

J. M. GARDNER.

ROTARY-ENGINE.

No. 176,616

Patented April 25, 1876.

Fig. 1.

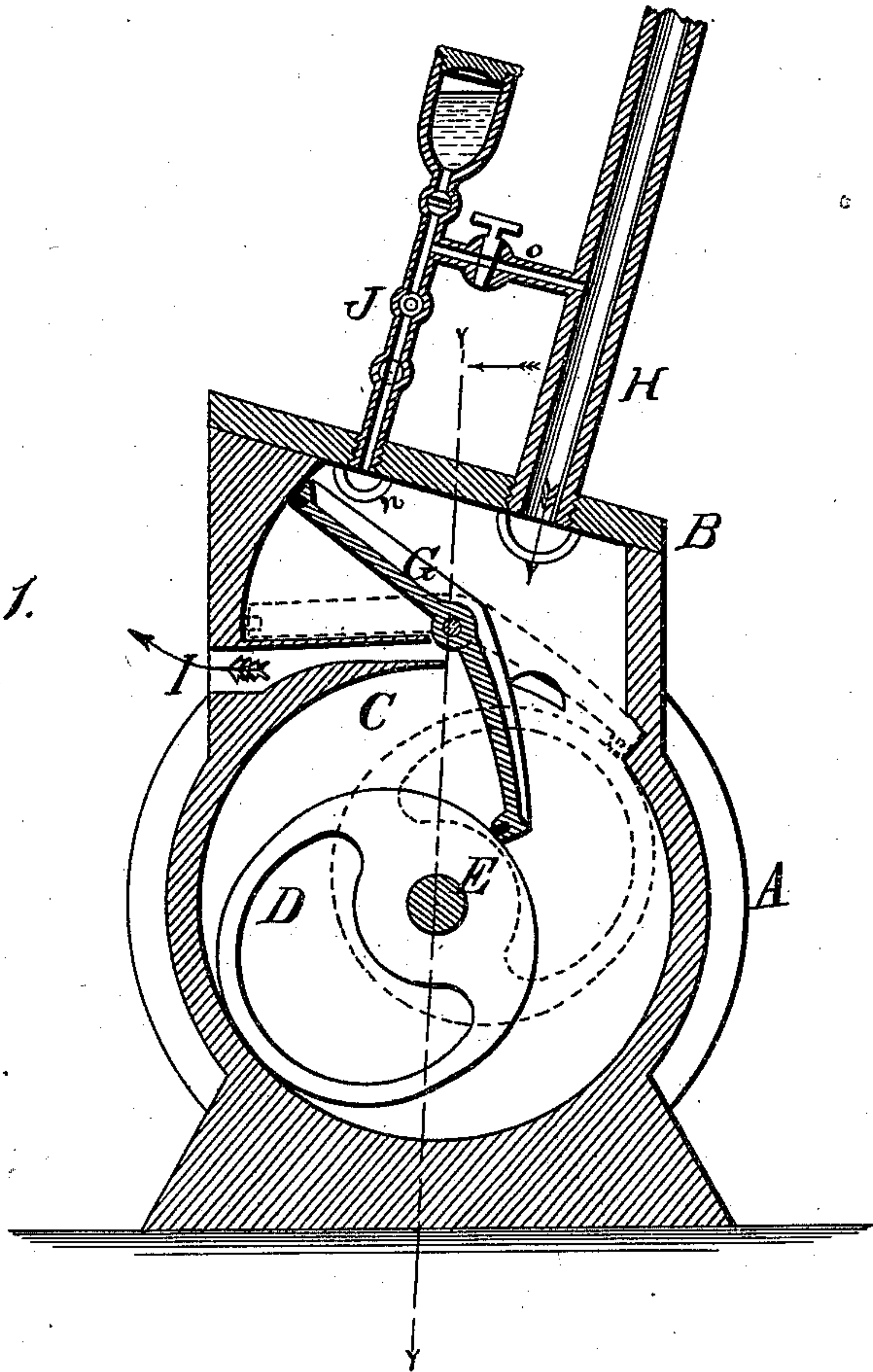
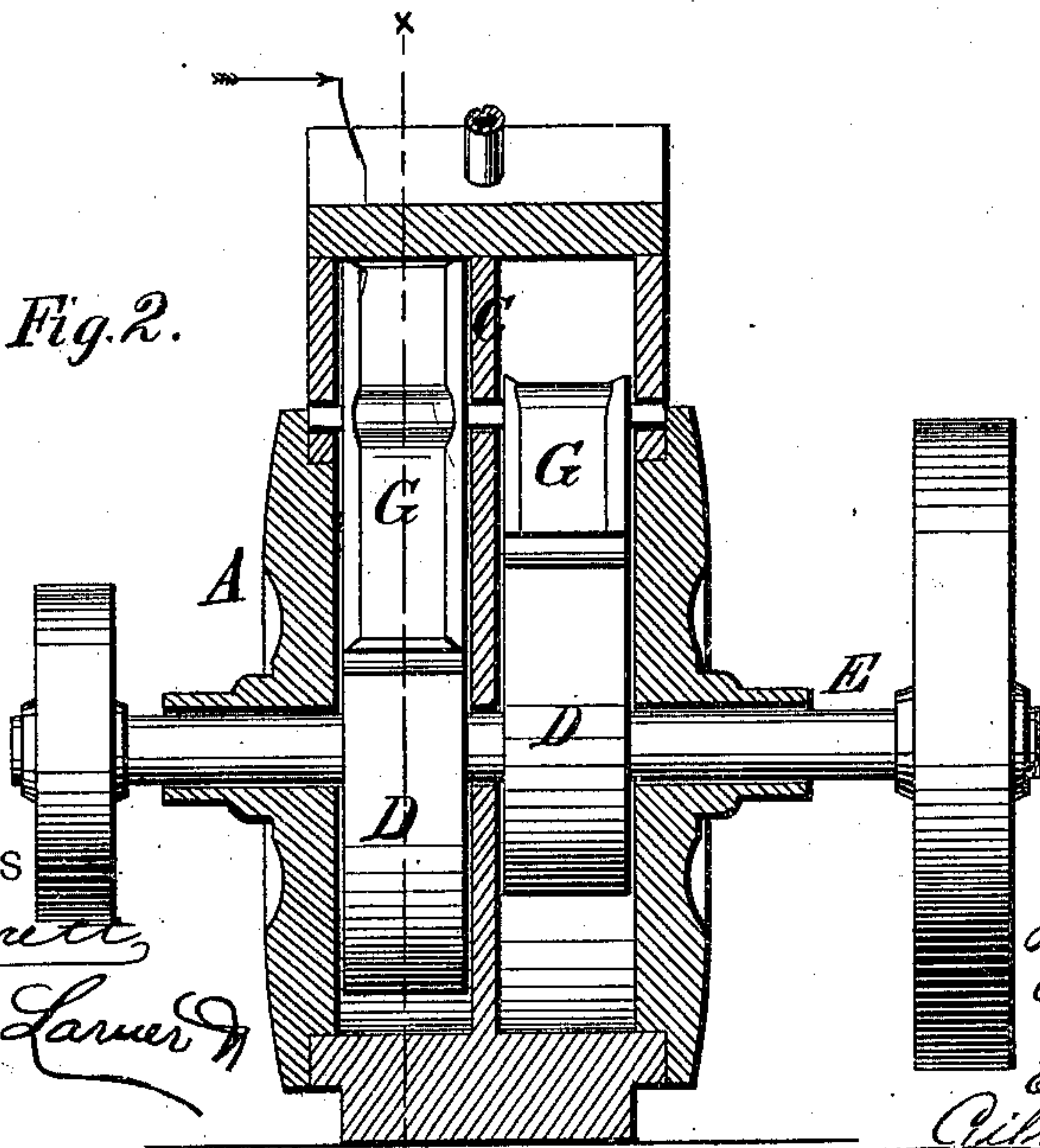


