

S. M. WRIGHT

Impd Boring and Morticing Machine

105760

PATENTED JUL 26 1870

FIG: 1.

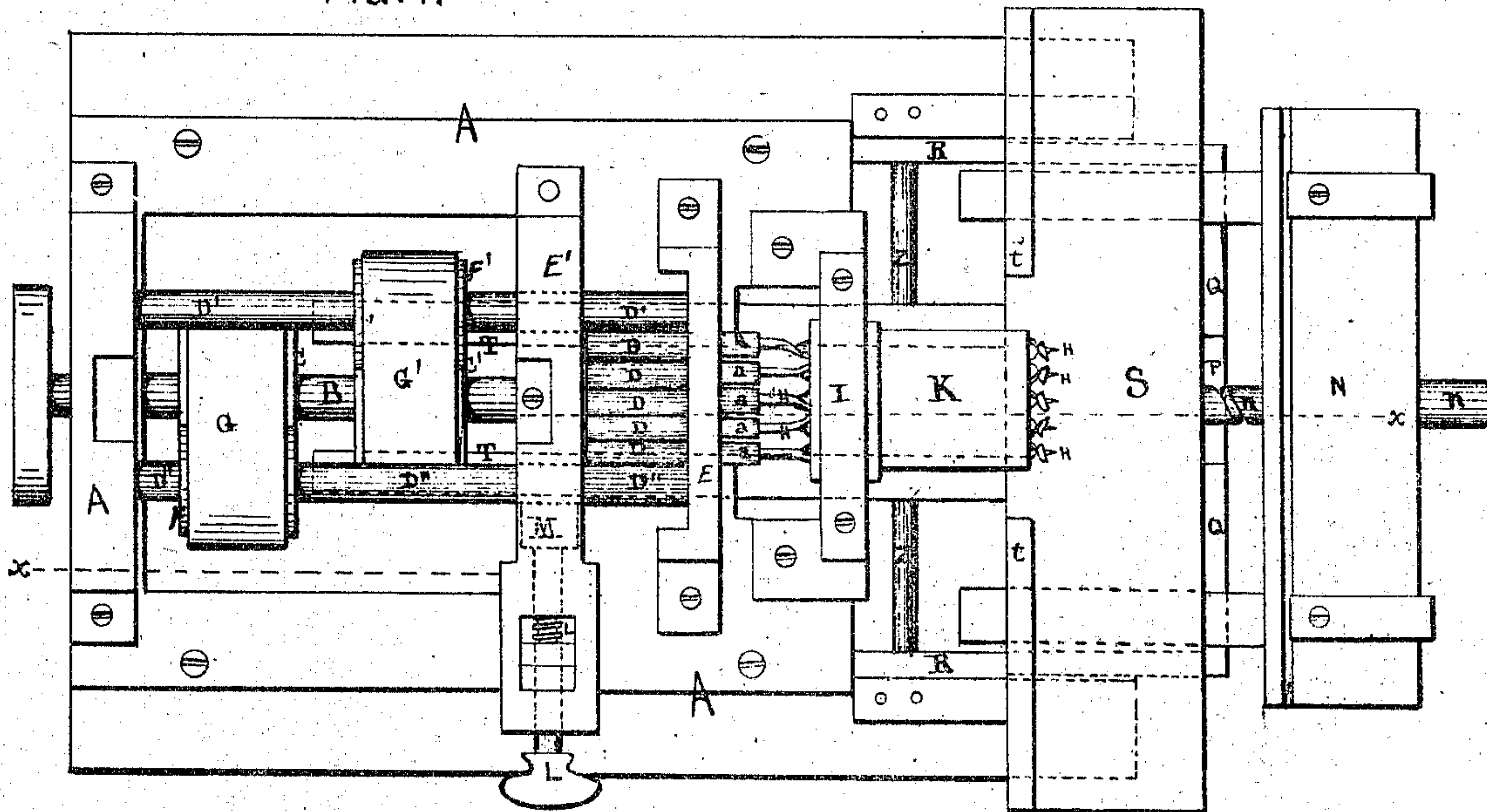


FIG: 2.

