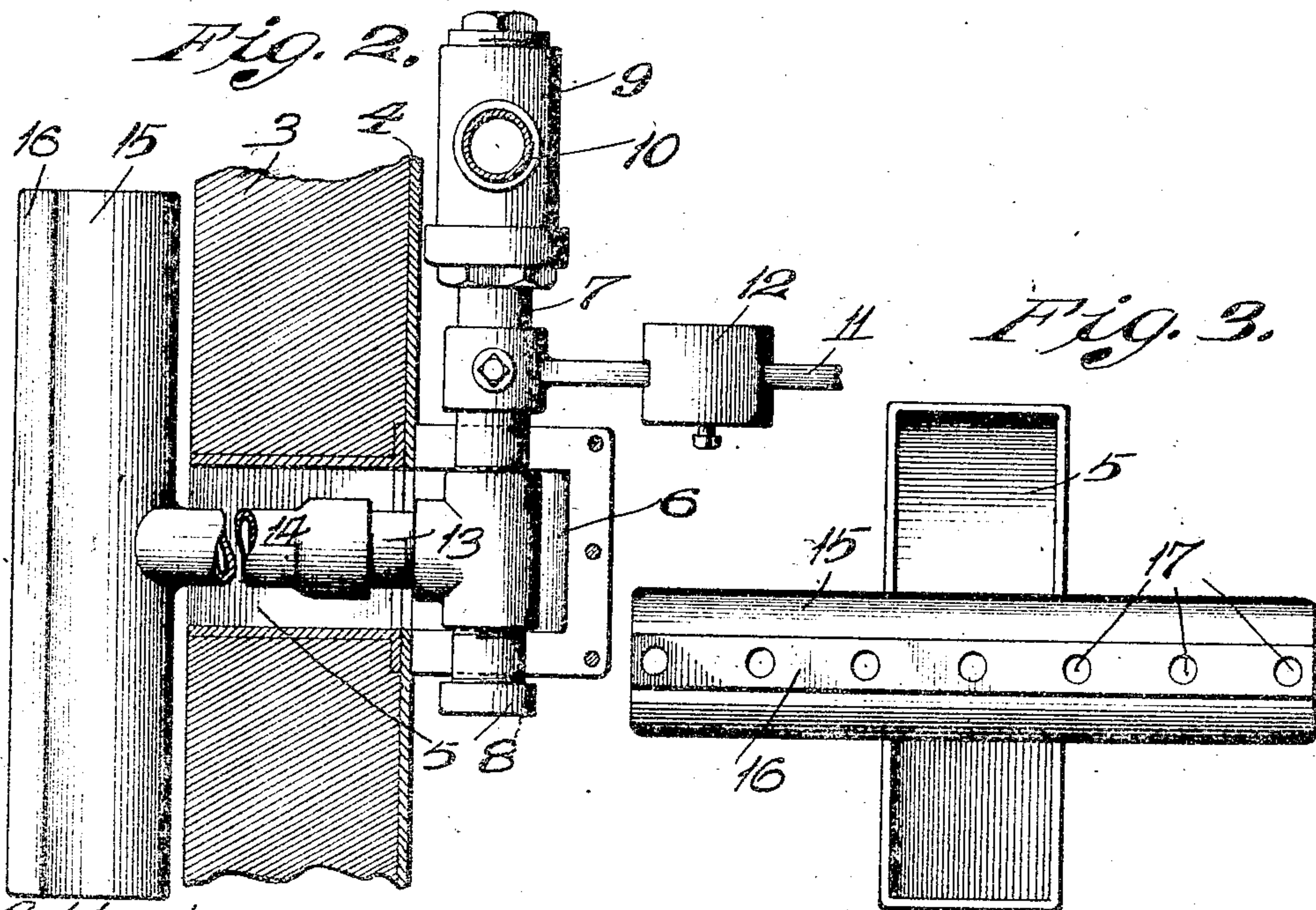
