

No. 609,028.

Patented Aug. 16, 1898.

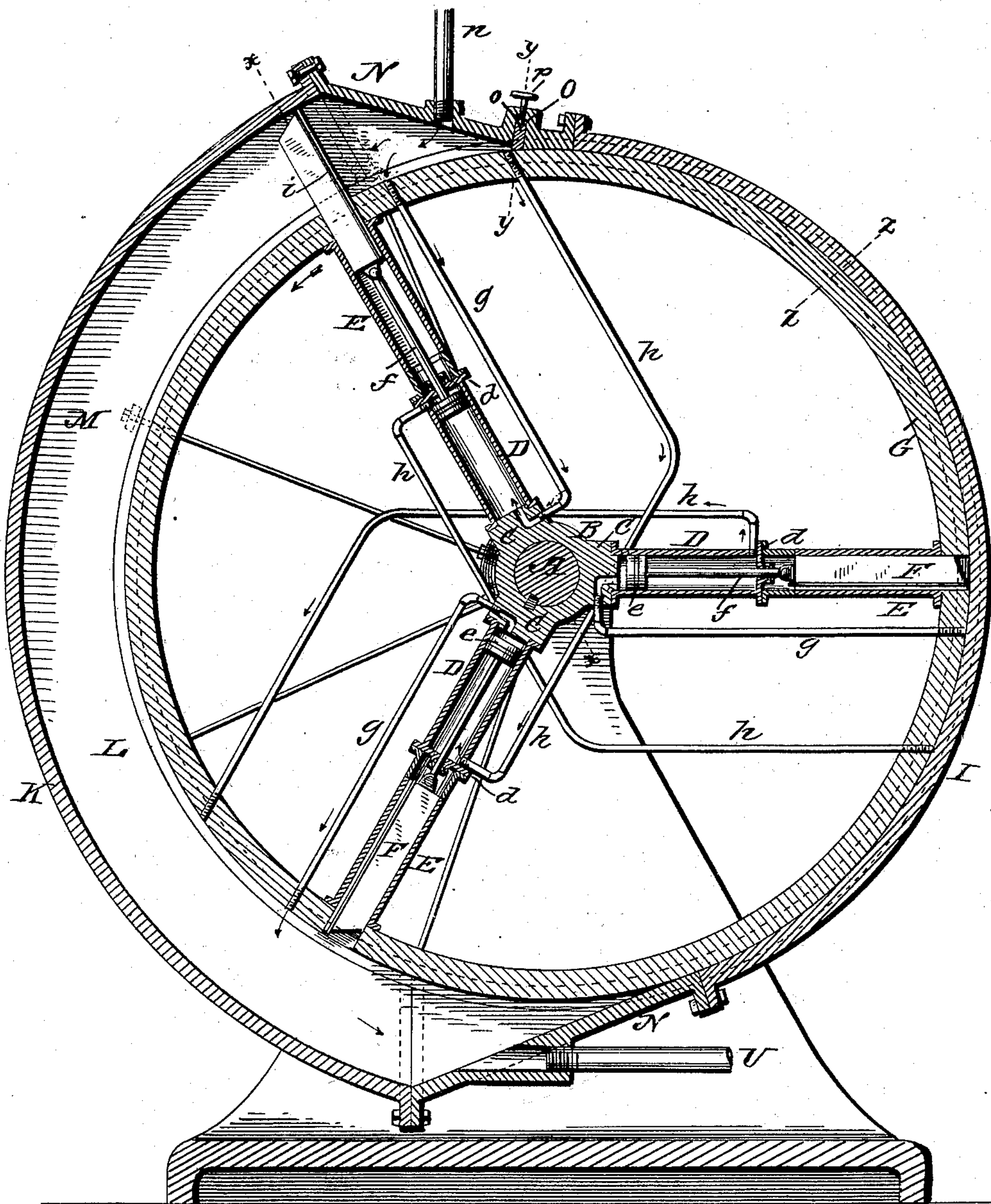
M. L. JONES.
ROTARY STEAM ENGINE.

(Application filed Feb. 3, 1898.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1



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2 Sheets—Sheet 2.

