

H. CHAVOUS.

Improvement in Oscillating-Engines.

No. 132,251.

Patented Oct. 15, 1872.

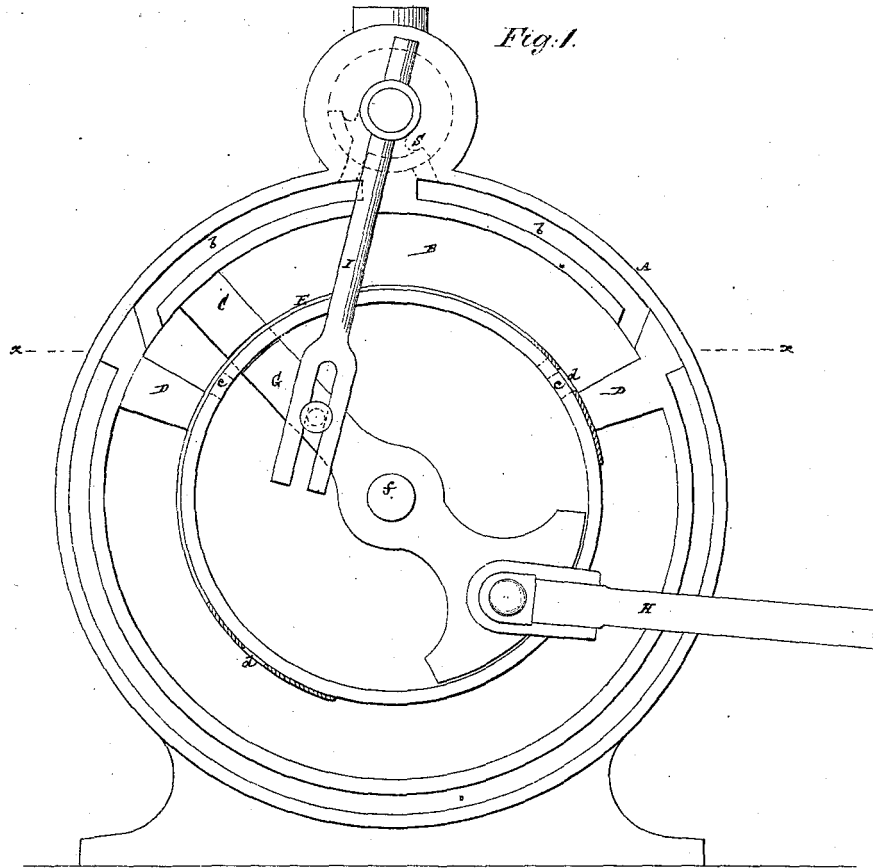


Fig. 1.

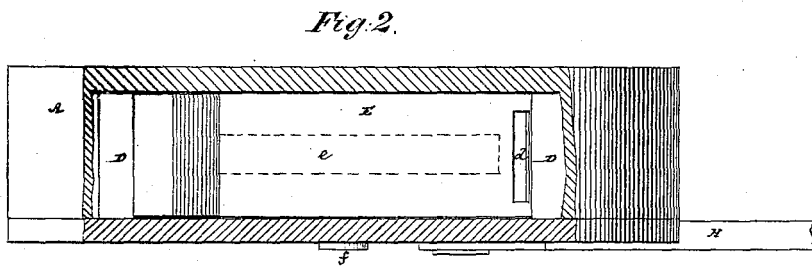


Fig. 2.

Witnesses:
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UNITED STATES PATENT OFFICE.

HILLY CHAVOUS, OF UNION CITY, INDIANA, ASSIGNOR TO HIMSELF AND
WILLIAM P. DE BOLT, OF SAME PLACE.

IMPROVEMENT IN OSCILLATING ENGINES.

Specification forming part of Letters Patent No. 132,251, dated October 15, 1872.

To all whom it may concern:

Be it known that I, HILLY CHAVOUS, of Union City, in the county of Randolph and State of Indiana, have invented an Improvement in Steam-Engines, of which the following is a specification:

This invention relates to that class of engines in which the piston moves in the arc of a circle; and consists in a novel combination of parts, including one or more segmental chambers or cylinders and piston or pistons to match; a valve or valves for controlling the admission of steam; a perforated plate connected with the piston for controlling the exhaust and for establishing a close connection between the piston and a lever through which power is communicated from the piston, whereby great simplicity, economy, and efficiency are obtained.

In the accompanying drawing which forms part of this specification, Figure 1 represents an interior side view of an engine constructed in accordance with my invention, and Fig. 2 a horizontal section of the same at the line *x x* in Fig. 1.

Similar letters of reference indicate corresponding parts in both figures of the drawing.

A is the main frame or case that may be of cylindrical form with a pedestal or base portion to stand upon, and which has one or more segmental chambers, B, within it accordingly as the engine is required to be single or double acting—that is, accordingly as it is fitted with one piston or duplicate pistons—a valve or valves, and parts to correspond, said chambers, if two are used, being arranged on opposite sides or top and bottom of the case, but both pistons having a like leverage. It will suffice here, however, to describe a single-piston arrangement. The main portion of the interior of the case may be left open and only the segmental chamber or chambers be covered in by a removable side plate or lid. The segmental chamber B is fitted with a piston, C, that reciprocates or moves to and fro in the arc of a circle between end blocks or abutments D D, accordingly as steam is admitted

to and exhausted from opposite sides of the piston.

The steam is admitted by passages *b b* in the outer peripheral portion of the case, said passages being connected with the segmental chamber B at or near its ends, and being controlled by a slide, oscillating, or any other suitable form of inlet-valve, S, operated by the engine to admit steam alternately to either passage *b b*. An oscillating valve, similar to that patented to A. Trew, March 16, 1869, may, if desired, be used.

The steam is exhausted from opposite sides of the piston alternately by outlets *c c* through the inner peripheral portion of the case, accordingly as either one of two orifices, *d d*, in a circular plate, E, connected with the piston and moving over or round the inner periphery of the case, is brought over or in line with either outlet *c*. The plate E also serves to make a close or steam-tight connection between the piston C and a lever, G, to which power is communicated from the piston, said lever, at its connection with the piston, working through and along a slot, *e*, in the inner peripheral portion of the case, which slot, as the piston reciprocates the plate E, serves to cover or prevent leakage through. The lever G has its fulcrum at *f*, and has pivoted to it, on the reverse side of its axis to which the piston is arranged, a rod, H, that either directly or indirectly, through a pitman, serves to operate the crank of the main shaft of the engine, or to perform any other work that may be required. The connection of the rod H with the lever G is made closer to the fulcrum *f* than is the piston or follower C, in order that the piston may work at an advantageous leverage relatively to the point at which the power is communicated from the engine. This difference of leverage may be varied at pleasure.

I is a lever, connected with the lever G by an adjusting-screw or otherwise, for operating the valve S that controls the admission of steam to opposite sides of the piston alternately.

An engine thus constructed combines sim-

plicity with cheapness of construction, economy of action, and a large amount of power together with neatness of appearance.

What is here claimed, and desired to be secured by Letters Patent, is—

1. The combination of the curvilinear reciprocating plate E, provided with ports *d d*, with the oscillating lever G and the ports *c c*, for operation as shown and described.

2. The combination of one or more pistons, C, and segmental chambers B, inlet valve or valves S, and passages *b b*, the plate E with its ports *d d*, the outlets *c c*, and the lever G, for operation substantially as specified.

HILLY CHAVOUS.

Witnesses:

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