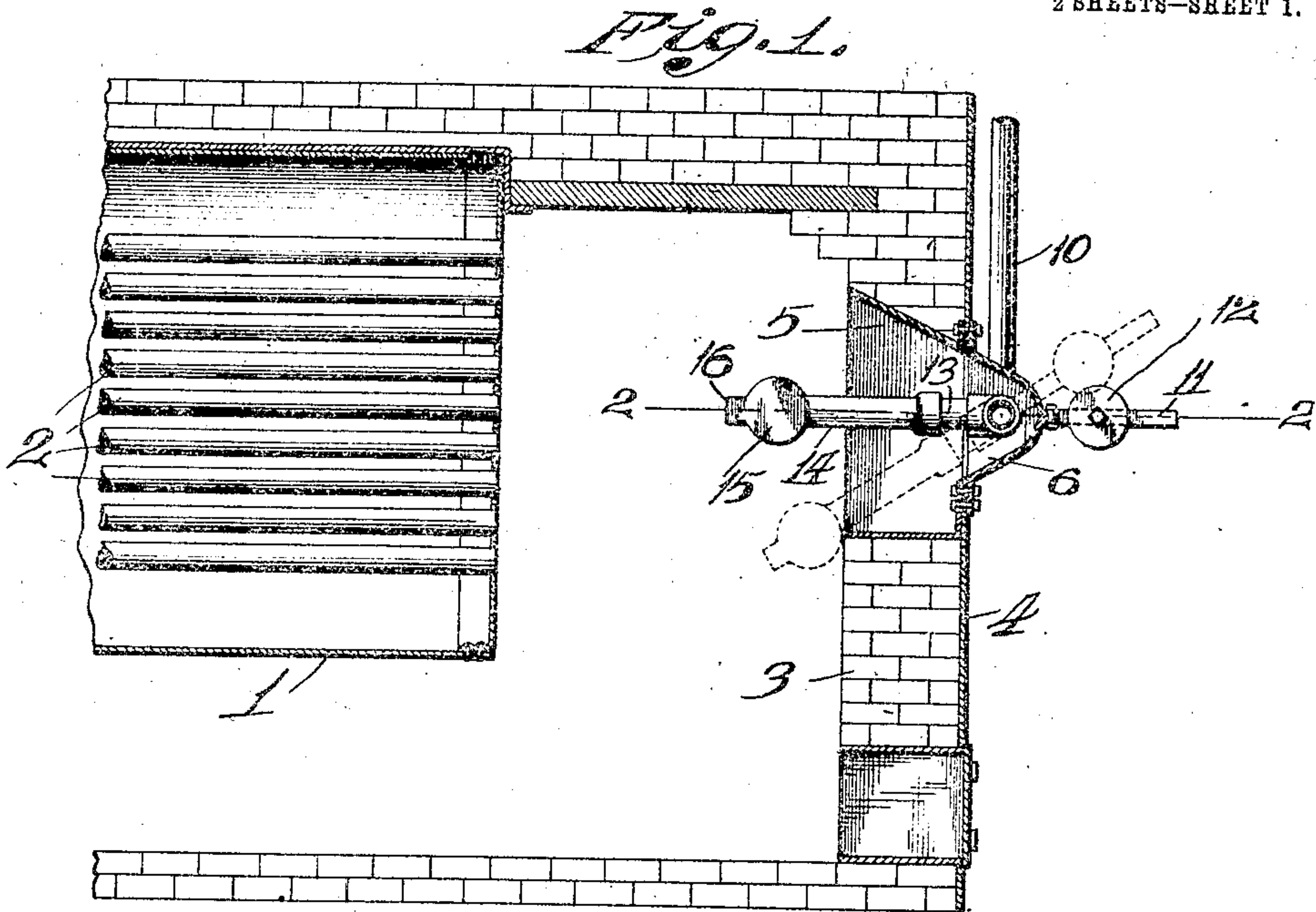


