

No. 618,517.

Patented Jan. 31, 1899.

C. F. NOFTZGER.
AUTOMATIC BOILER CLEANER.

(Application filed May 19, 1898.)

(No Model.)

Fig. 1.

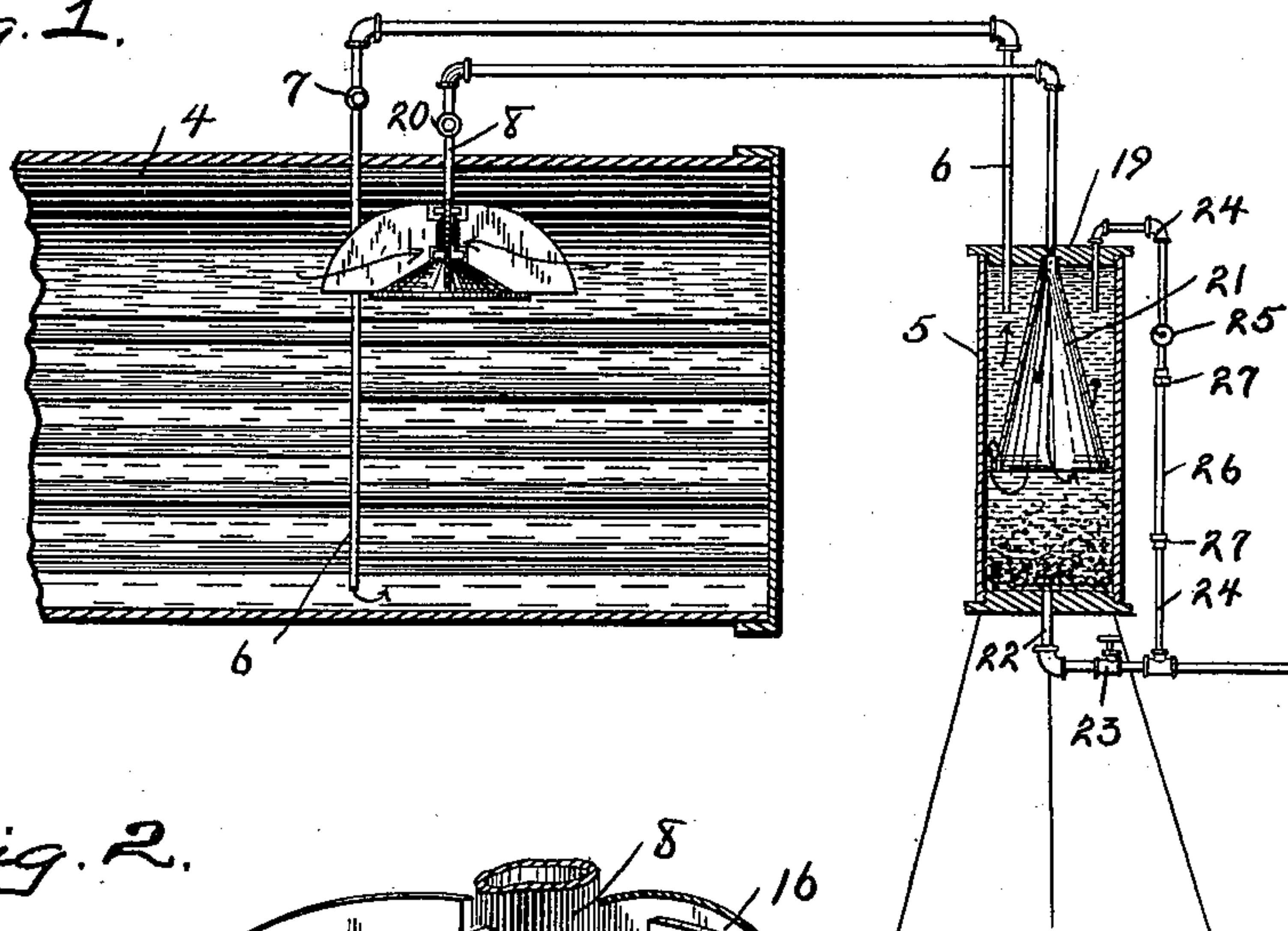


Fig. 2.

