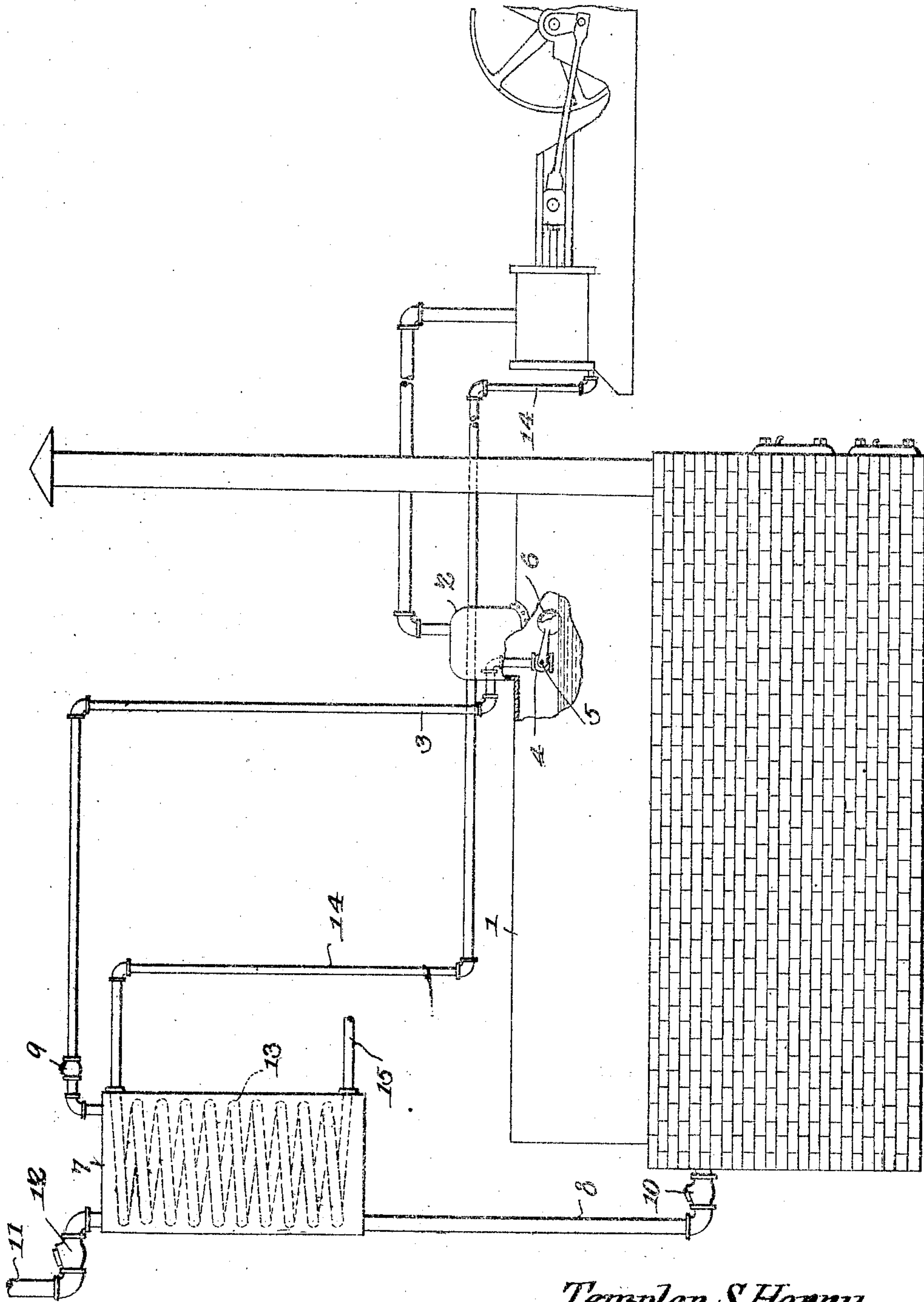


No. 826,786.

PATENTED JULY 24, 1906.

T. S. HORRY.  
BOILER FEEDER.

APPLICATION FILED MAR. 15, 1906.



*WITNESSES:*

*C. H. Stewart*  
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# UNITED STATES PATENT OFFICE

TEMPLER SHUBUCK HORRY, OF GREENSBORO, NORTH CAROLINA.

## BOILER-FEEDER.

No. 826,786.

Specification of Letters Patent.

Patented July 24, 1906.

Application filed March 15, 1906. Serial No. 306,267.

