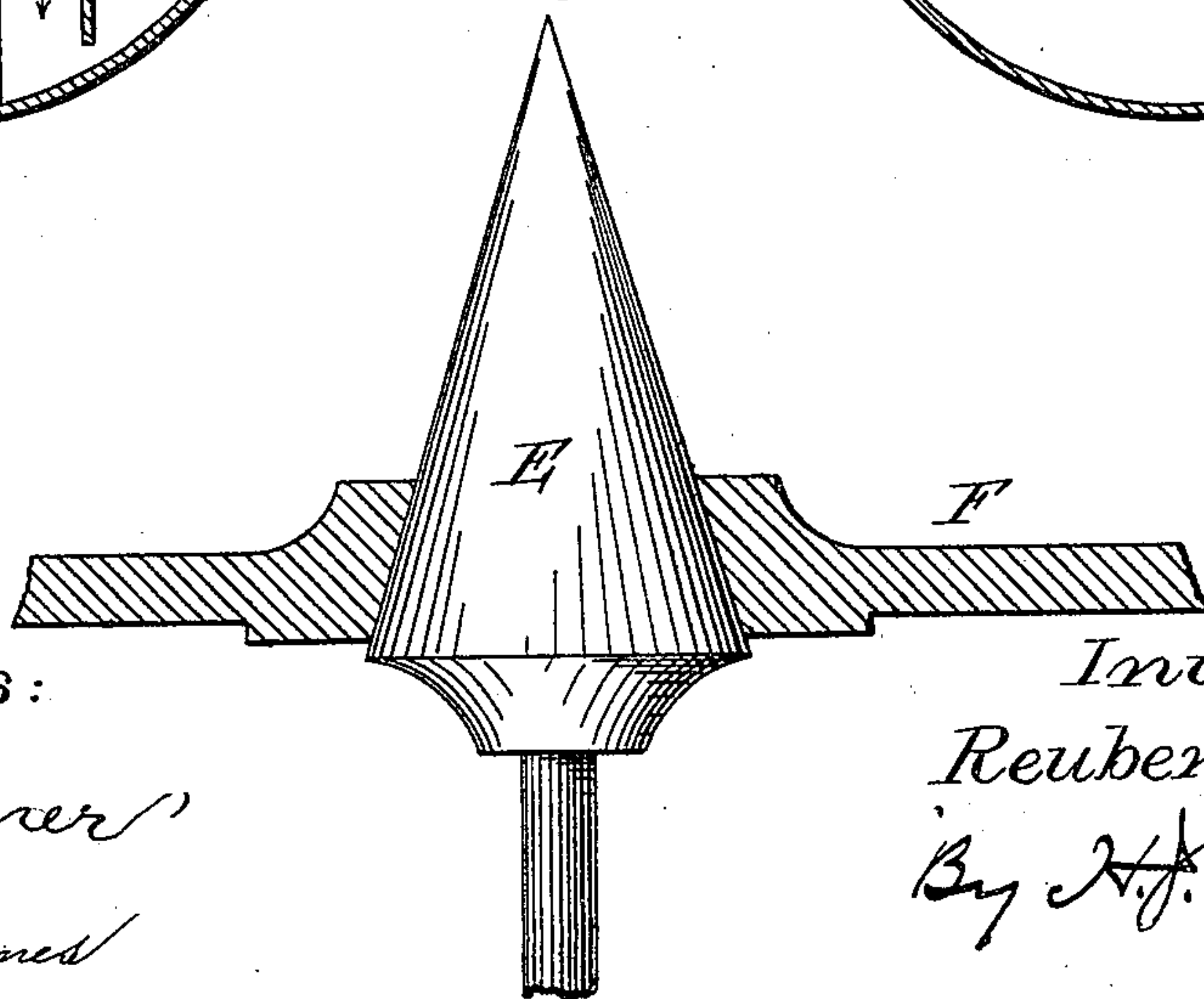
