

(No Model.)

2 Sheets—Sheet 1.

J. C. EDMUNSON.
ROTARY ENGINE.

No. 309,296.

Patented Dec. 16, 1884.

FIG. 1.

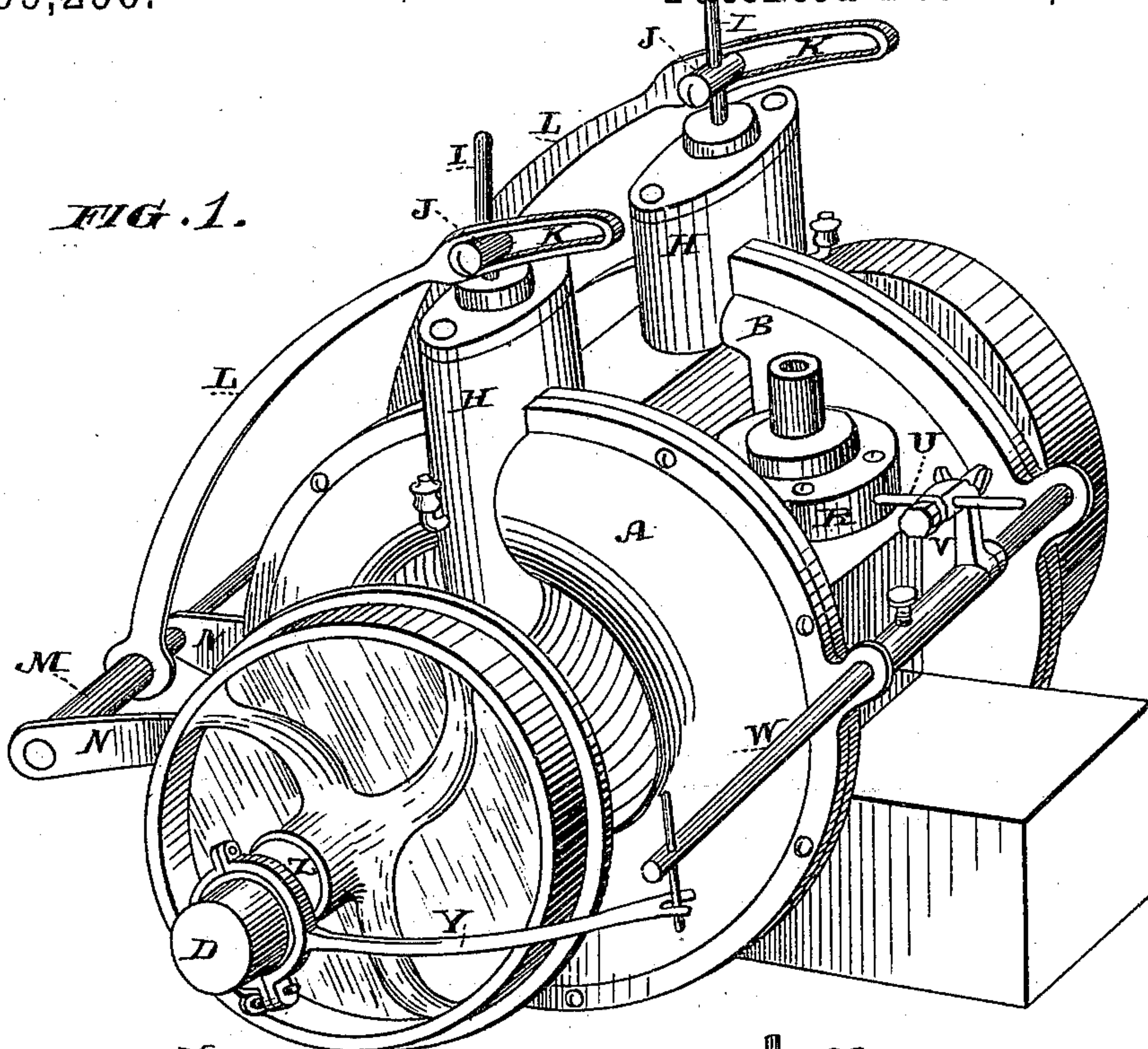
