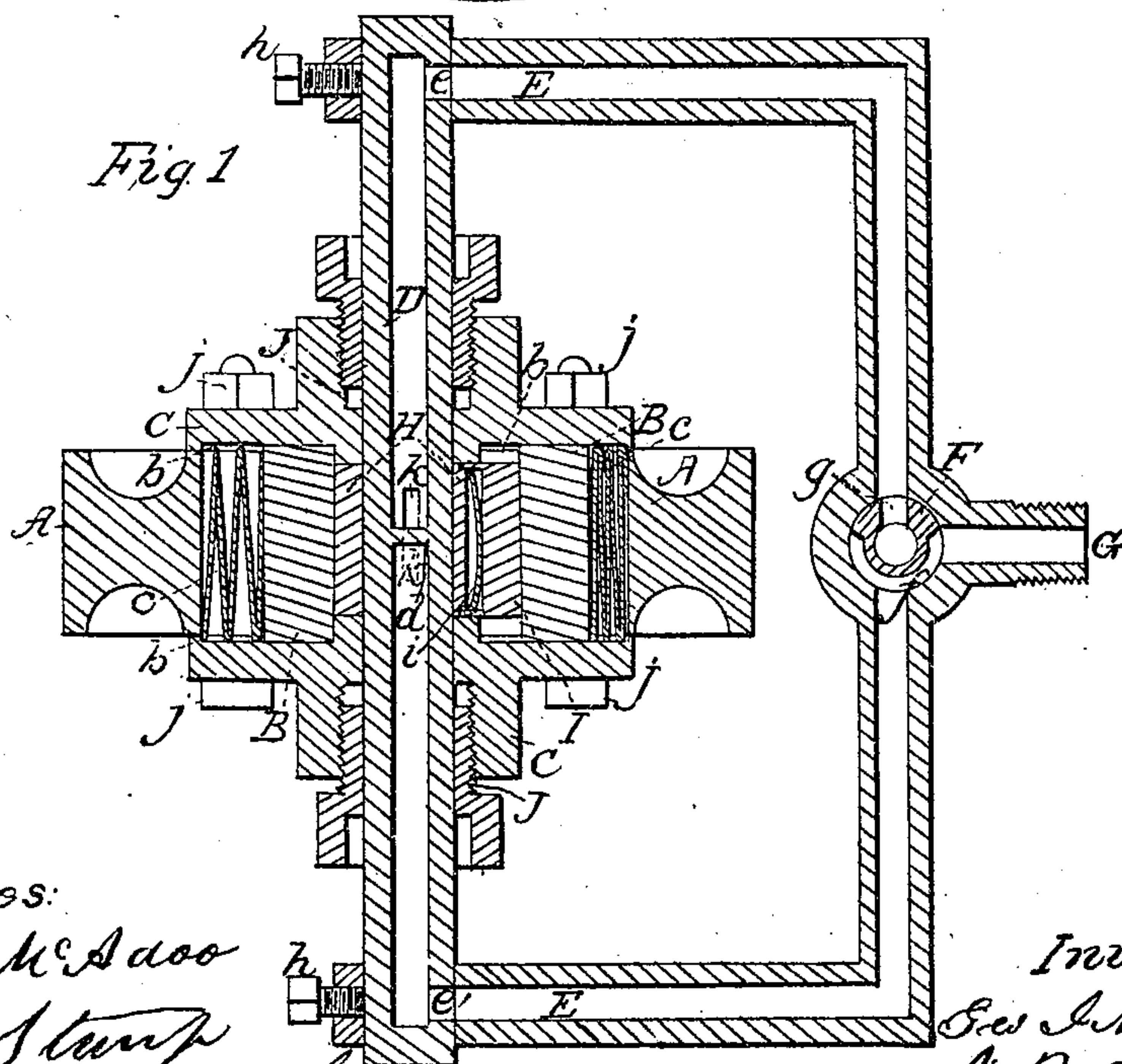
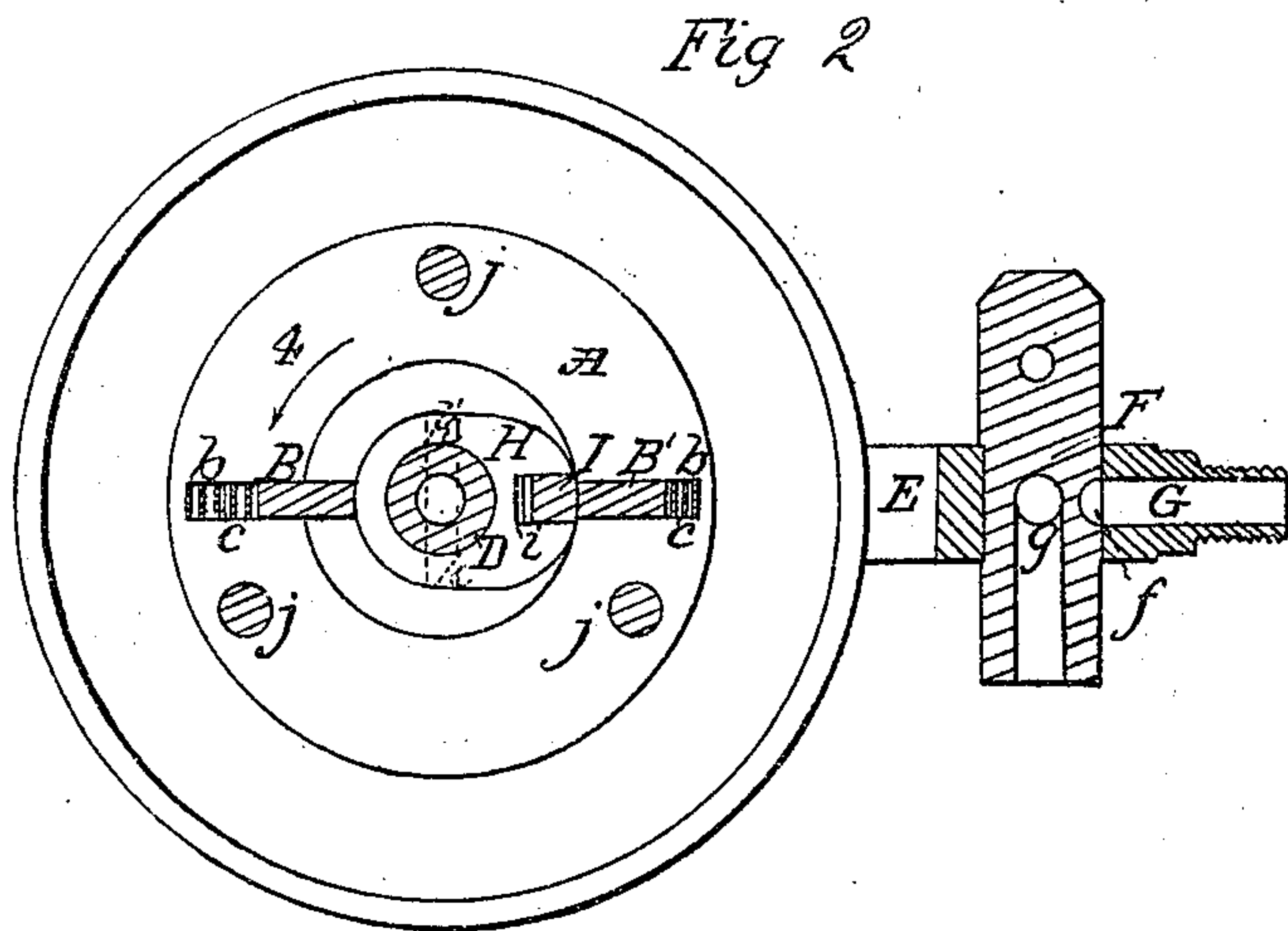
