

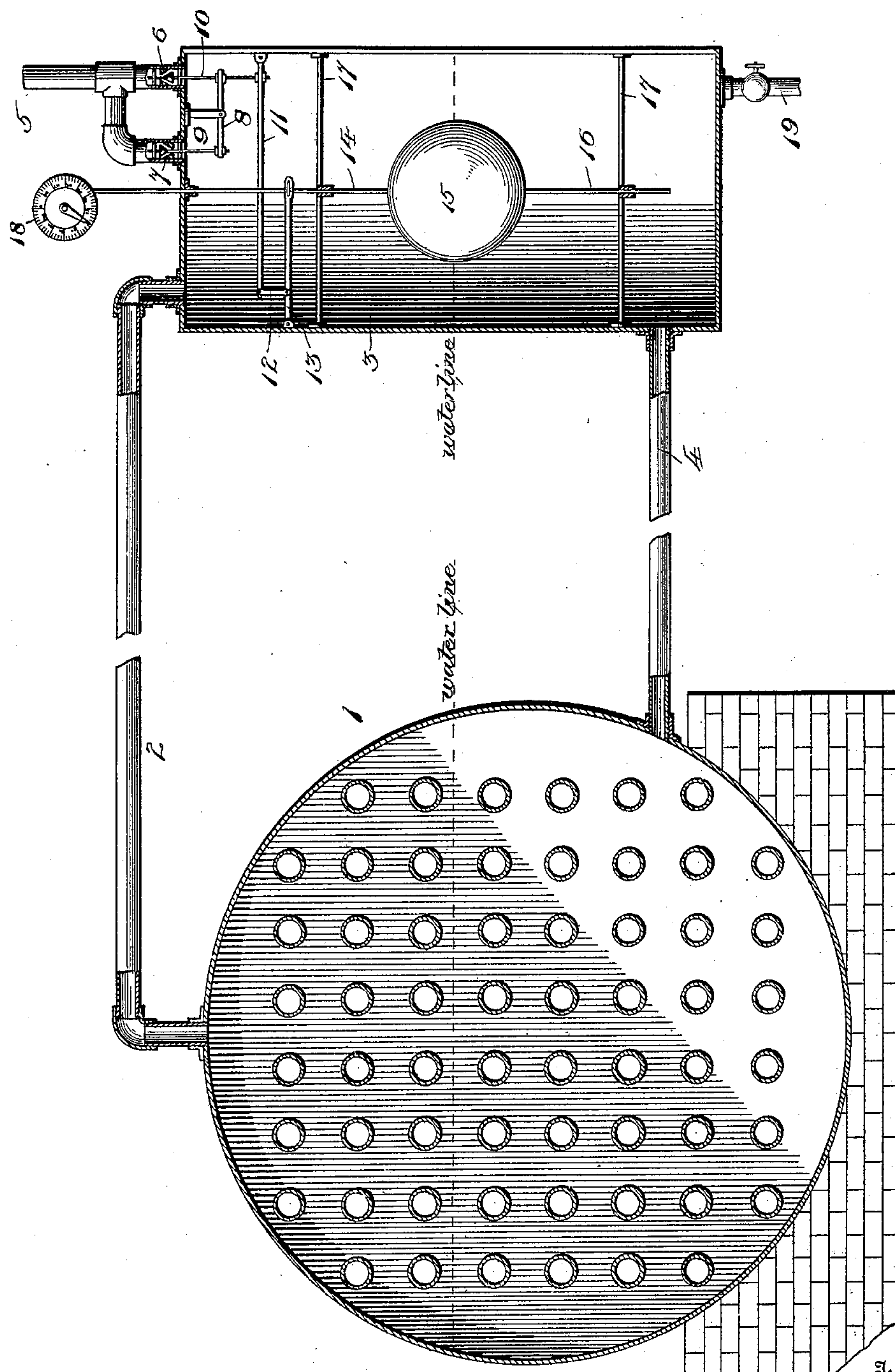
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J. R. KELLEY.
BOILER FEEDING APPARATUS.

(Application filed Feb. 11, 1898.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

JOHN RILEY KELLEY, OF REELFOOT, TENNESSEE.

BOILER-FEEDING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 611,967, dated October 4, 1898.

Application filed February 11, 1898. Serial No. 669,969. (No model.)

To all whom it may concern:

Be it known that I, JOHN RILEY KELLEY, a citizen of the United States, residing at Reelfoot, in the county of Lake and State of Tennessee, have invented certain new and useful Improvements in Boiler-Feeding Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My present invention relates to an automatic boiler-feeding apparatus.

