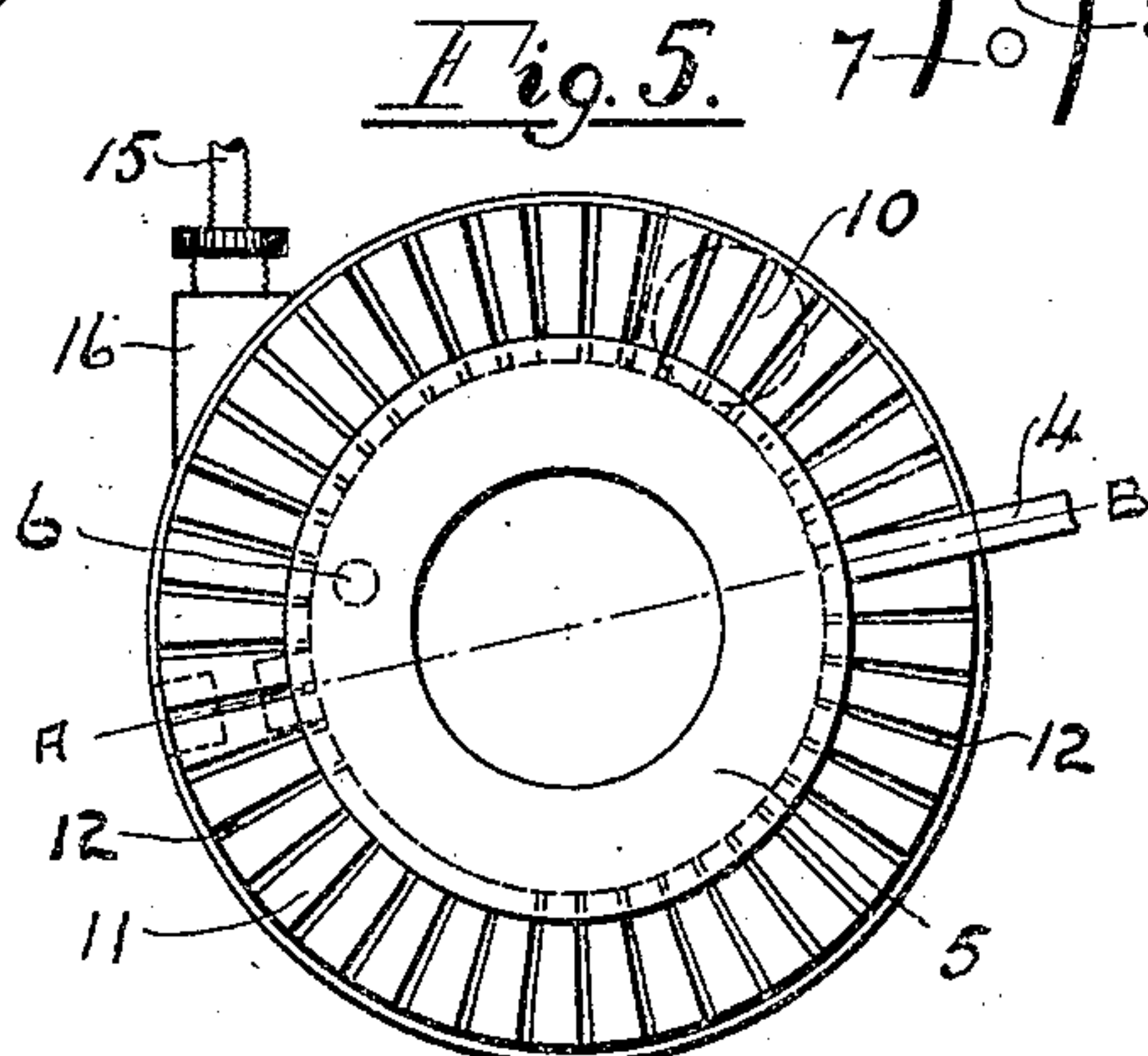
