2 Sheets--Sheet 1.

J. C. TITUS.

Rotary Engine.

No. 168,114. Patented Sept. 28, 1875.

Fig 1

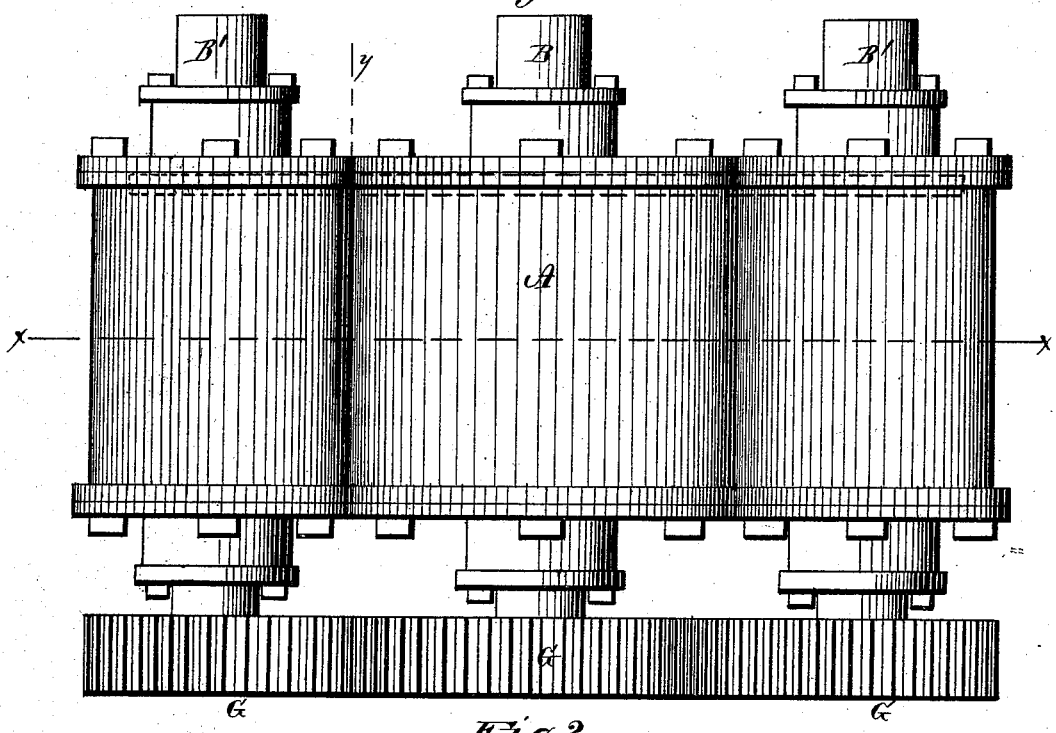
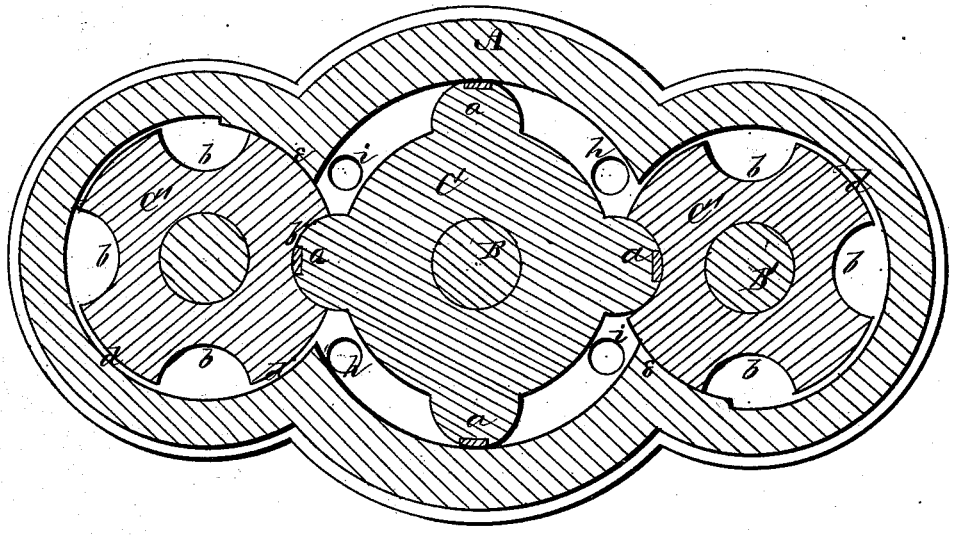


Fig 2



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2 Sheets--Sheet 2.

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Rotary Engine.

