2 Sheets--Sheet 1.

J. H. BEAN.
Carbureter.

No. 164,360.

Patented June 15, 1875.

Fig 1.

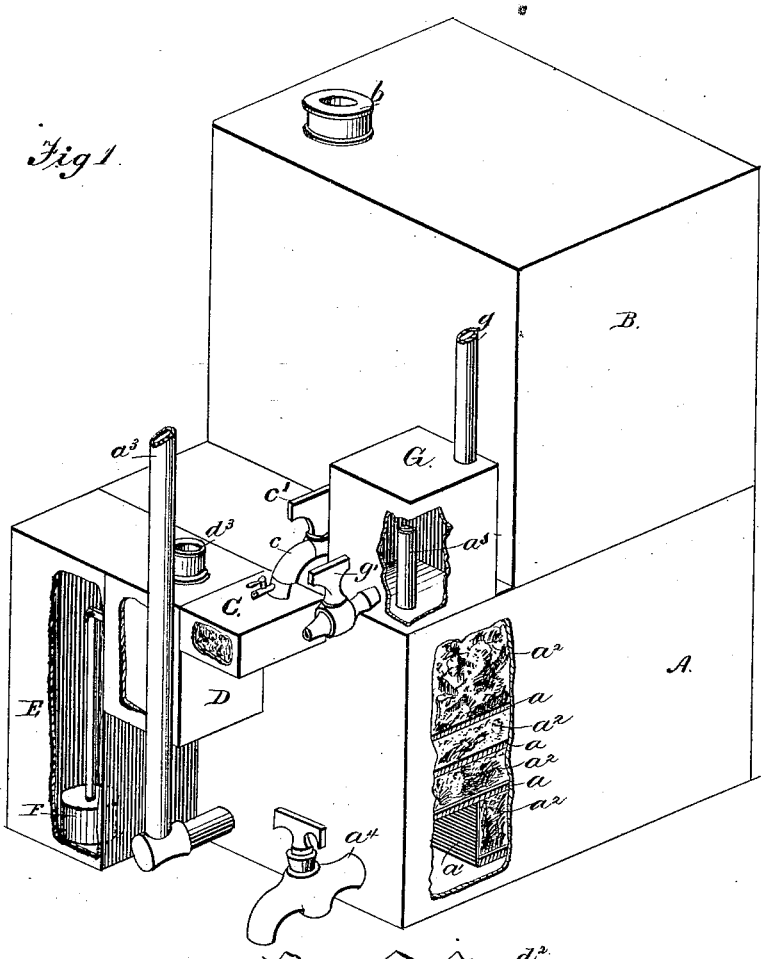
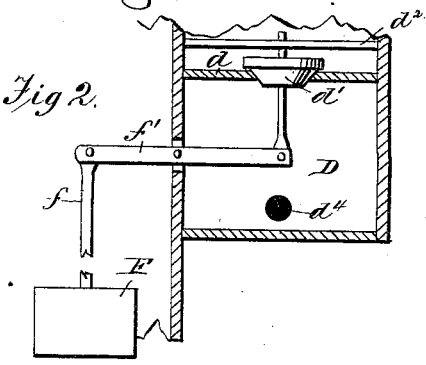


Fig 2.



Witnesses

Harry C Clark.

James J Finley

Inventor

Joseph H. Bean.

By A. W. Beadle & Co
Attys.

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

2 Sheets--Sheet 2.

J. H. BEAN.

Carbureter.

No. 164,360. Patented June 15, 1875.

Fig 3.

