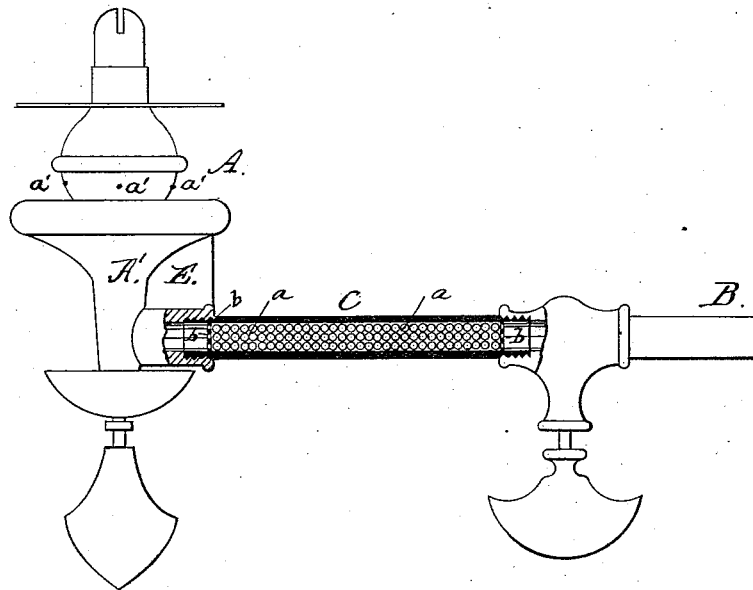


S. S. GRAY.
Vapor-Burner.

No. 161,336.

Patented March 30, 1875.



WITNESSES.

J. A. Pease
Wesley S. Dinsmore

INVENTOR.

S. S. Gray
Per Brown Brothers
Attorneys

UNITED STATES PATENT OFFICE.

SOLOMON S. GRAY, OF BOSTON, MASSACHUSETTS, ASSIGNOR TO HIMSELF
AND ALLEN F. GRAY, OF SAME PLACE.

IMPROVEMENT IN VAPOR-BURNERS.

Specification forming part of Letters Patent No. **161,336**, dated March 30, 1875; application filed
October 20, 1874.

To all whom it may concern:

Be it known that I, SOLOMON S. GRAY, of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Vapor-Burners, of which the following is a specification:

The present invention relates to vapor-burners in which naphtha is employed as the illuminating medium, the same being vaporized before its arrival at the burner-tip, where it is burned.

My invention consists in the combination, with a vapor-burner, a feed-tube, a burner-tube, and a series of supplementary jet-openings arranged beneath the burner-tip, of a packing of shot, arranged within the burner-tube of the vapor-burner in such manner that the flame, issuing from the supplementary jets beneath the burner-tube, will impinge against the body of the burner, heat the same, and transmit such heat to the burner-tube, so that the shot will be heated, and the liquid naphtha passing through or between such heated shot will be converted into steam or vaporized, thereby generating gas, which, issuing from the burner-tip, can be burned for illuminating purposes.

Referring to the drawings, the figure illustrates an elevation of a vapor-burner having my invention applied thereto.

The naphtha-burner A may be of any preferred construction known to the trade; but I have illustrated such a burner as is made the subject of a separate application for Letters Patent of even date herewith, in which the flaring cup A is connected with the burner-tube by a wing, E, whereby a greater amount of heat is transmitted to such burner-tube for generating gas from the naphtha, this heat being obtained by a series of supplementary jet-holes, *a'*, arranged in the burner A so as to impinge on the flaring cup. B represents the feed-tube through which the naphtha is fed

to the burner-tube C, and within this burner-tube C is arranged a packing consisting of a body of small shot, *a*, on which the heat transmitted to the burner-tube acts, and by such heat being transmitted to the shot the naphtha in its passage through such heated shot is converted into steam or vapor, and a gas is generated, and such, issuing from the burner-tip, can be burned for illuminating purposes.

By employing the packing of heated shot in the burner-tube I not only increase the generation of gas from the naphtha, and accomplish the results above stated, but such packing is not liable to injury, due to the intense heat, as is the case where a fibrous and destructible packing is employed in the burner-tubes of vapor-burners, as heretofore, and, moreover, a uniform, regular, and steady flow of the gas to the burner is insured.

The packing is preferably confined in place within the burner-tube, between the perforated end walls *bb*, through which the naphtha has a free passage.

I do not wish to be understood as claiming, broadly, passing ordinary gas to a burner through a body of shot for regulating the flow; but

Having described my invention, what I claim, and desire to secure by Letters Patent, is—

The combination, in a vapor-burner having a feed-tube, a burner-tube, and a series of jet openings arranged below the burner-tip, of a packing of shot within the feed-tube, heated by the said flame from the said jet-openings for vaporizing the liquid naphtha, and regulating the flow of the liquid, as and for the purpose specified.

SOLOMON S. GRAY.

Witnesses:

EDWIN W. BROWN,
WESLEY F. DINSMORE.