

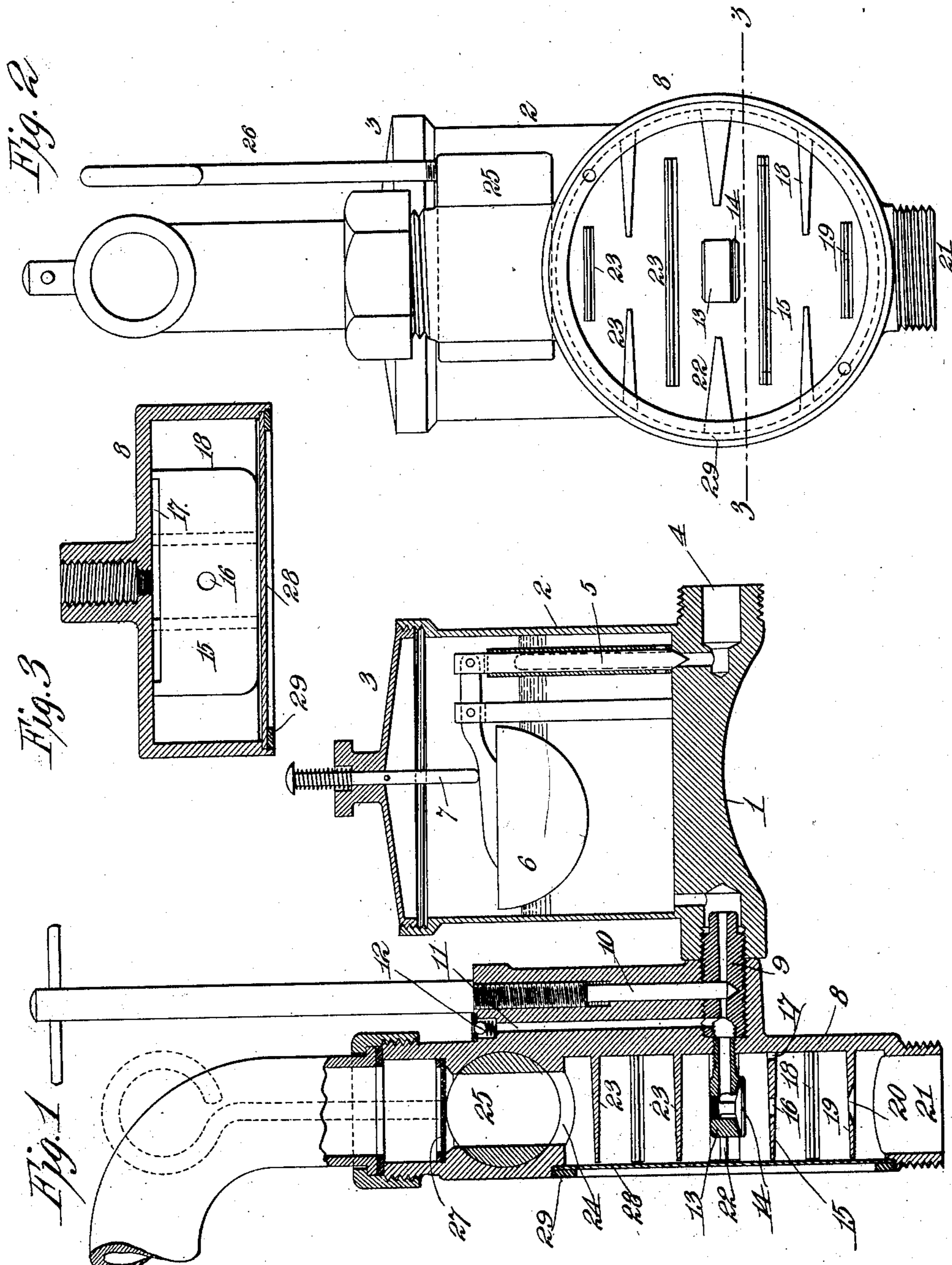
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F. H. MESSINGER.
CARBURETER FOR INTERNAL COMBUSTION ENGINES.

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NO MODEL.