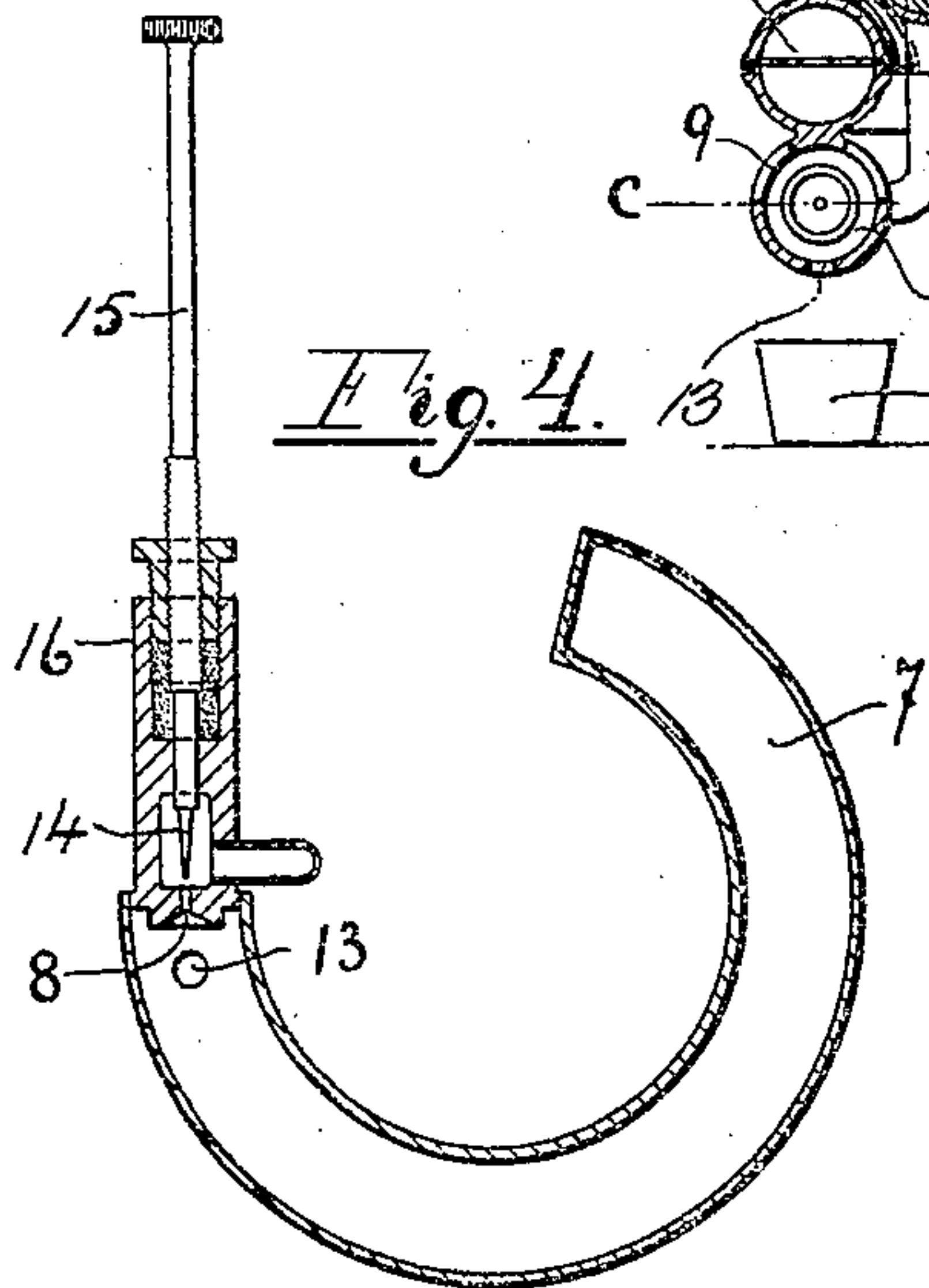
