

(No Model.)

E. L. HALL.
AUTOMATIC BOILER FEEDER.

No. 544,976.

Patented Aug. 20, 1895.

Fig. I.

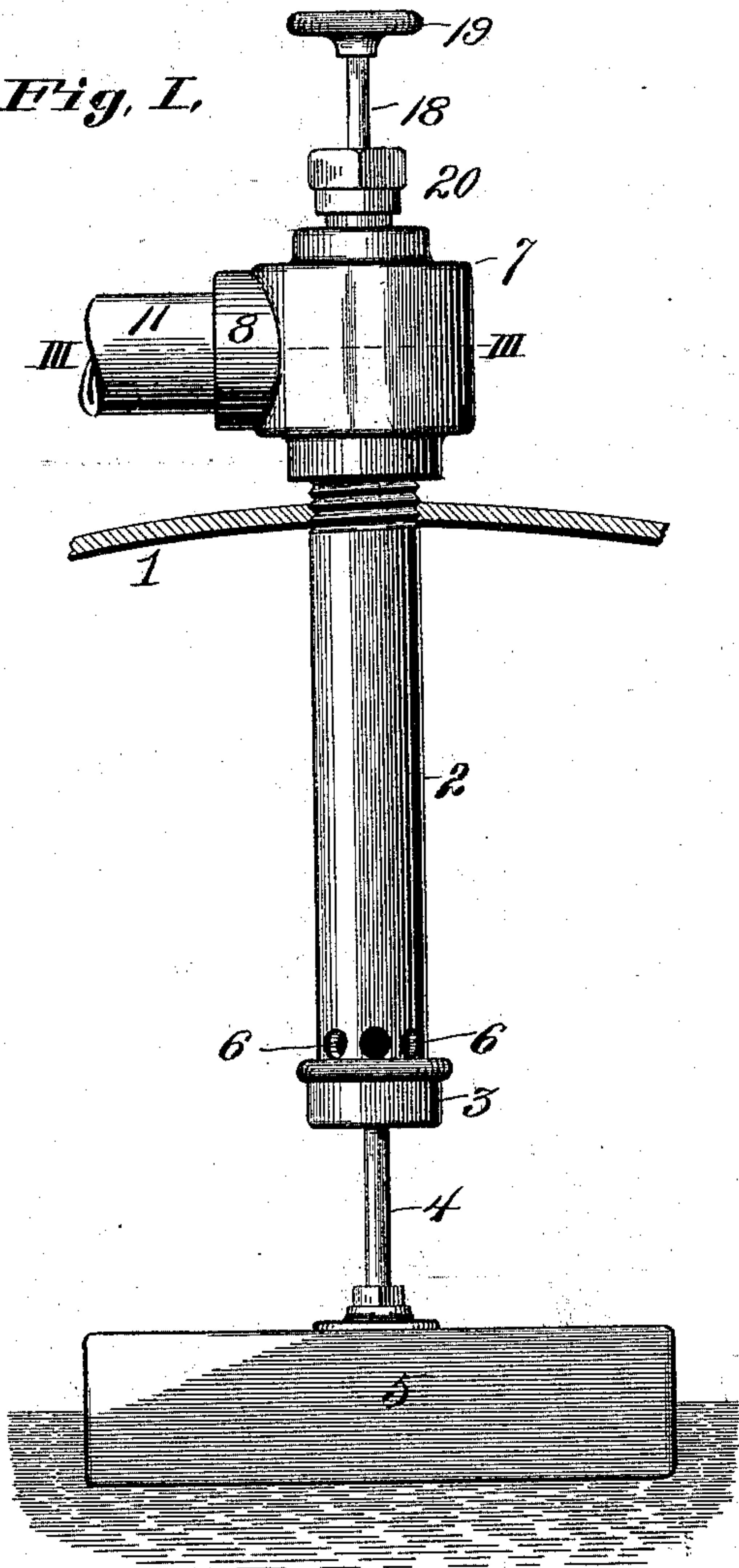


Fig. II.

