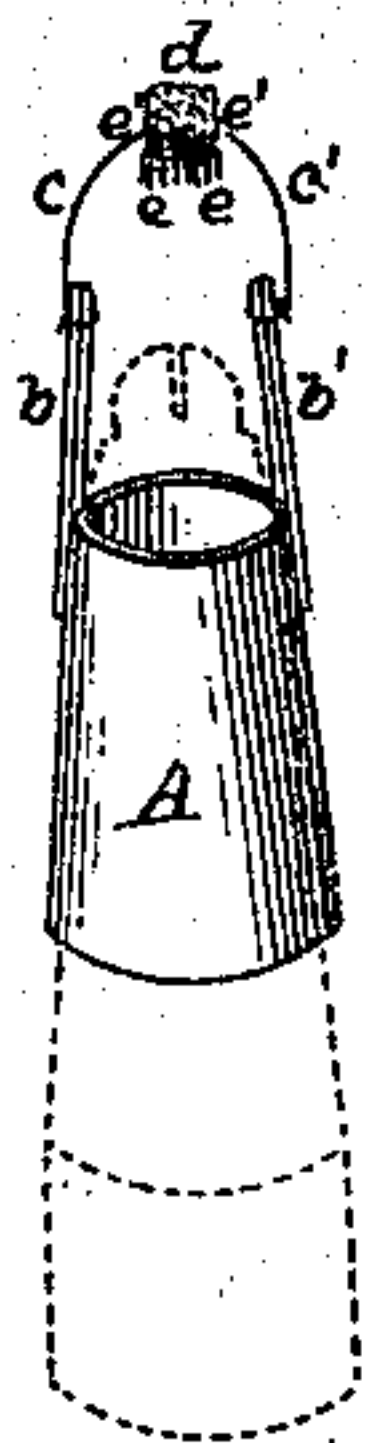


A. BARBARIN.
SELF LIGHTING GAS BURNER.

No. 81,734.

Patented Sept. 1, 1868.



Witnesses

Marshall Bailey
A. H. Page

Inventor:

Arthur Barbarin

by his attorney

A. Hollok

United States Patent Office.

ARTHUR BARBARIN, OF NEW ORLEANS LOUISIANA.

Letters Patent No. 81,784, dated September 1, 1868.

IMPROVEMENT IN SELF-LIGHTING GAS-BURNERS.

The Schedule referred to in these Letters Patent and making part of the same.

TO WHOM IT MAY CONCERN:

Be it known that I, ARTHUR BARBARIN, of New Orleans, in the parish of Orleans, and State of Louisiana, have invented certain new and useful Improvements in Self-Lighting Gas-Burners; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings.

My invention consists in the employment of spongy or finely-divided platinum, (or its equivalent,) in connection with fine platinum wire and fine platinum wire-points or ends, or their equivalent, placed above and projecting towards the jet of a gas-burner, in any manner, so that carburetted hydrogen or other gas, in a mixed or single state, issuing from said burner, shall be forced to strike the spongy platinum, or its equivalent, which, on becoming incandescent, shall impart such a heat to its projecting platinum wire, and to its projecting wire points or ends, as to cause either or both to become red hot or inflammable, and thus to determine the quick ignition of the carburetted hydrogen or other gas.

But my invention will be more clearly understood by referring to the annexed drawings, forming a part of this specification, in which—

A is an elongated ring, provided with two arms, *b* and *b'*, to support the fine platinum wire *c c'*, upon which wire is secured the spongy platinum, *d*, or its equivalent, which spongy platinum, or equivalent, is provided with fine projecting wire points, *e e*, and fine projecting platinum wire, *e' e'*, without points.

As before stated, the object of the fine wire and fine-wire points, secured to or near the spongy platinum, or other metal having the same property, is to determine the quick ignition of the carburetted hydrogen, whenever said carburetted hydrogen shall issue from the jet of a burner upon which my invention shall have been applied.

Although the ring A and arms *b* and *b'* may be constructed of metal, I prefer, in all cases, to employ some good non-conductor of heat for their construction, as in that case, when the hydrogen of the gas is brought in contact with the spongy platinum, (or its equivalent,) to determine its union with the oxygen of the air, which union will be to raise said platinum to a red heat, the whole heat will be concentrated upon the spongy platinum, points, &c., &c., which is the main object for the quick and certain ignition of the gas.