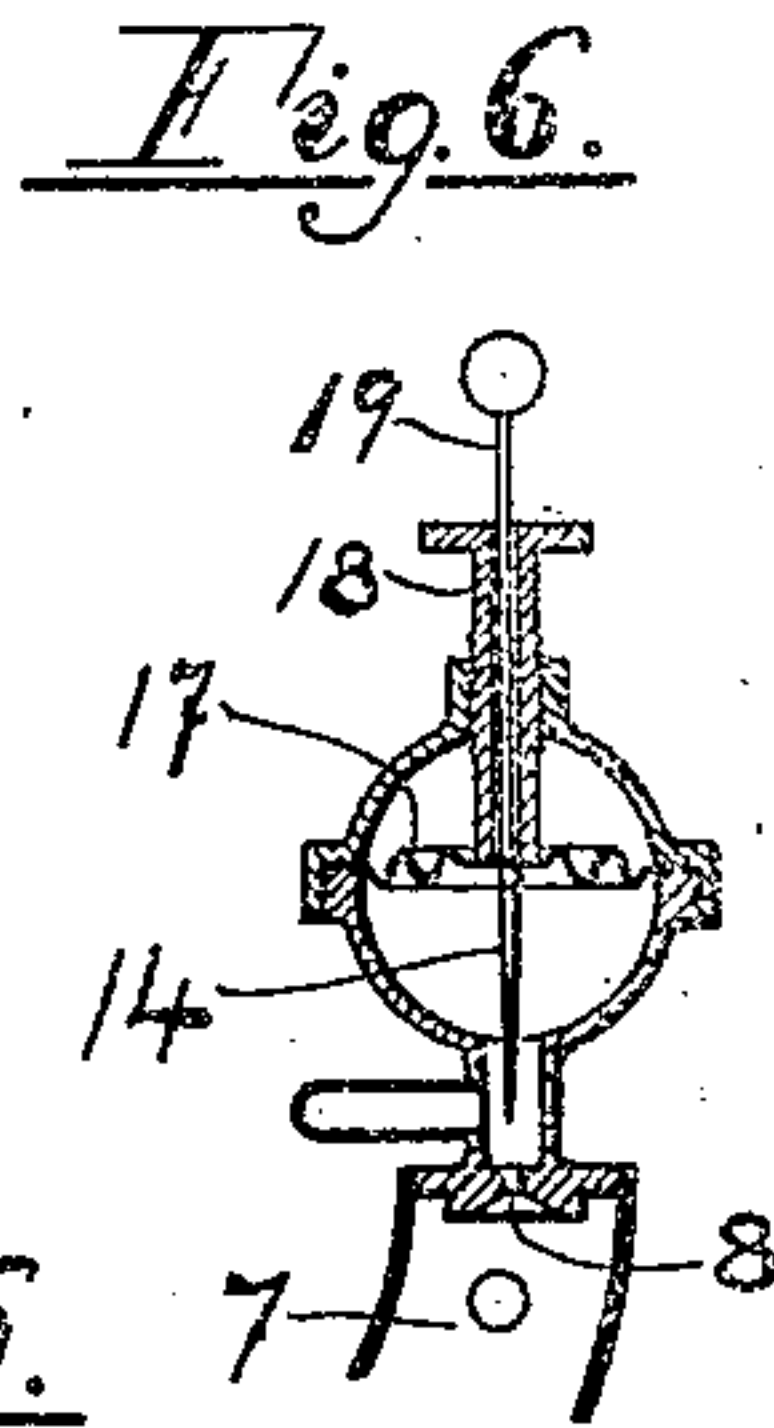
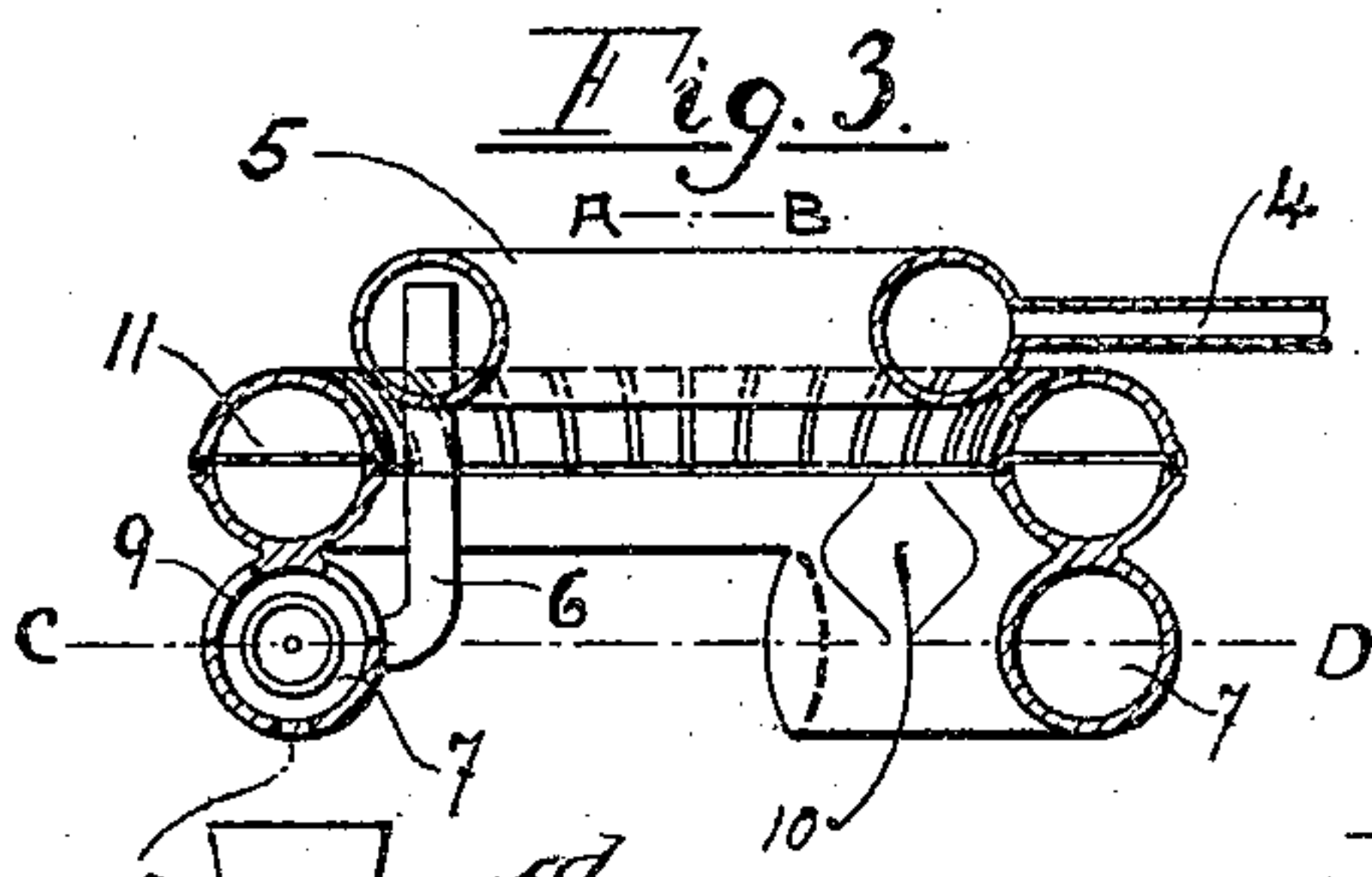
