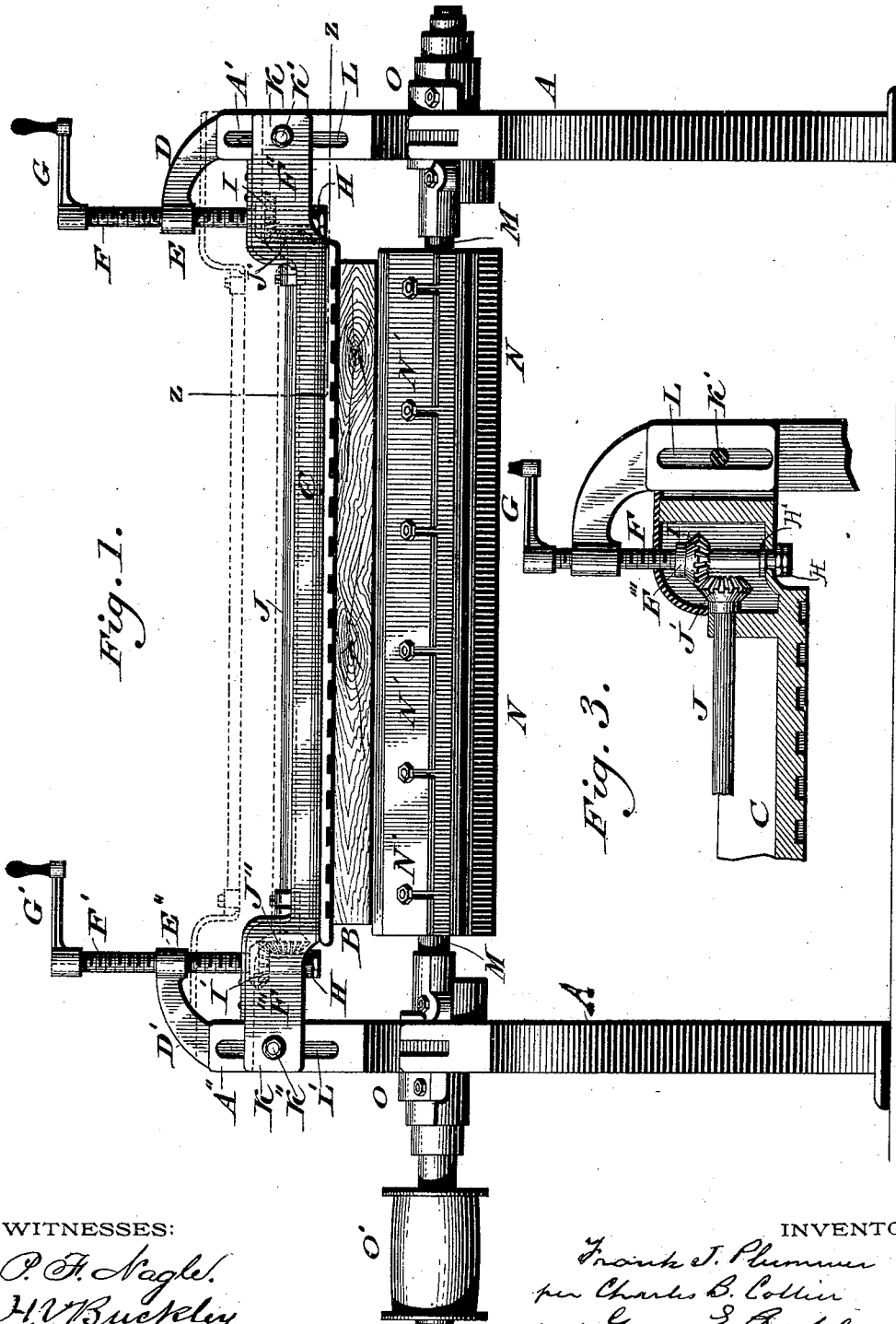


F. J. PLUMMER.
WOOD PLANING MACHINE.

No. 404,433.

Patented June 4, 1889.



WITNESSES:

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H. V. Buckley

INVENTOR:

