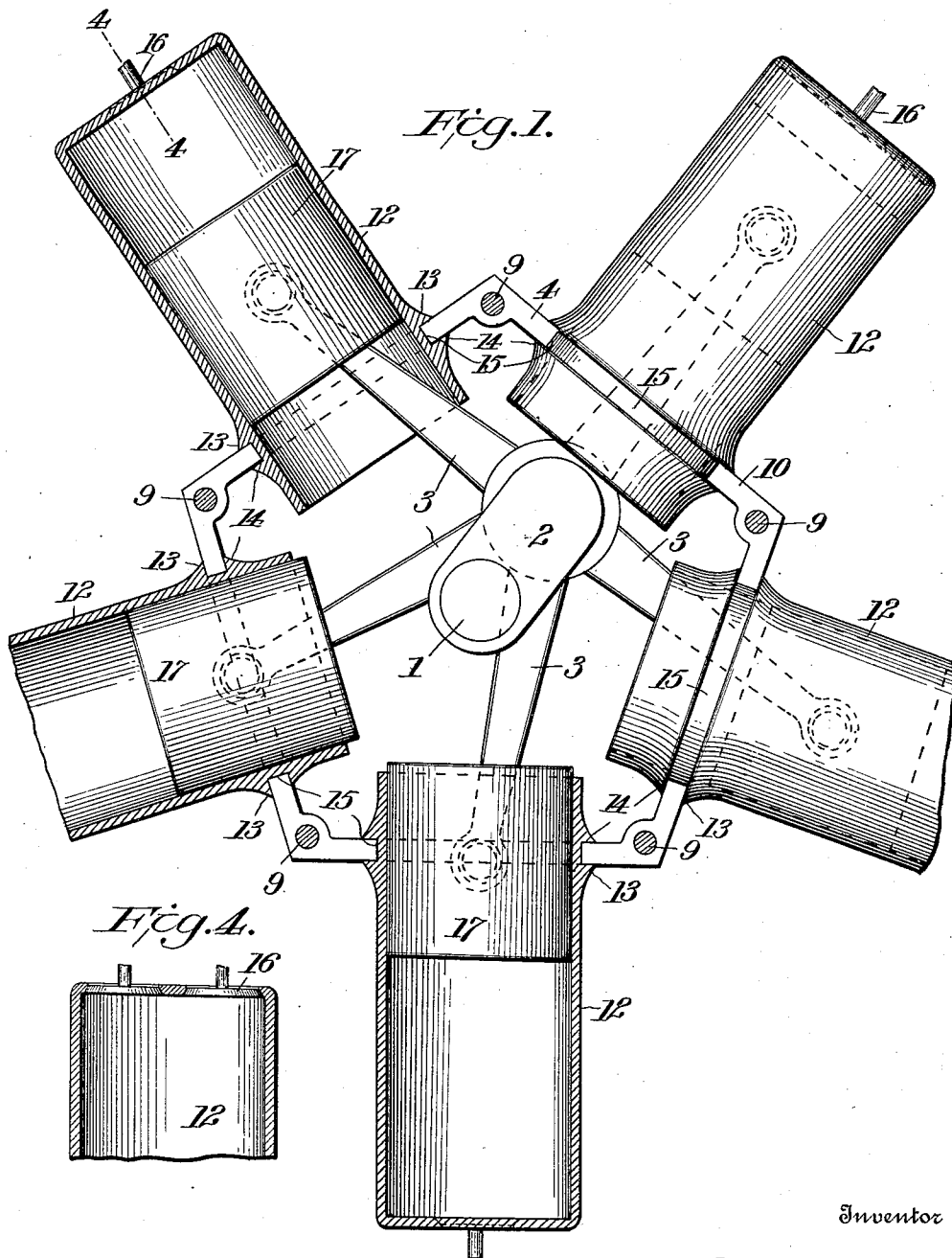


R. S. MOORE.
GAS ENGINE.
APPLICATION FILED OCT. 13, 1910.

1,008,184.

