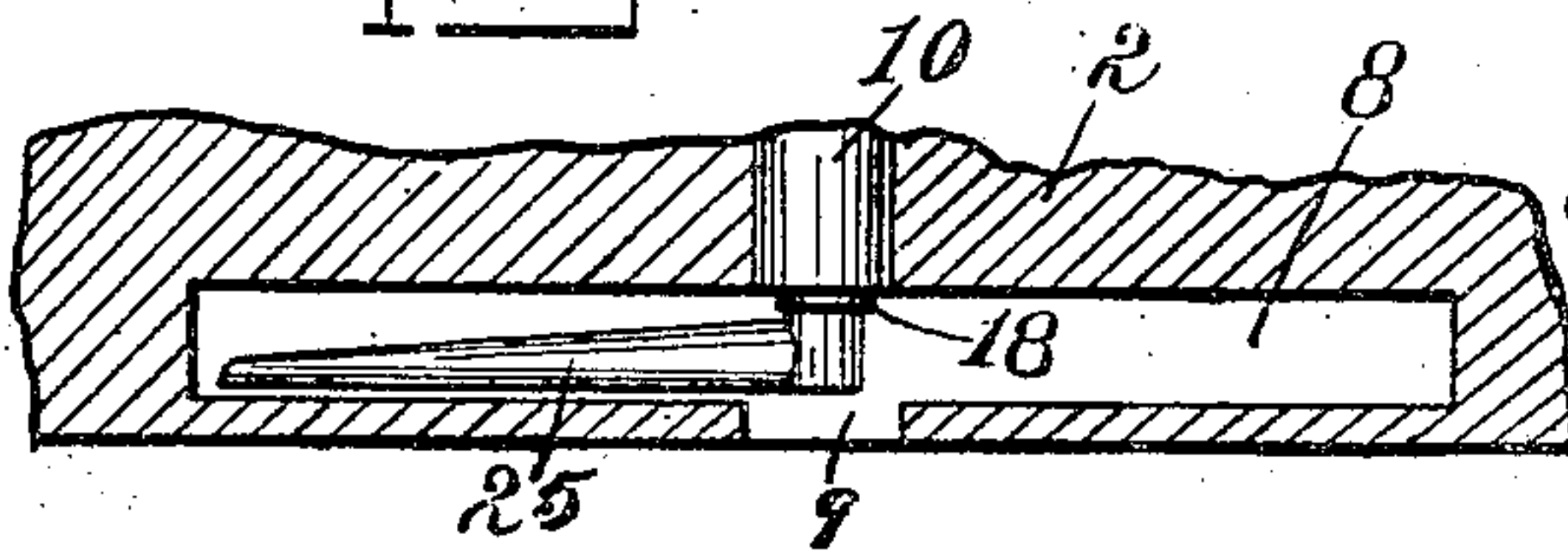


Fig. 2



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BOILER-CLEANER.

No. 838,898.

Specification of Letters Patent.

Patented Dec. 18, 1906.

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To all whom it may concern:

Be it known that I, CHARLES H. PRESCOTT, a citizen of the United States, and a resident of East Liverpool, in the county of Columbiana and State of Ohio, have invented a new and Improved Boiler-Cleaner, of which the following is a full, clear, and exact description.

This invention relates to boiler-cleaners, and is particularly useful in devices of this character in which live steam is used to blow the soot or other accumulations from the gases of combustion from the flues of fire-tube boilers.

The object of the invention is to provide a boiler-cleaner simple, strong, and durable in construction and having a section slidably mounted in the rear wall of the boiler and having a nozzle which can be rotated to permit the steam to be forced through all the tubes of the boiler.

A further object of the invention is to provide in a device of this character a nozzle which may be withdrawn into a recess in the back wall of the boiler to protect the nozzle from direct contact with the heated gases of combustion.

The invention consists in the construction and combination of parts to be more fully described hereinafter and definitely set forth in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures, and in which—

Figure 1 is a vertical longitudinal section of a boiler with my invention applied thereto. Fig. 2 is a horizontal cross-section of a portion of the rear wall of a boiler directly above the device, and Fig. 3 is an enlarged horizontal cross-section on the line 3 3 of Fig. 1.

Before proceeding to a detailed description of my invention it should be understood that the same comprises a rigid tube passing through the rear wall of the boiler and having a second tube slidably mounted within it and projecting from its inner end. The second tube has a laterally-disposed tapering nozzle with a longitudinal slot at the side adjacent to the boiler-tubes. The steam passes through the tubes and into the nozzle, from which it escapes in a thin sheet through the longitudinal slot. The inner tube is slidable

within the rigid tube and is at the same time rotatable, thereby permitting the nozzle to be placed in a plurality of positions and allowing the same to be withdrawn into a recess in the boiler-wall to protect it from the heated gases.

Referring more particularly to the drawings, 1 represents the rear end of a fire-tube boiler having a back wall 2, of brick or similar material, and a boiler-shell 3, through which pass flues 4, opening into a rear combustion-chamber 5. It is understood that the water is located in the boiler-shell surrounding the flues 4, and the gases of combustion pass through these flues from one end to the other, thereby heating the surrounding water. The wall 2 is provided with the usual opening 6, having an outer door 7. A chamber 8, having lateral extensions, is formed within the wall 2 near the inner side thereof and has an opening 9, communicating with the combustion-chamber 5.