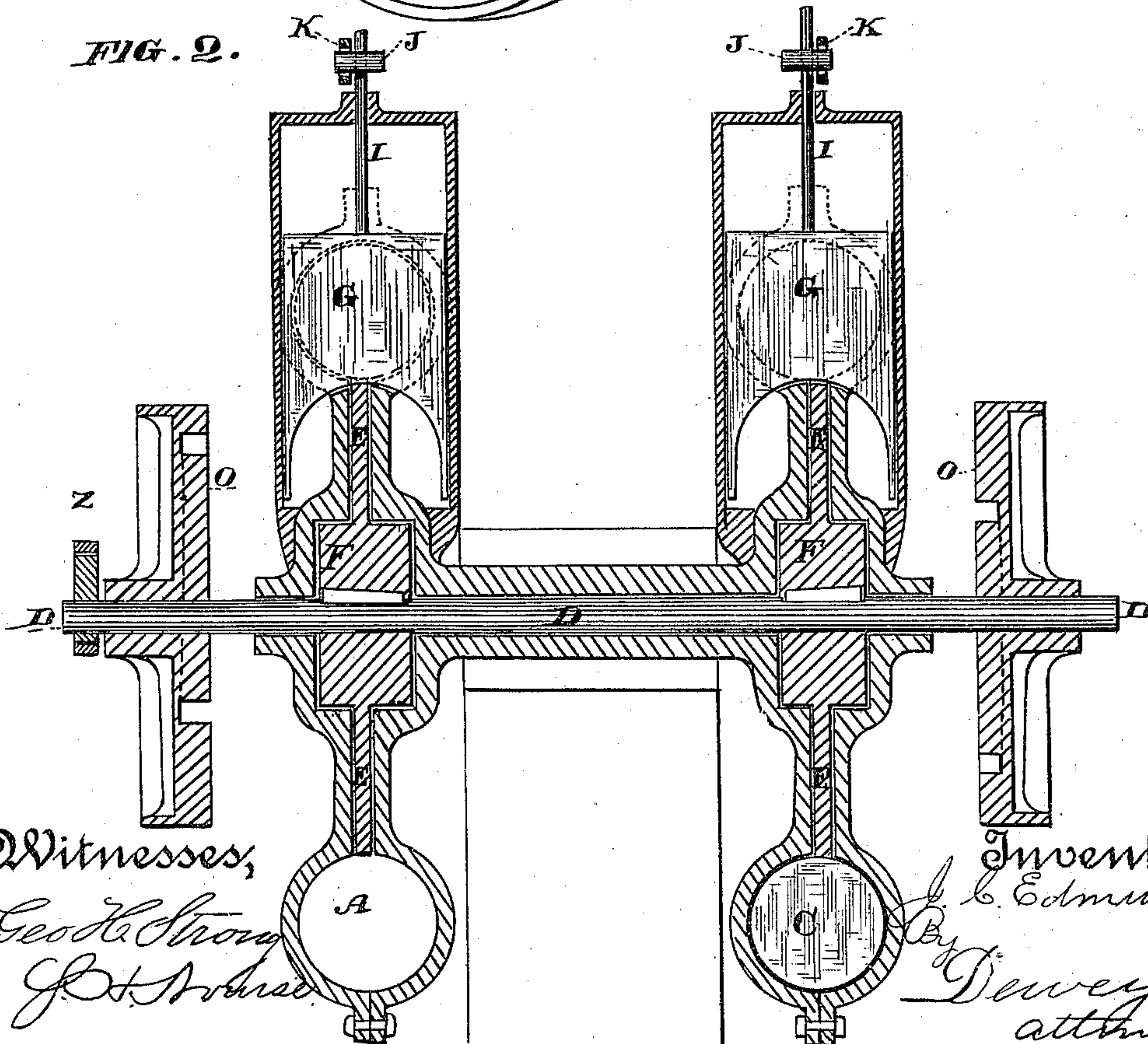


FIG. 2.



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2 Sheets—Sheet 2.

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FIG. 3.

