No. 685,787. Patented Nov. 5, 1901.

H. J. MYERS.

REGULATOR FOR FLOW OF FLUIDS.

(Application filed Jan. 9, 1901.)

(No Model.)

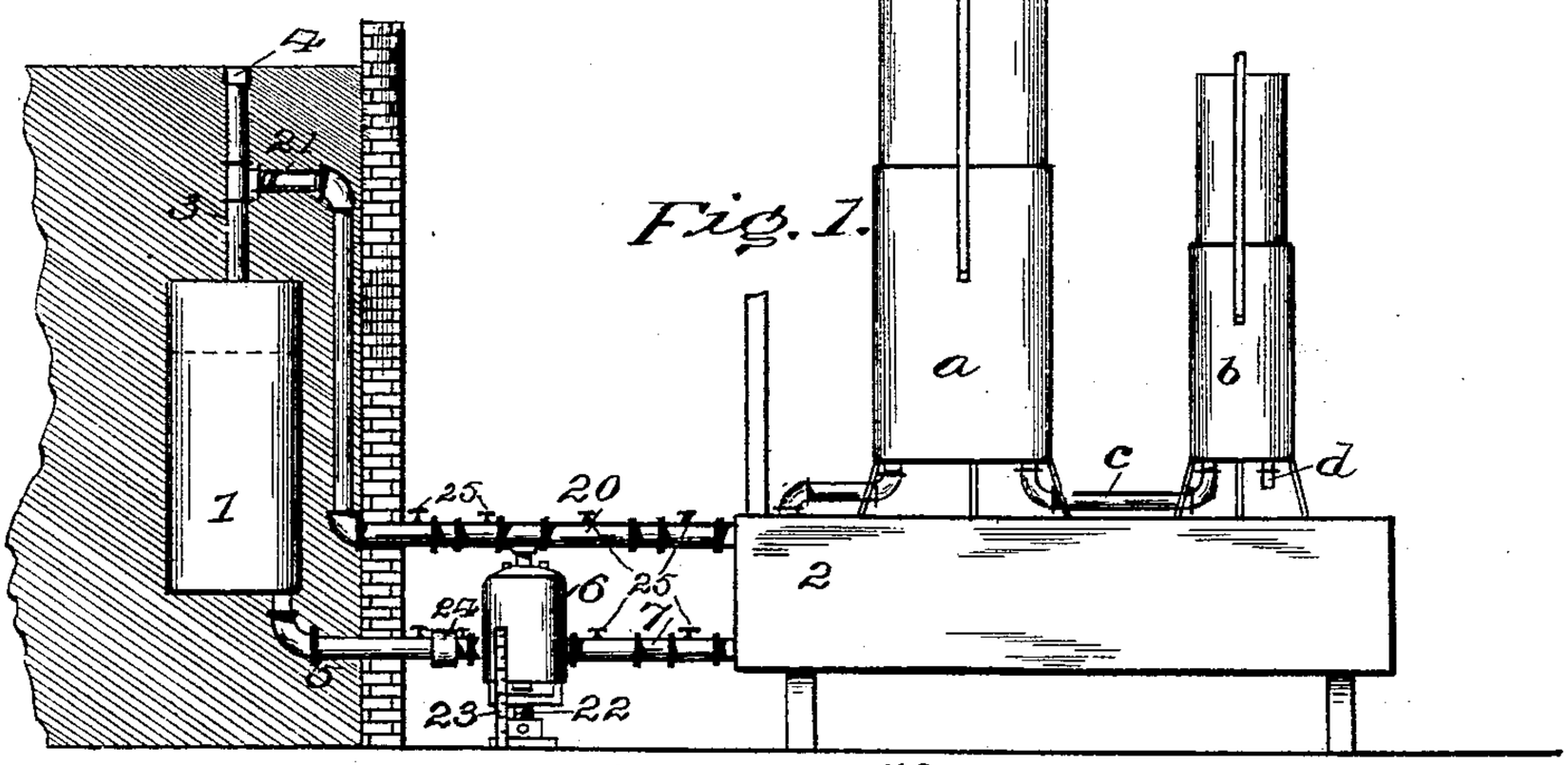

Fig. 1.

