

H. Mc Gann,
Steam-Boiler Water-Feeder,
Nº 84,642, Patented Dec. 1, 1868.

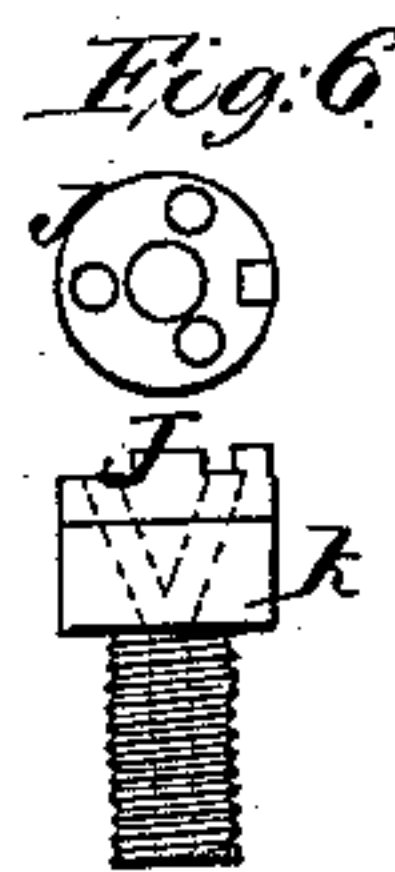
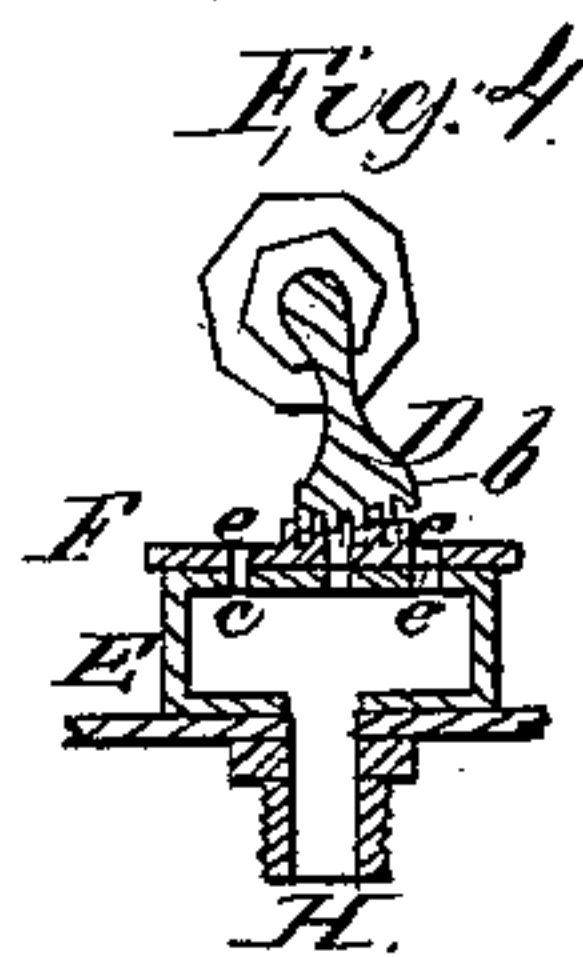
