

(No Model.)

J. W. WILKS.

ROTARY ENGINE.

No. 298,434.

Patented May 13, 1884.

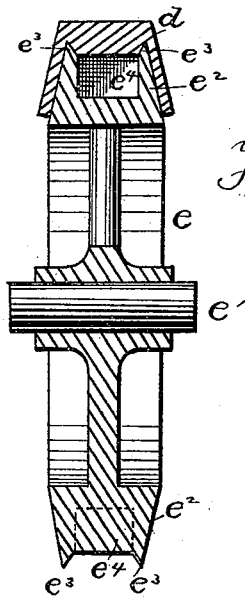
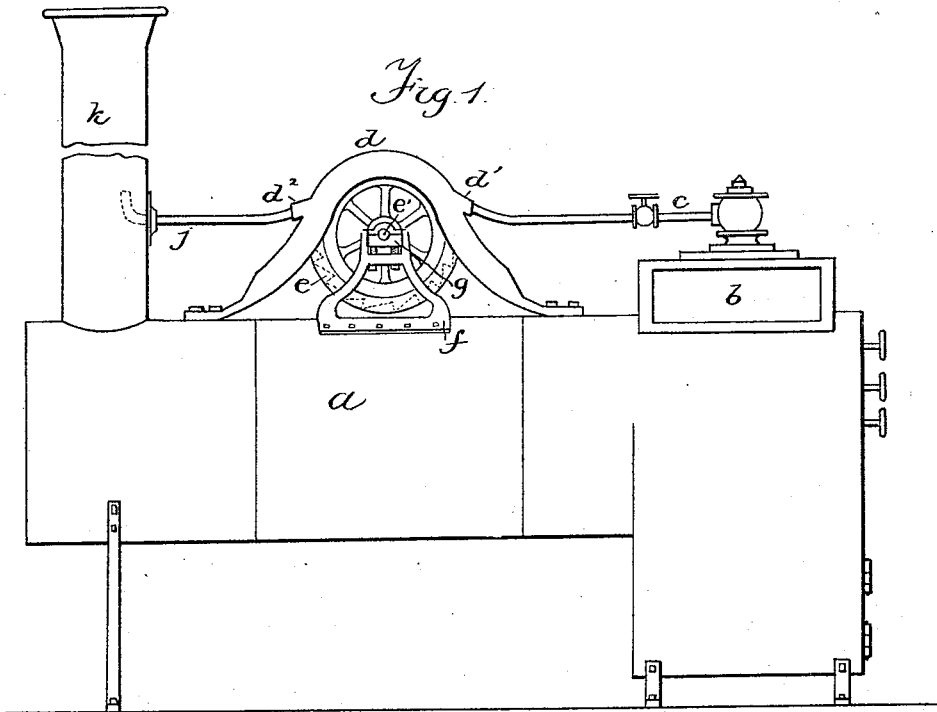


Fig. 2.

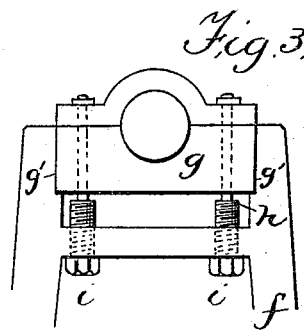


Fig. 3.

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# UNITED STATES PATENT OFFICE.

JOHN W. WILKS, OF CARMEL, SOUTH CAROLINA.

## ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 298,434, dated May 13, 1884.

Application filed January 5, 1884. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN W. WILKS, a citizen of the United States, residing at Carmel, in the county of Chester and State of South Carolina, have invented certain new and useful Improvements in Rotary Engines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

Figure 1 is a side elevation of my engine. Fig. 2 is a sectional view of the driving-wheel and cover. Fig. 3 is an enlarged view of the journal-box *g*, and set-screws *i*, and box-seat *h*.

My invention relates to improvements in rotary engines; and it consists in the novel construction and arrangement of its parts, hereinafter particularly described and set forth.

Similar letters refer to similar parts throughout the several views.

In the accompanying drawings, Fig. 1 is a representation of the engine complete, in which *a* represents the boiler; *b*, the steam-chest; *c*, the steam-pipe; *d*, the cap; *e*, the wheel; *e'*, the journal or shaft of the wheel; *f*, the frame for holding the wheel *e*; *g*, the journal-box; *h*, the seat for journal-box; *i*, set-screws; *j*, exhaust-pipe; *k*, the flue.

The journal or shaft of the power-wheel *e* is provided with a pulley or crank, to impart motion to machinery, and the engine is to be provided with such oil-cups, governors, and steam-gages as may be deemed necessary. These are not shown in the drawings, as I do not claim anything for these last-mentioned parts. The power-wheel *e* has its rim *e<sup>2</sup>* made V-shaped, with the lower part of the V cut off about one-half of its way up. The rim of this wheel has on either edge a V-shaped flange, *e<sup>3</sup>*, extending all the way around its periphery. In the rim of this wheel, also extending all the way around its periphery, are buckets or steam-heads *e<sup>4</sup>*, all as shown in Fig. 2, and the buckets by dotted lines also in Fig. 1. The cap *d* fits exactly over the rim *e<sup>2</sup>* and flanges *e<sup>3</sup>* of the wheel *e*, and runs over the top of the wheel and covers about one-third of its periphery, leaving the lower part of the wheel bare. The steam enters the jet *d'* made in the cap *d*, and

strikes against the buckets or steam-heads *e<sup>4</sup>*, and escapes through opening *d<sup>2</sup>* into pipe *j*, thence into flue *k*. This action of the steam rotates the wheel with great speed, and, passing thus over the top of the wheel and then into and up and out of flue *k*, causes a draft, which aids the draft of the flue.

The advantage of having the rim *e<sup>2</sup>* of the wheel and the flange *e<sup>3</sup>* V-shaped and fitting in a V-shaped cap, *d*, is the wearing of the wheel and of the cap causes the same to fit more and more closely as the engine grows older, and instead of becoming less efficient improves with age, and the flanges *e<sup>3</sup>* aid in confining the steam to the buckets or steam-heads *e<sup>4</sup>*, and around the wheel.

To keep the rim of the wheel up into the cap I have provided my machine with adjustable journal-boxes *g*, which have ears *g' g'*, to hold them in place in seat *h*, and they are provided with set-screws to move them up at pleasure, the operation of which can be readily understood by reference to Fig. 3.

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

1. The power-wheel *e*, made in one solid piece, its rim *e<sup>2</sup>* being wedge-shaped, the smaller portion pointing outward, and having on its outer periphery buckets or steam-heads *e<sup>4</sup>*, and on either side of said rim V-shaped flanges *e<sup>3</sup>*, all fitting neatly into cover or cap *d*, substantially as shown and described.

2. The cover or cap *d*, having a channel coinciding with rim *e<sup>2</sup>* of wheel *e*, and grooves coinciding with flanges *e<sup>3</sup>*, all neatly fitting, substantially as shown and described.

3. In a steam rotary engine, the combination with a steam-boiler, *a*, and steam-chest *b*, of pipe *c*, cover or cap *d*, having a channel coinciding with rim *e<sup>2</sup>* of wheel *e*, and grooves coinciding with flanges *e<sup>3</sup>*, and exhaust-pipe *j*, passing into flue *k*, substantially as shown and described.

4. In a steam rotary engine, the combination of journal-box *g*, having ears *g' g'*, box-seat *h*, and set-screws *i*, adapted to raise journal-box in said seat, substantially as shown and described, and for the purposes set forth.

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

Witnesses: JOHN W. WILKS.  
O. M. BALL,  
GEO. W. CHASE.