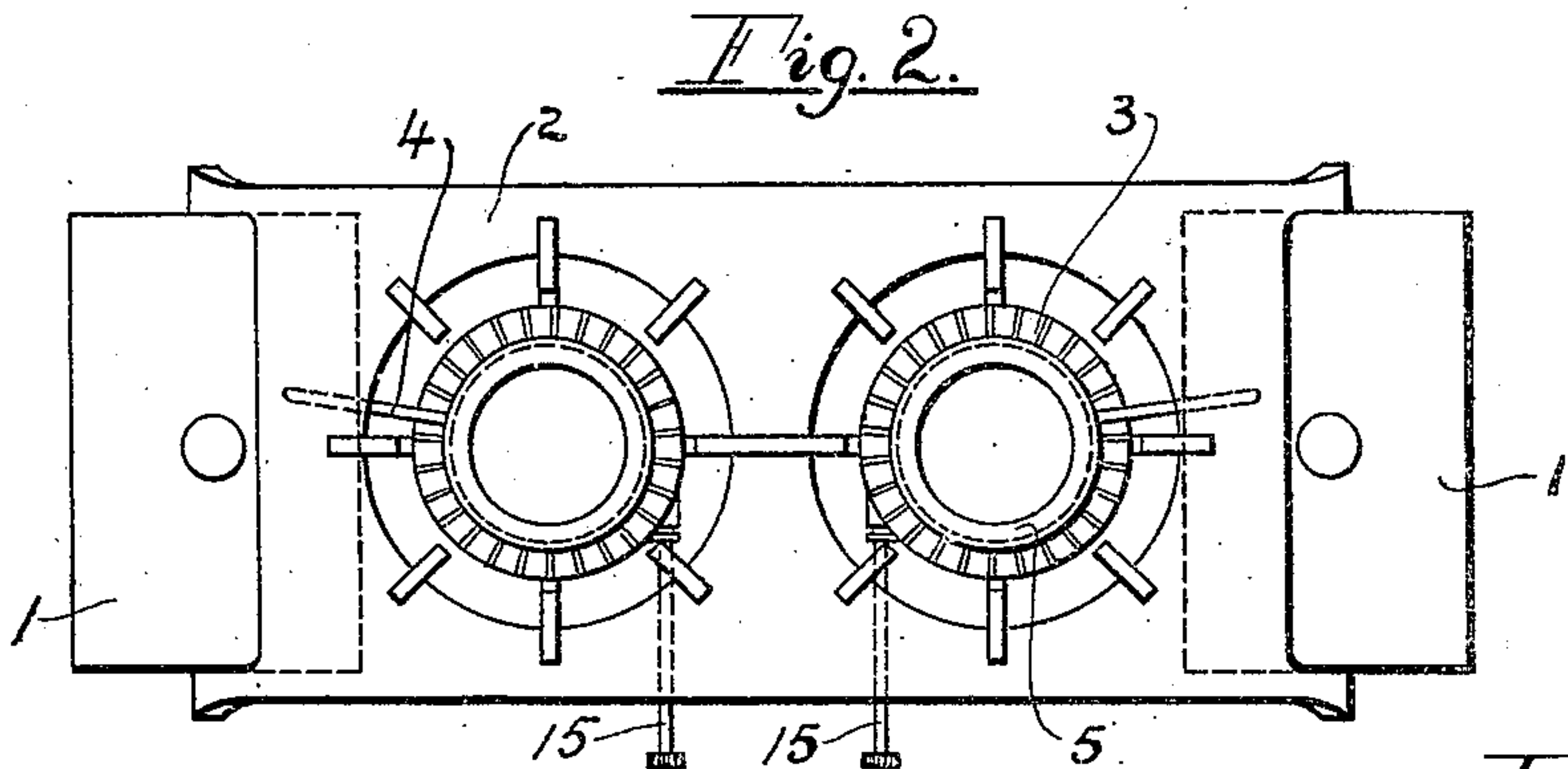