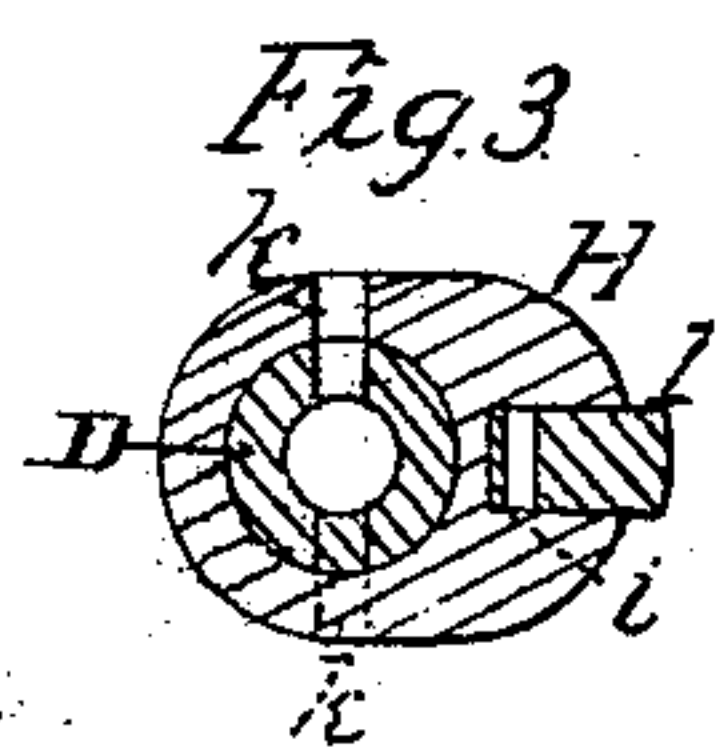


