

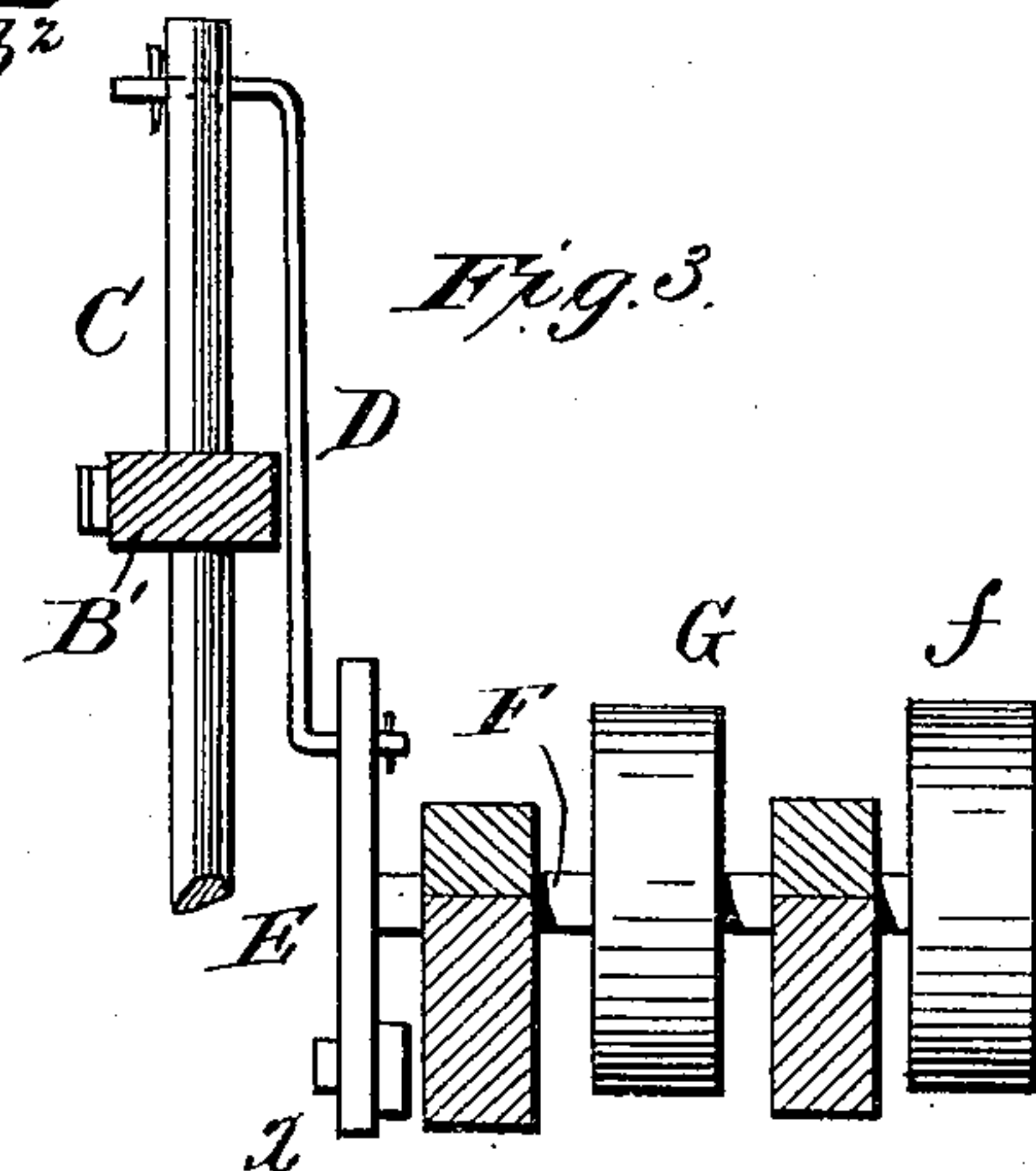
