

(No Model.)

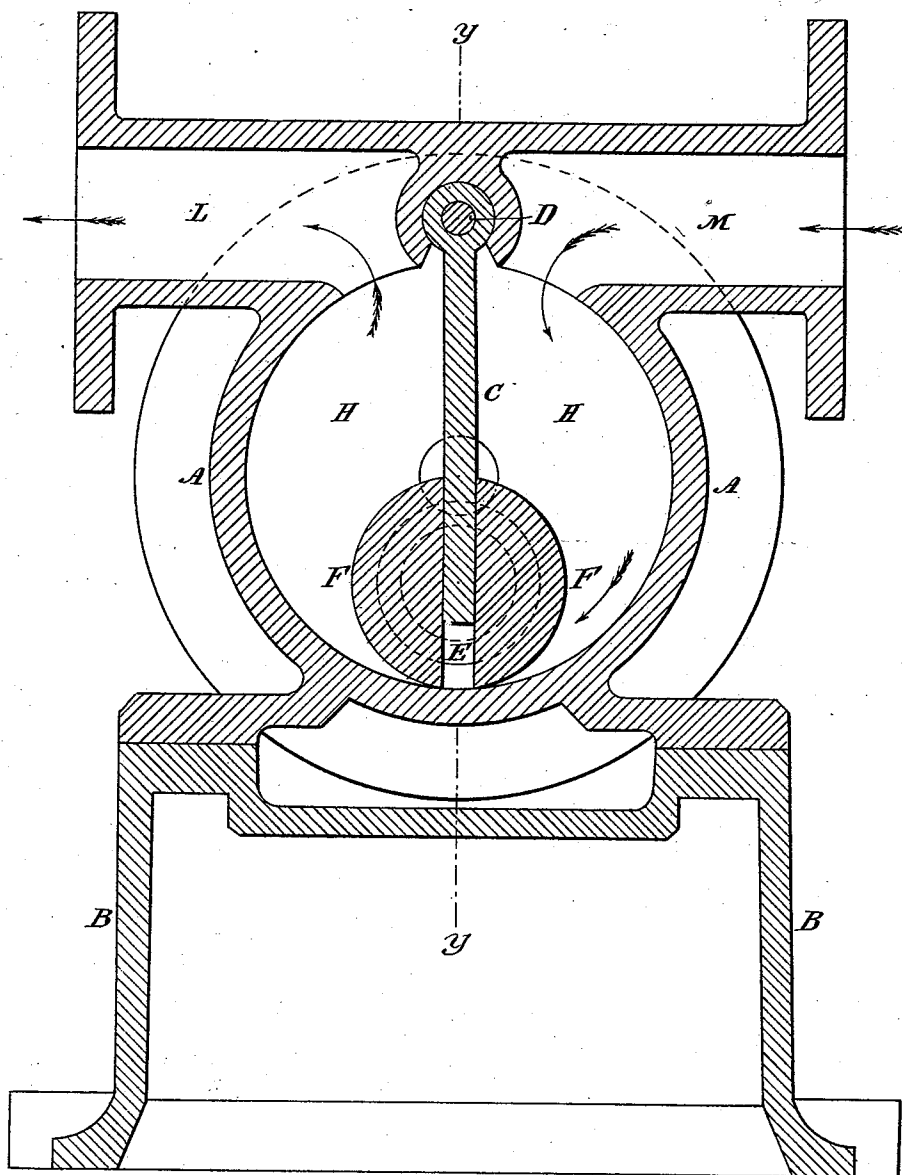
2 Sheets—Sheet 1.

S. MELLOR.
Rotary Engine or Pump.

No. 236,173.

Patented Jan. 4, 1881.

FIG. 1



ATTEST:

E. B. Bolton
A. M. Fraser

INVENTOR:

Samuel Mellor
by his Attys.
Burke, Fraser & Connells.

(No Model.)

