(No Model.)

3 Sheets—Sheet 1.

C. C. NEWTON.

MILLING MACHINE.

No. 319,302. Patented June 2, 1885.

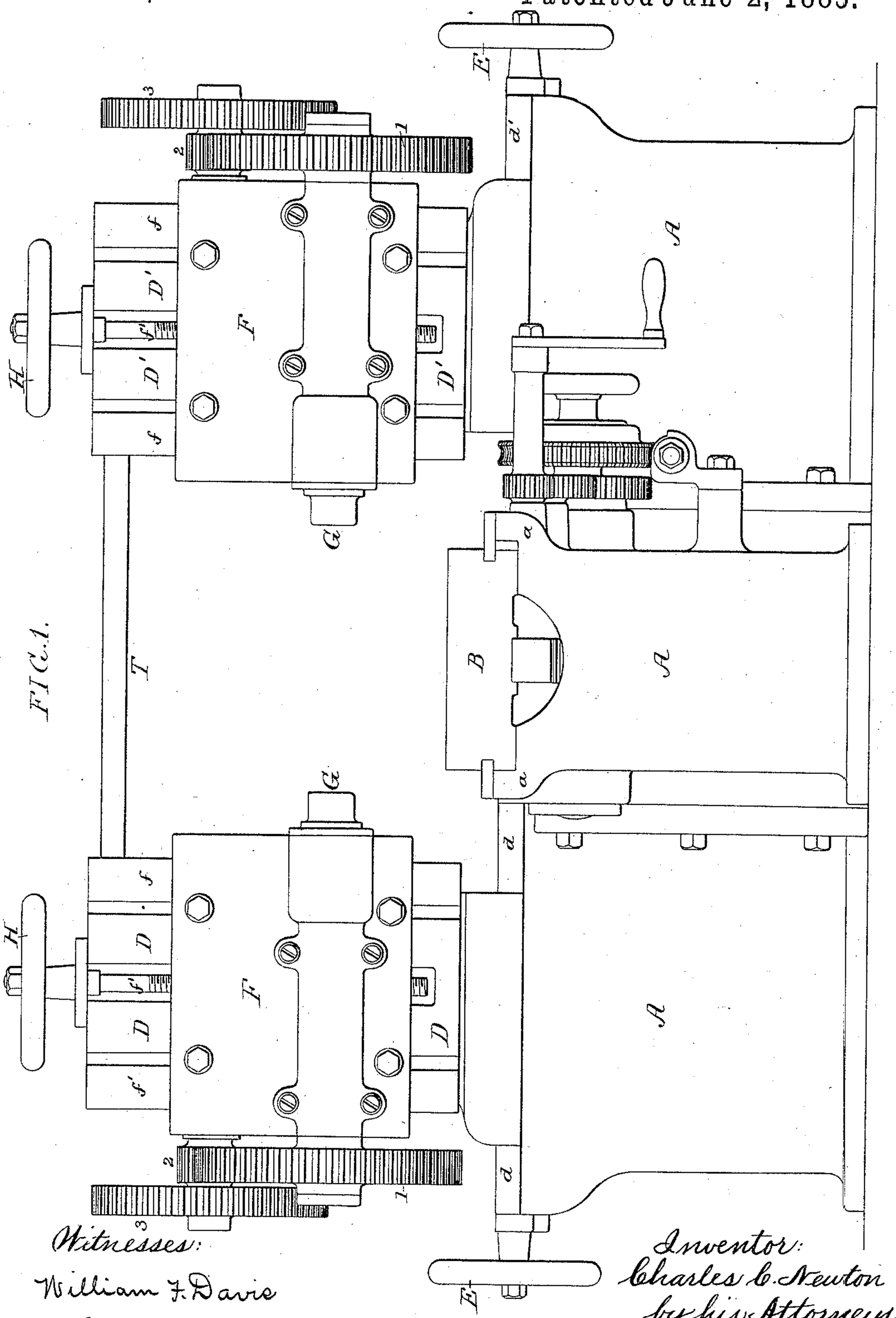

FIG. 1.

Witnesses:
William F. Davis
Henry Bossert

Inventor:
Charles C. Newton
by his Attorneys
Howson & Sons

(No Model.)

3 Sheets—Sheet 2.

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MILLING MACHINE.

