

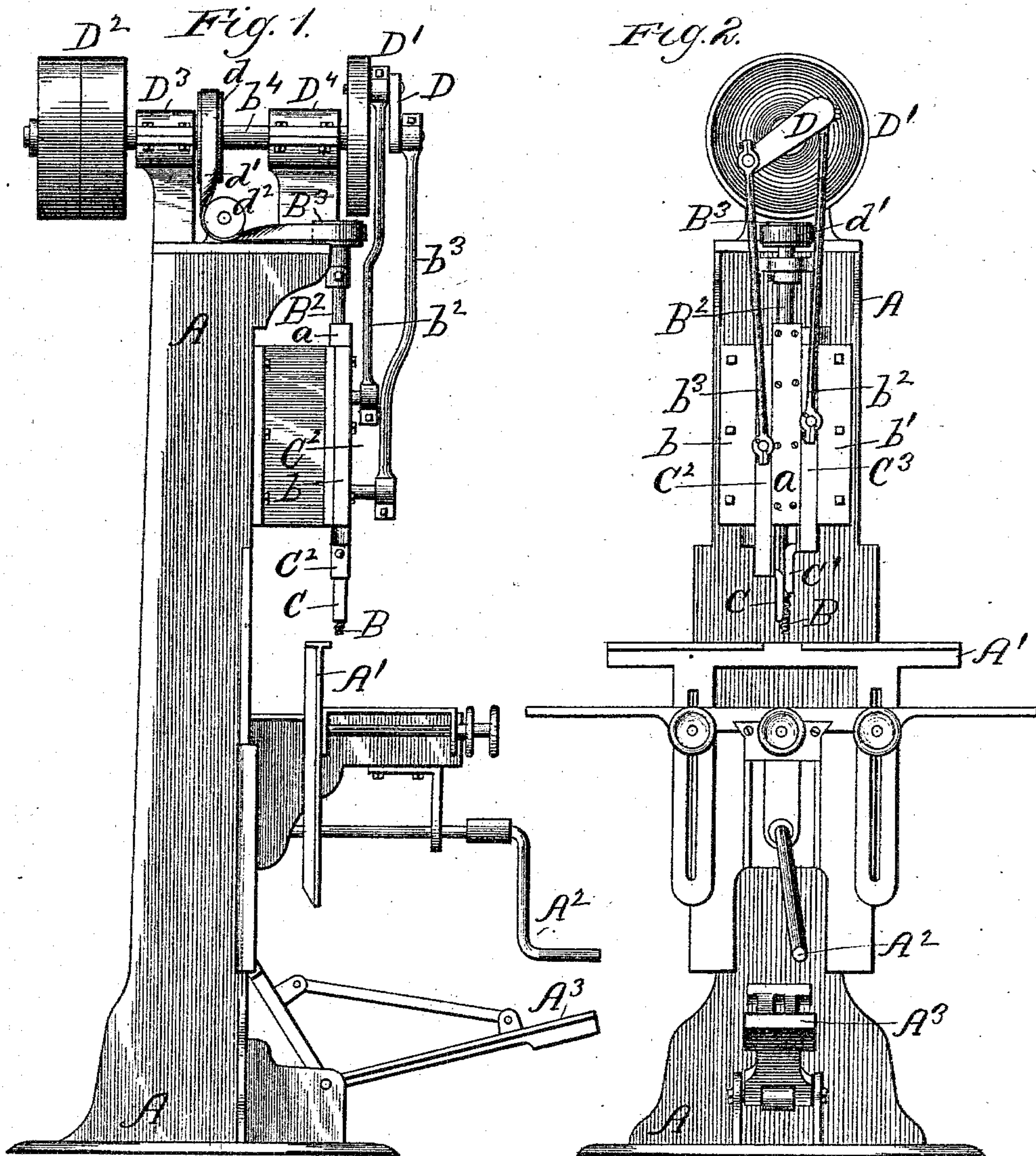
(No Model.)

2 Sheets—Sheet 1.

W. W. GREEN.  
MORTISING MACHINE.

No. 295,162.

Patented Mar. 18, 1884.



Witnesses.  
Will R. Omohundro.  
L. M. Freeman.

Inventor  
Wm. W. Green  
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Attys.



