(No Model.)

A. GAIRING & H. LEHMANN.

CARBURETOR.

No. 294,863. Patented Mar. 11, 1884.

Fig. 3.

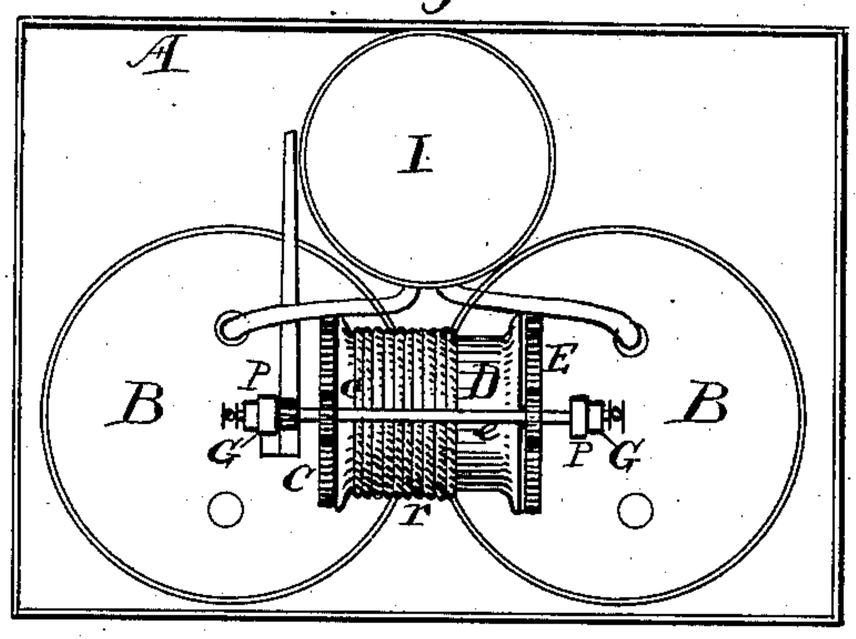


Fig. 4.

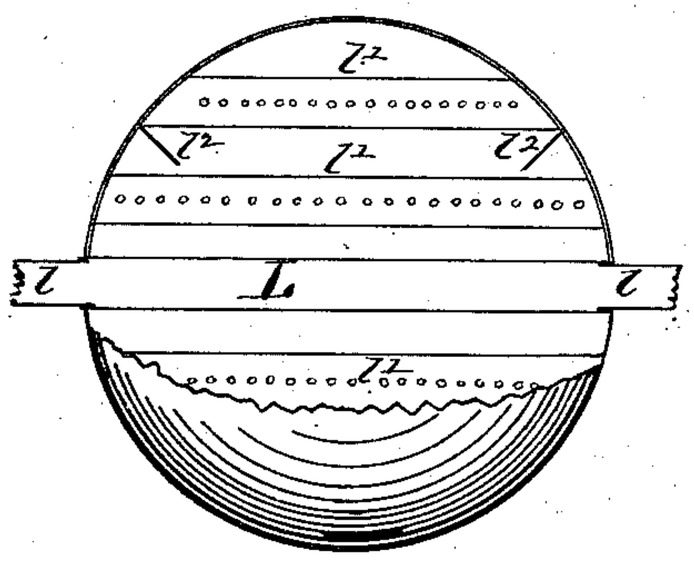


Fig. 1.