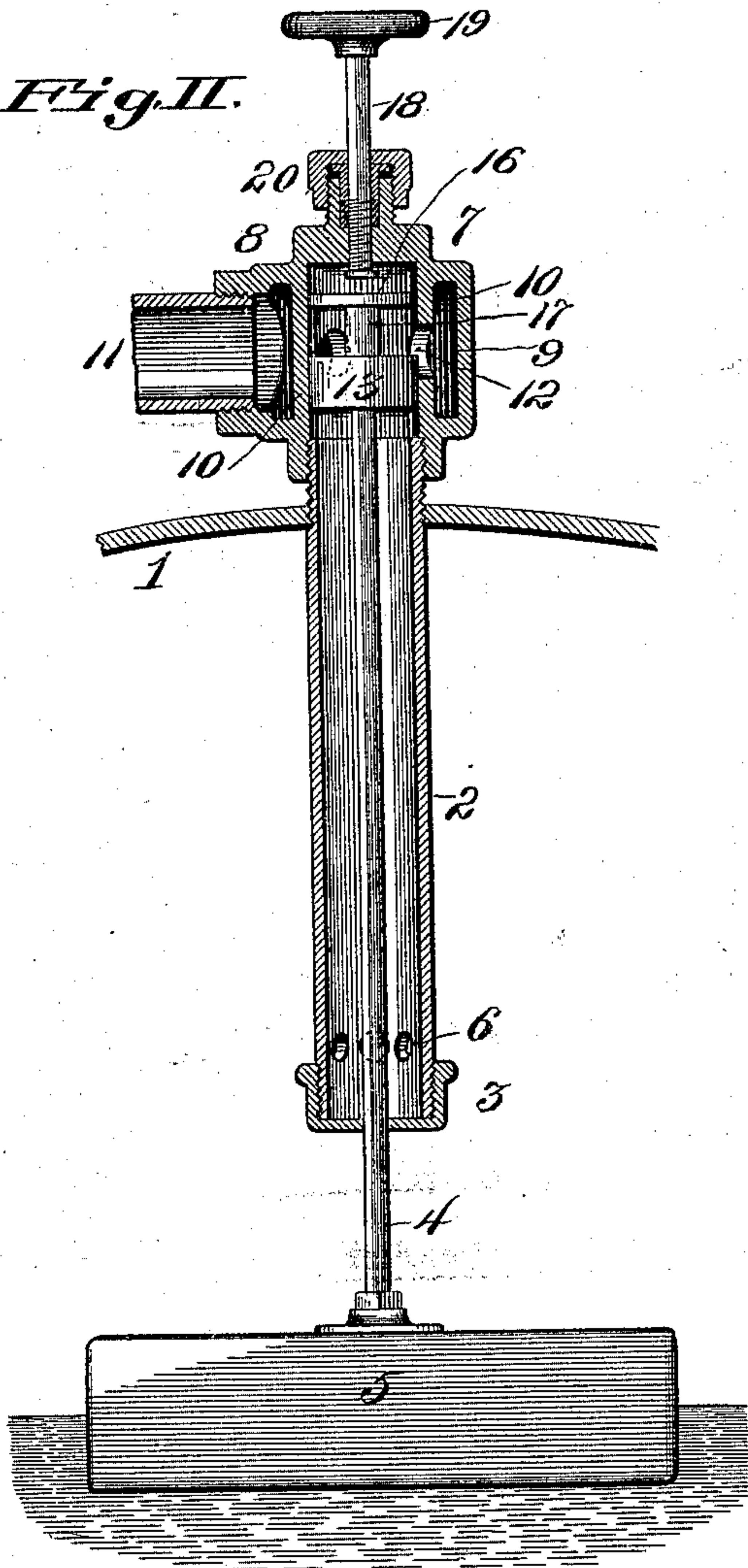
