

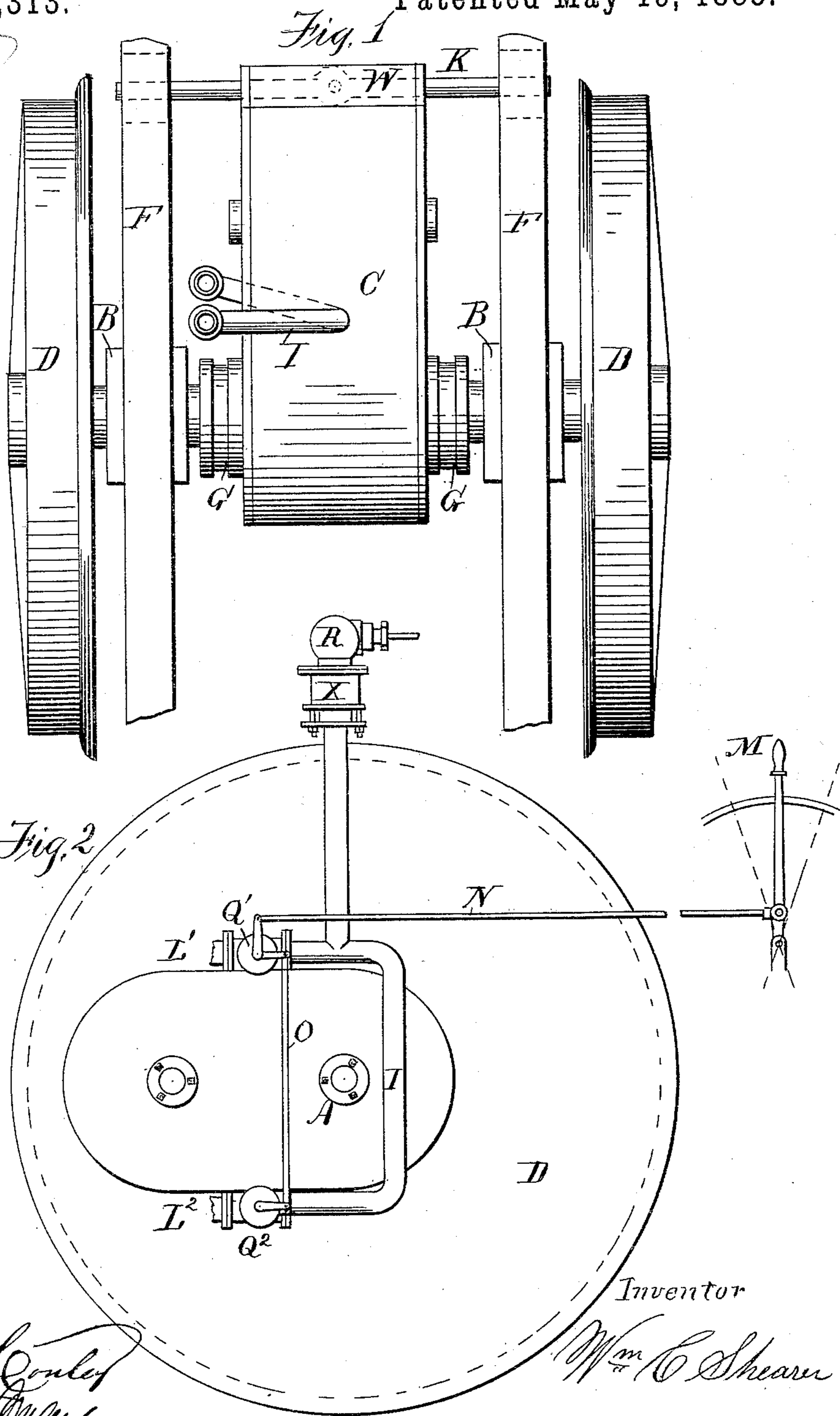
(No Model.)

3 Sheets—Sheet 1.

W. C. SHEARER.
LOCOMOTIVE ENGINE.

No. 318,313.