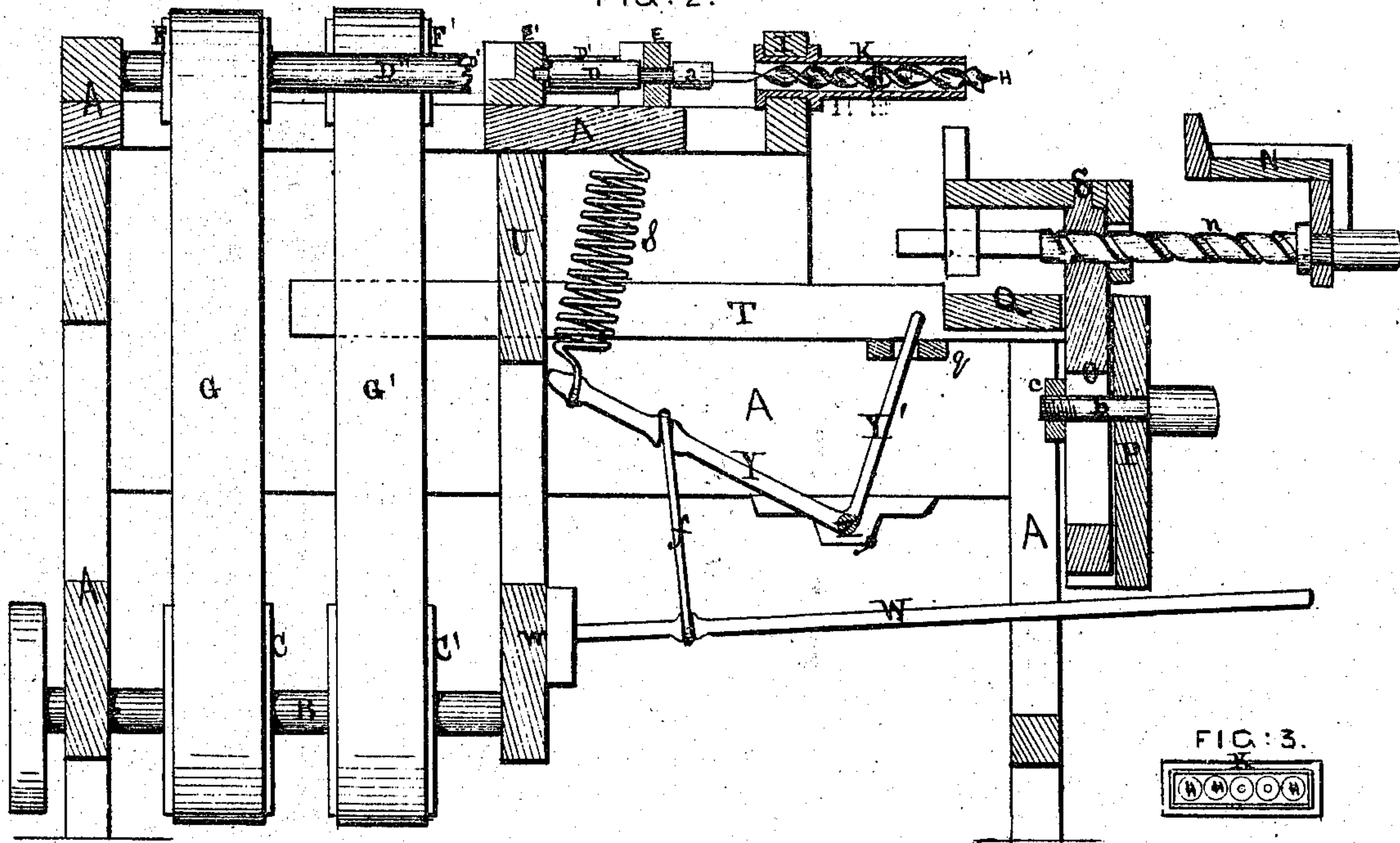


FIG: 3.



Witnesses

H. H. Young
Shields Burr

S. M. Wright Inventor

By David A. Burr atty.

United States Patent Office.

SIMEON M. WRIGHT, OF ATHENS, OHIO.

Letters Patent No. 105,760, dated July 26, 1870.

IMPROVEMENT IN BORING AND MORTISING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

I, SIMEON M. WRIGHT, of Athens, in the county of Athens and State of Ohio, have invented an Improved Boring and Mortising-Machine, of which the following is a specification.

My invention relates to the combination of the stocks carrying the auger-bit with adjustable friction-rollers to drive the same, the object of this part of my invention being to cause the augers to revolve more smoothly and uniformly than is the case where cogs are employed in driving them.

