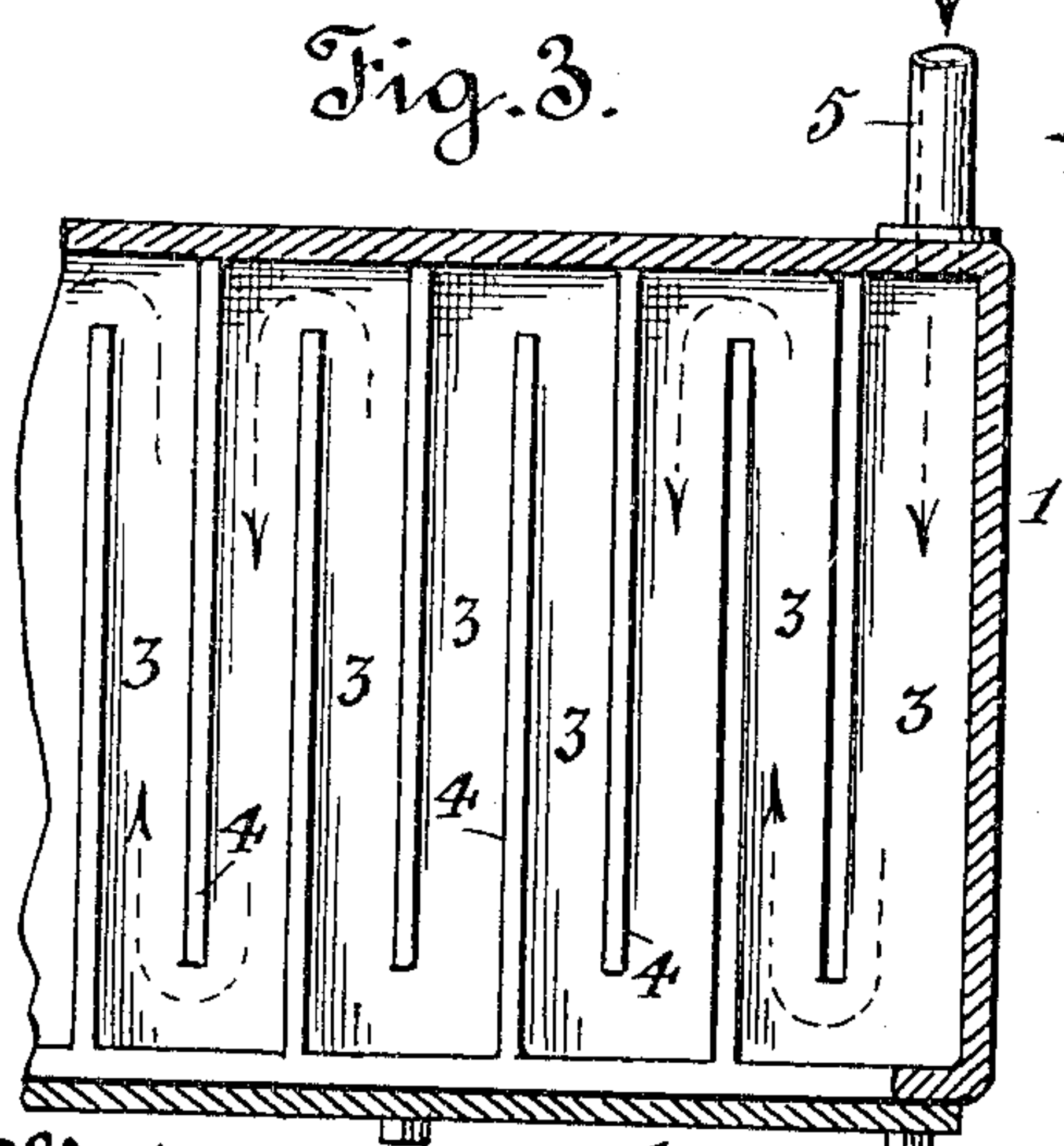