The object of the invention is to provide simple, durable, and efficient mechanism automatically operated by the variation of the water-level in the boiler to cause the automatic introduction or feed of water to the boiler when the water contained therein falls below a predetermined level.

To the accomplishment of these and other objects subordinate thereto the invention consists in certain novel details of construction and in the arrangement of parts herein-after described and claimed, and illustrated in the accompanying drawing.

In the drawing the figure represents a central vertical section through the boiler and valve-chamber, the mechanism upon the interior of the latter being shown in full lines.

Referring to the numerals on the drawing, 1 indicates a boiler of any ordinary construction, from the top or dome of which is led a steam-pipe 2, communicating with a preferably elongated cylindrical float-chamber 3, from the lower end of which is led a water-pipe 4, piercing the shell of the boiler at a point below the lowest level of water in the boiler. By this arrangement it will be seen that the water-level in both the boiler and float-chamber will at all times remain identical and that the upper end of the float-chamber will always be under the same steam-pressure as the dome of the boiler.

5 indicates what I will term the "steam-supply" pipe, leading from the top of the float casing or chamber to a pump or other boiler-feeding apparatus operated under steam-pressure. The extremity of the pipe 5, which pierces the upper end of the casing 3, is preferably bifurcated, as shown, in order to permit of the use of balanced valves 6 and 7,

oppositely disposed and carried at the opposite ends of a valve-lever 8, pivoted at its center to the lower extremity of a pendent bracket 9. The valve-lever is in turn connected to what may be termed a "valve-stem" 10, pivotally connected at its lower extremity to a horizontally-disposed lever 11, pivoted at one end to the side wall of the casing 3 and connected at its outer free end through a link 12 to what may be termed a "float-lever" 13, pivoted at the opposite side of the casing. The free end of the lever 13, which is located, preferably, axially with respect to the casing 3, is pivotally connected to the float-stem 14, extending upwardly through the top of the casing from a float 15 of any desired construction or dimension and from the opposite end of which depends a guide-stem 16. Suitable guides 17 are preferably provided at proper points to guide the stems 14 and 16 in order to prevent lateral play or vibration of the float 15.

18 indicates a water-gage of any suitable ordinary construction, which may be mounted immediately above the chamber 3 and operatively connected, in a manner not necessary to be described, to the upper end of the stem 14. If desired, a cock-controlled drip-pipe 19 may be led from the bottom of the float-chamber for the purpose of drawing off the water and sediment when it is thought desirable.

The operation of this form of my device will be obvious, since the float, when dropped sufficiently by the recession of the water-level within the float-chamber, will through the intermediate mechanism cause the valves 6 and 7 to open and will permit the steam to pass through the steam-pipe 5 to the pump-injector or other device. As soon, however, as the level of the water has reached the proper point by the introduction of the feed-water into the boiler the float will actuate the valves to cut off the steam-supply to the pipe 5 and the feed will be interrupted until it is again made necessary by the variation of the water-level due, of course, to the generation of the steam.

From the foregoing it will be observed that I have produced a novel and comparatively inexpensive and highly-efficient automatic apparatus for supplying steam to a pump-

indicator or boiler-feeding device and operated by the level of the water within the boiler; but while the present embodiment of my invention appears at this time to be preferable I do not care to limit myself to the structural details set out, but reserve the right to change, modify, or vary them at will within the scope of the protection prayed.

What I claim is—

10 The combination with a boiler, and a cylindrical float-casing in communication with said boiler at its upper and lower ends, of a steam-supply pipe having a bifurcated extremity, the branches of which lead into the upper
15 end of said casing, oppositely-disposed balanced valves controlling the passage through the branches of said pipe, a centrally-pivoted valve-lever connected at its opposite ends to the respective stems of said valves, a float
20 within said casing, a float-stem extending in opposite directions from said float, the upper

end of said stem projecting through the head of said casing and operatively connected to suitable indicating mechanism, guides within said casing through which the float-stem
25 passes, a float-lever fulcrumed at one end to the interior of said casing and pivoted at its opposite end to said float-stem, a lever intermediate of the valve and float levers fulcrumed at one end to the casing opposite the
30 float-lever and connected at a point intermediate of its ends to the stem of one of said valves, and a link connecting the free end of said intermediate lever with said float-lever at a point intermediate the ends of the
35 latter.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN RILEY KELLEY.

Witnesses:

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