Fig. 2.

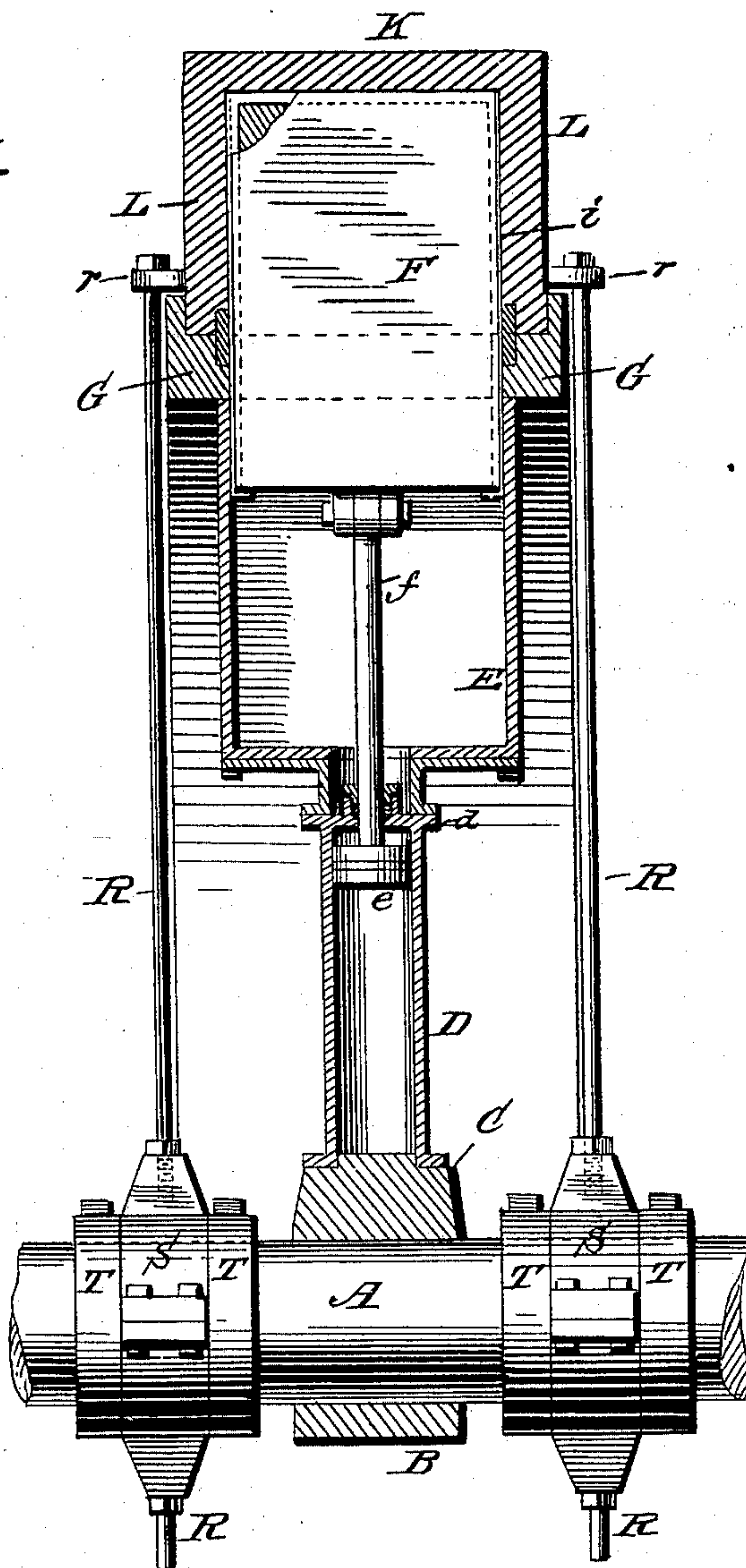


Fig. 3.