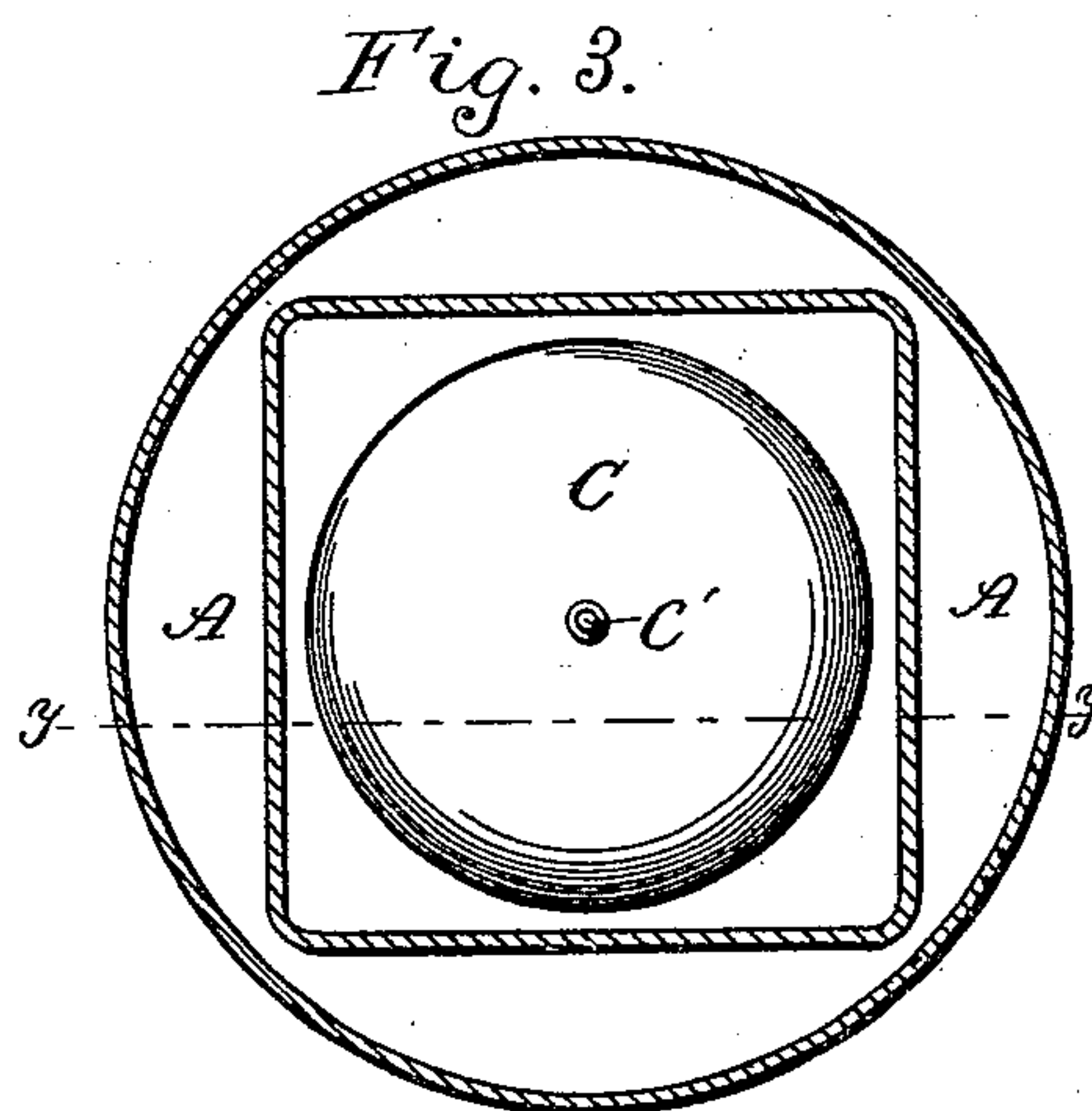