In the accompanying drawing—

Figure 1 is a top or plan view of my improved machine, and

Figure 2, a vertical section taken in an indirect plane, indicated by the dotted line *xx* of fig. 1.

A A A is the stand or frame-work supporting the operating parts of my machine.

B, the driving-shaft, supported in suitable bearings placed in the lower part of the frame-work.

C C' are pulleys secured upon said shaft.

D D, a series of friction-rollers, arranged horizontally above the stand A A, in contact with each other, and parallel to the shaft B, their journals being supported in extended bearings formed in cross-pieces E E', secured upon the top of the stand or frame A.

The outermost rollers, D' D'', on each side of the series, are larger in diameter than those intermediate, and are extended rearwardly through the cross-piece E', to constitute shafts upon which pulleys F F' are placed.

G G' are driving-belts passing over the pulleys C C' and F F', to transmit motion from the driving-shaft B to the friction-roller shafts D' D''.

Upon the front ends of the friction-rollers D D, projecting through the forward journal-piece E, stocks *a a* are secured, to receive auger-bits H H, which are arranged to be readily secured to or removed from said stocks.

Immediately in front of the journal-piece E is arranged a second cross-plate, I, to receive and hold the rear end of a hollow mortising-chisel, K, (see figs. 1, 2, and 3,) through which the augers H project and revolve. This chisel, following the auger, serves to cut out the corners of the mortise after the augers have cut away the central portion of the aperture. Any size of chisel may be fitted in the clamp formed by the plate I, to hold the same, so as to cover or inclose one or more augers, as the size of the mortise shall demand. Where it is desired simply to pierce a circular hole, instead of an angular mortise, the chisel K is entirely removed.

The friction of the rollers D D is regulated at pleasure by means of a set-screw, L, fig. 1, working horizontally against a block, M, (see dotted lines, fig. 1,) which fits and bears against one of the outer driving-rollers D' or D''.

S is the carriage or sliding table, or the machine upon which the timbers to be bored or mortised are placed and secured; and

N is a clamp operated by a screw, *n*, to bind the

timber against the inner ledge *t* of the table, and thus hold it in place.

The table S is supported upon a central bar or standard, O, moving vertically in a suitable box, P, which is, in turn, secured to a cross-piece, Q, sliding horizontally in ways R R, fig. 1, formed on each side of the machine. The table thus admits of vertical adjustment to any desired height, and has a free horizontal movement to and from the chisel and bits.

The table S is secured at such height as may be required by means of a bolt, *b*, passing through an aperture in the box P, and through a vertical slot in the upright bar or standard O, into a nut, *c*, secured upon the opposite side of said standard, as illustrated in fig. 2 of the drawing.

The horizontal movements of the table S are produced and controlled by means of a bell-crank lever actuated by a suitable treadle.

Y Y' is the bell-crank lever, secured to a transverse rocking-shaft Z, which constitutes its pivot.

The shorter arm Y' of the crank-lever projects upward far enough to enter a slot formed in the cross-piece Q, or in a transverse bar, *q*, secured to central bars T T, projecting horizontally from the piece Q far enough to pass through slots in a cross-plate, U, under the rear journal-piece E' of the friction-rollers, and thus steady its movements.

The longer arm Y projects inwardly under the cross-piece U, and is upheld by a strong spiral or other spring, *s*, secured to the frame-work of the machine. When the long arm Y of the crank-lever is thus upheld by its spring, the shorter arm Y' is thrown outward, carrying back the table S far enough to bring its rear edge *t* immediately in front of the bits H and chisel K.

W is the treadle-bar, pivoted to a rear support, *w*, under the machine. It projects forward thence far enough to be within easy reach of the operator's foot when he stands in front of the machine, and is attached to the longer arm Y of the crank-lever by means of a link, *f*, so that it is upheld in connection therewith by the spring *s*. When pressure is exerted, however, upon its outer end, to force it down, it overcomes the resistance of the spring *s*, and, drawing down the longer arm Y of the crank-lever, throws inward its shorter arm Y', carrying with it the table S, toward the chisel and bits, with more or less force and rapidity, in proportion to the pressure exerted thereon.

I claim as my invention—

The combination of two or more auger-bits, H, with friction-rollers D D, arranged and operated substantially as and for the purpose herein set forth.

The foregoing specification of my improved boring and mortising-machine signed by me this 2d day of February, 1870.

SIMEON M. WRIGHT.

Witnesses:

HENRY T. BROWN,
A. G. BROWN.