

(No Model.)

A. S. BANGS.
MORTISING MACHINE.

No. 263,752.
FIG. 2.

Patented Sept. 5, 1882.
FIG. 1.

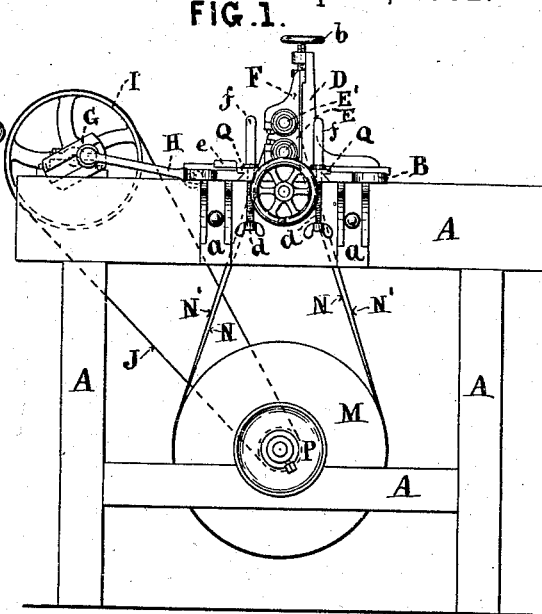
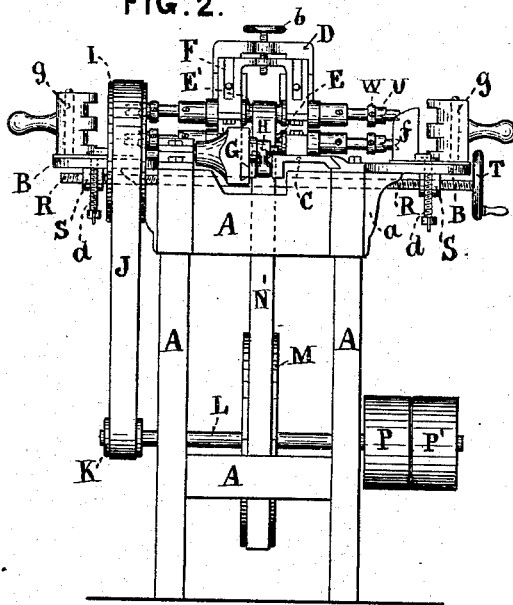
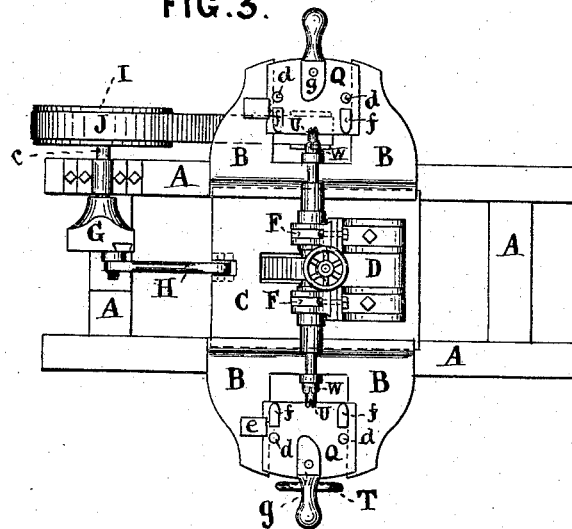


FIG. 3.



Witnesses.
E. Blanta.
F. H. Moore-

Inventor.
A. S. Bangs
by J. H. Adams.
Att'y-

UNITED STATES PATENT OFFICE.

ALGERNON S. BANGS, OF AUGUSTA, MAINE.

MORTISING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 263,752, dated September 5, 1882.

Application filed May 12, 1882. (No model.)

To all whom it may concern:

Be it known that I, ALGERNON S. BANGS, of Augusta, in the county of Kennebec and State of Maine, have invented a new and useful Improvement in Mortising-Machines, of which the following is a specification.

The object of my invention is to produce a machine for cutting mortises in window-frames for the reception of sash-cord pulleys, and by which I am enabled to cut the mortises in the window-frames on both sides at one and the same time.