Patented May 19, 1885.



Witnesses:

John Coulter
Wm. S. May

Inventor

Wm. C. Shearer

(No Model.)

3 Sheets—Sheet 2.

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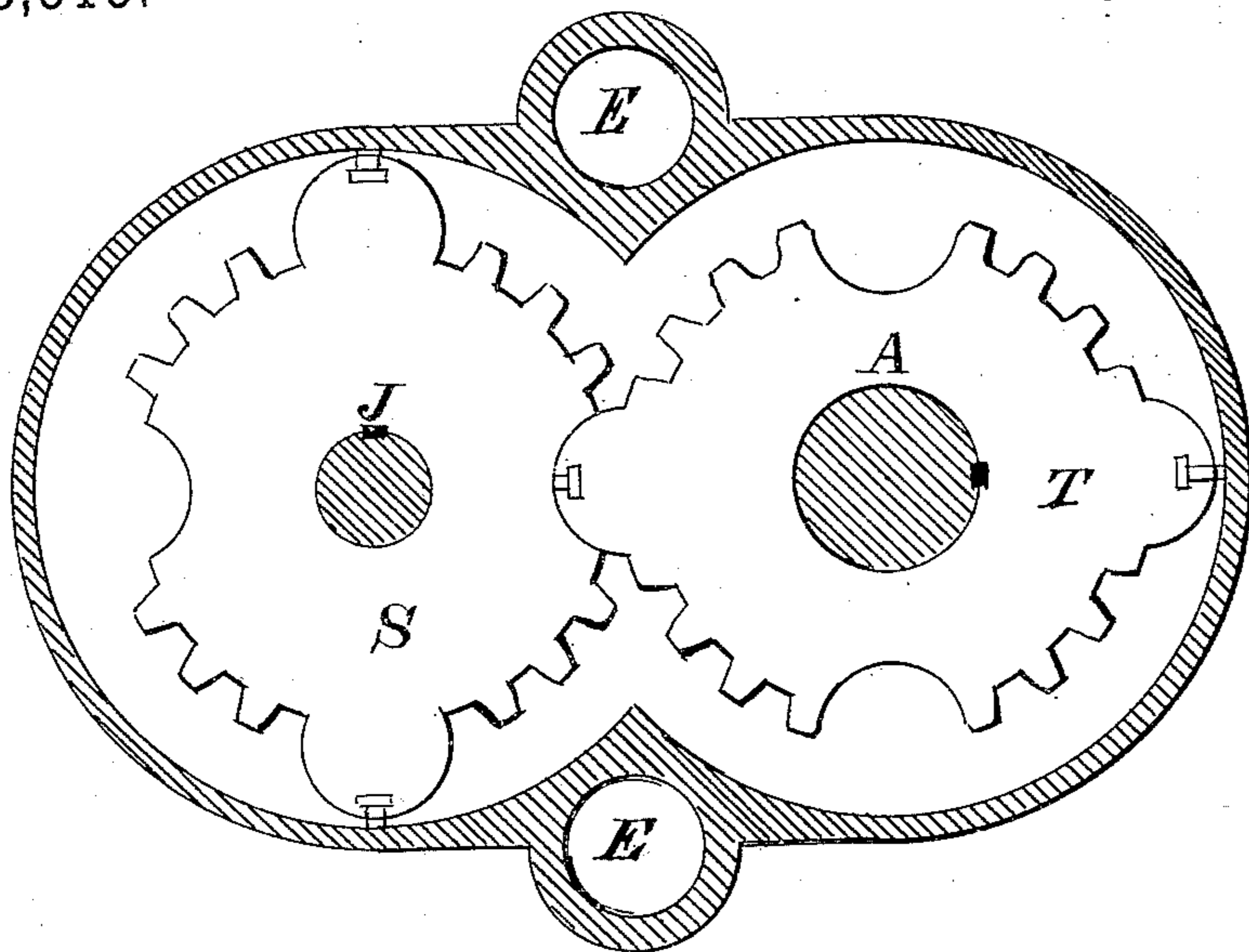