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Fig 3

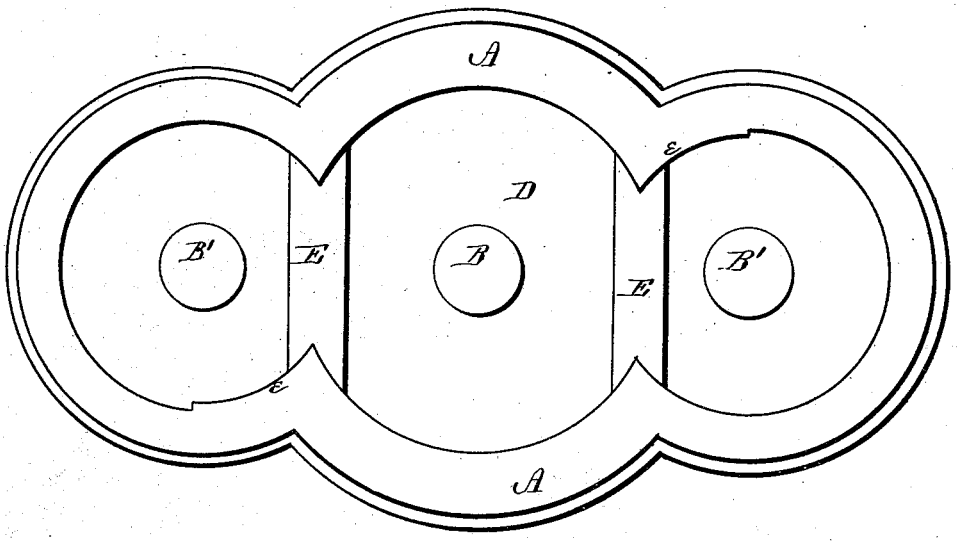
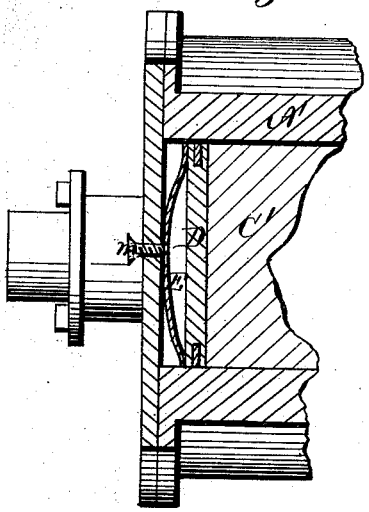


Fig 4



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UNITED STATES PATENT OFFICE.

JOHN C. TITUS, OF MARION, OHIO, ASSIGNOR TO WILLIAM HAVEN, OF CLYMER, NEW YORK.

IMPROVEMENT IN ROTARY ENGINES.

Specification forming part of Letters Patent No. **168,114**, dated September 28, 1875; application filed March 17, 1875.

To all whom it may concern:

Be it known that I, JOHN C. TITUS, of Marion, in the county of Marion and in the State of Ohio, have invented certain new and useful Improvements in Rotary Engines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon, making a part of this specification.

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

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, in which—

Figure 1 is a plan view of my rotary engine. Fig. 2 is a longitudinal section of the same through the line *x x*, Fig. 1. Fig. 3 is a side view of the engine with the outside plate removed. Fig. 4 is a section through the line *y y*, Fig. 1.

A represents the outside casing or shell of my engine, made in the form of three cylindrical chambers connected, as shown, by running into each other. Through the center of the middle cylindrical chamber passes a shaft, B, and through the center of each of the side chambers passes a shaft, B′, all of said shafts passing through suitable stuffing-boxes attached to the heads or end plates of the casing. On the center shaft B is secured a wheel or cylinder, C, provided on its periphery with four semicircular lugs or projections, *a a*, at equal distances apart, and on each of the shafts B′ is secured a wheel or cylinder, C′, provided in its circumference with four semicircular recesses, *b*, at equal distances apart, and of such size as to have the lugs or projections *a* fit therein when the wheels revolve. *d d* are steam-spaces between outside cylinders C′ C′ and the case A. *e e* are bearings, making steam-joints between the case and cylinders. *h h* are steam-entrances, and *i i* are the exhaust-ports. At one side of the casing A is an interior packing-plate, D, pressed against the ends of the cylinders C C′ on that side by means of springs E E, and the tension of these springs is regulated by means of set-screws *m m*. The shafts B B′ are connected together by means of cog-wheels G G, for rotating the cylinders together. The steam enters through the ports *h h*, and, coming in contact with the lugs or projections *a a*, drives the wheels around, the steam escaping through the ports *i i*. The steam is taken in on the two opposite sides of the center wheel C, so as to avoid side pressure. The two outside wheels C′ are abutments for the steam to back against, the spaces *d* allowing the steam to pass as far back as possible without escaping, for the purpose of taking off all side pressure on the outside cylinders, excepting enough to hold them snug in against their bearings *e*, and also against the face of the center bearings.

I do not broadly claim a cylinder of a rotary engine constructed to form a steam-space around a portion of the periphery of the revolving abutment, whereby the latter is nearly balanced by the pressure of steam, as such is not my invention.

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

The combination of the case or shell A, the wheels or cylinders C and C′ C′, with their respective lugs *a* and recesses *b*, steam-spaces *d*, bearings *e*, inlets *h h*, and outlets *i i*, all constructed substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 6th day of February, 1875.

JOHN C. TITUS.

Witnesses:
W. H. MOHR,
J. E. CROW.