(No Model.) 4 Sheets—Sheet 1.

H. COLLET & M. MERICHENSKI.

CARBURETOR.

No. 533,275. Patented Jan. 29, 1895.

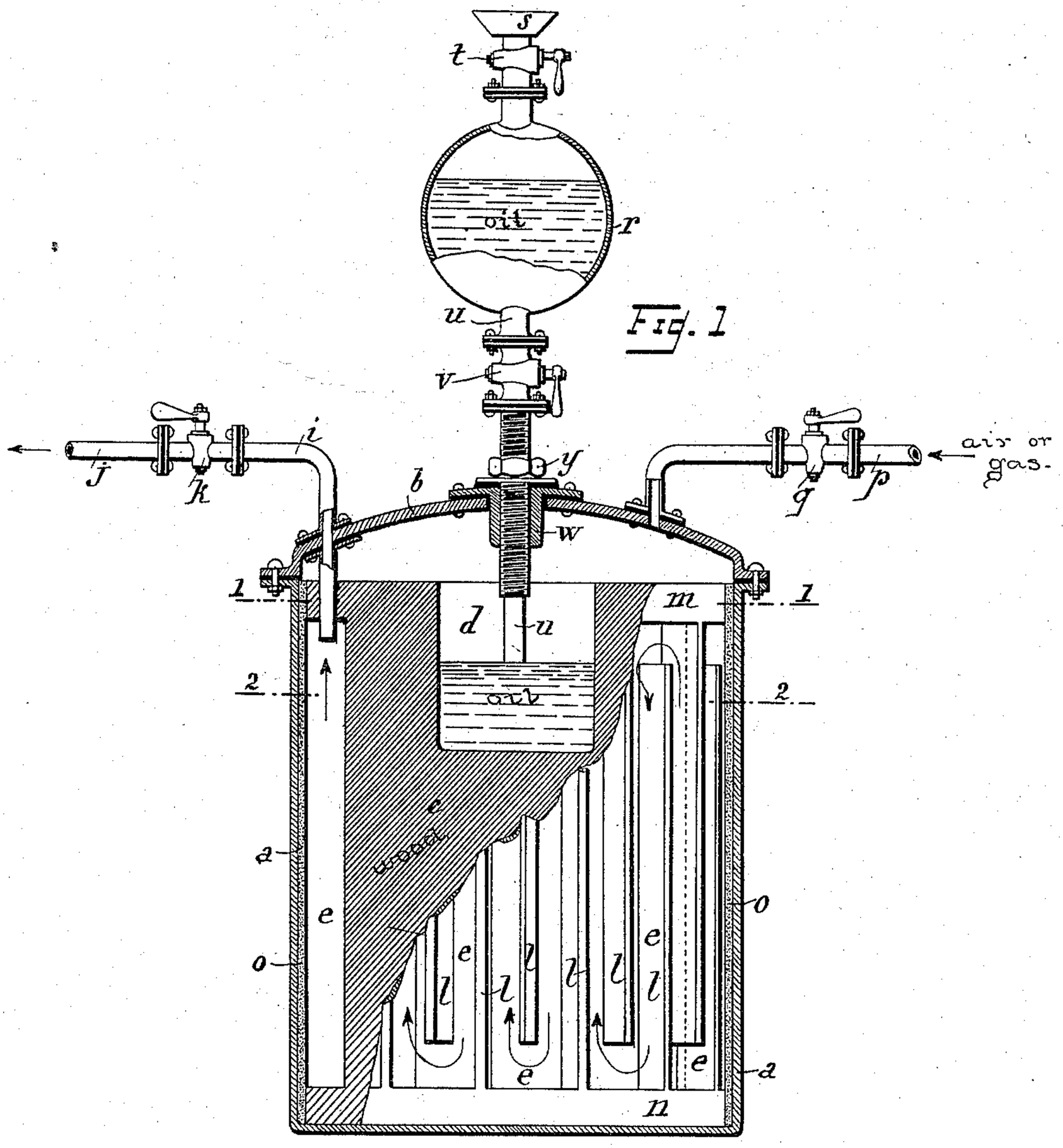

Fig. 1

Witnesses
Thos. A. Green
Robt Ewett.

Inventors.
Harold Collet.
Moska Merichenski.
By James L. Norris.
Atty.

(No Model.) 4 Sheets—Sheet 2.