Patented Nov. 7, 1911.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

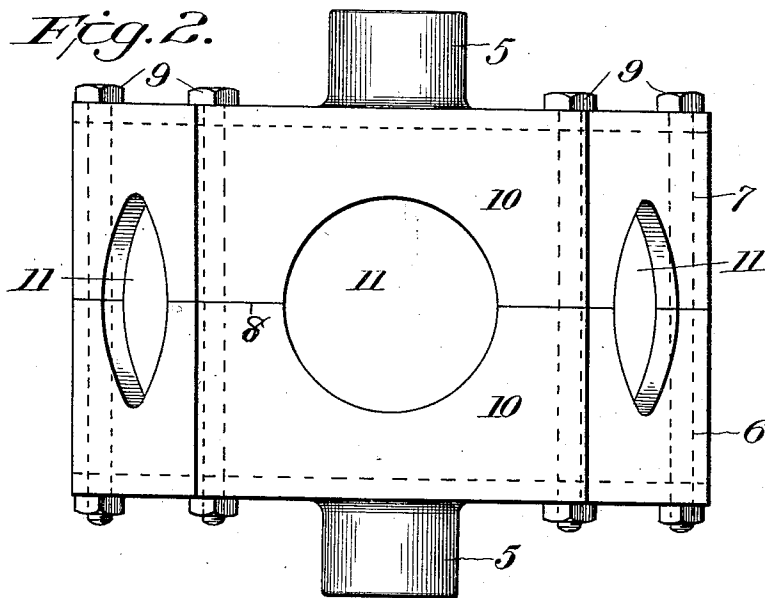
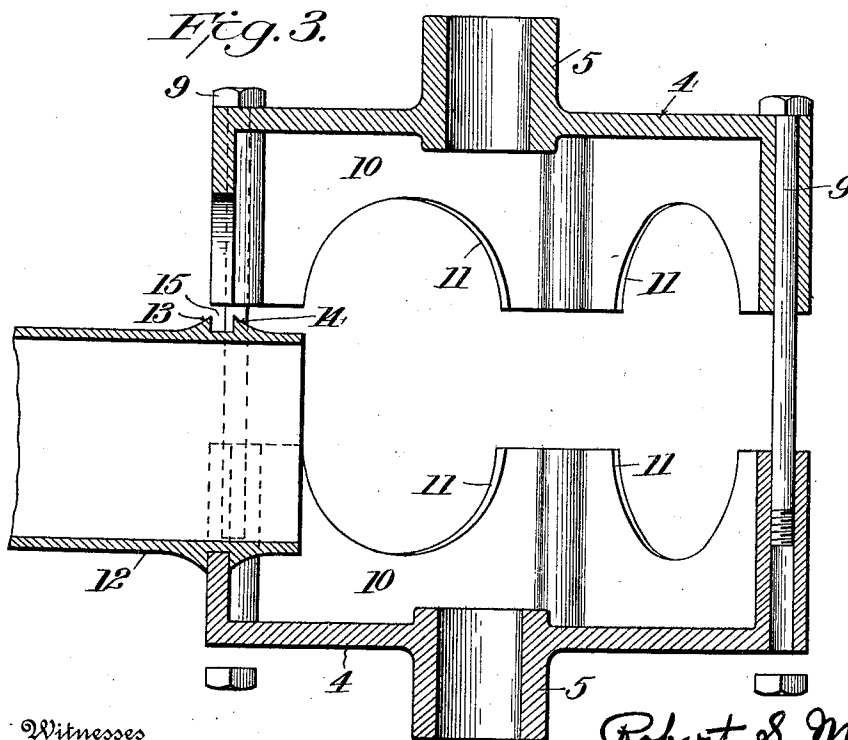


Fig. 3.



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UNITED STATES PATENT OFFICE.

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GAS-ENGINE.

1,008,184.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ROBERT S. MOORE, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Gas-Engines, of which the following is a description, reference being had to the accompanying drawing and to the letters and figures of reference marked thereon.

The invention relates to new and useful improvements in gas engines, and more especially to gas engines of the rotary cylinder type.

An object of the invention is to provide a gas engine of the above type, which shall be extremely light in weight, and which shall be sufficiently strong and durable to stand the strains incident to an engine of this character.