915,347.

Patented Mar. 16, 1909.

2 SHEETS—SHEET 1.



Attest.
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BOILER FLUE CLEANER.
APPLICATION FILED JUNE 1, 1908.

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2 SHEETS—SHEET 2.

Fig. 4.

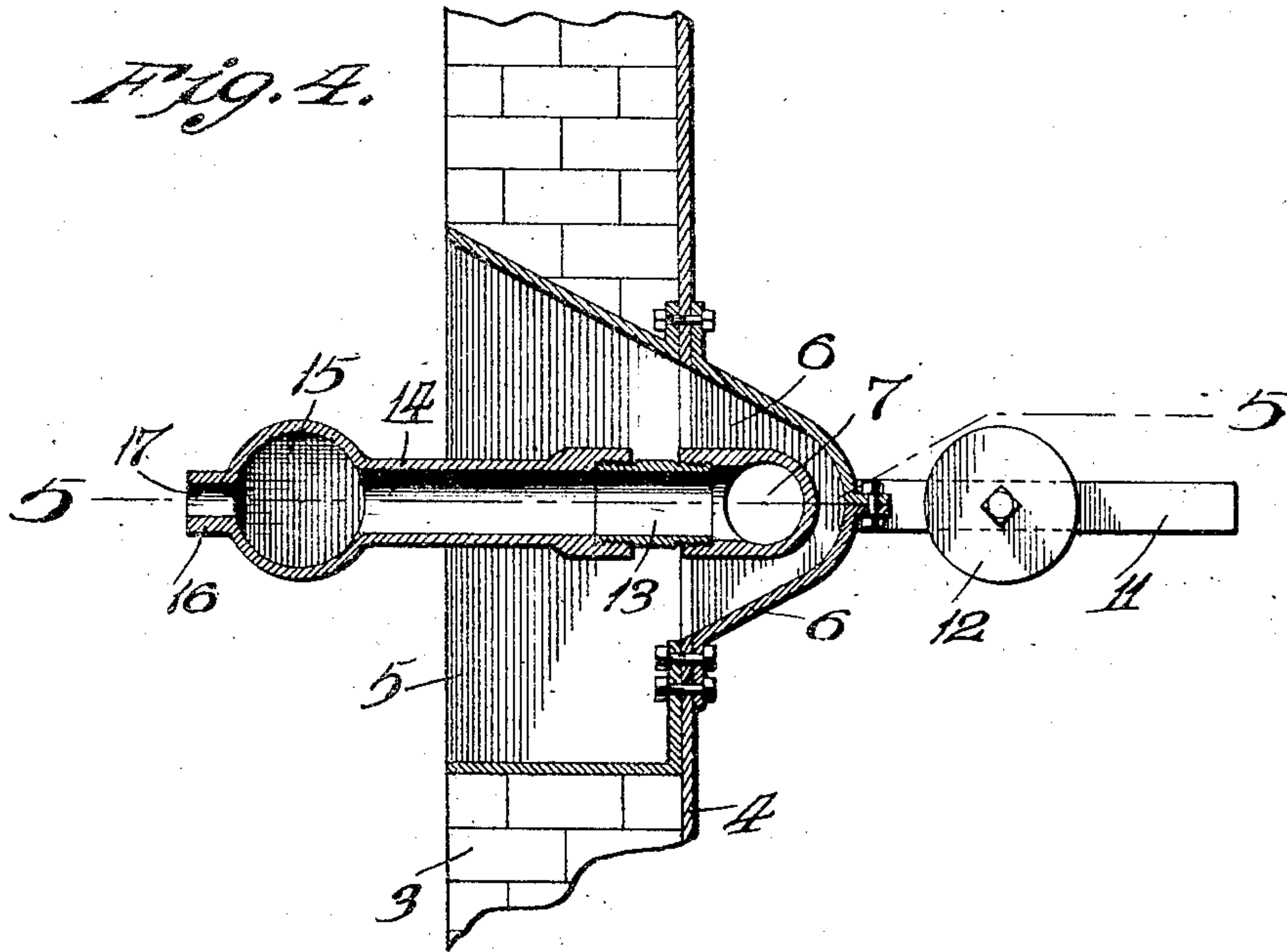
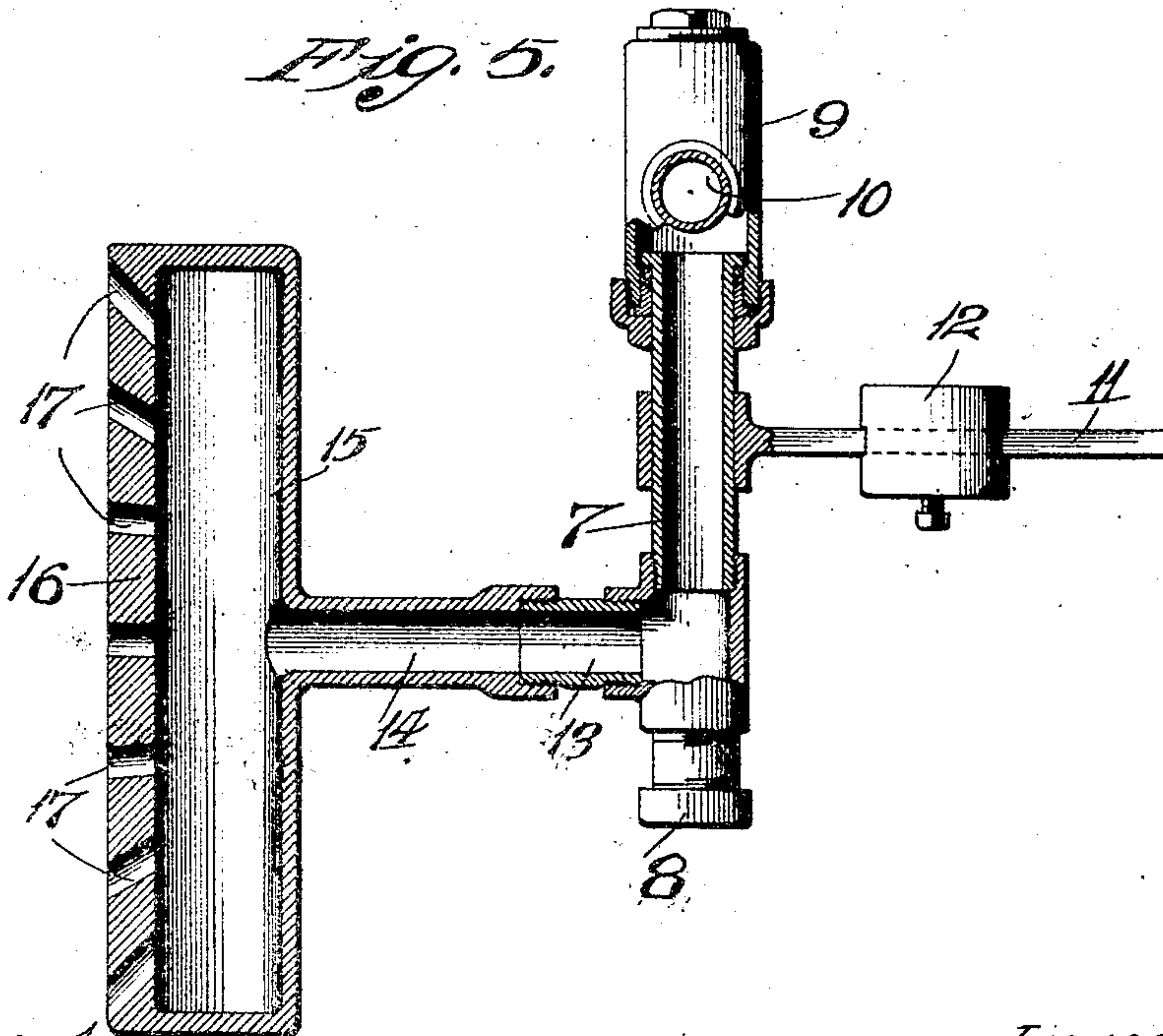


Fig. 5.



