H. K. Forbis.

Mortising Mach.

No. 86,293. Patented Jan. 26, 1869.

Fig. 1.

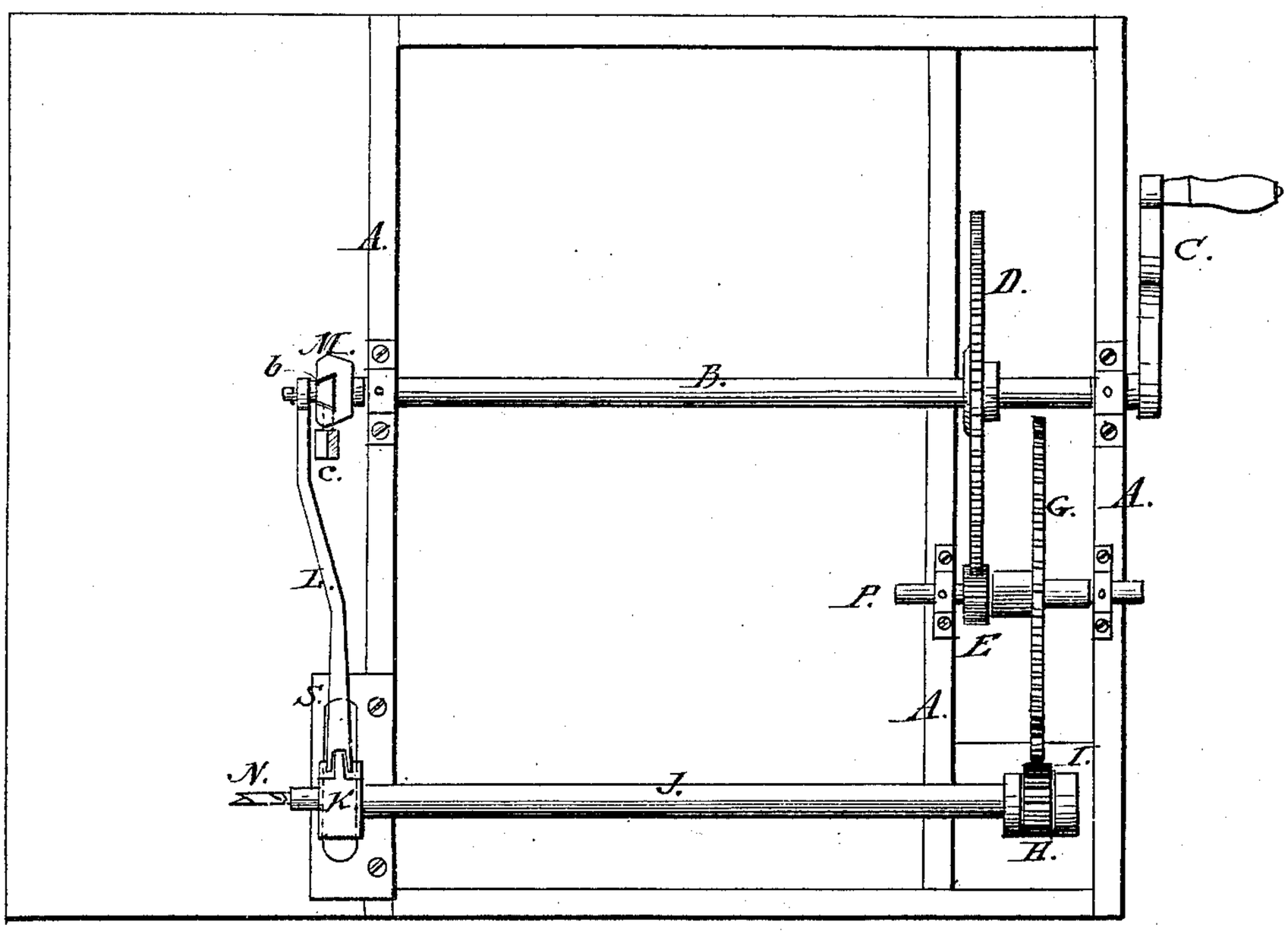


Fig. 2.

