

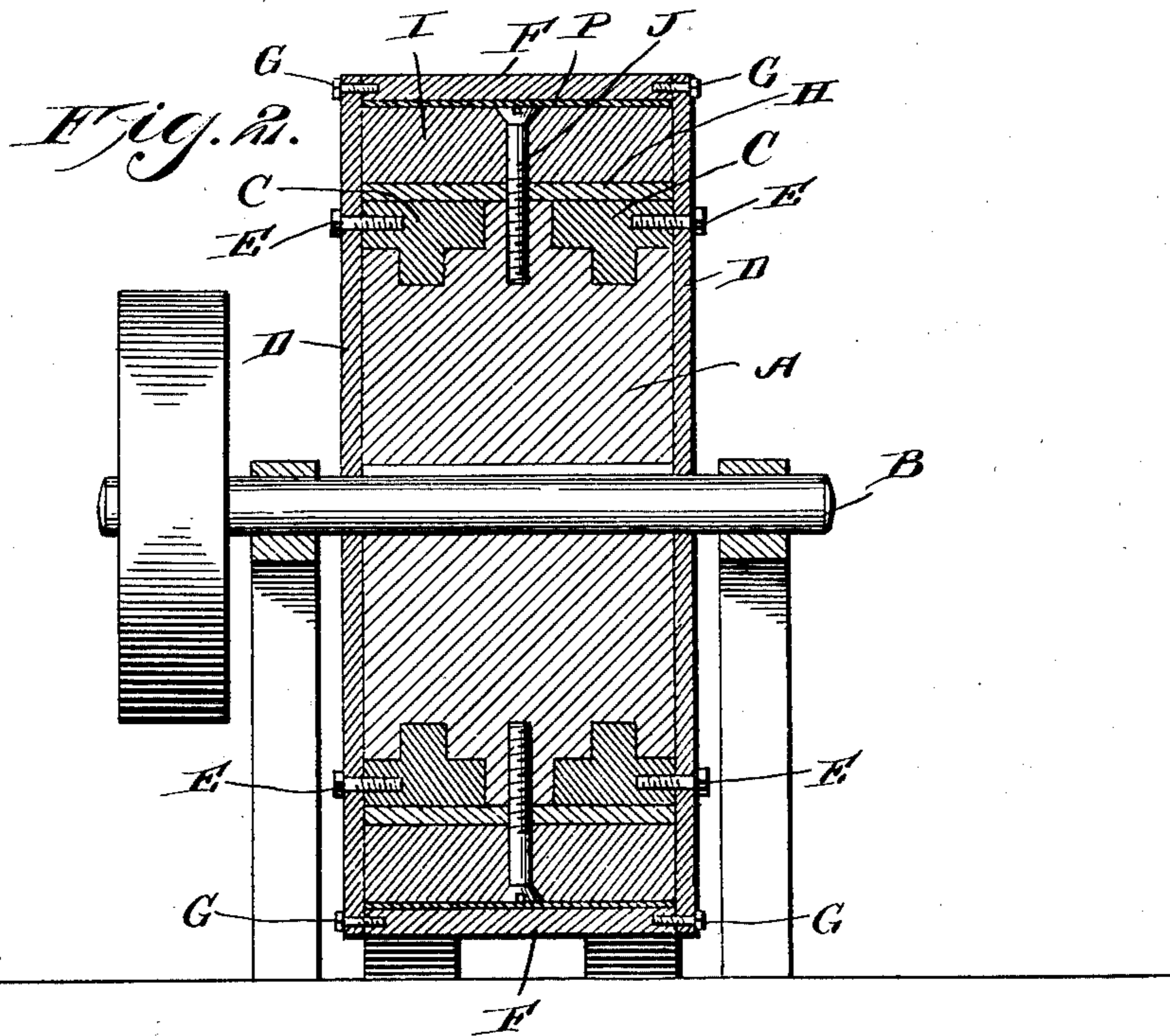
