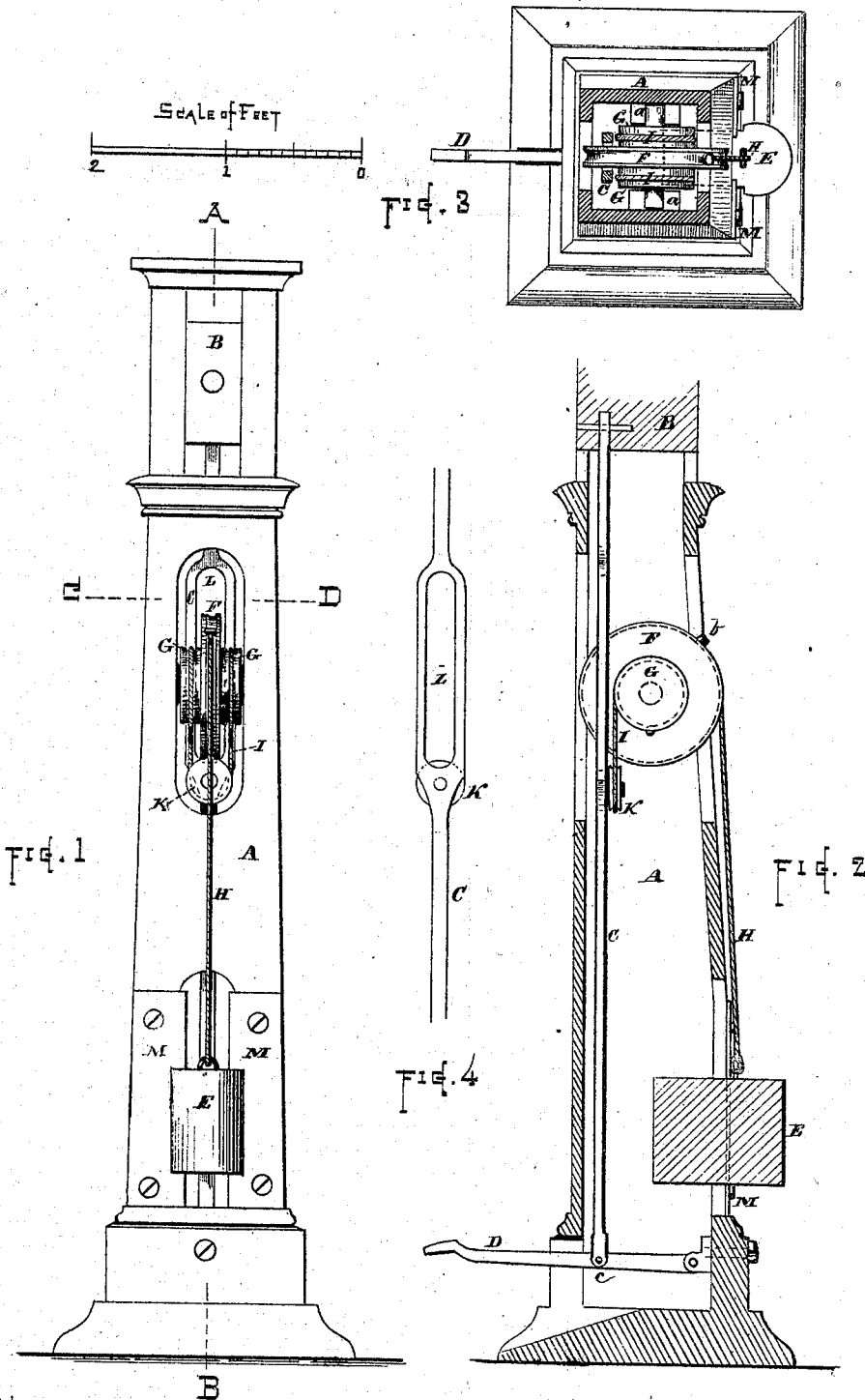


DALPHON L. GIBBS.

Improvement in Mortising Machines.

No. 120,737.

Patented Nov. 7, 1871.



Witnesses

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DALPHON L. GIBBS, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO R. BALL & CO., OF SAME PLACE.

IMPROVEMENT IN MORTISING-MACHINES.

Specification forming part of Letters Patent No. 120,737, dated November 7, 1871.

