

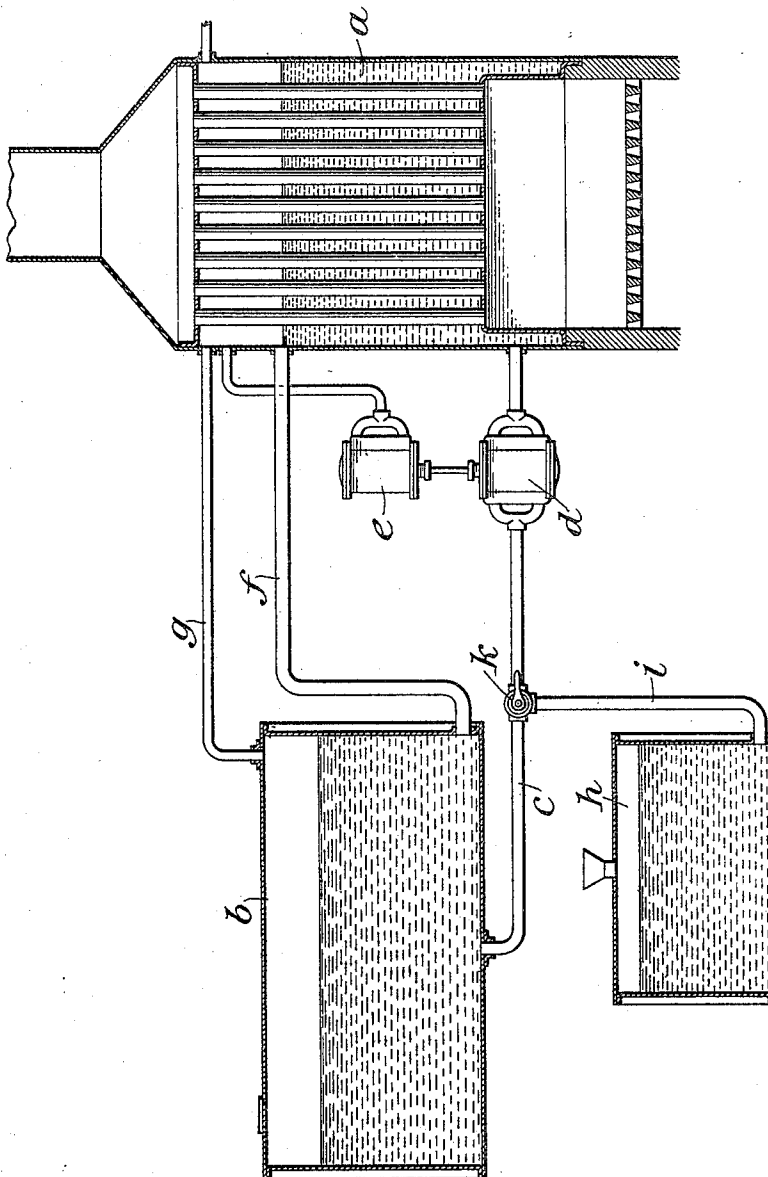
No. 690,957.

Patented Jan. 14, 1902.

C. W. HUNT.
BOILER FEEDER.

(Application filed May 22, 1901.)

(No Model.)



Attest:

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UNITED STATES PATENT OFFICE.

CHARLES W. HUNT, OF WEST NEW BRIGHTON, NEW YORK.

BOILER-FEEDER.

SPECIFICATION forming part of Letters Patent No. 690,957, dated January 14, 1902.

Application filed May 22, 1901. Serial No. 61,377. (No model.)

To all whom it may concern:

Be it known that I, CHARLES W. HUNT, a citizen of the United States, residing in West New Brighton, borough of Richmond, in the city of New York, in the State of New York, have invented certain new and useful Improvements in Boiler-Feeders, of which the following is a specification, reference being had to the accompanying drawing, forming a part hereof.

The main object of the invention is to provide improved means for the maintenance of the water-level in the boiler at a substantially uniform height, so that the best results in the generation of steam may be attained under all conditions.