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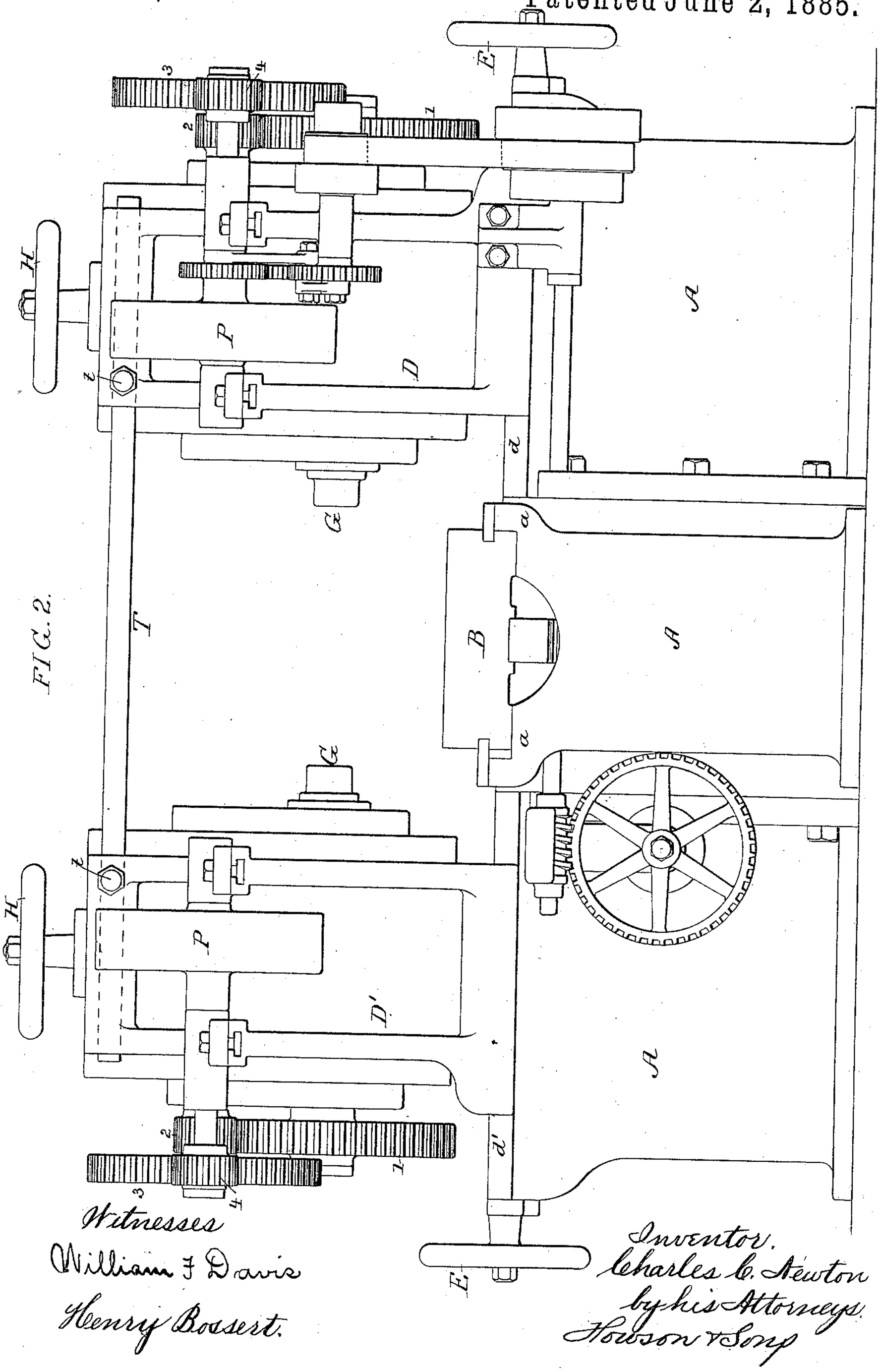

FIG. 2.

(No Model.)

3 Sheets—Sheet 3.

C. C. NEWTON.

MILLING MACHINE.

No. 319,302.

Patented June 2, 1885.