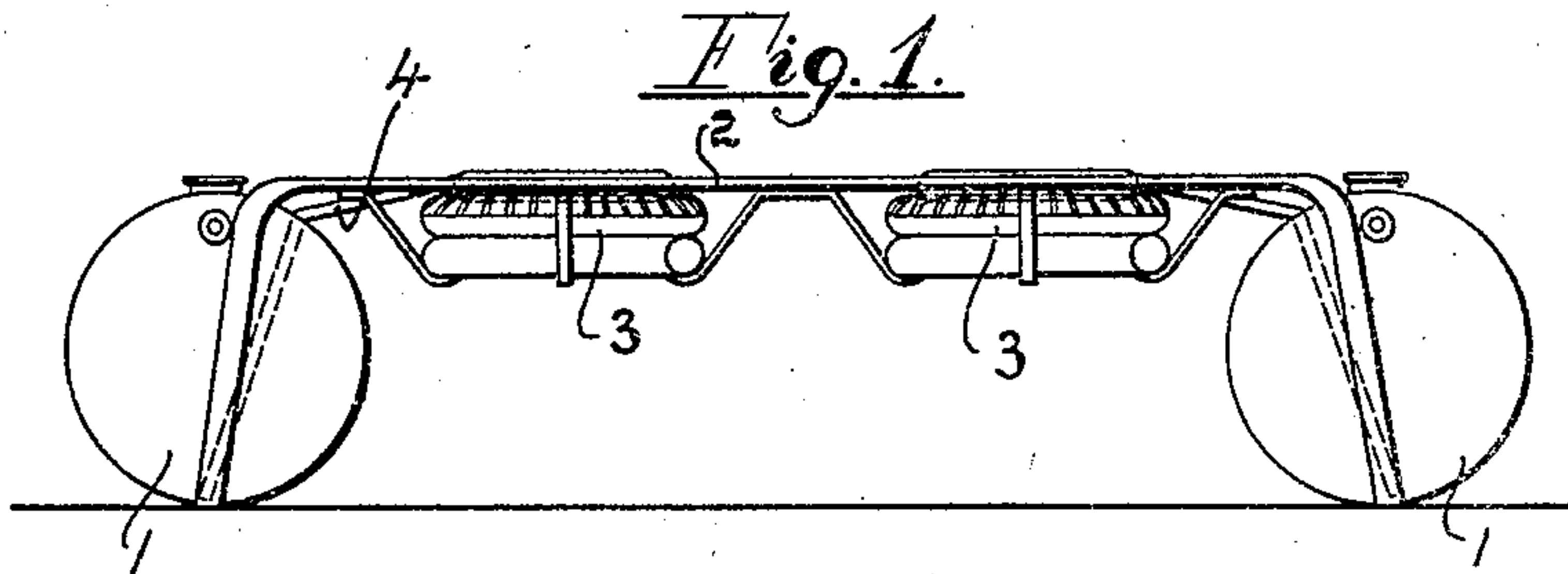