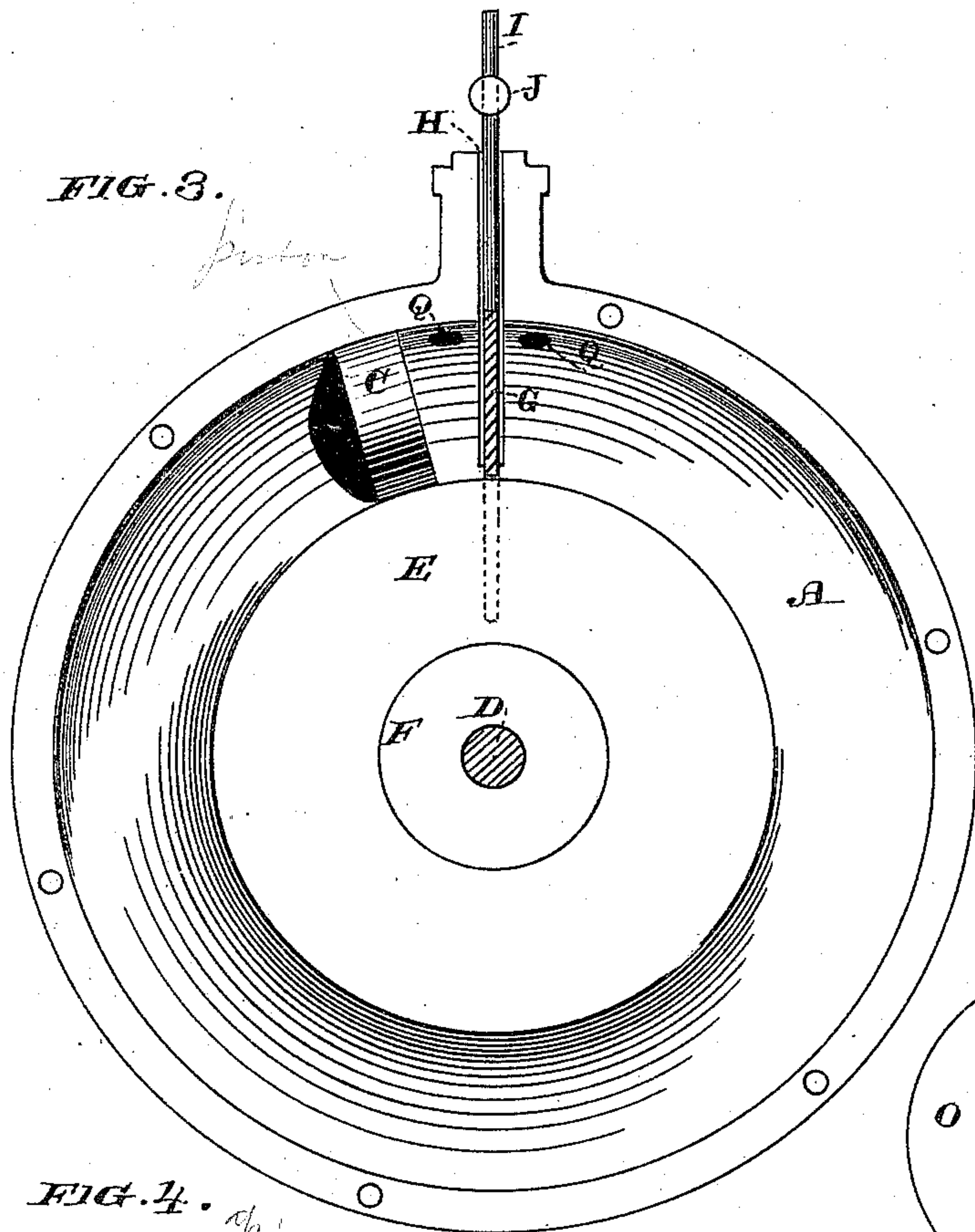


FIG. 5.