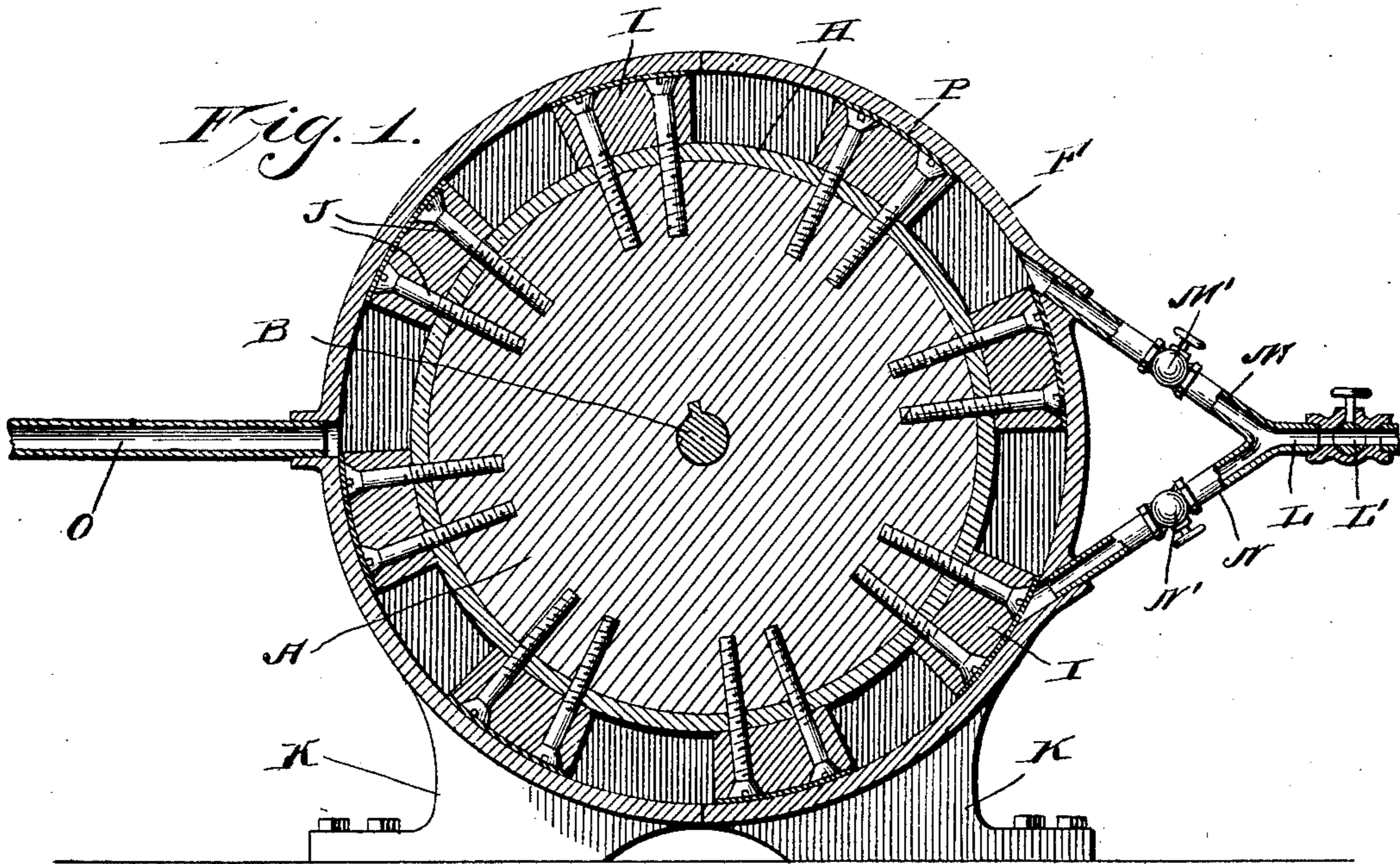
No. 717,190.