A further object of the invention is to provide a cylinder for a gas engine of this type, which is formed of a single integral cast steel structure.

These and other objects will in part be obvious, and will in part be hereinafter more fully described.

In the drawings which show by way of illustration one embodiment of the invention,—Figure 1 is in part a horizontal section and in part a top plan view, showing the essential parts of my improved engine; Fig. 2 is a side view of the supporting casing; Fig. 3 is a vertical section through the supporting casing showing the one cylinder in place and the sections of the casing separated; and Fig. 4 is a section on the line 4—4, of Fig. 1.

My invention as illustrated in the drawings is shown as applied to a rotary cylinder engine wherein the crank shaft remains stationary and the supported frame and cylinders rotate around the same.

The crank shaft 1 is of the usual construction, and is provided with a crank arm 2, to which each of the piston rods 3 is connected. Mounted on the crank shaft 1 is a rotary supporting casing 4, which is provided with bearings 5—5 engaging the crank shaft. The casing 4 is made in two sections 6 and 7, the dividing line 8 between the two sections lying in a plane cutting the axis of the crank shaft substantially at right angles.

The two sections of the casing are held together by suitable bolts 9. The casing, as herein shown, is provided with five flat sides 10, one for each of the cylinders supported thereby. Each of the sections is recessed centrally of the sides and said recesses are opposed to one another, so as to form a circular opening 11, in each face of the casing. Each of the cylinders 12, as herein shown, is formed of a single integral cast steel structure. The outer surface of the cylinder is turned so as to leave space for projecting lugs 13, 14, between which there is an annular recess 15.

The diameter of the bottom of the annular recess 15 is substantially the same as the diameter of the circular opening 11, and the distance between the lugs 13 and 14 is substantially the thickness of the wall of the supporting casing, so that when the two sections of the casing are separated, as shown in Fig. 3, the end of the cylinder may be inserted in the recesses formed in the sections of the casing, and the wall of the casing will engage the annular recess, snugly fitting the same.

It will readily be seen that by separating the two sections of the casing, each cylinder may be put in place, and when the sections are secured together, the cylinders will be rigidly connected to the supporting casing solely by the integral lugs on the cylinders engaging the walls of the casing. Each cylinder is provided with the usual valves 16, as shown in Fig. 4, although it is obvious that if desired the valve arrangement for the intake and the exhaust may be varied, without departing from the spirit of my invention. Each cylinder is also provided with a piston 17, which is connected to the piston rod 3.

While I have shown the invention as applied to a five-cylinder engine, it is obvious that my improvement may be used in connection with the cylinder of an engine having any number of cylinders. It is also obvious that minor changes in the details of construction may be made without departing from the spirit of my invention.

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

1. A gas engine including in combination, a rotatable supporting casing having in each

side thereof bearings for a crank shaft, said casing being divided between said bearings, means for holding the parts of the casing together, a plurality of cylinders having their ends extending within said casing, said casing having opposed recesses formed in the sections thereof for receiving the ends of the cylinder, and lugs carried by said cylinder for engaging the casing, whereby said cylinders are supported by the casing.

2. A gas engine including in combination, a rotatable supporting casing having in each side thereof bearings for a crank shaft, said casing being divided between said bearings, means for holding the parts of the casing together, a plurality of cylinders having their ends extending within said casing, said casing having opposed recesses formed in the sections thereof for receiving the ends of the cylinder, and said cylinders having spaced integral lugs forming an annular recess to receive the side walls of the casing,

whereby the cylinders are supported by the casing.

3. A gas engine including in combination, a sectional casing having straight sides corresponding in number to the cylinders supported thereby, bearings formed at the upper and lower face of said casing, means for holding the sections of said casing together, the meeting edges of said sections having opposed recesses formed therein to receive the ends of the cylinders, a plurality of cylinders having spaced integral lugs forming an annular recess to receive the walls of the casing, whereby said cylinders are supported by said casing.

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

ROBERT S. MOORE.

Witnesses:

E. H. PARKINS,

C. L. STURTEVANT.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."