H. L. BICKERTON.

ROTARY ENGINE.

APPLICATION FILED MAY 6, 1910.

1,002,121.

Patented Aug. 29, 1911.

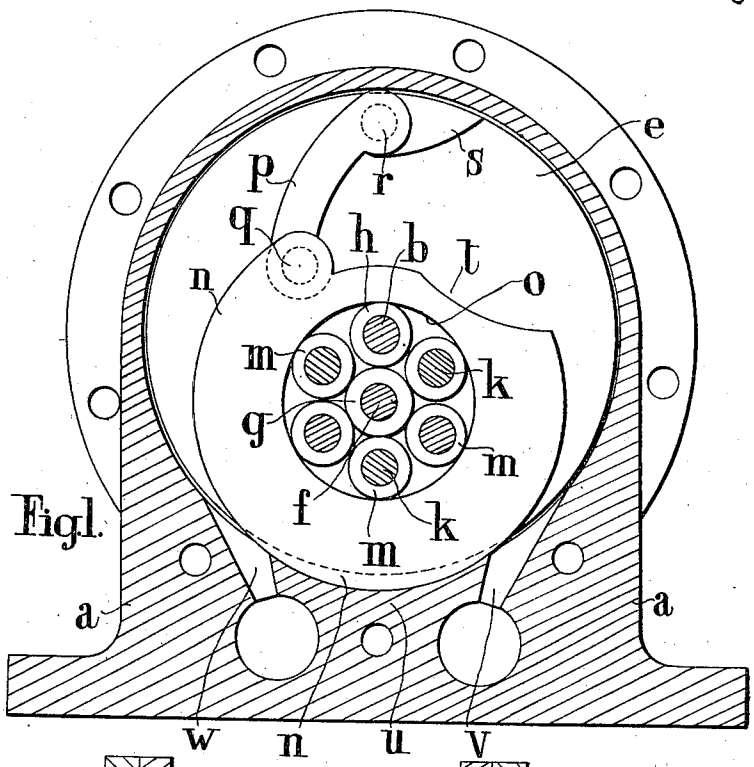

Fig. 1.

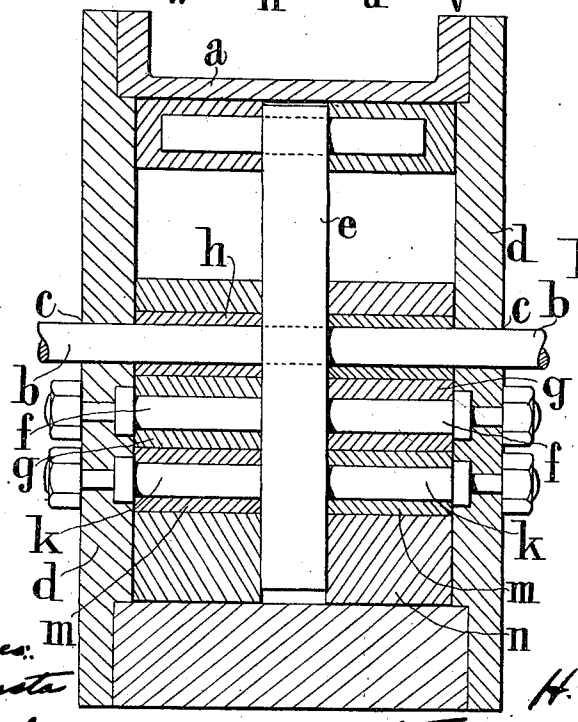

Fig. 2.

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UNITED STATES PATENT OFFICE.

HERBERT LAURENCE BICKERTON, OF HERTS, ENGLAND.

ROTARY ENGINE.

1,002,121. Specification of Letters Patent. **Patented Aug. 29, 1911.**

Application filed May 6, 1910. Serial No. 559,801.

To all whom it may concern:

Be it known that I, HERBERT LAURENCE BICKERTON, a subject of the King of England, residing at The Crosspath, Radlett, Herts, England, have invented new and useful Improvements in Rotary Engines, of which the following is a specification.

This invention relates to improvements in rotary engines of the character in which a drum carrying a blade on its periphery is eccentrically mounted on the driving shaft, and the object of the invention is to so mount the drum that it will be balanced to prevent binding.