Fig 3

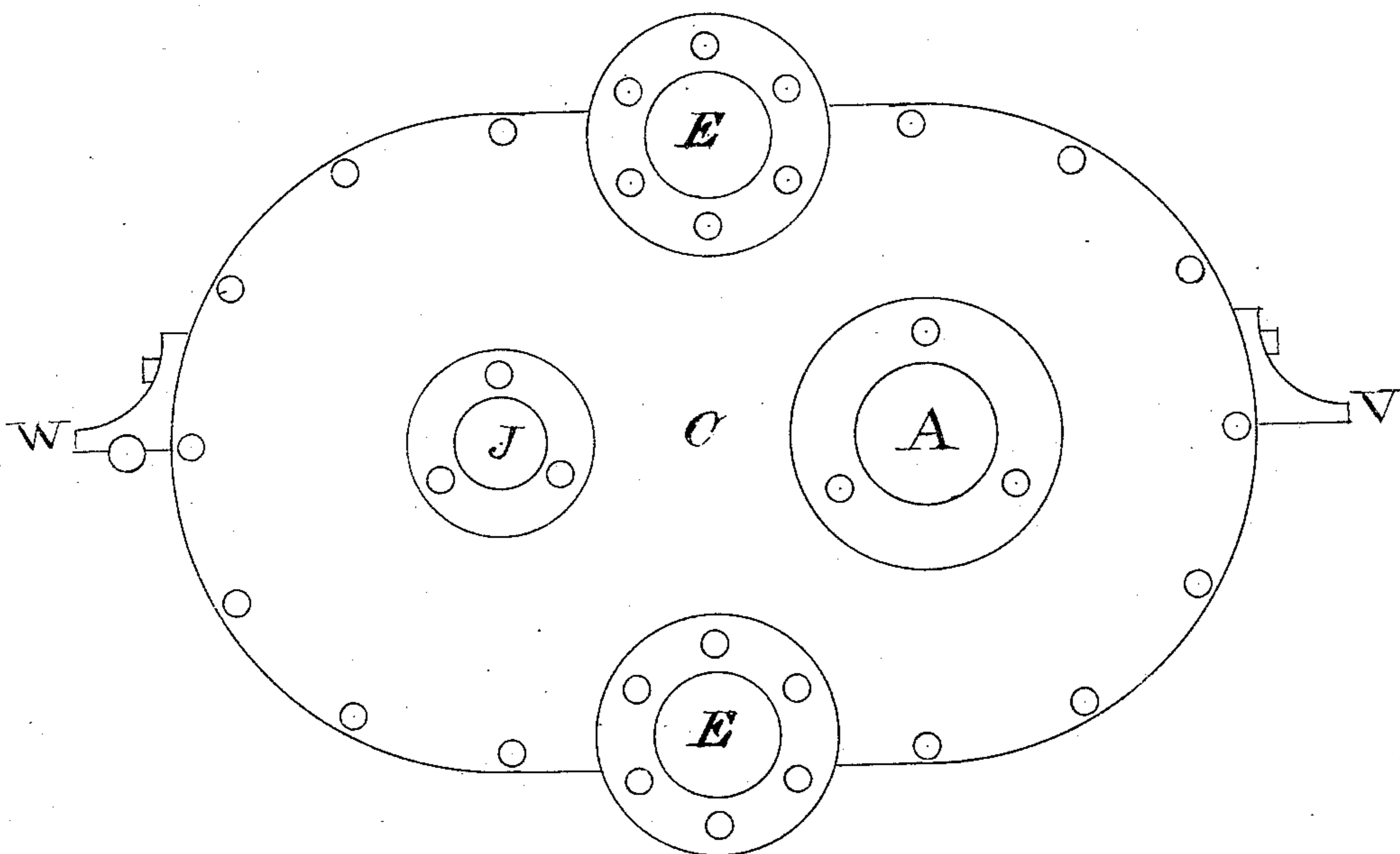


Fig 4

Witnesses,

