

(No Model.)

H. J. WEISSER.  
AUTOMATIC BOILER FEED.

No. 521,351.

Patented June 12, 1894.

Fig. 1.

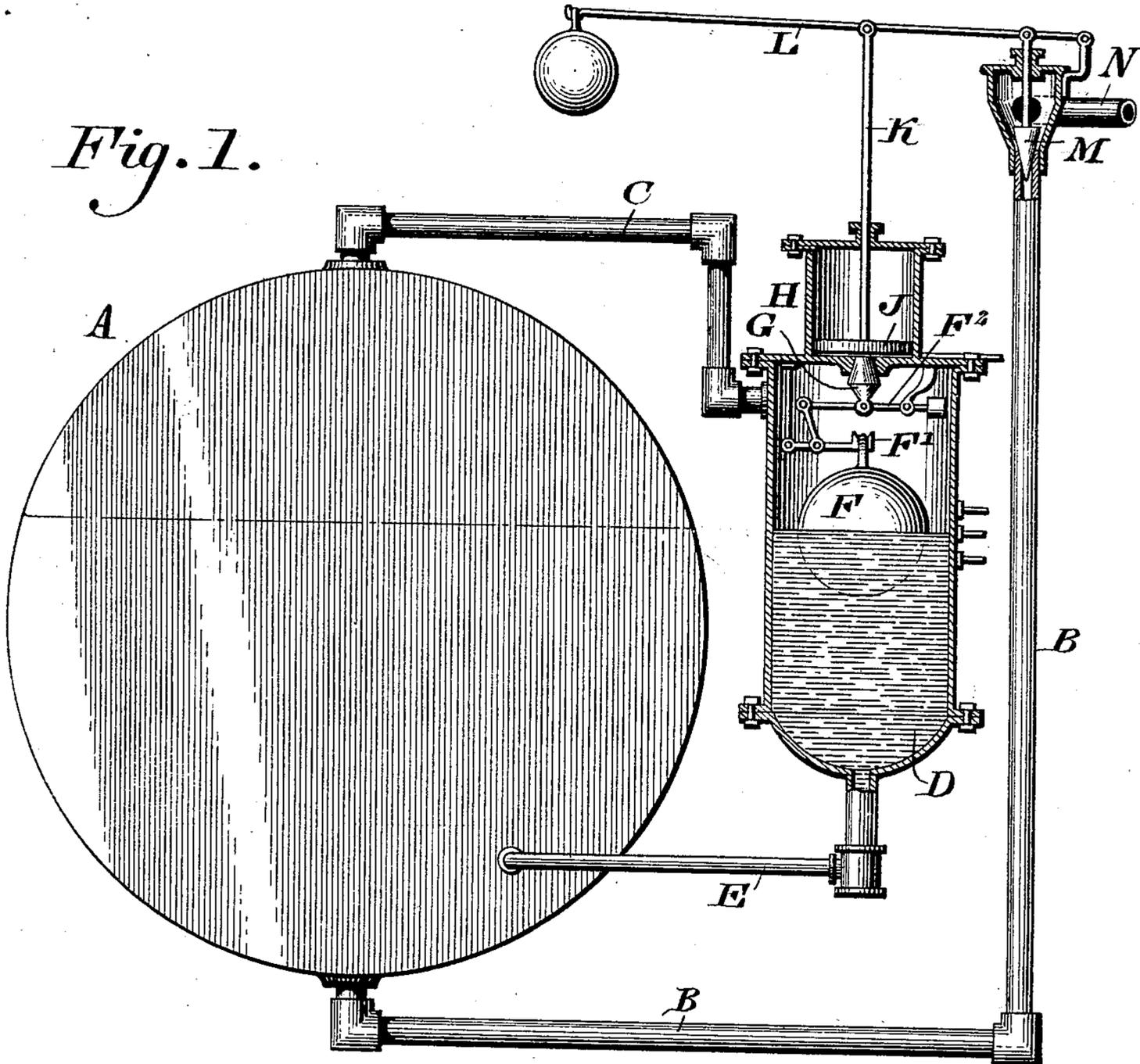
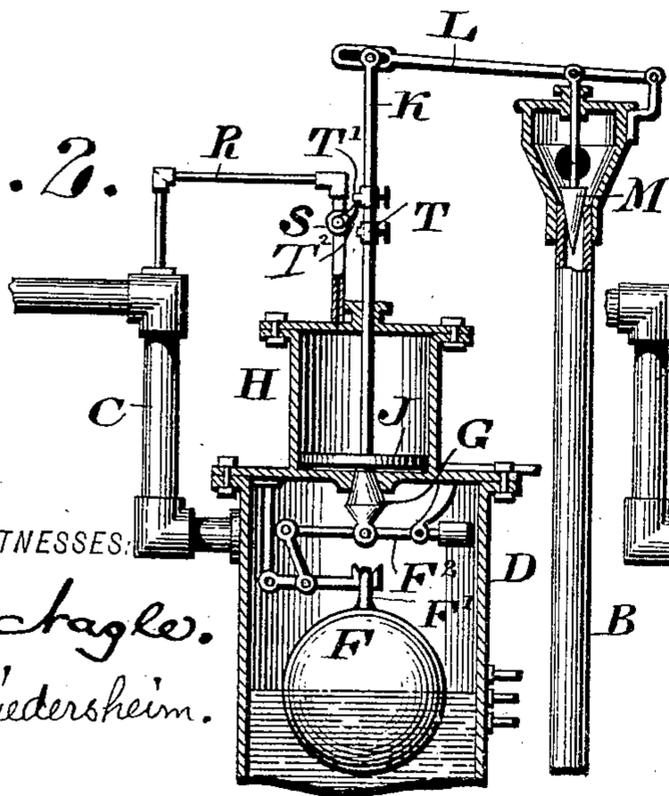