H. COLLET & M. MERICHENSKI.

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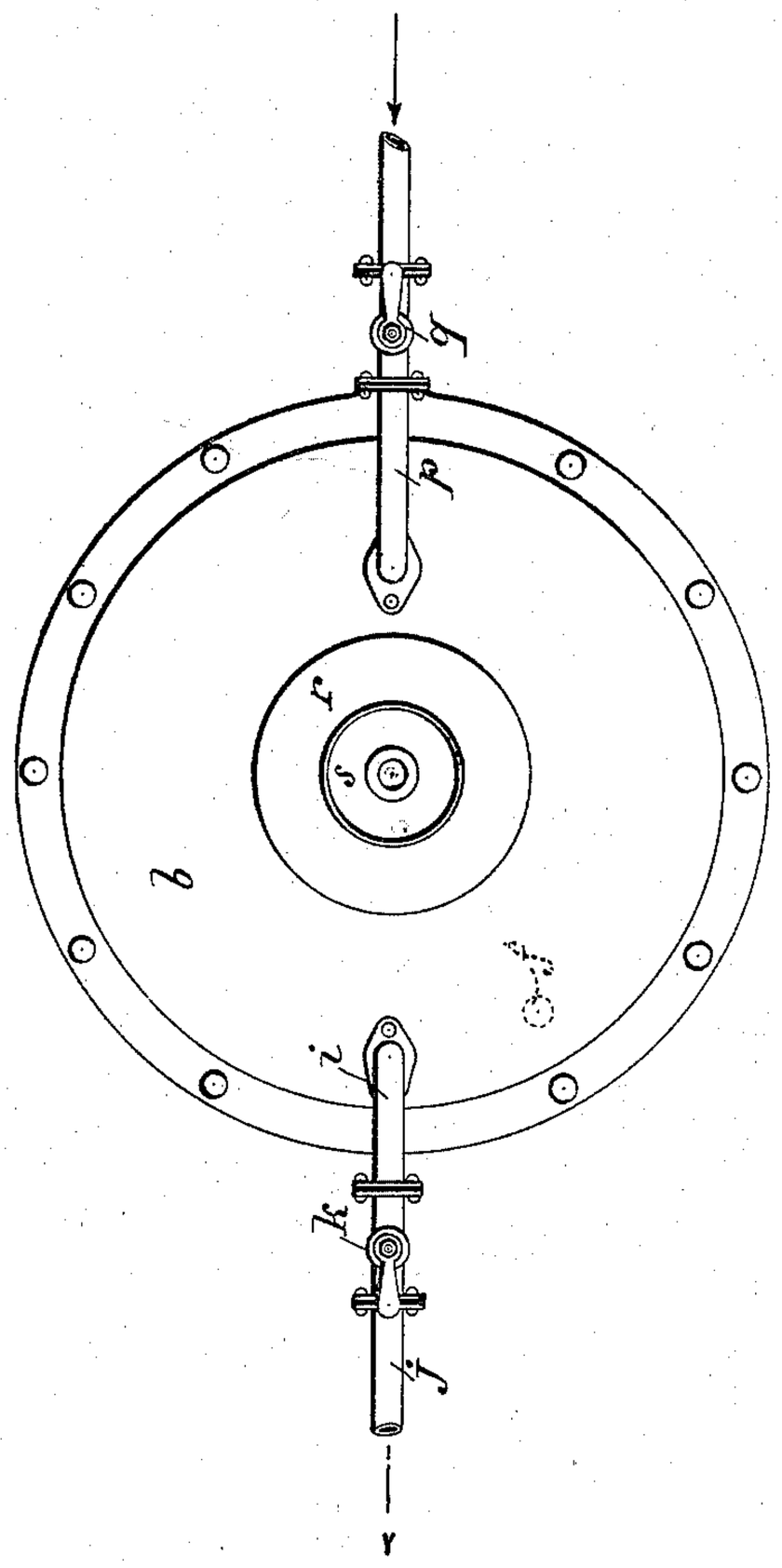
Fig. 2.



Witnesses.
Thos. A. Green
Robert Everett.

Inventors.
Harold Collet
Moska Merichenski.
By James L. Norris.
Atty.

(No Model.)