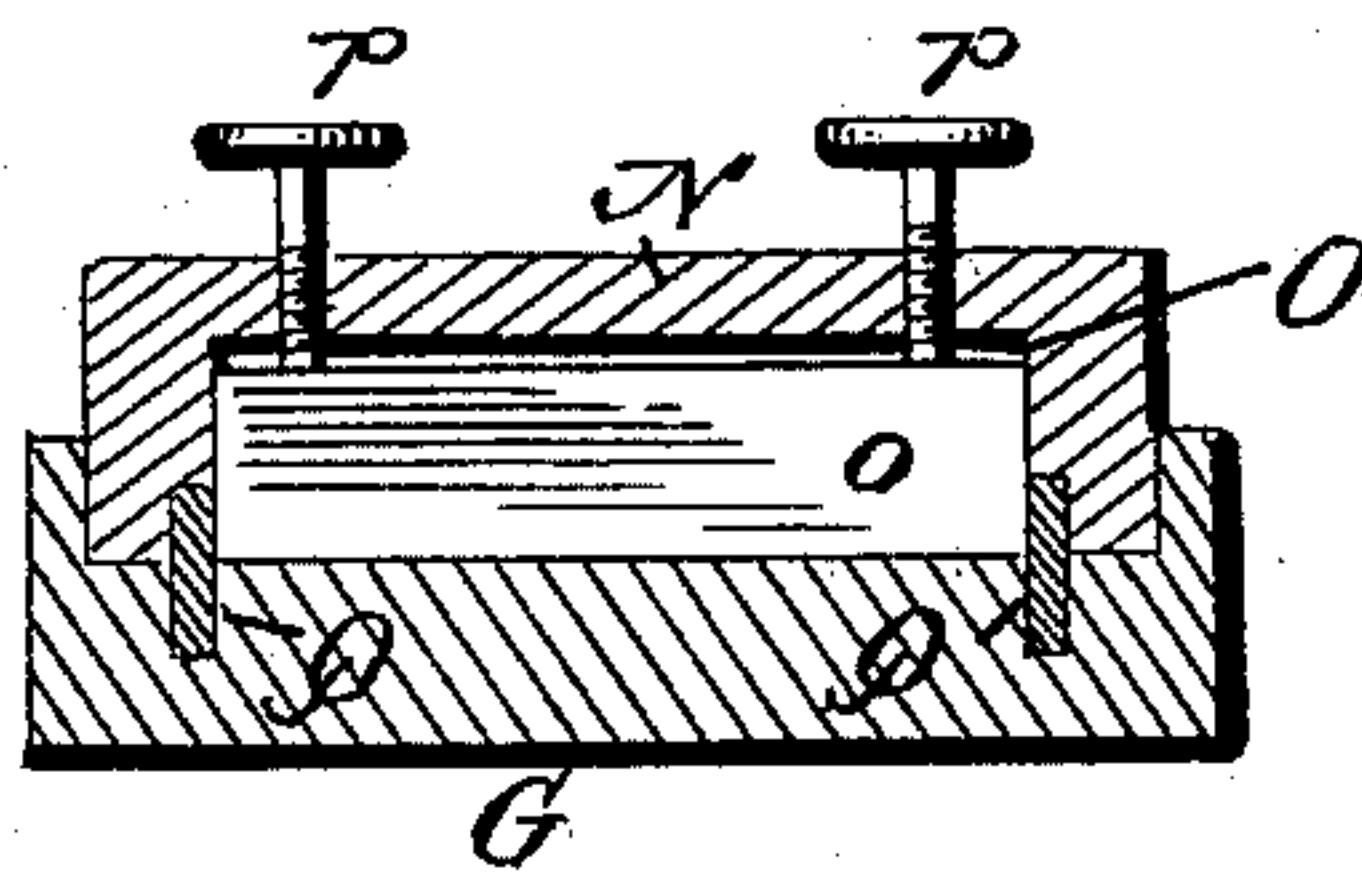
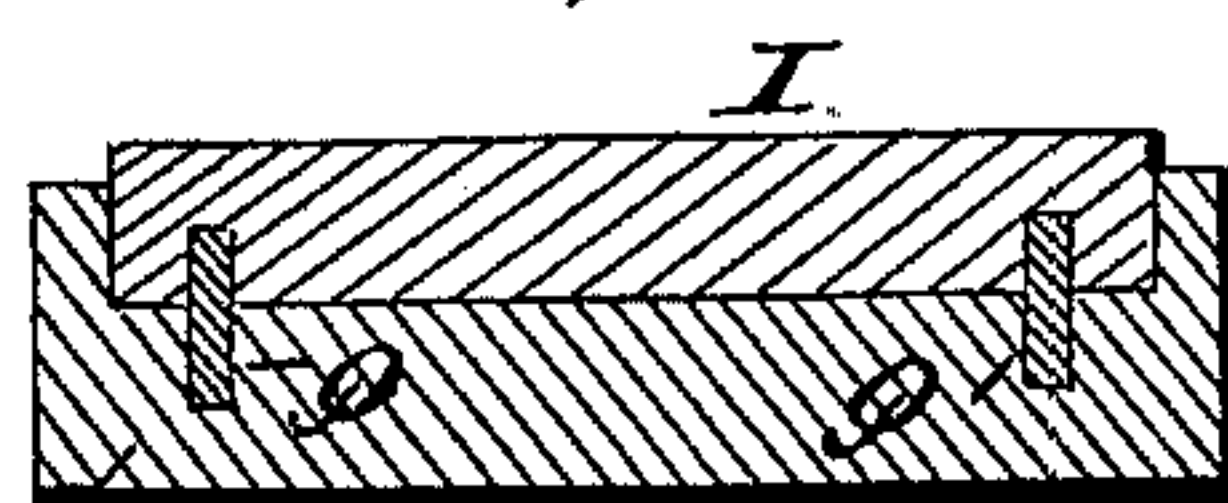