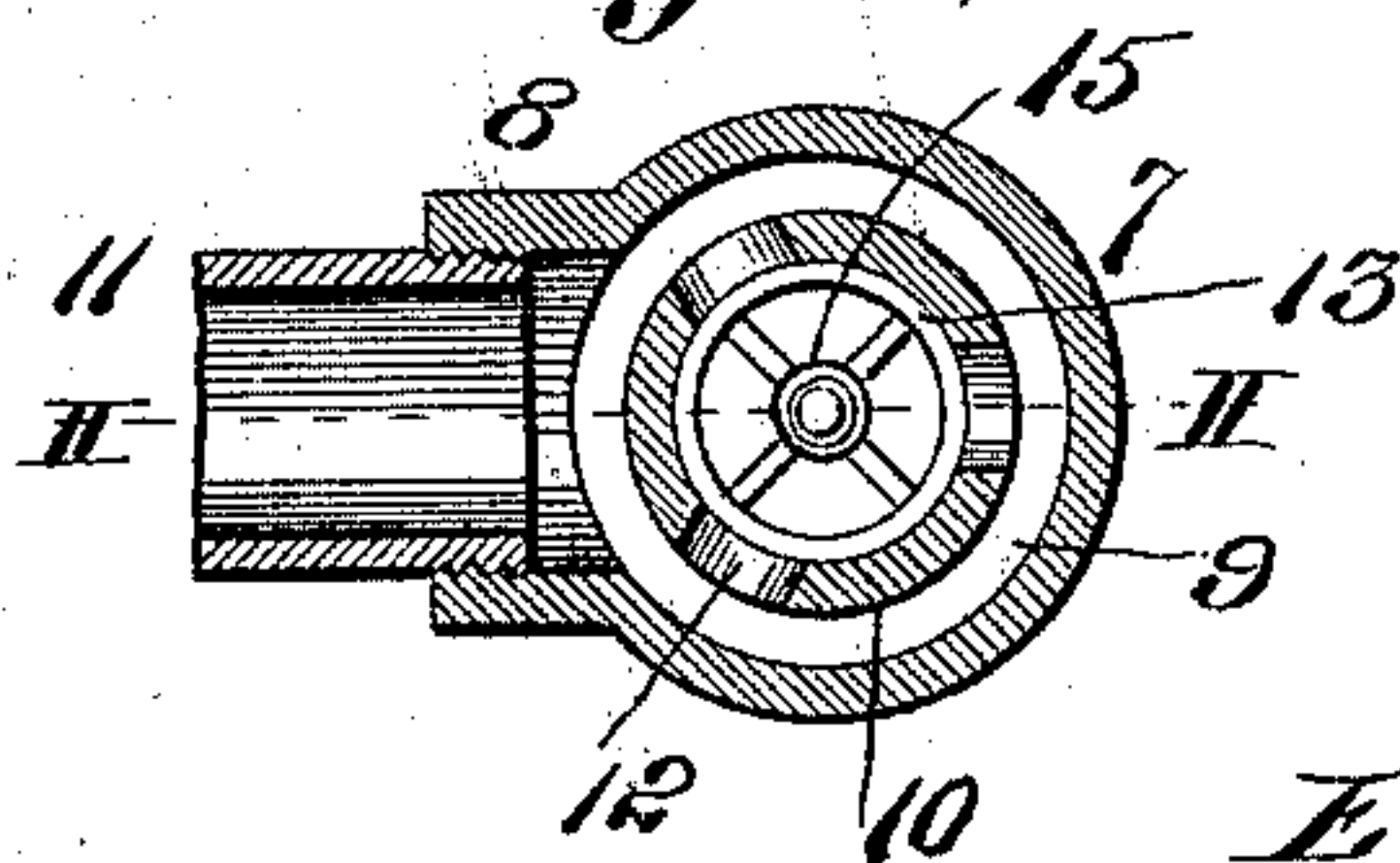


