R. CAMELL, L. COCHET AND J. GRITTE.

APPARATUS FOR HEATING BY CATALYSIS.

APPLICATION FILED JULY 9, 1920.

1,396,809. Patented Nov. 15, 1921.

FIG. 1

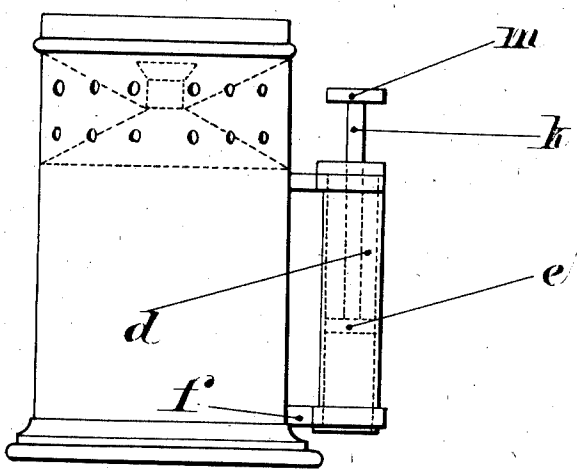


FIG. 2

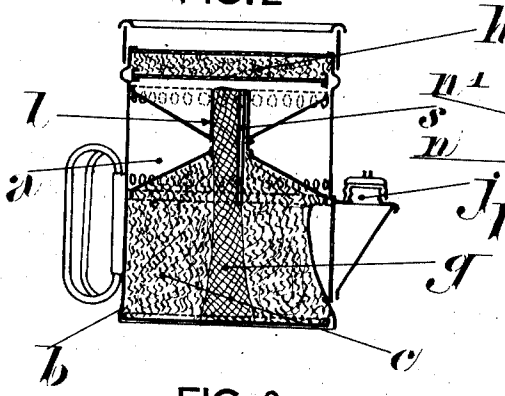


FIG. 4

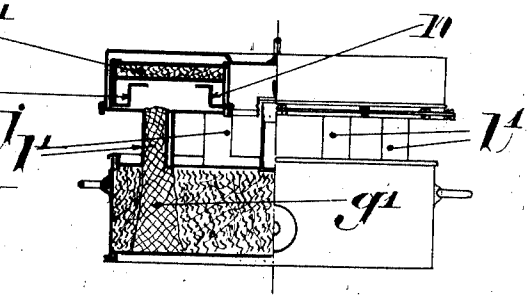


FIG. 3

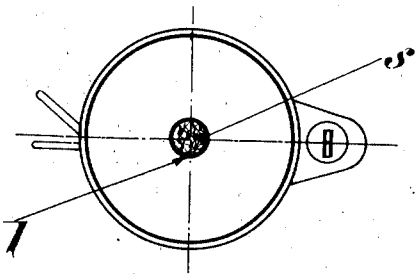
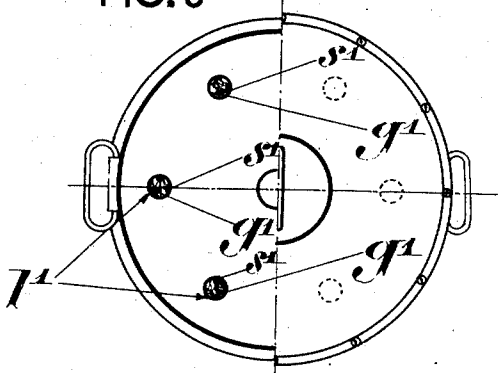


FIG. 5



Witnesses

Jean Formigin

Guillaume Pioche

Inventors

Ramon Camell

Lazare Cochet

Joseph Gritte

UNITED STATES PATENT OFFICE.

RAMON CAMELL, OF RHÔNE, LAURENT COCHET AND JOSEPH GRITTE, OF LYON, FRANCE, ASSIGNORS TO SOCIETE LYONNAISE DES RECHAUDS CATALYTIQUES, CAMELL, COCHET, GRITTE & CIE (SOCIETE EN COMMANDITE), OF CALUIRE, RHÔNE, FRANCE.

APPARATUS FOR HEATING BY CATALYSIS.