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W. R. Hodgson

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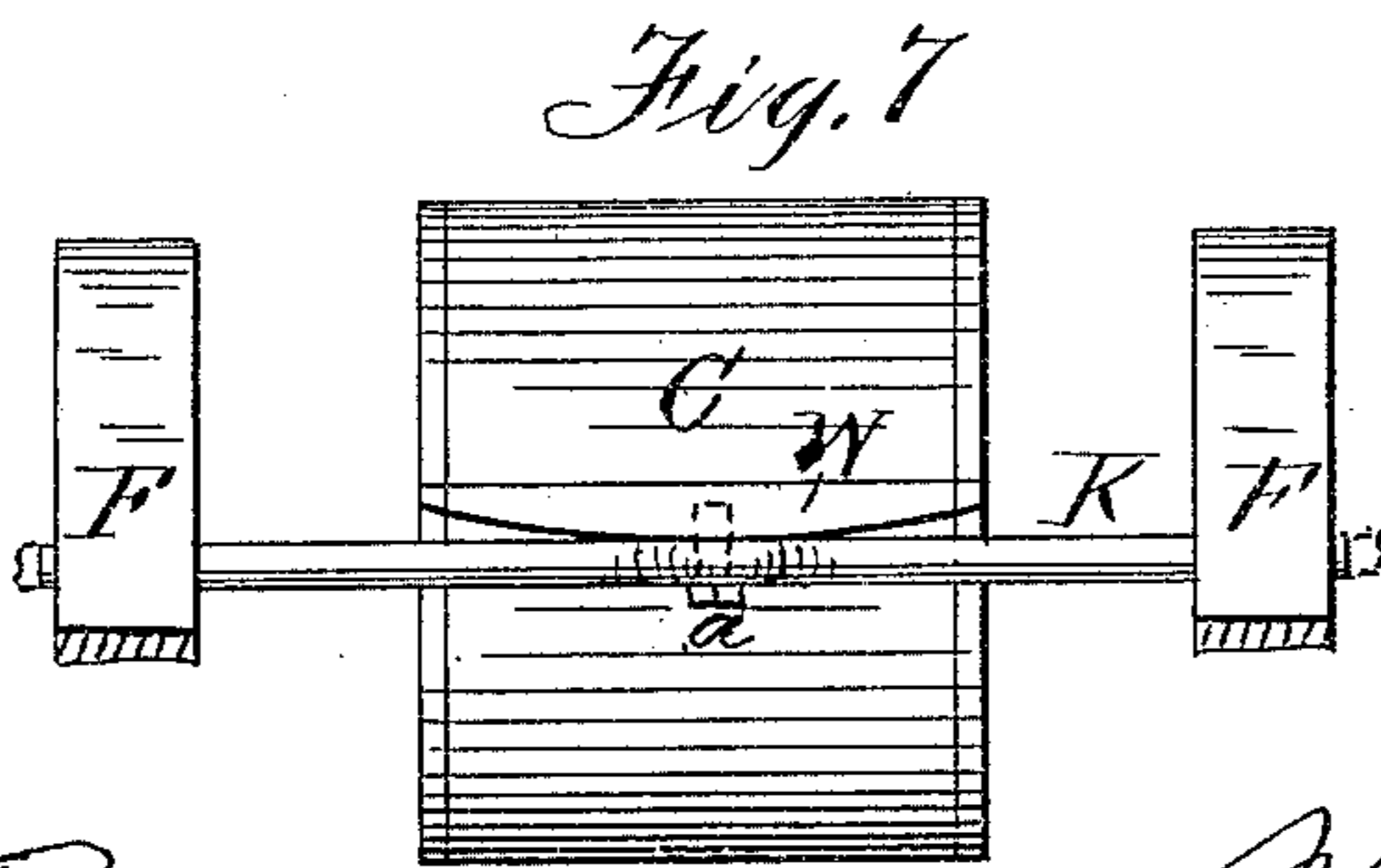