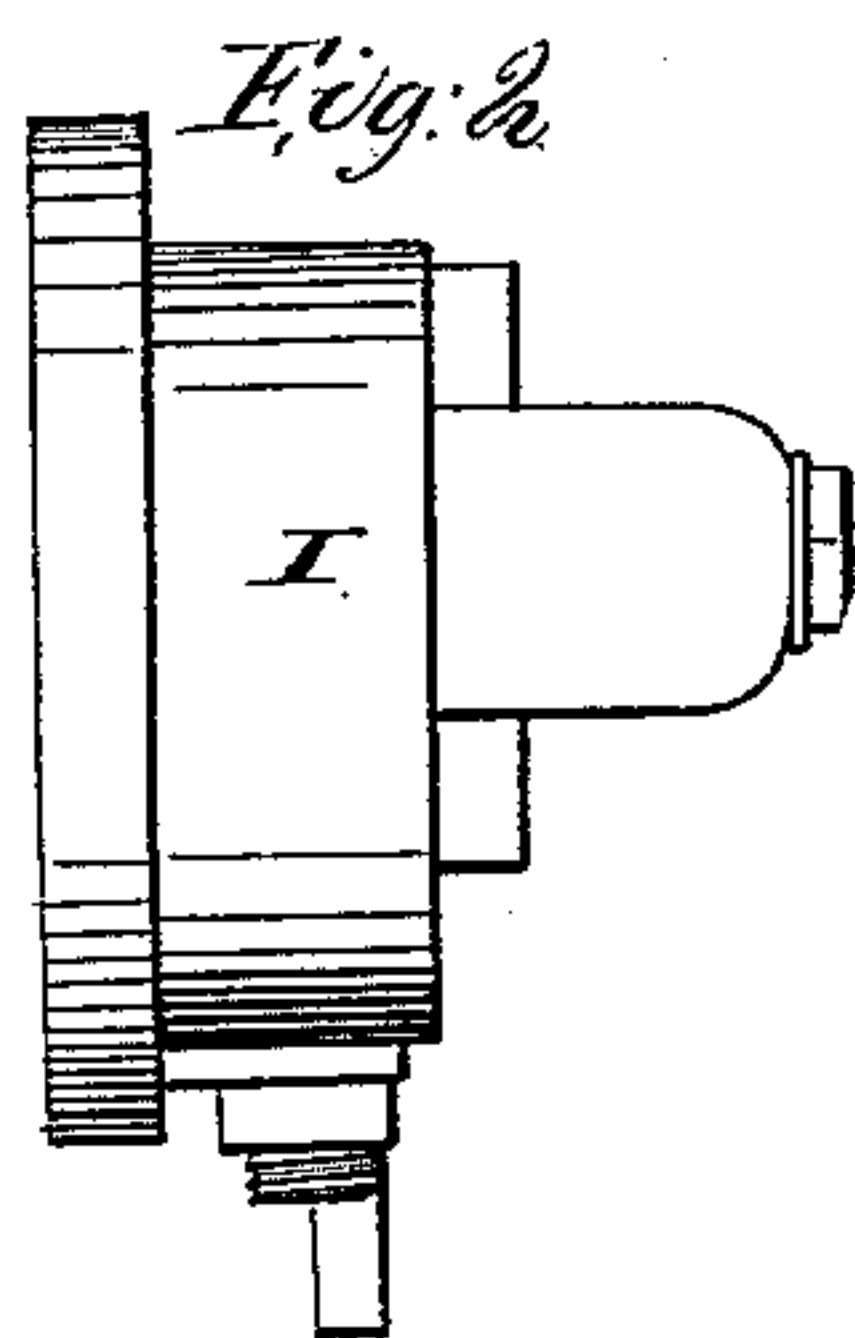
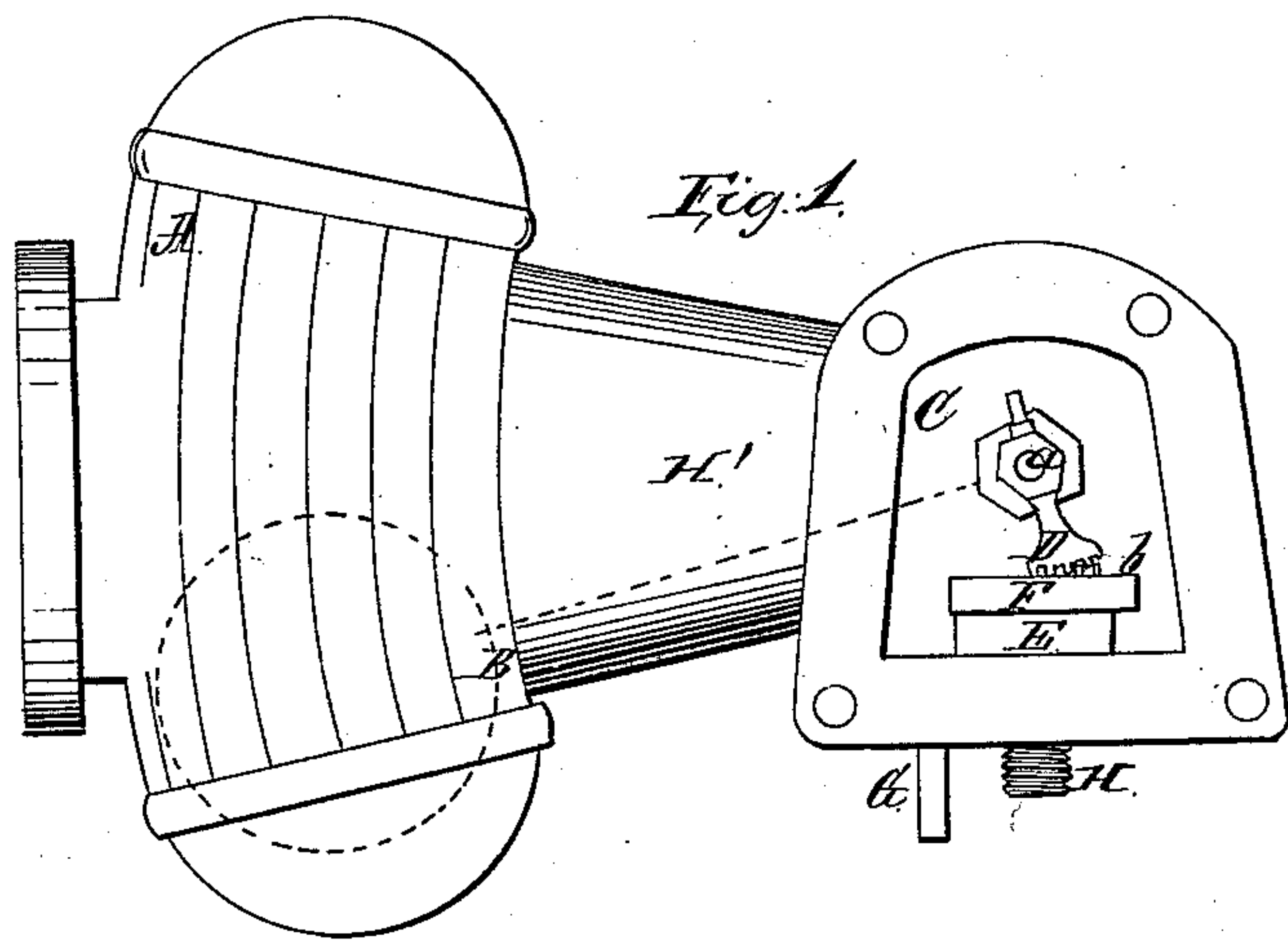