A rigid tube 10 passes through an opening within the wall 2 and has an enlarged end 11 on the outside of the wall, presenting a shoulder 12, abutting against the wall. A pipe 13 discharges into the enlarged end 11 of the tube 10 and is adapted to conduct steam from the boiler into said tube. A drain-cock 14 is provided at the lower side of the chamber 11 to permit condensed steam or other water to be withdrawn therefrom. A head 15, having a laterally-disposed threaded flange 16, is screwed upon the threaded rim of the end 11 and has a stuffing-box 17 for a purpose which will be more clearly described hereinafter.

A second tube 18 is located within the tube 10 and extends from an opening in the inner end of the latter into the combustion-chamber. The tube 18 has an integral head 19, fitting closely within the tube 10 and provided with openings 20, through which steam may pass from the tube 10 into the tube 18. A rod 21 has a threaded end screwed into a suitably-threaded opening in the head 19 and extends through the tube 10 and through the stuffing-box 17. The end passing through the stuffing-box 17 is provided with a handle 22, by means of which the tube may be moved in a horizontal direction to slide the tube 18 within the tube 10 and by means of which the tube 18 may be rotated within the tube 10. The rod 21 is

formed of jointed sections, each of which has a threaded stud adapted to be screwed into a threaded opening in the end of the adjacent section. By this means the rod 21 may be
 5 lengthened or shortened as the circumstances may require, for if the boiler-shell is close to the back wall 2 the rod 21 would project an inconvenient distance from the stuffing-box 16 when the tube 18 is withdrawn as far as
 10 possible into the tube 10 unless the rod were shortened.

The tube 18 has a constricted section 23 at the extremity adjacent to the boiler-shell, the end of which is closed by an integral head
 15 24. A nozzle 25 tapers toward its free end and has a longitudinal slot 26 on the side adjacent to the fire-tubes of the boiler. The nozzle has a bore at its wider end transverse of the length of the nozzle by means of which
 20 it may be secured to the tube 18, the bore fitting upon the constricted section 23. A set-screw 27 provides means for rigidly securing the nozzle upon the constricted section 23. A lateral opening 28 of the constricted sec-
 25 tion 23 communicates with the interior of the nozzle and permits the flow of the steam from the tube 18 into the nozzle.

When the device is not in operation, the tube 18 is withdrawn into the tube 10 by
 30 means of the rod 21, the nozzle being turned, so that it can pass through the opening 9 and into the chamber 8. The tube 18 is then rotated by means of the rod 21 to dispose the nozzle to one side of the opening 9 within the
 35 chamber 8. Thus in an inoperative position the nozzle is afforded protection from the heated gases of combustion within the chamber 5.

When it is desired to clean the fire-tubes of
 40 the boiler, the nozzle is turned so as to pass through the opening 9 and the tube 18 is projected from the tube 10 as far as possible to bring the nozzle close to the fire-tubes. Steam is then turned into the pipe 13 and
 45 flows thence through the tubes 10 and 18 and from the nozzle 25 in a thin sheet and into the fire-tubes of the boiler, thereby blowing out the soot or other accumulations within the same. By turning the handle 22 the noz-
 50 zle is rotated and all the fire-tubes of the boiler are subjected to the action of the steam.

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

1. In combination, a boiler having flues and a wall opposite the same having a recess on the inner side, a slidable tube passing through said wall and having a laterally-dis-
 60 posed nozzle adapted to lie within said recess in an inoperative position, and means for projecting said nozzle through said recess.

2. In combination, a boiler having flues and a wall opposite the same having a recess

on the inner side, a rigid tube passing 65 through said wall, a second tube slidably mounted within said rigid tube and having a laterally-disposed nozzle adapted to lie within said recess in an inoperative position, and means for passing steam through said tubes. 70

3. In combination, a boiler having flues and a wall opposite the same having a chamber provided with an opening on the inner side of said wall, a rigid tube passing through said wall, a second tube slidably and rotata- 75 bly mounted within said first tube and having a laterally-disposed nozzle adapted to be withdrawn into said chamber and disposed to one side of said opening in an inoperative position, and means for passing steam 80 through said tubes.

4. In combination, a boiler having flues and a wall opposite the same having a chamber provided with an opening on the inner side of said wall, a boiler-cleaner comprising 85 a rigid tube passing through said wall, a second tube slidably and rotatably mounted within said first tube and having a rod projecting from said first tube, said rod being adapted to be manually operated to move 90 said second tube within said first tube, and a nozzle mounted at the end of said second tube and at an angle therewith, said nozzle tapering toward its free end and having a longitudinal slot, said nozzle further being 95 adapted to be withdrawn into said chamber in an inoperative position.

5. A boiler-cleaner comprising a rigid tube passing through a wall of a boiler, a second tube slidably and rotatably mounted within 100 said rigid tube and having a head within said rigid tube, said head having openings, and a rod secured thereto and projecting from said rigid tube, said second tube having a con- 105 stricted end having a lateral opening and an integral head, a tapering nozzle having a longitudinal slot, and a transverse bore adapted to be mounted upon said constricted end, means for securing said nozzle to said second tube, and means for passing steam into said 110 rigid tube.

6. In a boiler-cleaner, a rigid tube passing through a wall of the boiler, a second tube slidable and rotatably mounted within said rigid tube, a nozzle mounted at the end of 115 said second tube, and at an angle therewith, said second tube having a head provided with openings, and having a rod mounted thereon comprising removable sections, said rod projecting through said rigid tube, and 120 means for passing steam through said tube.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES H. PRESCOTT.

Witnesses:

J. A. WOODLING,
 E. H. THOMAS.