

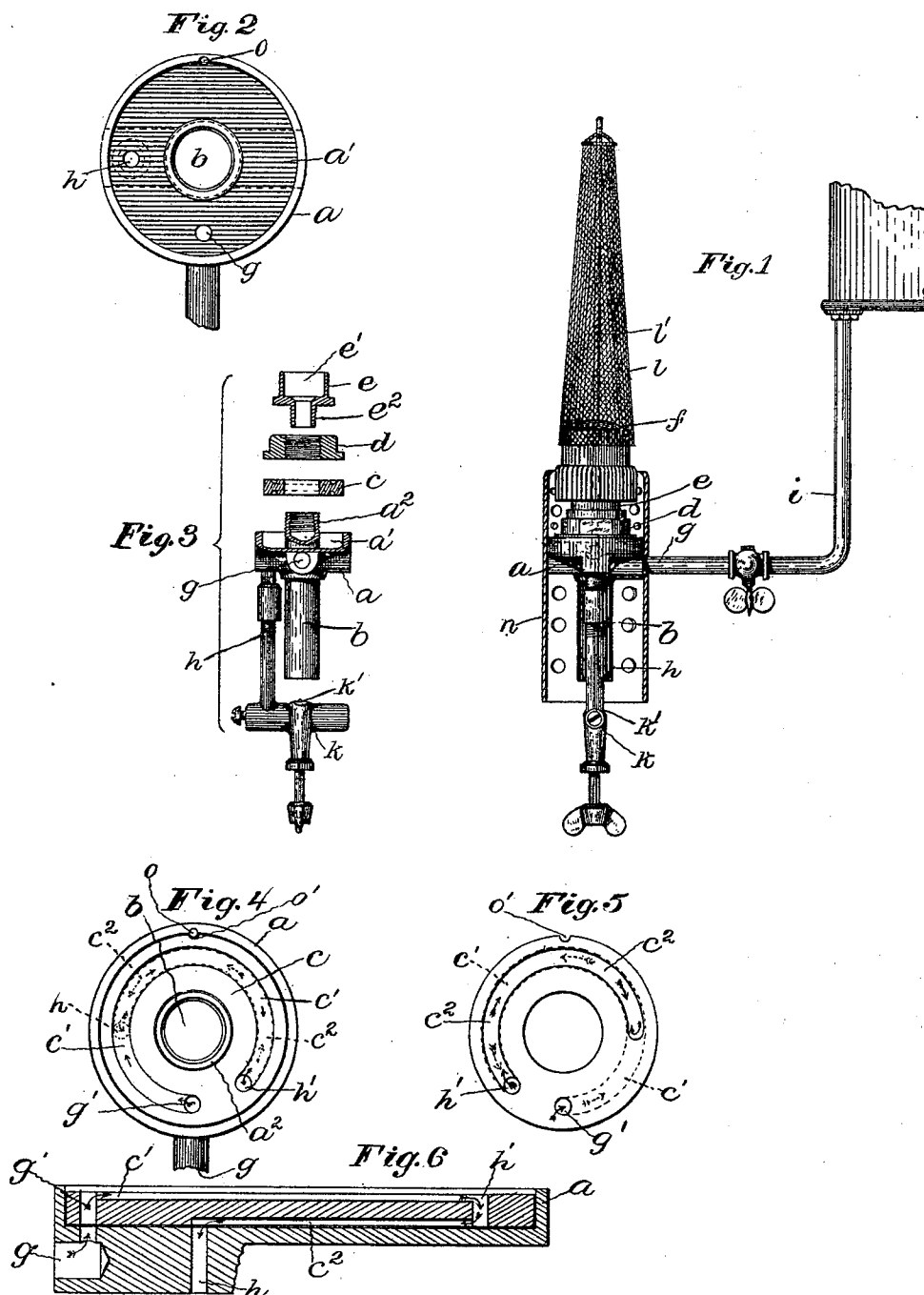
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F. A. CORTIS.
GASOLENE LAMP BURNER.

(Application filed June 3, 1899.)

(No Model.)



Witnesses:
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UNITED STATES PATENT OFFICE.

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GASOLENE-LAMP BURNER.

SPECIFICATION forming part of Letters Patent No. 642,784, dated February 6, 1900.

Application filed June 3, 1899. Serial No. 719,269. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. CORTIS, a citizen of the United States, and a resident of Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Gasolene-Lamp Burners, of which the following is a full, clear, and exact description, whereby any one skilled in the art can make and use the same.

My invention relates to the class of devices used for producing a flame intense enough to render incandescent a mantle such as is used in the well-known Welsbach burner; and the object of my invention is to produce a device of this class which shall be simple in construction and readily renewed and repaired as to the operative parts.

To this end my invention consists in the device as a whole, in the combination of parts, and in the details of such parts and their combination as hereinafter described, and more particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a view in side elevation of a lamp-burner embodying my invention, with parts cut away to show construction. Fig. 2 is a detail top or plan view, on enlarged scale, of the body part of the burner with the diaphragm removed. Fig. 3 is a detail view, in side elevation, of the burner parts with several of the members separated and displayed over each other on a central line and in relative position. Parts are cut in section to illustrate the construction. Fig. 4 is a detail top or plan view of the diaphragm on enlarged scale. Fig. 5 is a detail bottom view of the diaphragm on enlarged scale. Fig. 6 is a diagram view, in vertical section, through the diaphragm and the heating-chamber developed in a single plane to illustrate the relative location of the inlet-passage, the channels, and the outlet-passage.