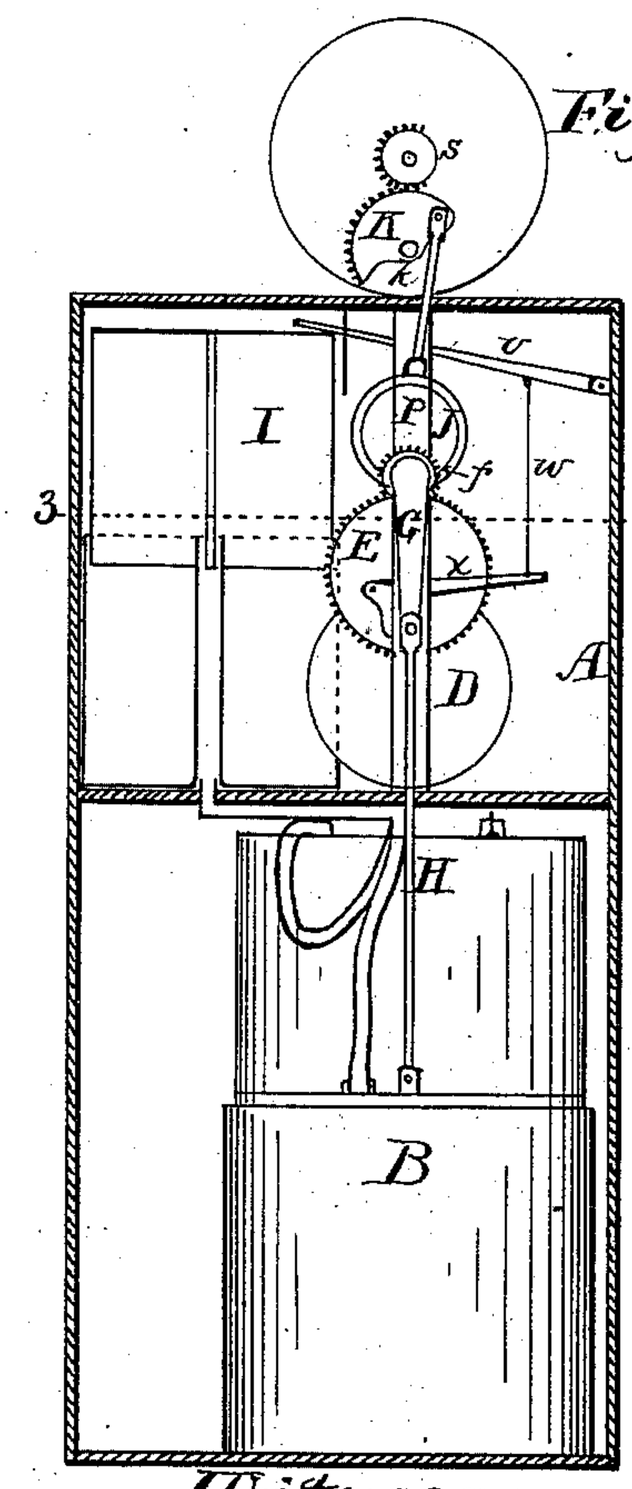
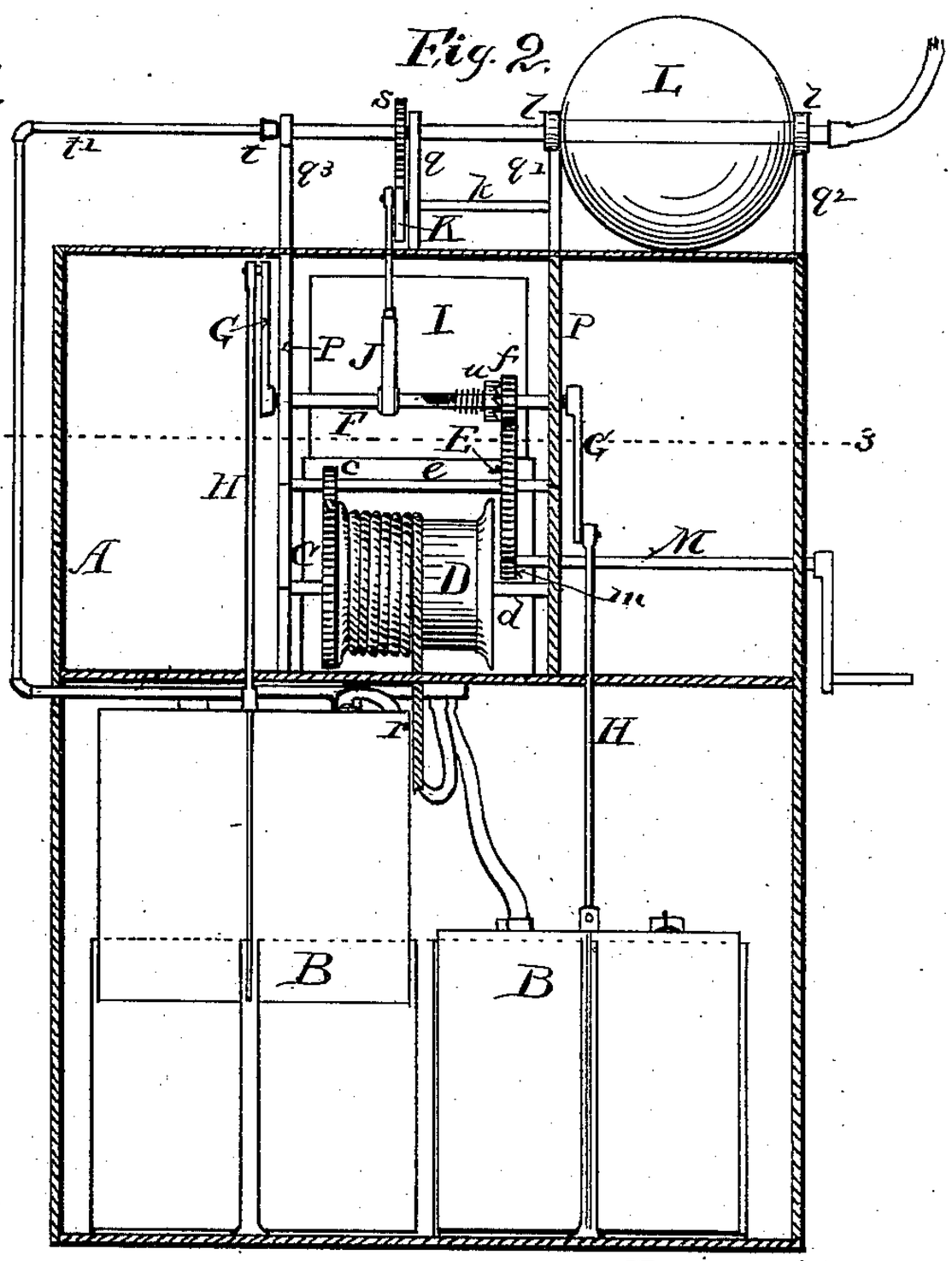