Frank J. Plummer
per Charles B. Collier
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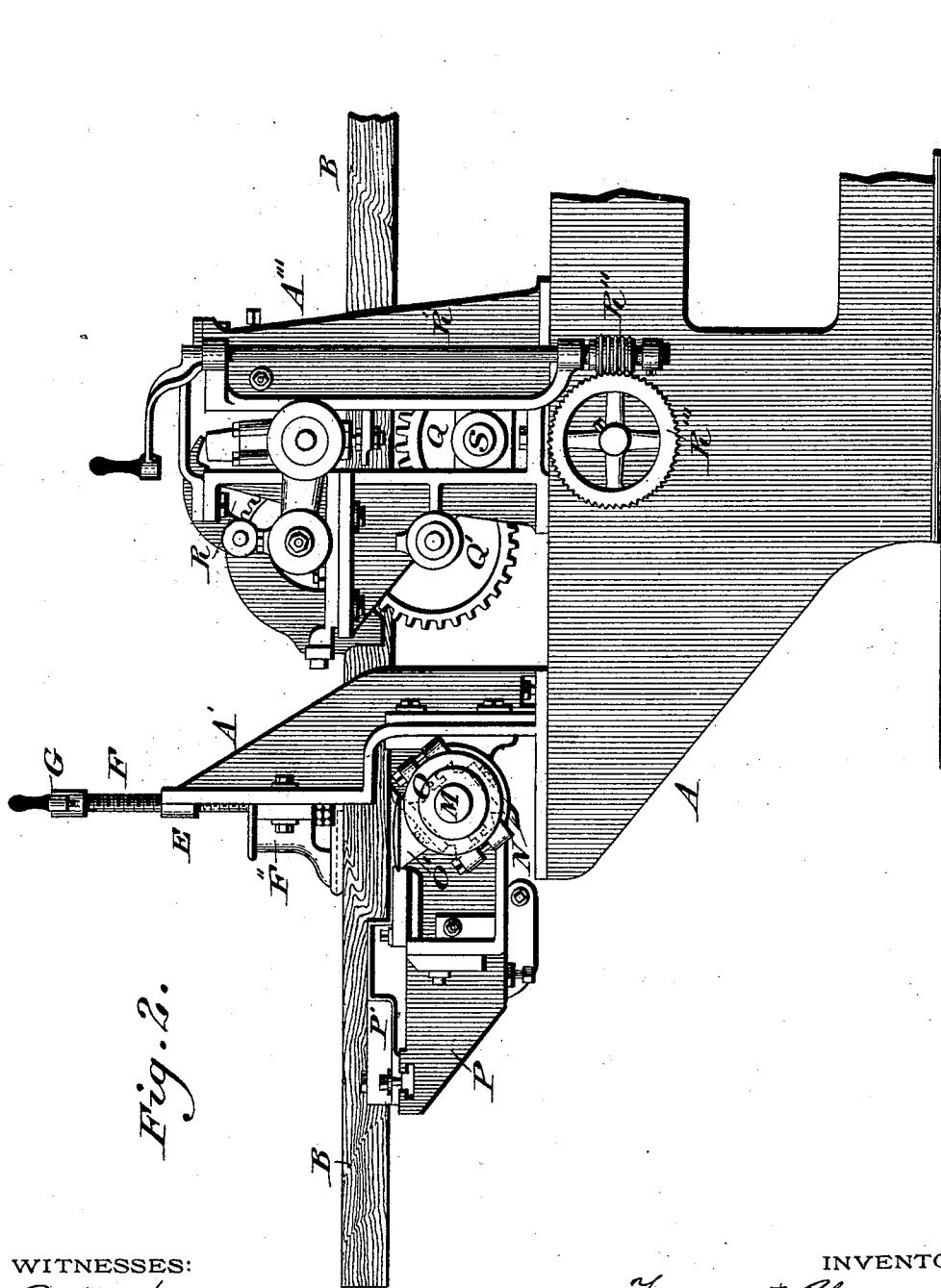


Fig. 2.

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UNITED STATES PATENT OFFICE.

FRANK J. PLUMMER, OF PHILADELPHIA, PENNSYLVANIA.

WOOD-PLANING MACHINE.

SPECIFICATION forming part of Letters Patent No. 404,433, dated June 4, 1889.

Application filed December 22, 1888. Serial No. 294,437. (No model.)

To all whom it may concern:

Be it known that I, FRANK J. PLUMMER, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented a new and useful Improvement in Wood-Planing Machines, of which the following is a description, reference being had to the annexed drawings, making part hereof.

The nature of the invention will fully appear from the following description and claims.

In the drawings, Figure 1 is a front view of my device with the front table removed; Fig. 2, a vertical longitudinal broken side elevation, showing the parts to which my improvement is applied; Fig. 3, a detached broken view, partly in elevation and partly sectional, on the line $z z$ of Fig. 1.

A A' A'' A''' indicate various parts of the iron frame.

B is the plank to be planed.

C is the pressure-bar.

D D' are inwardly-projecting arms cast upon the upper parts A' A'' of the frame. Each of these arms is provided with a vertical female screw-threaded sleeve E E'.

F F' are vertical screw-threaded rods engaging in said female screw-threaded holes in sleeves E E'.

