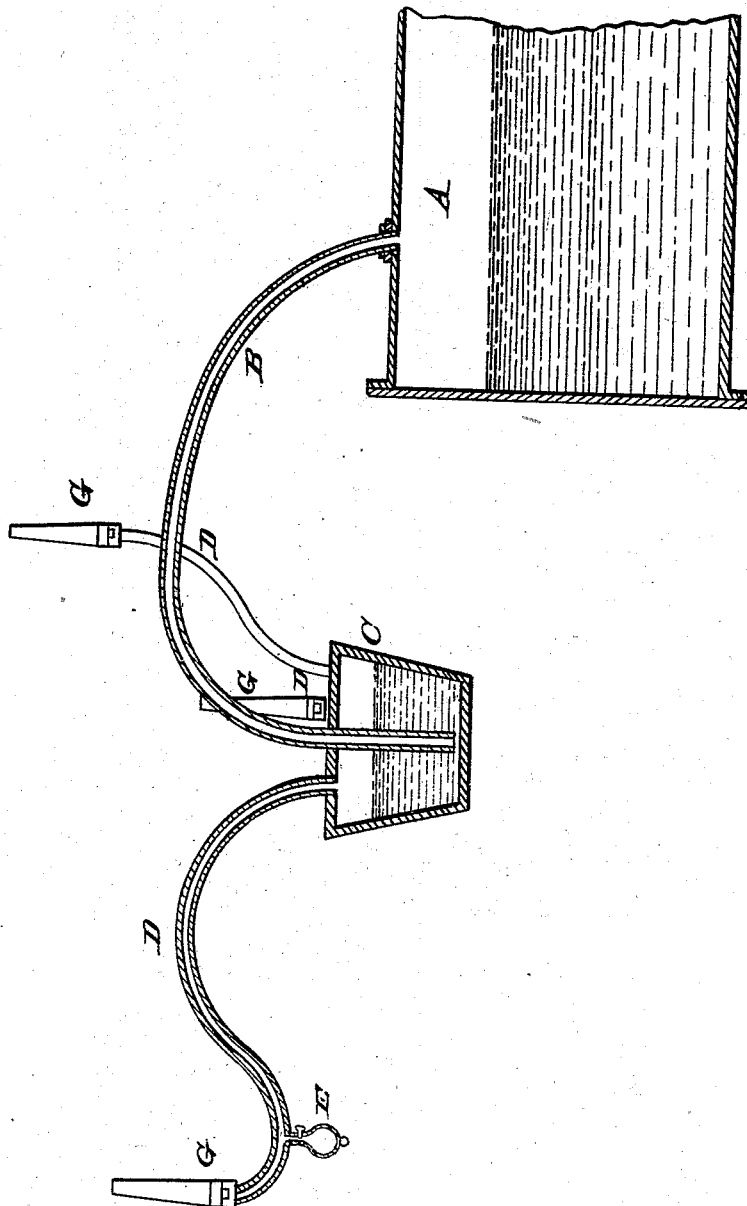


B. F. GREENOUGH.  
Making Oil and Water Gas.

No. 3,339.

Patented Nov. 15, 1843.



# UNITED STATES PATENT OFFICE.

B. F. GREENOUGH, OF BOSTON, MASSACHUSETTS.

## MODE OF USING VOLATILE OILS FOR PURPOSES OF ILLUMINATION.

Specification of Letters Patent No. 3,339, dated November 15, 1843.

*To all whom it may concern:*

Be it known that I, B. F. GREENOUGH, of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in burning the combined vapor of chemical oil or other mixture of which spirits of turpentine is the basis with the vapor of water; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawing, showing a section of the apparatus.

The nature of my invention consists in passing a current of steam from boiling water through chemical oil, spirits of turpentine, or other analogous substance and conveying the united steam or vapor through proper pipes to be burned, the vapor issuing from the burner by means of the pressure of the steam.

The construction of my apparatus is as follows: A suitable boiler A, of any construction having a fire under it is furnished with a pipe B, that leads from it to the reservoir C, containing the material to be burned the pipe running nearly to the bottom. The reservoir C, must be steam tight, as well as the connection of the pipe B, with it. This reservoir is filled with the material to be burned in sufficient quantity to supply the burners, and from or near the top of the reservoir one or more pipes D lead to the burners placed in any convenient position for giving light, or the burner may be attached directly to the reservoir; but I prefer the first named arrangement as being more convenient. The pipes D should have an inclination from the burner down toward the reservoir so that any condensed vapor may run back into said reservoir; but if it is found necessary to incline the pipe the other way a small cistern or receiver E can be connected with it at the lowest point

of depression to receive the condensed vapor and from which it may be drawn.

The burners G may be formed like Argand or other shaped gas burners and their fittings may be similar.

When the apparatus is put in operation the steam generated in the boiler passes through the pipe into the reservoir with which it is connected and when the material for burning is sufficiently heated the steam and vapor therefrom arising ascends in about equal proportions through the pipes to the burners; in the commencement of this process the vapor will be condensed and run back till the pipes are sufficiently hot when it will issue from the burners and can be lighted and will burn similar to gas from coal, the vapor or gas being driven forward by the pressure of the steam that generates it through the pipes to supply the burners, which supply may be regulated by stop-cocks as in gas-fixtures. One or more burners may be attached to a pipe and conveyed to the most convenient place for burning away from the reservoir and consequently from any danger of exploding; the fire which generates the vapor is also far enough removed from the reservoir to prevent any accident.

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

Combining a reservoir having burners attached thereto by pipes or otherwise, with a steam boiler substantially in the manner described, so that the vapor generated by the steam will be forced through the turpentine pipes to the burners under the pressure of the steam for the purpose set forth.

B. F. GREENOUGH,

Witnesses:

R. P. MALLORY,  
EDWD. WRIGHT,