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M. FRAUENTHAL.

ROTARY ENGINE.

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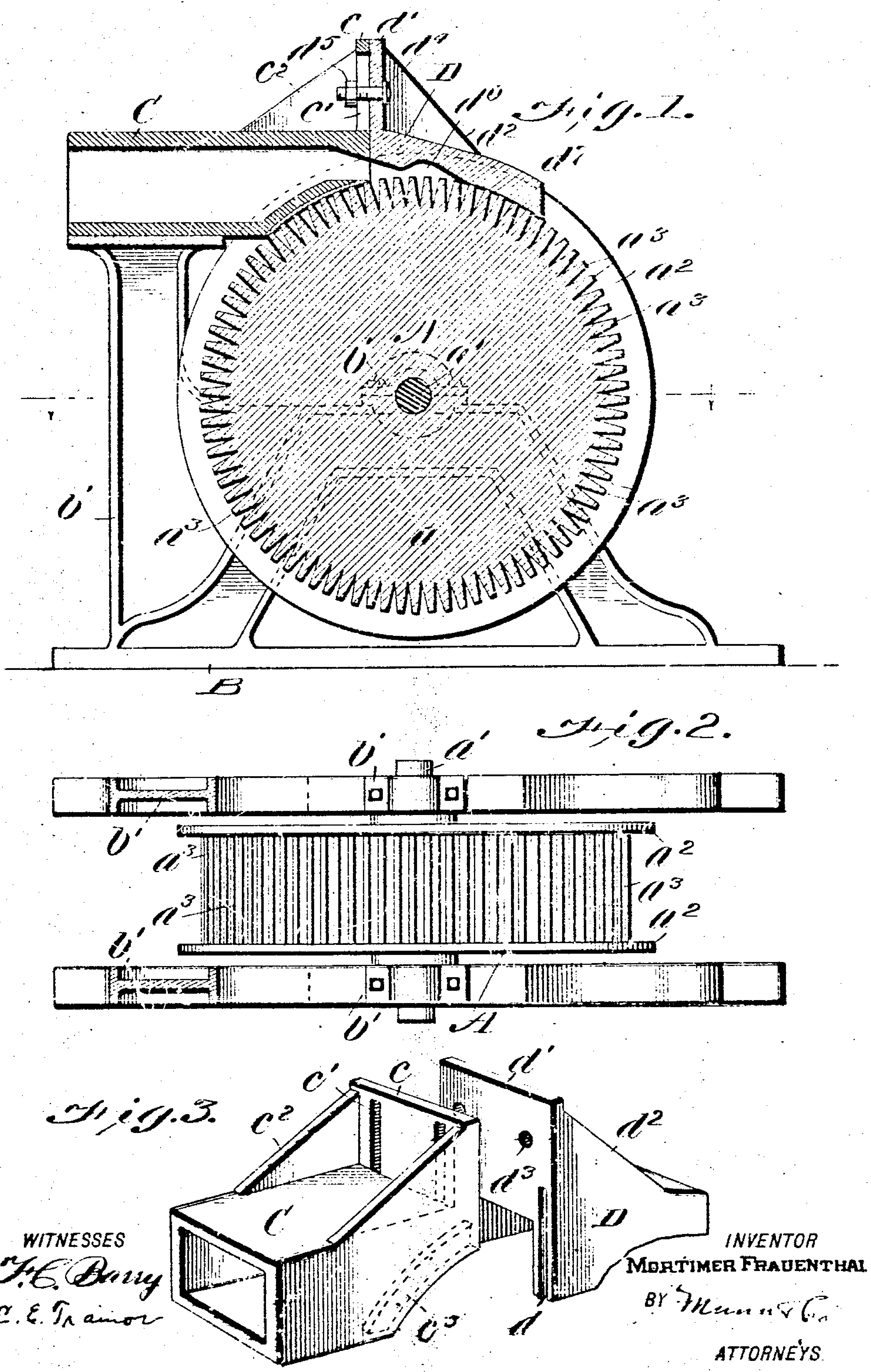

WITNESSES

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ROTARY ENGINE.

No. 875,515. Specification of Letters Patent. Patented Dec. 31, 1907.

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To all whom it may concern:

Be it known that I, MORTIMER FRAUENTHAL, a citizen of the United States, and a resident of Conway, in the county of Faulkner and State of Arkansas, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification.

My invention is an improvement in rotary engines, and consists in certain novel constructions and combinations of parts as will be hereinafter described and claimed.

Referring to the drawings, forming part hereof, Figure 1 is a vertical section through the engine. Fig. 2 is a plan view of the rotor and supporting frame, and Fig. 3 is a detail perspective view of the inlet pipe and the adjustable tongue.

In the present embodiment of my invention, the rotor A comprises a disk a secured to a shaft a', journalled in bearings b, on a supporting frame B. The periphery of the disk at the sides thereof is provided with radial annular flanges a^2, and a plurality of radial blades, wings or vanes a^3 are arranged transversely of the periphery of the disk between the flanges, the said vanes extending from flange to flange and being of lesser height than the said flanges, as shown in Figs. 1 and 2.

Brackets b' project upwardly from the frame B and supported upon the upper ends of the brackets is the motive fluid inlet pipe C, the said pipe being rectangular in cross section, as shown in Fig. 3, and the lower face of the said pipe adjacent to the free end thereof is curved to correspond with the path of travel of the free ends of the blades a^3.