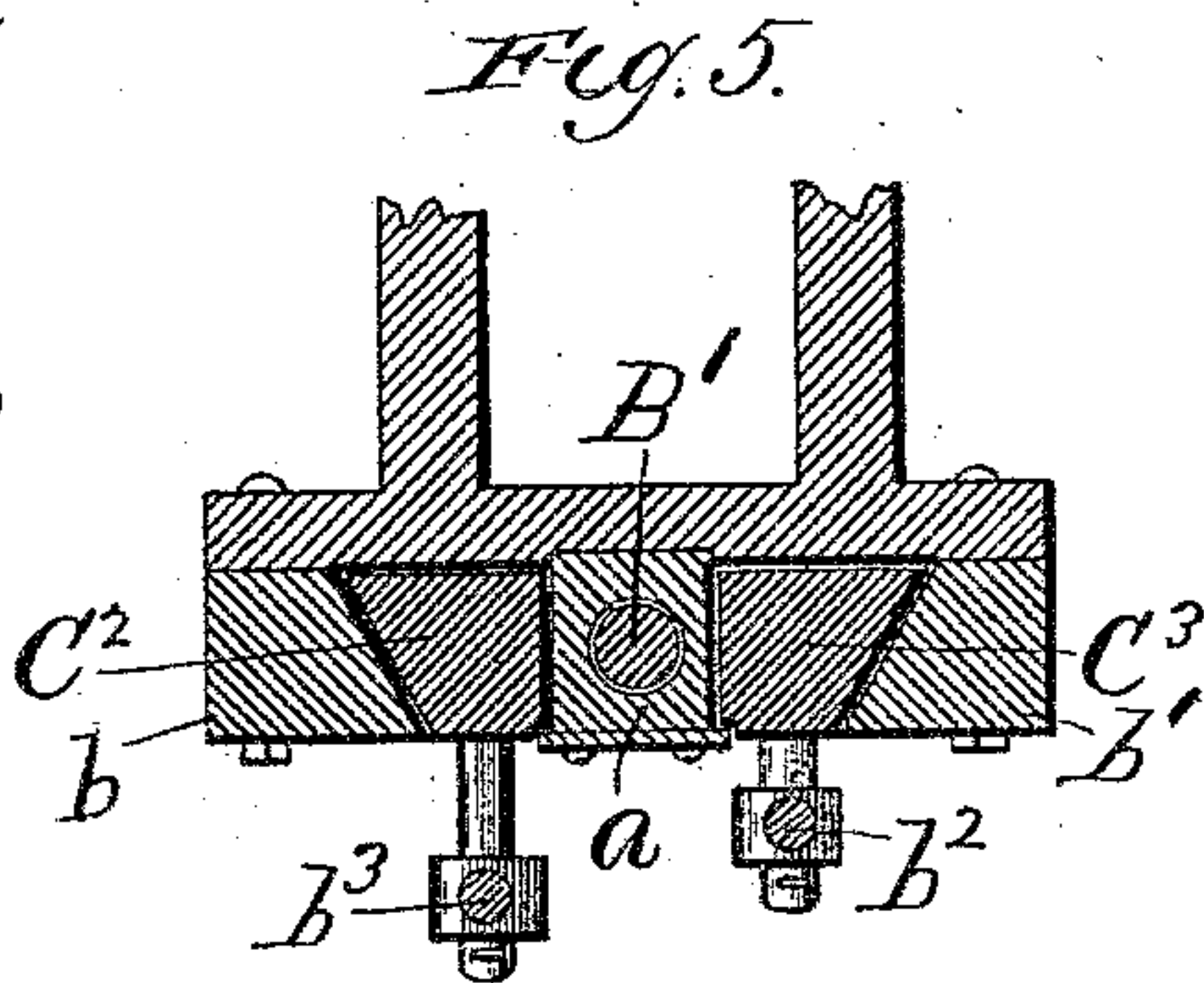
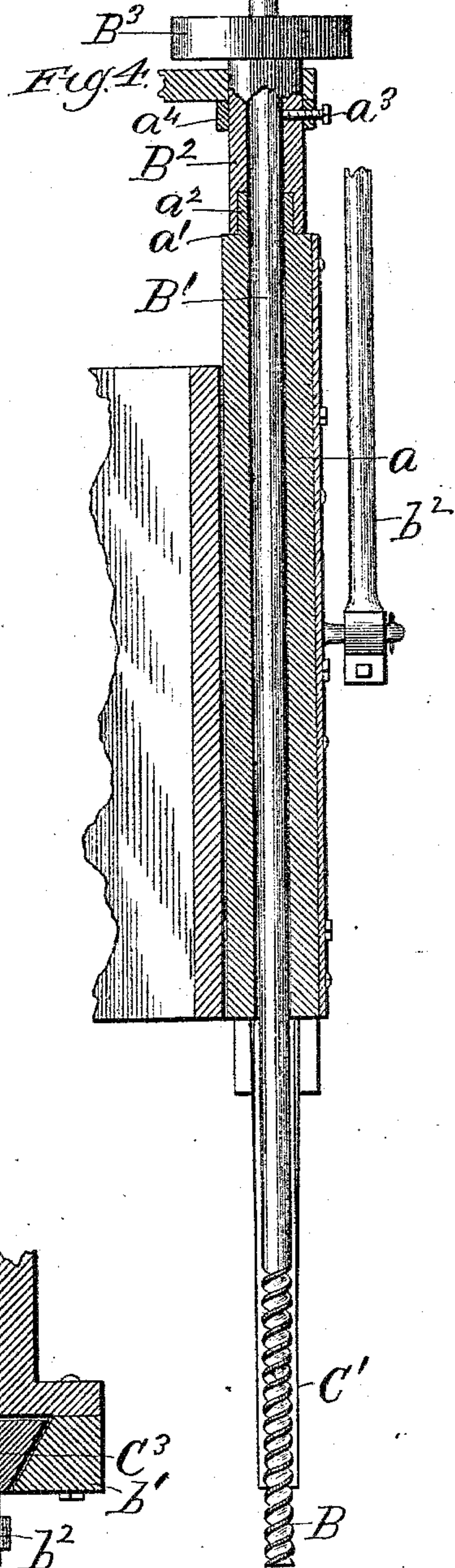
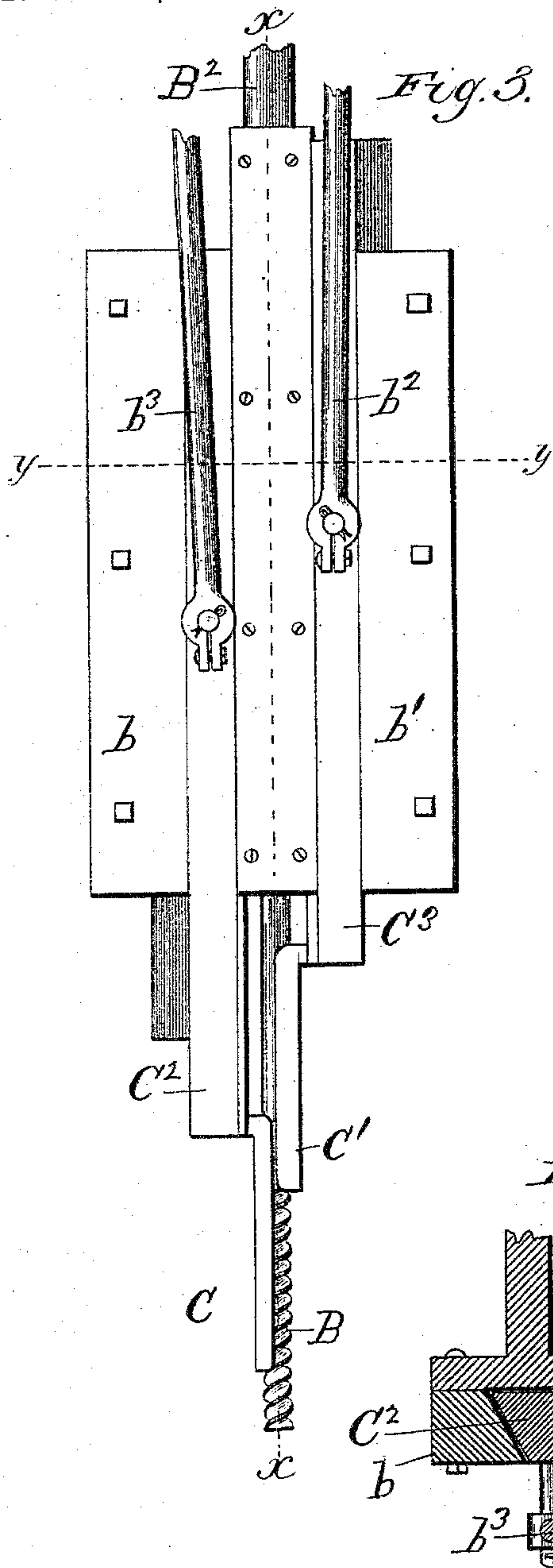
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# UNITED STATES PATENT OFFICE.

