W. W. WHEELER.

ROTARY ENGINE.

APPLICATION FILED SEPT. 30, 1909.

982,329. Patented Jan. 24, 1911.

3 SHEETS—SHEET 1.

Fig. 1.

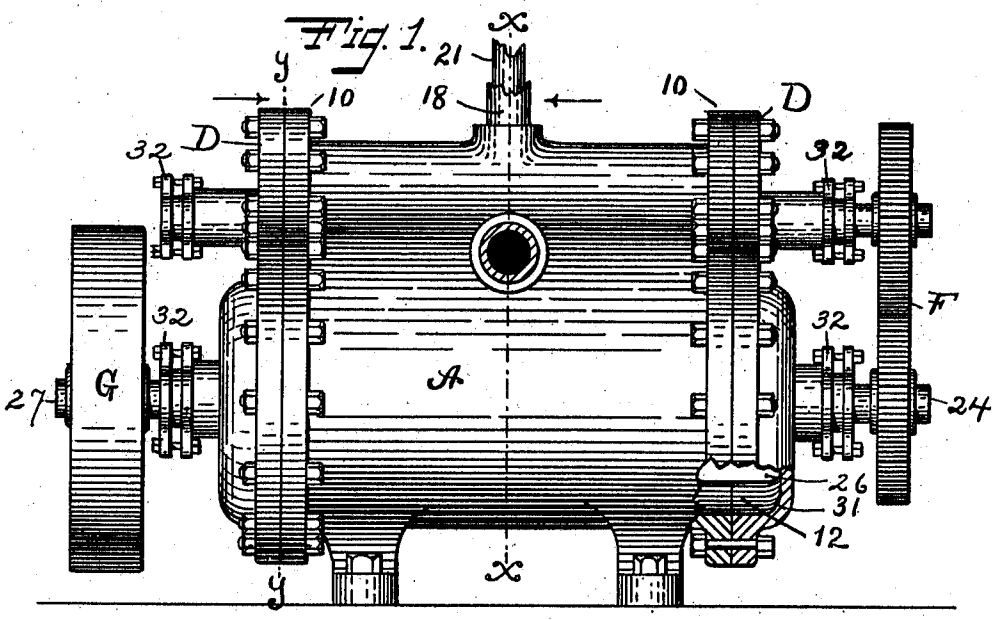
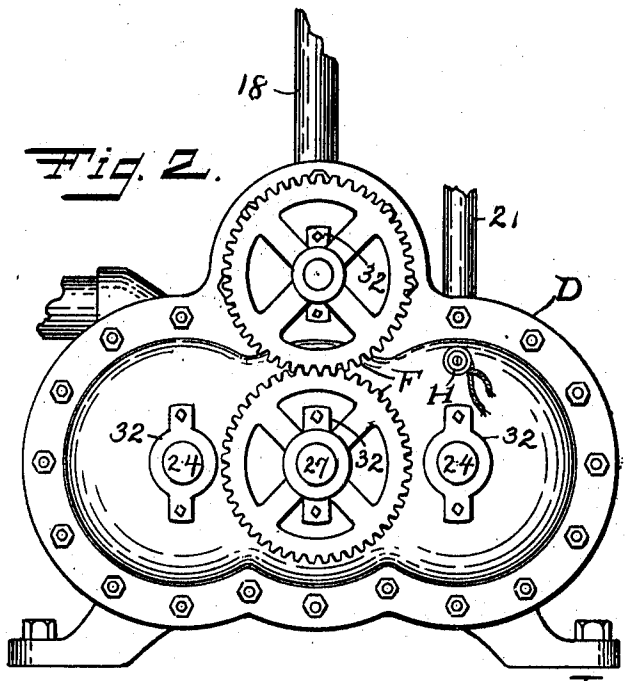


Fig. 2.



Witnesses

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N. L. Lockwood

Inventor.

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3 SHEETS—SHEET 2.

Fig. 3.