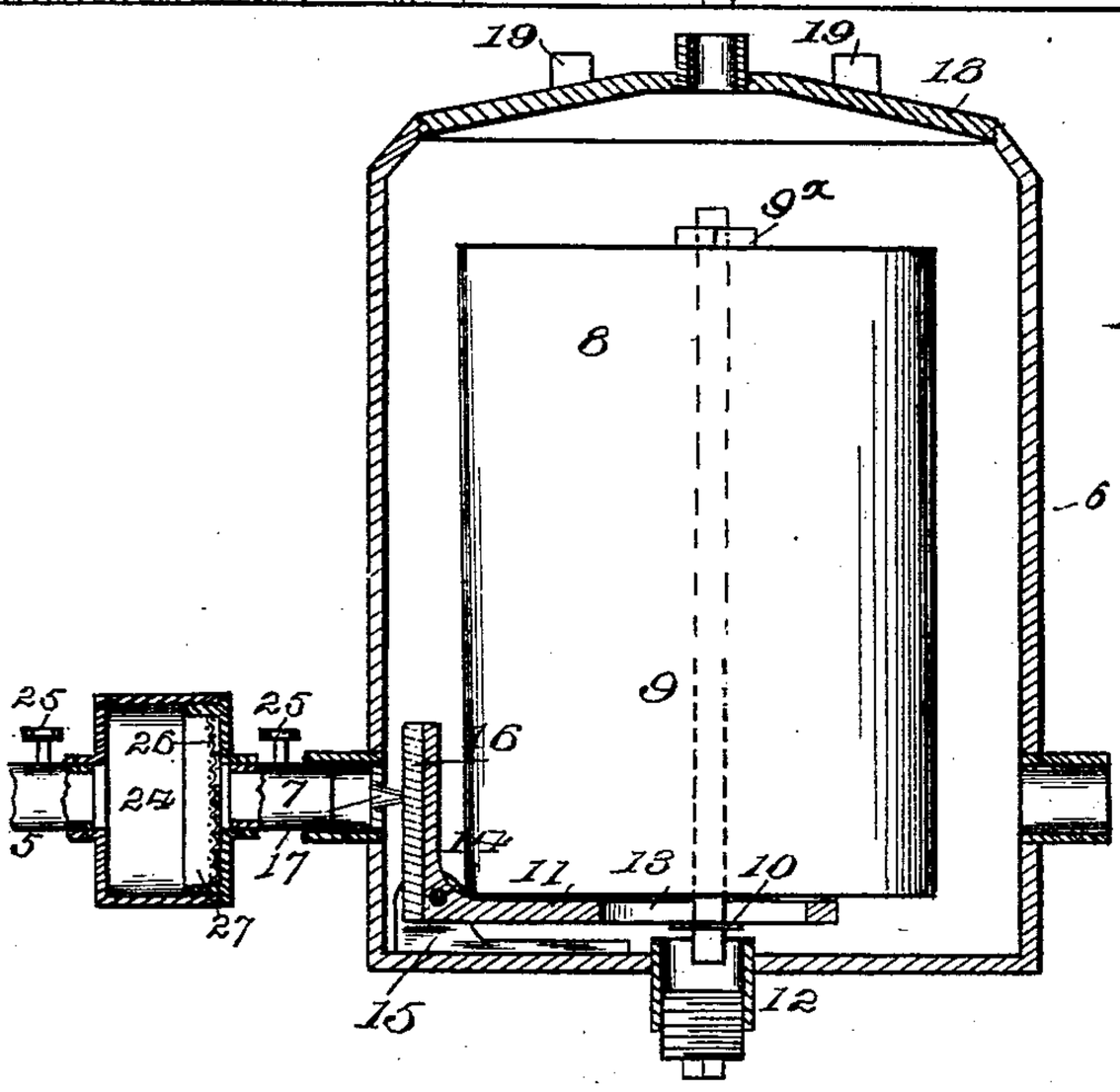

Fig. 2.

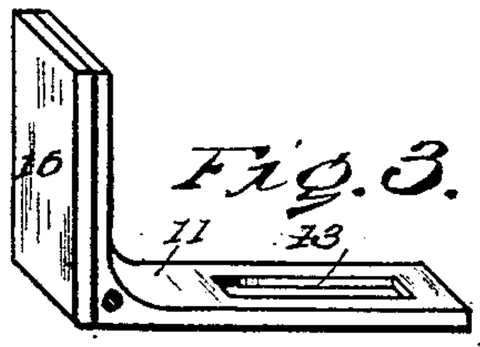

Fig. 3.

