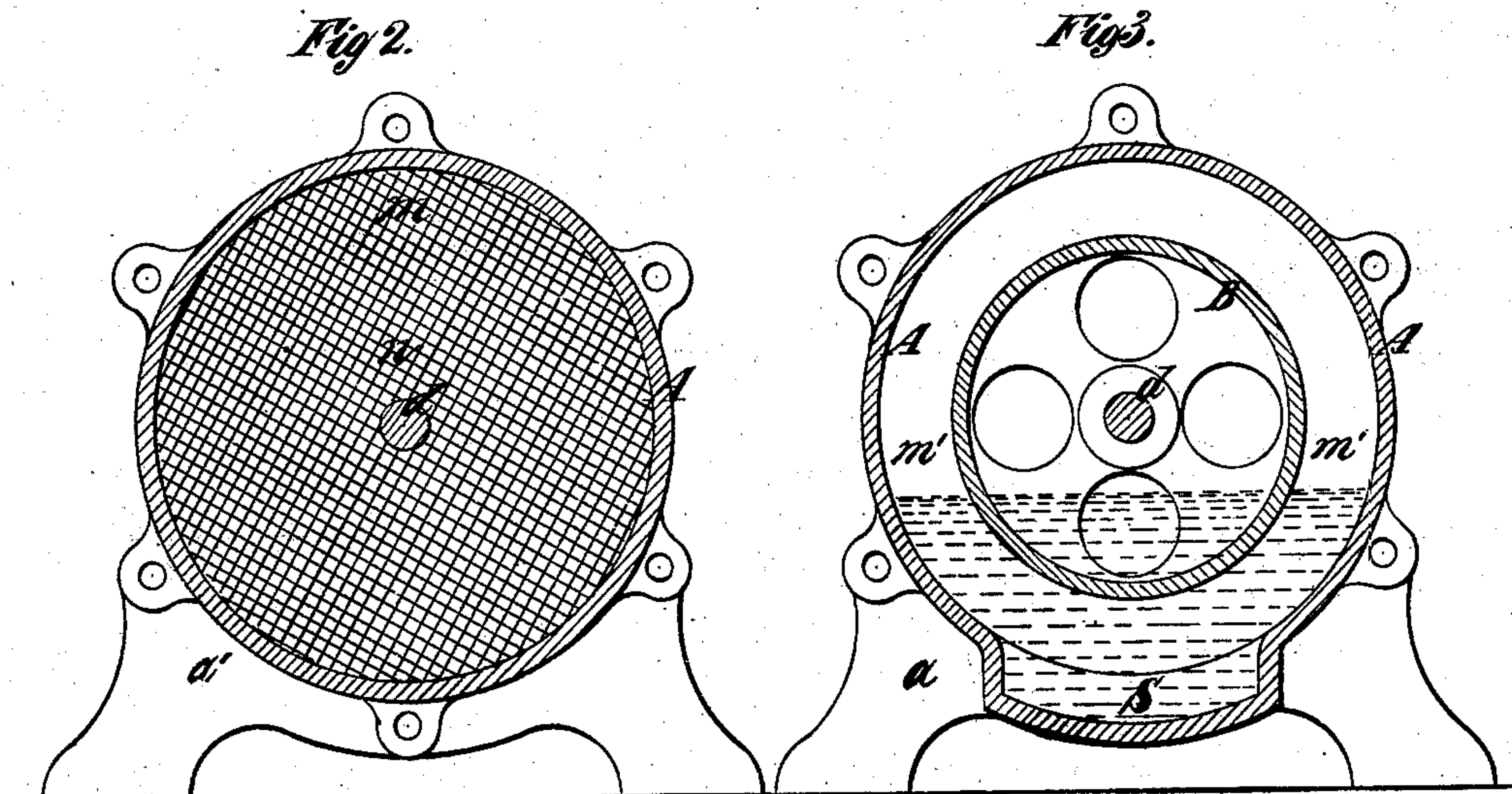
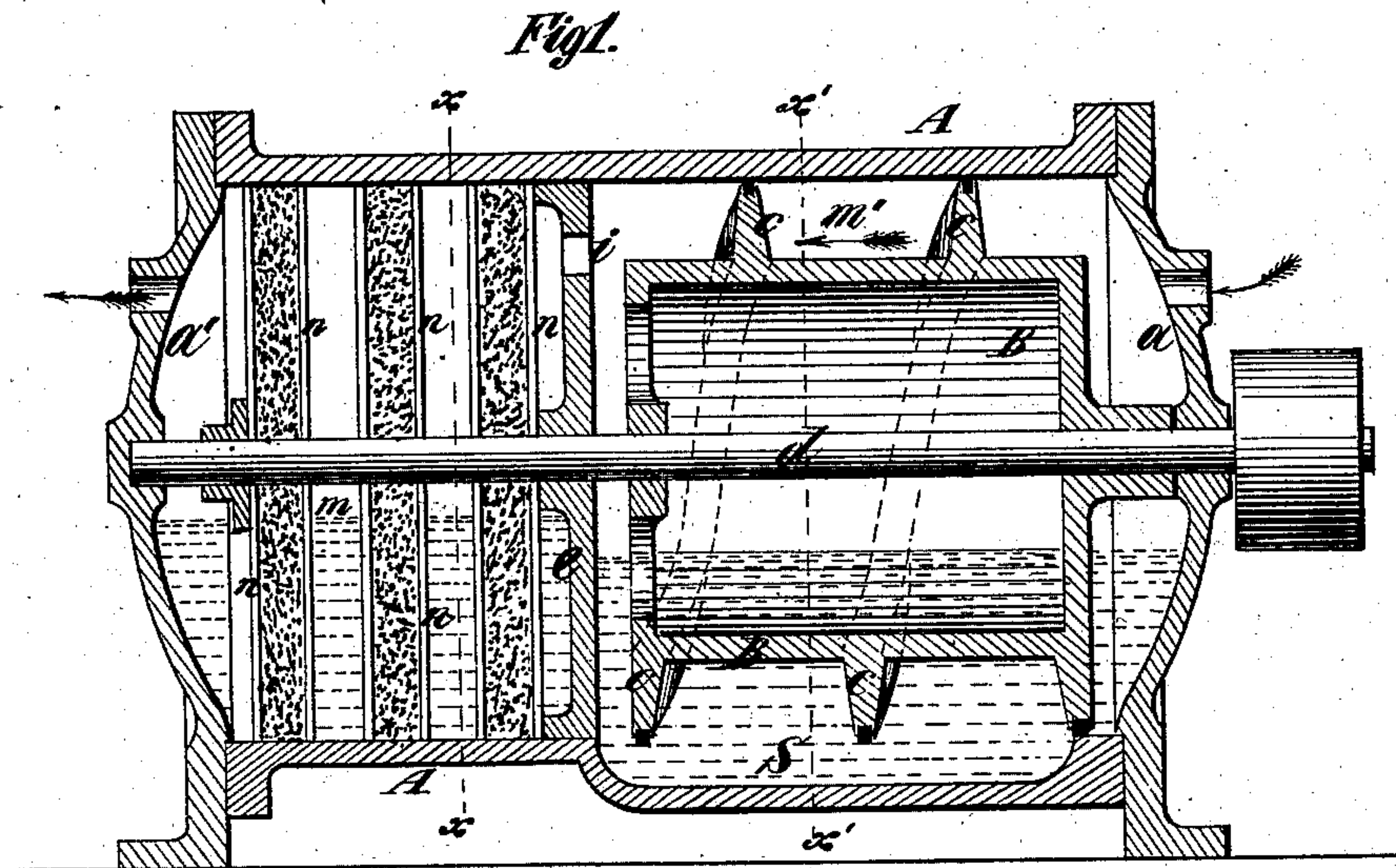


