

(No Model.)

T. BARBER.
BOILER FEED AND ALARM.

No. 325,898.

Patented Sept. 8, 1885.

Fig. 1.

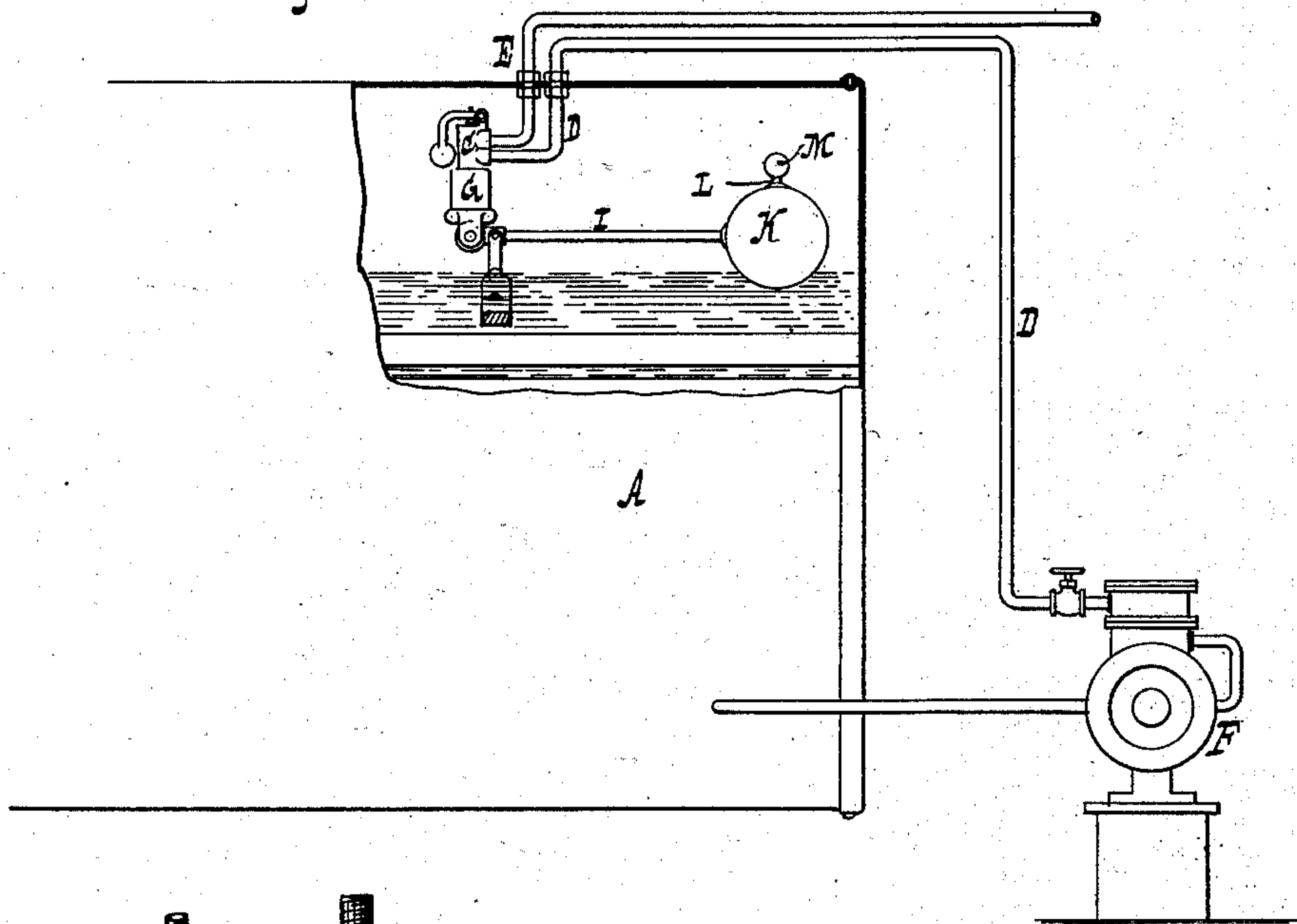


Fig. 2.

