J. T. GRAHAM.

CARBURETER.

APPLICATION FILED SEPT. 28, 1916.

1,269,423.

Patented June 11, 1918.

2 SHEETS—SHEET 1.

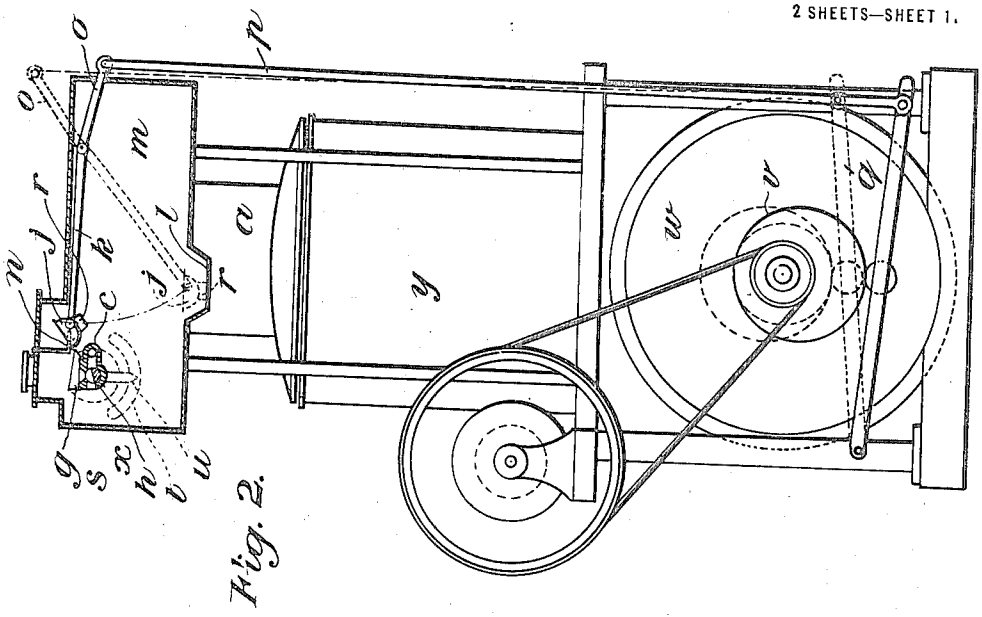


Fig. 2.

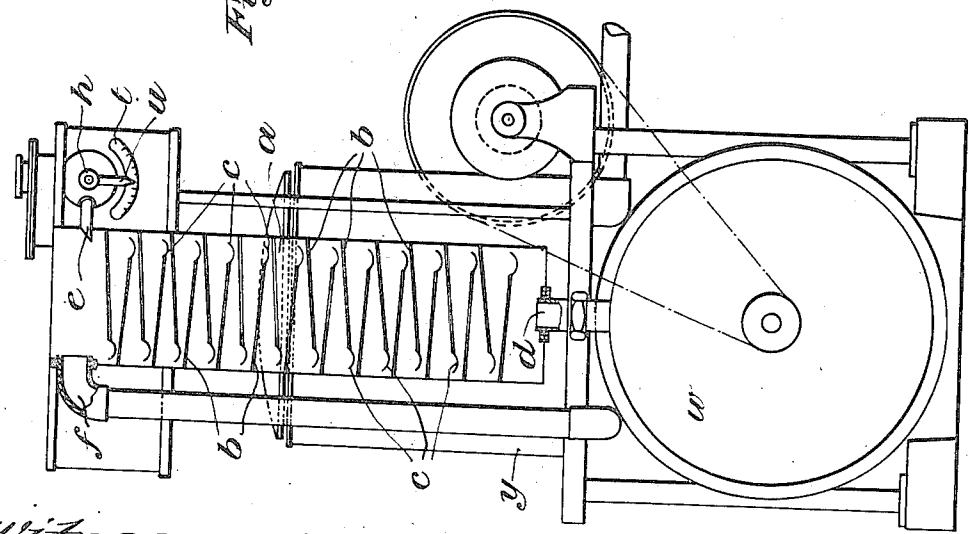


Fig. 1.

Witnesses:

M. E. McDade.

Inventor

John T. Graham

by James L. Norris,

Attorney

J. T. GRAHAM.

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2 SHEETS—SHEET 2.

Fig. 8.