Fig. 2.



WITNESSES

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IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. 176,616, dated April 25, 1876; application filed February 19, 1876.

To all whom it may concern:

Be it known that I, JEFFERSON M. GARDNER, of Silver Spring, in the county of Wilson and State of Tennessee, have invented a new and valuable Improvement in Steam or Water Engines; and I do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters and figures of reference marked thereon.

Figure 1 of the drawings is a representation of a longitudinal vertical section of my steam-engine, and Fig. 2 is a transverse vertical sectional view of the same.

The nature of my invention consists in the construction and arrangement of a rotary steam-engine, as will be hereinafter more fully set forth.

In the annexed drawing, A represents a circular casing, of any suitable dimensions, provided with steam-chest B on top, said casing and chest being, by a central vertical partition, C, divided into two equal chambers, as shown. Through the center of the casing A passes the horizontal shaft E, which is provided on each side of the center partition C with a circular wheel, D, placed eccentrically on the shaft in such a manner that at one point of its circumference it will always be in contact with the inside of the casing. The chest B connects with the interior of the casing on each side of the partition C through a suitable aperture, and in each of said apertures is hung an abutment, G, of substantially the form shown in Fig. 1, the upper end of said abutment following in its movement the curved rear side of the steam-chest.

These abutments or valves are hung at such a point that the portion below the pivot will contain enough more top surface so that it will hold a steam-joint on the wheel D when running.

The two wheels D D are set in opposite directions on the shaft E, so that when one abutment is down the other is up, and vice versa.

The abutments G serve both as cut-off valves

and abutments, and by the use of the two there are no dead-points.

Steam enters the chest through a pipe, H, and fills the chest on both sides, and passes by the abutment or valve that is open into that side of the casing rotating the wheel D therein, and as said wheel turns it raises the abutment or valve. The steam exhausts through a port, I, under each valve.

It will be observed that it is only for an instant that either valve is closed, and that is just at the time when the other valve is open to its fullest extent. As one valve or abutment gradually closes, the other opens in the same proportion, so that there is always the same size opening for the passage of steam, or, in other words, the same amount of steam is always admitted into the casing, part on one side and part on the other side of the center partition.

In connection with this engine I use an oiling device, (shown at J,) connected with the steam-pipe H above the throttle-valve therein, so that there can be power at all times to force the oil into the steam-chest, and the engine can be oiled at any time, whether running or standing still.

The oil-tube J is connected with the steam-inlet H by means of pipe o, regulated by a valve. The pipe J lies immediately over the opening n in the partition C. The valves G G' have projections on their side edges, forming between them a channel for the passage of oil to the interior working parts.

When the valves G G' rest upon the eccentrics, the pressure of the steam in the steam-chest will prevent the escape of oil through the tube J.

To obviate this defect, the valve in the pipe o is open for the passage of steam through it, thereby forcing the oil downward through pipe J into the steam-chest.

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

1. In a rotary engine, the abutments and cut-off valves G G', provided with oil-channels on their upper faces and centrally pivoted in the steam-chest, in combination with

the eccentric pistons D D, operating as described.

2. In a rotary engine, the cut-off valves G G', provided with oil-channels on their faces, substantially as and for the purpose set forth.

3. The steam-inlet pipe H and oil-tube J, connected together by the pipe o, having a regulating-valve, in combination with cut-off valves G G', having oil-channels upon their

upper faces, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

JEFFERSON M. GARDNER.

Witnesses:

T. L. COOK,

J. B. YEARGIN.