With the above and other objects in view, the invention consists in the novel features of construction and the combinations of parts hereinafter described and particularly pointed out in the appended claims.

The preferred embodiment of the invention is illustrated in the accompanying drawings, in which like characters of reference indicate corresponding parts.

Figure 1 is a cross section of a rotary engine embodying my invention, and Fig. 2 is a similar view at right angles to Fig. 1.

a represents the casing, in the side plates *d* of which is journaled the guiding shaft *b* carrying a disk *e* arranged centrally within the casing. At each side of the disk *e* on the driving shaft *b* is a sleeve *h*. Fixed to each side plate *d* and projecting within the casing to the disk *e* is a bolt *f* having thereon a sleeve *g*, and a plurality of similar bolts *k* carrying sleeves *m* are fixed in each side plate *d* and are arranged around the bolt *f* and its sleeve *g*, to form with each sleeve *h* roller bearings for a drum *n* located at each side of the disk *e*. The sleeves *m* and *h* are in rolling contact with the sleeve *g* but not with each other, and the inner surface of the circular hole *o* of the drum *n* is in rolling engagement therewith, by which arrangement friction is reduced to a minimum and binding of the moving parts is prevented. Pivoted to the periphery of each drum *n* on a pin *q* passing through the disk *e* is a blade *p* to which is hinged at *r* a block *s* having a circular portion which is adapted to slidably contact with the inner surface of the casing *a*. The periphery of each drum is recessed as at *t* in a suitable manner for receiving the blade *p* and block *s* when passing the lower portion *u* of the casing. An inlet port *v* is provided in the casing at each side of the disk *e* and arranged tangentially to the circumference of the drum to direct the motor fluid in the most effective manner against the blades *p*. For permitting the escape of the motor fluid is provided in the casing on each side of the disk *e* an outlet *w*.

The operation follows: The motor fluid entering the inlet ports *v* acts against the blades *p* and forces same around, which action of the blades rotates the drums on the sleeves carried by the bolts and the driving shaft, which drums are fixed to the disk rigidly secured to the driving shaft, and rotary motion is thereby imparted to the driving shaft.

Although the elements set forth and described are fully adapted to accomplish the intended purposes, it is to be understood that slight changes in the form, proportion and minor details of construction may be resorted to without sacrificing any of the advantages or departing from the spirit of the invention.

Having fully described my invention what I claim is:

1. In a rotary engine the combination of a casing having an inlet and an outlet, a disk rotatably mounted within the casing, a drum eccentrically arranged on the disk, a pin passing through the disk and through the drum near its periphery, and a blade pivoted on the pin adapted to contact with the inner surface of the casing, substantially as described.

2. In a rotary engine the combination of a casing having an inlet and an outlet, a shaft journaled in the sides of the casing, a disk fixed to the shaft, a drum connected eccentrically to the disk and having an opening, means projecting from a side of the casing within the opening for supporting the drum, and a blade hinged to the drum for receiving the force of a motor fluid, substantially as described.

3. In a rotary engine the combination of a casing, a shaft journaled in the sides of the casing, a disk fixed to the shaft centrally within the casing, the casing having an inlet and an outlet at each side of the disk, a drum connected eccentrically to each side of the disk and each having an opening, bolts projecting inwardly from the sides of the casing, sleeves loosely mounted on the bolts for supporting the drums, and a blade hinged to each drum for receiving the force of the motor fluid, substantially as described.

4. In a rotary engine the combination of a casing, a shaft journaled in the sides of the casing, a disk fixed to the shaft centrally within the casing, the casing having an inlet and an outlet at each side of the disk, a drum arranged eccentrically on each side of the disk and having a central opening, a sleeve mounted on the shaft at each side of the disk and in rotatable engagement with the opening of the drum, a bolt projecting inwardly from each side of the casing and carrying a sleeve in contact with the sleeve on the shaft, a plurality of bolts projecting inwardly from each side of the casing and each bolt carrying a sleeve in rotatable engagement with the sleeve on the first bolt and with the inner surface of the opening in each drum, a pin passing through the disk and through the drums near their peripheries, and a blade pivoted to each drum for receiving the force of a motor fluid, substantially as described.

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

HERBERT LAURENCE BICKERTON.

Witnesses:

LILY SIMMONIDS,

HAROLD ROWLEY.