Witnesses:

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FREDERICK H. MESSINGER, OF NEW YORK, N. Y.

CARBURETER FOR INTERNAL-COMBUSTION ENGINES.

SPECIFICATION forming part of Letters Patent No. 719,486, dated February 3, 1903.

Application filed October 19, 1901. Serial No. 79,225. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK H. MESSINGER, a citizen of the United States, residing at No. 45 East Twenty-second street, in the borough of Manhattan, city, county, and State of New York, have invented a certain new and useful Improvement in Carbureters for Internal-Combustion Engines, of which the following is a specification.

My invention relates to an improved carbureter designed particularly for use for forming an explosive hydrocarbon mixture for the operation of internal-combustion engines; and my object is to provide a simple and compact device for the purpose which shall have a high carbureting capacity. In fact, I have found in the practical operation of my device that the vaporizing effect which can be secured therein is of such a character that ordinary kerosene may be practically carbureted for the purpose. Ordinarily, however, I prefer to make use of the improved carbureter in connection with naphtha, gasolene, or other readily-volatilizable fluids.

My improved carbureter comprises a supply-reservoir in which the hydrocarbon is automatically maintained at the desired level, a nozzle connected with said reservoir and to which the fluid is fed in the desired limited quantity, and a vaporizing or carbureting chamber surrounding said nozzle and in which the vaporizing effect is produced, said chamber being provided with interior partitions so arranged, as will be described, as to accelerate and facilitate the vaporizing effect and also to secure a thorough mixture of the explosive vapor with the air.

The invention also preferably comprises an auxiliary air-passage leading into the conduit between the vaporizing-nozzle and the reservoir and by means of which air will be drawn through the vaporizing-nozzle with the fluid, so as to more effectively facilitate the carbureting action.

The invention also comprises details of construction, all of which will be more fully hereinafter described and claimed.

In order that the invention may be better understood, attention is directed to the accompanying drawings, forming part of this specification, and in which—

Figure 1 is a longitudinal sectional view of

the device; Fig. 2, an end elevation, and Fig. 3 a section on the line 3 3 of Fig. 2.

In all of the above views corresponding parts are represented by the same numerals of reference.

A cast base 1 is formed with a reservoir 2, having a removable top 3, screw-threaded in place. A suitable vaporizable fluid—such as gasolene, naphtha, or kerosene—is supplied to the reservoir by a pipe 4, and the supply of liquid in the reservoir is maintained at the proper height by means of a valve 5, actuated by a float 6. In order to depress the float when for any purpose a greater supply of fluid is necessary in the reservoir, I employ an upwardly-spring-pressed plunger 7, working in a suitable packing in the top 3, as shown.

8 represents a vaporizing or carbureting chamber, cast, preferably, in a single piece and into which is screwed a coupling 9, with which the reservoir is connected. The passage through the coupling 9 is relatively contracted, and controlling said passage is a threaded needle-valve 10 of common construction. Leading into the passage in the coupling 9 is an auxiliary air-supply passage 11, having, preferably, a small ball-valve 12 at its upper end, permitting air to flow downwardly therein, but preventing a return flow. Communicating with the passage in the coupling 9 is a threaded nozzle 13, the outlet from which is regulated by a spreading-disk 14, having a stem threaded into the nozzle, so as to be adjustable toward and away from its open end. The opening from the nozzle preferably extends downwardly, as shown. Immediately below the nozzle 13 is a partition 15, having a central opening 16 therein located in line, preferably, with the center of the spreading-disk 14, and having also a slitted opening 17 at its back. (See Fig. 3.) Below the partition 15 I preferably arrange two shorter partitions 18 18, with a passage between them, and extending across and below said passage is a partition 19, having a central opening 20 therein, the latter partition being located immediately above the main supply-opening 21. Located on each side of the nozzle are partitions 22, and above the nozzle are partitions 23, arranged, preferably, as shown, whereby air drawn by suction

through the air-opening 21 will be caused to partake of a tortuous passage through the vaporizing-chamber, the several partitions described acting as baffle-plates to effect an intimate mixture of the air and vaporized hydrocarbon. The openings 16, 17, and 20, which have been described, also enable further operations to be effected in producing the vaporizing action, as will be explained.

