

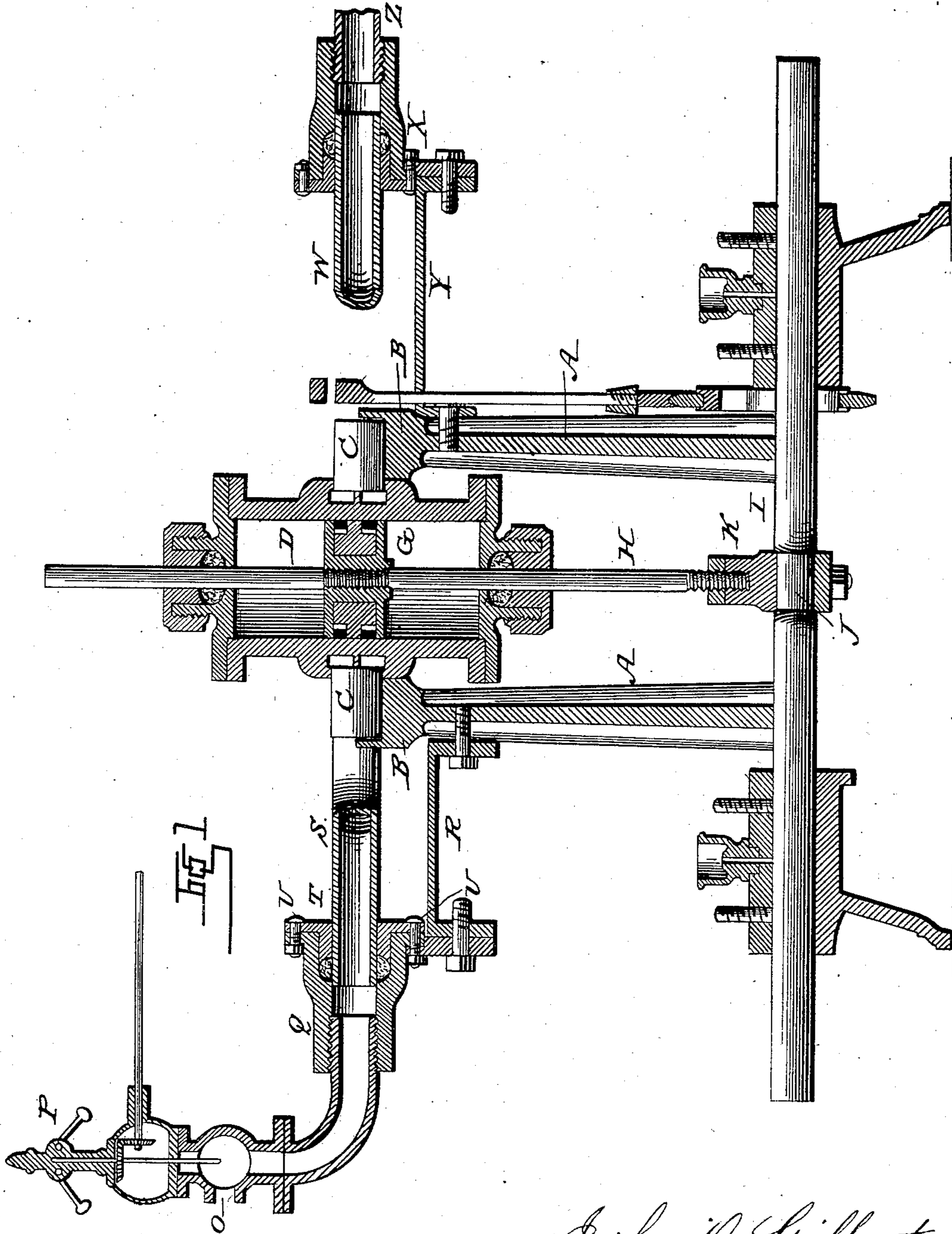
(No Model.)