1,396,809. Specification of Letters Patent. Patented Nov. 15, 1921.

Original application filed May 26, 1919, Serial No. 299,784. Divided and this application filed July 9, 1920. Serial No. 395,174.

To all whom it may concern:

Be it known that we, RAMON CAMELL, chemist, of St. Rambert-l'Ile-Barbe, Rhône, France, a citizen of the French Republic, LAURENT COCHET, manufacturer, of Lyon, France, a citizen of the French Republic, and JOSEPH GRITTE, manufacturer, of Lyon, France, a subject of the King of Belgium, have invented certain new and useful Improvements in Apparatus for Heating by Catalysis, of which the following is a specification.

This invention relates to catalytic heating apparatus and is a division of application No. 299784 filed May 26th, 1919. It consists broadly in the provision of a small hand operated air pump for passing air through the apparatus whereby spirit vapor may be taken up by said air from the absorbent material in the reservoir and forced together with said air through a pipe, directed toward the catalytic mass, so as to provide means for initiating the action of the latter.

In the annexed drawings Figure 1 is a side elevation of a heater provided with an air pump; Fig. 2 is a vertical section of the heater, illustrating more particularly the pipe for feeding air charged with vapor; Fig. 3 is a plan view thereof; Fig. 4 is a vertical section, and Fig. 5 is plan of a larger heater having several feed wicks and air pipes. The pump has been omitted from Figs. 2 to 5.

Referring more particularly to Fig. 2, *a* represents a containing vessel of any suitable shape, the lower portion of which is formed as a compartment *b* extending upward to a wick tube *l* alongside which is an air pipe *s*. The compartment *b* is filled with absorbent material *c* and a wick *g* extends through the wick tube *l* so that its upper end may be brought into contact with the under surface of the catalytic mass *h*. *j* is a filling orifice for charging the absorbent material *c* in the reservoir *b* with spirit. The pump (see Fig. 1) comprises a barrel *d* and a piston *e*, the lower end of the barrel being in communication with the reservoir *b* by a passage *f*. The piston *e* is carried by a piston rod *k* having a handle *m*.

In order to set the apparatus in action, the handle *m* is raised, thus causing air to be drawn through the material *c* into the pump barrel. The handle is then depressed and this air is forced through the material *c* out through the pipe *s*, carrying with it vapor of the spirit contained in *b*. This spirit laden air is thus discharged through pipe *s* against the catalytic mass *h*, and is then ignited. This temporary combustion is maintained for one or two minutes by giving a few pump strokes, and as soon as the catalytic mass is hot enough to insure the catalytic combustion, the pumping is discontinued. The catalytic combustion then commences and continues until the spirit in the reservoir is exhausted.

The larger heater shown in Figs. 4 and 5 has an annular catalytic mass to which spirit is supplied by a plurality of wicks g^1 suitably spaced from one another, and in proximity to each wick tube l^1 an air pipe s^1 is provided. Baffles *n* are preferably disposed below the catalytic mass h^1 to direct the vapor away from the lateral edges of the catalytic mass and so centralize the heat upon the middle annular zone thereof.

In each of these constructions the air pipe *s* or s^1 is located in close proximity to the wick tube *l* or l^1 so that should an excess of spirit be raised by the wick and fail to be vaporized therefrom, it will be enabled to fall back into the reservoir through the pipe *s* or s^1 respectively.

What we claim as our invention and desire to secure by Letters Patent of the United States is:—

1. In a catalytic heating apparatus the combination of a catalytic pad, a reservoir, absorbent material in the latter, and a wick extending from said reservoir into proximity with the pad, with a hand operatable pump connected to said reservoir and an air pipe from said reservoir directed toward the catalytic pad.

2. In a catalytic heating apparatus the combination of a catalytic pad, a reservoir having a wick tube, an air pipe alongside said wick tube, and a hand pump for forcing air through said reservoir and air pipe, the said air pipe being adapted to return excess fuel to the reservoir from the top of the wick tube.

In witness whereof we have signed this specification in the presence of two witnesses.

RAMON CAMELL.
LAURENT COCHET.
JOSEPH GRITTE.

Witnesses:
JULIAN KEMBLE SMEDBERG,
JEAN GERMAIN.