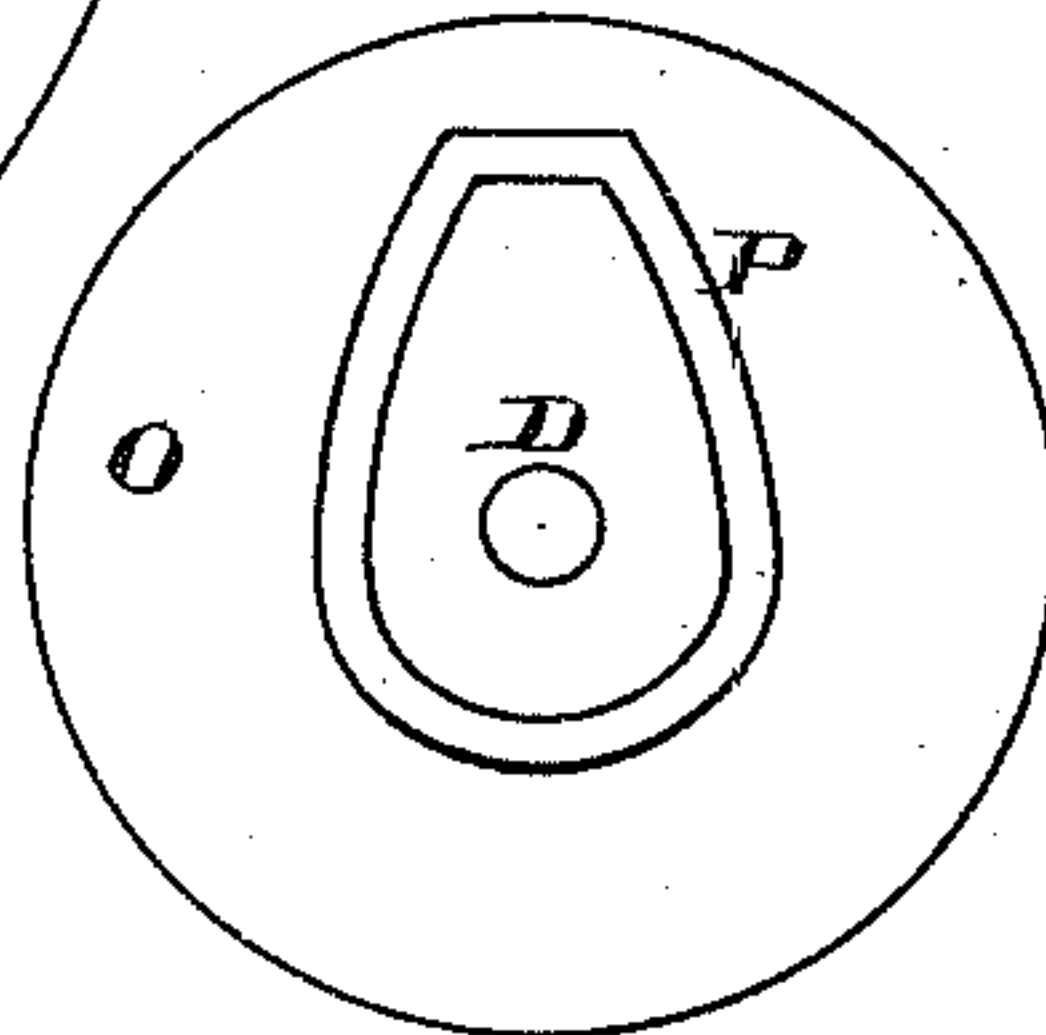