The upper face of the pipe at its free end is provided with an upwardly projecting flange c, having spaced slots c', for a purpose to be hereafter described and the flange is braced against the pipe by abutments c^2. The lower face of the pipe C is also provided with longitudinal grooves c^3 for receiving the flanges of the disk, and the said pipe is so arranged with relation to the disk, that the lower grooved face thereof is spaced apart a slight distance from the free ends of the tongues, as shown in Fig. 1.

A directing tongue D is adjustably connected with the free end of the inlet pipe, the said tongue comprising a casing having an open bottom, as shown in Figs. 1 and 3, and having its sides provided with grooves d for receiving the flanges of the disk. The inner end of the casing is provided with an upwardly projecting flange d' braced against the casing by abutments d^2 and provided with openings d^3, registering with the slots C′ before described when the flange of the tongue abuts against the flange of the inlet pipe. Bolts d^4 traverse the slots and openings and nuts d^5 engage the bolts for securing the parts together.

The inner surface of the upper face of the tongue is cut away as shown at d^6 in Fig. 1 to properly deflect or direct the motive fluid against the rear faces of the blades or vanes and the extreme outer end of the tongue is curved concentrically as at d^7 with the disk and such curved surface is adapted for engagement by the free ends of the tongue during the rotation of the disk.

In operation the motive fluid is admitted through the inlet pipe C and is directed by the surface d^6 against the rear faces of the blades or vanes, thus causing the disk to rotate. As the blades or vanes pass from contact with the surface d^7, the motive fluid is permitted to exhaust. Should the contact between the free ends of the vanes and the surface d^7 become imperfect through wear, by loosening the nuts d^5 the tongue D may be adjusted towards the center of the disk to compensate for the wear.

It will be noticed from the description, that the friction is reduced to a minimum, the only friction against the periphery of the disk being that between the free ends of the tongue and the surface d^7.

The improved engine is especially adapted for use as an explosive engine, that is, with motive fluids whose expansion is of short duration.

Any suitable mechanism may be made use of for supplying the motive fluid at predetermined intervals, but since such mechanism forms no part of my present invention, I have not thought it necessary to further describe the same.

I claim

1. A rotary engine comprising a disk supported for a rotary movement and provided at each side of its periphery with annular radial flanges, and with radial vanes or wings arranged transversely and extending between the flanges, said vanes being of lesser height than the flanges, an inlet pipe for the motive fluid having one face curved to correspond with the path of travel of the free ends

of the vanes and provided with grooves for receiving the flanges, said inlet pipe being provided with a flange at its free end, said flange having spaced slots, a tongue for deflecting the motive fluid against the vanes, said tongue having a flange abutting against the flange of the inlet pipe and provided with openings registering with the slots, bolts traversing the openings and the slots for securing the tongue to the pipe, said tongue having grooves for receiving the flanges of the disk and having a portion at the free end thereof curved concentrically with the disk and against which the ends of the vanes move.

2. A rotary engine comprising a disk supported for rotary movement and provided at each side of its periphery with annular radial flanges and with radial wings or vanes arranged transversely, the said vanes being of lesser height than the flanges and extending between the flanges, an inlet pipe for the motive fluid having one face curved to correspond with the path of travel of the free ends of the vanes and provided with grooves for receiving the flanges and a tongue for deflecting the motive fluid against the vanes and connected with the end of the inlet pipe and adjustable toward and from the disk, said tongue having grooves for receiving the flanges and having a portion at the free end thereof curved concentric with the disk and against which the free ends of the vanes or wings move.

3. A rotary engine comprising a disk supported for rotary movement and provided at each side of its periphery with annular radial flanges, and with radial wings arranged transversely and extending between the flanges, said vanes being of lesser height than the flanges, an inlet pipe for the motive fluid having one face curved to correspond with the path of travel of the free ends of the vanes, and provided with grooves for receiving the flanges, and a tongue connected with the pipe for deflecting the motive fluid against the vanes, said tongue being adjustable toward and from the disk and being provided with grooves for receiving the flanges.

4. A rotary engine comprising a disk supported for rotary movement and provided with radial wings, or vanes, arranged transversely of the periphery thereof, an inlet pipe for the motive fluid having one face curved to correspond with the path of travel of the free ends of the vanes, a tongue connected with the inlet pipe for deflecting the motive fluid against the vanes, said tongue having a portion at the free end thereof curved concentric with the disk and against which the ends of the blades move, and means whereby to adjust said tongue toward and from the disk.

5. A rotary engine comprising a disk supported for rotary movement and provided with radial vanes or wings, an inlet pipe for the motive fluid having one of its faces arranged adjacent to the path of travel of the free ends of the vanes, a tongue connected with the pipe for deflecting the motive fluid against the vanes, said tongue being adjustable toward and from the disk and having a portion at the free end thereof against which the ends of the vanes move.

6. A rotary engine comprising a disk supported for rotary movement and provided with radial wings or vanes, an inlet pipe for the motive fluid, and having one of its faces arranged adjacent to the path of travel of the free ends of the vanes, a tongue adjustably connected with the pipe for deflecting the motive fluid against the wings or vanes, said tongue having a portion at the free end thereof against which the ends of the vanes move.

7. A rotary engine, comprising a disk supported for rotary movement and provided on its periphery with radial vanes and with radial annular flanges of greater length than the vanes, between which the vanes extend, an inlet pipe having one of its faces arranged adjacent to the free end of the vanes and between the flanges, and a tongue connected with the pipe for deflectin the motive fluid against the vanes, the free end of said tongue having a portion between the flanges curved concentric with the disk and against which the free ends of the vanes move.

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Witnesses:

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