4 Sheets—Sheet 3.

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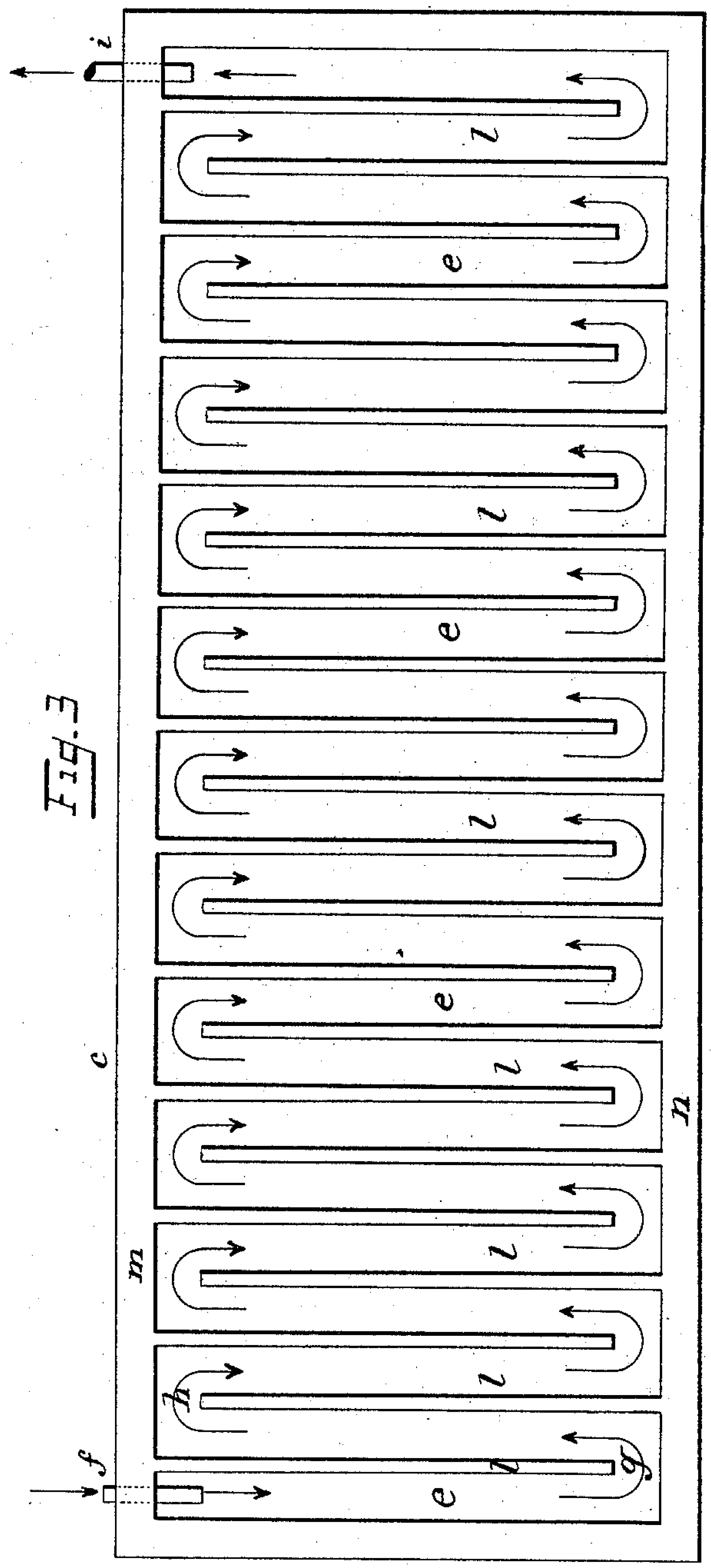

Witnesses.
Thos. A. Green
Robert Everett.

Inventors.
Harold Collet.
Moska Merichenski.
By James L. Norris.
Atty.

(No Model.) 4 Sheets—Sheet 4.

H. COLLET & M. MERICHENSKI.

CARBURETOR.

