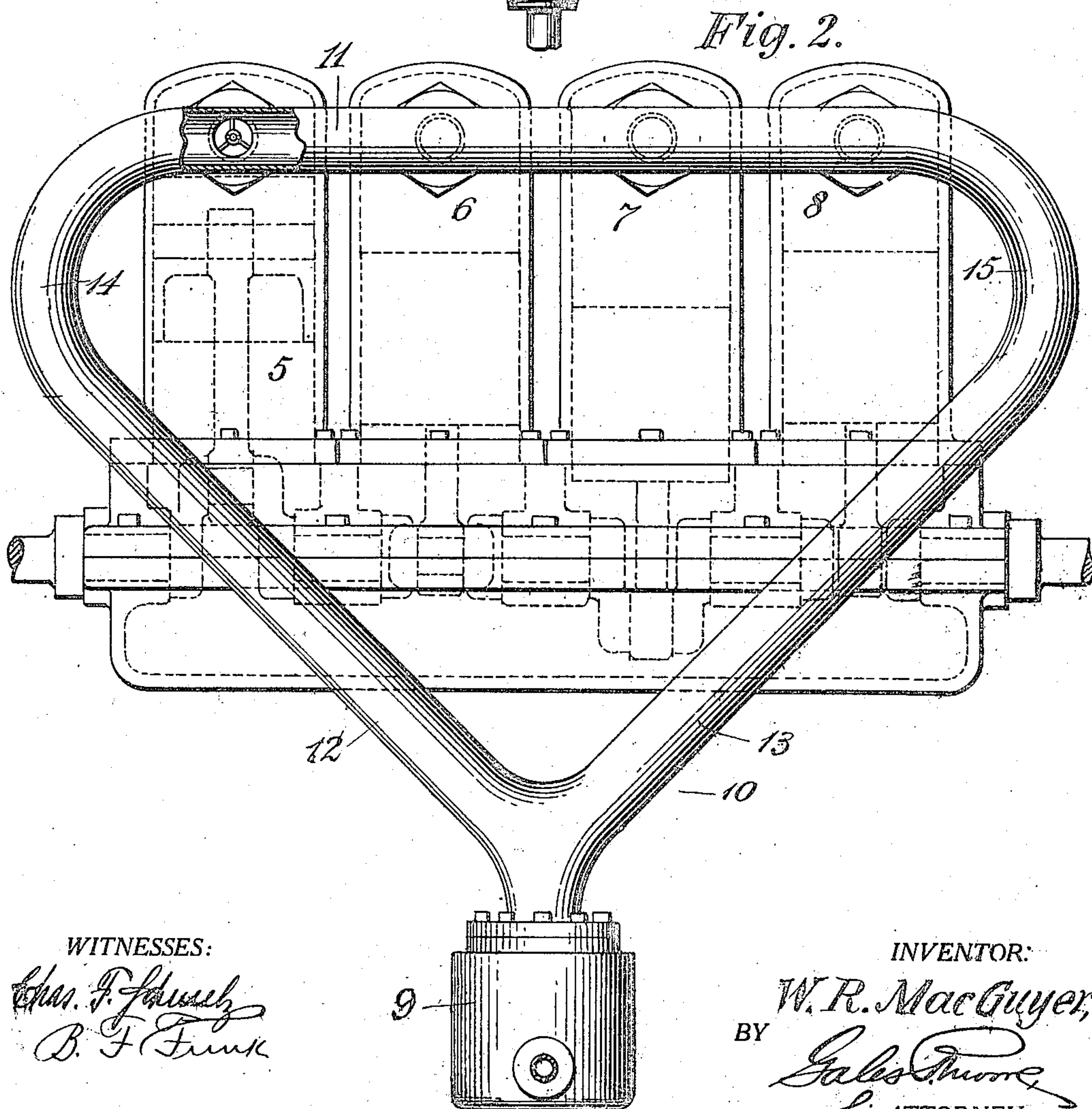
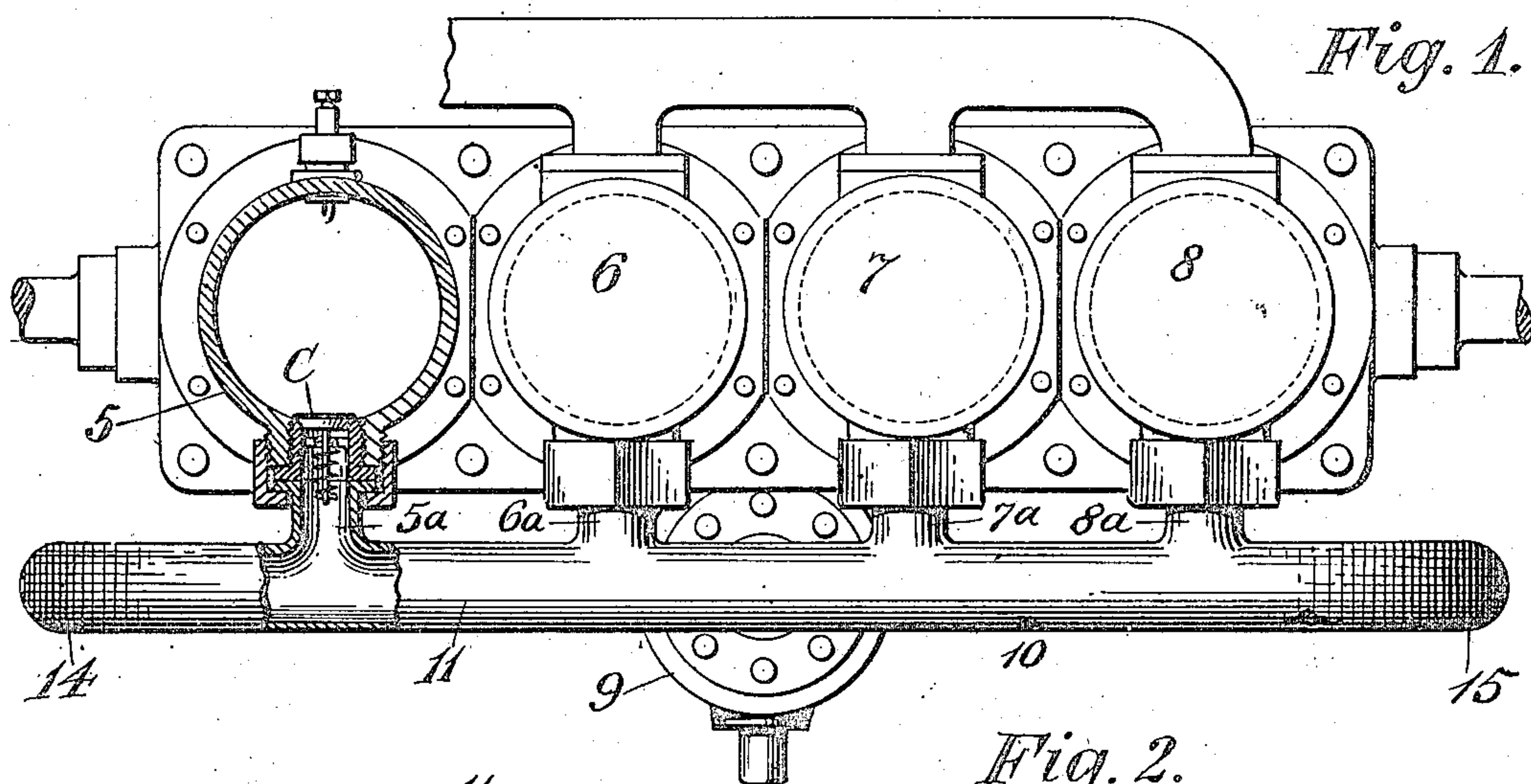