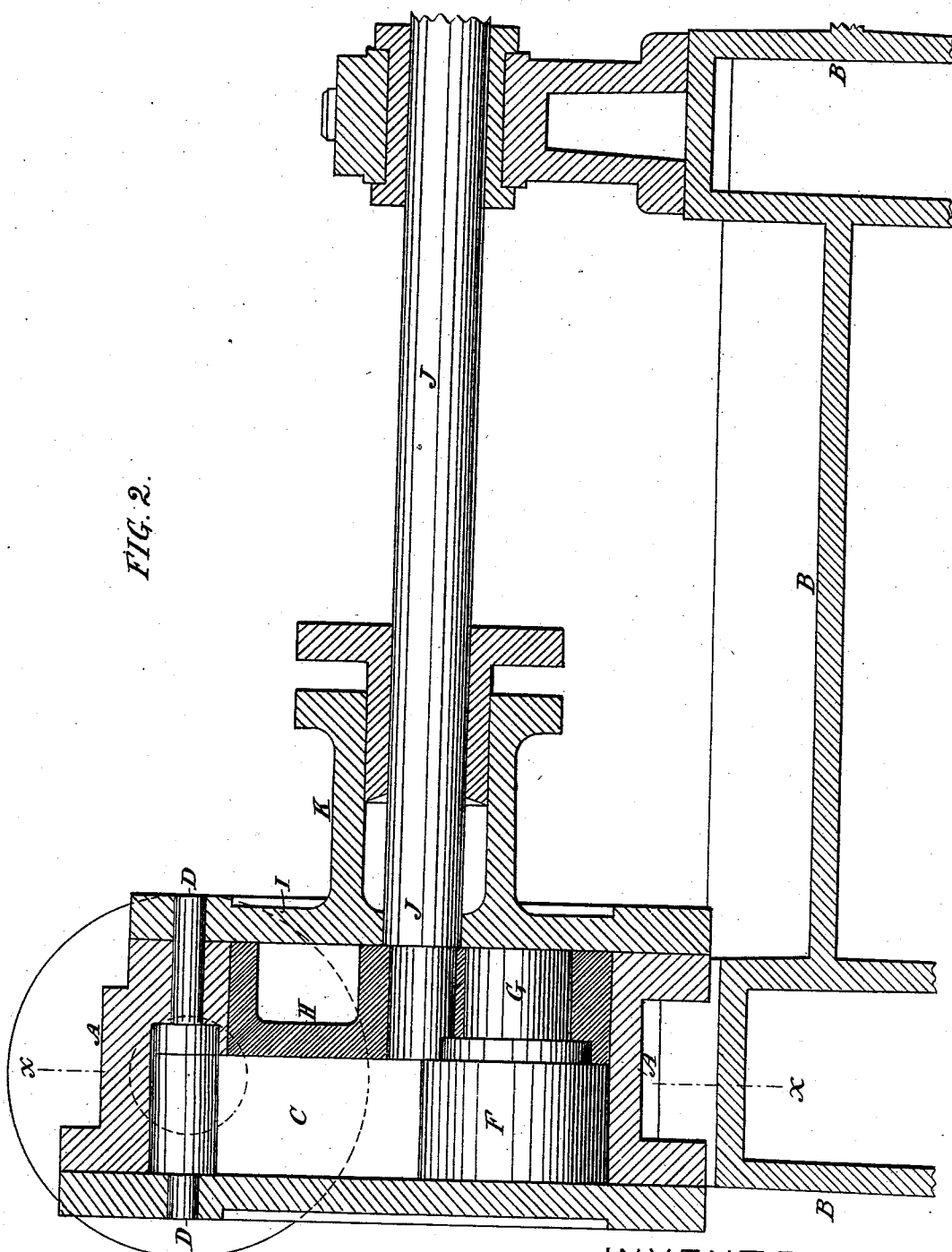
2 Sheets—Sheet 2.

S. MELLOR.
Rotary Engine or Pump.

No. 236,173.

Patented Jan. 4, 1881.

FIG. 2.



ATTEST:

E. B. Bolton
A. M. Fraser.

INVENTOR:

Samuel Mellor.
By his Atty.
Bank, Fraser & Co.

UNITED STATES PATENT OFFICE.

SAMUEL MELLOR, OF LONDON, ENGLAND.

ROTARY ENGINE OR PUMP.

SPECIFICATION forming part of Letters Patent No. 236,173, dated January 4, 1881.

