E. McCAFFREY.

MOTOR.

No. 188,529. Patented March 20, 1877.

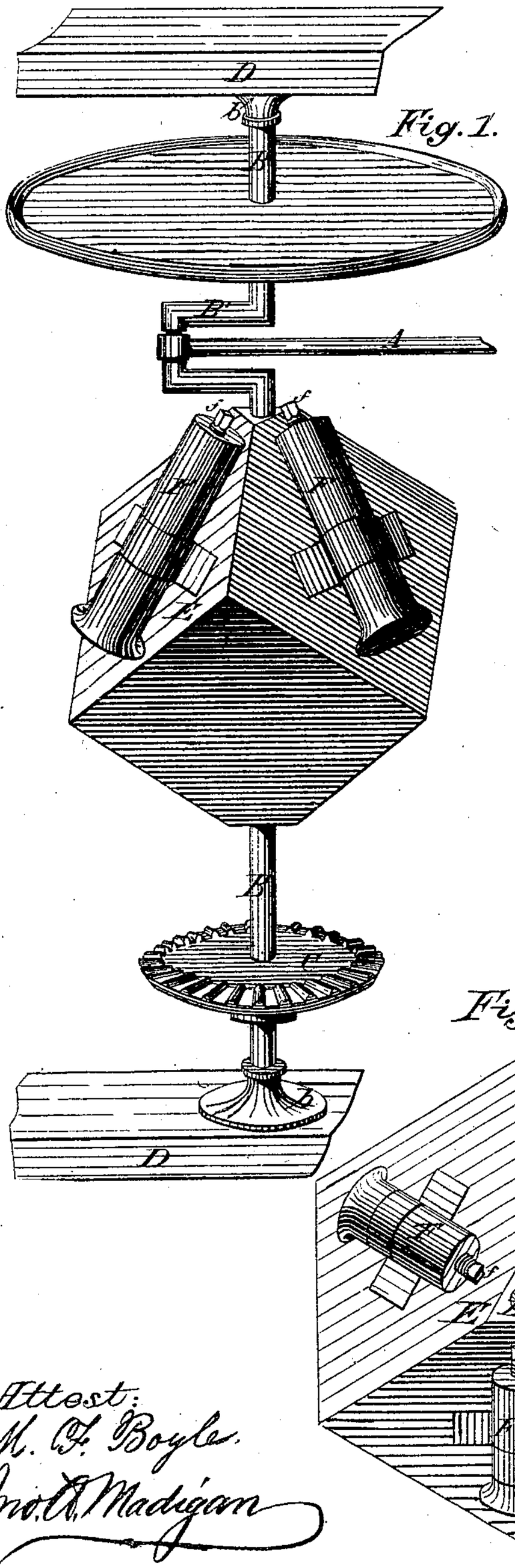


Fig. 1.

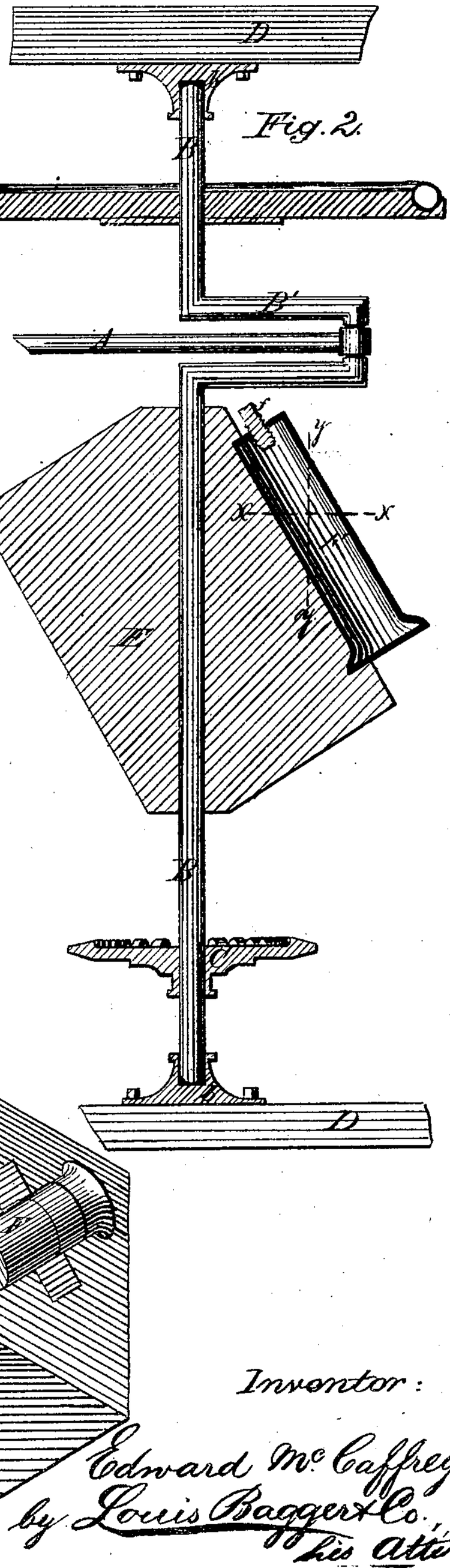
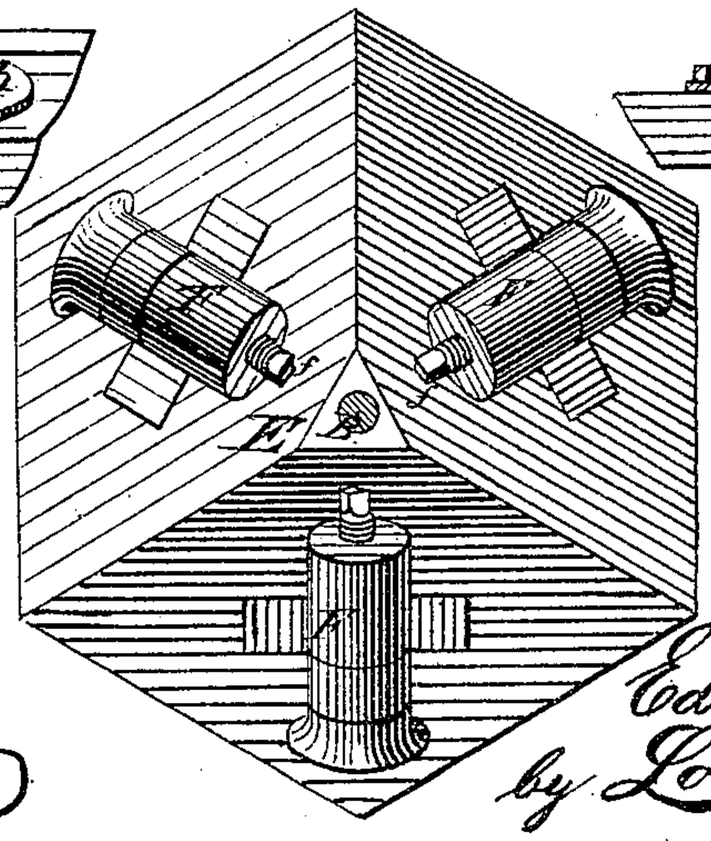