Leading out of the vaporizing-chamber is a passage 24, having an ordinary controlling-valve 25 therein operated by a handle 26, and within said passage I also preferably locate a screen 27, which tends to further break up the mixture, as well as to exclude foreign substances from the engine-cylinder.

The front of the vaporizing-chamber is formed of a panel 28, made, preferably, of mica or some other transparent material and held in place by a threaded ring 29, whereby the operation of the carbureter may be observed. A space is left between the baffling-partitions and the panel 28.

The operation of the device is as follows:

The fluid will be supplied to the reservoir 2 and maintained at a uniform level therein by the action of the float 6 and valve 5. The needle-valve 10 is now opened to permit a very limited flow of the fluid to the nozzle 13. At each suction-stroke of the engine rarefaction of the atmosphere in the vaporizing-chamber will be effected and a slight flow of air will therefore take place past the valve 12, through the passage 11, and between the spreading-disk 14 and its seat, this air tending, therefore, to force the fluid through the vaporizing-nozzle and effecting a partial atomizing effect thereon. Air will also be drawn in greater quantities through the air-supply opening 21 and, passing around the partition 19 between the partitions 18 and around the partition 15, this air will flow into proximity with the nozzle to sweep up the atomized fluid and effectively vaporize it. In practice I find that a drop of the fluid tends to form on the bottom of the disk 14, but that the air which flows directly through the openings 16 and 20 from the air-admission will immediately vaporize this accumulation at each suction-stroke. By making use of the slitted opening 17 in the partition 15 air will not only flow around the ends of that partition, but will flow past its back and front, so as to entirely surround the vaporizing-nozzle and be practically concentrated thereon to secure a maximum vaporizing effect. After the fluid from the vaporizing-nozzle has been thus vaporized the air will be drawn through the exit-opening 24; but by means of the partitions 23, as explained, an intimate mixture of the air and hydrocarbon will be secured.

While I prefer to secure a positive feed of the hydrocarbon to the nozzle by mounting the reservoir 2 above the level of the nozzle, as shown, it will be understood, of course, that the reservoir may be so located with respect to the nozzle that the float and valve will maintain the level of the liquid in the reservoir immediately below that of the nozzle, so that liquid will be drawn from the nozzle by suction, as with carbureters as now constructed. The latter construction possesses the advantage that when the engine ceases to operate the valve 10 need not be closed, as is necessary with the specific arrangement illustrated.

Having now described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows:

1. In a carbureter for internal-combustion engines, the combination with a vaporizing-chamber through which the air is drawn upwardly, a vaporizing-nozzle in said chamber, a fluid-supply for said nozzle, a horizontally-arranged partition in said chamber below said nozzle, air-passages around said partition, and an opening in the center of said partition in line with the nozzle for directing a jet of air upwardly upon the nozzle, substantially as set forth.

2. In a vaporizing-carbureter, the combination of a vaporizing or carbureting chamber, a vaporizing-nozzle in said chamber, a fluid-supply for said nozzle, a partition in said chamber below said nozzle, a central opening in said partition, and passages around the ends and front and back of said partition, for the purposes set forth.

3. In a vaporizing-carbureter, the combination of a vaporizing or carbureting chamber, a vaporizing-nozzle in said chamber, a fluid-supply for said nozzle, a partition in said chamber below said nozzle, a central opening in said partition, and a series of partitions or baffle-plates in said chamber above the nozzle, for the purposes set forth.

4. In a vaporizing-carbureter, the combination of a vaporizing or carbureting chamber, a vaporizing-nozzle in said chamber, a fluid-supply for said nozzle, a series of partitions or baffle-plates in the chamber below the nozzle, a series of partitions or baffle-plates in the chamber above the nozzle, and openings in the partitions below the nozzle in line with said nozzle, for the purposes set forth.

This specification signed and witnessed this 10th day of October, 1901.

FREDERICK H. MESSINGER.

Witnesses:

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