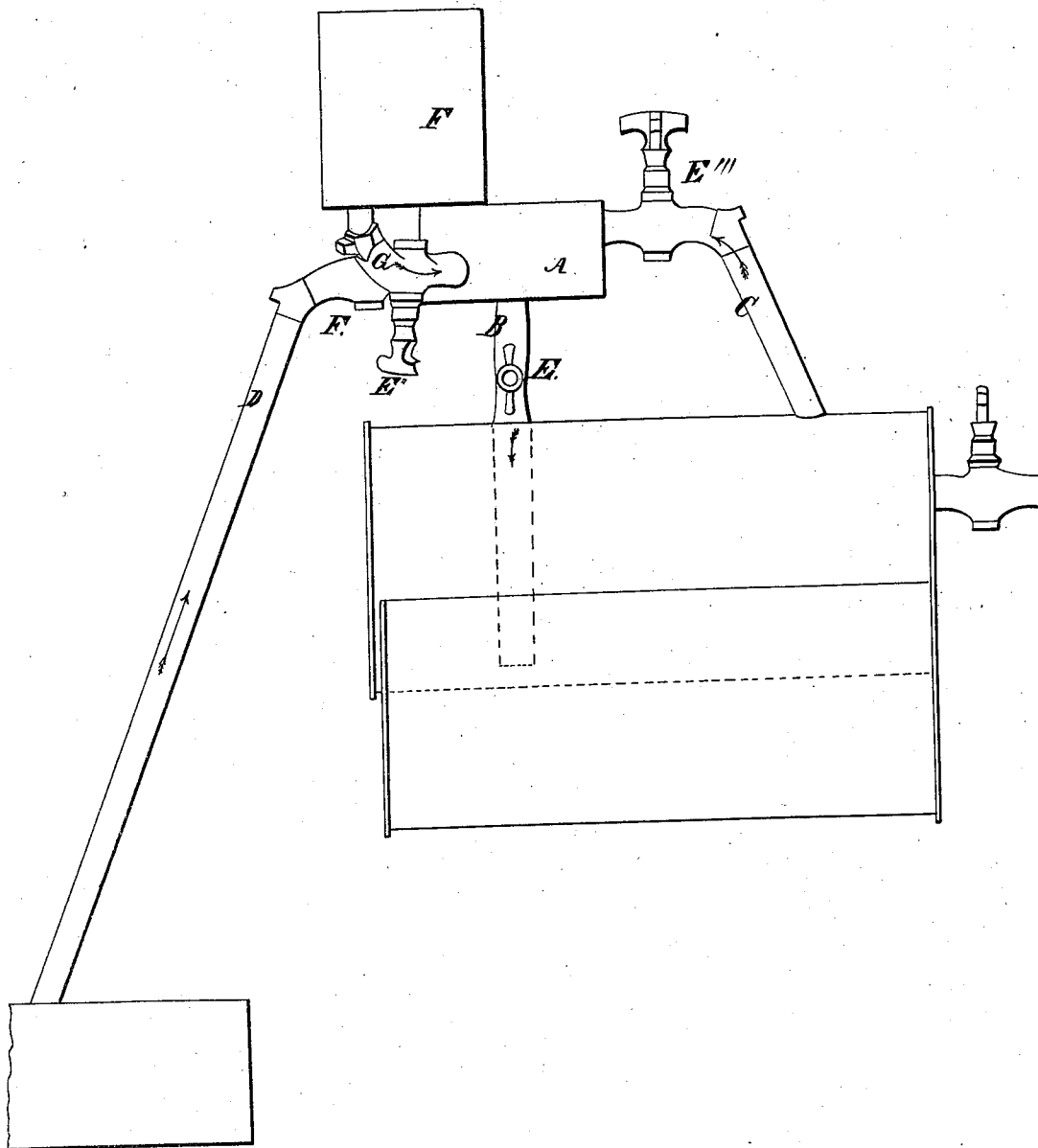


*B. M. Hyatt,*  
*Steam-Boiler Water-Feeder,*  
*No. 1,819,* *Patented Oct. 10, 1840.*



# UNITED STATES PATENT OFFICE.

BENJAMIN M. HYATT, OF WILMINGTON, DELAWARE.

