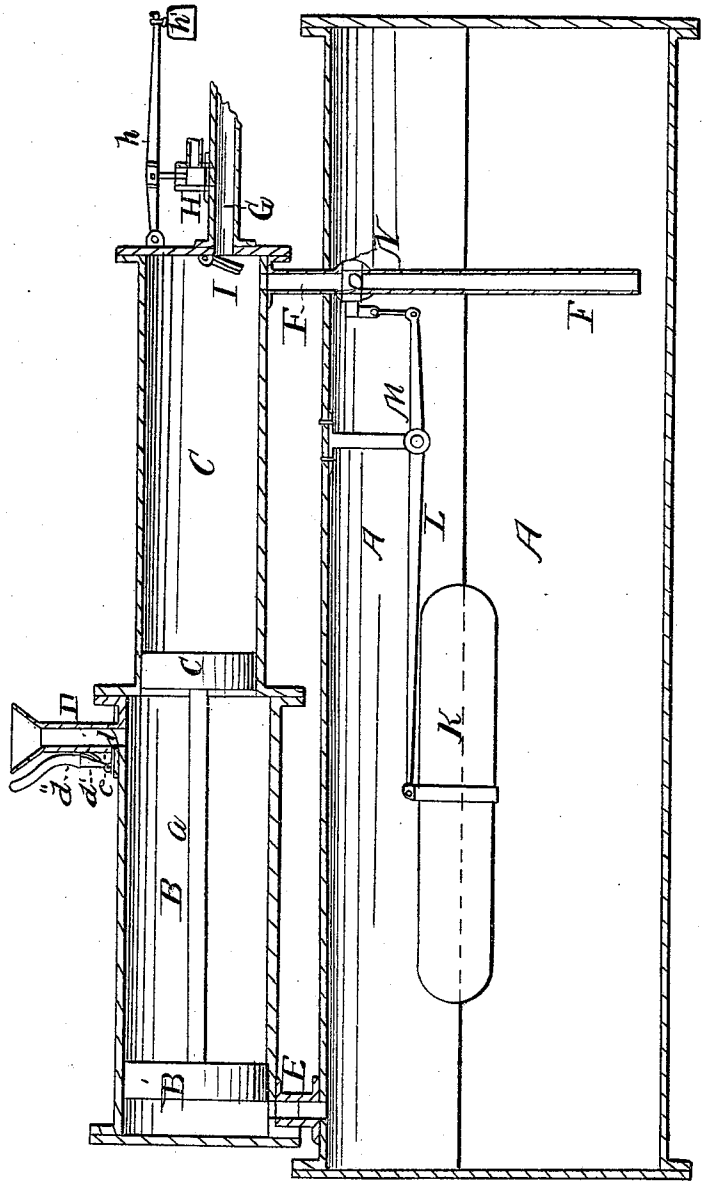
C. Clinton,

Steam-Boiler Water-Feeder,

No. 2,586. Patented Apr. 29, 1842.



UNITED STATES PATENT OFFICE.

CHARLES CLINTON, OF GOSHEN, NEW YORK.

STEAM-BOILER.

Specification of Letters Patent No. 2,586, dated April 29, 1842.

To all whom it may concern:

Be it known that I, CHARLES CLINTON, of Goshen, in the county of Orange, State of New York, have invented a new and useful Improvement in Regulating the Height of Water in Steam-Boilers, and that the following is a full and exact description of the same, reference being had to the annexed drawing, making a part of this specification, which represents a vertical longitudinal section through the boiler cylinders, &c.

On the top of a steam boiler A, of the common construction I place two cylinders B, and C, in a line with each other, having their two ends firmly connected and their other ends closed with heads steam tight; the cylinder B is somewhat larger than the cylinder C, and of equal length, having about one-eighth greater capacity for a purpose hereafter described; attached to this cylinder and opening into it on the top near where it joins the other cylinder is a pipe D, across the bottom of which slides a valve *d*. This valve is attached to an upright lever *d'*, having its fulcrum at *d''*. This valve is kept open by a spring *c*. There is another opening in the underside of the cylinder near the other end at E, communicating by a pipe with the boiler; at the other extremity of the cylinder C a tube F, is attached which extends down into the boiler nearly to the bottom, or, if necessary this tube may pass down outside the boiler and enter below in a manner that will at once be obvious, to the head of cylinder C, is screwed a pipe G, leading to the force pump which is of the usual form; on this pipe near the head I place a waste valve H, formed like the safety valve of a steam engine *h* is the lever and *h'*, the weight of this allows the water to escape when forced in too fast; there is also a hinged valve I, over the orifice of the pipe inside the cylinder head opening inwardly. Within the boiler I place a cylindrical hollow metal float K, to the top of which at the center I attach one end of the horizontal lever L, having its fulcrum at M, on a standard extending down from the top of the boiler; from the other end of this lever there runs up a rod, which is attached to the short lever of a stop cock N, in the tube F.

Within the cylinder B, a piston B', works steam tight, and another piston C', is fitted to the cylinder C, these pistons are connected by a rod, *a* so that both pistons shall move together.

Operation: When the force pump is set in motion it throws water into the cylinder C, and through the tube F, into the boiler, till the float K, rises high enough to close the cock N; the pistons will then be forced back till they reach the end of the cylinders by the water which fills cylinder C; if the force pump still continues to act, the waste valve H lets the water escape there; when the force pump ceases to act, and the water in the boiler becomes low enough to open the cock N, the pressure of the steam on the piston B' forces the water in the cylinder C into the boiler the enlarged size of cylinder B, aiding in this operation. When the piston B', passes the pipe D, the steam will rush out and give notice that the water is exhausted in cylinder C.

I sometimes vary the construction of this machine by placing the cylinders B, and C, vertical, one near each end of the boiler, with separate piston rods, which are connected with a working beam, having its fulcrum between them; if the cylinders are of the same diameter the fulcrum may be adjusted so as to produce an equal pressure on the piston.

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

The combination of a steam and water cylinder, provided with pistons connected together, with the boiler of a steam engine, having a float arranged within it as set forth, so that by the combined actions of the cylinders and float a continuous supply of water is afforded to the boiler or an alarm given when it ceases, all as herein described.

CHS. CLINTON.

Witnesses:

H. W. ELLIOTT,

HENRY W. ELLIOTT.