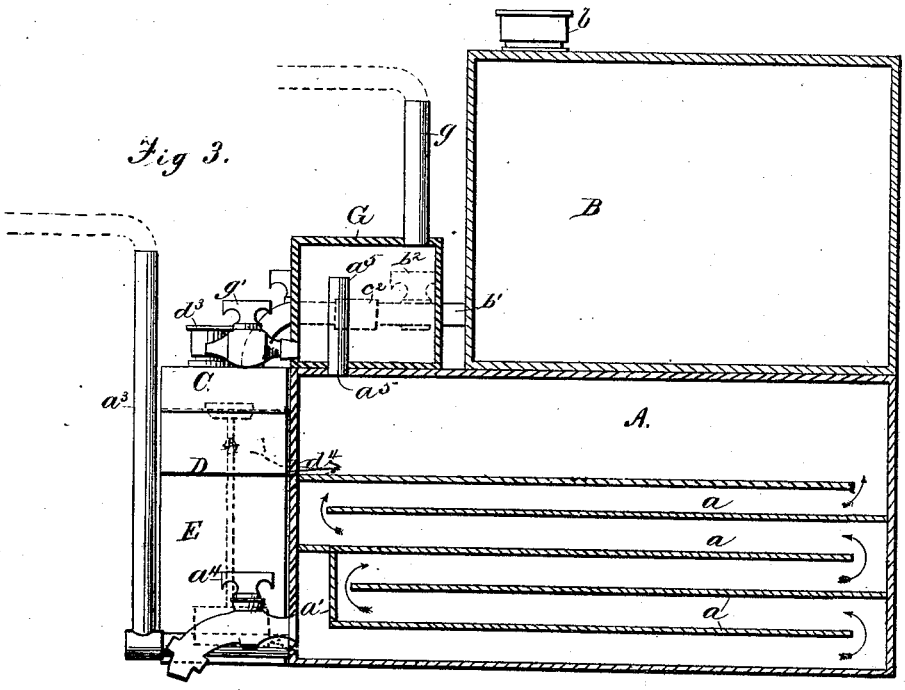


Fig 4.

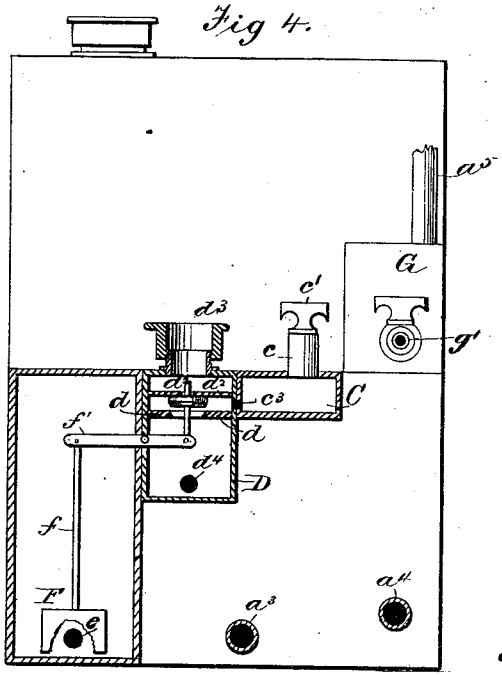
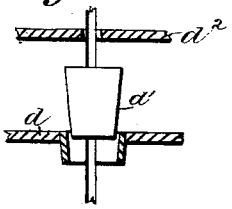


Fig 5.



Witnesses;
Harry b Clark
James J Finley.

Inventor.
Joseph H. Bean.
By H.C. Beadle & Co.
Attys.

UNITED STATES PATENT OFFICE.

JOSEPH H. BEAN, OF CINCINNATI, OHIO.

IMPROVEMENT IN CARBURETERS.

Specification forming part of Letters Patent No. **164,360**, dated June 15, 1875; application filed April 27, 1875.

To all whom it may concern:

Be it known that I, JOSEPH H. BEAN, of Cincinnati, in the county of Hamilton and State of Ohio, have invented new and useful Improvements in Carbureters; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

This invention consists, mainly, in the combination, with an independent reservoir and carbureting-chamber, of an independent valve-chamber, having automatic mechanism for controlling the flow of liquid from the reservoir to the carbureting-chamber. It consists, further, in the combination, with the carbureter, of a condensation-chamber, and in certain details of construction, all of which will be fully described hereinafter.

In the drawings, Figure 1 represents a perspective view of my improved apparatus, with portions broken away to show the interior; Fig. 2, a view, in elevation, of the regulating-valve and actuating-float; Fig. 3, a side elevation, mainly in section, of the entire apparatus; Fig. 4, an end elevation of the same; and Fig. 5, a detail view of the valve.

To enable others skilled in the art to make my improved apparatus, and properly use the same, I will now proceed to describe its construction and operation.