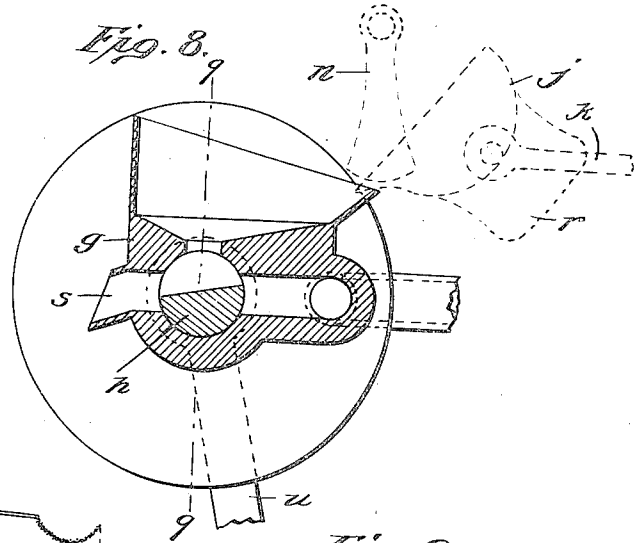


Fig. 4.



Fig. 3.

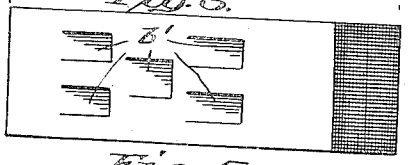


Fig. 5

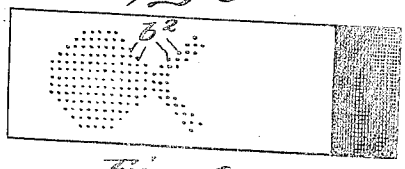
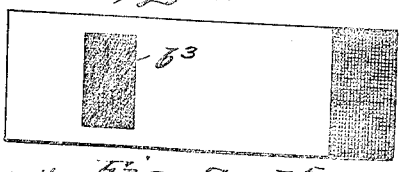


Fig. 6.



b4 Fig. 7. b5

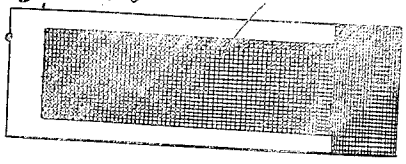
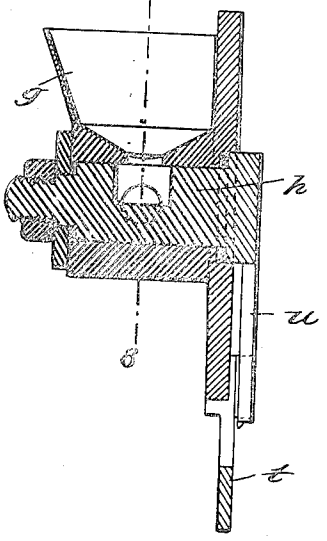


Fig. 9.



Witness

Harris L. Dunlap.

Inventor

John Thomas Graham

By James L. Norris

Attorney

UNITED STATES PATENT OFFICE.

JOHN THOMAS GRAHAM, OF HALSTEAD, ENGLAND.

CARBURETER.

1,269,423. Specification of Letters Patent. Patented June 11, 1918.

Application filed September 28, 1916. Serial No. 122,667.

To all whom it may concern:

Be it known that I, JOHN THOMAS GRAHAM, engineer, subject of the King of Great Britain, residing at 13 Chapel street, Halstead, Essex, England, have invented new and useful Improvements in or Relating to Carbureters, of which the following is a specification.

This invention relates to carbureters for use in vaporizing hydrocarbons for illuminating, cooking, heating and like purposes and of the type comprising a casing in which are positioned two series of oppositely inclined plates either plain or perforated, disposed one above the other, down which measured quantities of hydrocarbon are allowed to flow.

The object of this invention is to provide an improved construction of carbureter.

To this end, each inclined plate is provided with a lip or the like for the purpose of collecting the spirit and depositing the excess on to the next inclined plate and so on. Each lip preferably consists of curved metallic gauze.

The means provided for supplying measured quantities of the hydrocarbon to the inclined plates consist of a cup pivoted to a lever disposed in the reservoir and adapted to pick up quantities of the hydrocarbon from a well or recess in the bottom of the reservoir and discharge same into a regulator fitted to the supply pipe of the carbureter.

I am aware that it has been proposed to supply hydrocarbon to carbureters by means of a cup or dipper pivoted in the tank to a resilient arm operated by means of a rod and cranks said cup depositing the hydrocarbon into a funnel fitted to the supply pipe of the carbureter.