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Fig. 5

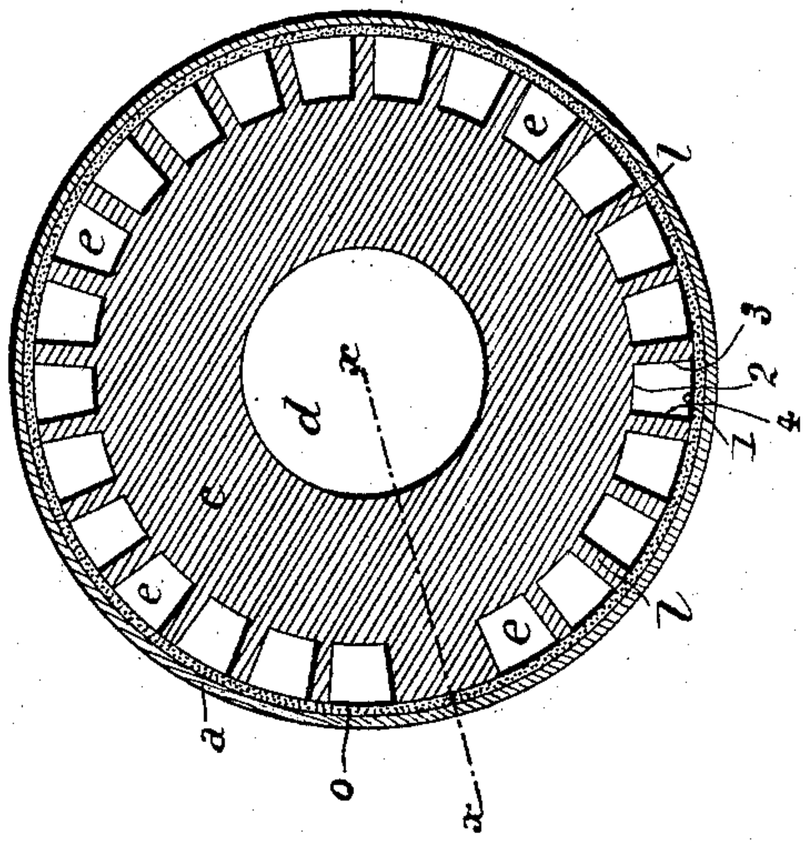
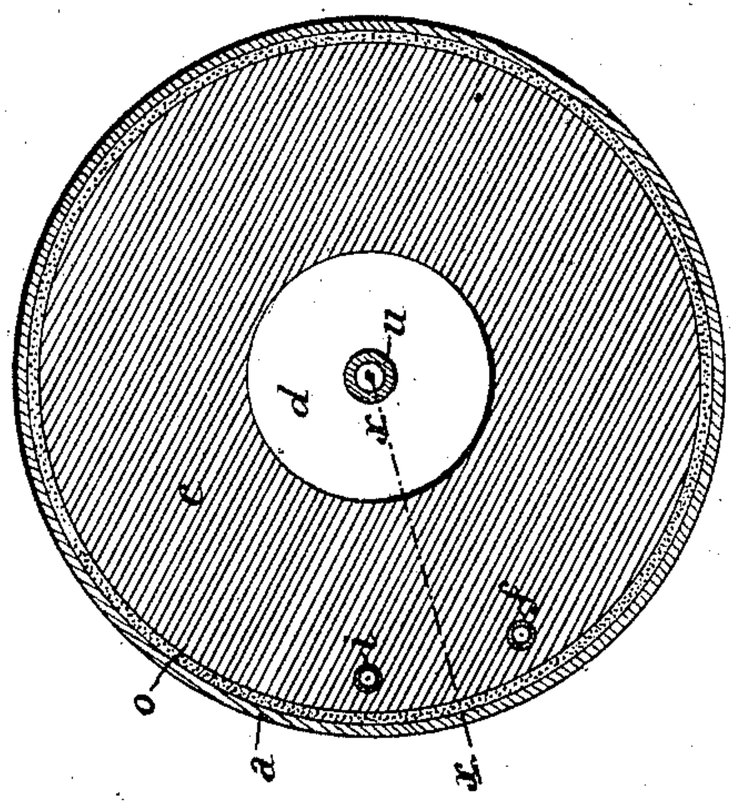


Fig. 4



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Thos. A. Green
Robert Everett.

Inventors.
Harold Collet,
Moska Merichenski.
By James L. Norris.
Atty.

UNITED STATES PATENT OFFICE.

HAROLD COLLET AND MOSKA MERICHENSKI, OF LONDON, ENGLAND.

CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 533,275, dated January 29, 1895.

Application filed July 16, 1894. Serial No. 517,734. (No model.) Patented in England April 11, 1892, No. 6,909; in France December 27, 1892, No. 226,722, and in Belgium December 28, 1892, No. 102,808,

To all whom it may concern:

Be it known that we, HAROLD COLLET, engineer, a subject of Her Majesty the Queen of England, residing at 7 Coleridge Road, Finsbury Park, and MOSKA MERICHENSKI, engineer, a subject of His Majesty the Emperor of Russia, residing at Bruce Castle Road, Tottenham, London, England, have invented certain new and useful Improvements in Carburetors, (for which we have obtained patents in Great Britain, No. 6,909, bearing date April 11, 1892; in France, No. 226,722, bearing date December 27, 1892, and in Belgium, No. 102,808, bearing date December 28, 1892,) of which the following is a specification.

