G. BRUNEAU.

GAS BURNER.

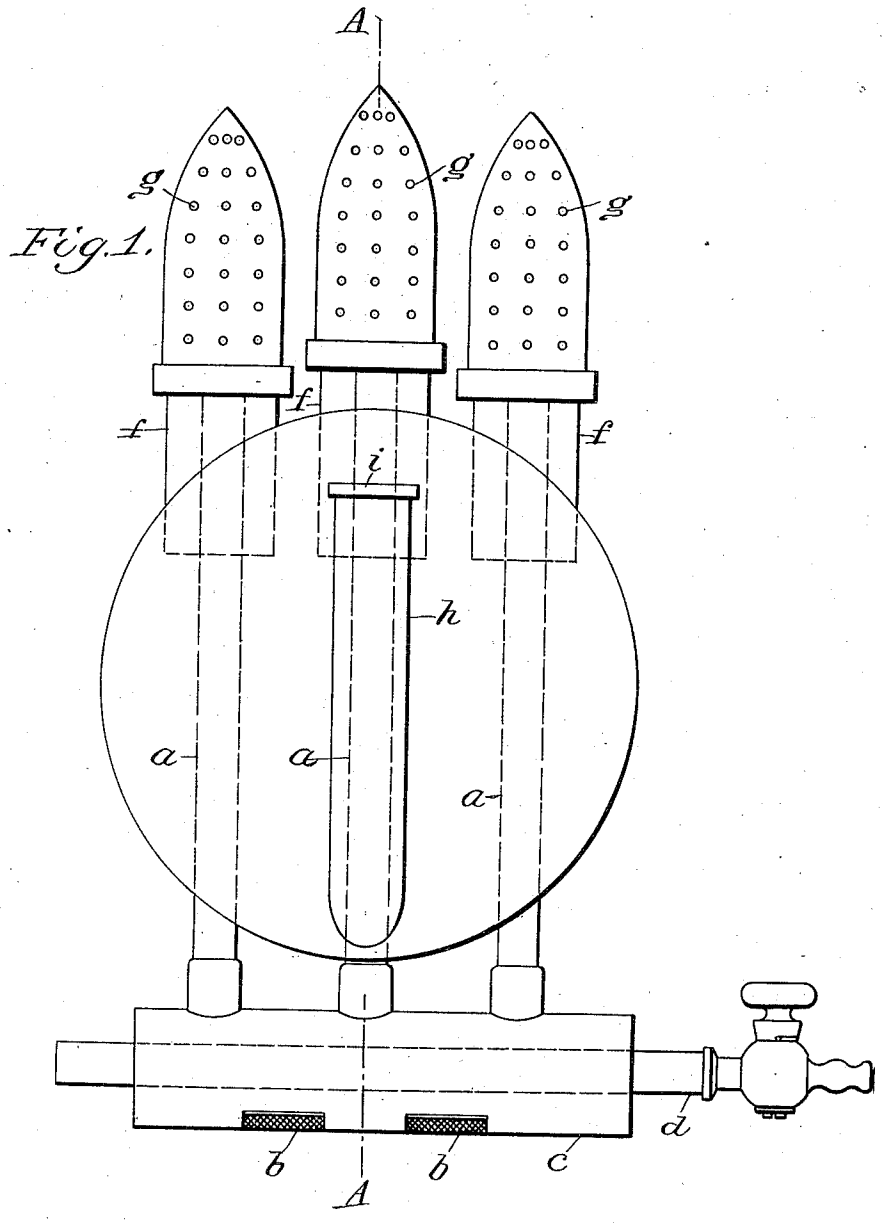
APPLICATION FILED SEPT. 27, 1910.

1,019,298.

Patented Mar. 5, 1912.

2 SHEETS—SHEET 1.

Fig. 1.



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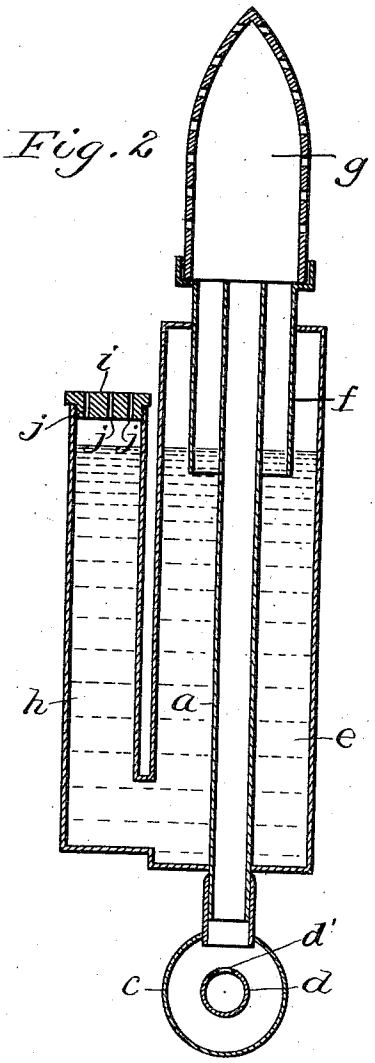
2 SHEETS—SHEET 2.

