

No. 673,798.

Patented May 7, 1901.

E. KEMPSHALL.
CARBURETER.

(Application filed July 18, 1900.)

(No Model.)

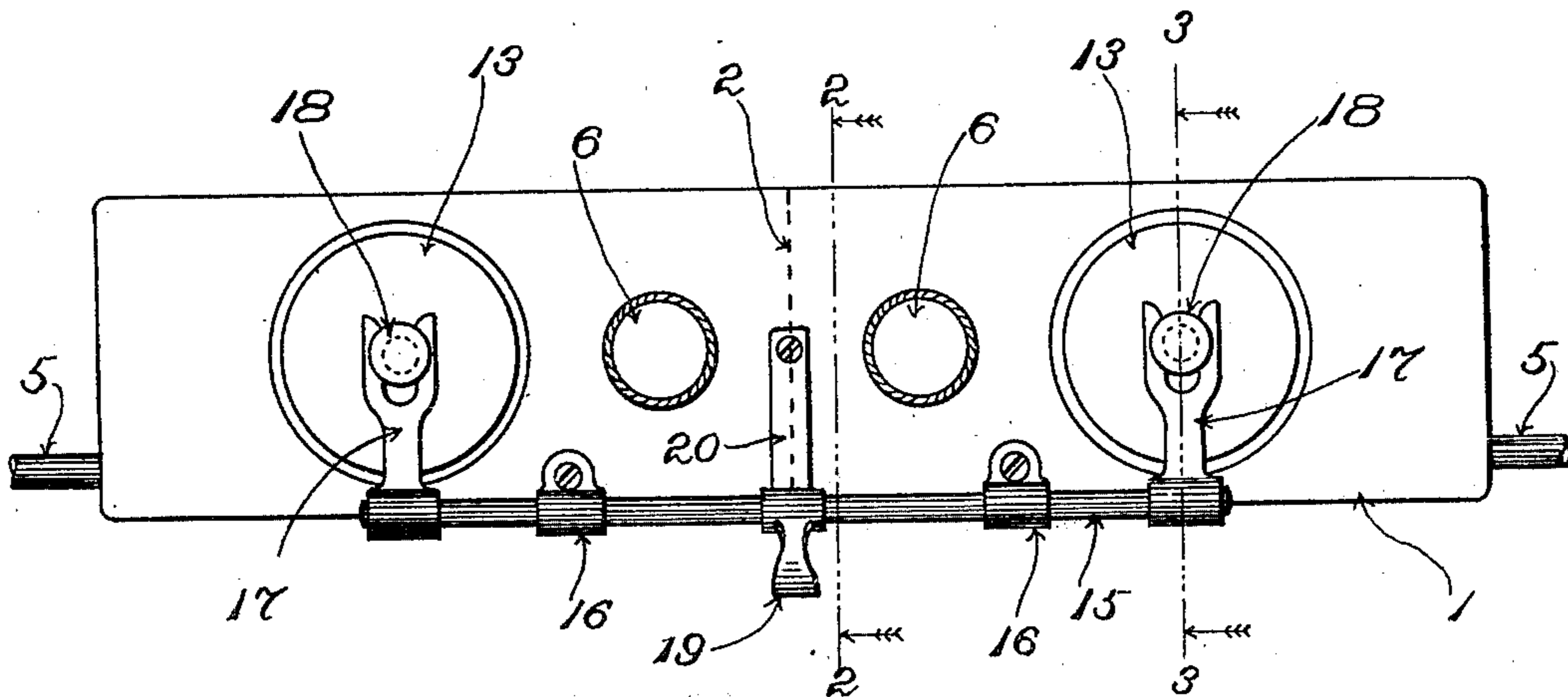


Fig. 1.