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UNITED STATES PATENT OFFICE.

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BOILER-FLUE CLEANER.

No. 915,347.

Specification of Letters Patent.

Patented March 16, 1909.

Application filed June 1, 1908. Serial No. 436,151.

To all whom it may concern:

Be it known that I, RICHARD W. HAMANN, a citizen of the United States, and resident of St. Louis, Missouri, have invented certain new and useful Improvements in Boiler-Flue Cleaners, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to boiler flue cleaner, or a device utilized for directing jets of steam or compressed air against the ends of boiler flues for the purpose of removing all accumulation in said flues and blowing the same through said tubes and into the forward portion of the boiler, from whence said accumulation passes into the stack.

The principal object of my invention is to construct a boiler flue cleaner which is particularly adapted for use in connection with marine boilers, although with slight changes in the lengths of connecting pipe, and the like, said flue cleaner can be advantageously employed in connection with any form of boiler in which flues are utilized.

A further object of my invention is to provide a perforated head through which the steam or compressed air is discharged, and which head is arranged for vertical movement immediately to the rear of the tube area of a boiler.

To the above purposes, my invention consists in certain novel features of construction and arrangement of parts, which will be hereinafter more fully set forth, pointed out in the claims, and illustrated in the accompanying drawings, in which:—

Figure 1 is a vertical section taken through the rear portion of a boiler and its setting and showing my improved apparatus located in the rear wall in position for use; Fig. 2 is an enlarged horizontal section taken on the line 2—2 of Fig. 1; Fig. 3 is a front elevation of the perforated head from which the steam or compressed air discharges; Fig. 4 is an enlarged vertical section taken through the center of the cleaner, and the housing in which the same operates; and Fig. 5 is a horizontal section taken on the line 5—5 of Fig. 4.

Referring by numerals to the accompanying drawings: 1 designates the boiler, 2 the flues therein, and 3 the rear wall of the boiler setting, which in marine boiler construction is located immediately against the inner face

of a vertically disposed sheet metal wall or plate 4. The housing 5 of sheet metal or analogous material is located in the wall 3 immediately opposite the tube area on the rear end of the boiler, and fitted onto the plate 4 immediately to the rear of this housing 5 is an extension housing 6, made in meeting halves and rigidly held together in any suitable manner. Passing transversely through this extension housing 6 and journaled for rotation in the side walls thereof, is a horizontally disposed pipe 7, one end of which is closed by a cap 8, and the opposite end being journaled in a union 9, to which is connected a steam or compressed air supply pipe 10. Fixed on the pipe 7, outside the housing 6, is one end of a lever 11, which provides means for rocking the pipe 7 when the cleaner is in use, and arranged on this lever 11 is a weight 12, which counterbalances the weight of the nozzle of the cleaner.

Fixed to the pipe 7 within the housing 6 is a short pipe 13, to which is connected a tubular extension 14, which is formed on or fixed to the hollow head forming the nozzle of the cleaner. This nozzle is in the form of a hollow cylinder 15, closed at both ends, and formed integral with the front side of said cylinder is a rib 16, through which is formed a series of discharge apertures 17, and the apertures adjacent the ends of the nozzle are so inclined as that the jets of steam or compressed air issuing therethrough will diverge so as to spread over the entire tube area on the end of the boiler.

When the apparatus is properly installed, the nozzle or cylinder head 15 occupies a horizontal position, and when not in use rises immediately in front of the lower end of the housing 5, as shown by dotted lines in Fig. 1.