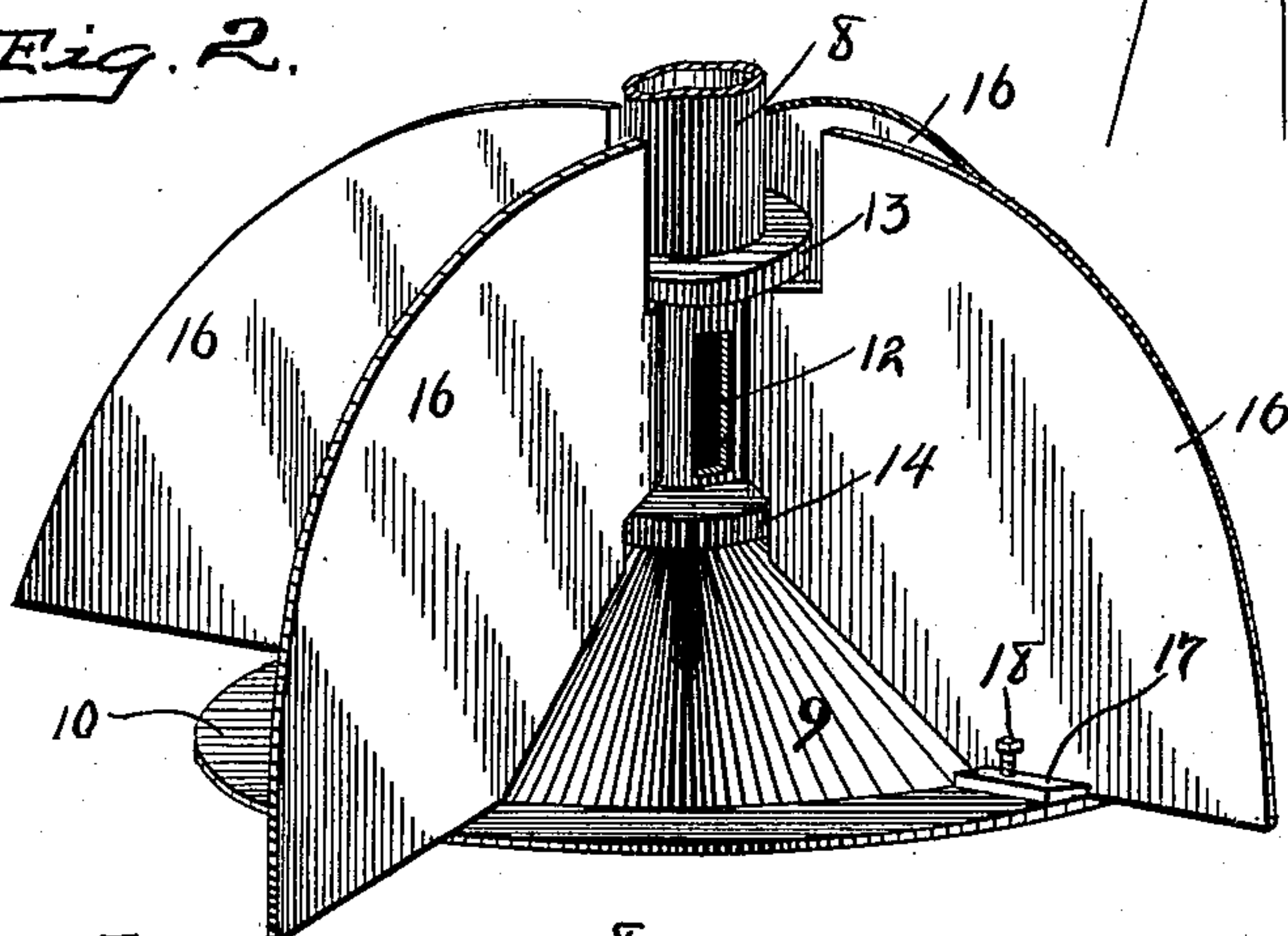
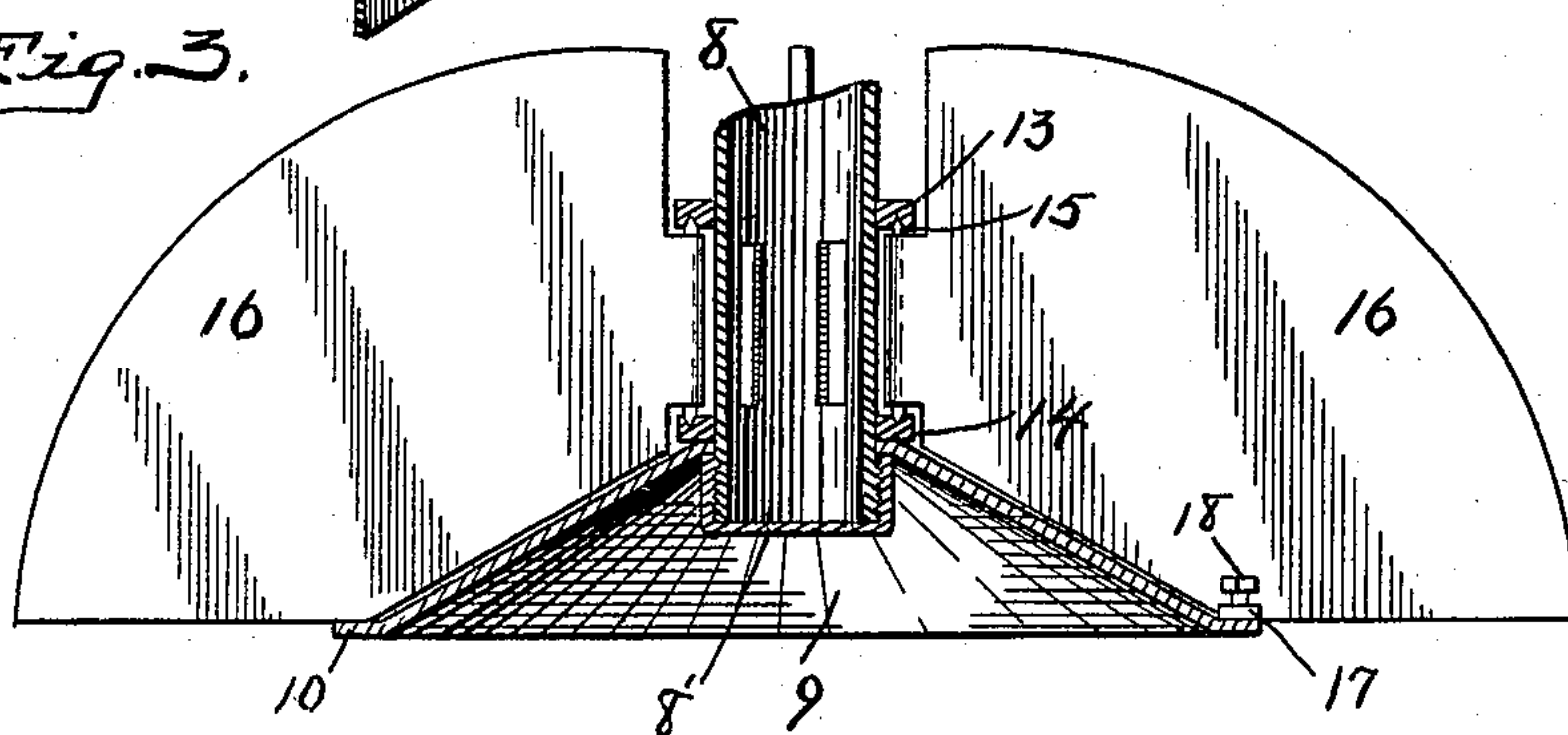