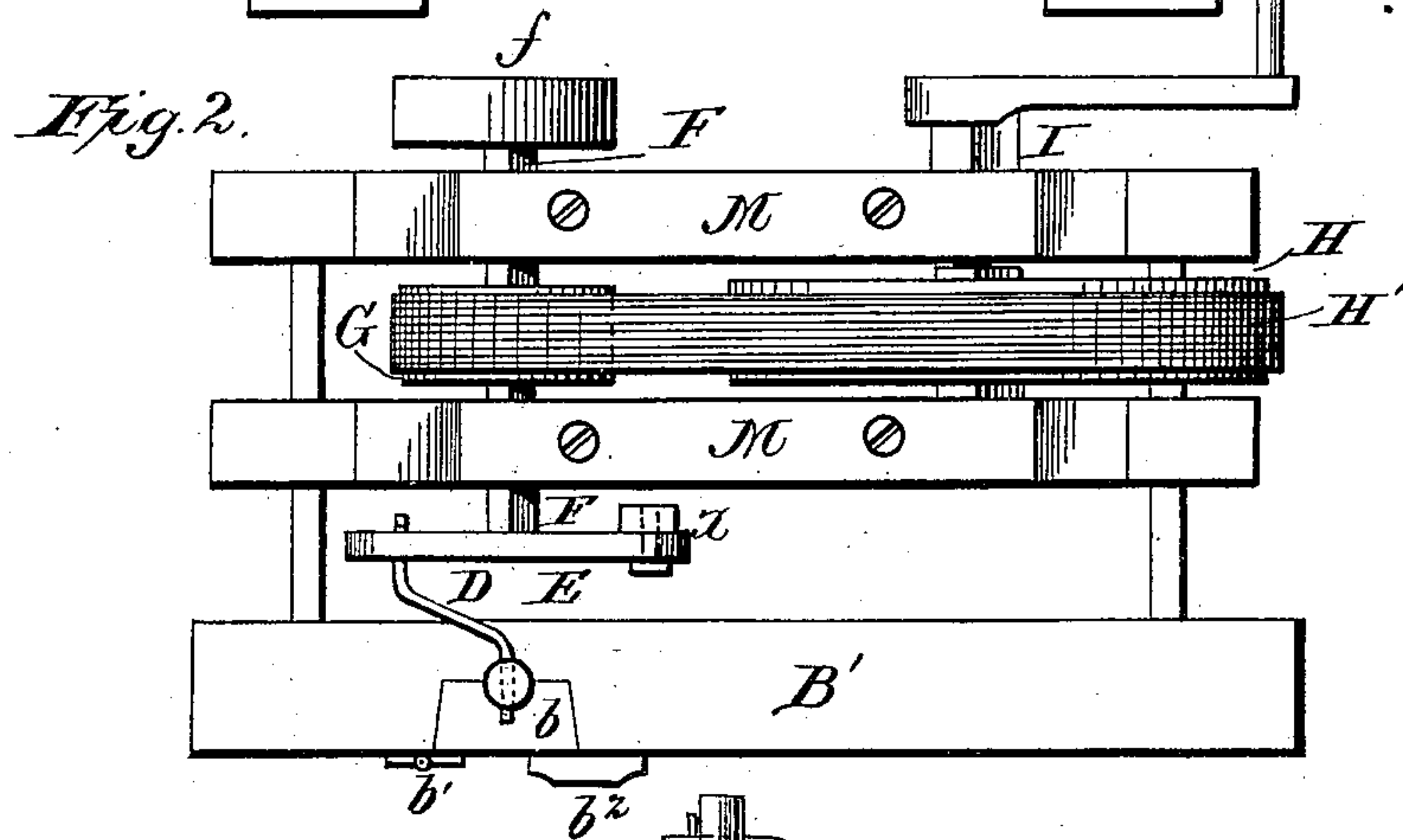