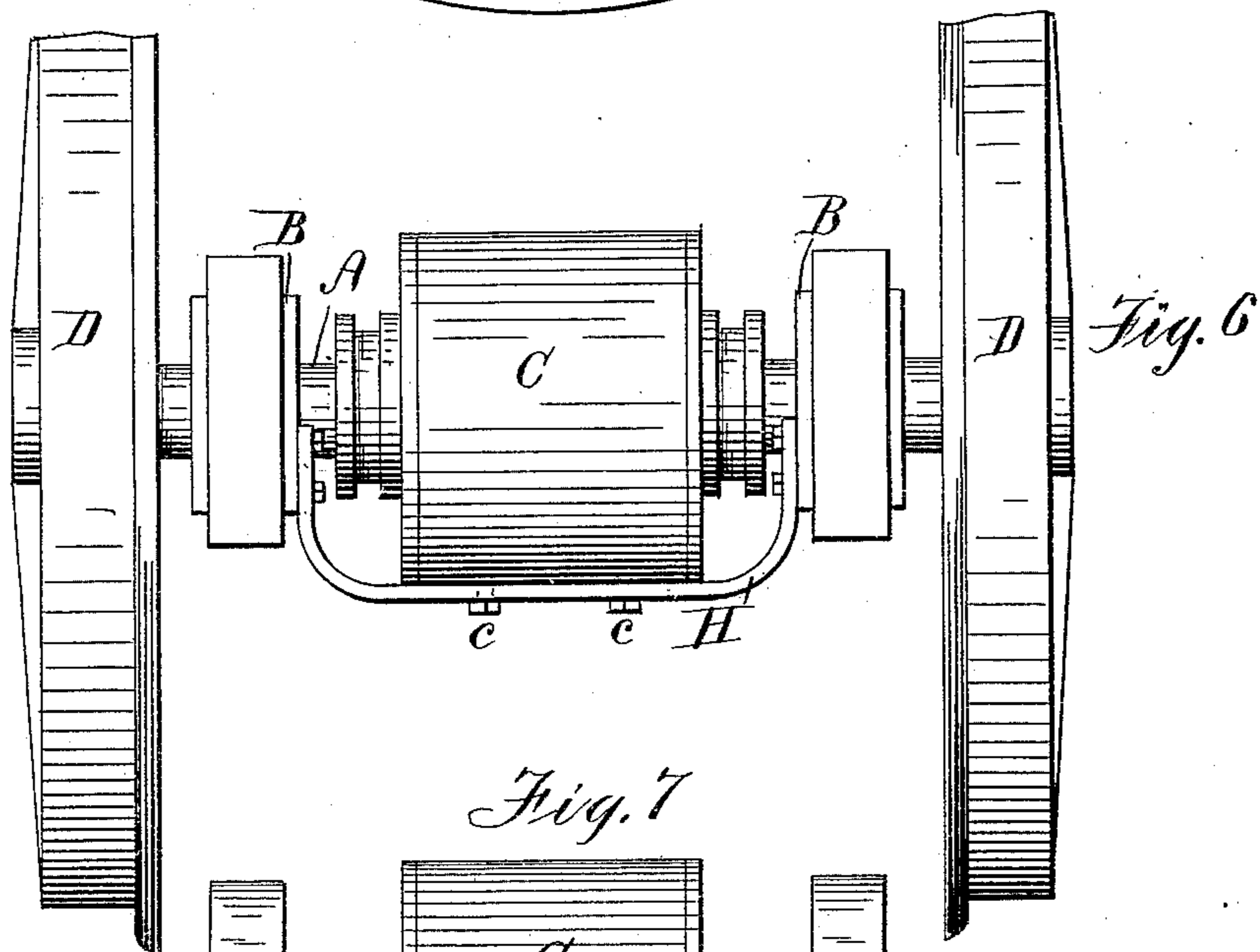
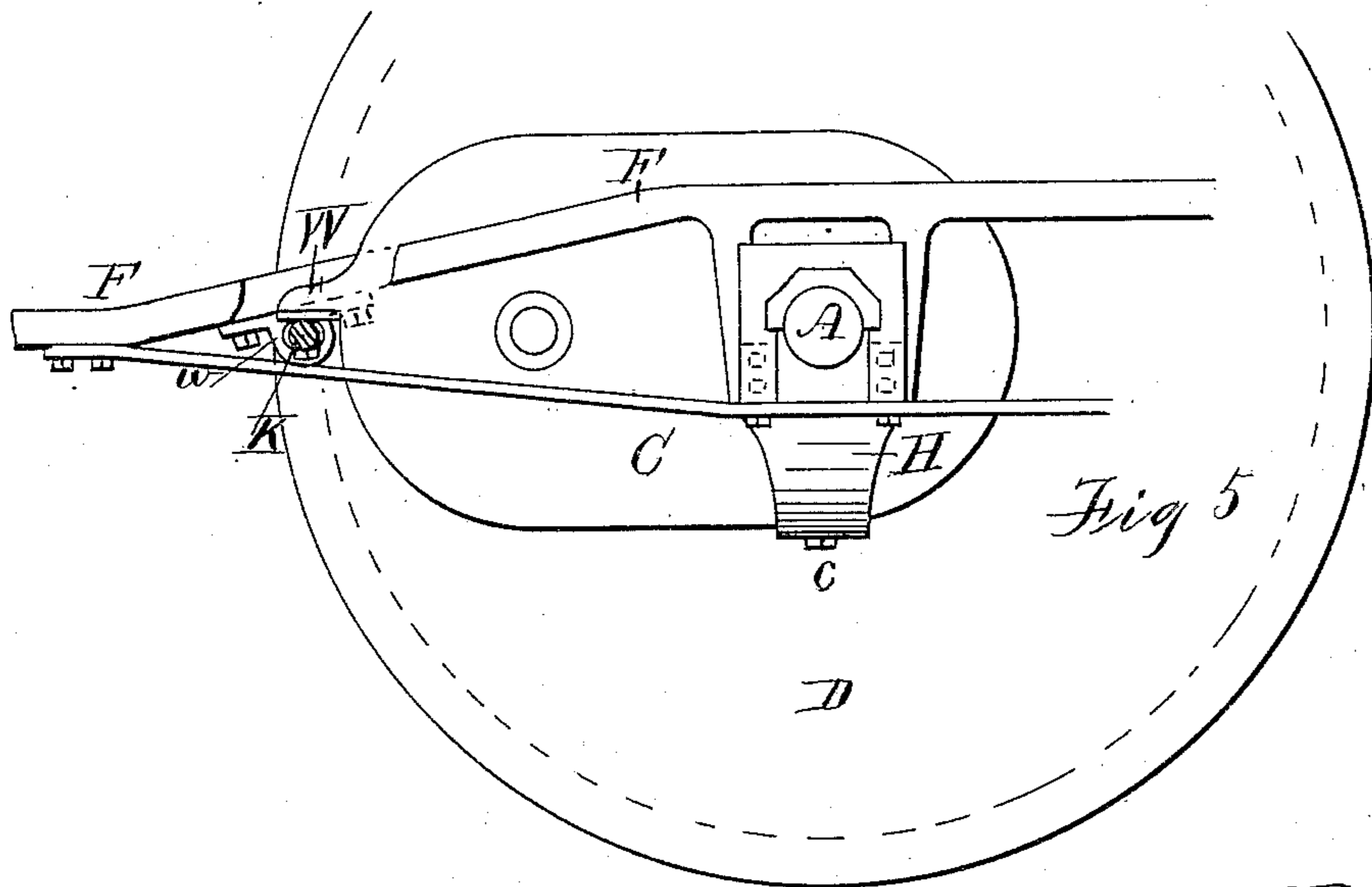
(No Model.)