Fig. 3.



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AUTOMATIC BOILER-CLEANER.

SPECIFICATION forming part of Letters Patent No. 618,517, dated January 31, 1899.

Application filed May 19, 1898. Serial No. 681,103. (No model.)

To all whom it may concern:

Be it known that I, CHARLES F. NOFTZGER, a citizen of the United States, residing at North Manchester, in the county of Wabash and State of Indiana, have invented a new and useful Automatic Boiler-Cleaner, of which the following is a specification.

My invention relates to an improvement in automatic boiler-cleaners for removing impurities and preventing foaming.

The object of my invention is to produce a boiler-cleaner of the class described which shall be simple and efficient and in which the means for collecting the scum, oil, and other impurities shall be adjustable to suit varying conditions and boilers.

The accompanying drawings illustrate my invention.

Figure 1 is a central vertical section thereof. Fig. 2 is a perspective view of the skimmer. Fig. 3 is a central vertical section thereof.

In the drawings, 4 indicates a boiler of any type, and 5 indicates a settling-chamber. Leading from the upper end of the chamber 5 is a pipe 6, which leads into the boiler 4 and discharges near the bottom thereof, the said pipe being provided with a suitable valve 7. Mounted within boiler 4 is a skimmer or device for collecting the scum which rises to the top of the water as it boils. The skimmer consists of a pipe 8, which extends down into the boiler, and to the lower end of which is secured a cone 9, the lower larger end of which is provided with a flange 10. The lower end of the pipe 8 is closed, and immediately above the smaller end of the cone 9 the pipe 8 is perforated by a series of openings 12, through which any scum may pass. Mounted upon pipe 8, one at each end of the openings 12, are two collars 13 and 14, which between them support a series of pins 15, upon each of which is pivoted a wing 16, each of which extends down along the side of the cone 9 and out beyond the flange 10. Each wing 16 is provided with a lip 17, which lies against the flange 10 of the cone 9, and through this lip is passed a set-screw 18, the end of which may be brought into engagement with the flange 10, thus holding the wing in any desired position. By this means the wings may be angularly adjusted, so as to adapt the device for use in

