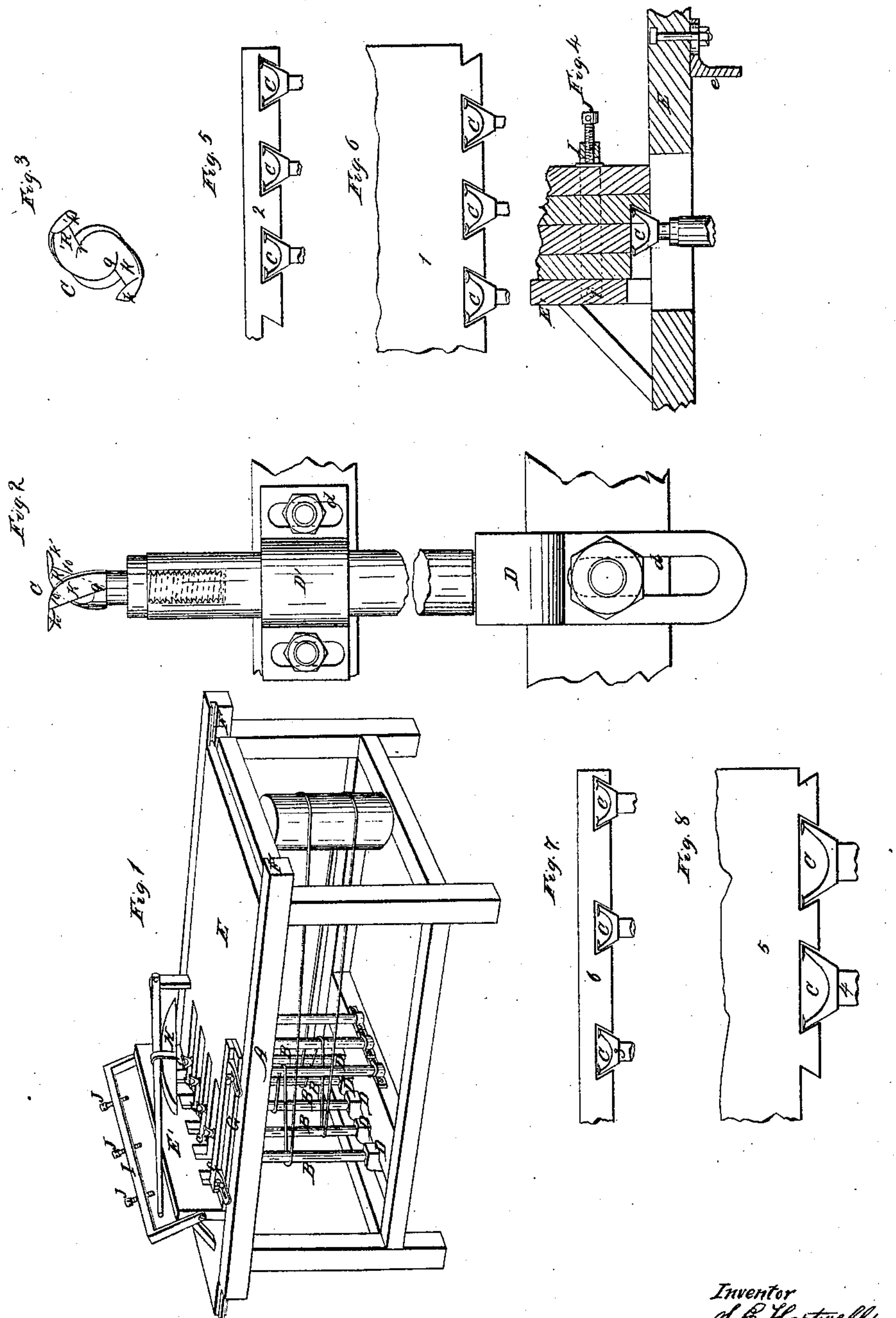


*S. E. Hartnell,
Doretailing Machine.*

N^o 41,992.

Patented Mar. 22, 1864.



*Witnesses.
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UNITED STATES PATENT OFFICE.

SAMUEL E. HARTWELL, OF NEW ALBANY, INDIANA.

IMPROVEMENT IN DOVETAILING-MACHINES.

Specification forming part of Letters Patent No. **41,992**, dated March 22, 1864.

To all whom it may concern:

Be it known that I, SAMUEL E. HARTWELL, of New Albany, Floyd county, Indiana, have invented a new and useful Dovetailing-Machine; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification.

My invention relates to a provision for cutting a complete set of dovetail tenons and corresponding mortises on the parts of a drawer, box, or the like.

Figure 1 is a perspective view of a machine embodying my invention. Fig. 2 shows a cutter and mandrel to full size. Fig. 3 is an end view of the same. Fig. 4 is a longitudinal section of a portion of the machine. Figs. 5, 6, 7, and 8 are diagrams illustrating the dovetailing action of my cutters on the work.

Journaled vertically and equidistant in a frame, A, is a gang of mandrels, B, surmounted by conical cutter-heads, C, which are adjusted to an exactly corresponding elevation by means of slots, *d*, in the steps D and boxes D'.

As arranged in Figs. 1, 5, and 6, the cutters are adapted to form the tenons 1 and mortises 2 of exactly equal dimensions. This is, however, not imperative, as two distinct sets of cutters, 3 and 4, may be employed, respectively, for the tenons 6 and mortises 5, (see Figs. 7 and 8;) but whether of equal or unequal size the cutters have the same angular contour, and are arranged at equal distances from center to center in the gang.

The operative portion of each cutter consists of two opposite blades, K K', which terminate in pods or lips *k k'*. The cutting-edge 9 10 of each blade, K or K', is so formed as to project forward of a radial position from heel 9 to point 10, so as to enable the lip K or K' and point 10 to initiate the cutting action and cause the cutter to hug the work to the bed, and to operate with a paring or shaving rather than with a breaking and tearing action, resulting in great economy of

power, and imparting a smooth and even finish to the bottom and sides of the mortises and sharp unbroken angles to the tenons.

The work is supported and guided to the cutters by a sliding bed, E, which bed is restricted to a motion at right angles to the gang of cutters by guides F in the frame A. *e* is a stop to limit the stroke of the bed.

G is an adjustable gage, against which the edge of the stuff is pressed when about to be forwarded to the cutters.

H is a clamp for holding the end piece of a drawer or box down to be mortised.

I J is a clamp to receive and hold a bundle of side pieces during the operation of cutting the tenons. The said clamp consists of a frame I, hinged at *i* to an upright or standard, E', upon the bed E, and capable of being brought down to the position represented in Fig. 4, in which figure the red lines indicate the stuff held securely in position by means of set-screws J.

In the above-described illustration of my invention a gang of five bits is employed, but it is evident a greater or less number may be used without departing from my plan.

I claim herein as new and of my invention—

1. The arrangement of the gang of conical dovetailing-bits C K K' *k k'*, rotating on axes at right angles to the plane of motion of the bed E, substantially as and for the purposes explained.

2. The combination of the adjustable dovetailing-bits C K K' *k k'* bed E *e*, sliding in a plane at right angles to the axes of the said bits, the clamps H and I, and gage G, the whole being arranged and operating substantially as set forth.

3. The dovetailing-cutter C K K' *k k'*, operated as represented in the foregoing specification.

In testimony of which invention, I hereunto set hand.

S. E. HARTWELL.

Witnesses:

GEO. H. KNIGHT,
PH. F. BALDAUFF.