R. R. MOFFATT.  
Air-Carbureting Apparatus.

No. 216,879.

Patented June 24, 1879.



*Witnesses:*  
*Chandler Hall.*  
*Thomas E. Birch.*

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*Edwin H. Brown.*



# UNITED STATES PATENT OFFICE.

RICHARD R. MOFFATT, OF BROOKLYN, NEW YORK.

## IMPROVEMENT IN AIR-CARBURETING APPARATUS.

Specification forming part of Letters Patent No. 216,879, dated June 24, 1879; application filed April 23, 1879.

*To all whom it may concern:*

Be it known that I, RICHARD R. MOFFATT, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Apparatus for Carbureting Air for Illuminating Purposes, &c., of which the following is a specification.

The object of this invention is to produce a cheap and simple device for mixing a light hydrocarbon liquid with air, so as to produce a vapor or gas suitable for illuminating purposes, &c.

My invention consists in the combination, in a carbureting apparatus, of a stationary outer cylinder or case, perforated disks secured to the central shaft, fitting tightly and rotating within said outer cylinder or case, so as to effect the saturation of cotton-waste or similar material carried by them with gasoline or other hydrocarbon contained in said outer cylinder or case, and a rotary cylinder provided with a spiral flange, and serving to force air through the disks and saturated material, whereby the desired end is attained.

It also consists in the combination of parts, hereinafter described and claimed.