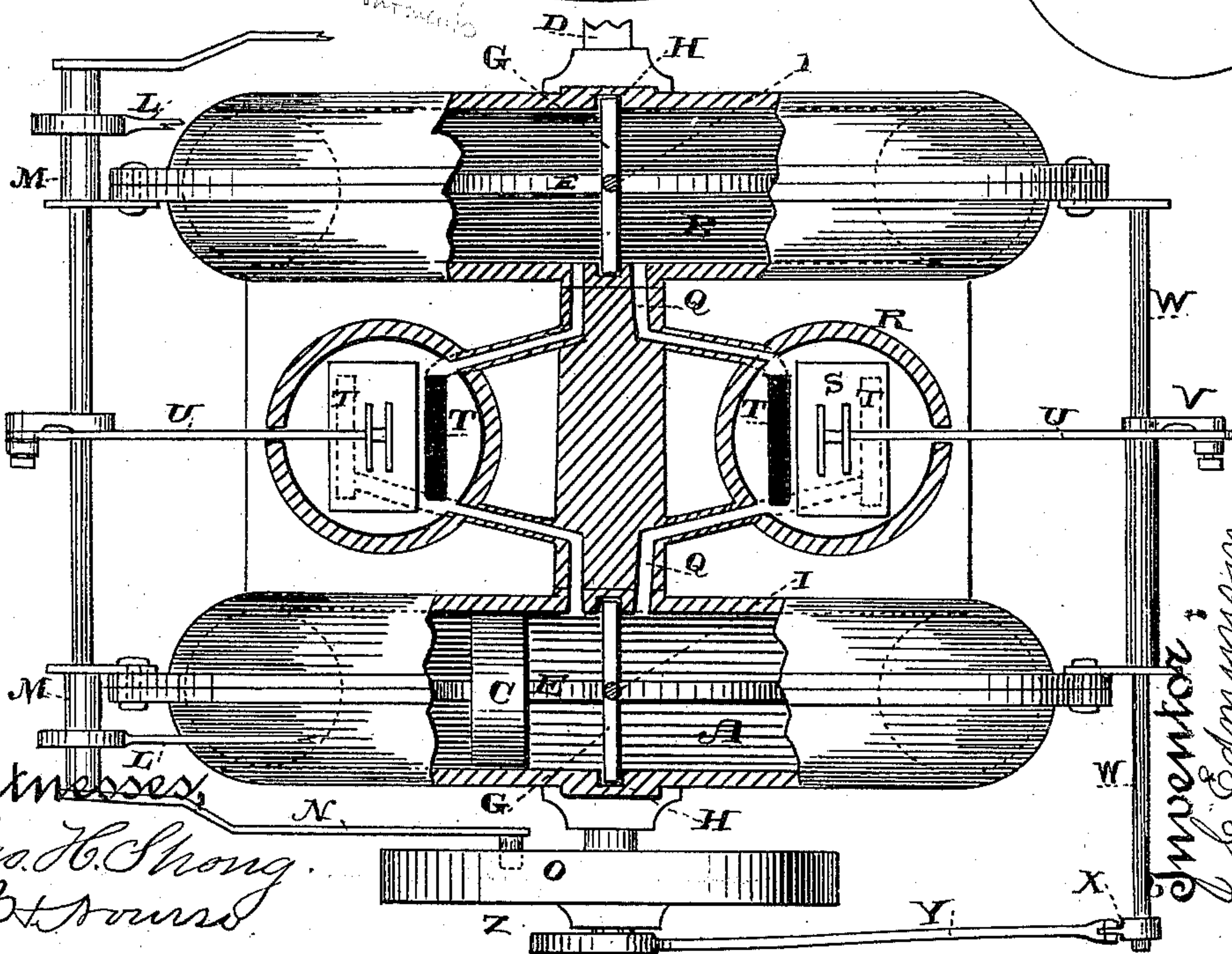