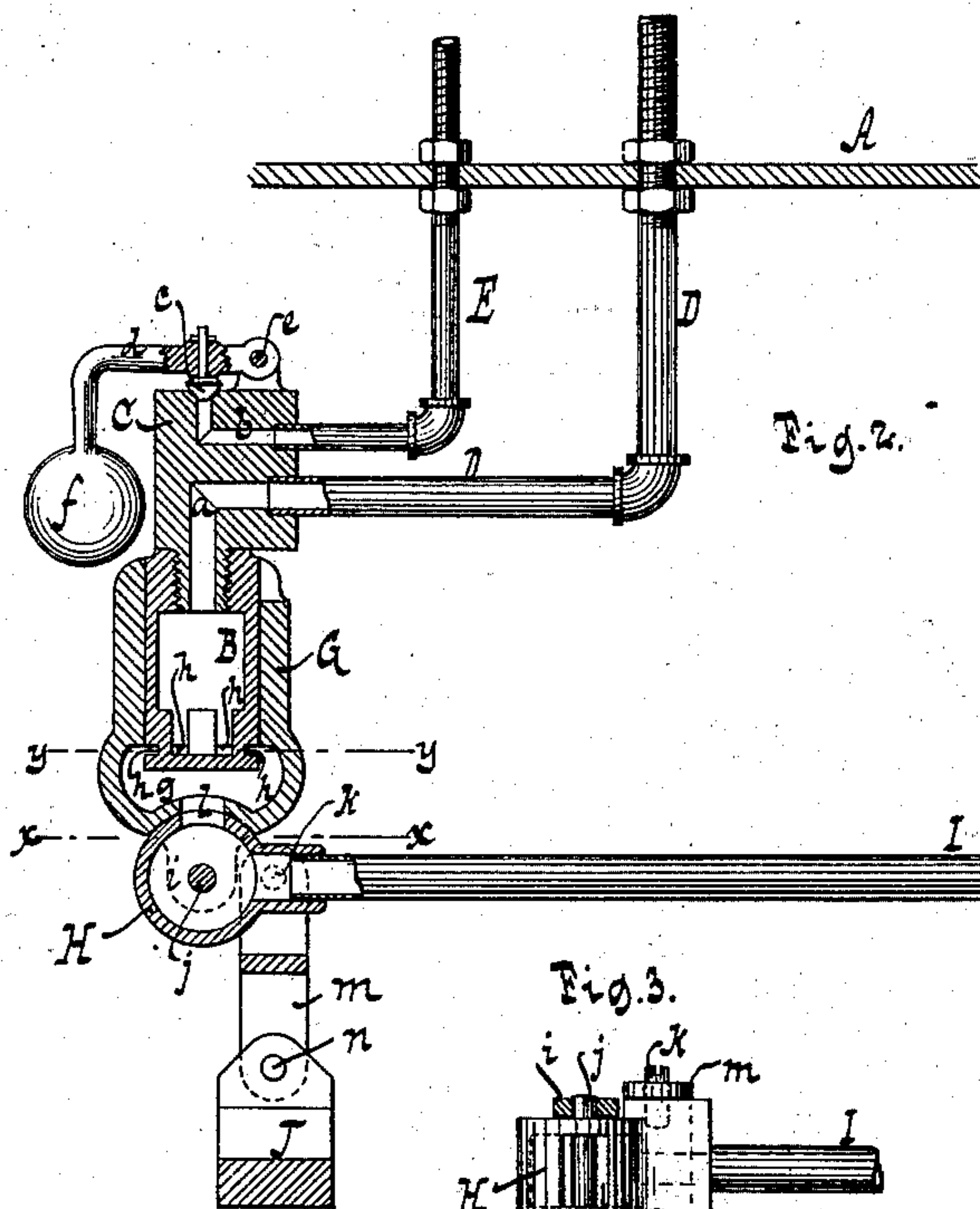