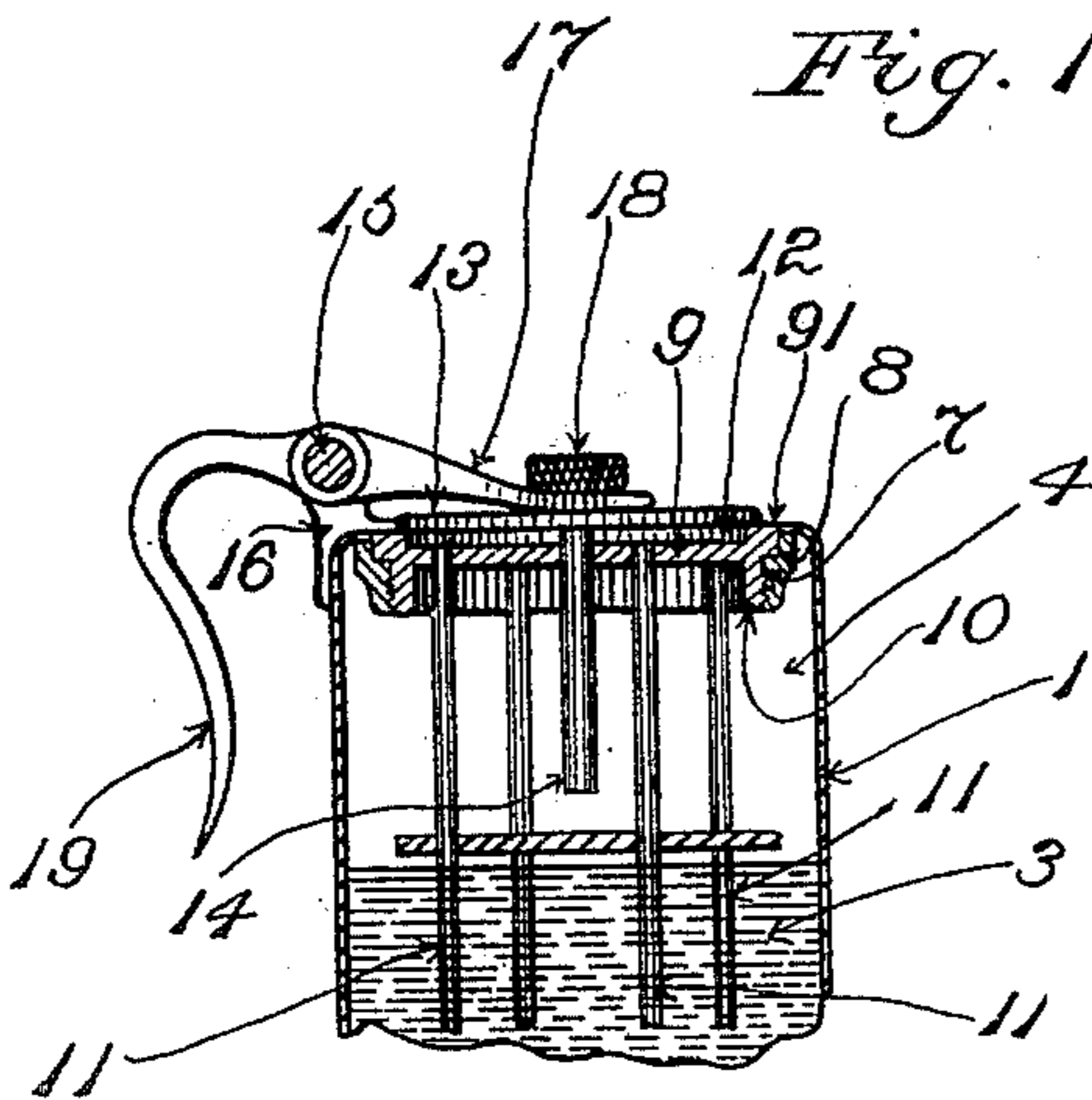


Fig. 3.