Fig. 2.



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UNITED STATES PATENT OFFICE.

ADOLF GAIRING AND HENRY LEHMANN, OF CLEVELAND, OHIO.

CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 294,863, dated March 11, 1884.

Application filed October 19, 1883. (No model.)

To all whom it may concern:

Be it known that we, ADOLF GAIRING and HENRY LEHMANN, both of Cleveland, in the county of Cuyahoga and State of Ohio, have invented certain new and useful Improvements in Carburetors, of which the following is a specification.

This invention relates to gas-machines in which air is carbureted to be used for illuminating purposes; and it consists of an apparatus combining machinery operated or propelled by a weight transmitting motion for forcing air through the carbureting-chamber, and also imparting motion to the carburetor for rotating the same, for the purpose of percolating the carbureting material contained within it, whereby the air in its passage through the carburetor will be more readily impregnated and require less time for passage. The apparatus is constructed, combined, and operated substantially as hereinafter described and claimed.

In the drawings, Figure 1 is a vertical section, showing the various parts comprising our apparatus in their relative positions. Fig. 2 is a vertical section transverse of Fig. 1. Fig. 3 is a horizontal section on line 3 3 of Figs. 1 and 2. Fig. 4 is a detached view of the carburetor, having portion of shell broken out to show interior construction.

A in Figs. 1, 2, and 3 represents a box or outer casing, in which is contained the motor and most of the working parts of the machinery. It is divided into two compartments by a floor about midway of its height, thus forming an upper and lower compartment.