In the accompanying drawings the letter *a* denotes the body part of the burner, having a socket *a'* in the upper surface and a perforation, preferably through the center, which forms a mixing-chamber *b*. In the socket *a'* in the burner-body is located a diaphragm *c*, which in the form of device shown is a disk of metal fitting closely within the socket and perforated for the passage of the projection

*a*² from the floor of the socket *a'*. This projection *a*² is threaded on the outside to receive the cover *d*, that fits closely within the socket and overlies the diaphragm.

A mouth or outlet *e'* is formed within the burner *e*, removably secured by means of a threaded shank *e*² in the threaded opening in the projection *a*².

The upper part of the burner is covered in the usual manner by a netting *f*, of close mesh, such as is common in this form of burner.

The diaphragm is held closely between the bottom of the socket *a'* and the under surface of the cover *d*, the proximate surfaces fitting closely together, and passages are formed along the opposite meeting faces and through the substance of the diaphragm extending from the inlet-opening *g* to the outlet *h*.

It is not material that the connecting-passages on the opposite faces of the diaphragm should be formed in the substance of the latter; but they are so located by preference and for ease in construction. The passages which connect the channel on one side with the channel on the other are of course formed through the substance of the diaphragm, and the passage *g'* connects with the channel *c'*, which extends along the surface and in the form shown nearly in a complete circle until the passage *h'* is reached. This passage *h'* extends through the substance of the diaphragm and connects with the channel *c*² on the opposite side, and this latter channel curves around until it connects with the outlet-pipe *h*.

A fluid rich in hydrocarbon, as gasolene, is conducted from a suitable source of supply through the pipe *i* to the inlet *g* and, flowing through the several passages and channels, is vaporized by the heat due to the burning of the flame at the burner. The vapor passes down through the outlet-pipe *h* into the body of the valve *k* and through the needle-valve *k'* into the mixing-chamber *b*, through which it passes up into the combustion-chamber through the mouth *e'* and is ignited.

An incandescing-mantle *l* is supported by a wire *l'*, that is thrust into the socket *l*², fast to a fixed portion of the structure at the side of the burner.

A shield *n*, preferably of metal, fits about

and incloses the body of the burner, being provided with a suitable number of perforations in its wall to provide it with the proper draft.

5 In order to hold the diaphragm in position when it is of circular disk form, as shown in the drawings, a projection *o* on the wall of the socket registers with a socket *o'* in the disk and prevents rotation. By this means
10 the several openings in the diaphragm are caused to register with the inlet-passage for the fluid and with the inlet-passage for the gas that has been formed by the heat from the flame of the burner.

15 It is obvious that other means than the cover with the threaded socket fitting the threaded projection from the center of the burner-body may be used to inclose and hold the diaphragm containing the vaporizer and that changes
20 may be made in other features and the same results secured as in the preferred form shown and without departing from the invention, and such changes which require only the exercise of mechanical skill of the artisan are
25 within my invention and contemplated by me.

I claim as my invention—

1. In combination in a gas-burner, a burner-body with mixing-chamber, inlet and outlet passages, and a socket, a diaphragm located
30 and inclosed within said socket and vaporizing-channels located on opposite sides of the diaphragm with inlet and outlet passages each extending through the diaphragm into said channels.

35 2. In combination in a gas-burner, the burner-body with mixing-chamber, inlet and outlet passages and a socket, a diaphragm inclosed within said socket, channels on the opposite faces of the diaphragm, inlet and
40 outlet passages each extending through the diaphragm at opposite ends of the channels and registering with the respective inlet and outlet passages through the burner-body, and means for firmly holding the diaphragm in
45 its socket.

3. In combination in a gas-burner, the burner-body with mixing-chamber, inlet and

outlet passages and a socket, a central tubular projection from the floor of said socket, a diaphragm located and fitting closely within
50 said socket, a cover fitting the socket and having a central opening threaded to engage the threads on the projection, a burner having a threaded stem fitting the threaded socket
55 in the projection, and channels between the adjacent walls of the diaphragm and socket and registering at opposite ends with the respective inlet and outlet passages in the burner-body for the passage of fluid through it.

4. In combination in a gas-burner, a burner-body having a socket and a tubular projection from the floor of said socket forming in part a mixing-chamber, a diaphragm surrounding the mixing-chamber and located
60 within the socket and having vaporizing-channels on opposite sides, inlet and outlet passages each extending through said diaphragm into said channels, and inlet and outlet passages to said channels.

5. In combination in a gas-burner, a burner-body having a socket and a tubular projection from the bottom of the socket forming in part a mixing-chamber, a diaphragm having vaporizing-channels on opposite faces,
70 said diaphragm surrounding the mixing-chamber and located within the socket, inlet and outlet passages to said channels, and a cap closely fitting within the socket and against said diaphragm.

6. In combination in a gas-burner, a burner-body having a socket and a tubular projection forming in part a mixing-chamber, a diaphragm having vaporizing-channels on its opposite faces, said diaphragm surrounding
80 the mixing-chamber and located within the socket, inlet and outlet passages to said channels, and a cap also surrounding the mixing-chamber and closely fitting against the diaphragm within the socket.

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Witnesses:

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