The invention will now be described with reference to the accompanying drawings in which Figure 1 is a front view, partly in section, of a carbureter made in accordance with this invention; Fig. 2 is a back view, partly in section, of the carbureter

Figs. 3 and 4 are, respectively, a plan view and an edge view of one form of inclined plate;

Figs. 5, 6 and 7 show modified forms of plates; and

Figs. 8 and 9 are enlarged vertical sectional views of the dispensing vessel comprised in the regulator.

a is the carbureting chamber or casing in the inside of which are fitted two series of oppositely inclined metal plates *b*, *b*, alternately disposed one above the other; for example, half of the plates are inclined downward toward the left and the other half toward the right. Each inclined plate is provided with a lip *c*.

The lips preferably consist of curved metallic gauze or other suitable reticulate material. The bottom of the casing *a* is provided with an air inlet pipe *d* and the top of the casing is provided with a petrol or the like supply pipe *e* and also an outlet pipe *f* to the usual gas holder *y* for the conveyance of the mixture.

The inclined plates *b*, *b*, may be formed with tongues *b'*, which are slightly depressed, as shown in Figs. 3 and 4, or with perforations b^2, (Fig. 5), the perforations and the slits which produce the tongues being too small to allow drops to form. If preferred, moreover, the plates may be provided with gauze-covered slots b^3, (Fig. 6), or they may take the form of skeleton frames b^4 having gauze b^5 stretched thereover, as in Fig. 7.

The said supply pipe *e* is so arranged that the spirit discharged therefrom is caused to drop onto the uppermost inclined plate *b* and form a thin film thereon and percolate through and form a film on the underside also and then be absorbed by the reticulated lips. Petrol not vaporized on the top plate collects on the lips and drops to the next inclined plate and so on.

While the spirit is percolating down, a supply of air is forced up into the casing from the pump *w* and is caused to follow a circuitous path between the plates *b* and come in contact with the petrol on both sides of the plates.

The petrol is vaporized and the air becomes carbureted in determined proportions of air and vapor and passes on through the outlet pipe *f*.

m is the reservoir, in the inside of which is positioned a regulator *x* comprising a funnel shaped vessel *g* (Figs. 8 and 9) connected to the supply pipe *e* and controlled by a valve *h*. Said funnel-shaped vessel is

fed automatically by means of a tilting cup *j* mounted on a lever *k* and adapted to dip into and take up a supply of spirit from the well *l* in the reservoir *m* and discharge it into the funnel-shaped vessel *g*.

The cup *j* is provided with a balance weight *r*.

The means for effecting this automatic feed preferably consists of a series of levers *o*, *p*, *q*, operated by a cam *v* mounted on a suitable part of the mechanism for driving the pump.

A trip *n* is provided in a suitable position near the funnel *g* in order that the cup may be tilted when in position over the funnel.

The position of the regulator tap determines the amount of petrol passing to the carbureter or through the overflow pipe *s* back into the reservoir *m*. By this means the exact proportion of petrol and air is correctly obtained.

The valve *h* is provided with an index *t* and pointer *u* for indicating the position thereof.

I claim as my invention:—

1. In a carbureter, the combination of a vertical chamber having both a petrol supply means and an outlet for the carbureted air at its top; two series of oppositely-inclined plates alternately disposed one above another in said chamber below said supply means; each plate being provided with relatively-fine apertures and having a curved, metal gauze lip at its lower edge, so that the petrol, as it passes from plate to plate, will form a thin film on the upper side of the plate, then percolate through the apertures in the plate and form a thin film on the under side of the plate, while the surplus petrol will collect in the lip on the plate and fall therefrom upon the next lower plate; and means for supplying air to said chamber below the lowermost plate, whereby the air is caused to follow a circuitous path through the chamber between said plates and come into contact with the films of petrol on both sides of the plates.

2. In a carbureter, the combination of a vertical chamber having both a petrol supply means and an outlet for the carbureted air at its top; two series of oppositely-inclined plates alternately disposed one above another in said chamber; each plate being provided with groups of fine perforations and having a drainage device at its lower edge for the surplus petrol, so that the petrol, as it passes from plate to plate, will form a thin film on the upper side of the plate, then percolate through the perforations in the plate and form a thin film on the under side of the plate, while the surplus petrol will collect in the drainage device on the plate and be discharged therefrom upon the next lower plate; and means for supplying air to said chamber below the lowermost plate, whereby the air is caused to follow a circuitous path through the chamber between said plates and come into contact with the films of petrol on both sides of the plates.

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

JOHN THOMAS GRAHAM.

Witnesses:

ERNEST JOHN HILL,

ALBERT CONS.