B B are two air-forcing devices, consisting of what are commonly called "gasometers." These are located in the lower compartment, standing side by side. Between two posts, P P, in the upper compartment is placed a drum, D, set on a shaft, *d*, having its bearings in said posts. Said drum carries a rope, *r*, to which is to be attached a weight for revolving said drum, for the purpose of giving motion to the machinery. By the side of the drum is attached a gear-wheel, C, which meshes with a pinion, *c*, on a shaft, *e*, over the drum, on which is a gear-wheel, E. This wheel E meshes with a pinion, *f*, on a shaft, F, above said shaft *e*. These said shafts all have their bearings in the aforesaid posts P P. Upon the ends of said shaft F outside of the posts are attached cranks G G, which are connected by pitmen H H to the movable cylinders B B of the air-forcers. The cranks are set opposed to each other on their shaft, so that an alternate movement is given to the said cylinders. In the upper compartment is also placed an air-receiver, I, constructed in like manner to the air-forcers B B, which are inverted cylinders playing in tanks containing water. The air from said forcers is discharged into the receiver I, from whence it is conveyed to the carburetor, as hereinafter described. Upon the aforesaid shaft F is placed an eccentric, J, connected with a segment-gear, K, fixed on a shaft, *k*, set in the posts *q q'* on the top of the case A, designed for giving a rotary movement to the carburetor.

L is the carburetor, which consists of a hollow globe having pipe or hollow journals *l l* set in boxes on the posts *q' q²*, the pipe extending on one side of said carburetor and resting in bearings on posts *q q³*. On said long pipe is placed a pinion, *s*, meshing with the aforesaid segment-gear K, and is designed to give a half-revolution back and forth to the carburetor, the object being as hereinafter shown. Said long pipe is connected by a swivel-union, *t*, to a pipe, *t'*, leading into the bottom of the air-receiver I. The interior of the carburetor is provided with a series of horizontal perforated shelves, *l'*, and also has short radial wings *l²*, the purpose of which will appear in the description of the operation of the apparatus.

A crank-shaft, M, having a pinion, *m*, meshing with the gear E, and set in post P, the crank being on the outside of the case, is provided for winding up the rope on the drum when the weight has run down. Upon the shaft F is placed a spring-clutch, *n*, which operates with the pinion *f*, which is placed loose on the shaft. The object of this is to avoid rotating the shaft F when the rope is being rewound, as before stated.

A brake mechanism is also provided, consisting of a lever, *v*, pivoted at one side of the case, and having its moving end attached to or resting on the air-cylinder, by which it is operated. It is connected by a cord, *w*, to a brake-lever, *x*, pivoted to a bracket on the post P, and arranged to bear against the shaft *e*. The object of this brake is to stop or check the working of the air-forcers when the air-cylinder is full, thus making our machine a self-

regulating one. Check-valves are provided in the top of the cylinders B B to allow air to enter when they are ascending.

The operation of this apparatus is as follows: The air-receiving cylinder being down, of course the brake is off and the drum is free to move, which it does by the gravity of the weight. This causes the cylinders B B to be moved. The one going down forces the air it contains into the receiver above through the hose connecting it therewith, while the one that is moving upward is refilling with air. When the receiver is filled with air the brake mechanism stops further movement. The air from the receiver is forced through its central tube, connected with the pipe l' into the carburetor L, where it is impregnated with the gasoline contained therein, and passes out through the opposite side of the carburetor, and is conveyed to burners by the ordinary means. In the meantime the carburetor has been operated upon through the instrumentality of the eccentric J and the segment-gear K actuating the pinion k to give the carburetor a rotating movement. The carburetor contains a quantity of gasoline, and the object of giving to it the rotary movement is to cause the gasoline to trickle through the perforations of the shelves and more readily impregnate the air as it passes.

We are aware that the mechanism for forcing air is not new. We do not claim such; but

What we do claim is—

In a gas-carburetor substantially as described, and in combination with the segment K, link k, eccentric J, and the pinion s, the globular vessel L, having hollow journals l, perforated shelves l', and inwardly-extending deflectors or wings l^2, all combined and arranged to operate substantially as and for the purpose set forth.

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