FIG. 4.



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UNITED STATES PATENT OFFICE

JOHN COLEMAN EDMUNSON, OF SALINAS, CALIFORNIA, ASSIGNOR OF ONE-EIGHTH TO IRA B. TUCKER, OF SAME PLACE.

ROTARY ENGINE.

SPECIFICATION forming part of Letters Patent No. 309,296, dated December 16, 1884.

Application filed June 2, 1884. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. EDMUNSON, of Salinas, in the county of Monterey and State of California, have invented an Improvement in Rotary Engines; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in rotary engines; and it consists of a pair of annular chambers, each of which has a piston adapted to revolve within it, and both pistons are connected by disks with a single central shaft which extends through the casings of both disks, so that the two operate together. In connection with these chambers and pistons is a valve-chamber, a valve by which steam may be admitted alternately to one chamber or the other, and a means for operating said valve connected with the main engine-shaft, vertically-moving gates which alternately rise, so as to open a passage in the chamber to allow the pistons to pass, and are closed behind the pistons, to act as abutments between which and the pistons steam may act to drive the latter around in the chambers, and cams and connecting mechanism from the main shaft, by which these abutments are operated.

Referring to the accompanying drawings for a more complete explanation of my invention, Figure 1 is a perspective view of my apparatus. Fig. 2 is a vertical section taken through the two annular chambers in a plane through the axis of the engine-shaft. Fig. 3 is a vertical section taken transversely to the shaft through one of the annular chambers, showing pistons and abutment. Fig. 4 is a plan view showing part of the chambers broken away, with the sliding abutment, one piston, and the valve-chamber with the cover removed, so as to show the valve. Fig. 5 is a view of one of the cams by which the abutments are operated.

A and B are two annular chambers, within which pistons C may fit with suitable packing-rings, so that they may be driven around within these chambers by the action of steam or any other medium under pressure. These annular chambers may be supported in such a manner that the central shaft, D, may pass

through the two and have the pistons of each connected with it, carrying also an eccentric by which the valve may be moved, and cams by which the abutments may be operated. The pistons C have their inner edges secured to the disk E, which has projecting hubs F upon each side. The disk E fits between the sides of that portion of the annular chamber which is interior to the channel traversed by the piston, and the hubs F project into chambers formed for them, as shown in Fig. 2. These hubs may be secured to the shaft D by set-screws or in any other desired manner, so that when the pistons are driven around in their chambers they will also carry the disk E, with their hubs F, and the shaft D.

G G are sliding plates or abutments, which in the present case I have shown working in vertical channels H above the piston-chambers A and B, and having stems I extending up through stuffing-boxes, so that they may be driven by suitable attachment. From these stems I lugs or pins J project horizontally and fit in slots K in the ends of the curved arms L, as shown in Fig. 1. The opposite ends of these arms are secured to shafts M, suitably journaled with relation to the engine, and having arms N extending inward toward the engine-shaft.

O O are disks, Figs. 2 and 5, having irregular cam-shaped channels or grooves P formed in their inner faces, and pins having anti-friction rollers upon them project from the arms N into these grooves or channels P, so that when the cams O are rotated by the movement of the shaft D these pins will follow the slots and the arms M (and with them the shaft N and arms L) will be moved. One of these cams and its accompanying arms are connected with each of the stems I of the abutments which cross the chambers A and B, and their operation is such that one will be opened while the other is closed. When the abutment in one of the engines has been closed, steam is admitted between the abutment and the piston C, which passes this point just before the abutment closes, and the steam will then act to drive the piston around the circle of the annular chamber A until it reaches a point near the abutment, when the latter will again be

raised to allow it to pass and close behind it. Suitable ports, Q, are arranged for the admission of steam, and also for the escape of the steam after it has done its work, and after the
5 abutment has again been closed behind the piston. Each abutment moves loosely in its chamber while the steam-pressure is off. It will be seen that the second valve and mechanism makes the engine reversible.

10 R is a valve-chamber having valve S working within it. This valve may be of the ordinary slide pattern, and may work over two ports, T, one of which admits steam to one of the chambers, A, and the other to the chamber
15 B. This valve is operated by a stem, U, from a rock-shaft, V, upon a shaft, W, and another cranked arm, X, upon this shaft has a rod, Y, connecting with an eccentric, Z, by which it is operated and the valve moved.

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

1. The annular casings A and B, fixed side by

side, having a single shaft extending through the center of both, disks E, secured thereto 25 and carrying pistons C, the vertical sliding abutments G, having stems I, with projecting pins J, together with slotted arms L, within which these pins work, rock-shaft M, with the arms N, and the cam-disks O, fixed to the 30 main shaft, substantially as herein described.

2. The annular chambers A and B, fixed side by side, having the main shaft D extending through their centers, pistons C, connected therewith, so as to receive them alternately, 35 the abutments G and operating mechanism, together with the ports Q and valve S, operating within the chamber R, eccentric upon the main shaft, and intermediate connecting mechanism, substantially as herein described. 40

In witness whereof I have hereunto set my hand.

JOHN COLEMAN EDMUNSON.

Witnesses:

W. T. GILKEY,

E. TALBBE.