Witnesses
D. W. Gould.
C. M. Catlin

Inventor
Harry J. Myers,
By Benj. R. Catlin
Attorney

UNITED STATES PATENT OFFICE.

HARRY J. MYERS, OF ROCHESTER, NEW YORK, ASSIGNOR OF ONE-HALF TO O. M. ROBERTS, OF ROCHESTER, NEW YORK.

REGULATOR FOR FLOW OF FLUIDS.

SPECIFICATION forming part of Letters Patent No. 685,787, dated November 5, 1901.

Application filed January 9, 1901. Serial No. 42,678. (No model.)

To all whom it may concern:

Be it known that I, HARRY J. MYERS, a resident of Rochester, in the county of Monroe and State of New York, have invented certain new and useful Improvements in Regulators for Flow of Fluids; 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 pertains to make and use the same.

The invention relates to apparatus for carbureting gasolene and like purposes; and its object is to insure a nicely-accurate and efficiently-acting regulator for the flow of liquid from one receptacle to another.

The invention consists in the construction herein described and pointed out.

In the accompanying drawings, Figure 1 is an elevation showing diagrammatically the relative situation of a gasolene-tank, a carbureter, and an intermediate regulator. Fig. 2 is an enlarged section of the regulator. Fig. 3 is a perspective of a regulating-valve.

Numeral 1 denotes a gasolene-tank, preferably situated below the ground-surface for safety and conveniently made of cylindrical form.

2 denotes a rectanglar carbureter conveniently placed in a cellar or basement. The particular form and situation, however, either of the tank or of the carbureter are not essential.

a and *b* denote "gasometers" communicating by a pipe *c* and supplying carbureted air through a pipe *d*, communicating directly with gasometer *b*. Gasometer *a* receives carbureted air from the carbureter through a pipe, as indicated in Fig. 2.

The gasolene-tank has a nozzle or inlet-pipe 3, normally closed vapor-tight by a screw-cap 4, but adapted to be opened to permit filling the tank by a flexible charging-pipe or other means.

5 denotes a pipe leading to the regulator, which comprises a receptacle or vessel 6. This pipe enters the tank at its bottom to insure that the heaviest part of its contents shall be first used.

7 is a pipe leading from the receptacle 6 to the carbureter.

8 indicates a float situated in the receptacle on a rod 9, having a foot 10. A nut $9^{\times}$ fastens the float to the valve-stem to avoid loss of motion.

12 is a screw-plug to close an opening in the bottom of the vessel 6. Said opening provides that the float-stem may be introduced and passed through the slot 13 in the valve-stem 11 and secured to the float in any convenient manner.

18 denotes a cover, and 19 are lugs to receive a tool for screwing the cover into or out of the head of the vessel.

The stem 11 is pivotally supported by a pin 14 between lugs 15, near the bottom of the vessel, so that its two arms are situated near the bottom and side walls of the vessel, respectively. The vertical arm of the valve-stem is lined with leather 16 or other soft material and is adapted to close a needle-valve inlet-passage 17 whenever the float is sufficiently buoyed up to suitably lift the horizontal arm of said stem.

20 denotes a pipe by which the upper part of the tank, regulator vessel, and carbureter communicate to equalize pressure.

21 is a check-valve to prevent flooding the carbureter with gasolene in case of accidental overfilling of the tank.

22 denotes a screw for raising and lowering the regulator vessel to adjust it for maintaining any desired level in the carbureter.

23 is a scale to indicate the level of the vessel from which the level of the liquid can be deduced.

Thin blocks or wedges might be used to raise the regulator vessel, but a screw is preferred.

Obviously the tank 1 and its connections are not necessarily fixed. It should be understood that as illustrated the vessel 6 if raised as stated would carry with it the connected pipes, which in practice will spring or yield enough to admit of regulation of the liquid-level to a practical degree. If when the regulator vessel is at a given level the valve is barely opened, then in such case by elevating the vessel a given distance, the other parts remaining as before, gasolene will be admitted to the carbureter to a depth equal to the said distance, and by this means the depth of gasolene in the carbureter can

be predetermined, and it will be maintained by the construction described. Ordinarily the pipes connecting the regulator vessel with the tank and carbureter will be long enough to permit them being sprung in raising or lowering the regulator vessel without opening a joint; but flexible couplings may be used in these pipes, if desired.