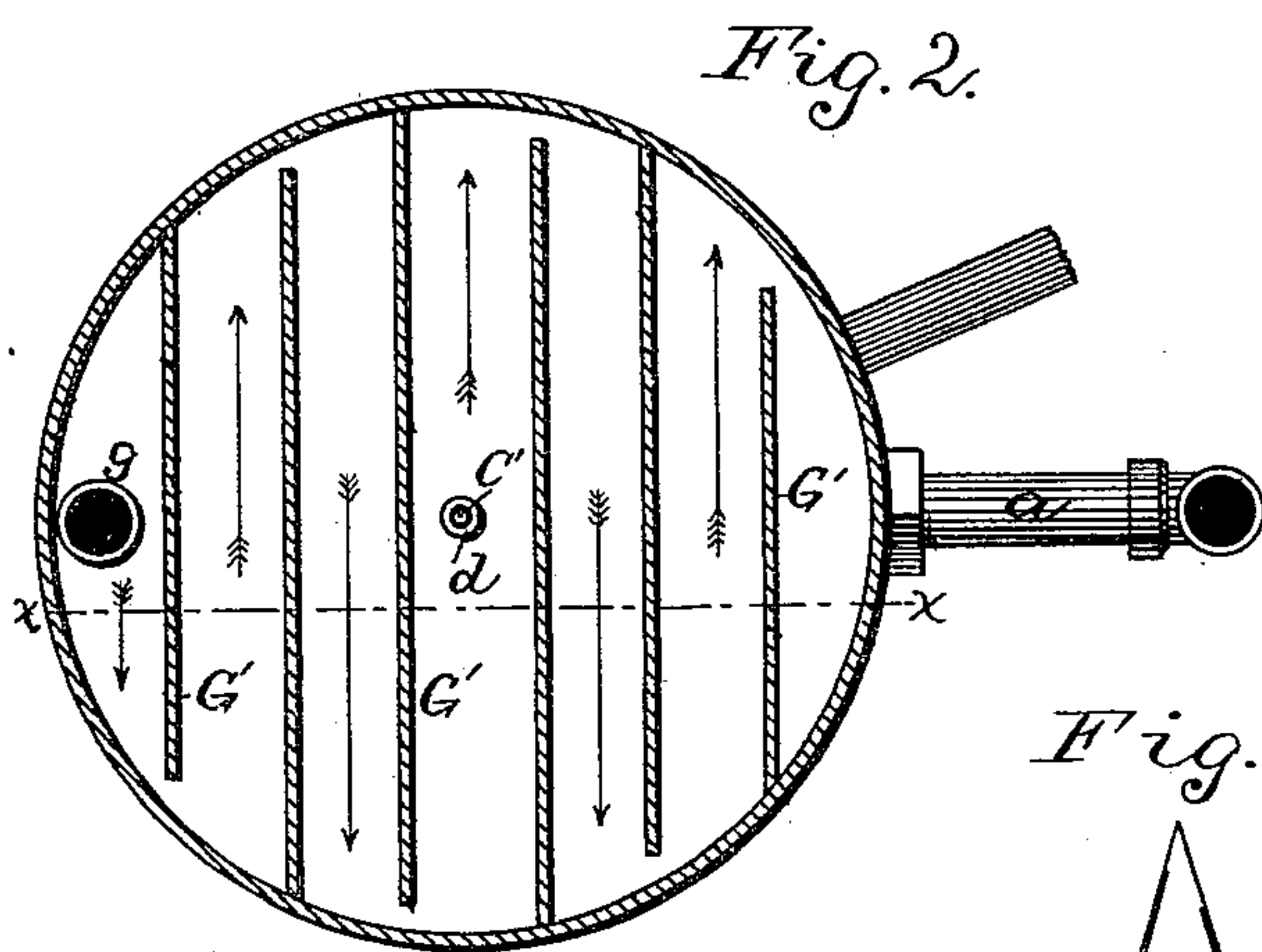