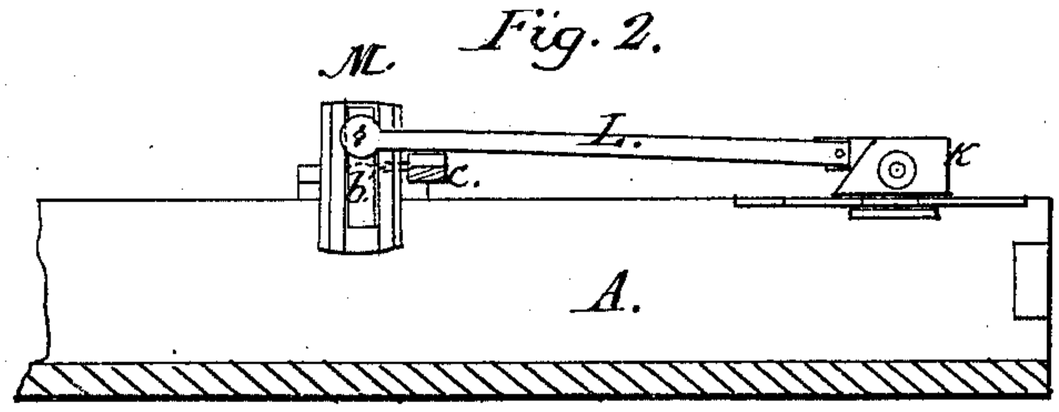


Fig. 3.

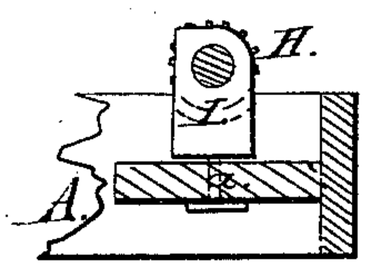
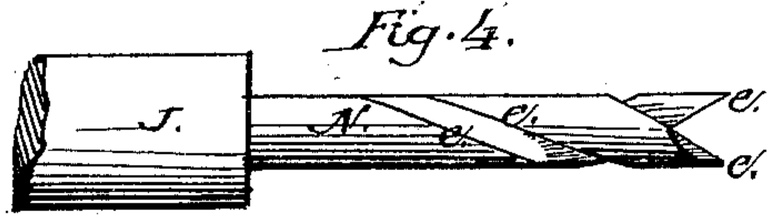


Fig. 4.



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UNITED STATES PATENT OFFICE.

H. K. FORBIS, OF DANVILLE, KENTUCKY.

IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. **86,293**, dated January 26, 1869.

To all whom it may concern:

Be it known that I, H. K. FORBIS, of Danville, in the county of Boyle, and in the State of Kentucky, have invented certain new and useful Improvements in Machines for Boring Holes and Mortises; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

The nature of my invention consists in the construction and general arrangement of a portable machine for boring holes and mortises, whereby the most work is secured with the least power, and which is adapted to shop and machine work.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, which form a part of this specification, and in which—

Figure 1 is a plan view; Fig. 2 is a front view; Fig. 3 is a side view of the pivot-box; and Fig. 4 is a side view of the bit enlarged.

A A represent the frame of the machine, across which a shaft, B, is placed in suitable journal-boxes. This shaft is turned by means of a crank, C, at the rear of the frame A, and is provided with a cogged driving-wheel, D. The main driving-wheel D gears into a pinion, E, on the counter-shaft F, which has its bearings in suitable journal-boxes on the frame A, and is provided with another cog-wheel, G, which gears into a pinion or cog-wheel, H, in a pivot-box, I. The box I turns on a pivot, *a*, in the frame A, and the pivot *a* is placed so as to be exactly under the center of the pinion H, as well as exactly opposite the center of the face of the wheel G, thus preserving a uniform gearing for the machinery when in motion. For this purpose the faces on the wheel G and pinion H are sufficiently rounded. The pinion H is placed on the auger-shaft J in the pivot-box I, said auger-shaft passing at its front end through a sliding box, K, which is attached by a pitman, L, to an adjustable crank, M, on the front end of the main shaft B, and thus regulates the size of the mortise to be cut by giving the auger-shaft a reciprocating as well as a rotary motion. The adjustable crank M is constructed with a slide, *b*, working in a dovetailed groove, and fastened at any desired point with a set-screw, *c*, controlling the length of the crank. The auger or bit N is inserted into the auger-shaft J, and fastened with a set-screw, spring, or any suitable means. The auger N is pointed, upon the plan of a double saw-tooth, with projecting jaws *e e* running down the side of the bit, so that the bit may be sharpened simply by filing as a saw-tooth, giving simplicity, strength, and durability to the auger or bit not heretofore attained by any invention now in use.

Instead of using cog-wheels for driving the machine, belts and pulleys may be used, in which case the counter-shaft becomes the main shaft, with a speed-wheel attached, running opposite to a speed-wheel on the crank-shaft, which controls the speed of the reciprocating motion of the auger-shaft, giving more or less speed, as may be desired, for mortises of different lengths.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The arrangement herein described of the adjustable crank M, pitman L, box K, slotted plate S, shafts B J, and pivoted box H, all constructed and operating as herein shown and described.

In testimony that I claim the foregoing I have hereunto set my hand this 4th day of December, 1868.

H. K. FORBIS.

Witnesses:
J. W. PROCTOR,
LEOPOLD EVERT.