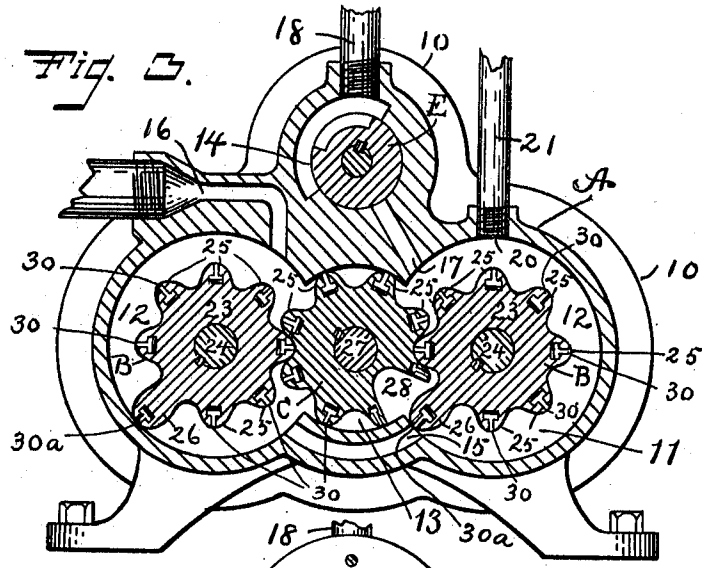
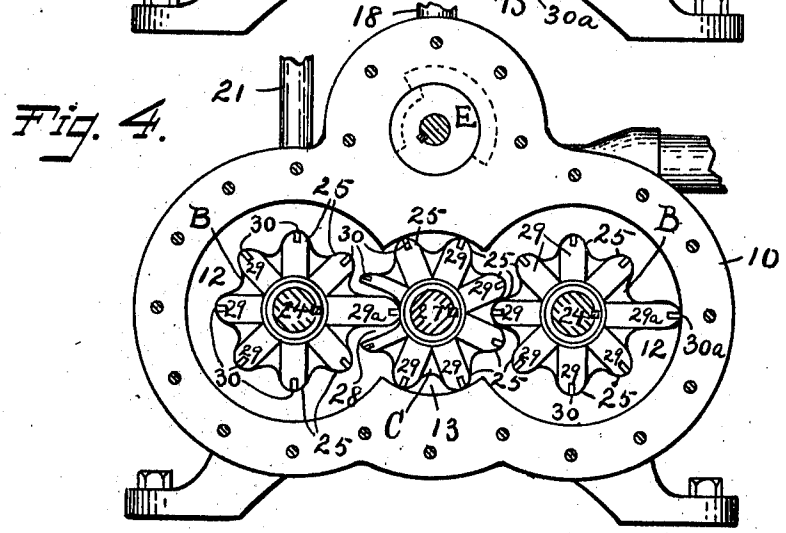


Fig. 4.



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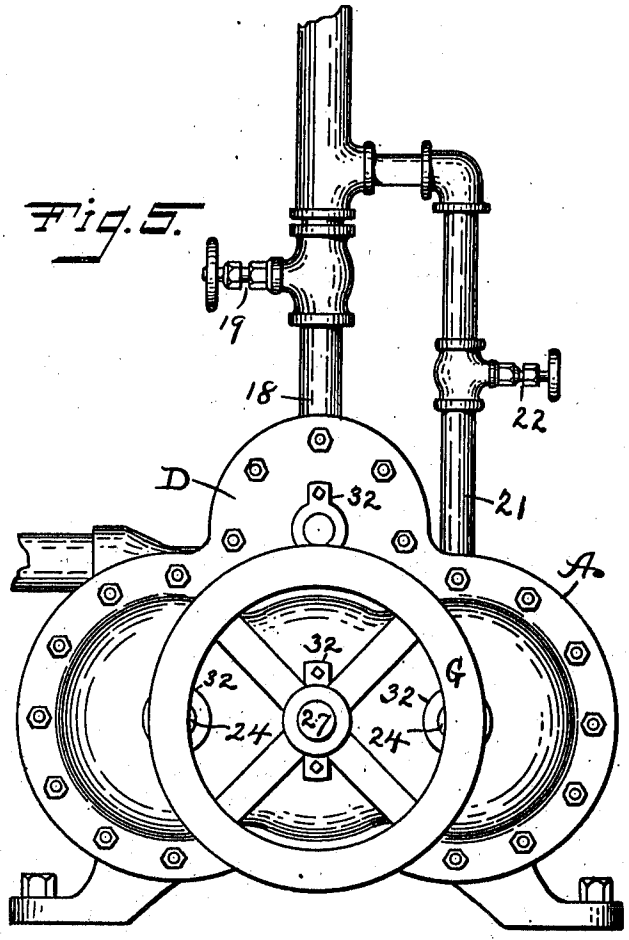
3 SHEETS—SHEET 3.

Fig. 5.



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UNITED STATES PATENT OFFICE.

WILLIAM W. WHEELER, OF MERIDEN, CONNECTICUT.

ROTARY ENGINE.

982,329. Specification of Letters Patent. Patented Jan. 24, 1911.