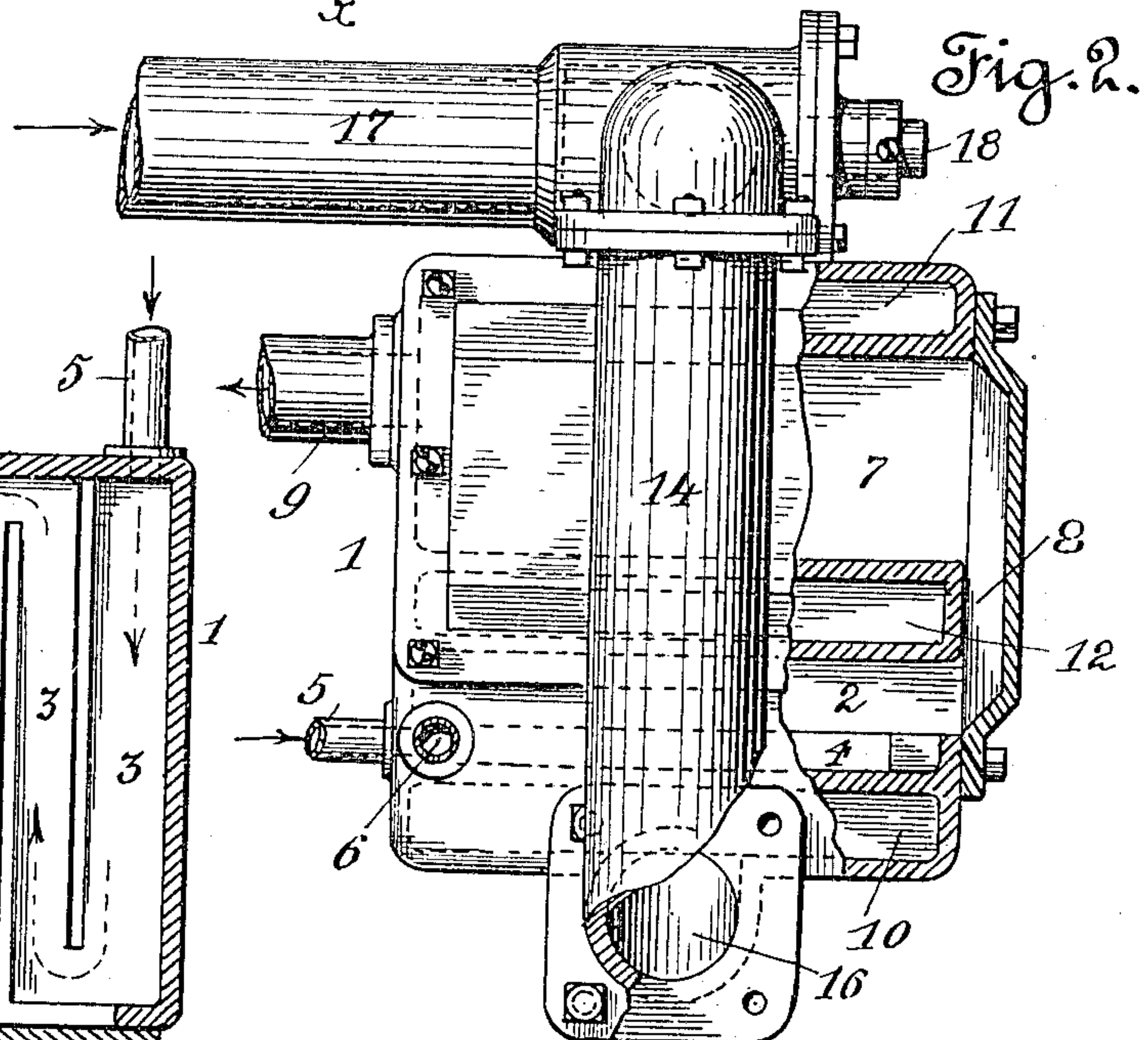