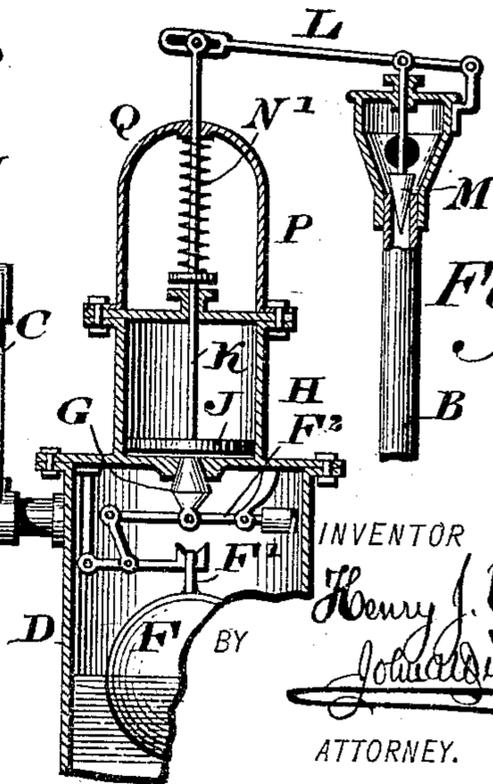
Fig. 2.



WITNESSES:

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Fig. 3.



INVENTOR

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# UNITED STATES PATENT OFFICE.

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## AUTOMATIC BOILER-FEED.

SPECIFICATION forming part of Letters Patent No. 521,351, dated June 12, 1894.

Application filed August 26, 1893. Serial No. 484,113. (No model.)

*To all whom it may concern:*

Be it known that I, HENRY J. WEISSER, a citizen of the United States, residing at Pottstown, in the county of Montgomery, State of Pennsylvania, have invented a new and useful Improvement in Automatic Boiler-Feeds, which improvement is fully set forth in the following specification and accompanying drawings.

My invention consists of an automatic boiler feed or feed valve formed of a vessel in communication with the boiler, a float in said vessel adapted to open a valve therein, and a piston which is operated by the influx of steam into said vessel, whereby a valve in the feed pipe is opened and the boiler accordingly supplied, said feed pipe valve afterward closing when the level of water is obtained said parts being arranged and combined as hereinafter described.