boilers of different diameters. Pipe 8 is passed through the shell of the boiler and the outer end thereof secured to the head 19 of the settling-chamber 5, thus forming a communication from the boiler to the settling-chamber. Pipe 8 is provided with a suitable valve 20. Secured to the inside of head 19 is the smaller end of a cone 21, which extends down into the settling-chamber and forms a continuation of the pipe 8. Leading from the lower end of the settling-chamber is a discharge-pipe 22, provided with a suitable valve 23, through which the mud and other material precipitated to the bottom of the chamber may be discharged. Leading from the upper end of chamber 5 is a pipe 24, which is passed down along the outside of the said chamber and into the pipe 22 beyond the valve 23. Pipe 24 is provided with a suitable valve 25, and below this valve is mounted a "sight-tube" 26, which forms a part of the pipe 24 and is removably held therein by means of suitable couplings 27.

The operation is as follows: The skimmer is so mounted in the boiler that the openings 12 shall be at or slightly below the normal water-line and the two wings 16, which lie transversely, are swung upon their pivots until their outer ends lie close to the shell of the boiler, thus insuring the rapid collection of all of the scum. The other parts are then connected in the manner shown in Fig. 1, the boiler end of the pipe 6 being lower than the settling-chamber end and the lower end of the cone 21 being lower than the openings 12. Valves 20 and 23 are then opened, thus allowing the water to pass from the boiler into the settling-chamber. As soon as this occurs the valve 23 is closed and the valve 7 opened, thus establishing a circulation through the settling-chamber, as indicated by arrows. The scum as it rises to the top of the water in the boiler will be directed toward the openings 12 by means of the cone 9 and the wings 16 and will pass from there through the pipes 8, through the cone 21, and into the settling-chamber 5. Here owing to the gradual increase of size of the cone 21 the velocity of the scum-carrying water will decrease and the scum and sediment will settle to the bottom of chamber 5, the clear water rising and passing through

pipes 6 into the boiler. By occasionally opening valve 23 the accumulated sediment in the bottom of chamber 5 may be withdrawn.

It is often desirable for the operator to know in what condition the water from the settling-chamber is passing into the boiler, and for this purpose the "sight-glass" 26 has been provided. By opening valve 25 a small quantity of the upper stratum of water in the settling-chamber may be caused to flow through the sight-glass, thus enabling the operator to tell at a glance the condition of the water. By this means it becomes possible to lead the discharge-pipe 22 directly to a sewer to outside away from the buildings, and it becomes unnecessary for the operator to observe the character of the discharge.

I claim as my invention—

1. In a boiler-cleaner, a skimmer therefor having a series of adjustable wings, substantially as described.

2. In a boiler-cleaner, a skimmer therefor consisting of a pipe provided at its lower end with a series of openings, a cone secured at its smaller end to the lower end of said pipe, a pair of collars secured to said pipe above the cone, a series of radial wings pivotally mounted between said collars, and means for holding said wings in any desired position.

3. In a boiler-cleaner, a skimmer therefor consisting of a pipe provided at its lower end with a series of openings, and a series of an-

gularly-adjustable wings secured to said pipe and leading toward said openings.

4. In a boiler-cleaner, a skimmer therefor consisting of a pipe provided at its lower end with a series of openings, a cone secured at its upper smaller end to the lower end of said pipe, and a series of adjustable wings secured to said pipe.

5. In a boiler-cleaner, a settling-chamber, a pipe leading therefrom to a boiler, a pipe leading thereto from the boiler, a cone 21 mounted within the settling-chamber and communicating with said second pipe, and a skimmer mounted upon the boiler end of said second pipe and provided with a series of adjustable wings, substantially as described.

6. In a boiler-cleaner, a settling-chamber, a pipe leading therefrom to the boiler, a pipe leading thereto from the boiler, a cone 21 mounted within the settling-chamber and having its interior at its smaller upper end communicating with said second pipe, a skimmer mounted upon the boiler end of said second pipe, a pipe 24 leading from the upper end of the settling-chamber, and a "sight-glass" mounted in said pipe, substantially as and for the purpose set forth.

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