

(No Model.)

C. F. BOWER.
BOILER TUBE CLEANER.

No. 359,383.

Patented Mar. 15, 1887.

Fig. 1.

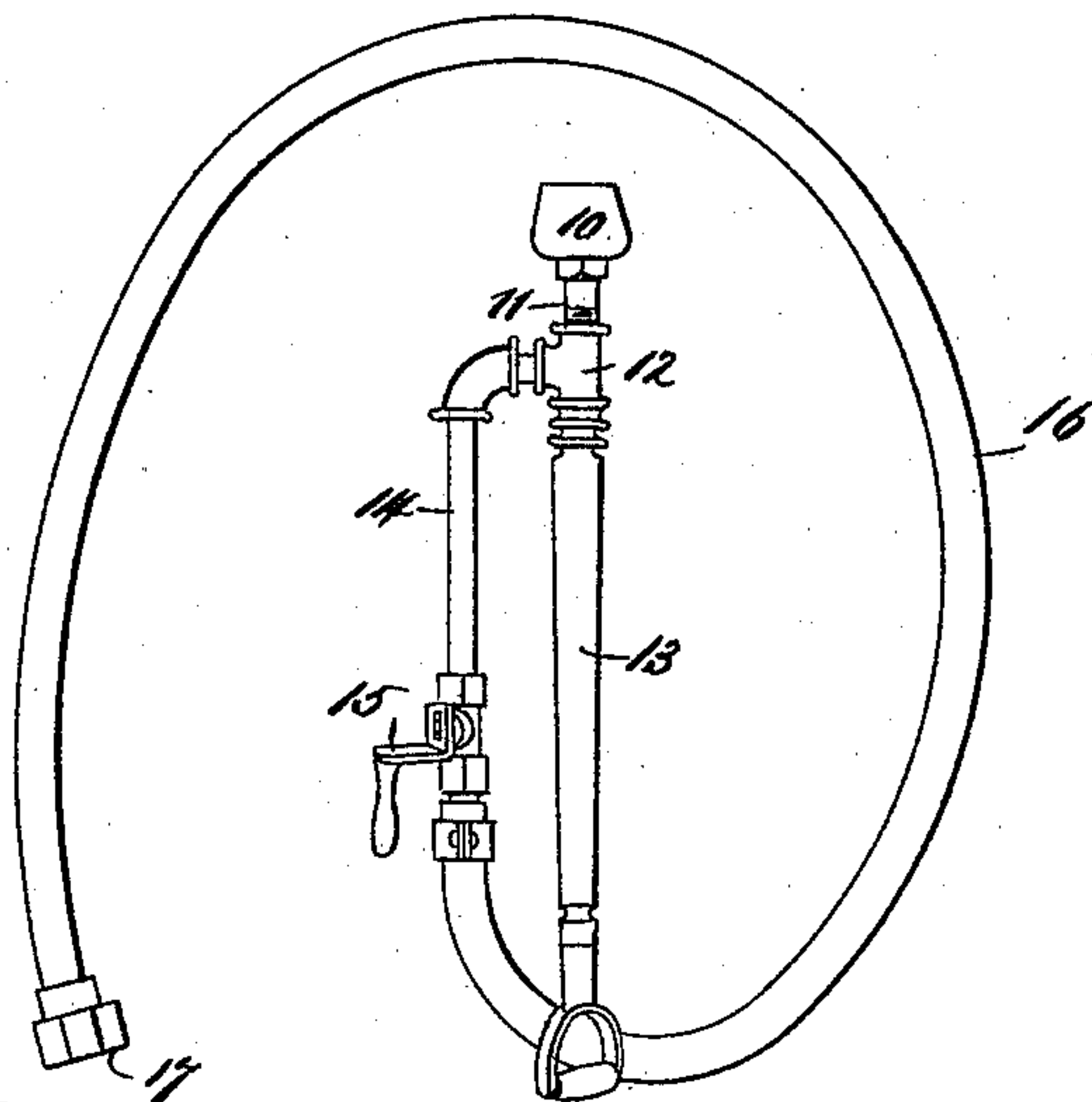


Fig. 2

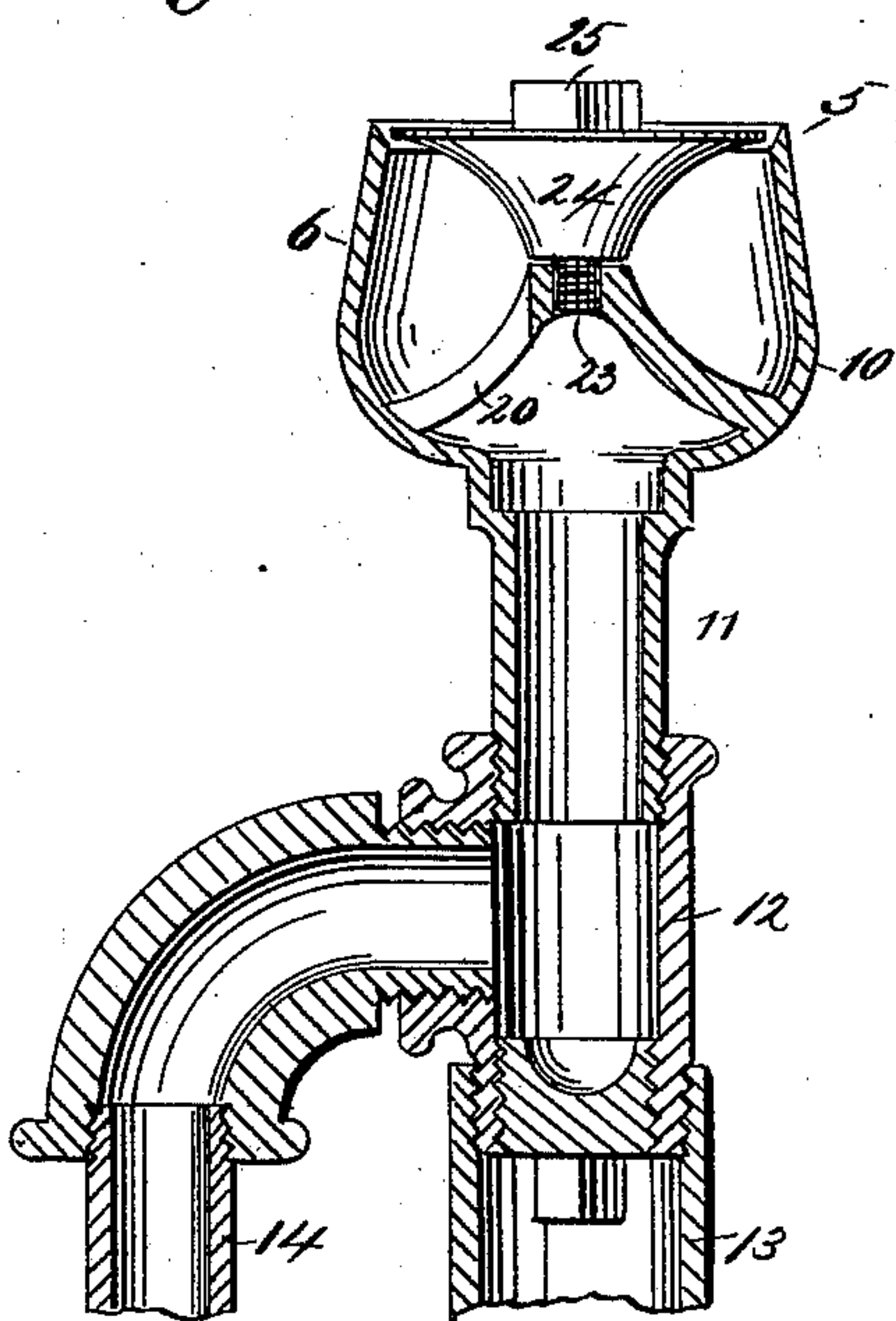
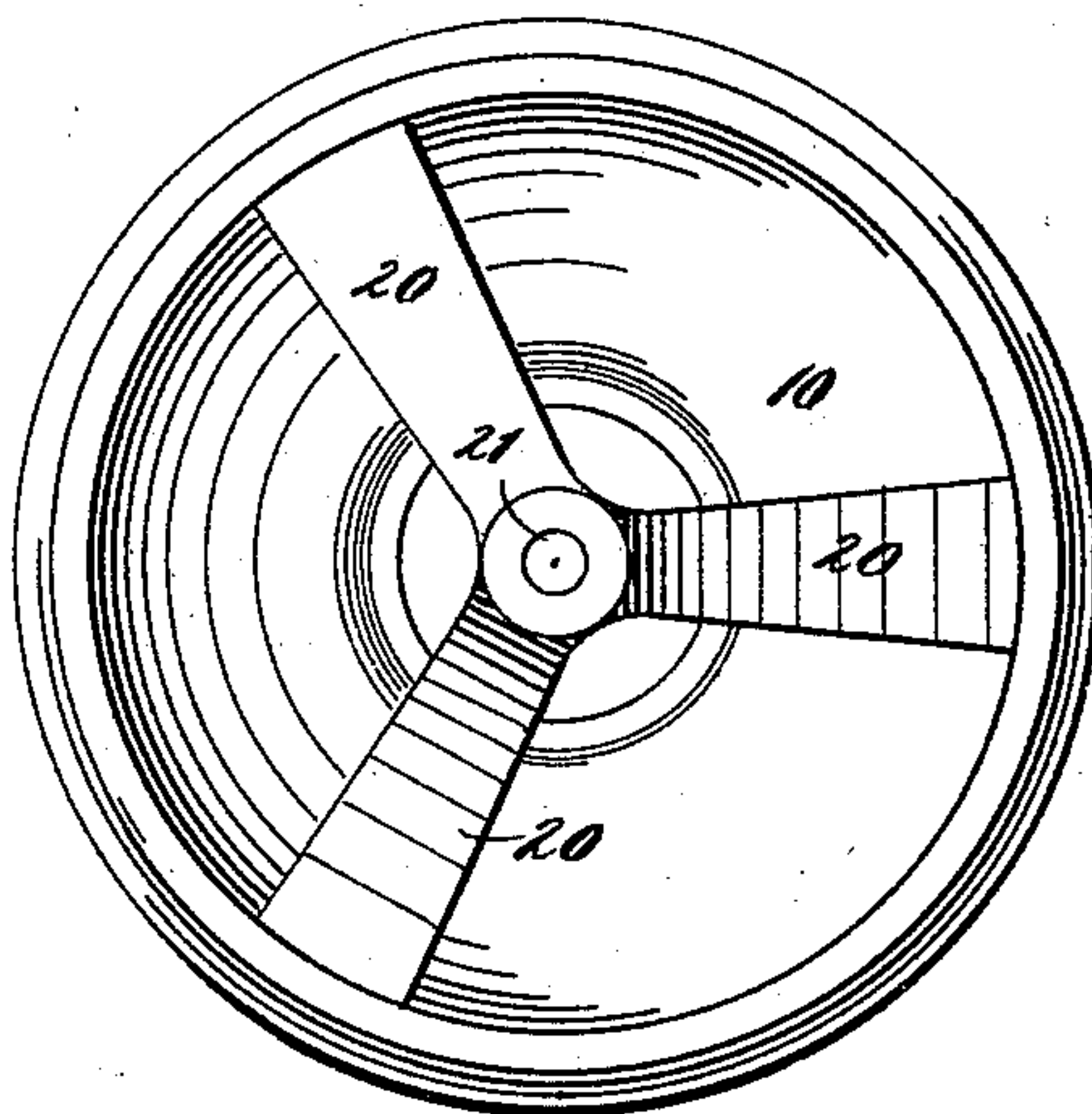