Fig. 3.

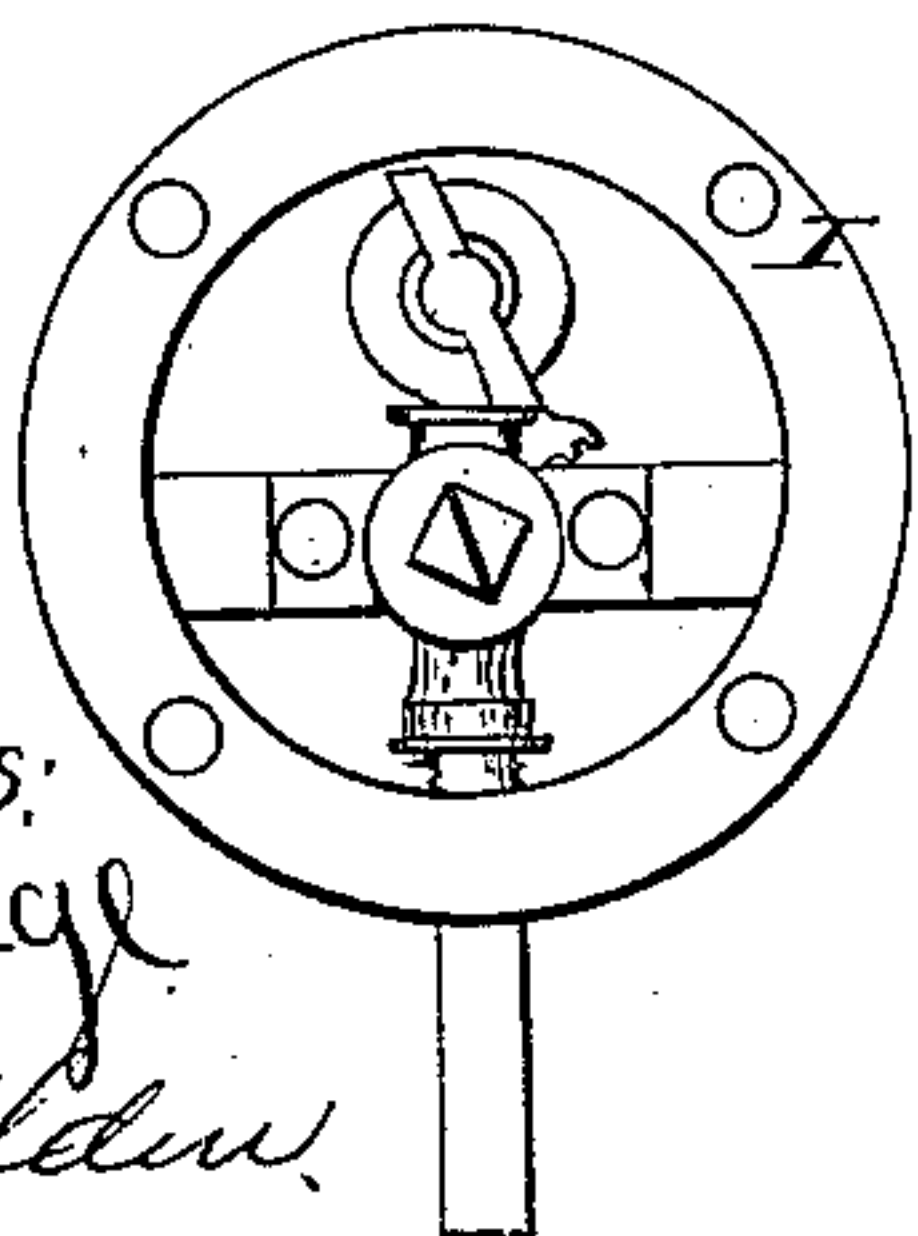
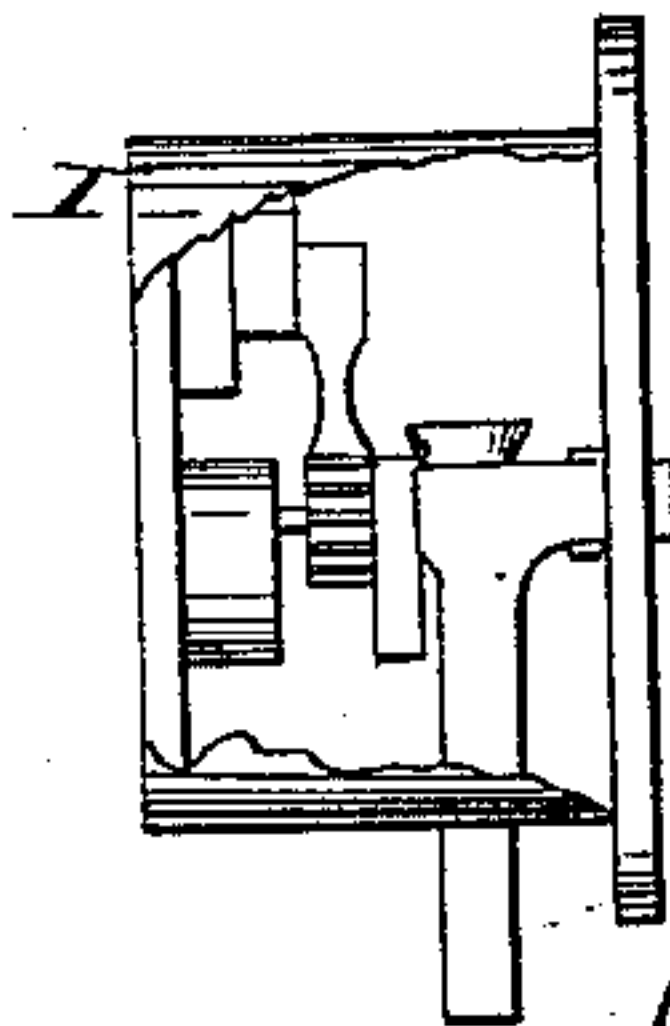


Fig. 5.



Witnesses:
J. B. Brown
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Inventor:
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United States Patent Office.

HENRY MCGANN, OF CLEVELAND, OHIO.

Letters Patent No. 84,642, dated December 1, 1868.