Valve and valve-ports as heretofore constructed and arranged have been liable to obstruction by sediment. To avoid this evil, the inlet or needle valve passage is formed in a slender horizontal valve-body and adapted to be closed by contact with a plain surface which bears on the point of the admission-valve tube. The closing is made effectual by the compressible lining or face of the valve in which the point of the valve-body is embedded when the valve closes. The yielding character of the valve face or lining enables it to effectively close the port even if foreign particles should be deposited thereon; but such deposit is avoided by the free vertical situation of the valve-face and the horizontal situation of the small valve-body. This excludes sediment from the regulator.

24 is a sediment-receptacle communicating with pipe 5 and inlet 7 and by preference is detachably connected thereto.

25 represents cocks to close the pipe and inlet or either of them, and cocks for a like purpose can be used in other pipes, as indicated.

26 is a sieve of fine mesh to arrest solid particles. This sieve may be held in a screw-cap 27, detachable to permit clearing the receptacle and cleaning the sieve.

Having thus described my invention, what I claim is—

1. In a regulator for the flow of liquids, a gasolene-tank, a float-receptacle, a valve-body having a needle-valve passage, a valve, a bell-crank carrying the valve on one arm, a float loosely connected to the other arm of the bell-crank, said latter arm having a slot, a rod passing through said slot, and devices for loosely securing the rod to the float and to the slotted arm.

2. In a regulator for the flow of liquids, a gasolene-tank, a float-receptacle, a float, a valve-body having a needle-valve passage discharging horizontally into the float-receptacle, a bell-crank having a vertical arm and a horizontal arm, the vertical arm being provided with a valve and the float seated loosely on the horizontal arm, said horizontal arm having a slot, a rod secured to the float and passing through said slot, and devices for securing the rod to the float and to the arm.

3. In a regulator for the flow of liquids, a gasolene-tank, a float-receptacle, a valve-body having a needle-valve passage, a valve, a bell-crank to support the valve on one arm, a float loosely connected to the other arm of the crank, said arm having a slot, a rod secured to the float and passing through said slot, devices for securing the rod to the float and to the crank, and a sediment-chamber situated between the valve and tank.

4. In a regulator for the flow of liquids, a gasolene-tank, a float-receptacle, a valve-body having a needle-valve passage, a valve admitting gasolene to the receptacle, and a sediment-chamber situated between the valve and tank, said sediment-chamber having a screen.

5. In a regulator for the flow of liquids, a gasolene-tank, a float-receptacle, a valve-body having a needle-valve passage, a valve, a bell-crank carrying the valve, a float loosely connected to one arm of the crank, said arm having a slot, a rod secured to the float and passing through said slot, devices for securing the rod to the bottom of the float and to the stem, a detachable sediment-chamber situated between the valve and tank, and cocks whereby the sediment-chamber can be detached without waste of gasolene.

6. The combination of the tank, the regulator comprising the regulator vessel, float and valve, the carbureter, and means to vary the level of the regulator vessel to predetermine the consequent depth of the gasolene in the carbureter.

7. The combination of the tank, the regulator comprising the regulator vessel, float and valve, the carbureter, and means to vary the level of the regulator vessel to predetermine the consequent depth of the gasolene in the carbureter, said means comprising a screw mediately bearing on the vessel.

8. The combination of the tank, the regulator comprising the regulator vessel, float and valve, the carbureter, means to vary the level of the regulator vessel to predetermine the consequent depth of the gasolene in the carbureter, said means comprising a screw mediately bearing on the vessel, and a scale supported independently of said vessel.

9. In a fluid-regulator, a float-receptacle having a removable cover for its top and having an opening in its bottom normally closed by a detachable device, a float, a rod, a nut on the rod detachably secured to the float and accessible through the uncovered top of the receptacle, an admission-valve port, and a bell-crank having a slotted arm supporting a valve, said float and crank being detachably connected and the whole adapted for the assemblage of said parts by passing the rod through the bottom opening and through the slotted arm and for securing the receptacle upon the crank by means of the rod and nut.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

HARRY J. MYERS.

Witnesses:

WILLIAM FORSCHLER,

H. E. SHAFFER.