A represents the carbureting-chamber, constructed of any suitable material and proper size, but preferably incased in a strong wooden box. *a a* represent shelves, a series of which is employed in the carbureting-chamber, as shown, the members of which are located one above the other, and alternately attached at their ends to the case, in the usual well-known manner, for the purpose of forming a continuous air-passage over the shelves, as indicated by the arrows, Fig. 3. a^1 represents a deflecting or division plate, extending across the carbureter in front of the discharge-opening of the pipe a^3, supplying the air or gas to be carbureted, by means of which an air-chamber is formed, in which the entering air is caused to spread over and come in contact with the entire surface of the gasoline in the bottom of the chamber. a^2 a^2 represent suitable masses of sponge placed upon the shelves, for the purpose of absorbing the gasoline, and bringing it into intimate contact with the stream of air passing through the chamber. a^3 represents the pipe through which the air or gas to be carbureted is supplied to the chamber. a^4 represents a draw-off cock, by means of which any excess of gasoline is removed. a^5 represents the exit-pipe for the carbureted gas. B represents the reservoir holding the gasoline, which is provided with the supply-opening *b* and discharge-pipe b^1, Fig. 3, having the stop-cock b^2, as shown. If desired, it may be provided, also, with a glass gage, or other suitable means, for indicating the height of its contents or the presence of gasoline. This reservoir is a distinct and independent vessel, which may be readily removed from the premises for the purpose of filling. The size and material are not important; but it is preferred to incase the same in a heavy wooden box, properly secured by lock and key. C represents a filtering-chamber, located outside of the carbureter. *c* represents a supply-pipe, having cock c^1, which is removably connected by the union-joint c^2 to the discharge-pipe b^1 of the reservoir B, as shown. c^3, Fig. 4, represents a discharge-opening, through which the gasoline passes into the valve-chamber. Any suitable filtering material may be employed; but wool or sponge is preferred. D represents the valve-chamber, divided by means of a diaphragm or partition, *d*, into an upper and lower part. d^1 represents a valve, resting in a suitable opening or seat in the dividing-diaphragm, which is adapted, when properly operated, to open and close the communication between the upper and lower divisions, as shown. d^2 represents a guide, by means of which the valve is enabled, when operated, to move accurately in a vertical plane. d^3 represents a screw-cap, covering a suitable opening in the top plate of the valve-chamber, through which the valve may be reached, if it should require attention. d^4 represents a discharge-opening, through which the gasoline passes from the lower division in the valve-chamber onto the upper shelf in the carbureting-chamber. E represents a float-chamber, provided with an opening, *e*, Fig. 4, through which gasoline is received from the carbureting-chamber. F, Fig. 2, represents a float,

united by the rod f to one end of the pivoted bar or lever f', the other end of which is attached to the valve-rod, as shown. G represents a condensation-chamber, into which the carbureted air is delivered from the carbureting-chamber by means of the pipe a^5. g represents the exit-pipe, through which the gas is drawn off for use, which pipe is not arranged in line over the pipe a^5, but in a different vertical plane, so that the water of condensation is permitted to fall into the chamber. g' represents a draw-off cock, by means of which the water may be removed from the chamber.

The operation is as follows: The reservoir having been properly fitted and connected to the pipe of the filtering-chamber, the cocks between the two are opened. The gasoline from the reservoir, then, flowing into the filtering-chamber, and through the filtering material into the upper division of the valve-chamber, passes through the valve-opening into the lower division of the chamber, and flows successively over the shelves, saturating the sponges held thereon, and, finally, passing out into the float-chamber, raises the float and shuts off the supply. The air or gas to be carbureted enters the apparatus through the pipe a^3, and, spreading over the lower chamber and successively over the shelves, becomes thoroughly carbureted by contact with the saturated sponge, and passes out through the pipe a^5 into the condensation-chamber G, from whence it is drawn off for use through the pipe g.

Some of the advantages of the described construction are as follows: The reservoir is removable, in order that it may be readily taken away and filled, thus making it unnecessary to open it at any time upon the premises. The valve and float chambers are located outside and independent of the carbureter, so that they may be readily reached, if requiring attention. The employment of the air-chamber in the carbureter is advantageous, because by means of it the incoming air is spread over the lower surface, in close proximity to the bottom of the chamber, and consequently the gasoline settling in this place may be entirely absorbed. By means of the condensation-chamber the water is collected and drawn off.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The condensation-chamber G, having the draw-off cock g', in combination with the supply-pipe a^5 and delivery-pipe g, whereby the waters of condensation from the service-pipe are caught and prevented from entering into the carbureter and float-chamber, as described.

2. The combination of the reservoir B, having pipe b^1, with the filtering-chamber C, having pipe c and the union c^2, as described.

3. The combination, with the valve-chamber, of the filtering-chamber, as described.

4. In combination with the carbureter described, the float-chamber E and filter-chamber C, placed on the outside of the carbureter proper, and connected therewith by suitable openings, as shown.

This specification signed and witnessed this 19th day of April, 1875.

JOSEPH H. BEAN.

Witnesses:
WM. H. SKERRETT,
J. H. MARTIN.