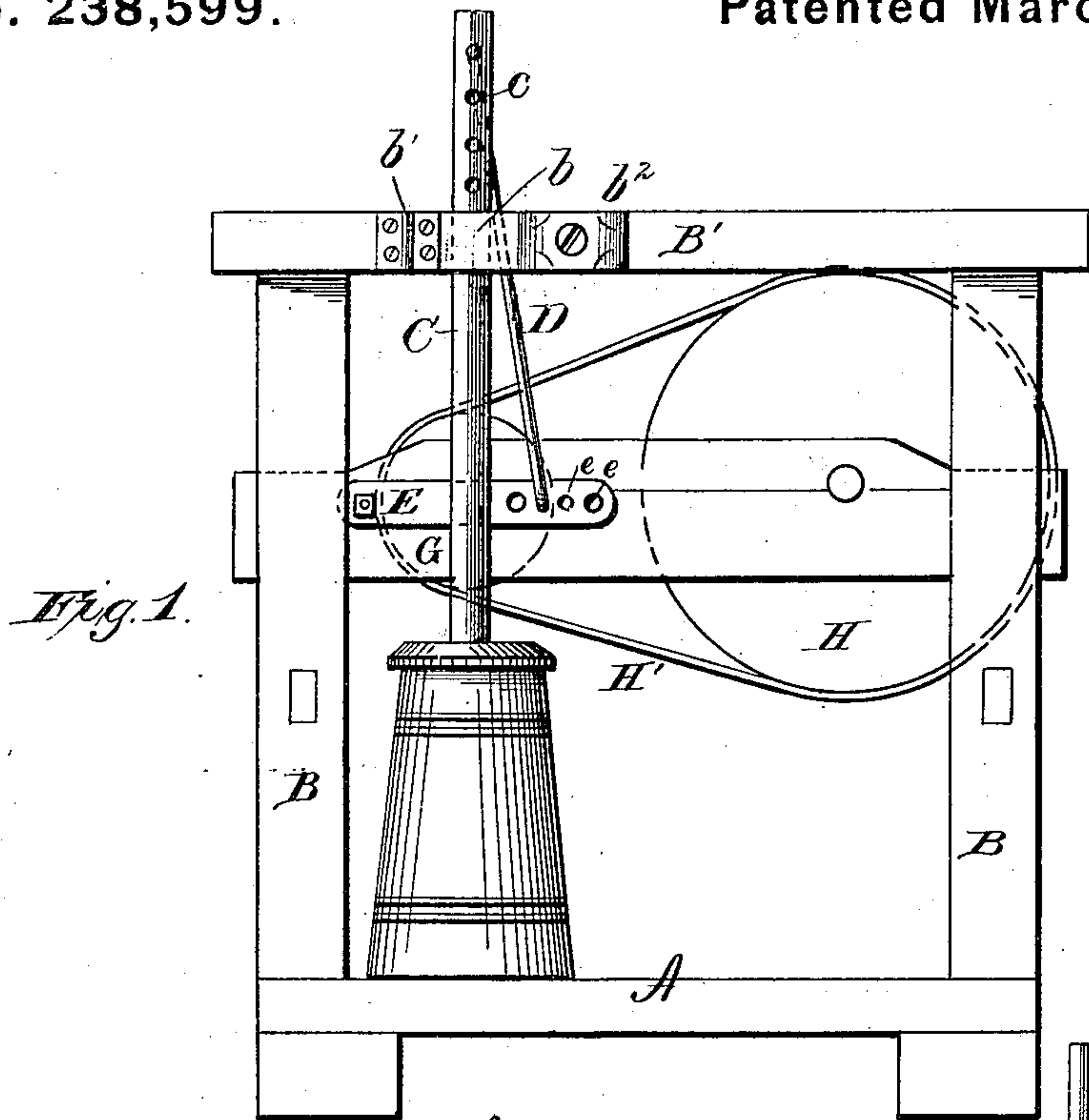
(No Model.)