The invention consists in mounting in a suitable adjustable frame four cutters, two of which operate on opposite sides of the machine, and attached to two spindles arranged one above the other in such a manner as to have motion imparted to both spindles by means of two separate belts, one to each spindle and both on one pulley attached to the main shaft, to which motion is imparted from any suitable motor, and means for feeding the material to be operated upon to the cutters.

In the accompanying drawings, Figure 1 is a front view of a machine constructed according to my invention. Fig. 2 is an end view of same. Fig. 3 is a plan or top view.

On a suitable frame, A, I fix plates or tables B, which project out beyond the frame, and are supported upon brackets *a* underneath, which fit against and are bolted to the frame A. The inner sides of the tables B are provided with V-shaped grooves, in which slides the plate or table C, which is provided with corresponding projections.

On the plate C is mounted the frame D, which has bearings for the lower cutter-spindle, E. The frame D is also formed with V-shaped grooves near its edges, into which fits and slides the frame F, carrying the bearings for the upper cutter-spindle, E', which is adjusted vertically by means of the screw and hand-wheel *b*, working through the head of the frame D. The spindles E E' are provided at each end with cutters V W, as indicated in Fig. 2, and which are of that construction which enables them to cut a slot, and a rabbet in said slot at the same time, in the material operated upon.

A reciprocating motion is transmitted to the sliding plate or table C by means of a slotted

eccentric block, G, to which it is connected by the rod H, the eccentric block being secured to the shaft *c*, which also carries the pulley I, which is driven by the belt J from a pulley, K, on the driving-shaft L. The rod H can be adjusted in the slot of block G toward or from the axis of the pulley I, to give more or less travel to the reciprocating plate C, as required.

The cutter-spindles E E' are both driven from a pulley, M, on the driving-shaft L by the belts N N', the belt N, which passes over the pulley on the lower spindle, E, being in contact with the pulley M, and the belt N', which passes over a pulley on the upper spindle, E', working over or on the outside of the belt N around the pulley M.

P P' are fast and loose pulleys on driving-shaft L for the reception of bands from the driving-power.

The bed-plates or tables B are formed at their outer ends with openings, (see Fig. 3,) the sides of which are provided with V-shaped projections for taking into corresponding V-shaped grooves in the sliding plates Q, which carry the material to be operated upon. The plates Q are provided with screws *d*, on the heads of which the material rests, so that it can be adjusted to the required position in relation to the bits. *e* is a stop against which the material is set. The material, after being placed in position, is securely held by means of the clamps *g*, which press it against the stops *f f*. The clamps *g* are notched out opposite the cutters, so that when the cutters have bored through the material they will not come in contact with the clamps. The material is fed to and brought from the bits by means of a rod, R, having a right and left hand screw-thread, which works through nuts S on the under side of the plates Q, motion being given the rod by the hand-wheel T.

The operation is as follows: A piece of material being placed in position on each side of the machine is held by the clamps *g*. The screw-rod R, operated by the hand-wheel T, is then turned, which carries both the tables Q simultaneously toward the cutters until the material is bored through or to the required depth. At the same time the reciprocating motion of the table C carries the cutters backward and forward, and the hole and rabbet are cut

the desired length. The hand-wheel T is then turned in the reverse direction, and the tables Q are forced out from the cutters. The clamps g are then turned and the material released.

5 What I claim as my invention, and desire to secure by Letters Patent, is—

1. In a mortising-machine, the spindles E E', arranged one above the other and provided with cutters on each opposite end, and rotated
10 by bands passing over each spindle separately and both over a single pulley, M, substantially as specified.

2. The movable plates Q Q, supporting the article operated upon, in combination with the

bed-plates B B and the right-and-left-screw- 15 threaded rod, as and for the purpose set forth.

3. The combination of the bed-plates B B, the reciprocating plate C, the frames D and F, and the cutter-carrying spindles E E, substan- 20 tially as and for the purpose set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

ALGERNON S. BANGS.

Witnesses:

J. H. ADAMS,
E. PLANTA.