W. R. MacGUYER.
FEEDING MEANS FOR EXPLOSION MOTORS.
APPLICATION FILED JULY 29, 1907.

962,371.

Patented June 21, 1910.



WITNESSES:

Chas. F. Schuch
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UNITED STATES PATENT OFFICE.

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DEPARTURE MANUFACTURING COMPANY, OF BRISTOL, CONNECTICUT, A CORPORA-
TION OF CONNECTICUT.

FEEDING MEANS FOR EXPLOSION-MOTORS.

982,371.

Specification of Letters Patent. Patented June 21, 1910.

Application filed July 29, 1907. Serial No. 395,992.

To all whom it may concern:

Be it known that I, WOODFORD R. MAC-
GUYER, a citizen of the United States, resid-
ing at Waterbury, county of New Haven,
5 State of Connecticut, have invented a cer-
tain new and useful Feeding Means for Ex-
plosion-Motors, of which the following is a
full, clear, and exact description, such as
will enable others skilled in the art to which
10 it appertains to make and use the same, ref-
erence being had to the accompanying draw-
ings, forming part of this specification.

This invention relates to feeding means
for explosion motors.

15 One of the objects of the invention is to
provide means for facilitating the introduc-
tion of the fuel from the source of fuel sup-
ply into the cylinder or cylinders in which
it is to be exploded.