3 Sheets—Sheet 3.

W. C. SHEARER.
LOCOMOTIVE ENGINE.

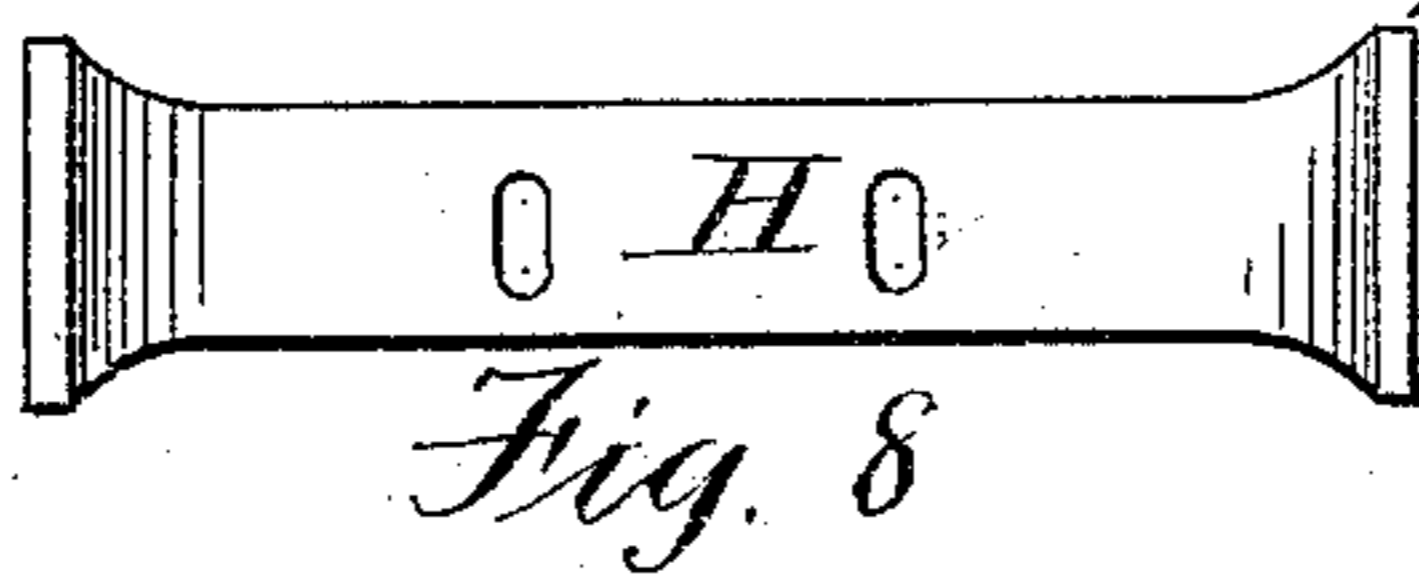
No. 318,313.

Patented May 19, 1885.



Witnesses
Benj. Conley
Robt. S. May

Inventor
Wm. C. Shearer



UNITED STATES PATENT OFFICE.

WILLIAM CHARLES SHEARER, OF ATLANTA, GEORGIA, ASSIGNOR OF ONE-HALF TO ASA LYMAN HARRIS, OF SAME PLACE.

LOCOMOTIVE-ENGINE.

SPECIFICATION forming part of Letters Patent No. 318,313, dated May 19, 1885.

Application filed July 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM CHARLES SHEARER, of Atlanta, Georgia, have invented a new and useful Improvement for Railroad and other Locomotive-Engines, of which the following is a specification.

My invention relates to improvements in locomotive-engines in which rotary engines are attached to the driving-wheel axle; and it has for its object to better adapt the engine to all lateral, vertical, or torsional working of the engine-frame or the movement of the axle caused by the springs on uneven roads. The engine may be applied to one axle and the remaining driving-wheels attached together by the usual parallel rod, or an engine may be applied to each axle, as in either case they could be started, stopped, or reversed by a simple movement of one lever by which the valves are operated.