Fig. 2.

Fig. 3.



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UNITED STATES PATENT OFFICE.

EDWARD McCAFFREY, OF ALBANY, NEW YORK.

IMPROVEMENT IN MOTORS.

Specification forming part of Letters Patent No. **188,529**, dated March 20, 1877; application filed May 25, 1876.

To all whom it may concern:

Be it known that I, EDWARD McCAFFREY, of Albany, in the county of Albany and State of New York, have invented certain new and useful Improvements in Motors; and I do hereby declare that the following is a full, clear, and exact description thereof, 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, and to letters of reference marked thereon, which form a part of this specification.

This invention consists in the construction and arrangement of an improved device intended as a substitute for the ordinary fly-wheel in steam or other engines, substantially as I shall now proceed more fully to explain.

In the drawing hereunto annexed, Figure 1 is a perspective view. Fig. 2 is a vertical section, and Fig. 3 is a top plan.

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

A is the connecting rod or shaft, from the cylinder-piston or other motive power. B is a vertically-rotating shaft, having a crank, B′, upon which is pivoted the shaft A, from the motor. C is a drum or gear-wheel, by which the power is transmitted to the machinery, and *b b* are the bearings for the vertical shaft B, which are secured in the framework D of the machine.

Upon shaft B is rigidly affixed a block of iron or other heavy material, E, of the shape of a cube, shaft B passing vertically and diagonally through opposite corners. F are tubular reservoirs, secured one upon each of the slanting sides of cube E, and closed at the top by screw-caps *f*, or similar devices. Into these reservoirs I pour quicksilver until one-third, one-half, or nearly quite full, according to the weight and impetus it is desired to give the cube E.

When the power is at rest, the quicksilver in the reservoirs F will be level, as indicated by the line *x x* in Fig. 2; but when the power is started, the shaft B and cube E will rotate, and consequently the quicksilver will be forced in an outward direction by the centrifugal force until, when the machine is at full speed, it assumes the position indicated by the line *y y* in Fig. 2, thus filling the parts of the reservoirs that are farthest from the vertical axis of cube E, the effect of which is to increase the impetus and power of the machine.

When the power is slackened, the quicksilver will gradually return to its level, thus decreasing the force of the rotations of cube E in the same degree as the power is slackened.

The advantages of my improvement are as follows: Owing to the vertical position of shaft B, it requires less force to start the machinery than when the ordinary fly-wheel upon a horizontal shaft is employed. The weight of the balance may, to some extent, be regulated by the quantity of quicksilver in the reservoir F, which may be made large enough to hold a considerable quantity; and, finally, when the power is slackened for the purpose of stopping the machinery, the quicksilver, returning to its level-line, will aid in gradually stopping the machinery, and prevent the cube E from rotating an undue length of time, which, otherwise, it would be apt to do.

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

The combination, with a steam or other engine, of the cube E, secured vertically and diagonally upon a vertical rotating shaft, B, and having reservoirs F, partially filled with quicksilver, affixed upon its sides or faces, substantially as and for the purpose herein shown and specified.

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

EDWARD McCAFFREY.

Witnesses:

THOMAS D. COLEMAN,

MICHAEL MULVILL.