*To all whom it may concern:*

Be it known that I, TEMPLER SHUBUCK HORRY, a citizen of the United States, residing at Greensboro, in the county of Guilford and State of North Carolina, have invented a new and useful Boiler-Feeder, of which the following is a specification.

This invention relates to a combined boiler-feeder and feed-water heater; and its object is to provide a device of simple construction which when connected to a boiler will automatically supply water thereto as needed, said water having first been heated by waste or exhaust steam.

The invention consists of a receptacle the upper end of which is connected to the steam-dome of the boiler, while the lower end is connected by a water-pipe with the lower portion of the boiler. A water-inlet is disposed within the receptacle, and a coiled pipe is also located within said receptacle and is connected with the exhaust of an engine, so that the waste steam may be utilized for heating the water prior to its discharge into the boiler. The pipe for conveying the steam to the receptacle has a float thereon adapted to be opened or closed automatically as the water within the boiler assumes different levels, thereby admitting steam to the receptacle and equalizing the pressure upon the water contained therein, so that the feed-water will flow into the boiler until the water therein will reach a predetermined level and shut off the valve in the steam-pipe.

The invention also consists of certain other novel features of construction and combinations of parts, which will be hereinafter more fully described, and pointed out in the claim.

In the accompanying drawing the combined heater and feeder is shown in section, and the relation of the boiler and engine thereto is shown diagrammatically.

Referring to the drawing by numerals of reference, 1 is a boiler of any preferred construction, from the steam-dome 2 of which extends a steam-pipe 3, having one end projecting downward into the boiler and provided with a valve 4. The stem 5 of the valve has a float 6, which is adapted to be raised and lowered with the level of the water contained within the boiler. The valve is so disposed that when the float is raised the pipe 3 will be closed and when the float swings downward to a predetermined point the pipe will be opened. Pipe 3 opens into

the upper end of a receptacle 7, the lower end of which is connected by an outlet-pipe 8 with the lower portion of boiler 1. A check-valve 9 is located at a suitable point in pipe 3, so as to prevent outward pressure from the receptacle 7 through said pipe 3, and another check-valve 10 is suitably located in pipe 8 to prevent water within the boiler from backing through the pipe into the receptacle 7. A supply-pipe 11 opens into the upper portion of receptacle 7 and also has a check-valve 12 for preventing the contents of the receptacle from being forced outward through said pipe. A pipe-coil 13 is disposed within the receptacle 7, and one end is connected by a pipe 14 with the exhaust of an engine, and the other end has an outlet or discharge pipe 15.

In operation the pipe 3 will be normally closed, and the exhaust-steam will pass through pipe 14 into the coil 13 and then outward through pipe 15, thereby heating the feed-water, which is supplied by gravity to receptacle 7 through pipe 11. As the water-level within the boiler becomes lower the float 6 will cause stem 5 to swing downward, and when a predetermined point is reached the valve 4 will be opened and steam will escape through the pipe 3 into receptacle 7. The pressure within said receptacle will then be rendered equal to that within the boiler, and the water contained within said receptacle will therefore flow by gravity through pipe 8 and into the boiler. The water-level in the boiler will therefore be raised and cause the valve 4 to close, so as to shut off the supply of steam through pipe 3. Water will then promptly flow into receptacle 7 from the pipe 11 until said receptacle is filled, and the operation above described can then be repeated. Importance is attached to the fact that waste steam is utilized for heating the feed-water prior to its discharge into the boiler, said heating being facilitated by allowing water to come into direct contact with coils through which the waste steam passes.

If desired, the flow of steam through pipe 3 may be regulated by a hand-operated valve instead of the float-operated valve shown and described.

I claim—

The combination with a boiler having a steam-dome thereon, a steam-pipe extending into the dome, and a float-valve for opening and closing said pipe when water in the boiler



reaches predetermined levels; of a water-receptacle, said steam-pipe opening into the top of said receptacle, a check-valve within the outlet portion of said steam-pipe, a water-supply pipe opening into the upper portion of the water-receptacle, a check-valve therein for preventing return flow of water after being discharged into the receptacle, a water-pipe connecting the bottom of said receptacle with the lower portion of the boiler, a check-valve therein adjacent the boiler to prevent escape of water from the boiler, a heating-coil disposed within the water-receptacle and extending between the water inlet

and outlet pipes, and means for directing steam into said coil, the inlet end of said coil extending into the path of water discharged from the water-supply pipe and the steam-pipe opening into the receptacle close to said water-supply pipe. 15

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses. 20

TEMPLER SHUBUCK HORRY.

Witnesses:

A. R. HORRY,  
G. D. FERGUSON, Jr.