In the accompanying drawings, Figure 1 represents a longitudinal central section of my invention. Fig. 2 represents a cross-section of the same, taken on the line *xx*, Fig. 1. Fig. 3 represents a like view, taken on the line *x'x'*, Fig. 1.

Similar letters of reference in the several figures indicate like or corresponding parts.

A represents a hollow cylinder or case, to the ends of which are fitted end plates, *a a'*, secured in place by screws or otherwise, and provided with legs, where they support the cylinder and its appurtenances. In the upper part of the plates *a a'* are openings for the passage of air, so made that pipes may be applied to them as may be desirable. The cylinder A is separated into two compartments, *m m'*, by a transverse partition, *e*.

B is a hollow cylinder, mounted on a shaft, *d*, supported in the end plates, and driven through a cord and weight acting on a pulley, or otherwise, so as to cause said cylinder to rotate within the compartment *m'* of the chamber A. It is provided with one or more spiral flanges, *c c*, extending around its periphery,

and fitting snugly within the inner surface of its compartment of the cylinder A.

S designates a recess or duct formed in and open at all points to the compartment *m'* of the one cylinder A, so as to provide for the return of water or other liquid in the compartment, driven in one direction by the spiral flanges *c c*. In the end of the cylinder B nearest the partition *e* are openings to its interior C. Through the partition *e* is an air-opening, *i*, located in its upper part. *n* designates pairs of perforated disks, composed in this instance of wire-cloth, secured to the shaft *d*, so as to rotate through and dip in the gasoline or analogous material in the compartment *m* of the cylinder A. Between the disks of each pair is placed cotton-waste or other similar material. A draw-cock may be placed at the bottom of the duct S, if desired, and gage-cocks may be located at the side of the cylinder A, so as to indicate the quantity of liquid within the chambers *m* and *m'*. In the chamber *m'* is placed water, as represented in the drawings, and within the chamber *m* is a light hydrocarbon liquid, such as gasoline.

The operation of the invention is as follows: The shaft *d*, rotating, carries with it the cylinder B and the disks *n n*, and as the ends of the spiral flanges *c* enter the liquid in the compartment *m*, the air entering the said compartment is forced forward in the direction indicated by the arrows, (see Fig. 1;) and as one end of the flange does not move out of the liquid until the other end has entered it, the air is prevented from moving or passing backward. The water returns through the duct S as fast as displaced, and hence is always in position to immerse the flange and prevent the backward flow of air. The air is forced, through the opening *i* in the partition *e*, into the chamber *m*, and through the disks *n n* and the cotton-waste, thence out through the opening in the end plate, *a'*, into pipes that convey it to burners. As the disks *n n* are rotated by the shafts *d*, the cotton-waste or other material between them passes into and out of the liquid in the chamber *m*, and becomes highly saturated with the liquid, so as to thoroughly impregnate with it the air as it is forced through, thus carbureting it fully before it passes from the compartment *m*. The cylinder B, being



hollow and provided with openings at the end near the partition *e*, acts as an air-chamber, in which compressed air may be stored up, so as to make the flow even and steady at the burners. The shaft *d*, if rotated in the opposite direction, causes the air to flow in the opposite direction, in which case it passes through the carbureting-chamber *m* before it is forced through the chamber *m'*.

The elements of this device may be modified in various ways without departing from the principle of my invention.

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

1. In a carbureting apparatus, the combination of an outer stationary cylinder or case, perforated disks secured to the central shaft, fitting tightly and rotating within the outer cylinder or case, for saturating cotton-waste or other material carried by them with gasoline or other hydrocarbon in said cylinder or case, and a rotary cylinder provided with a spiral flange fitting tightly within said outer cylinder or case, for the purpose of forcing air through the aforesaid disks, substantially as and for the purpose specified.

2. In a carbureting apparatus, the combina-

tion of a cylinder or case divided into two compartments, perforated disks secured to the central shaft, fitting tightly and rotating within one compartment, to effect the saturation of cotton-waste or similar material carried by them with gasoline or other hydrocarbon, and a rotary cylinder provided with a spiral flange fitting tightly in the other compartment, and serving to force air through the aforesaid disks, substantially as and for the purpose specified.

3. In a carbureting apparatus, the combination of a cylinder or case composed of two compartments, perforated disks secured to the central shaft, fitting tightly and rotating within one compartment, for saturating cotton-waste or similar material carried by them with gasoline or other hydrocarbon, a rotary cylinder provided with a spiral flange fitting tightly in the other compartment, serving to force air through the said disks, and a duct in the latter compartment open at all points to the said compartment, substantially as and for the purpose specified.

R. R. MOFFATT.

Witnesses:

N. B. REEVES,  
JOHN P. HAFF.