The present invention embodies a construction of carburetor which is illustrated in the accompanying diagrams.

Figure 1 is a vertical section, and Fig. 2 is a plan of the carbureter. Fig. 3 shows the hydrocarbon distributor supposed laid out flat. Fig. 4 is a plan of Fig. 1, on the line 1, 1. Fig. 5 is a plan of Fig. 1, on the line 2, 2.

The carburetor is intended either to carburet atmospheric air, so as to produce an inflammable gas which can be used for heating, lighting and motive power purposes, or to enrich ordinary coal-gas or other gas, so as to increase its illuminating power.

The improved carburetor is automatic in its feeding action, that is to say, the hydrocarbon or other liquid substance employed is supplied from time to time to a reservoir from which it is automatically fed through a distributer in proportion to the consumption. The air to be carbureted or the gas to be enriched is caused to travel through an extensive channel and during such travel, it mingles with the hydrocarbon vapor and becomes carbureted. The channel is so devised that its walls are at all times evenly saturated with hydrocarbon, so that the carbureting action is constantly uniform and the air or gas is always carbureted or enriched, respectively, to a uniform degree, without in any way having to depend either upon any regulation of the supply of hydrocarbon or upon any adjustment of the inlet opening for the atmospheric air or gas to be subjected to the action of the apparatus.

a is an outer vessel, preferably cylindrical, made of any suitable material, and provided with a cover *b* which is made gas-tight. Into the vessel *a* is placed a body *c* which I will call the distributer, and which has for its object to distribute the liquid hydrocarbon and present it evenly to the air, so as to enable it to mingle therewith and form carbureted air. The distributer *c* has a central chamber *d* which always contains an almost constant quantity of hydrocarbon. Its outer vertical surface is channeled at *e*, as shown in Fig. 3, which, for the convenience of illustration, illustrates the said surface laid out flat, the beginning and end of the development proceeding from a radial line *x*, *x*, Figs. 4 and 5. The channel *e* begins at the inlet pipe *f* for the air to be carbureted or the gas to be enriched, then it descends, passes horizontally at *g*, then upward, then horizontally at *h*, and then it continues following a similar course until it reaches the outlet pipe *i*, from which the carbureted air is led to the spot of consumption by a pipe *j*, provided with a cock *k*. The hydrocarbon contained in the chamber *d* passes through the distributer *c* which is made of wood, and oozes out at the external surface of the said distributer, where it is met by the inflowing air circulating through the channel *e*, and mingles therewith. The hydrocarbon which thus presents itself at the walls of the channel *e* mingles with the air, as above stated, is carried away therewith through *i* and is replaced by fresh hydrocarbon oozing through the distributer *c*, but any hydrocarbon which oozes through at the outer surface of the vertical ribs *l* between the channels *e* and at the horizontal ribs *m*, *n* at the top and bottom of the distributer *c* is taken up by a porous or absorbing jacket *o* interposed between the outer vessel *a*, and the distributer c. The jacket *o* may be made of wood, cloth, felt, porcelain or any other substance, capable of absorbing liquid hydrocarbon by capillary attraction. The air to be carbureted or the gas to be enriched enters the apparatus through a pipe *p* made gastight in the cover *b* and provided with a cock *q*.

The supply of liquid hydrocarbon is contained in a closed vessel *r* connected at the top to a funnel *s* provided with a cock *t*, and at the bottom to a pipe *u* provided with a cock *v*. The pipe *u* is screwthreaded and is screwed into a bush *w* which is secured gas-tight into the cover *b*. It can be adjusted as to height, so that its lower end may be made to dip more

or less into the liquid hydrocarbon contained in the chamber *d*. When once properly adjusted, the pipe *u* is set by means of a nut *y*, a suitable washer being interposed between the bush *w* and the nut, for the purpose of obtaining a fluid-tight joint.