2 Sheets—Sheet 1.

J. O. GILBERT.
OSCILLATING ENGINE.

No. 294,219.

Patented Feb. 26, 1884.



WITNESSES:

Ad. L. Dietrich
Wm. J. Scher

John O. Gilbert
INVENTOR.
By *Louis Bagger & Co.*
ATTORNEYS.

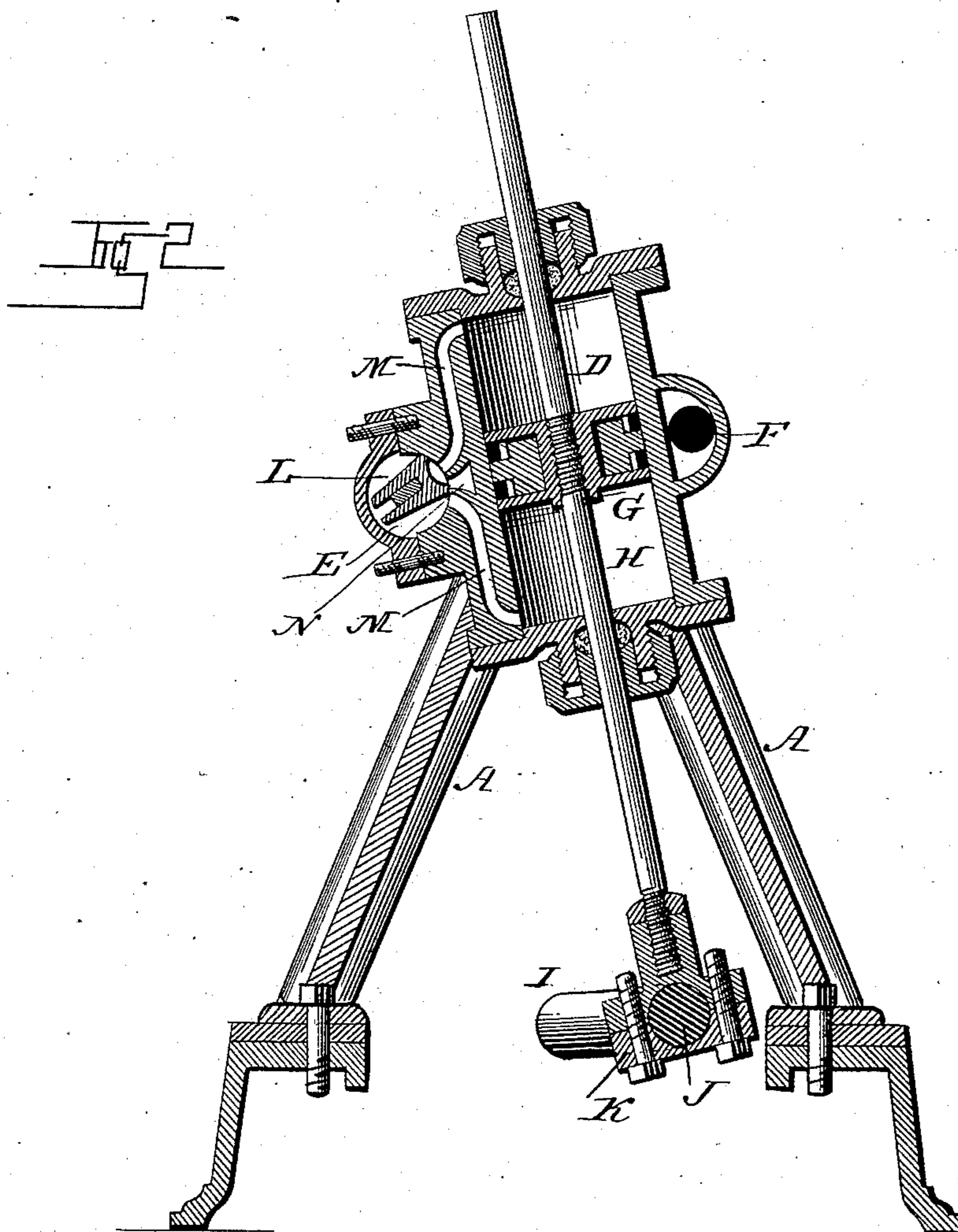
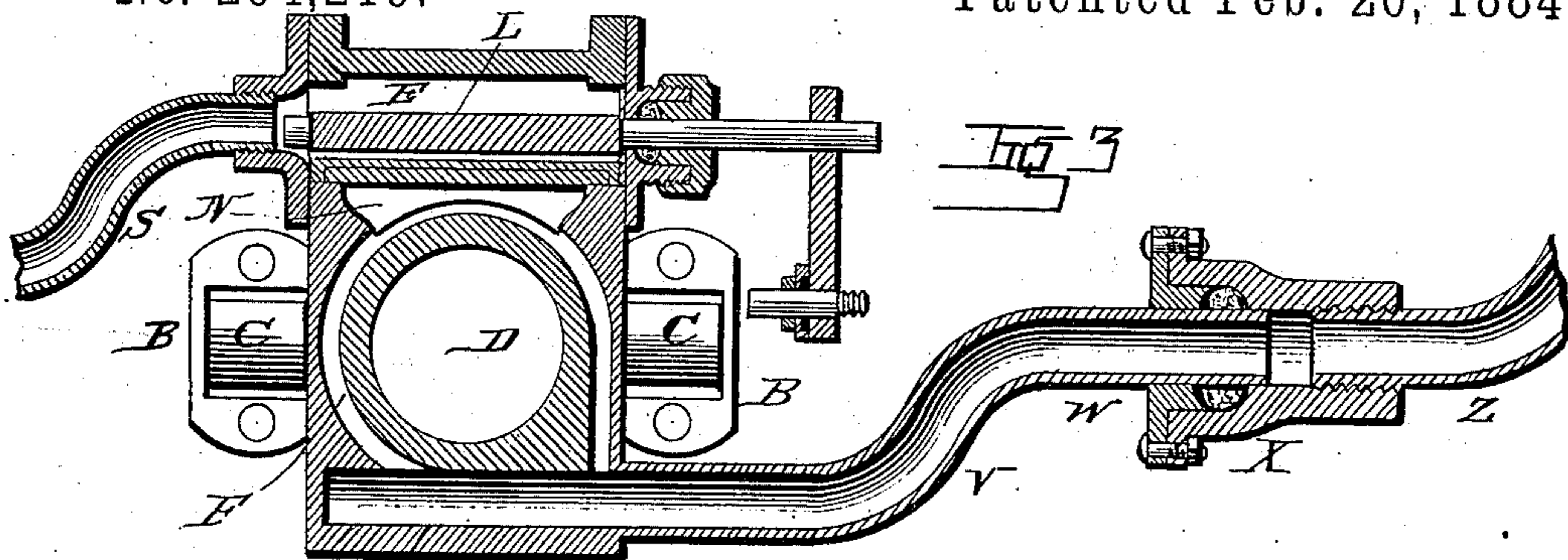
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UNITED STATES PATENT OFFICE.