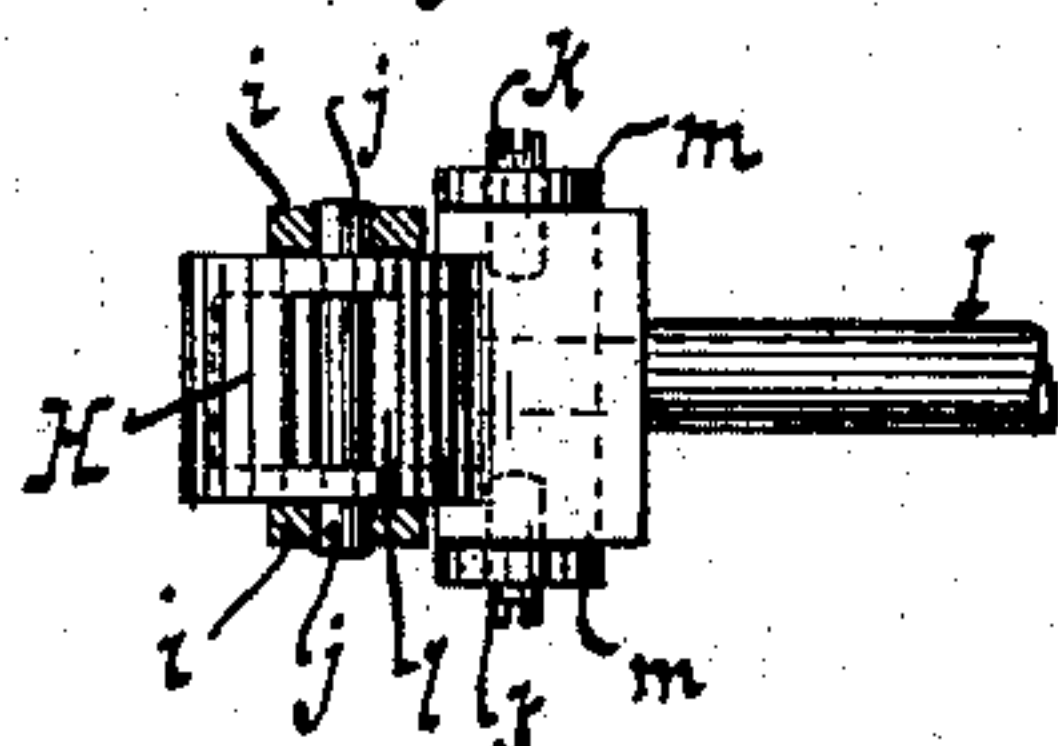