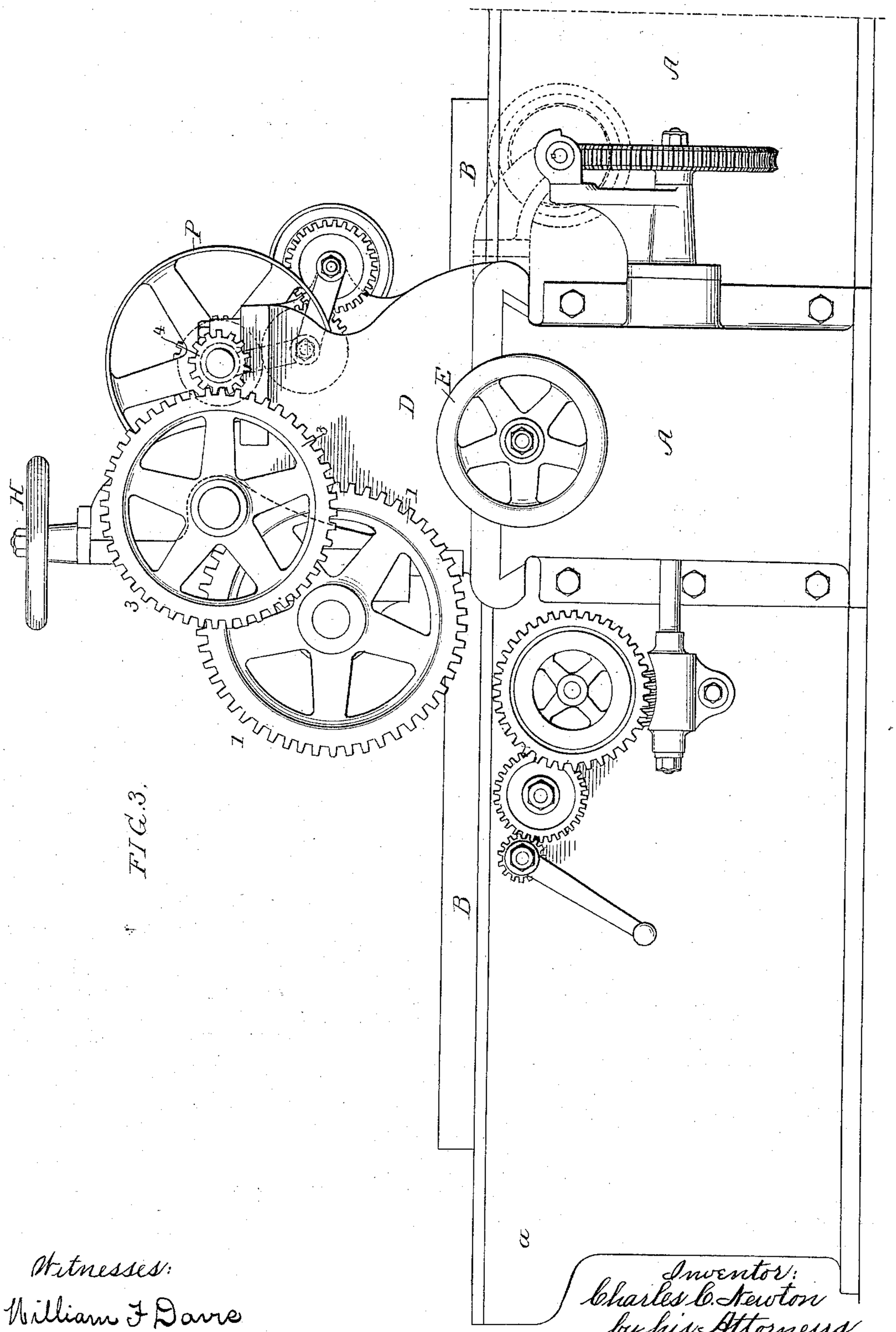

FIG. 3.

Witnesses:
William F Dawe
Henry Bossert.

Inventor:
Charles C. Newton
by his Attorneys
Howson & Sons

UNITED STATES PATENT OFFICE.

CHARLES C. NEWTON, OF PHILADELPHIA, PENNSYLVANIA.

MILLING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 319,302, dated June 2, 1885.

Application filed April 23, 1885. (No model.)

To all whom it may concern:

Be it known that I, CHARLES C. NEWTON, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Milling-Machines, of which the following is a specification.

The object of my invention is to construct a metal-working milling-machine with the view of increasing its capacity without decreasing its strength or accuracy in its work.

In the accompanying drawings, Figure 1 is a front view of the machine. Fig. 2 is a rear view, and Fig. 3 is a side view.

A is the base of the machine, which is provided with ways *a*, for the longitudinal traversing of the work-bed B, which can be traversed to and fro by any suitable or well-known feed-motion, which it will not be necessary to describe here, as it forms no essential part of my invention.

At right angles to the way *a*, on each side thereof, the base of the machine is provided with ways *d d'*, on which are mounted vertical frames D D', each of these frames being laterally adjustable on its ways toward and from the bed-plate by suitable horizontal feed-screws controlled by a wheel, E. Each of the frames D D' is provided with vertical ways *f*, on which are mounted heads F, carrying the horizontal spindles G for the milling-tools. These heads are vertically adjustable on the frames D D' by feed-screws *f'*, provided at the upper ends with hand-wheels H. Each of the spindles G carries at its outer end a spur-wheel, 1, to which motion is imparted from a belt-pulley, P, through the medium of gearing 2 3 4, in any convenient or suitable manner.

If desired, motion may be transmitted from one of the shafts carrying a pulley, P, to the automatic feed mechanism for traversing the table B; but as this forms no essential part of my invention it will not be necessary to describe it in detail.

From the foregoing description it will be seen that the machine is duplex, and that each of the heads carrying its milling-tool is adjustable laterally in a horizontal direction from and toward the traversing bed at right angles thereto, and is at the same time vertically adjustable, and in order to keep the cutters true I connect the two frames D D', which carry the opposite heads of the milling-tools, by means of a horizontal tie-rod T, which passes through openings in the upper ends of the frames D D', and is provided with set-screws *t*, on loosening which the heads may be adjusted laterally by means of their feed-screws and the hand-wheels E, while on tightening the set-screws again after adjustment the frames, with their milling-tools, will be firmly and rigidly held.

I claim as my invention—

1. The combination of the base and traversing work-bed with two frames laterally adjustable in a horizontal plane at right angles to and on opposite sides of the said bed, and vertically-adjustable heads carrying the milling-tools mounted on said frames, substantially as described.

2. The combination of the base and traversing bed of a milling-machine with adjustable frames on opposite sides thereof carrying the milling-tools, and a tie-rod, T, as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES C. NEWTON.

Witnesses:
H. W. CHAMPION,
HARRY SMITH.