Fig. III.



Attest:

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UNITED STATES PATENT OFFICE.

EDGAR L. HALL, OF ST. LOUIS, MISSOURI.

AUTOMATIC BOILER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 544,976, dated August 20, 1895.

Application filed July 6, 1894. Serial No. 616,596. (No model.)

To all whom it may concern:

Be it known that I, EDGAR L. HALL, of the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Automatic Boiler-Feeders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to an improved device for automatically admitting feed-water to a boiler; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claim.

Figure I is a side elevation of my invention and showing part of the boiler-shell in section. Fig. II is a vertical section through my improved feeder, the float being shown in full lines, the section being taken on line II II, Fig. III. Fig. III is a transverse horizontal section taken on line III III, Fig. I.

Referring to the drawings, 1 represents part of the shell of the boiler into which is screwed a tube 2, having a cap 3 on its lower end, through which passes a stem 4, on the lower end of which is a float 5. The tube 2 is perforated at 6 above the cap 3, so as to permit the free passage of water from the lower end of the tube into the boiler, while at the same time the cap serves as a lower guide for the float-stem 4. On the upper end of the tube 2 is a head 7, formed with a threaded neck 8 and having an annular chamber 9. The head has an inner wall 10, the interior diameter of which is preferably about the same as the interior diameter of the tube 2.

11 represents the supply-pipe connected with the threaded neck 8 of the head 7, and through which water passes to the boiler. There are one or more perforations or holes 12 in the wall 10, through which water may pass from the pipe 11 through the chamber 9 and pipe 2 into the boiler when these perforations are open.

13 represents a piston-valve on the upper end of the stem 4. This valve fits the interior of the wall 10, and when in its upper position closes the openings 12 and shuts off the passage of water from the pipe 11 into the boiler. The

valve 13 is in the form of a ring connected to the stem 4 by means of arms 15, as shown in Fig. III, so that when the valve is in its lower position water passing through the perforations 12 will pass through the valve, down through the pipe 2, out through the perforations 6, and into the boiler. Above the valve 13 is a disk 16, connected to the valve 13 by means of arms 17. This disk forms a guide for the valve and also serves to receive the lower end of a set-screw 18, provided with a hand-wheel 19, by which it is turned. The stem 18 passes through a stuffing-box 21, which prevents the passage of water around the stem. When the parts are put together the set-screw 18 is adjusted so that when the valve is in its extreme upper position the disk will bear against the upper end of the valve-chamber and the openings or holes 12 will be completely closed by the valve 13.

When the device is applied to a boiler and the water is turned on, it passes from the pipe 11 through the chamber 9 and perforation 12 and through the pipe 2 into the boiler. It continues to flow until the float 5 rises and forces the valve 13 to its upper position closing the openings 12. The supply of water is then automatically shut off. As the water is consumed the float 5 will move down, exposing the openings 12 slightly or altogether, as the case may be. The water will pass through the openings 12 again into the boiler, and as it does so the float rises again, closing the openings 12, and thus the operation continues automatically, the boiler being supplied constantly with a small amount of water, which maintains it at a uniform height in the boiler.

The function of the set-screw 18 is to force the valve 13 away from the perforations 12, should it ever be desired to fill the boiler above the line of the float, as by screwing down on the set-screw, the float will be forced down into the water and the valve forced down below the perforations 12.

I claim as my invention—

In a boiler feeder, the combination of a tube perforated at its lower end and extending into the boiler, a head secured on said tube and provided with a perforated inner wall, a pis-

ton valve, formed of a ring and secured by arms to a stem extending through the tube working in said head, a disk carried by said valve, a set screw working in the head and
5 adapted to bear upon the disk, by the adjustment of which the valve may be made to close properly, a cap on the perforated end of the tube through which the stem extends, and a float on said stem substantially as and for the purpose set forth.

EDGAR L. HALL.

In presence of—
E. S. KNIGHT,
C. G. EDWARDS.