When it is desired to use the apparatus to clean the boiler flues, the steam or compressed air is drawn on through the supply pipe 11, and said steam or compressed air passes from thence through the pipes 7 and 13, through the tubular extension 14 into the hollow head or nozzle 15, and discharges from thence through the apertures 17. The operator now engages the outer end of the lever 11 and moves the same up and down, thereby rocking the pipe 7 and consequently moving the hollow head or lever 15 vertically in front of the housing 5. The jets of steam or compressed air issuing from the apertures

17 are those discharged into the rear ends of the boiler flues, and the force of said jets of steam or compressed air blows all of the soot and like accumulation through said flues 5 and into the forward end of the boiler setting, from whence said soot and accumulation passes into the stack. The weight 12 counterbalances the weight of the nozzle or hollow head 15 while the apparatus is in use, 10 thereby rendering the operation of said apparatus comparatively easy.

An apparatus of my improved construction is simple, inexpensive, is easily operated, and can be advantageously employed in all 15 forms of boilers where flues are made use of.

I claim:—

1. The combination with a boiler and its setting, of a fluid pressure supply pipe arranged to rock adjacent the rear wall of the 20 boiler setting, a branch pipe leading from the supply pipe through the rear wall of the boiler setting, a horizontally disposed head carried by the forward end of the branch pipe, and there being a horizontally dis- 25 posed row of perforations formed through the front wall of the head.

2. The combination with a boiler and its setting, of a housing arranged in the rear wall of the boiler setting, a fluid pressure 30 pipe arranged to rock in the housing, a branch pipe leading from the supply pipe through the housing, a horizontally disposed head arranged on the forward end of the branch pipe, and there being a horizontally 35 disposed row of perforations formed through the front wall of said head.

3. In an apparatus of the class described, a fluid pressure supply pipe, arranged to rock adjacent the rear wall of a tubular setting; a 40 horizontally disposed hollow head connected with said supply pipe, a rib formed integral with the front side of said hollow head, and there being a plurality of discharge apertures formed through said rib.

4. In an apparatus of the class described, a housing adapted to be positioned in the rear portion of a boiler setting, a fluid pres- 45 sure supply pipe arranged to rock in said housing, a horizontally disposed hollow head connected with the supply pipe, and there being a horizontally disposed row of discharge apertures formed through the 50 front of the hollow head.

5. In an apparatus of the class described, 55 a fluid pressure supply pipe adapted to be positioned adjacent the rear end of a boiler, a hollow head connected with said supply

pipe, the front of said hollow head being thicker than the rear portion, and there being a single horizontally disposed row 60 of discharge apertures formed through the front of said head.

6. The combination with a boiler and its setting, of a housing arranged in the rear wall of the boiler setting, a fluid pressure 65 pipe arranged to rock in the housing, a branch pipe leading from the supply pipe through the housing, a perforated head arranged on the forward end of the branch pipe, and a weighted lever connected to the 70 fluid pressure supply pipe, for counterbalancing the weight of the perforated head.

7. In an apparatus of the class described, a housing arranged in the rear wall of a boiler setting opposite the tube area of the boiler, a 75 tube arranged to swing vertically in said housing, a hollow nozzle carried by the forward end of said tube, there being a rib formed integral with the front wall of said nozzle, and there being a single row of dis- 80 charge apertures formed through said rib.

8. In an apparatus of the class described, a horizontally disposed cylindrical nozzle arranged to move vertically adjacent the rear end of a boiler, the front wall of which 85 nozzle is thicker than the rear wall, and there being a single row of discharge apertures formed through the front wall of said nozzle.

9. In an apparatus of the class described, a horizontally disposed nozzle arranged to 90 move vertically adjacent the rear end of a boiler, a horizontally disposed rib formed integral with the front face of said nozzle, and there being a single row of discharge apertures formed through said rib. 95

10. In an apparatus of the class described, a horizontally disposed tubular nozzle arranged to move vertically immediately to the rear of the boiler, the front wall of which 100 nozzle is thicker than the rear wall, there being a horizontally disposed single row of discharge apertures formed through the front wall of said nozzle, and said apertures being formed on horizontal angles so as to throw diverging jets of fluid delivered to the 105 nozzle.

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

RICHARD W. HAMANN.

Witnesses:

M. P. SMITH,
E. L. WALLACE.