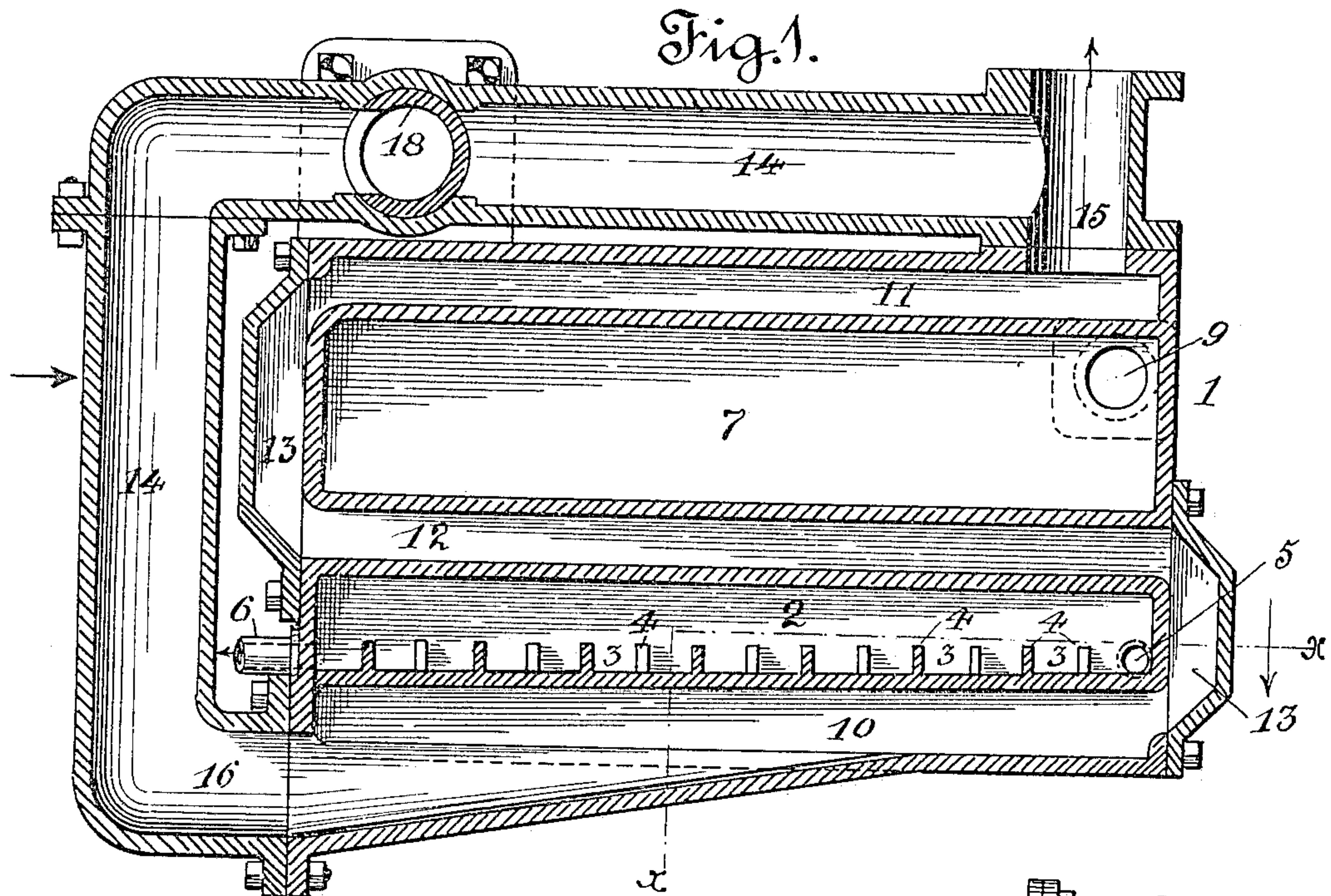