By my improvement the rotary engine is better adapted for locomotives, as it will last longer, run with less friction, and there is no momentum of the pistons, cross-heads, and connecting-rods to overcome and absorb part of the power.

My invention consists of novel features that will be fully described, and particularly pointed out in the claims.

Referring to the drawings, Figure 1 is a top view of my invention, showing the engine upon the shaft and the bar for supporting the end to the frame. Fig. 2 illustrates the position of the reversing-valves and their connection to the hand-lever. Figs. 3 and 4 are section and end views of a well-known form of rotary engine that I use to illustrate my improvements. Fig. 5 is a side elevation, showing the support for the forward end of engine to the frame. Fig. 6 is an end view, showing the brace supporting the after part of the engine, the ends of the brace being made fast to the axle-boxes. Fig. 7 is an opposite end view, showing the lug and supporting-bar for forward end of engine, and Fig. 8 is a top view of brace, showing slots for the fastening-bolts.

A is the axle or shaft of the driving-wheels, and B B are the axle-boxes, to which the brace

H is attached for sustaining the rear part of the engine C.

D D represent the driving-wheels.

E E, Fig. 3, represent the steam-ports to the engine, to which are attached the three-way cocks Q'-Q². The lever of the upper one is connected to the reversing-lever M by the rod N. Another lever, which is attached to the stem of valve Q', is connected to the lever of valve Q² by a rod, O. By moving the reversing-lever to one of the positions shown by dotted lines one valve will admit steam and the other exhaust, and the reverse takes place when the lever is moved in the other position. The exhaust escapes through one of the pipes L' L², depending upon whether the engines are running forward or backward, said pipes leading to the furnace or other suitable place.

The end of the steam-pipe I is connected to the throttle-valve R by a slip-joint, X, to permit of any movement between the boiler and the engine.

Upon the forward part of the engine, and about in line with its center, is formed a lug, W, by casting or otherwise, it being provided with a curved under face, which rests upon the bar K, the ends of which are supported in bearings w, that are bolted to the frame F F. The ends of the bar K are round, and are free to oscillate in their bearings should the after end of the cylinder rise or fall. The bar also has a longitudinal motion in its bearings, and the bolt a, which passes through the bar into the lug W, will move the bar laterally with the forward end of the engine.

It will be seen in Fig. 7 that the curved face of the lug will allow the engine to oscillate on the bar. From the foregoing it will be seen that any position the axle may take the engine will always keep in proper relation therewith.

To allow for any slight movement between the brace H and bar K, I make the holes oblong in the brace through which the fastening-bolts pass, as shown in Fig. 8.

It will be seen from the foregoing description and illustration by the drawings that my method of connecting or attaching a rotary engine to a locomotive will permit me to ob-

tain very high speed, as there is no position in which the engine will bind, thereby causing friction or damage.

What I desire to claim is—

- 5 1. The combination of a rotary engine mounted upon the driving-axle of a locomotive, with a lug on the forward part of the engine-cylinder, and a bar upon which the lug rests, said bar being supported by the engine-frame and free to oscillate or slide in its bearings, substantially as shown and described.
2. The combination of a rotary engine mounted upon the driving-axle of a locomotive, with a lug on the forward part of the engine-cylinder, provided with a curved face, a bar upon which the lug rests, and the engine-frame, substantially as shown and described.
3. The combination of a rotary engine

mounted upon the driving-axle of a locomotive, with a brace supporting the engine made 20 fast to the axle-boxes, and a compensating support for any movement of the engine at the forward end, substantially as shown and described.

4. The combination of a rotary engine 25 mounted upon the driving-axle of a locomotive, with a brace for supporting the engine, the bolt-holes of the said brace being elongated, the axle-boxes, the lug on the forward part of the engine-cylinder, the supporting-bar, 30 and its bearings, substantially as shown and described.

WILLIAM CHARLES SHEARER.

Witnesses:

JNO. L. CONLEY, -

W. R. HODGSON.