## MODE OF SUPPLYING STEAM-BOILERS WITH WATER.

Specification of Letters Patent No. 1,819, dated October 10, 1840.

*To all whom it may concern:*

Be it known that I, BENJAMIN M. HYATT, of Wilmington, in the county of Newcastle and State of Delaware, have invented a new and useful Improvement in the Mode of Supplying Steam-Boilers with Water, which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Figure 1 is a side elevation of the apparatus

This apparatus consists of a small cylinder or reservoir A, placed above the boiler, or in any convenient position; into the bottom of which is introduced a hot water pipe B extending nearly to the bottom of the boiler inside, the lower end being always below the surface of the water, and a steam pipe C leading from the top of the boiler into the top or end of the cylinder or reservoir A, and a cold water pipe D leading from the other end of the cylinder or reservoir A to a well below the boiler containing water, each pipe containing a stop cock E.

The operation is as follows: All the cocks being closed open the cock E''' of the steam pipe and let a quantity of steam into the reservoir A. Then close this cock and open the cock E' in the cold water pipe when instantly the steam enters this pipe and is condensed leaving a vacuum in the cylinder, which is instantly filled by the water rising through said pipe D by atmospheric pressure. Then close this cock E' and open the cock E''' of the steam pipe C and at the same time open the cock E of the hot water pipe B, the steam instantly heats the cold water in the cylinder A, balances the pressure above and below the water and causes it to descend into the boiler. In this manner the operation may be repeated until the supply in the boiler is sufficient. The apparatus may be so regulated that the supply shall be continuous and equal to the evaporation.

The cocks are all operated by the gear of the engine arranged in any convenient mode.

A second mode of supplying the boiler is as follows. Instead of the well a cistern F placed above the cylinder may be used communicating with it by means of a pipe b which enters the side or top of the cylinder A, being also furnished with a cock E'' for letting the cold water into the cylinder and for shutting it off. When the water is let into the cylinder from said cistern which is placed above the level of the same, the

cock E'' of the water pipe b is shut and the cock E''' of the steam pipe is opened which admits the steam which heats the water, balances the pressure and causes it to enter the boiler through the pipe B, the cock of said pipe being opened at the same time the cock of the steam pipe is opened.

I am aware that steam boilers have been constructed with a supply cistern in some respects like mine, that is with a chamber or cistern placed above them having tubes governed by stop cocks connecting the top and bottom of the cistern with the boiler for the purpose of equalizing the pressure of the steam upon the water and allowing it to descend into the boiler as herein described.

I do not therefore claim the raising of water by the condensation of steam in a vessel for that purpose; but

What I do claim is—

1. The combination for raising water and supplying a steam boiler therewith, as herein set forth; that is to say, by the use of the pipes B and C, leading from the cylinder A, into the boiler, combined with the respective stop cocks connected with the cylinder A, and the boiler; said cocks being operated by the strokes of the steam engine in any convenient way, so as to allow the steam in the cistern at every stroke of the piston to come in contact with the tube D, so as to produce a rapid condensation, and a consequent vacuum for the admission of water from the supply reservoir.

2. I also claim the combination and arrangement as above set forth for supplying water to the boiler from the cistern F, or from any sufficient source above the boiler, the combination, and the action of the respective cocks by the power of the engine being in all respects as herein set forth, with the exception of the apparatus for raising the water from a well, or reservoir below the boiler.

I wish to be understood also as not claiming in this the raising of water into a cistern connected with a steam boiler by atmospheric pressure, steam being admitted from the boiler into the cistern and condensed as in my arrangement, unless the mode of supplying the boiler from the cistern by balancing the pressure of the steam be employed as herein described.

B. M. HYATT.

Witnesses:

WM. P. ELLIOT,  
WM. P. MAHER.