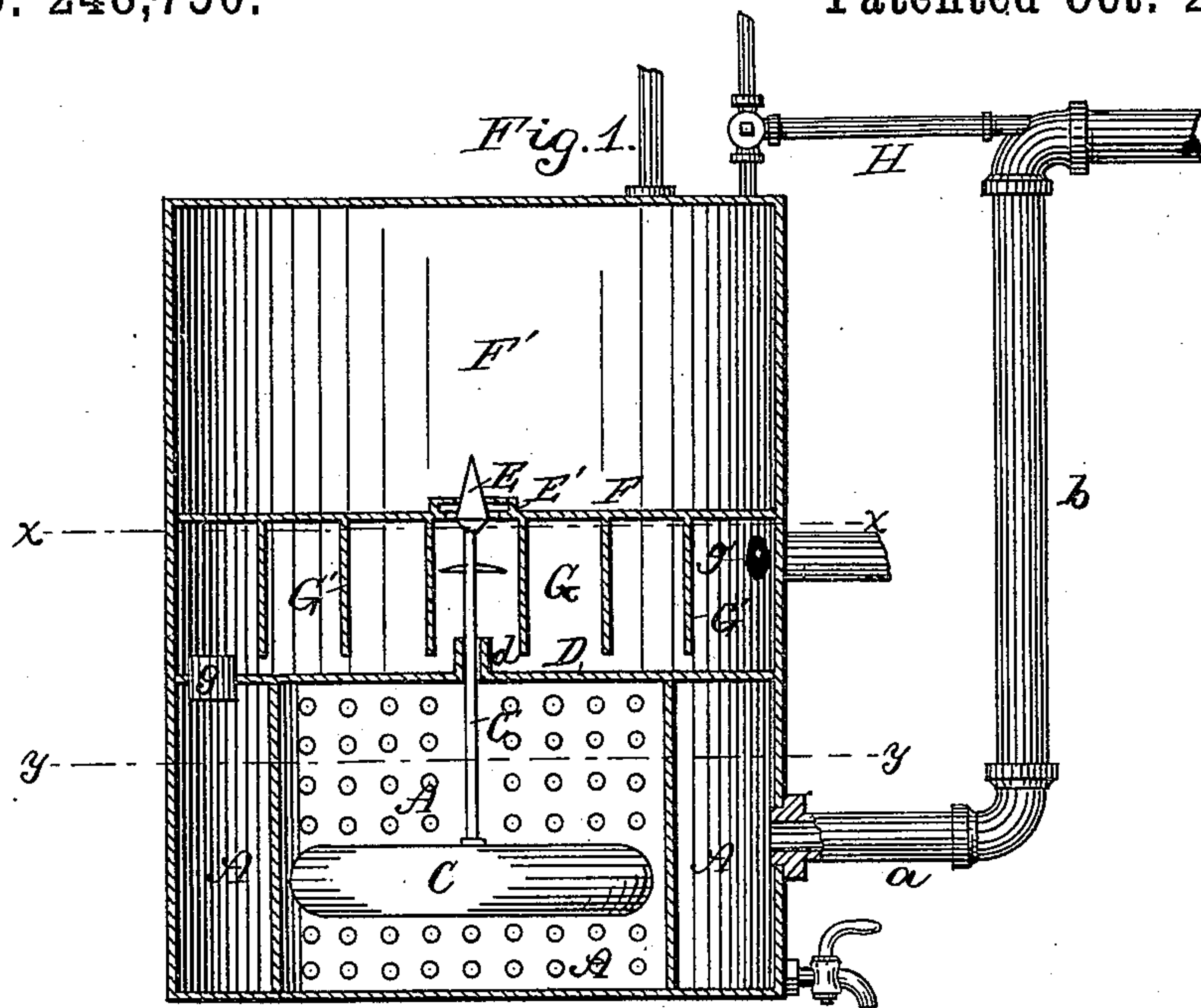


