(No Model.)

E. H. CORBIN.

ROTARY ENGINE.

No. 282,171. Patented July 31, 1883.

Fig. 1.

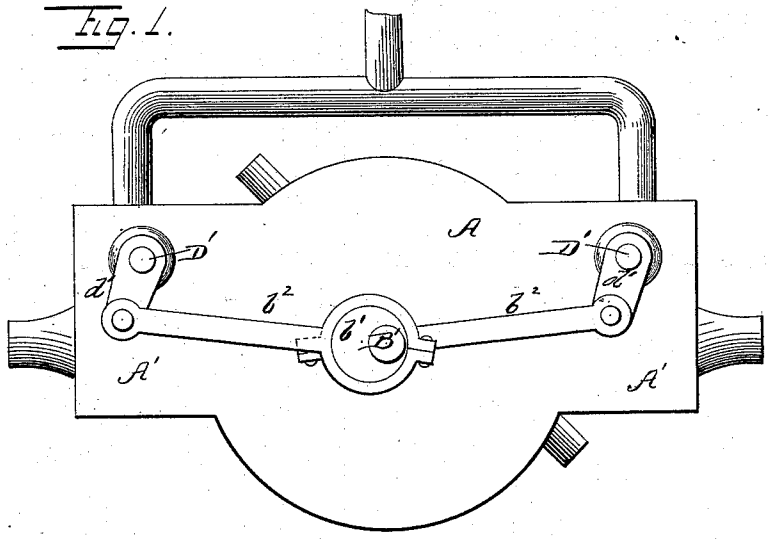
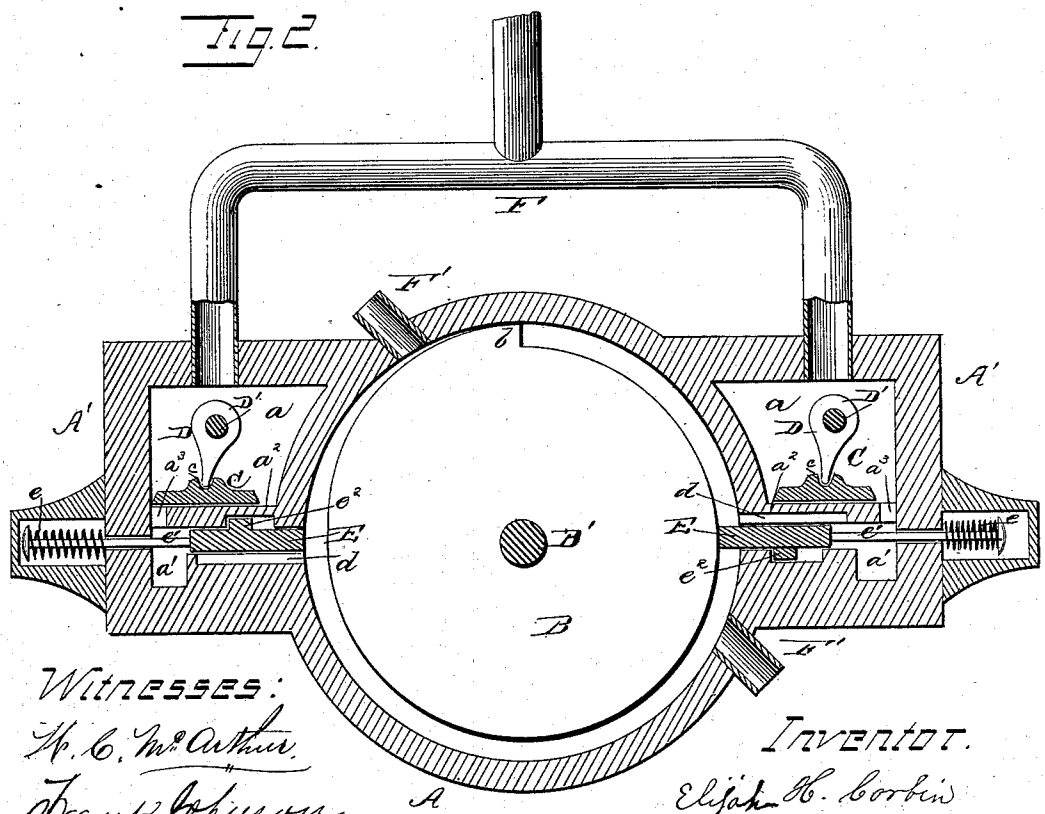


Fig. 2.



Witnesses:

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per

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UNITED STATES PATENT OFFICE.

ELIJAH H. CORBIN, OF DECATUR, INDIANA, ASSIGNOR TO HIMSELF, JOHN T. FRANCE, MARK M. McCONNELL, GEORGE W. McCONNELL, JAMES W. PLACE, JAMES W. HOAGLAND, JOHN B. MEIBERS, LEWIS H. CORBIN, AND ISRAEL C. KING, ALL OF SAME PLACE.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 282,171, dated July 31, 1883.

