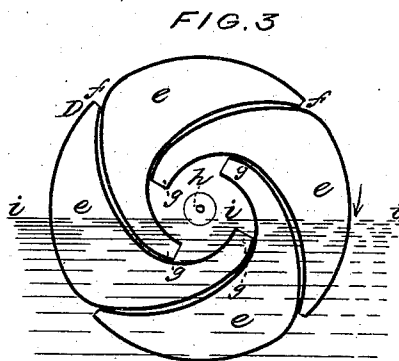
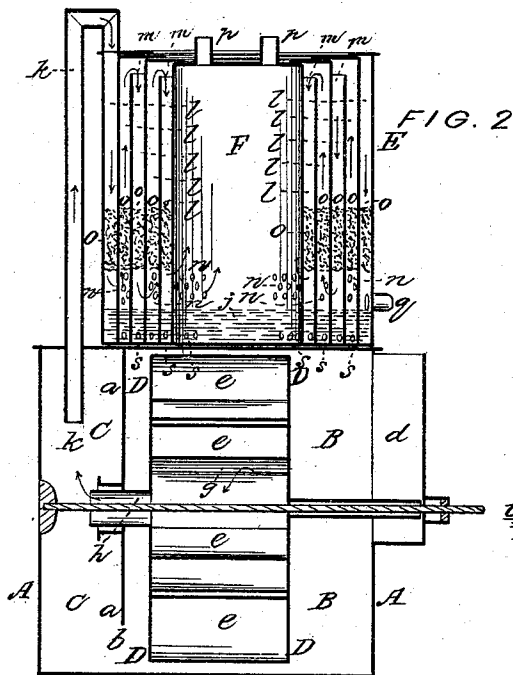
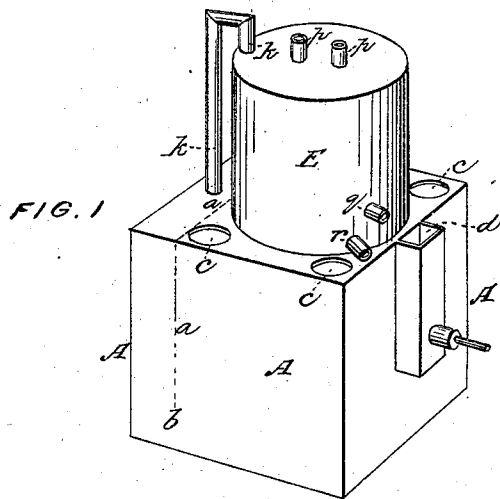


J. MILLWARD.

Carbureter.

No. 106,389.

Patented Aug. 16. 1870.



WITNESSES:

Edmund Wilson

Edmund Wilson

INVENTOR:

Joseph Millward.
Byatty A. Stoughton.

United States Patent Office.

JOSEPH MILLWARD, OF FAYETTEVILLE, NEW YORK.

Letters Patent No. 106,389, dated August 16, 1870.

IMPROVEMENT IN CARBURETING APPARATUS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, JOSEPH MILLWARD, of Fayetteville, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Carbureting Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, reference being had to the accompanying drawings making a part of this specification, in which—

Figure 1 represents in perspective the exterior of the apparatus;

Figure 2 represents, on an enlarged scale, a vertical section through the carbureting apparatus; and

Figure 3 represents, on a similar scale, a section through the air-driving wheel, taken at right angles to its axis, and showing its form of buckets.

Similar letters of reference, where they occur in the separate figures, denote like parts of the apparatus in all of the drawings.

My invention relates mainly to the construction and operation of the air-driving wheel, the open chamber, in which it works, the closed chamber adjoining, with a water-packed communication between them and a carbureting-passages or chamber, made between concentric and alternate shorter and longer cylinders, as will be explained.

The base A of the apparatus is divided by the partition *a*, extending from the top to near the bottom thereof, into two chambers, B C, having a water communication with each other underneath the partition *a*, as seen at *b*.

The chamber B is open to the exterior air by means of the openings *c c*, or through a well, *d*, and in this chamber, partially filled with water, is placed the air-driving or propelling-wheel D, composed of buckets *e e*, &c., of peculiar form, and which, when revolved by any ordinary power, take in the air at *f*, and, as the wheel continues to turn, discharges it at *g*, and below the center of the wheel, whence it is driven through the tubular axis *h*, and into the chamber C, which is a sealed or packed chamber.

The peculiar form given to the buckets *e* of the air-wheel is for the purpose of making the end *f*, where the air is taken in, descend far enough into and below the surface of the water, designated by the line *i*, to perfectly seal that end before the other end of the same bucket rises above the surface of said water, and prevent any escape of air at the inlet end. Or, in other words, the air is forced in under pressure, and the inlet ends must be sufficiently sealed by the column of water above them to stand the pressure without allowing the air to escape therefrom.

When the air-wheel D is not revolving the water in the chambers B C will be of uniform height. But when the wheel is started, the air is driven through

the buckets *e* and into the chamber C, with considerable force, and with sufficient force to displace some of the water contained in said chamber, driving it through the passage *b*, into the chamber B, and correspondingly raising the water therein; and the tendency of this water in B to flow back again, or to find its level, and the resistance of the compressed air together, make, as it were, a regulator for the flow of the air through the carbureter, and making its flow uniform, instead of in beats or pulsations.

From the chamber C the air is forced up through the tube *k*, and through and around and over the series of concentric passages *l l l l*, each alternate cylinder or jacket, as at *m*, being shorter than those next to them, so as to form a long continued circuit of the air through and in contact with the vapor of the carbureting material, which, together with the concentric cylinders and passages, is inclosed in a tight jacket or case, E.

The carbureting material is placed in the bottom of the inclosed case E, and rises therein to about the height shown at *j*.

Above the hydrocarbon, and through the concentric rings, cylinders, or jackets, are made a series of air-lobes, *n n*, and in the air-passages between these jackets is placed any absorbing or vapor-containing material, *o*, through which, and through the vapor it contains, the air must be forced or pass, before it reaches the interior chamber F, whence it is conducted by one or more tubes, *p*, to the burners.

The tube *q* carries off all excess of the hydrocarbon above the line *j*.

The pipe *r* is for drawing off the contents of the cylinder, when necessary for any purpose to do so.

The holes *s* are for allowing the vaporizing material to flow through, so as to occupy the under portions of the air-passages.

The buckets *e e* of the air-forcing wheel are separate and independent of each other, as seen in fig. 3. They are quite deep at their centers, and very shallow at their inlet and exit, and so shaped as to dip deeply in the water, to more thoroughly seal their ends, and so exert greater pressure upon the air carried through them.

What I claim is—

In combination with a blowing-wheel and its appliances, the carbureting-chamber E, composed of a series of concentric rings or cylinders, through, over, and between which the air to be carbureted passes in contact with the carbureting vapor, substantially as and for the purpose described.

JOSEPH MILLWARD.

Witnesses:

A. B. STOUGHTON,
JAMES MILLWARD, Jr.