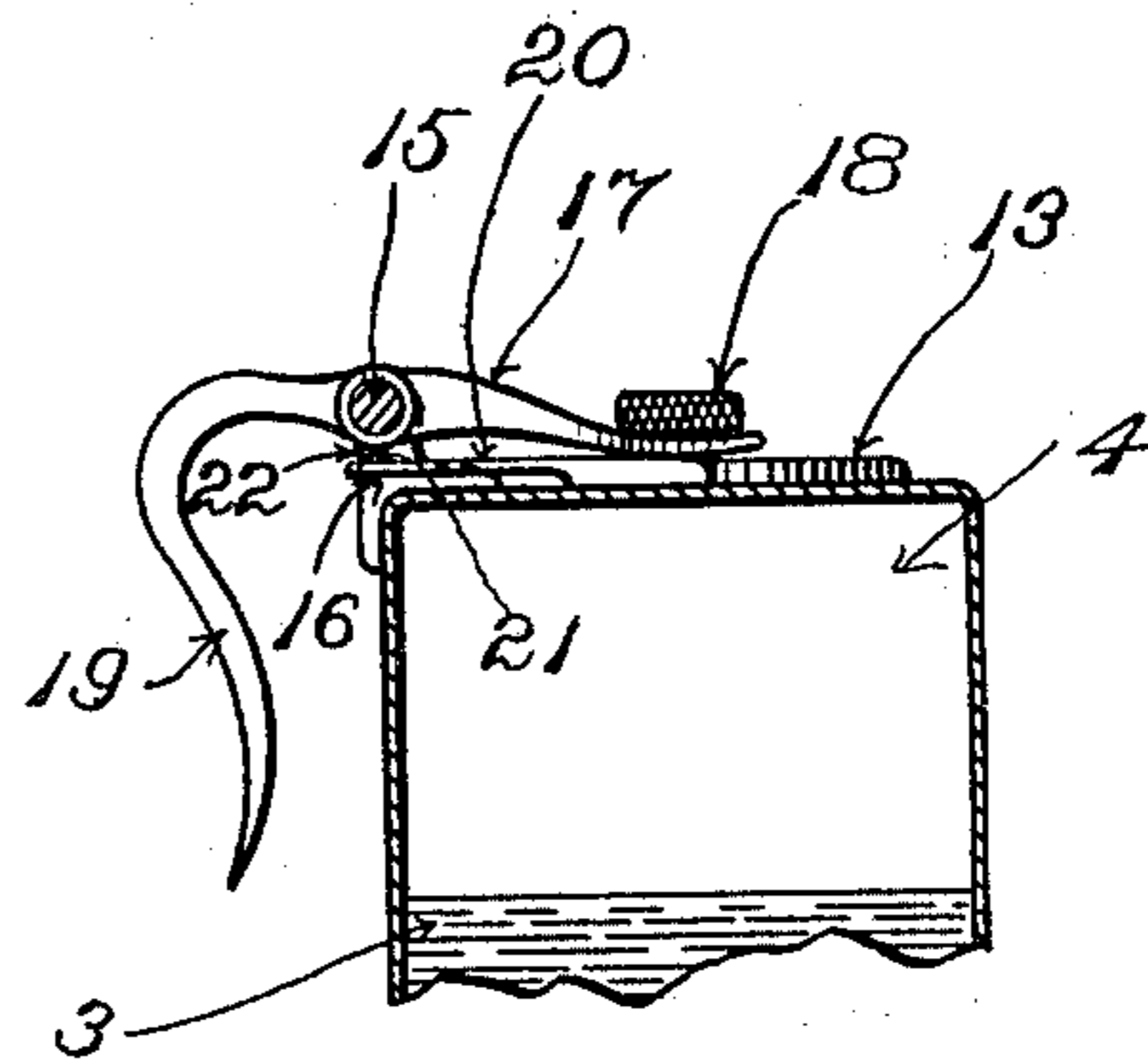


Fig. 2.

