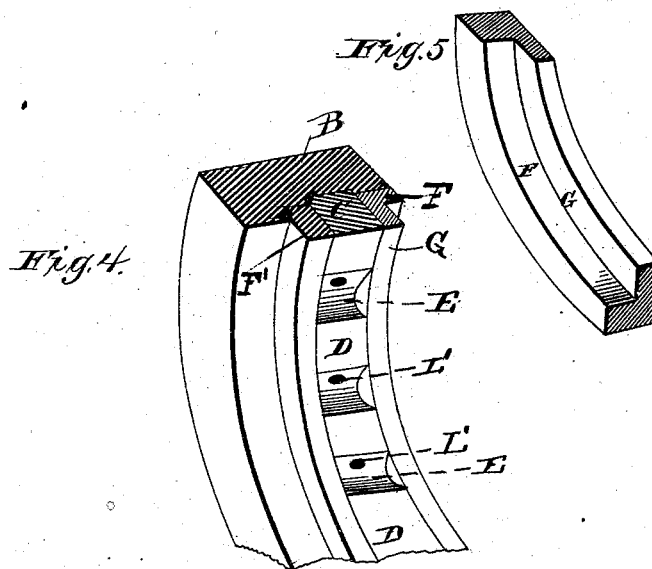
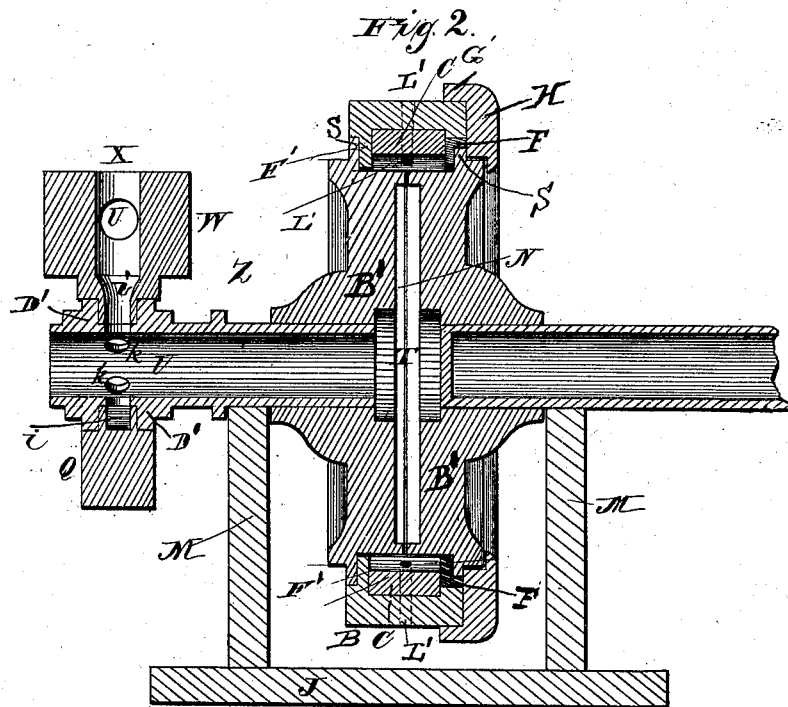




J. C. MILLER.  
Rotary-Engines.

No. 219,108.

Patented Sept. 2, 1879.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

JOHN CURRY MILLER, OF LOUISVILLE, KENTUCKY.

## IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. **219,108**, dated September 2, 1879; application filed May 28, 1877.

### *To all whom it may concern:*

Be it known that I, JOHN CURRY MILLER, of Louisville, in the county of Jefferson and State of Kentucky, have invented certain new and useful Improvements in Rotary Engines; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention relates to rotary engines; and it consists in the construction and combination of parts, as will be hereinafter more fully set forth, and pointed out in the claims.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, which form a part of this specification, and in which—

Figure 1 is a central longitudinal section of my rotary steam-engine. Fig. 2 is a transverse vertical section of the same. Figs. 3, 4, and 5 are detailed views of parts thereof.

J represents a suitable bed-plate, upon which are two standards, L L, for supporting the engine. B represents the outer cylindrical casing, provided with side-projections, I I, which rest upon the standards L and are fastened thereto by bolts J'.

Within the casing B, by bolts or other suitable means, is attached a pressure-ring or lining, C, which on its interior circumference is formed with alternate recesses E and elevations D. The recesses E are curved, as shown, and form stationary pressure-heads, while the elevations D between said recesses are designed for and perform the office of cut-offs for the steam.

From each recess E leads an opening or passage, L', through the ring C and case B, for the purpose of attaching exhaust and drain pipes and cocks for blowing out condensed steam, supplying heating apparatus, &c., and said pipes may be directed to any point desired for a heater.

The recesses E are closed at the sides to confine the steam therein by means of a continuous flange, F', formed around the inside of the case B, and a loose ring, F, having a flange, G, on the other side, as shown in Figs. 2 and 4.

In Fig. 5 I have shown a part of this flanged ring F, representing a rabbet in the ring. This ring F is to be firmly attached to the pressure-ring C.

The rabbet formed in the ring F and the rabbet formed by the flange F' receive the flanges S of the rotary disk or driver, and form packing-joints, packed by suitable packing-rings.

The packing-ring H has a flange, G', which passes over the circumference of the case B to make a more complete finish.

The rotary disk or driver is made in two halves, B' B', firmly or otherwise fastened together, and provided with a central chamber, T, for receiving and distributing the steam through a series of radial ports or passages, N. These ports, near their outer ends, turn at right angles and open into recesses formed in the periphery of the disk, each recess forming a pressure-head, P, so that the steam in escaping through the ports or passages N will act against the pressure-heads P and in the recesses E of the stationary pressure-ring C, to produce a simultaneous circular pressure all around the rotary disk and cause the same to rotate.

The peripheral surfaces R, between the recesses in the rotary disk, act in conjunction with the elevations D of the pressure-ring C, to cut off the steam from the recesses as the disk rotates.

M M represent standards or pillars forming bearings for the shaft of the rotary disk. The shaft U is made in two parts, each half of the rotary disk being firmly secured to the inner ends of the two parts of the shaft. The inner end of one shaft must at all times be closed, while the other is open, and the steam made to enter through the latter into the central chamber, T, of the rotary disk.

In Fig. 2 I have shown the open portion of the shaft, provided with a series of openings, k, and on each side of this series of openings is a circumferential flanged collar, D', firmly secured to or formed on the shaft. Around these flanged collars is placed a flanged steam-chest, Q, made in two parts, packed and united together, and forming a steam-chamber, i, encircling the shaft. On the steam-chest Q is a valve-chamber, W, with steam-entrances U and X.

The steam being admitted into the valve-chamber W enters the passage or chamber *i* in the steam-box Q, encircling the shaft and passing into the same through the openings *k*, and then passes into the central chamber, T. From this chamber the steam passes equally through all the radial ports or passages N into the recesses in the periphery of the rotary disk, and acts upon the pressure-heads P and recesses E to give a continuous rotary motion to the disk.

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

1. The removable pressure-ring or lining C, provided with alternate recesses E and elevations D, in combination with the cylindrical case B and exhaust-passages L', passing

through the ring and case, substantially as herein set forth.

2. The combination of the removable pressure-ring or lining C, having alternate recesses E and elevations D, the cylindrical case B, interior rotary disk, B' B', having central chamber, T, ports N, and pressure-heads P, and the exhaust ports L', all constructed substantially as and for the purposes herein set forth.

In testimony to the above I have hereunto set my hand.

JOHN CURRY MILLER.

Witnesses:

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