Figure 1 represents a partial side elevation and partial vertical section of a boiler feed embodying my invention. Figs. 2 and 3 represent vertical sections of different forms thereof.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates a steam boiler, and B designates the water supply pipe thereof.

C designates a steam pipe which is connected with the boiler, and with the steam-receiving vessel D, the latter having connected with it the water pipe E, which is also connected with the boiler, so that the level of water in the boiler will be the same in said vessel.

F designates a float which is in the vessel D, the same being hung by the levers F', F<sup>2</sup>, with the valve G, whose seat is on the upper wall of the vessel D, and which opens into the box H, within which is the piston J, whose stem K is pivoted to the weighted lever L, the latter carrying near its axial end the valve M whose seat is on the water supply pipe B below the inlet branch N thereof.

The float F is freely hung on one end of the lever F', so as to at all times maintain its vertical position, and the said lever is pivoted at its other end to the wall of the vessel D, or an attachment thereof, and is connected by a link with one end of the lever F<sup>2</sup>, which

latter is weighted at its other end, and is pivoted to a hanger on the wall of the vessel D, the valve G being pivotally connected with said lever between its fulcrum and the link connection, thereby insuring vertical movements at all times, of said float and valve.

It will be seen that when the boiler is properly supplied with water, the valve G is closed, owing to the position of the float F. When the water becomes low, the float falls and carries the valve G with it, thus opening communication with the box H, and causing the steam which has entered the vessel D through the pipe C to impact against the piston J, and raise the same. This lifts the valve M, and accordingly causes water to flow from the branch N into the pipe B, and thus supply the boiler. When the level of water is attained, the float rises and closes the valve G. The piston J now descends, owing to the weighted lever L, and the valve M is closed, whereby the supply of water ceases.

In lieu of the weight on the lever L, I may employ the spring N' which bears against a collar on the stem K, and a yoke or other support Q on the box H, as shown in Fig. 2.

In Fig. 2, I show both the weight and spring dispensed with, and in lieu thereof I employ the supplemental steam pipe R, which is connected with the pipe C and box H and communicates with the same. A valve S is placed on said pipe R, and lugs T, T', on the stem K in such manner that when the piston J has risen sufficiently, the lug T engages the arm T<sup>2</sup> on the stem of the valve R, and opens the latter, whereby steam enters the box H, and lowers the piston, the valve M being thereby closed. The descent of the stem K causes the lug T' to engage with the arm T<sup>2</sup> and close the valve S, and thus the supply of steam through the pipe R is cut off.

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

1. An automatic boiler feed having a vessel connected by water and steam pipes with the boiler, a water pipe leading into the boiler and having a controlling valve, a valve controlling a steam outlet from said vessel, said valve being connected by levers with a float therein, a box in communication with said steam outlet having a piston therein, a lever

connected with said water pipe valve and  
with said piston, and a supplemental steam  
pipe leading from the first mentioned steam  
pipe to said box on the opposite side of the  
5 piston from said steam outlet valve of the  
said vessel, and a valve in said supplemental  
steam pipe having an arm engaged by stops  
on the stem of said piston, said parts being  
combined substantially as described.

10 2. The combination of the vessel D, having  
steam and water communication with a boiler,  
the box H on said vessel D, the valve G be-  
tween said vessel and box, the lever F' in  
said vessel, the float F freely mounted on said

lever F', the lever F<sup>2</sup> having a weight on one 15  
end, and its other end linked to said lever F',  
the said valve G being pivotally connected to  
said lever F<sup>2</sup> intermediate of its fulcrum and  
its linked connection, a piston in said box, a  
water supply pipe to said boiler with a valve 20  
therein, and a weighted lever connected to  
said water supply pipe valve and to said pis-  
ton, substantially as and for the purpose set  
forth.

HENRY J. WEISSER.

Witnesses:

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