Although the spongy platinum, points, &c., &c., shown upon the drawings, are represented as being supported by a fine platinum wire, *c c'*, somewhat in the shape of an arc, I desire it well understood that I do not confine myself to any particular size or shape of this support, nor do I confine myself to the ring A as the only means of supporting both the wire support and the spongy platinum, &c., above the jet of the burner, as I may, if I so desire it, attach the spongy platinum, points, and fine wire to a larger vertical wire without ring, and wind or otherwise secure the lower end of said larger wire around the burner before adjusting the spongy platinum, &c., &c., to the jet of the burner, after which operation the platinum sponge, being properly adjusted to the jet, shall have but one point of support, instead of two, as shown upon the drawings.

Should I also prefer it, I may employ the same fine wire *c c'*, upon which the spongy platinum, points, &c., or their equivalents, are secured, to attach the same to the burner, above or near the jet thereof, thus doing away with other support or supports, and instead of having the points *e e* and the other fine projecting wire *e' e'* to project directly from the spongy platinum, or its equivalent, towards the jet of the burner, the same may be secured to and directly project from the wire support *c c'*, or other support, near the spongy platinum, and instead of presenting one surface, with points, &c., two or more surfaces of spongy platinum, with points, &c., attached to the support *c c'*, or to other supports, may be applied and presented to the jet of a burner. But no matter how many surfaces of the spongy platinum, points, &c., &c., are or may be employed or arranged upon a burner or burners, towards its or their jets, and no matter of what shape or size the same may be, when applied to the burner or burners, whether temporarily or permanently, I shall always reserve the exclusive right to employ my said invention in any manner, and at any suitable time, for lighting gas.

To produce a sufficient quantity of hydrogen-gas to accomplish my purpose, I shall now describe how the same may be obtained and carburetted at an almost fabulous cost below that of the ordinary gas, which will nevertheless give a much more brilliant light than any common illuminating-gas now used.

An inch pipe is connected with a steam-boiler, used in any manufactory or at the gas-works, and thence run into the fire-furnace, passing between said boiler and the fire used to generate the steam in the boiler. As soon as the steam is generated and the inch pipe has become intensely heated, by means of a stop-cock the steam is allowed to pass through the heated pipe, which at once decomposes it, and the hydrogen gas is freely produced. (This operation may be repeated as often as desired.)

The gas is then passed through purifiers, if desired, and, when cool, through common gasoline, or naphtha, or other cheap carburetted oil, after which it may be passed through other purifiers, to dry it, and then carried into the gasometer for use.

Thus from common water-gas a brilliant and cheap illuminating-gas is easily produced, which can at any time be lighted by means of my invention without recourse to electricity, therefore without wires from post to post, and especially without alteration to the present mains or branch-pipes, the only necessary alteration to street or other lamps being in the application of my invention to the burners.

By the simple application of a thin strip of platinum, or of platinum wire made somewhat in the shape of a cone, and supported by a brass frame fitting on to the burner over the flame of the pure hydrogen or water-gas, the same is at once changed into a dazzling white light.

With regard to the injury to the platinum strip, &c., &c., when used continually, I may safely say that it will remain uninjured for an indefinite period, especially when used in contact with the pure hydrogen or water-gas.

As to the shape of the platinum-strip, &c., it is not of very great importance, as it may be shaped to suit the burner and flame to which it is to be applied.

I am aware that my patent, No. 59,754, secures to me the use and application of spongy platinum to ordinary gas-burners, but this is in connection with the means of projecting a jet of hydrogen-gas upon the platinum, so that the flame of the burning hydrogen shall traverse the path of hydrocarbon-gas issuing through the burner, for the purpose of lighting the same.

I am aware that my other patent, No. 64,188, also secures to me the direct use and application of spongy or finely-divided platinum to ordinary gas-burners, to ignite hydrogen or hydrocarbon-gas, either mixed or in a separate state, when issuing from the same burner or burners.

I am also aware that my application for a patent now before the Patent Office, claims the combination of spongy or finely-divided platinum with a basket of platinum gauze, wire, ribbon, and a cylinder of magnesia, &c., &c. These I do not claim herein; but after having described my invention,

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

A gas-lighting device, consisting of spongy or finely-divided platinum, combined with fine projecting platinum wire and fine projecting wire-points or ends, in the manner herein specified, the said device being applied to a gas-burner, and arranged to operate in connection therewith, substantially as shown and set forth.

In testimony whereof, I have signed my name to this specification before two subscribing witnesses.

ARTHUR BARBARIN.

Witnesses:

IRYL BARTLETT,
E. PEARSON.