Application filed September 30, 1909. Serial No. 520,399.

To all whom it may concern:

Be it known that I, WILLIAM W. WHEELER, a citizen of the United States, residing at Meriden, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in Rotary Engines, of which the following is a specification.

My invention relates to improvements in rotary engines and the objects of my improvements are simplicity and economy in construction and convenience and efficiency in use.

In the accompanying drawings:—Figure 1 is a side elevation of my rotary engine in part broken out. Fig. 2 is a front elevation of the same. Fig. 3 is a sectional view of the same on the line *x x* of Fig. 1. Fig. 4 is a view of the back end of my engine with the end plate removed. Fig. 5 is a back end view of my engine.

A is the body of my rotary engine and comprises a casting having flat parallel heads 10 connected in the lower main part by a chamber 11 comprising two cylinders 12 one on each side of and communicating with an abutment chamber 13 respectively cylindrical in formation, with axes parallel and horizontal and essentially in the same plane, and connected in the upper part with a cylindrical valve chamber 14, the said cylinders 12 being interconnected at the bottom at points appreciably below said abutment chamber by an open port 15, and each provided at the top with a port, that provided for the left hand cylinder 12 as shown in Fig. 3, serving as an exhaust port 16 and being connected to the outside and the port provided for the right hand cylinder 12 serving as a main supply port 17 and connecting through said cylindrical valve chamber 14 with a main supply pipe 18, the fluid supply in which is controlled by a hand controlled supply valve 19. The said right hand cylinder 12 adjacent the said main supply port 17 is provided with an auxiliary by pass port 20 connected by means of by pass piping 21 with the said main supply pipe 18 on either side of the said supply valve 19 as desired, the said by pass piping 21 being provided with by pass hand controlled valve 22, by means of which the control of fluid in the said by pass piping 21 may be effected. Co-axial with and operatively fitting each of the said cylinders 12 is a rotary piston B comprising a central hub portion 23 provided along the generally cylindrical periphery with a series of teeth 25 the extreme radial length of which is generally less than the radius of the interior of the said cylinder 12, one tooth 26 however being of the full radial length of the said cylinder 12 and constituting the piston proper. Co-axial with the said abutment chamber 13 is a rotary abutment C mounted on a shaft 27, provided generally with teeth 25 corresponding to and adapted to coact with the said teeth 25 on the said rotary piston B, the exterior of the said abutment chamber 13 operatively fitting the exterior of the said teeth 25 on the said rotary abutment C, and provided with a recess 28 adapted to operatively receive the said rotary piston 26. The said teeth 25 and 26 are provided at the ends with end packing strips 29 and 29^a and with longitudinal packing strips 30 and 30^a after the manner shown in my application, Serial No. 484,111 and Patent No. 906,759, dated Dec. 15, 1908.

Suitable heads D are provided for the body A, and I prefer to have the same recessed internally and provided with a rounded corner as shown at 31 and have the cylinder B and abutment C project correspondingly beyond each end of the said body A and have rounded corners for the teeth and the packing strips to correspond, the rounded corner of the tooth 26 on piston proper being shown in Fig. 1, the heads D being provided with suitable stuffing boxes 32 through which project the shafts for the cylindrical rotary valve E adapted to operate in the said valve chamber 14 and for the shafts 24 for the rotary pistons B and the shafts 27 for the rotary abutment C. A train of gears F operatively connects the said rotary valve E with the said shaft 27 of the rotary abutment C, while on the said shaft 27 is mounted a driving pulley G.

In my engine as described, by using an extension of rotary abutment shaft for the main driving shaft for delivering power I insure a constant contact between the driving teeth provided for the rotary pistons and the driven teeth provided for the rotary abutment at all times when there is live steam or steam pressure back of the pistons, and thus insure a steam tight connection and against leakage and seepage of steam. The open interconnecting port connecting the two cylinders permits of delivering steam after partial expansion in one cylinder from

the said cylinder to the other cylinder, in which the latter expansion may be further prolonged and continued. The location of the said port may be so determined as to equalize the actual work done by each piston.

As described, my engine is adapted for use with either steam, explosive mixture or other fluid medium as a motive power. In case the same is used with an explosive mixture for the motive power the spark plug H would be used for ignition.

I claim as my invention:

In a compound rotary engine having an abutment chamber and two expansion cylinders separated by said chamber, the said cylinders interconnected by an open port at points appreciably remote from the said chamber.

WILLIAM W. WHEELER.

Witnesses:
SHEFFIELD H. CLARKE,
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