20 Another object of the invention is to pro-
vide means for insuring a proper volume of
fuel being fed into the cylinder or cylinders
preparatory to being exploded.

25 Another object of the invention is to pro-
vide means whereby fuel will be fed into
the motor cylinder as soon as the inlet valve
is opened.

30 Another object of the invention is to pro-
vide means for maintaining a constant circu-
lation of fuel in the supply conduit from
which the fuel is permitted to enter the
motor cylinders.

Other objects and advantages as well as
the novel details of construction of this in-
35 vention will be specifically described herein-
after, it being understood that changes in
form, proportion and minor details of con-
struction may be resorted to without depart-
ing from the spirit of the invention or sac-
40 rificing any of the advantages thereof.

In the drawings Figure 1 is a view partly
in plan and partly in section of a motor
embodying my invention; and Fig. 2 is a
view partly in elevation and partly in sec-
45 tion of a motor to which my invention is ap-
plied.

My invention is applicable to a motor em-
bodying any number of cylinders, but I have
shown it as being applied to a four cylinder
50 motor, the cylinders being designated as 5,
6, 7 and 8 respectively. It is to be under-
stood that these cylinders are to be equipped
with all of the necessary appurtenances com-
monly found in motors of this type includ-

ing sparking plugs, a source of electrical 55
generation therefor, exhausts and mufflers,
etc., but as these are all old and well known
I have deemed it unnecessary to specifically
describe or illustrate them. The source of
fuel supply for the motor may conveniently 60
consist of a carbureter 9 from which the
fuel may be conveyed to the motor cylinders
through a looped conduit 10 including a
branch 11 having a plurality of outlet ports
5^a, 6^a, 7^a and 8^a respectively leading into the 65
cylinders 5, 6, 7 and 8. The branches 12
and 13 lead from the carbureter 9 and di-
verge toward the respective ends of the
branch 11 and are connected thereto by rela-
tively broad bends 14 and 15, so as to feed 70
fuel from the source of supply into the re-
spective ends of said branch 11 whence it
may be conveyed to the respective cylinders.

The ports 5^a to 8^a respectively are of
slightly less diameter than the diameter of 75
the branch 11 so that the interior area of
the branch 11 will be sufficient to contain
so much fuel that no one cylinder will be
able to exhaust the entire volume contained
in said branch 11, hence there will be, at 80
all times, sufficient fuel in the branch 11 to
feed more than one cylinder. The ports 5^a
to 8^a are also relatively short so that the
branch 11 may be close to the respective
cylinders thereby permitting the fuel to be 85
fed, practically, directly from the branch
11 into the respective cylinders. Each port
leading from the branch 11 into the cylin-
der is provided with an inwardly opening
check valve C so that on the suction stroke 90
of the piston, the valve C will be unseated to
permit fuel to enter the cylinder, but during
the compression stroke, the valve will be
seated. It is to be understood, of course,
that these valves may be operated mechan- 95
ically if desired.

By utilizing the construction of reed con-
duit having the generic principles involved
in the invention illustrated in the accompa-
nying drawings, the suction stroke of each 100
cylinder will cause a circulation of gas in
the branch 11 and the successive operations
of the respective pistons will maintain this
circulation of fuel so that fuel will be pres-
ent adjacent each supply port when the 105
valve C is open to admit fuel in its cylinder.
This circulation will be insured, in a meas-
ure, on account of the fact that both ends

of the branch 11 are open for admission of fuel or, in other words, in communication with the source of fuel supply and on account of this arrangement, a steady suction will be maintained in the carbureter during the operation of the motor instead of the intermittent or jerky suction resulting from the use of the fan-form of feed conduit in which there is a separate pipe leading to each cylinder. It will be observed in the form illustrated, a single conduit is used common to all of the cylinders and that action of each piston assists in providing gas for the cooperating pistons.

While I prefer to use the form of conduit illustrated in the drawings, and while I believe that the broad bends 14 and 15 are of advantage in reducing the friction of the gas or fuel passing into the branch 11, I do

not desire to be limited to the particular form of conduit shown.

What I claim is—

In a motor, the combination with a plurality of cylinders, and a source of fuel supply, each said cylinder being provided with a fuel inlet, of a feed conduit having said inlets opening thereinto at points between the ends of the conduit, and communication between said source of supply and each end of said conduit; substantially as described.

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

WOODFORD R. MACGUYER.

Witnesses:

PATRICK S. VERDON,
PETER A. ROGERS.