No. 819,211.

PATENTED MAY 1, 1906.

R. F. DRISCOLL.
VAPOR GENERATOR.
APPLICATION FILED SEPT. 24, 1904.



Witnesses: 1
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UNITED STATES PATENT OFFICE.

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THE ECONOMIST GAS ENGINE CO., OF SAN FRANCISCO, CALIFORNIA,
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VAPOR-GENERATOR.

No. 819,211.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed September 24, 1904. Serial No. 225,783.

To all whom it may concern:

Be it known that I, RICHARD F. DRISCOLL, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented certain new and useful Improvements in Vapor-Generators; and I do hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of vapor or gas generators in which crude oil or its distillates is passed over a surface heated by a suitable medium, such as exhaust-gases from the explosive-engine to which the generator supplies the necessary vapor to drive it. In generators of this type it is usual to take the vapor to the engine direct from the retort-chamber in which it is generated. Distinguished from this practice my invention contemplates the interposition of a vapor-chamber supplied from the retort-chamber and communicating with the engine, said vapor-chamber being subjected to the heat of the exhaust-gases passing to their exit.

The object of my invention is to superheat the vapor prior to its delivery to the engine; and it consists in a generator provided with a suitable retort-chamber to which the oil or distillate is supplied and in which the vapor is driven off, a vapor-chamber communicating with the retort-chamber to receive the vapor therefrom and deliver it as required to the engine, and a continuous passage through the generator for subjecting both chambers to the heating medium, whereby the vapor is generated in one chamber and superheated in the other chamber.

It also consists in the novel constructions and arrangement of parts which I shall now fully describe by reference to the accompanying drawings, in which—

Figure 1 is a vertical longitudinal section of my vapor-generator. Fig. 2 is an end elevation, partly broken, looked at from the direction of the arrow in Fig. 1. Fig. 3 is a detail sectional view on the line $x-x$ of Fig. 1.

1 is the shell of the generator. In its lower portion is formed the retort-chamber 2, which may be of any suitable construction, presenting a surface adapted to conduct the oil or distillate throughout a sufficiently extensive course to insure the proper vaporization. The form of surface here shown is a common one, consisting of a tortuous passage 3, formed

of spaced ribs 4, which alternately overlap at opposite ends, as seen in Fig. 3. Through this passage the oil or distillate flows by gravity, being supplied to its upper end at 5, and the residue discharged from its lower end at 6.

In the upper portion of the shell is formed the vapor-chamber 7, which along one side communicates with the retort-chamber through a passage 8, Fig. 2. The outlet from the vapor-chamber 7 to the engine is at 9. Under the retort-chamber is the lowermost course 10 of the passage for the heating medium, which in practice consists of the exhaust-gases from the engine. Above the vapor-chamber is the uppermost course 11 of said passage, while between the two chambers is the middle course 12 of said passage. Vertical end courses 13 connect said horizontal courses, thereby forming a continuous passage, which in its course substantially envelops both chambers.

14 is a pipe which at its upper end 15 forms the outlet from the heating medium passage, and at its lower end 16 forms the inlet to said passage. Into this pipe intermediate of its ends is let the pipe connection 17 from the exhaust-port of the engine, the communication being controlled by a valve or damper 18, by the manipulation of which the exhaust-gases may be turned down to enter the heating-passage and serve the generator or to pass by said generator directly through the outlet when necessary.

The operation of the generator is as follows: The oil or distillate supplied at 5 passes through the tortuous passage 3, the residue being drawn off at 6. The exhaust-gases entering at 16 and passing through the course 10 under the retort-chamber furnish the heat necessary to vaporize the oil or distillate. The vapor passes from the retort-chamber through passage 8 into the vapor-chamber. In this chamber it is superheated by the exhaust-gases passing under and above said chamber through the courses 12 and 11 and is delivered through the outlet 9 to the engine, as required.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A vapor-generator having a suitable retort-chamber in which the vapor is generated,

an independent chamber for superheating said vapor arranged thereabove, the respective chambers being separated from one another by two partitions forming an unobstructed passage-way, a connecting-passage 5 between said chambers, and means for supplying a heating medium to said unobstructed passage-way whereby the heat will simultaneously act upon both of said chambers. 10

2. A vapor-generator comprising a shell having a suitable retort-chamber within its lower portion, to which the oil is supplied and in which the vapor is generated, an independent superheating vapor-chamber within its 15 upper portion, communicating with the retort-chamber by a passage-way in one side of the shell, to receive the vapor therefrom and having a suitable outlet for said vapor, a

continuous passage comprising a course under the retort-chamber, a course above the vapor-chamber, a course intermediate the two chambers and connecting end courses, said passage having an inlet at its lower end and an outlet at its upper end, a pipe having its 25 ends communicating with said inlet and outlet, a pipe from the source of the heating medium, communicating with the first-named pipe intermediate its ends, and a valve controlling said communication to direct the 30 heating medium to either end, at will.

In witness whereof I have hereunto set my hand.

RICHARD F. DRISCOLL.

Witnesses:

WALTER F. VANE,
D. B. RICHARDS.