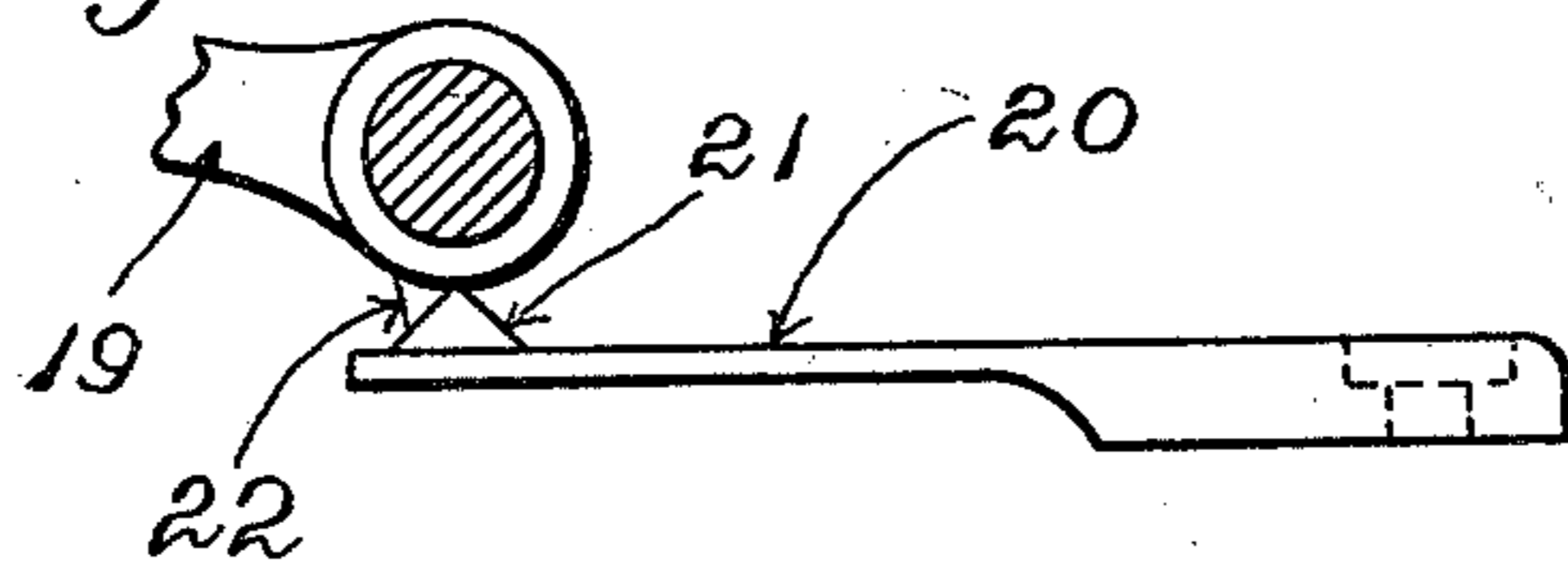


Fig. 4.

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UNITED STATES PATENT OFFICE.

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CARBURETER.

SPECIFICATION forming part of Letters Patent No. 673,798, dated May 7, 1901.

Application filed July 18, 1900. Serial No. 24,056. (No model.)

To all whom it may concern:

Be it known that I, ELEAZER KEMPSHALL, a citizen of the United States, residing at Newton, in the county of Middlesex, State of Massachusetts, have invented a certain new and useful Improvement in Apparatus for Producing Gasolene Vapor, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention has relation to the apparatus which is employed for the purpose of producing a combustible mixture of air and gasolene or the like liquid for use more especially as an explosive fuel in gasolene-engines.

More particularly, the invention has reference to apparatus of that class in which a vapor heavily charged with gasolene is formed by causing atmospheric air to make contact with a supply of liquid gasolene by flowing through the latter.

The form of apparatus to which my invention is especially designed to be applied comprises, essentially, one or more chambers, two being represented herein, receiving each a supply of liquid gasolene and each having a vapor-space from which the vapor is drawn to the engine through a suitable feed-pipe, and one or more air-supply tubes in connection with each of such chambers and through which air flows under atmospheric pressure as the vapor is sucked out of the vapor-space by the action of the engine. In connection with the air-supply tube or tubes of each chamber a movable closure device is employed, which is shifted to uncover the air inlet or inlets when the production of vapor is required to proceed, as during the running of the engine, and again shifted to cover the same when the production of vapor is to be discontinued, as when the working of the engine is to be arrested.

The invention consists in a means of enabling the closure devices to be operated quickly and conveniently manually whenever it is desired to open or close the air inlet or inlets, the said means having in connection therewith a device for locking positively the closure device in either position until it is shifted by the application of sufficient force to the other.

In the drawings, Figure 1 shows in plan a receptacle for gasolene having an embodi-

ment of my invention applied thereto. Fig. 2 is a view in vertical section on line 2 2 of Fig. 1 looking in the direction indicated by the arrows at the ends of such line. Fig. 3 is a similar view on line 3 3 of Fig. 1 looking in the direction indicated by the arrows. Fig. 4 is a detail view showing one form of the locking devices.

Having reference to the drawings, 1 designates a receptacle for gasolene. In the present instance the same is represented as divided into two compartments by means of a vertical partition, (indicated by the dotted line at 2 in Fig. 1.) In use the receptacle 1 is filled more or less completely with liquid gasolene or the like, as indicated at 3 in Figs. 2 and 3. The upper portion 4 of the said interior of each chamber of the receptacle 1 constitutes a vapor-space, from which the contained vapor is led or drawn off through a feed-pipe 5, as by the suction produced by the movement of the piston of the engine with which the said feed-pipe is connected in practice. The vapor-space 4 becomes filled with a heavily-charged vapor produced by causing atmospheric air from the exterior of the receptacle to come into intimate contact with the supply of liquid gasolene 3 in the manner which presently will be explained.

At 6 6, Fig. 1, are shown removable caps which are applied to openings in the upper portion of the receptacle, the said openings being provided to enable a supply of liquid gasolene to be introduced into each of the chambers of the receptacle.

In the upper part of the receptacle a circular hole is formed for each chamber, and at each of said holes a ring 7 is secured inside the chamber. (See Fig. 3.) The upper portion of said ring is rabbeted to form an internal recess and a shoulder 8, and below said shoulder the ring is screw-threaded interiorly. A head 9, having a downwardly-extending interiorly-threaded flange 10, is screwed into said ring 7 until the rim 91 on said head is received within the said recess of the ring and bears against the said shoulder 8. Through the central portion of the said head 9 is formed a number of holes, in which are secured the upper ends of the series of small air-supply tubes 11 11, Fig. 3. The lower ends of these tubes project down

below the liquid level within the receptacle, and when the suction of the piston of the engine draws out a portion of the vapor occupying the vapor-space 4 fresh air is caused
 5 by atmospheric pressure to pass downward through the pipes 11 11 and rise in widely-distributed small bubbles through the liquid gasolene.