Fig. 3



WITNESSES:

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UNITED STATES PATENT OFFICE.

CHARLES F. BOWER, OF PHILADELPHIA, PENNSYLVANIA.

BOILER-TUBE CLEANER.

SPECIFICATION forming part of Letters Patent No. 359,383, dated March 15, 1887.

Application filed December 16, 1886. Serial No. 231,724. (No model.)

To all whom it may concern:

Be it known that I, CHARLES FREDERICK BOWER, of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented a new and Improved Boiler - Tube Cleaner, of which the following is a full, clear, and exact description.

This invention relates to a novel form of boiler-tube cleaner; and it consists of the novel parts and combinations to be hereinafter described, and specifically pointed out in the claims.

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

Figure 1 is a side view of my improved form of boiler-tube cleaner. Fig. 2 is a central sectional view of the upper portion of the cleaner, the view being given upon an enlarged scale; and Fig. 3 is an end view of the nozzle as it appears when the deflector is removed, the view being given upon a still larger scale.

Referring now to the general construction illustrated in the drawings, 10 represents the nozzle of my improved form of boiler-tube cleaner. To the shank 11 of this nozzle there is attached a three-way coupling, 12, and to this coupling 12 there is connected a handle, 13, and a steam-supply pipe, 14, said steam-supply pipe being provided with a valve or stop-cock, 15, and connected to a flexible tube or pipe, 16, upon the end of which there is secured a coupling, 17.

The nozzle 10 is made integral with a spider, 20, which spider is preferably made with three arms, as best shown in Figs. 2 and 3. At the point where the several arms of the spider 20 meet there is formed a threaded aperture, 21, that is arranged to be engaged by a threaded projection, 23, that is made integral with a circular deflecting-plate, 24, said deflecting-plate being provided with a squared or irregular head, 25, which may be engaged by a wrench

or key, so that the edges of the plate may be adjusted toward or from the flaring edges of the nozzle 10.

By securing the spider in the lowest and widest portion of the shell of the nozzle it offers but little obstruction to the steam and affords a cheap, durable, and convenient means for securing the deflecting-plate.

In operation the coupling 17 is connected with the boiler at a point as near as possible to the top thereof, so as to insure the delivery of dry steam, the handle 13 is grasped with the left hand, and the steam-cock 15 is held by the right hand. The nozzle 10 is then inserted within the end of the tube and forced inward, so that its inclined peripheral face 6 will bear hard against the end edges of the bore of the tube, and steam is then admitted by turning the stop-cock or valve 15, which steam, passing into the nozzle 10, will be deflected by the plate 24, so that it will issue from the nozzle in a circular stream, striking against the entire inner face of the tube.

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

1. In a boiler-tube cleaner, the combination of a nozzle-shell provided with a spider, 20, a deflecting-plate, 24, secured to the said spider, and means for supplying steam to the nozzle, substantially as herein shown and described.

2. In a boiler-tube cleaner, the combination, with a nozzle, of a spider made integral therewith, a deflecting-plate connected to the spider and provided with an external head, a coupling, 12, a steam-supply pipe connected to a flexible pipe that is provided with a coupling, a coupling connected to the end of the flexible pipe, and a handle connected to the coupling 12, substantially as described.

CHARLES F. BOWER.

Witnesses:

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WILLIAM H. VAN NOTE.