G. J. MOUNTJOY & J. B. SAWYER.  
ROTARY ENGINE.

25,133.

Patented Aug. 16, 1859.



Witnesses:

J. D. McAloo  
J. P. Stump  
A. D. Orwash

Inventor:

G. J. Mountjoy  
J. B. Sawyer



# UNITED STATES PATENT OFFICE.

GEORGE J. MONTJOY AND J. B. SAWYER, OF HOUSTON, TEXAS.

## ROTARY STEAM-ENGINE.

Specification of Letters Patent No. 25,133, dated August 16, 1859.

*To all whom it may concern:*

Be it known that we, GEORGE J. MONTJOY and JOEL B. SAWYER, both of Houston, in the county of Harris and State of Texas, have invented a new and Improved Rotary Engine to be Operated by Steam or other Fluid; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a central section of the engine. Fig. 2, is a section taken perpendicularly to the shaft close within one of the side plates of the cylinder. Fig. 3, is a transverse section of the shaft and abutment.

Similar letters of reference indicate corresponding parts in the several figures.

Our invention consists in a rotary engine with a certain novel arrangement of passages and a reversing cock or valve, in combination with the passages in a stationary hollow shaft and abutment, and with a suitable system of pistons, which makes it simple in its construction and enables it to work with little friction.

To enable others to make and use my invention we will proceed to describe its construction and operation.

A, (Figs. 1 and 2), is the cylinder, bored truly and concentrically, as shown at *a, a*, in Fig. 1, and having at opposite points two deep, radial, parallel, faced grooves *b, b*, to receive the two sliding pistons B, B', at the backs of which springs *c, c*, are applied within the grooves to press the said pistons toward the center of the cylinder.

C, C, are side plates bolted by bolts *j, j*, to the ends of the cylinder, and closing up both the bore *a, a*, and the ends of the grooves *b, b*. Each of these plates is fitted with a stuffing box J, for the main shaft D, to pass through.

The main shaft D, is made entirely hollow with the exception of being closed at its ends and having a transverse partition *d*, opposite to the middle of the length of the cylinder; and near each end of the shaft there is an opening *e*, or *e'*, leading into one of the hollow branches or arms E, E', of a double elbow piece, which arms are united with opposite sides of the seat of a cock F, to which is connected the main induction pipe G. The plug of the cock F, contains two passages, viz: one *f* in the form of a

groove extending half way around it opposite to the pipe G, and branches E, E', and the other *g*, of angular form extending from a point opposite the branches E, E', through one of its ends. The passage *f*, is for the induction, and *g*, is for the eduction. The two branches of the double elbow piece E, E', are bored transversely to fit the ends of the shaft and are secured thereon by set screws *h, h*. On opposite sides of the partition *d*, of the main shaft there are two passages *k, k'*, leading through the abutment into the cylinder, said passages being directed opposite ways and terminating in the opposite flat surfaces of the abutment.

H, is the abutment, fast on the main shaft and extending from one of the side plates C, C, to the other and having its transverse section of the nearly elliptical form shown in Figs. 2 and 3, that is to say having two corresponding semi-circular portions opposite to each other united by a parallel sided portion, one of the said semi-circular portions being concentric with the shaft and the other in contact or nearly so with the inner peripheral surface of the cylinder. This abutment is fitted with a packing piece I, which is kept out against the interior peripheral surface of cylinder by a spring *i*. The pistons B, B', are always kept in contact with the abutment H, by their respective springs *c, c*. The shaft with its abutment and the double elbow piece E, E', are all to be made stationary by some suitable means of securing them.

In the condition of the cock F, shown in Fig. 1, the steam or other fluid which acts as the motive agent enters by the pipe G, and passage *f*, of the cock into the arm E', of the double elbow piece and from thence passes through the passage *e'*, into the portion of the shaft at the lower part of Fig. 1, and from thence by the passage *k*, into the cylinder, and by its action on the two pistons B, B', alternately after they have respectively passed the passage *k*, causes the cylinder to rotate on its shaft in the direction of the arrow 4 shown upon it in Fig. 1, and the exhaust taking place from behind each piston as soon as it has passed the opposite passage *k'*.

By simply turning the cock half way round to make the passage *f*, form communication between the pipe G, and arm E, the movement of the engine will be reversed.

What we claim as our invention, and desire to secure by Letters Patent, is:—

The arrangement of the passages in the double elbow piece E, E', and the reversing  
5 cock or valve F, in combination with the passages in the stationary hollow shaft D, and its abutment H, the whole applied in connection with the cylinder and its sliding

pistons to operate substantially as herein described.

GEO. J. MONTJOY.  
JOEL B. SAWYER.

Witnesses:

J. D. McADOO,  
J. W. W. STRING,  
N. B. MARSH.