A. VIVARTTAS.

ROTARY STEAM-ENGINE.

No. 193,133. Patented July 17, 1877.

Fig. 1

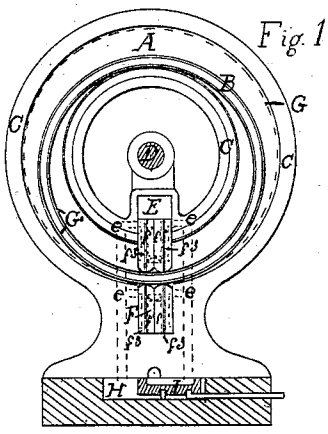


Fig. 2

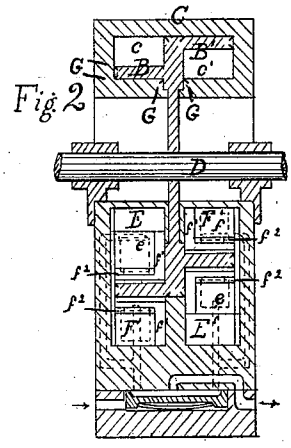


Fig. 3

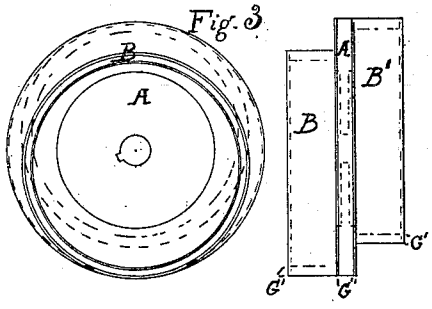


Fig. 4

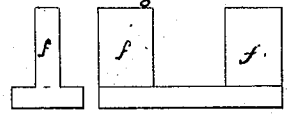


Fig. 5

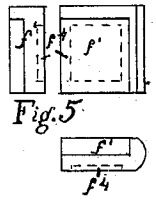


Fig. 6



Witnesses

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UNITED STATES PATENT OFFICE.

ALOHA VIVARTTAS, OF NEW YORK, N. Y., ASSIGNOR TO THE CENTRAL PROPELLING COMPANY, OF SAME PLACE.

IMPROVEMENT IN ROTARY STEAM-ENGINES.

Specification forming part of Letters Patent No. **193,133**, dated July 17, 1877; application filed November 15, 1876.

To all whom it may concern:

Be it known that I, ALOHA VIVARTTAS, of the city, county, and State of New York, have invented Improvements in Steam-Engines, of which the following is a specification, reference being had to the accompanying drawings, like letters referring to like parts.

Figure 1 represents a vertical cross-section of my engine, with a portion of plate A removed to show the working parts. Fig. 2 is a vertical longitudinal section of the same. Fig. 3 represents a front and side view of the eccentric-rings B B′ and plate A. Fig. 4 represents a side and end view of the abutment *f*. Fig. 5 represents a side, end, and plan view of the valves f^1. Fig. 6 represents a front and end view of the spring f^2.

This invention relates to what are commonly called "rotary engines;" and consists of, first, a revolving plate, A, on each face of which are secured ring-flanges B′. The ring-flanges B B′ are located eccentrically upon opposite sides of the plate A, so that they may balance each other perfectly. The plate A is keyed or coupled to the shaft D, and revolves in the case C. The case C has chambers *c c′*, concentric with the central hub of the case, and of sufficient width and depth to permit the flanges B and B′ to revolve within them.

Across the chambers *c c′* are two recesses, E E′, in which traverse the abutments F F′. These abutments F F′ are composed of a main frame, *f f*, which carries the abutments or valves proper, f^1 f^1, with their springs f^2 f^2 and spring packing-strips f^3 f^3. The ends of the abutments or valves f^1 f^1 are curved where they bear upon the sides of the flanges B B′, and are held up to them by the springs f^2 f^2, and have the spring packing-strips f^3 f^3 in the faces that bear upon the plate A, while in the sides that are presented to the sides of the recesses E E′ are recessed chambers f^4 f^4; and as the abutments F F′ slide to and fro in the recesses E E′, by the action of the ring-flanges B B′, the size of the recessed chambers f^4 f^4 in the abutments or valves, as they pass the steam and exhaust ports *e e* in the sides of the recesses E E′, would regulate the amount of steam or point of cut-off, as may be desired.

This engine works equally well backward or forward, being throttled, held, or reversed by the single common D-valve I in the steam-chest H. In this engine not only is the weight of the revolving parts perfectly balanced, but also the steam-pressure, in a direction radial to the shaft D, is equal in every direction, while the power is constant, being represented by the pressure of the steam multiplied by the area of the abutments F and F′, the circle of mean radius of the channels *c c′*, and the number of revolutions per minute; also, the pressure of the steam between the plate A and case C upon one side just balances the similar pressure upon the other side, thus obviating any tendency to crowd endwise of the shaft D, and leaving the engine very light-running and durable.

A similar arrangement of mechanism may, as in the ordinary piston-engine, be used as an air-compressor, blower, pump, or meter for liquids or fluids.

Having thus described the nature of my invention, what I claim, and desire to secure by Letters Patent, is—

In a rotary engine, the combination, with the casing C, having the chamber *c c′* and recesses E E′, of the plate A, having eccentric ring-flanges B B′, the abutments or valves F F′, through which the ring-flanges pass, and formed by the parts *f* f^1, having recessed chambers f^4, for allowing steam to enter and exhaust from the chambers *c c′*, the springs f^2, and packing-strips f^3, all substantially as shown and described.

ALOHA VIVARTTAS.

Witnesses:

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