To all whom it may concern:

Be it known that I, DALPHON L. GIBBS, of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Mortising-Machines; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing which forms a part of this specification, and in which—

Figure 1 represents a rear view of so much of a mortising-machine as is necessary to illustrate my invention. Fig. 2 represents a central vertical section of the same at line A B, Fig. 1. Fig. 3 represents a horizontal section at line C D, Fig. 1; and Fig. 4 represents a view of the central portion of the treadle-rod.

The nature of my invention consists in certain improvements in the construction of the treadle-rod in mortising-machines, and in the combination therewith of peculiarly-constructed devices for connecting the weight and rod to each other; also, in the combination of the weight with the lower portion of the frame, as hereinafter described.

In the drawing, the part marked A represents the frame of the machine. B indicates the movable bearing-piece at the upper part of the frame, wherein is supported the driving-shaft, by means of which the chisel devices are operated. C indicates the treadle-rod, extending from the treadle D to the bearing-piece B, and by means of which the latter is raised or depressed to govern the action of the chisel devices. E indicates the weight for acting in opposition to the treadle D to raise the treadle-rod and bearing B. F G G indicate three pulleys or rolls secured together and supported at the central part of the frame by bearings *e*, so as to turn freely therein. To the larger pulley F the weight E is attached by means of a cord, chain, or strap, H, while a cord, chain, or strap, I, extends from one of the smaller pulleys G to and around a small pulley, K, on the treadle-rod C, and thence to the other small pulley G, the ends of said cord I being secured to the pulleys G and G, respectively. The pulley K insures an equal tension on each end of the cord, so that the draft will always be the same on each of the pulleys. The treadle-rod C is made with a division, as shown in Fig. 4, to form a slot, L, through which the edge of the large pul-

ley extends, thereby allowing sufficient room for the free working of said pulley, and also permitting the rod to stand close up to the small pulleys G without any of the parts interfering with each other. The pulley K is pivoted to the rear side of the rod C, just below the end of the slot L, as shown. In lieu of the pulley K a pin or equivalent device to receive the cord I may be employed, although I prefer the use of a loose pulley, as shown, to reduce friction. The weight E has vertical channels formed upon its sides, and it is fitted between a pair of vertical guide-pieces, M, secured to the rear of the frame A, at the lower part thereof. The guide-pieces M hold the weight from swinging out of place as it works up and down between said guides. The cord or suspending-chain H is attached to the upper part of the weight at a central position, and extends to the pulley F, to which its end is securely fastened, as indicated at *b*, so that it tends to draw the pulley in an opposite direction from the draft of the cord I, which extends from the opposite side of the smaller pulleys G and forms, with the pulley K, the connection with the treadle-rod C. The treadle D is arranged in the lower part of the frame in the ordinary manner, as shown, and the rod C is pivoted thereto at *c*.

The operation of the mechanism is as follows: When the operator presses the treadle down with his foot the cord I is unwound from the pulleys G, causing the pulleys to revolve, and the weight is raised by the winding up of the cord H upon the large pulley F. Then, when the pressure is removed from the treadle, the weight E, drawing upon the cord H, revolves the pulleys in the opposite direction, and rewinds the cord I upon the pulleys G G, thereby raising the pulley K, rod C, and bearing-piece B, together with the parts which may be connected therewith. The difference of leverage upon the pulleys G and F renders the use of a comparatively small weight practical, and, by placing said weight near the bottom of the frame and between guides, the machine stands much steadier than when the weight is at the upper part of the frame.

The machines may be constructed with but one of the small pulleys G; but I prefer to construct them as herein described; also, the cord I may be attached directly to the rod G without using the pulley K, although I prefer the construction shown in the drawing.

The parts of the machine not herein especially referred to may be constructed and arranged as described in Letters Patent Nos. 77,877, 84,817, 86,389, and others heretofore granted to me for improvements in mortising-machines, or in any other of the well-known forms.

Having described my improvements in mortising-machines, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. The combination with the frame, bearing-

piece, treadle, and treadle-rod, of the weight E, pulley F, pulley or pulleys G, pulley K, and the cords, straps, or chains connecting said parts, substantially as and for the purposes set forth.

2. The arrangement of the weight E between ways M in the bottom or lower part of the frame A, as herein shown and set forth.

DALPHON L. GIBBS.

Witnesses:

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