Fig. 2



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GERDA BRUNEAU, OF CLICHY, FRANCE.

GAS-BURNER.

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To all whom it may concern:

Be it known that I, GERDA BRUNEAU, a subject of the King of Sweden, residing at Clichy, France, have invented certain new and useful Improvements in Gas-Burners, of which the following is a specification.

The object of the present invention is to provide a domestic heating apparatus, or a heating apparatus for use in industrial establishments, in which hydrocarbon gases and particularly coal gas are burned, so that steam will be produced by heat radiation from the burner said steam being decomposed in the vicinity of the flame, the hydrogen of the dissociated gases and a portion of the oxygen serving to create a flame of very high temperature.

In the annexed drawings, I have shown by way of example a form of embodiment of my invention, but I do not wish to be understood as limiting myself to the exact structure shown.

Referring to the drawings, in which like reference characters indicate like parts throughout the several views:—Figure 1 represents a vertical elevation of the apparatus; and Fig. 2 is a vertical section taken on the line A—A of Fig. 1.

Referring particularly to the drawings, in the embodiment of my invention as it is shown, I have represented three blow-pipes by the reference character *a*, these being in practice arranged vertically as shown, but for some uses of the apparatus, one of such blow-pipes will be sufficient in practice. The three blow-pipes *a* are connected at their lower ends to, and open into, a casing or tube *c*, said casing or tube *c* being provided with air inlet openings *b* (two are shown). Passing through and inclosed by casing *c* is a gas duct *d*, said duct being provided with gas escape openings *d'*. The three blow-pipes *a*, pass through, and are inclosed by, a metallic vessel *e*, which vessel *e* may be of any suitable form or shape, but which is shown of circular shape in the drawings. Each of the blow-pipes *a* terminates within a socket *f*, the latter being fixed to the vessel *e* by any suitable means. The sockets *f* are each arranged to support a burner head *g* which is made incandescent for heating purposes. A pipe *h* connects with vessel *e* at a point in the lower part of one of the side walls thereof and is disposed approximately parallel to the sides of the said vessel *e*. The pipe *h* permits of the introduction of water into the said receptacle, the level thereof being indicated in Fig. 2. When the burner is in operation, pipe *h* is closed by means of a cap *i* at its upper and free end, said cap being provided with perforations *j* which are formed so that steam from the water within the casing may be liberated in small quantities.

When the burner is to be used, the vessel *e* and pipe *h* are filled with water to about the level indicated in Fig. 2; gas being permitted to flow into pipe *d*, the mixture consisting of such gas and the air which will be sucked through openings *b* is lighted and the flame will render the burner heads *g* incandescent. As a result of the heat which is given out from the burner heads *g*, and owing to the fact that the metal walls of the apparatus conduct the heat, the water contained in the vessel *e* becomes heated to the extent that steam is slowly generated, said steam being drawn into the burner head to the socket *f* and that passing out through the perforations *j* passes into contact with the exterior of the burner heads *g*. In accordance with the well known principle, the steam coming into contact with the incandescent walls of the burner heads *g* and the hydrocarbon gases, is decomposed into its elements, the oxygen serving to assist combustion, and the hydrogen burning with the gas, whereby a great increase in the heat of the flame is obtained.

In use, the fact that the tubes *a* are surrounded by water, prevents them from becoming highly heated; this fact serves to revent the flame from jumping back and burning at the points where the air is mixed with the incoming gases.

I claim:—

1. A gas burner, comprising a water-containing vessel, a gas duct provided with an end opening, passing through said vessel and in contact with the water therein, a conducting member relatively larger than said gas duct surrounding the same adjacent its opening and in communication with said vessel, a burner head in communication with said conducting member to draw off steam generated within said vessel to within said burner head, and a supplementary conducting member in communication with said vessel, and extending in proximity to the exterior of said burner head, to convey steam generated in the former to the latter.

2. A gas burner, comprising a water-con-

taining vessel, a blow pipe passing through said vessel and in contact with the water therein, the blow pipe having an opening below and an opening above the water in said vessel, a gas duct provided with means directing the gas to said blow pipe at the said opening thereof below said water, and a burner head at the upper end of said blow pipe with its interior open to said vessel so that steam generated therein will be drawn into said burner head during operation of the device.

3. A gas burner, comprising a water-containing vessel, a blow pipe passing through said vessel and in contact with the water therein, the blow pipe having an opening below and an opening above the water in said vessel, a gas duct provided with means directing the gas to said blow pipe at the said opening below said water, a burner head at the upper end of said blow pipe with its interior open to the said vessel so that steam generated therein will be drawn into said burner head during operation of the device, and a conducting member in communication with said vessel and extending into proximity to the exterior of said burner head to convey steam generated in the former to the latter.

In testimony whereof I have hereunto set my hand in presence of two witnesses.

GERDA BRUNEAU.

Witnesses:
AUGUSTE DUPONT,
NOIROT ALBERT.