O. E. V. ERICSON.
OIL GAS COOKING STOVE.
APPLICATION FILED APR. 15, 1909.

938,747.

Patented Nov. 2, 1909.



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OIL-GAS COOKING-STOVE.

38,747.

Specification of Letters Patent.

Patented Nov. 2, 1909.

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To all whom it may concern:

Be it known that I, OLOF EMIL VICTOR ERICSON, a citizen of Sweden, residing at Gottenborg, in the Kingdom of Sweden, have invented new and useful Improvements in Oil-Gas Cooking-Stoves, of which the following is a specification.

This invention relates to improvements in oil gas cooking stoves and the object thereof is to remove a great many of the inconveniences of such stoves hitherto used. One of their faults is their considerable vertical height which make them unsafe and easy to turn over; others are the short lasting of the burners on account of the impurities accumulating in their channels, the difficulty of cleaning same and the disturbing roar when burning. The inconvenience first mentioned depends on the unsuitable position of the burner at the top of a vertical tube on the oil reservoir, the base of the stove thus being rather small in relation to its height. I am aware, that in some oil stoves the burner is placed at the side of the reservoir, but these have yet other faults depending on the unsuitable arrangement and form of the burners, these being placed below the top of the oil reservoir, so that the oil pipe and the vaporizer, even while the stove is out of use, are filled with oil, which fumes when the flame is lighted or extinguished. I fully remove the said faults by my invention in giving the burner the smallest possible vertical height and placing it level with or close to the highest point of the oil reservoir. There being several burners each of these is placed in connection with its proper reservoir. I make the volume of the burner head rather large in relation to the cross section of the pipe for the petrol and construct same as a horizontal closed ring, the upper side of which is perforated by radial slits and I connect the burner with a preferably ring-shaped vaporizer. The mixing chamber is bent and placed immediately under the burner head, and provided at the underside with holes for outlet of such unvaporized oil as may enter the chamber.

