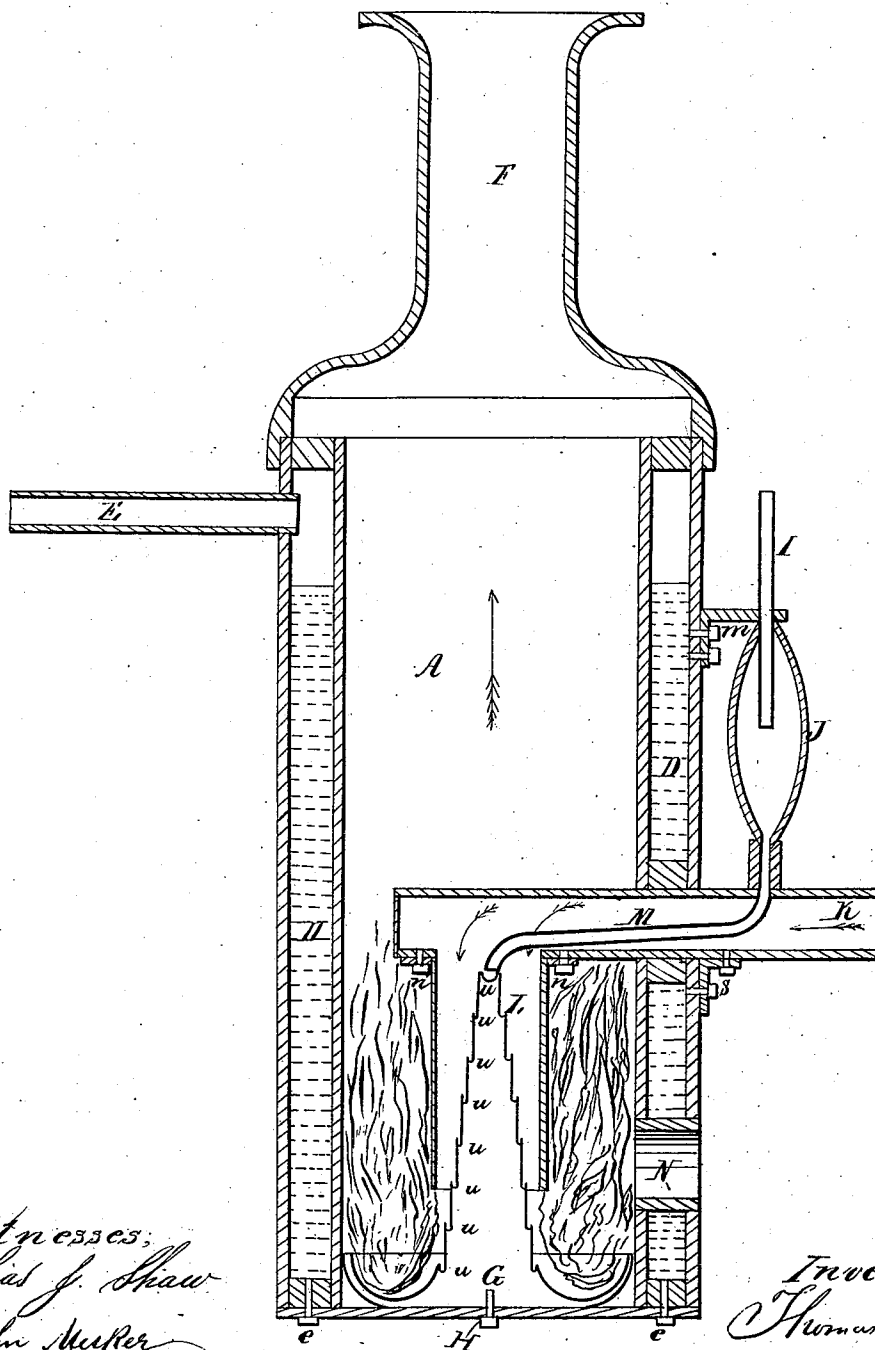


T. SHAW.
 APPARATUS FOR BURNING FLUIDS FOR THE GENERATION OF STEAM, &c.
 No. 38,791. Patented June 2, 1863.



Witnesses,
 Chas. J. Shaw
 John Miller

Inventor:
 Thomas Shaw

UNITED STATES PATENT OFFICE.

THOMAS SHAW, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
HIMSELF AND JOHN L. LINTON.

IMPROVED APPARATUS FOR BURNING FLUIDS FOR THE GENERATION OF STEAM, &c.

Specification forming part of Letters Patent No. **38,791**, dated June 2, 1863; antedated
May 19, 1863.

To all whom it may concern:

Be it known that I, THOMAS SHAW, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and Improved Mode of Employing Ignitable Fluid for the Generation of Steam; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the mode of mixing air with the vapors of the oil, for the purpose of thoroughly consuming the same, as hereinafter described.

In order to enable others to use and practice my invention, I will proceed to describe its construction and operation.

On reference to the accompanying drawings which form a part of the specification, A is a vertical section through the center of an ordinary flue-boiler, of which B is the outer and C the inner casing; D the steam or water space; E, a pipe leading therefrom; F, the smoke-stack; K, a pipe to be connected with a blower, for the purpose as hereinafter described; G, a disk having built up conically with a series of steps or annular recesses, *u u u u u u*, for the purpose of retaining a portion of the oil, as hereinafter described; H, a plate secured to disk G by screw H. Said plate covers the bottom of the boiler, and is secured to the same by means of screws *e e*. N is an aperture for the insertion of kindling-matter when starting the fire; s, a bracket supporting pipe K; m, a bracket supporting pipe I. Said pipe I is intended to be connected with any suitable reservoir that may contain oil, for the purpose of conducting the oil from the same; M, a pipe for the purpose of conducting the oil upon the top of the conic section G, as hereinafter described; J, a glass connecting pipes M and I, for the purpose of exposing the quantity of oil passing through the same.

The apparatus is put in operation in this

wise: There is placed upon the disk G some kindling-matter, in the shape of shavings, chips, &c., and ignited. A powerful draft is then caused to flow through pipe K by means of a blower. The oil is then allowed to flow from a reservoir through pipes I and M, directly upon the apex of the conic section of disk G. From thence it flows successively upon each annular recess of said cone.

The object of igniting the aforesaid kindling-matter is to heat the cone G, which, by virtue of the conducting material, (metal,) is conducted to the several recesses, at its various temperatures, to the top of cone G. The object of this manner of heating is to drive off the different vapors at not too elevated a temperature. The coolest point of the cone is at the apex, by reason of the air blowing constantly over it. The light oils are converted into vapor upon the apex. The next heavier oils are converted into vapor or gas upon each successive recess, according to the temperature required. In the meantime, said vapors are taken up by and commingled with the air that is passing over it. This combination of air and gases ignite and burn after its passage from pipe L, making a voluminous flame, and will continue to do so so long as it be supplied with oil.

It will be evident that these several parts could be modified without any alteration of the result. I therefore do not wish to confine myself to the exact shape or position of the same.

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

1. The construction of the cone G, substantially as and for the purpose set forth.
2. The pipe L, or its equivalent, for conducting the air downward over the cone G, substantially as and for the purpose specified.

THOMAS SHAW.

Witnesses:

ELIAS J. SHAW,
C. BRAZER.