The invention is particularly applicable to boilers of that general type in which a comparatively small volume of water is directly subjected to the action of heat for the generation of steam for power purposes, while provision is made for a sufficient supply of water to keep up the generation of steam for the desired time; but, as will be seen, the invention is not necessarily restricted to use with boilers of the type referred to.

In accordance with the invention a separate tank or reservoir is provided to contain a reserve supply of water and is suitably connected with the boiler, means being also provided for maintaining a constant flow from the tank or reservoir to the boiler in excess of the quantity evaporated, the surplus returning from the boiler to the tank or reservoir, while provision is made for equalization of pressures in the boiler and tank.

The invention will be more fully described and other features pointed out hereinafter with reference to the accompanying drawing, in which a convenient and practical embodiment thereof is illustrated, partly in section, for the purposes of explanation.

The boiler proper or steam-generator may be of any suitable or desired construction. As represented in the drawing, it is a vertical tubular boiler of an ordinary type. In any convenient position with respect to the boiler *a*, but preferably somewhat below the same in general level, is placed a tank or reservoir *b*, preferably closed and adapted to contain a considerable body of water, sufficient to sup-

ply steam during the desired or probable period of operation. From any convenient point in the tank *b*, preferably from a point near the bottom thereof, connection is made to any convenient point in the boiler *a* by a suitable pipe or conductor *c*, in which is interposed at a convenient point a circulating-pump *d* of any desired construction. This pump is intended to be operated continuously while the boiler is in use, and for this purpose is represented as connected mechanically with a steam-motor *e*, which may be supplied with steam from the boiler *a*, preferably from a point above the highest water-level. As stated hereinbefore, the quantity of water supplied to the boiler in a given period is in excess of the maximum quantity of water evaporated during the same period under normal conditions, so that the level of the water in the boiler shall not at any time fall below the predetermined height. In order that the water in the boiler shall not rise substantially above the predetermined height, a return connection *f* from the boiler to the tank is provided, such return pipe or connection being preferably free and direct and communicating with the boiler at the predetermined water-level and preferably below the steam connection above referred to and with the tank or reservoir *b* preferably near its bottom. For the purpose of equalizing the pressures on the surface of the water in the boiler and in the closed tank a third connection *g* from the upper part of the boiler to the upper part of the tank is also provided, steam passing freely through such pipe from one to the other.

The tank *b* may have a capacity equal to all ordinary demands that may be made upon it, and a supplementary tank or reservoir *h* may also be provided and connected by a pipe *i* and a three-way cock *k* with the pipe or conductor *c*, so that at any time by turning the three-way cock *k* water may be drawn from the supplementary reservoir *h* and added to the system.

It will be seen not only that it is possible by this invention to maintain the water-level of the boiler practically uniform at all times, so that the best results in the generation of steam may be secured, but it will also be seen

that the body of water in the tank or reservoir *b*, which by the return of the excess of water from the boiler quickly becomes heated to or nearly to the temperature of the water in the boiler, affords a large reserve supply of heat, so that the generation of steam will continue for sometime after the reduction of the fire beneath the boiler and so that a large volume of steam is always available to compensate for any extraordinary demands of the motor supplied by the boiler. Furthermore, by the provision of the supplementary tank or reservoir it is possible at any time to introduce into the system a small quantity of cold water, if it should be desirable.

It will be understood that the invention is not to be limited to the precise construction and arrangement of parts shown and described herein, such construction and arrange-

ment being chosen merely for the purpose of illustrating the nature of the invention.

I claim as my invention—

The combination with a boiler, of a water tank or reservoir, supply and return connections between said tank or reservoir and said boiler, a separate connection from the upper part of the boiler to the upper part of the tank to equalize the pressures and means for supplying water from the tank or reservoir to the boiler in excess of the amount evaporated.

This specification signed and witnessed this 20th day of May, A. D. 1901.

CHARLES W. HUNT.

In presence of—

ANTHONY N. JESBERA,
LUCIUS E. VARNEY.