Fig. 4.



Fig. 3.



WITNESSES:

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BOILER-FEED AND ALARM.

SPECIFICATION forming part of Letters Patent No. 325,898, dated September 8, 1885.

Application filed May 22, 1885. (No model.)

To all whom it may concern:

Be it known that I, THOMAS BARBER, a citizen of the United States, residing at Flatbush, in the county of Kings and State of New York, have invented new and useful Improvements in Boiler-Feed and Alarms, of which the following is a specification.

This invention has for its object to provide novel mechanism for actuating the feed-pump of a boiler and to indicate undue low water in the boiler. These objects I accomplish in the manner and by the means hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 represents a sectional view of a steam-boiler provided with my feed and alarm. Fig. 2 is a longitudinal vertical section of the boiler-feed and alarm detached on a larger scale than the previous figure. Fig. 3 is a horizontal section on the plane *x x*, Fig. 2. Fig. 4 is a horizontal section in the plane *y y*, Fig. 2.

Similar letters indicate corresponding parts.

In these drawings, the letter A designates a steam-boiler, which may be a plain cylinder boiler or a tubular boiler. In the interior of this boiler is placed a chamber, B, in the upper end of which is secured a block, C, from which extend two pipes, D E. These pipes extend to the outside of the boiler, and they support the chamber B in the desired position. The pipe D connects at its outer end with the steam-chest of the feed-pump F and serves to supply steam to this pump whenever it is desirable to start the same. The inner end of the pipe D communicates through a channel, *a*, in the block C with the interior of the chamber B. The pipe E is connected at its outer end with an alarm, which may be situated at any place suitable for the same, and the inner end of said pipe communicates with the channel *b* in the block C. The open end of this channel forms the seat for a valve, *c*, which I term the "alarm-valve," and the stem of which passes through a lever, *d*, and is secured therein by a pin or other suitable means. This lever swings on a pin, *e*, secured in lugs projecting from the block C, and on its free end is secured a weight, *f*, which serves to hold the valve *c* down in its seat.

The chamber B is by preference made cylindrical and it fits in the bore of the main valve

G, the lower portion of which forms a steam-space, *g*, which, when the valve is raised to the position shown in Fig. 2, communicates with the interior of the chamber B through openings *h*, Figs. 2 and 4.

The valve G is provided with ears *i*, which are connected by a pivot, *j*, to a hollow head, H, which swings on pivots *k k*, Figs. 2 and 3, and in which is secured a pipe, I. Said head is ground steam-tight into the concave bottom of the valve G, and it communicates through openings *l l* with the steam-space *g* in said valve. The pivots *k k* pass through links *m m*, which connect by a pin, *n*, with a bracket, J, secured in the interior of the boiler.

The pipe I extends into the interior of the float K, which is firmly secured thereon, so that said pipe practically forms the stem of the float. In the top of the float is secured a pipe, L, which opens into the steam-space of the boiler, and on this pipe is secured a weight, M. From this description it will be seen that the pressure on the inside and outside of the float is balanced and the danger that the float may collapse is entirely avoided.

In the position which the float occupies in the drawings steam enters through the float and its tubular stem I into the head H, the steam-space *g*, and chamber B, whence it passes through the pipe D to the feed-pump F. If the water rises in the boiler the valve G is depressed, steam is shut off from the pump F, and the motion of this pump stops. If from some cause the float sinks down until it strikes the boiler-flue O the valve G is raised up, so that it presses against the weight *f*, the lever *d* is forced upward, the alarm-valve *c* is opened, and steam from the steam-space of the boiler passes through the alarm-pipe E to the alarm. Under normal conditions, however, whenever the float sinks down to the mean water-line the feed-pump is started and an almost uniform water-level is maintained in the boiler.

I do not claim in this application for a patent those matters which I have claimed in an application for a patent filed by me on February 28, 1885, Serial No. 157,390.

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

1. The combination of a stationary hollow chamber, B, having a pipe, D, for connecting

with a feed-pump, a valve, G, sliding vertically on the chamber and having a valve-seat at its lower end, and a rotary hollow valve pivoted below the said valve-seat, with the pipe I, 5 connected with the rotary valve, and the float K, having an opening through which steam can enter, and with which float the said pipe communicates, substantially as described.

2. The combination of a hollow stationary 10 chamber, B, having an alarm-valve, an alarm-pipe, E, and a pipe, D, for connecting with a feed-pump, a valve, G, sliding vertically on the chamber and having a valve-seat, and a rotary valve seated upon said valve-seat, with 15 the pipe I, connected with the rotary valve, and a float, K, having an opening through which steam can enter and with which float the said pipe communicates, substantially as described.

3. The combination, substantially as herein 20 described, of the float, the pipe or opening admitting steam into the float, the tubular stem I, the pivoted head H, the valve G, slidable vertically on the chamber B and the steam-pipe D.

4. The combination, substantially as herein 25 described, of the float, the pipe or opening admitting steam into the float, the tubular stem I, the pivoted head H, the valve G, slidable vertically in chamber B, the lever d, the alarm-valve c, and the alarm-pipe E. 30

In testimony whereof I have hereunto set my hand and seal in the presence of two subscribing witnesses.

THOMAS BARBER. [L. S.]

Witnesses:

W. HAUFF,

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