WILLIAM W. GREEN, OF CHICAGO, ILLINOIS.

## MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 295,162, dated March 18, 1884.

Application filed November 20, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM W. GREEN, of Chicago, county of Cook, and State of Illinois, have invented certain new and useful Improvements in a Mortising-Machine, of which the following is a full, clear, and exact description, that will enable others to make and use the same, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to an improvement in power mortising-machines; and it consists of an auger for boring a hole, with mortising-chisels arranged on two sides of said auger in the same plane, which are adapted to have an alternate reciprocating movement in a vertical plane, with reference to each other, as will be hereinafter more fully set forth in detail.

Figure 1 is a side elevation of a machine embodying my improved features; Fig. 2, a front elevation of the same; Fig. 3, an enlarged front view of a part of the machine; Fig. 4, a longitudinal vertical section in the plane  $x x$ , Fig. 1; and Fig. 5 a transverse section in the plane  $y y$ , Fig. 3.

Referring to the drawings, A represents the supporting frame-work; A', table for holding the stuff under the mortising-tools; A<sup>2</sup>, hand-crank for raising or lowering the table to a new fixed position, according to the thickness of the material to be operated upon; and A<sup>3</sup> the foot-treadle for feeding the stuff to the machine.

There is nothing new in the construction, arrangement, or operation of the feed-table. A detailed description of the same will therefore be omitted.

The boring-auger B is arranged in a vertical plane, the long stem B' passing up through the socket-piece  $a$ , which provides a long bearing, and firmly holds the auger in position and prevents the same from springing in the work. The upper end of the stem B' is inclosed by the sleeve B<sup>2</sup>, the lower end of which has an annular bearing on the shoulder  $a'$  of the upper end of the socket-piece  $a$ , having the neck  $a^2$ , projecting upward a short distance on the inside of said sleeve, as shown in Fig. 4 of the drawings. The upper end of the sleeve is provided with the band-pulley B<sup>3</sup>, and the auger-stem is removably secured in relation to said sleeve by the set-screw  $a^3$ , which passes through the collar  $a^4$ . The sleeve rotates with the auger-stem and serves to greatly stiffen and hold

these parts to a true bearing. The two mortising-chisels C C' are placed on each side of the auger, and are adapted to have an alternate reciprocating movement, so that when one chisel is down in the mortise the companion chisel is at the highest point on the upstroke. This alternate movement prevents a heavy jar and equalizes and balances the operation and movement of the mechanism. By the use of two chisels both sides of the mortise are elongated from the boring-auger at the same time, and the stuff can be moved in either direction for a continuation of the work without having to turn the same end for end or to change the chisels. By this arrangement more than double the amount of work can be done in the same time than could be accomplished if but one chisel were used. The cutting ends of the chisels may be of any desired form, and provided with lips, if necessary, in order to facilitate the removal of the chips from the mortise. The upper ends of the chisel are bent at an angle and recessed into the lower ends of the cross-heads C<sup>2</sup> C<sup>3</sup>, and may be removably secured in position in any suitable manner. The cross-heads are retained in position by means of the guides  $b b'$  on the outer sides and the socket-piece  $a$  on the inner sides. The lower ends of the two connecting-rods  $b^2 b^3$  are attached to the cross-heads, while the upper ends are connected to each end of the crank-arm D, which is attached to and projects across the face of the crank-wheel D', mounted on one end of the driving-shaft  $b^4$ . By this arrangement the alternate reciprocating movement is imparted to the mortising-chisels. The opposite end of the shaft  $b^4$  is provided with the driving-pulley D<sup>2</sup> and is supported in the journal-boxes D<sup>3</sup> D<sup>4</sup>. A small band-pulley,  $d$ , is also mounted on the driving-shaft  $b^4$ , near its longitudinal center, while, running over and downward from the same is the belt  $d'$ , which passes underneath the companion guide-wheels  $d^2$ , and from thence running in a horizontal plane to and around the band-pulley B<sup>3</sup>, by which means the required motion is transmitted to the boring-auger.

By this arrangement a machine is provided which is simple and durable in construction, easily and conveniently operated, and which will greatly facilitate this class of work.

Having thus described my invention, what



I claim as new, and desire to secure by Letters Patent, is—

1. In a mortising-machine, the combination, with a boring-auger, of the chisels C C', arranged on each side of said auger and adapted to have an alternate reciprocating movement, substantially as and for the purpose set forth.

2. In a mortising-machine, the combination of the auger-stem, the socket-piece  $a$ , provided on the upper end with the shoulder  $a'$  and the neck  $a^2$ , and the sleeve B, resting upon the

shoulder  $a'$  and neck  $a^2$ , and having band-pulley B<sup>3</sup>, substantially as described.

3. In a mortising-machine, the combination of a boring-auger having a socket-piece,  $a$ , and chisels C and C', having reciprocating cross-heads C<sup>2</sup> and C<sup>3</sup> on each side of the socket-piece  $a$ , substantially as described.

WILLIAM W. GREEN.

Witnesses:

L. M. FREEMAN,  
V. STARRWOOD.