My invention is shown in the accompanying drawing, wherein:—

Figure 1 is a front view of the cooking stove, Fig. 2 a plan view of same, Fig. 3 is a vertical section of the burner on the line A—B in Fig. 5, Fig. 4 a horizontal section of same on the line C—D of Fig. 3, Fig. 5

is a plan view of the burner shown in Fig. 3. Fig. 6 is a sectional view showing a modification hereinafter referred to in detail.

The oil stove is provided with one or more oil reservoirs 1, which preferably consist of 60 horizontal cylinders in order to obtain the smallest possible height. The reservoirs 1 are adapted to be charged in any approved manner with air under pressure, but the means for so charging the reservoirs forms 65 no part of my invention, and I have therefore deemed it unnecessary to illustrate the same.

The plate or grid 2 for the cooking utensils is placed immediately above the reservoir or reservoirs. Each one of the reservoirs has its proper burner 3, placed at its side under the grid 2, on a level with the top of the reservoir or close to said level. The burner is constructed as described in the 75 following. The narrow pipe 4 through which the oil is conducted to the burner, extends from the bottom of the reservoir and is preferably led through its higher part, from where it ascends, slightly inclined, to 80 the burner head, at the middle of which it is expanded to a rather low, preferably ring-shaped vaporizer. From the underside of the vaporizer a pipe 6 extends to a height somewhat over the bottom of the vaporizer 85 in order to prevent non-vaporized oil entering the pipe and reaching the burner. The pipe 6 is connected with the mixing chamber 7, which is placed immediately beneath the burner head, through a short orifice 8 with a 90 narrow opening. In escaping through the orifice 8 the oilgas is mixed with air which flows into the tubeshaped mixing chamber through one or more openings 9 in the walls of same. The mixing chamber is preferably 95 bent in a circle, the ends of which do not meet and which opens at the end opposite to the orifice through a vertical channel 10 into the horizontal closed ringshaped burner-head 11. At its top-side the burner-head is 100 perforated by several radial slits 12, through which the combustible mixture of air and oil vapor escapes. For the purpose of easy cleaning of the burner-head this is divided into two parts, which can be separated when 105 desired. Immediately beneath the vaporizer 5 I can place a cup 5^a for spirits for heating the same as already known, but a common spiritlamp or the like may also be used for the same purpose. Through an opening 13 110

at the bottom of the mixing chamber such non-vaporized oil, as escapes into the mixing chamber during the ignition may be collected in a cup, for example the above mentioned spirit cup 5^a, where it burns together with the spirit instead of being wasted on the table or the floor as hitherto has been the case.

The narrow outlet of the orifice 8 may be cleaned by a needle 14, which preferably is somewhat conical in order to serve for a valve and to throttle the entrance for the oilgas, when inserted to a certain degree into the outlet. For this purpose the rod 15, at the end of which the needle is placed, is screwed through a tight fitting stuffing box 16 or the like. The needle must be so arranged that it does not fully stop the outlet, thus allowing the flame to burn during the cleaning also. In order to prevent leakage the cleaning needle may be fixed at right angles to the interior side of a corrugated metal diaphragm 17 placed before the orifice the periphery of which diaphragm is tightly fitted to or pressed against the gas-tight walls of a chamber placed outside the orifice as shown in Fig. 6. By means of a screw 18, screwed through a fixed nut and pressed against the outside of the diaphragm I can bend this inward and thus insert the needle into the orifice to the desired degree to regulate the flame. For simply cleaning the needle is pressed by the fingers by means of a rod 19, inserted through a channel in the screw, which rod provided with a button or the like extends outside the screw.

On account of the burner extending chiefly in a horizontal direction it has become possible to reduce its height as well as that of the whole stove, the total height being still further reduced by placing the burners at the side of the reservoirs instead of on their top. The said arrangement gives the stove a rather large base in relation to its height and consequently makes it rest firmly.

In the described ring-shaped mixing chamber 7 the flow of the gas is forced to change direction thus getting better mixed with the air, and owing to its proximity to the burner head the chamber becomes well heated, so that the gas is cooled as little as possible on its way to the burner. In the large-volumed burner-head the gas has an opportunity to expand thus escaping very slowly through the slits in the burner, giving a steady flame without the disturbing roar usual with petrol-stoves of hitherto known types. On account of the reduced vertical height of the vaporizer the oil will leave this and flow back to the reservoir, as soon as the air-pressure in the latter is released so that it is not necessary for this purpose to place the vaporizer very high.