R. F. HUGHES.
GAS CARBURETOR.

Patented Oct. 25, 1881.



Witnesses:

J. W. Garner,
H. S. D. Haines

Inventor:

Reuben F. Hughes,
By H. J. Ennis
Atty.

UNITED STATES PATENT OFFICE.

REUBEN F. HUGHES, OF CINCINNATI, OHIO.

GAS-CARBURETOR.

SPECIFICATION forming part of Letters Patent No. 248,750, dated October 25, 1881.

Application filed March 18, 1881. (No model.)

To all whom it may concern:

Be it known that I, REUBEN F. HUGHES, a citizen of the United States, residing at Cincinnati, in the county of Hamilton and State of Ohio, have invented certain new and useful Improvements in Gas-Carburetors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention relates to self-feeding gas-carbureting machines; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claim.

The objects of the invention are, first, to avoid all systems of levers whereby the operation of the valve in automatic or float feeders is varied by the specific gravity of the lowest body of oil in the carbureting-chambers, and to provide a direct-acting stem connecting the float to the valve, said stem extending through an enriching chamber or chambers between the carbureting and float chamber in which the forced air is admitted and the volume of oil in the reservoir above; second, to supply air to the reservoir to compensate for displaced gasoline, said air being fed from the air-inlet, thus keeping the reservoir in condition to feed down at any time, and preventing the escape and waste of vapor from the hydrocarbon fluid contained in the reservoir; third, to provide a lower float-chamber, which serves as an air-inletting chamber and a carbureting-chamber, the float in which is connected by a direct stem to a valve, which is seated properly in the bottom of a reservoir forming the upper chamber, and between these two chambers one or more enriching-chambers, connected together and to the float-chamber by pipes or tubes extending sufficiently far above the floors of these intermediate or enriching-chambers to allow a proper quantity of the richer gasoline to be retained in each chamber and this quantity of gasoline to be controlled by the float and valve.

To enable others skilled in the art to make and use my invention, I will describe its manufacture, construction, and mode of operation, and to this end refer to the accompanying draw-

ings, which form a part of this specification, and in which—

Figure 1 is a vertical longitudinal section, showing one intermediate or enriching chamber; Fig. 2, a horizontal section through the line *x x* of Fig. 1; Fig. 3, a horizontal section through the line *y y* of Fig. 1; and Fig. 4, an enlarged sectional view of the valve and its seat.

In the said drawings similar letters of reference indicate like parts in all the figures.

Referring to the figures, A represents the lower or float chamber, having an air-inlet, *a*, connected with the forced-air pipe, *b*, which is, in turn, connected to any air-propelling motor, and having a usual cock-outlet near the bottom to allow the devaporized or poor gasoline to escape. This chamber is of ordinary and well-known construction, adapted to afford a maximum of carbureting power with a minimum of space and hydrocarbon liquid, and it is adapted to receive a float, C, having a stem, C', which, passing upward through a neck, *d*, in a diaphragm, D, is secured to a valve, E, in a direct line, said valve E having its seat E' formed in the diaphragm F, which comprises the bottom of the reservoir or store-chamber F'.

For convenience I will describe but one intermediate chamber, but it will be understood that two or more may be used.

The weight of the float C serves to open the valve and admit the gasoline into the enriching-chamber G, which is connected to the float-chamber by a tube, *g*, extending sufficiently above the floor to allow such enriching-chamber to at all times have a proper quantity of gasoline retained therein.

With their lower edges extending slightly below the horizontal plane of the tube *g*, and secured to the diaphragm F above, are hanging plates, G', between which and the cylinder are openings at alternate ends which delay the flow of air to insure its more perfect carbureting, and an exit, *g'*, allows its conduction to the burners.

Leading from the air-induction pipe B to the reservoir F', above the surface of the volume of oil, is a pipe, H, which allows the inlet of air to take the place of the displaced gasoline and to prevent the waste of vapor. The reservoir has proper facilities for filling.

From the foregoing description, in connec-

tion with the drawings, the operation of the machine will be obvious.

Various modifications may be made without departing from the principle or sacrificing the advantages of my invention, the essential features of which are the direct-acting valve, the connection between air-inducting pipe and reservoir, and the general construction and arrangement of the whole.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

The herein-described gas-carburetor, composed of the vessel divided by the diaphragms D and F into a float-chamber, having the air-inlet *a*, connected with the forced-air pipe *b*,

the enriching-chamber G, hanging plates G', and store-chamber F', said chamber G and float-chamber A connected by tube *g* and neck *d*, and provided with the float C, having the upright stem C', provided with conical valve E, and the pipe H, connecting pipe *b* with chamber F', the several parts constructed and arranged relatively to each other substantially in the manner as and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

REUBEN F. HUGHES.

Witnesses:

CHARLES LEPENER,
N. MARCHANT.