Fig. 4.



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UNITED STATES PATENT OFFICE.

MILTON L. JONES, OF TROY, NORTH CAROLINA, ASSIGNOR OF ONE-HALF TO
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ROTARY STEAM-ENGINE.

SPECIFICATION forming part of Letters Patent No. 609,028, dated August 16, 1898.

Application filed February 3, 1898. Serial No. 668,971. (No model.)

To all whom it may concern:

Be it known that I, MILTON L. JONES, a citizen of the United States, residing at Troy, in the county of Montgomery and State of North Carolina, have invented certain new and useful Improvements in Rotary Steam-Engines; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has relation to rotary engines, and more particularly to that class in which the sliding piston is operated by the action of the steam; and the objects thereof are to provide an engine that will run with the least amount of friction, to control the operation of the sliding piston automatically, and thereby cause the engine to be operated by a smaller amount of steam than engines with the same piston area.

The invention therefore consists in a rotary steam-engine constructed substantially as shown in the drawings and hereinafter described and claimed.

Figure 1 of the drawings represents a vertical section taken through the engine, across the shaft thereof; Fig. 2, a sectional view on line $x x$ of Fig. 1; Fig. 3, a sectional view through the cylinder, taken on line $y y$ of Fig. 1, showing the packing-strip; Fig. 4, a sectional view taken on line $z z$ of Fig. 1.

In the accompanying drawings, A represents the main shaft, upon which is keyed the hub B, said hub having three projections C, which form the heads of cylinders D and to which they are secured in any preferred manner. To the outer heads d of these cylinders are secured the casings E for the sliding pistons F, the outer ends of the casings being secured to the rotary drum G. It will be seen that the cylinder D and casing E form the spokes or connections between the drum and hub, and as the sliding pistons are connected with the drum power applied to said pistons will cause the drum to transmit motion through the so-called "spokes" to the hub and shaft.

Within the cylinders D are pistons e , provided with piston-rods F, that project through

the heads d and are connected to the sliding pistons F.

Each cylinder D has a port on its inner end connecting with the passages in the hub to which the pipes g are attached. These pipes lead to and through the drum, and with the passages through the hub form the steam and exhaust passages for the inner end of the cylinder.

The pipes h lead from the outer end of the cylinder D and terminate through the drum and back of the next cylinder following the one to which the pipe is attached, the object thereof being hereinafter described.