J. N. B. LUSK.

Mechanical Motor for Churns, &c.

No. 238,599.

Patented March 8, 1881.



Witnesses.  
*P. L. Ouraud*  
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Inventor:  
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 By  
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 atty.

# UNITED STATES PATENT OFFICE.

JOSEPH N. B. LUSK, OF CLEO, TENNESSEE.

## MECHANICAL MOTOR FOR CHURNS, &c.

SPECIFICATION forming part of Letters Patent No. 238,599, dated March 8, 1881.

Application filed January 18, 1881. (No model.)

*To all whom it may concern:*

Be it known that I, JOSEPH N. B. LUSK, a citizen of the United States, residing at Cleo, in the county of Bradley and State of Tennessee, have invented certain new and useful Improvements in Motors for Churns, &c; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as 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 or figures of reference marked thereon, which form a part of this specification.

My invention relates to a device for converting rotary into reciprocating motion; and the novelty consists in the construction and arrangement of parts, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

The invention is peculiarly adapted to churns, stirrers, muddlers, and the like, but may be used for other purposes, if desired.

For convenience the device will be described as applied to a churn or pump.

In the accompanying drawings, which form a part of this specification, Figure 1 represents a side elevation, and Fig. 2 a plan view. Fig. 3 is a detail view.

To enable others skilled in the art to make and use my invention, I will describe its construction and mode of operation.

Referring to the drawings, A represents the base or support, and B two standards arising therefrom, a cap-piece or horizontal plate, B', being secured upon the upper ends thereof.

b represents a hinged block, hinged at b', and held in locked position by a pivoted button, b<sup>2</sup>, as shown. It is provided with a semi-cylindrical recess, which, in connection with a similar recess in the back of the recess in the plate B, into which it operates, receives a vertical reciprocating plunger, C, provided with holes c, into which operates a transverse arm of a pitman, D, the opposite end of which is provided with a similar arm, which operates in a double crank-arm, E, having perforations e. The series of perforations e allow the stroke of the plunger to be arranged and adjusted at will, with regard to the service to be performed. The perforations e in the crank-arm are arranged at alternate distances from the center—i. e., upon one arm they may be arranged at

one, two, and three inches, &c., from the center or axis of motion, and upon the other arm at one and a half, two and a half inches, &c., therefrom—thereby giving a double adjustability, at the will of the operator.

The double crank-arm E is rigidly hung upon one end of a shaft, F, journaled in a frame, M, carrying upon the other end a fly-wheel, f, and about centrally a pulley, G, which is connected, by a belt, H', to a larger or multiplying pulley, H, upon the power-shaft I, which may be connected to a motive power by a crank, pulley, or gear.

It will be observed that as thus far described, at nearly or approximating one-half of the stroke of the crank-arm—that is to say, the upstroke of the side of the crank-arm to which the connecting-pitman is attached—the entire weight of the plunger and its connections is a dead weight, and tends to impart a jerking motion to the device. I obviate this by providing a removable adjustable weight, x, which may be attached to the arm of the crank opposite the one to which the pitman is connected in either of the perforations e, as desired, as plainly seen in Figs. 2 and 3 of the drawings.

It will thus be observed that my double crank-arm gives a compound adjustability of the length of stroke, and that I may also adjust the relative vertical position of the stroke at will.

The operation of my device from the foregoing description is obvious.

What I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The rotating devices and double crank-arm E, perforated alternately at e, as shown, combined with the pitman D and plunger-rod C, perforated at c, to afford compound adjustability, as and for the purposes specified.

2. The rotating devices and double alternately-perforated crank-arm, pitman D, and plunger C c, combined with removable adjustable weight to compensate, by its gravity, for the dead weight of the plunger and its connections upon its upstroke, as specified.

In testimony whereof I affix my signature in presence of two witnesses.

J. N. B. LUSK.

Witnesses:

A. J. CARSON,

JOSEPH W. HICKS.