Application filed December 7, 1882. (No model.)

To all whom it may concern:

Be it known that I, ELIJAH HENRY CORBIN, a citizen of the United States of America, residing at Decatur, in the county of Adams and State of Indiana, have invented a new and useful Improvement in Rotary Engines, of which the following is a specification, to wit:

This invention relates to rotary engines; and it consists in certain novel details of construction, substantially as and for the purpose 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, in which—

Figure 1 is a front elevation of my invention; Fig. 2, a central vertical section of the same.

A represents a circular casing, in which is placed a wheel, B, somewhat smaller than the interior of the casing, in order to leave a steam-space between it and the periphery of the wheel, and upon the surface of said wheel is a head or stop, *b*, filling this steam-space on one side, and serving the purpose of a piston in engines of ordinary construction.

Upon opposite sides of the casing A is a box, A′, containing an upper steam space or chamber, *a*, and a lower chamber, *a′*, which are separated by a web, a^2, having a steam-passage, a^3, connecting the two chambers.

Resting on the upper side of the web or division a^2 are two valves, C C, adapted to slide horizontally to cover and uncover the steam-passage a^3. These valves are each provided with lugs or projections *c c*, with which engage two arms, D D, depending from rock-shafts D′ D′, journaled in the boxes A′, as shown.

Below the web a^2, in suitable cored spaces between the lower steam-space, *a′*, and the interior of the casing, are two sliding heads, E, arranged to slide back and forth. The slides are projected into the interior of the casing against the face of the wheel B by the action of the steam when admitted to the lower steam-chamber, and are drawn back again by a coiled spring, *e*, upon an arm, *e′*, projecting from the rear end of the sliding heads E. The movement of these heads is limited by a stop or projection, e^2, upon the head playing in a space cut out of the casing A, as shown.

Upon the under side of the web a^2 in one of the boxes A′ and under the sliding head E in the other box A′ is a cored passage, *d*, opening into the interior of the casing A at its inner end and into the space in which the slides E move at the other. This passage *d* is closed to the admission of steam when the slides are drawn back and opened when they are projected.

F represents the steam-supply pipe, forked and communicating with each of the upper steam-chambers, *a*, in the boxes A′, and F′ are two exhaust-pipes, one in the upper and one in the lower side of the casing.

The wheel B is arranged upon a driving-shaft, B′, on which is secured an eccentric, *b′*, to which are connected pitmen b^2, pivoted at their other ends to arms *d′* upon the rock-shafts D′, by means of which the slide-valves C C are shifted at the proper time to admit steam behind the steam-head *b*.

The operation of this engine is as follows: Steam being admitted from the pipe F to the upper chambers, *a a*, one of the valves C C is opened and the other closed. When the valve C is opened steam passes into the lower chamber, *a′*, and its pressure upon the sliding head E drives this head into the casing against the face of the wheel B, and allows the steam to pass through the cored passage *d* into the casing behind the stop or head *b*, and its recoil against the head E drives the wheel B around. When the stop *b* on the wheel has passed the exhaust F′, the steam escapes, and the eccentric *b′* actuates the valves C C, through the medium of the rock-shaft D′ and its arms D *d′* and pitman b^2, to close the port a^3 and shut off the steam. The head E being now released

from the pressure of steam, the spring *e* retracts it and closes the passage *d*. The momentum of the engine carries the stop *b* past the next sliding head E, the eccentric opens the other valve and admits the steam, and the operation is repeated, obtaining a steady and regular motion with a very economical use of steam and very little wear upon the machine. The parts to which steam is admitted are packed in any of the well-known ways found most desirable.

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

1. The combination, with the cylindrical casing A, having a wheel, B, and steam-chests A′ A′, each provided with chambers *a a′*, separated by a recessed web, a^2, having passage a^3, of the sliding heads E, each having spring *e* and stop e^2, the slide-valve C, and the rock-shaft D′, having arms D, engaging said valves, substantially as shown and described.

2. In a rotary engine, the casing A, having steam-chests A′, each provided with two chambers, *a a′*, passage a^3, port *d*, and steam inlet and outlet pipes F F′, in combination with the sliding head E, having arm *e′* and retracting-spring *e*, slide-valve C, rock-shafts D′, having arms D *d′*, pitmen b^2, main shaft B′, carrying the eccentric *b′*, and wheel B, having a projection or head, *b*, all constructed and arranged to operate substantially as and for the purpose herein set forth.

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

ELIJAH HENRY CORBIN.

Witnesses:
A. J. HILL,
JAS. T. MERRYMAN.