G G' are detached cranks or keys engaging over the ends of rods F F'. The pressure-bar C is provided at each end with hollow closed boxes F'' F'''. These boxes are pierced with plain holes to receive the lower ends of rods F F', which pass through them and are held in place beneath by nuts and lock-nuts or binders H H'.

H' H' (see Fig. 3) are collars on the rods F F' to press the boxes down when the bar C is to be depressed. The parts of rods F F' within these boxes are plain (not screw-threaded) and are provided with the horizontal beveled cog-wheels I I'. (See Fig. 3, and in dotted lines in Fig. 1.) A horizontal lateral shaft J spans the distance from wheel I to wheel I', and is provided at one end with vertical beveled cog-wheel J', which engages with wheel I, and at the other it is provided with beveled cog-wheel J'', which engages with beveled cog-wheel I', whereby, when the rod F is turned, the motion is communicated to the rod F' by shaft J and the beveled cog-wheels, and vice versa. By this means

the bar C is raised and lowered evenly. The ends of shaft J have their bearings in the sides of the boxes F'' F'''. Lips K K of the hollow boxes overlap the fronts of parts A' A'', and are provided with bolts or pins K' K'', which engage in long upright slots L L in parts A' A'' of the frame. These pins, with the rods F F', serve to guide the upward and downward motion of the pressure-bar C and that of the hollow boxes. M is a shaft upon which the long cutting-blades N N are set. These blades plane the lower side of plank B. They are secured to shaft M by longitudinal flanges on the latter (not shown) and bolts and nuts N'.

O O are the bearings of shaft M in frame A, and O' is the pulley-wheel which actuates the shaft to drive the cutters.

P, Fig. 1, is a table to support side guides P'. These guides are set on each side of the table to direct the movement of the plank. They are set against each long edge of the latter. The plank rests upon this table in its forward movement. It is not shown in Fig. 1, as it would hide the cutters in such a view as is there shown. That part of the frame lettered, A''' supports the shafts upon which are mounted the rolls to drive the plank on its course through the machine. These parts and the rest of the machine are old and well known in the arts and require no special description. The cutters to plane the upper surface of the plank are not shown in the drawings.

Q Q' R are arrangements of gears to drive the upper and lower rolls. Rod R', with its worm R'' and gear R''', is designed to actuate internal gearing, and gear-racks to raise the upper roll to release the plank and to depress it.

S is a shaft driven by a gear-wheel at the end opposite the end shown to actuate the rolls; but, as above mentioned, these parts are old in planing-machines and well known.

In the old styles of planing-machines the shaft J is arranged across the top of the frame or uprights A' A'' and is fixed—that is, it is turned to raise and depress the pressure-bar C, but does not move up and down with it. It projects through stationary bearings in the sides of the frame—that is, in the uprights A' A''—and is turned by an end crank. In my

machine, however, the shaft is set in boxes F'' F''', which are rigidly attached to the bar C and rise and fall with it, actuated by the vertical rods F F' and their beveled gearing. 5 The pressure-bar C and bar J are carried by these boxes F'' F''', the latter thus forming carriages. In my device the front of the machine is not encumbered, and the operator is enabled to see his work and keep the top of 10 the plank free from chips, as he has free access to it over the top of shaft J and pressure-bar C. The screw-threads upon rod F are "right threads," while those on rods F' are "left," whereby they act in harmony. If chips 15 are allowed to remain upon the top of the plank as it enters the rolls, they are apt to be driven into the plank, so as to indent the wood to its great damage, especially when a thin cut is to be made from it. The clearance of the 20 obstruction of the shaft also enables the operative to get at contiguous parts of the machine for oiling and cleaning.

Various methods of arranging the connection of the carriages or boxes F'' and F''' with 25 the slots in uprights A' A'' will readily suggest themselves to any skilled mechanic.

What I claim as new is—

1. In a planing-machine, the combination of the uprights A' A'', arms or projections D D', right and left screw-threaded rods F F', 30 carriages F'' F''', guided by connecting-pieces setting in grooves in the uprights and rigidly attached to a pressure-bar C, shaft J, sustained by said carriages, with the gear-wheels to actuate the shaft, substantially as shown, 35 whereby the said gearing rises and falls with the pressure-bar.

2. In a planing-machine, the combination of the uprights A' A'', arms or projections D D', right and left screw-threaded rods F F', 40 closed boxes F'' F''', forming vertically-moving carriages for shaft J and pressure-bar C, pressure-bar C and shaft J, and the gear-wheels to actuate said shaft and to rise and fall therewith and with the pressure-bar, sub- 45 stantially as described.

In witness that the above is my invention I have hereunto set my hand.

FRANK J. PLUMMER.

Witnesses:

GEORGE E. BUCKLEY,
H. V. BUCKLEY.