Patented Dec. 30, 1902.

F. GOUGER.  
ROTARY ENGINE.

Application filed July 19, 1902.)

(No Model.)



Witnesses  
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# UNITED STATES PATENT OFFICE.

FRANK GOUGER, OF FORESTPORT, NEW YORK.

## ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 717,190, dated December 30, 1902.

Application filed July 19, 1902. Serial No. 116,271. (No model.)

*To all whom it may concern:*

Be it known that I, FRANK GOUGER, a citizen of the United States, residing at Forestport, county of Oneida, and State of New York, have invented a certain new and useful Improvement in Rotary Engines, of which the following is a specification.

My invention relates to a new and useful improvement in rotary engines, and has for its object to provide a rotary engine which will be simple, easily constructed, and yet durable and practical.

With this end in view this invention consists in the details of construction and combination of elements hereinafter set forth and then specifically designated by the claims.

In order that those skilled in the art to which this invention appertains may understand how to make and use the same, the construction and operation will now be described in detail, referring to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a vertical longitudinal section through the engine; Fig. 2, a vertical cross-section through the engine.

The engine consists of a central core A, which is keyed or otherwise secured to the main shaft B. Surrounding this core are two steel rings C, which are divided for the purpose of placing them around the core, and these rings remain stationary and are secured to the outer stationary side casings D by means of bolts E, arranged at intervals in a circle and threaded through the side casing D into the ring C. The side casings D are circular in form and are joined at their peripheries by a divided circular casing F, which is secured to the side casings by means of bolts G, threaded at intervals through the side casing into the casing F.

H is a metallic ring which is slipped over the core A and also over the ring C before the casings are secured in place. This continuous ring H is adapted to revolve with the central core A, and the casings are of such a size relative to the core that there will be an annular space left between the continuous ring H and the casing F, and in this annular space are arranged at intervals blocks I, which blocks are secured to the central core

A by means of screws J, passing downward through the blocks, through the continuous ring H, and threaded in the central core A between the divided rings C. Thus it will be seen that the central core A, the continuous ring H, and blocks I may all revolve with the main shaft B; but the casings D and F and also the divided ring C will remain stationary, and the casings F are secured to the base K.

L is the main steam-inlet pipe, and the valve L' controls the inlet of steam. Branching out from this pipe L are two branch pipes M and N. Each pipe extends through the casing F at a tangent, one upon one side of the center and the other upon the other, and each pipe contains a valve M' and N', respectively, for controlling the flow of steam through the pipe. Directly opposite the inlet-pipe L is an exhaust-port O, which extends from the annular chamber between the continuous ring H and the casing F. Thus it will be seen that if the valves L' and M' are open and the valve N' closed the steam will issue through the pipe M and enter the annular chamber at a tangent, and thus impinge upon the blocks I, fill the pockets between the blocks, and cause the same to revolve, and the steam will remain in the pockets until it reaches the exhaust-port O, when it will be exhausted. Each pocket as it comes opposite the pipe M will be filled with steam. By closing the valve M' and opening the valve N' the engine will be reversed and will revolve in the opposite direction. Between the blocks I and the outer casing F is interposed packing P to prevent the escape of the steam around the blocks.

Of course it will be understood that the engine will be provided with a governor for regulating the inflow of steam and also that the valves M' and N' may be throttle-valves and controlled by a lever instead of ordinary globe-valves, as here shown, and it will also be understood that although I have mentioned steam as the motive power the engine could be operated also by water or compressed air.

Of course I do not wish to be limited to the exact construction here shown, as slight modifications could be made without departing from the spirit of my invention.

Having thus fully described my invention, what I claim as new and useful is—

1. In a rotary engine, a main shaft, a central core secured to said main shaft, divided  
5 rings surrounding the core upon each side, stationary side plates to which the divided rings are secured, a circular casing joining the periphery of the side plates, a continuous ring surrounding the central core and the di-  
10 vided rings, blocks secured at intervals to the continuous ring and also to the central core, said blocks lying in the space between the continuous ring and the outer casing, two steam-inlet pipes entering the outer casing at  
15 a tangent, and an exhaust-port opposite the steam-inlet, as and for the purpose specified.

2. In a rotary engine, a main shaft, a central core secured to said main shaft, divided  
20 rings surrounding the central core upon each side, the width of said rings being such as to allow a portion of the core between the rings to extend outward flush with the periphery of the rings, stationary side plates, bolts passing through the side plates into the divided  
25 rings, a continuous ring surrounding the central core and the divided rings, an annular

outer casing interposed between the side plates and secured to the same by means of bolts passing through the side plates into the annular casing, said annular casing so ar- 30 ranged as to leave an annular space between the continuous ring of said casing, blocks arranged at intervals within this annular space, screws passing downward through the blocks, through the continuous ring and threaded 35 in the central core, a base formed with the annular casing, two inlet-ports extending through the annular casing at a tangent, one at one angle and the other at the opposite angle, suitable valves for controlling the flow of 40 the motive fluid, an exhaust-port opposite the inlet-ports, and suitable packing between the revolving and the stationary ports, as and for the purpose specified.

In testimony whereof I have hereunto af- 45 fixed my signature in the presence of two subscribing witnesses.

FRANK GOUGER.

Witnesses:

ELMER E. NICHOLS,  
HARRY HEGEMANN.