No. 670,332. Patented Mar. 19, 1901.

A. SIMONINI.

SELF LIGHTING GAS BURNER.

(Application filed Mar. 9, 1900.)

(No Model.)

Fig. 1

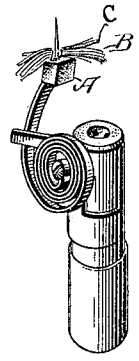


Fig. 3

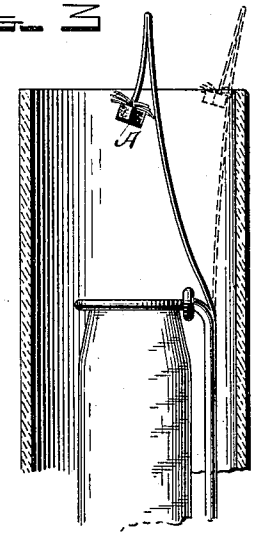


Fig. 2

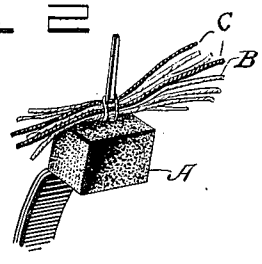


Fig. 4

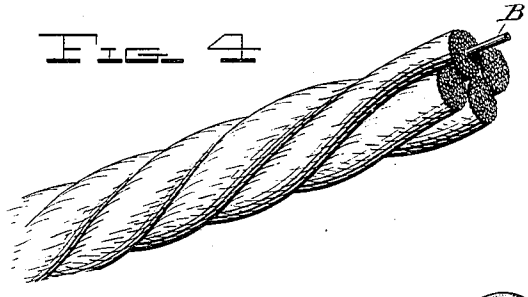
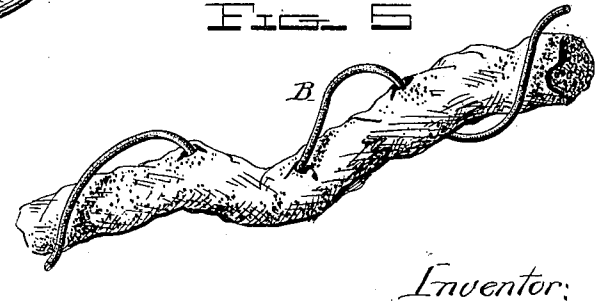


Fig. 5



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UNITED STATES PATENT OFFICE.

ANGELO SIMONINI, OF BROOKLYN, NEW YORK.

SELF-LIGHTING GAS-BURNER.

SPECIFICATION forming part of Letters Patent No. 670,332, dated March 19, 1901.

Application filed March 9, 1900. Serial No. 8,025. (No model.)

To all whom it may concern:

Be it known that I, ANGELO SIMONINI, a subject of the Emperor of Austria-Hungary, residing at Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Self-Lighting Gas-Burners, of which the following is a specification.

My present invention pertains to lighting devices for gas-burners, the operation and advantages of which will be hereinafter set forth, reference being had to the accompanying drawings, wherein—

Figure 1 is a perspective view of an open burner, showing my invention applied thereto; Fig. 2, a somewhat enlarged view of the igniter proper; Fig. 3, a view showing the invention adapted to ignite the gas passing from an incandescent mantle; Fig. 4, an enlarged detail view of one of the strands or threads before it is ashed or burned, and Fig. 5 a similar view of the strand after it has been ashed.

The present invention comprises in its broadest sense the combination of a preliminary heater capable of absorbing and condensing gases or vapors, and thereby caused to glow, a second or intermediate heater, which absorbs a certain degree of heat from said preliminary heater and in so doing becomes active, and a third member or igniter, which in and of itself is incapable of becoming active, but which when heated by the intermediate heater will become active and highly incandescent, finally igniting the gas. In other words, the invention comprises the combination of a preliminary heater, a second or intermediate heater, and an igniter, each in turn acting upon the other to bring about the ultimate object sought to be attained—namely, the ignition of the gas.

The preliminary heater (designated by A in the drawings) is made up or composed largely of platinum-black, which is capable of and does absorb and condense gases or oxygen and becomes hot, or, as generally stated, glows.

The secondary or intermediate heater may be prepared in the following manner: A cotton thread which has a very fine platinum wire embodied in it, as B in Fig. 4, is impregnated with a solution of platinum chlorid. After drying the cotton is burned out and the wire is left coated with a covering of porous platinum. If a strong solution is used, then it oftentimes occurs that the platinum wire is surrounded by or forms a support for a mass of spongy platinum, as is indicated in Fig. 5, which shows the ashed thread. The degree of covering of porous platinum formed upon the wire and the amount of spongy platinum which is left after the thread has been ashed are dependent upon the concentration of the solution used, and in a like manner and to a like degree and extent the ultimate capabilities of the thread or wire thus formed are affected. For instance, if the solution be not too concentrated and the porous covering is consequently thin this thread will act as an igniter direct; but should the solution be quite concentrated then the coating is thick and heavy and the thread is incapable of that action which will bring about an ignition of the gas. In other words, it will not become heated to a sufficient degree to ignite the gas and can then act only as an intermediate heater to take up the glow from the pill of platinum-black and transfer it to the igniter proper.

It is of course not absolutely essential or necessary that the spongy platinum mass of the intermediate heater should cover the platinum wire. It is manifest that it might be inclosed in a network of the latter. For instance, ordinary cotton threads without platinum wire might be impregnated with platinum-chlorid solutions, dried, and then covered with a netting of platinum wire. After the cotton is burned out spongy platinum is left, with a grating or cage of platinum wire.

The igniter proper may be composed of one or more pieces of bare platinum wire or a combination of platinum wire and one or more of the rare earths, as indicated by the threads C, which after having derived a certain degree of heat from this intermediate heater just described are rendered capable of becoming so highly incandescent by the action of the gas as to ignite the gas.

I do not desire to limit or restrict myself to the exact details herein set forth, as my invention consists, broadly, in the combination of the preliminary heater, the intermediate heater, and the igniter, all acting in

conjunction with each other to bring about the desired result, which is the ignition of the gas or vapor.

The construction shown in Figs. 1 and 2 of the drawings embodies the thermostatic device for carrying the lighter out of the path of the flame after the gas has been ignited. The lighter is of course returned to that position where it will be in the path of the issuing gas after the flame is extinguished and the thermostatic device becomes cool. This, however, forms no part of my present invention and is simply shown for the purpose of illustrating the working of the device.

Having thus described my invention, what I claim is—

1. A lighter for gases or vapors, comprising a preliminary heater capable of absorbing and condensing gases at normal or moderate temperature, and being thereby rendered more or less incandescent; an intermediate heater consisting of a wire of the platinum group in combination with a porous body of metal of the platinum group; and an igniter capable of being rendered active by absorbing heat from said intermediate heater, substantially as described.

2. A lighter for gases and other vapors, comprising, in combination, a preliminary heater of platinum-black; an intermediate heater consisting of a wire of the platinum group treated with a solution of a chlorid of the platinum group; and an igniter composed of a body capable of catalytic action when preliminarily heated to a certain degree, substantially as described.

3. A heater for a lighter for gases and vapors, comprising a wire of the platinum group having a rough or porous coating of metal of the platinum group; and a mass of spongy metal of said platinum group supported and held by said wire.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ANGELO SIMONINI.

Witnesses:
GEO. L. WILLIAMS,
GEO. J. ADAMS.