The action of the apparatus is as follows: Liquid hydrocarbon is supplied into the closed vessel *r*, first closing the cock *v* and opening the cock *t*. The cock *t* is closed and the cock *v* is then opened and a quantity of hydrocarbon will descend by gravity through the pipe *u* into the chamber *d*, after which the well known phenomena will take place, viz: As soon as a vacuum is formed above the liquid in the closed vessel *r*, the liquid will momentarily cease to flow until one or more bubbles of air rise from the chamber *d* through the pipe *u* into the vessel *r*. The liquid will then again begin to flow downward and so on until the chamber *d* gets filled up to a level reaching somewhat above the bottom end of the pipe *u*. The hydrocarbon supplied to the chamber *d* will gradually travel in all directions through the pores of the distributer *c* until it reaches the compound channel *e* at its outer surface. As soon as the hydrocarbon descends below the almost constant level at or near the bottom end of the feed pipe *u*, it is replaced by fresh hydrocarbon from the vessel *r*, and so on as long as the vessel is kept supplied. The cock *q* of the inlet pipe *p* is then opened and atmospheric air or gas is introduced into the apparatus. The air or gas will find its way through the pipe *f* into the compound channel *e* and become saturated with hydrocarbon vapor as it travels through the said channel. During such passage, the said air becomes not only saturated with the hydrocarbon vapor which evolves at the three walls, 1, 2, 3, Fig. 5, of each vertical channel *e* of the distributer *c*, but also by the hydrocarbon which, as hereinbefore stated, has been absorbed by and evolves as vapor at the inner surface or wall 4 of the absorbing jacket *o*. The carbureted air or enriched gas issues from the apparatus through the pipe *i* and is conveyed away by the pipe *j*, the cock *k* having been previously opened.

The operation of the apparatus having now been explained, it is to be remarked that the walls 1, 2, 3 of the distributer *c*, Fig. 5, as well as the walls 4 of the jacket *o* are at all times evenly saturated with hydrocarbon and thus the production of gas is uniform. It is also to be remarked that by adjusting the position of the supply pipe *u*, the head or column of hydrocarbon in *d* can be made to vary. The degree of saturation of the distributer *c* can thus be regulated to some extent. Moreover, it is especially to be remarked that the chamber *d* can be made more or less deep so as to cause the hydrocarbon to be distributed more toward the top than at the center of the distributer *c*, with a view of radiating the hydrocarbon as required toward all parts of the outer surface of the said distributer. It is finally to be also observed that if the pressure of the gas or air introduced by the pipe *p* into the apparatus increases slightly, the said pressure will tend to force the head or column of hydrocarbon in *d*, through the distributer *c*, so that the amount of hydrocarbon exposed to the air being carbureted will be increased. Thus if the atmospheric air or gas flows quicker through the channel *e*, a proportionately greater amount of hydrocarbon will be subjected to the said air.

We claim—

1. In a carburetor, the combination with an outer casing or vessel, of the porous distributer *c* having in its upper part a central chamber *d* to receive hydrocarbon and provided on its outside with a continuous tortuous channel *e* for passage of air or gas to be carbureted, substantially as shown and described.

2. In a carburetor, the combination with an outer casing or vessel, of the porous distributer *c* having in its upper part the chamber *d* to receive hydrocarbon and provided on its outside with a continuous tortuous channel *e* for passage of air or gas to be carbureted, and a porous jacket *o* interposed between the said distributer and the outer vessel, substantially as shown and described.

3. In a carburetor, the combination of the vessel *a* having a valved inlet *p* and a valved gas outlet *i*, the porous distributer *c* placed in and concentric with said vessel, and provided with a central chamber *d* to receive hydrocarbon and an outside continuous tortuous channel *e* for passage of air or gas to be carbureted, the porous jacket *o* between the distributer and its inclosing vessel, a cover for said vessel, and means for automatically feeding liquid hydrocarbon to the chamber of the distributer, substantially as shown and described.

4. In a carburetor, the combination of the vessel *a* provided with a cover and having a valved inlet *p* and a valved gas outlet *i*, the porous distributer *c* located in said vessel and provided with a chamber *d* to receive hydrocarbon and surrounded on the outside by a continuous tortuous channel *e* for passage of air or gas to be carbureted, the porous jacket *o* between the distributer and inclosing vessel, and the hydrocarbon supply vessel *r* having an adjustable feed pipe leading to the chamber of the distributer and provided with a valve, substantially as shown and described.

In witness whereof we have hereunto set our hands, this 2d day of July, 1894, in the presence of two subscribing witnesses.

HAROLD COLLET.
MOSKA MERICHENSKI.

Witnesses:
J. P. SWEENEY,
Bucklersbury, London, E. C., Notary Public.
W. F. HOWARD,
Bucklersbury, London, E. C., Secretary Public Company.