IMPROVEMENT IN AUTOMATIC BOILER-FEEDERS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, HENRY MCGANN, of Cleveland, in the county of Cuyahoga, and State of Ohio, have invented certain new and useful Improvements in a Device for Feeding Steam-Boilers; and I do hereby declare that the following is a full and complete description of the same, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1 is a side view of the apparatus.

Figures 2 and 3, a modification of fig. 1.

Figure 4, a detached vertical section of fig. 1.

Figure 5, a side view of fig. 3.

Figure 6 will be referred to hereinafter.

Like letters of reference refer to like parts in the different views presented.

The nature of this invention relates to a device for supplying water to steam-boilers, so that the water therein shall remain, at all times, at or near the water-line. When it falls below said line, the device operates, to supply the deficiency, and shuts off the water when the proper amount has been supplied to the boiler, the apparatus being automatic in its operation.

In fig. 1, A represents a case or shell, in which is a pendulum-float, indicated by the dotted lines B.

Said float is attached to a shaft, *a*, projected, through the side of the shell, (and in which it has its bearings,) into a supplementary shell or water-chamber, C.

To the end of said shaft is secured an arm, D, the lower end of which forms the segment of a circle, provided with teeth or cogs, *b*, the purpose of which will hereinafter be shown.

E is a valve-seat, and of which F is the valve, in the upper side of which are cogs or teeth, in which the teeth of the segment referred to are made to engage, as shown in fig. 4, and by which said valve is operated reciprocally, as and for a purpose presently shown.

G is an induction-water pipe, and H, the eduction-pipe, leading from the chest C to the boiler.

The practical application and operation of this apparatus are as follows, viz:

It is attached to the head of the boiler, or at any other convenient place, in the position shown in fig. 1, and in such relation to the water-line that the centre of the case, indicated by the line H', will be in said line.

The case or shell is put in direct communication with the boiler, so that the water flows therefrom into it, and which will, therefore, have one common height, in consequence of a free communication between them, below and above the water-line.

The water-chest or chamber C is provided with a cover, made to fit water-tight, thus enclosing the valve in a water-compartment, thereby equalizing the pressure of the water on the valve, and which is conducted into the same through the pipe G, connected to the pump.

The valve is operated by means of the float, which, as the water in the boiler descends, will also descend with it, as indicated by the dotted lines B, thereby moving the arm D, which, being engaged in the valve, will move it to the right, and bring the parts *c* in open relation with the parts *e* in the valve-seat, as shown in fig. 4, thereby allowing the water to flow from the chest, through the valve and pipe H, to the boiler; until the water is again at the water-line H', which, as the float ascends, will reverse the movement of the valve, and close the parts, thus shutting off a further inflowing of the water.

By this arrangement, it will be obvious that the water in the boiler can never fall below the water-line without the float operating the valve, thereby allowing the water to flow into the boiler, and shutting off the same when at the line of safety, thus automatically regulating the water in the boiler, so that it cannot descend below the lowest water-line. Hence all danger of collapse from a deficiency of water is avoided.

In a former patent granted to me for a similar device, the stop-cock which was employed in that apparatus, instead of a sliding valve, was not enclosed in a water-chest, as is the valve represented above, but was uncovered, the objection to which is that, unless the plug of the cock were made to fit closely tight, it would leak, and thus make a wet place about under it; also, in consequence of its being fitted so tight, the plug would bind in the chamber of the cock, so that the float sometimes failed to operate it, and thereby destroy its efficiency; but, by the use of a valve, and enclosing it in a chest, as above described, this difficulty is avoided; or, if the stop-cock is used, instead of a valve, and enclosed, as shown in figs. 3 and 5, in a water-chest, I, the plug may be fitted loosely in the chamber, and thus be free to move by the float, and, though it may leak, the water cannot find its way to the outside of the chest, but is conveyed back into the cock; thence to the boiler.

Fig. 6 represents a modified form of the valve, and which consists of a circular valve, J, fitted to a corresponding seat, K, the valve being provided with cogs or teeth, in which the segment-gear of the arm D is made to engage, so that the valve is opened and shut as the float rises or falls.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the slide-valve F with the arm D, shaft *a*, float B, case A, and chest C, substantially as specified.

2. The supplementary chest C, in combination with the shell A, as set forth.

HENRY MCGANN.

Witnesses:

W. H. BURRIDGE,
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