The head 9 is provided with the disk-like
 10 cover 13, the latter being adapted to close the upper ends of all the tubes 11 11. In Fig. 1 the two covers pertaining to the two chambers of the receptacle are shown in position. Having reference more especially to
 15 Fig. 3, each cover 13 has a central spindle 14 extending down through a central hole in the head 9 to guide the cover in its vertical movement.

While I have been thus far explicit in de-
 20 scribing the foregoing features to the end that the construction and relations thereof, as well as the manner of applying the illustrated embodiment of the invention in connection therewith, may be rendered clear and
 25 be readily understood, I wish to state that the invention is not necessarily restricted in all cases to use in these precise connections and that the foregoing particulars of construction are by no means essential.

30 It will be obvious that when the cover 13 is raised the inlet ends of all the air-supplying tubes 11 11 will be opened for the admission of air, while when the cover is dropped onto the head 9 the said inlet ends will all of
 35 them be closed. For the purpose of enabling the cover 13 to be lifted or raised quickly and conveniently I provide a rock-shaft 15, which is mounted in bearings 16 16 at the top of the receptacle, the said rock-shaft 15 having
 40 thereon an arm 17 for each chamber or compartment of the receptacle, the said arm being slotted or forked to receive the reduced neck of the boss or head 18, with which the disk-like cover 13 is provided. The rock-
 45 shaft 15 is also furnished with an operating-arm 19. Pressure exerted against the said arm 19 will operate to turn the rock-shaft to raise the disk-like cover 13 or lower it, according to the direction in which the pres-
 50 sure is exerted. For the purpose of holding the rock-shaft locked in either position which may be given it, so as to cause it to retain such position until pressure is applied to the said arm in order to cause it to assume the oppo-
 55 site position thereof, I combine with the said rock-shaft a spring-actuated locking device. The latter may have various forms. Herein a flat spring, as 20, is secured to the recep-
 60 tacle, the said spring being provided near its free extremity with a wedge-like projection 21. A similar wedge-like projection 22 is connected to the rock-shaft 15, so as to move in unison with the latter. The tension of the spring 20 holds its wedge 21 pressed against

the wedge 22 of the rock-shaft 15, and, as will
 65 be obvious, engagement of the two wedges with each other will hold the rock-shaft locked in either position thereof, according as the wedge 22 stands at one side or the other of the apex of the wedge 21 on spring 20. 70

I claim as my invention—

1. In a vapor-producing apparatus, in combination, the receptacle for liquid gasolene or the like, having the vapor-space and a feed-
 75 pipe for vapor leading from said vapor-space, one or more air-supply tubes conducting air into the liquid gasolene, the cover for the said tube or tubes, a manually-operated actuating device for the said cover, and a spring-actuated lock for the said device serving to
 80 hold the cover in each of its opposite positions, substantially as described.

2. In vapor-producing apparatus, in combination, the receptacle for liquid gasolene or the like, having the vapor-space and a feed-
 85 pipe for vapor leading from said vapor-space, one or more supply-tubes conducting air into the liquid gasolene, the inlet-cover for the said tube or tubes, the rock-shaft in opera-
 90 tive engagement with the said cover, a manually-actuated operating-handle for the said rock-shaft, and a spring-actuated device to lock the said rock-shaft in each of its extreme positions, substantially as described.

3. In vapor-producing apparatus, in combination, the receptacle for liquid gasolene or the like, having the vapor-space and a feed-
 95 pipe for vapor leading from said vapor-space, one or more air-supply tubes conducting air into the liquid gasolene, the inlet-cover for
 100 the said tube or tubes, the rock-shaft having the arm in engagement with the said cover, a manually-actuated operating-arm for the said rock-shaft, and the locking devices for the said rock-shaft comprising a projection moving in
 105 unison with the said rock-shaft, and the spring having the wedge-shaped projection engaging with the former, substantially as described.

4. In vapor-producing apparatus, in combination, the receptacle for liquid gasolene or
 110 the like, tubes for leading air into the liquid gasolene within the said receptacle, a plurality of inlet-covers in connection with the said tubes, a rock-shaft having an arm thereon for
 115 each cover to move the latter, a manually-actuated arm for operating the said rock-shaft to raise or lower the said covers in unison, and the spring-actuated locking devices by means of which the said rock-shaft is held in each
 120 of its opposite positions, substantially as described.

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

ELEAZER KEMPSHALL.

Witnesses:

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