Application filed September 30, 1880. (No model.) Patented in Great Britain March 30, 1880.

To all whom it may concern:

Be it known that I, SAMUEL MELLOR, a subject of the Queen of Great Britain, of the city of London, England, have invented certain
5 Improvements in Rotary Engines and Pumps, of which the following is a specification.

My invention relates to that class of rotary mechanisms which may be employed as engines or prime movers, to be rotated by steam
10 or other fluids, or as a pump for elevating fluids, being rotated in such a case by a prime mover.

In the drawings which serve to illustrate my invention, Figure 1 is a transverse section taken in the plane of the line xx in Fig. 2,
15 and Fig. 2 is a longitudinal mid-section taken in the plane of the line yy in Fig. 1.

A is a fixed cylinder, mounted upon and fixed to a base or sole plate, B, or other suitable foundation. This cylinder has suspended
20 within it a pendulous tongue or plate, C, hung on a rod, D, placed somewhat outside of the circumference or periphery of the cylinder-bore. This tongue passes through and plays
25 in a mortise or slot, E, in the cylindrical or rounded block F, which acts as a kind of piston, and the said block has a cylindrical stem, G, provided with a bearing in a disk, H, arranged to rotate in and concentrically with
30 the cylinder A. This disk fits snugly against the cylinder-cover I, and in contact with the peripheral wall of its inclosing-cylinder, and is mounted or fixed on the end of a shaft, J, which has a bearing in a stuffing-box, K, on
35 the cylinder-head. On this shaft may be mounted the pulley or gears for transmitting or receiving power.

M is the inlet to the cylinder A, and L the outlet. These may, when necessary, be governed by valves actuated by the engine.

The operation is as follows: On steam being admitted at M, it presses on the circular block F and vibrating tongue C. The block
45 slides on the tongue, and, through its connection with the disk H, rotates the shaft J. As the said shaft continues to rotate the block slides up and down upon the pendulous tongue, remaining always in close contact with the wall of the cylinder A, and the tongue vibrates
50 to and fro. As the tongue does not extend

across the cylinder, the steam may pass under its free end and escape at L while the block F is passing over above the center.

The engine may be made to rotate in the opposite direction by introducing the steam at
55 L instead of M, and a disk and shaft may be fitted to each end of the cylinder.

When the machine is used as a pump the passages L and M serve as water inlets and
60 outlets.

An ordinary valve may be introduced in some part of either the suction or delivery pipe, to prevent the return of the fluid that is being pumped at the moment when the block F
65 is passing between the ingress and egress passages. This will probably be necessary only when the pump is working against a great head of water or at a low speed, as in other cases the momentum of the water will prevent
70 any return of the water at that time.

Instead of arranging the inlets and outlets as shown, they may be arranged in the tongue C, and the block F be arranged to open and close them as it slides upon said tongue.

I am aware that it is not new to provide a
75 rotating cylinder with a vibrating pendulous plate inside arranged to pass laterally through a lesser internal cylinder which rotates on an axis eccentric to that of the larger external rotating cylinder. This construction is very
80 old, but has never come into use for various reasons, one being the rotation of the larger external cylinder. I am also aware that an engine has been proposed having a fixed external
85 cylinder, a lesser internal cylindrical piston hung on a crank-pin or eccentric, and arranged to gyrate inside the exterior cylinder, sliding in its gyrations on an abutment or partition fixed in the exterior cylinder. I am not aware,
90 however, that an engine having a fixed cylinder with a pendulous plate or tongue extending nearly across it, and a cylindrical block having a diameter equal to half the internal
95 diameter of the cylinder, arranged to slide on the tongue and to be carried around the cylinder in such a manner as to rotate the main shaft, has ever before been employed.

Having thus described my invention, I claim—

The combination, with a fixed cylinder, A, 10

provided with a pendulous tongue, C, of the
main shaft having a disk, H, which fits the
cylinder, and a cylindrical block, F, having a
diameter equal to half the internal diameter
5 of the cylinder A, said block being mounted
rotatively in the disk H and provided with a
mortise or slot, E, through which the pendu-
lous tongue passes, all arranged to operate
substantially as set forth.

SAMUEL MELLOR.

Witnesses:

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