T. S. La France, Rotary Steam Engine.

113309

Fig: 1.

PATENTED APR 4 1871

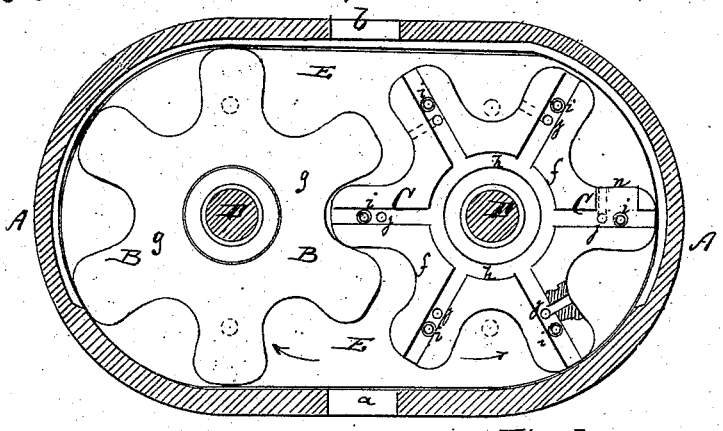


Fig: 3.

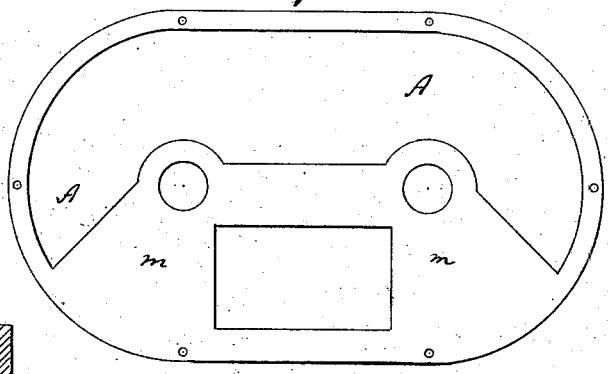


Fig: 2.

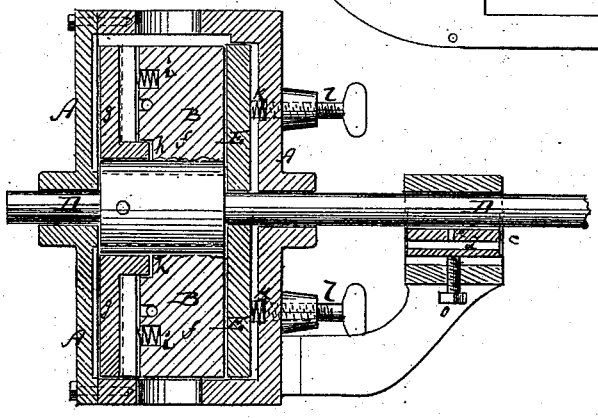
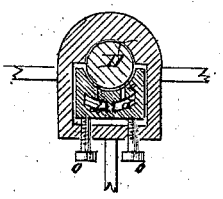


Fig: 4.



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TRUCKSON S. LA FRANCE, OF ELMIRA, NEW YORK.

Letters Patent No. 113,309, dated April 4, 1871.

IMPROVEMENT IN ROTARY STEAM-ENGINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern:

Be it known that I, TRUCKSON S. LA FRANCE, of Elmira, in the county of Chemung and State of New York, have invented a new and improved Rotary Steam-Engine; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification.

Figure 1 represents a face view, partly in section, of my improved rotary engine.

Figure 2 is a vertical transverse section of the same.

Figure 3 is an inner face view of the front plate of the engine.

Figure 4 is a transverse section of the journal-box.

Similar letters of reference indicate corresponding parts.

My invention relates to a "new way" of rendering an engine, composed of two rotating geared drums, arranged within a fixed case, automatically adjustable to different degrees of temperature and expansion.

I will now describe my invention in connection with all that is necessary to its full understanding thereof, and then clearly point it out in the claim.

A in the drawing represents the case of the engine.

It is made with semicircular ends, and just large enough to contain the two toothed drums or wheels B and C, which gear into each other, as is clearly shown in fig. 1.

Steam enters the lower part of the case A through a pipe, *a*, rotates the wheels, as indicated by arrows in fig. 1, and escapes through an opening, *b*, in the upper part of the case.

Each drum or wheel is mounted upon a shaft, D, which has its bearings in the sides and frame of the case.

The journal-box of each shaft (shown in figs. 2 and 4) contains below the shaft a removable bearing-block, *c*, which has longitudinal recesses, *d d*, and apertures *e*, leading from said recesses to the shaft.

The apertures *e* serve as oil-conductors and the recesses as oil-reservoirs for the shaft.

The blocks can be set against the shaft by means of screws *o o*.

Each drum is longitudinally extensible on its shaft. With this object each wheel is made in two sections *f* and *g*, of which one, *f*, is fixed to and the other loose on the shaft.

The contiguous faces of the parts *f g* are respectively grooved and ribbed.

The grooves extend radially to the extremities of the several teeth, and the inner ends of the radial grooves terminate in a circular groove, *h*, as is clearly shown in fig. 1.

The ribs are arranged on the parts *g*, to correspond with and fit into the said grooves.

Springs *i i* are interposed between the parts *f g* to hold them apart.

In place of the springs steam may be conducted between the parts *f g* through openings *j j*.

The drums are thus made self-adjusting to always fit steam-tight against the heads of the case A.

The ribs prevent steam from passing between the parts *f g*, the circular inner rib preventing communication under the inner ends of the radial ribs.

For the same purpose of keeping the drums tight in the case a loose head, E, is placed within the latter, and held by springs K against the drums, screws *l l* being provided for increasing or reducing the tension of the springs K.

The faces of the case with which the drums are in contact may be recessed, as in fig. 3, to leave but a section, *m*, as wide as two teeth of each drum, in contact with the same, while the recessed parts will contain steam cushions to reduce the friction of operation.

From each rib on the part *g* may project a block or ear, *n*, which enters a corresponding recess in the part *f*, and interrupts the steam-passage along the rib, to act as a stop for preventing steam from passing by the cogs at the pitch-line of the drums.

This invention is also applicable to pumps and other mechanism.

Having thus described my invention,

I claim as new and desire to secure by Letters Patent—

The rotary drums B C, made extensible on their shafts, their sections being on the contiguous faces provided with ribs and grooves, as set forth.

Witnesses: T. S. LA FRANCE.

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