The sliding piston F is rectangular in form, and necessarily its casing is the same, said piston having suitable packing-strips i . On the outer side of the drum is a casing formed in four sections, casing I being in contact with the drum and casing K set off from the drum and provided with sides L, and with the drum form the cylinder M of the main engine, the ends of this section K L being connected to section I by the two sections N, thus forming a complete casing. Steam is admitted to the cylinder by the pipe n , connected to the upper one of the sections N of the casing, and exhausts through pipe U, attached to the lower one of the sections. The upper one of the sections N where it comes in contact with the drum is provided with a recess or groove O, into which is placed a packing-strip o , held therein by bolts or suitable screws p , and packing-strips Q are placed over the joint formed by the drum and the casing, as shown in Fig. 4 of the drawings. The casing comprising the sections or parts I N M is held in position by the brace-rods R, which are attached to the casing by the lugs r , the outer end of the rods being adjustably secured to loose collars S on the shaft, which collars are prevented from moving laterally thereon by the rigid collars T.

The operation of the engine is as follows: Steam being admitted to the cylinder through pipe n will press upon the sliding piston, which has just passed the steam-port, causing the drum to move and connect the pipe h with the steam side of the sliding piston. The steam passing through the pipe h acts on the piston of the lower sliding piston and

draws it into the drum, while the exhaust from the inner end of the cylinder passes out through the pipe *g* into the main cylinder and exhausts through pipe, thereby causing the
 5 sliding piston to exhaust the steam that moved it and also permit it to pass the section I of the casing. The cylinder of the upper sliding piston is connected with the steam-space through the pipe *g* and exhausts through pipe
 10 *h*, this change occurring to each cylinder in turn as the drum revolves.

A very simple, practical, and easy-operating rotary steam-engine is provided that possesses all the advantages required of an engine of this character, securing a maximum
 15 amount of power with a comparatively small amount of steam.

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

1. In a rotary steam-engine, the combination of the main cylinder, the rotary drums carrying the sliding pistons, and cylinders with pistons in said cylinders connected to
 25 the sliding pistons, and ports at each end of the cylinders connected to the periphery of the drum and made to connect with the main cylinder during the rotation of the drum to admit and exhaust the steam to the cylinders
 30 to operate the sliding pistons, substantially as and for the purpose set forth.

2. In a rotary steam-engine, the combination of the main shaft with a hub secured thereto, cylinders secured to the hub, a drum
 35 secured to the cylinders, the main cylinder on the drum, the sliding piston carried by the drum, and pistons in the cylinder connected to the sliding pistons, and ports in said cylinders connected with the main cylinder
 40 during the rotation of the drum for admitting and exhausting steam for operating the sliding pistons, substantially as and for the purpose described.

3. In a rotary steam-engine, the combination of a rotary drum with sliding pistons, 45 the pistons for operating the same, cylinders for the pistons, the ports of the outer ends of the cylinders leading through the drum back of the following piston, and the ports for the inner end of the cylinders leading out through 50 the drum back of its own piston, substantially as and for the purpose specified.

4. In a rotary steam-engine, the combination of a rotary drum with sliding pistons, pistons for operating the same, and passages 55 periodically connecting with the main cylinder for controlling the admission and discharge of steam to each side of the latter pistons, by the rotation of the drum, substantially as and for the purpose specified. 60

5. In a rotary engine, the combination of the drum with the outer sections of the casing, the adjustable rods connected thereto and to the collars placed loosely on the shaft, 65 substantially as and for the purpose specified.

6. In a rotary engine, the combination of the drum with the outer sections of the casing, the rods adjustably connected thereto and connected to collars loosely supported on the shaft, and collars rigid to the shaft to prevent lateral movement, substantially as and 70 for the purpose set forth.

7. In a rotary engine, the combination of the rotary drum with the stationary casing, packing-strips between the drum and casing, 75 and adjustable rods for the casing connected to a loose collar on the shaft, substantially as and for the purpose described.

In testimony that I claim the above I have hereunto subscribed my name in the presence 80 of two witnesses.

MILTON L. JONES.

Witnesses:

I. E. SAUNDERS,
 J. C. SMITH.