Having thus described my invention, what

I claim as new and desire to secure by Letters Patent is:—

1. In an oil-gas cooking stove, the combination of an oil reservoir, a burner comprising a tubular, ring-shaped burner head having eduction openings in its upper portion, and arranged in about the same horizontal plane as the reservoir, a ring-shaped vaporizer disposed above and adjacent said head, a conduit intermediate the reservoir and the vaporizer, and a ring-shaped mixing chamber disposed below and adjacent the burner head and connected therewith and also connected with the vaporizer, and a plate for supporting cooking utensils, connected with the burner.

2. In an oil-gas cooking stove, a burner comprising an annular burner head having eduction opening in its upper portion, an annular vaporizer arranged above and adjacent said head and adapted to be connected with a source of hydrocarbon supply, and an annular mixing chamber arranged under and adjacent the head and connected with the vaporizer and also connected with the head.

3. An oil-gas cooking stove comprising oil reservoirs spaced apart, a grid arranged adjacent the reservoirs and in the same horizontal plane as the uppermost portions thereof and adapted to support cooking utensils, and burners carried by the grid and respectively comprising an annular vaporizer connected with the adjacent reservoir, an annular burner head arranged under and adjacent the vaporizer and having eduction openings, and an annular mixing chamber arranged under the head and connected with the vaporizer and also with the head.

4. In an oil-gas cooking stove, the combination of one or more oil-reservoirs, and one burner for each reservoir arranged at the side of the reservoir, and comprising a tubular ring-shaped burner-head having eduction openings in its top, a tubular vaporizer for each burner disposed above the head thereof, and a tubular mixing-chamber under the burner head and connected therewith.

5. In an oil-gas cooking stove, the combination of one or more oil-reservoirs, and one burner for each reservoir, arranged at the side of the corresponding reservoir, a tubular ring-shaped burner-head divided horizontally into two detachable parts and having radial slits at its top, a tubular vaporizer above and adjacent the burner-head, and a tubular bent mixing chamber under and adjacent the burner head and connected therewith.

6. In an oil-gas cooking stove, the combination of one or more oil-reservoirs, one burner for each reservoir, a tubular ring-shaped burner-head, a tubular vaporizer above and adjacent the burner head, a tubu-

ar bent mixing chamber under and adjacent
the burner head and having a small aperture
in its under side, and a cup for ignition
spirit placed under the burner in position
to receive oil from said aperture.

7. In an oil-gas cooking stove, the combi-
nation of one or more oil-reservoirs, one
burner for each reservoir, a tubular vapo-
rizer, a tubular mixing-chamber connected
through a small orifice with the vaporizer
and having a chamber surrounding said
small orifice, means for cleaning the small
orifice consisting of a pricking needle at-
tached to the end of a spindle, a corrugated
metallic diaphragm tightly pressed against
the walls of said chamber that surrounds the
small orifice to the inside of which dia-
phragm the said spindle is fixed at right
angles, and a screw threaded through a fixed
nut outside said chamber and pressed against
the outside of said diaphragm, as described
and shown.

8. In an oil-gas cooking stove, the combi-
nation of one or more oil-reservoirs, one
burner for each reservoir, a tubular vapo- 25
rizer, a tubular mixing-chamber connected
through a small orifice with the vaporizer,
and means for cleaning said orifice consist-
ing of a pricking needle, a corrugated dia-
phragm the inside of which is fixed to the 30
needle, a screw pressed against the outside
of said diaphragm and having a channel,
and a rod inserted through said channel and
resting against the diaphragm; said rod ex-
tending outside the end of the screw so that 35
it can be manipulated by the fingers, as de-
scribed and shown.

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

OLOF EMIL VICTOR ERICSON.

Witnesses:

ROLF LINDBLOM,
H. SÖDERHOLM.