JOHN OAKLEY GILBERT, OF HOUSTON, TEXAS.

OSCILLATING ENGINE.

SPECIFICATION forming part of Letters Patent No. 294,219, dated February 26, 1884.

Application filed September 4, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN O. GILBERT, a citizen of the United States, and a resident of Houston, in the county of Harris and State of Texas, have invented certain new and useful Improvements in Oscillating Engines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a vertical sectional view of my improved oscillating engine, taken through the shaft. Fig. 2 is a similar view at right angles to Fig. 1, and Fig. 3 is a horizontal section of the same through the trunnions and the feed and exhaust pipes.

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

My invention has relation to oscillating steam-engines; and it consists in the improved construction and combination of parts of such an engine, in which the steam is fed into the steam-chest from the feed-pipe, which is concentric with the trunnions, through a curved pipe turning in a stuffing-box at the end of the feed-pipe and entering the steam-chest upon the side of the cylinder, and in which the steam is exhausted through a similar pipe into an exhaust-pipe concentric with the other trunnion, as hereinafter more fully described and claimed.

In oscillating engines in which the steam passes through tubular trunnions, the latter must necessarily be of a larger diameter than solid trunnions, which increases the friction-surface largely, the hollowing out of the trunnions weakening the same considerably, which necessitates their being made of a comparatively large diameter; and to obviate this inconvenience and give the cylinder a solid support I construct my engine, as will now be described.

In the accompanying drawings, the letters A A indicate supports, which form bearings or boxes B B at their upper ends, in which the trunnions C C of the cylinder D are journaled or rock. The cylinder is of the usual construction, forming a valve-chest, E, which is

preferably cylindrical at one side, and forming an exhaust-channel, F, around its middle opening at a point diametrically opposite to the valve-chest.

G is the piston. H is the piston-rod, and I the shaft having a crank, J, to which the cross-head K of the piston-rod is hinged. A slightly wedge-shaped valve, L, rocks in the cylindrical valve-chest, distributing the steam from the live-steam pipe around the valve into the cylinder through two steam-channels, M, opening in the steam-chest, the exhaust-steam passing through a port, N, between the steam-ports into the exhaust-channel.

O is the feed-pipe, which is provided with a governor, P, of the usual construction, and with a stuffing-box, Q, at its end which is opposite to and concentric with one of the trunnions, the said stuffing-box being supported by a bracket, R, extending from one of the supports, or by any other suitable means. A curved live-steam pipe, S, opening at one end into the valve-chest, fits and rocks with its other end into the stuffing-box upon the end of the feed-pipe, and is provided with a cap, T, which closes the stuffing-box and makes the joint perfectly tight, being held in place by bolts U or similar means. The curved portion V of the exhaust-pipe W opens at one end into the exhaust-channel diametrically opposite to the valve-chest, and fits with its other end into a stuffing-box, X, supported by a bracket, Y, and fastened upon the end of the exhaust-pipe proper, Z, which end is opposite to and concentric with the other trunnion of the engine, forming a steam-tight joint, similar to the joint upon the steam-pipe. It will thus be seen that the cylinder will be supported and rocked upon its solid trunnions, and the steam fed and exhausted through the curved rocking live-steam and exhaust pipes being distributed by the valve, which may be operated by an eccentric disk and rod, or by any other suitable means.

Having thus described my invention, I claim and desire to secure by Letters Patent of the United States—

1. An oscillating steam-engine having its trunnions solid, and having a curved live-steam pipe and exhaust-pipe opening at op-

posite sides of the cylinder at one end, and opening at their other ends into stuffing-boxes upon the ends of the feed and exhaust pipes rocking in the same, the said boxes being opposite to and concentric with the trunnions, as and for the purpose shown and set forth.

2. An oscillating engine having a curved live-steam pipe opening into the valve-chest upon the side of the cylinder, and having the other end of the said pipe turning in a stuffing-box opposite to and concentric with one of the trunnions of the cylinder and fastened upon the end of the feed-pipe, as and for the purpose shown and set forth.

3. An oscillating engine having a curved

portion of its exhaust-pipe opening into the exhaust-channel upon the side of the cylinder, and having its other end fitting and rocking into a stuffing-box upon the end of the exhaust-pipe opposite to and concentric with a trunnion of the cylinder, as and for the purpose shown and set forth.

In testimony that I claim the foregoing as my own I have hereunto affixed my signature in presence of two witnesses.

JOHN OAKLEY GILBERT.

Witnesses:

CASPAR BRAUN,

FRANK BERAUGUARD DWYER.