

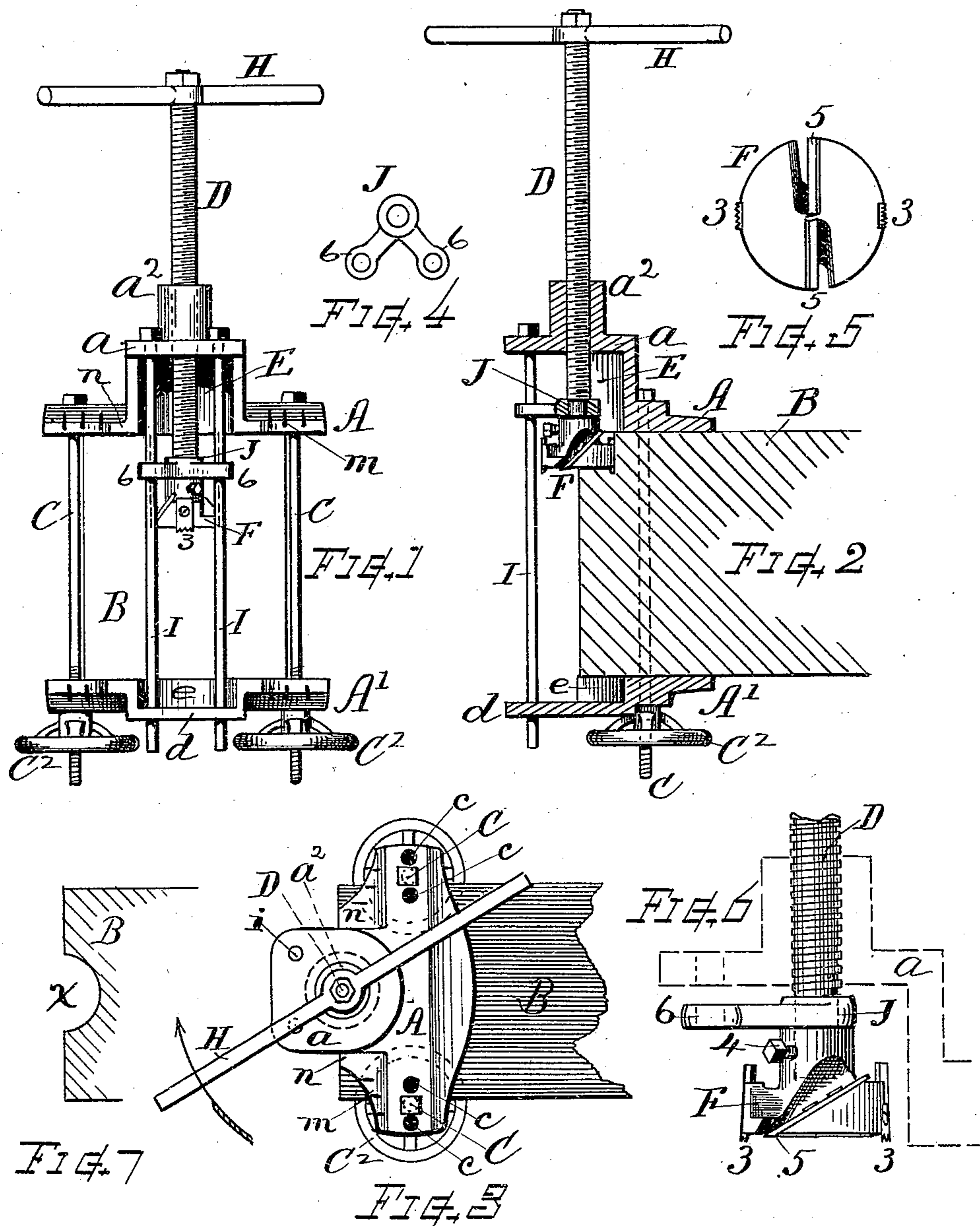
(No Model.)

G. H. CUTTING.

MECHANISM FOR CUTTING PINTLE CAVITIES IN TIMBER.

No. 557,054.

Patented Mar. 24, 1896.



Witnesses.

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# UNITED STATES PATENT OFFICE.

GEORGE H. CUTTING, OF WORCESTER, MASSACHUSETTS.

## MECHANISM FOR CUTTING PINTLE-CAVITIES IN TIMBER.

SPECIFICATION forming part of Letters Patent No. 557,054, dated March 24, 1896.

Application filed July 11, 1895. Serial No. 555,685. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE H. CUTTING, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented a new and useful Mechanism for Cutting Pintle-Cavities in Timber, of which the following, together with the accompanying drawings, is a specification sufficiently full, clear, and exact to enable persons skilled in the art to which this invention appertains to make and use the same.

In the construction of mills and other buildings in which columns and heavy timber floor-girders are employed it is customary to employ what are known as "pintles" for supporting the foot of an upper column upon the head of a lower column, the pintle passing through the timber or girder of the floor, the space for the pintle being cut out as semi-circular cavities in the adjacent abutting ends of the girder-timbers.

The object of my present invention is to provide a mechanism whereby these semi-circular or circular cavities can be formed in heavy timbers with ready facility and precision, and in a quicker and less laborious manner than the usual practice of chipping them out by hand by means of gouges.

To this end my invention consists in a mechanism constructed and organized for operation substantially as explained in the following detailed description.

In the drawings, Figure 1 is an end view of my mechanism as applied to the end of a timber for forming the pintle-cavity. Fig. 2 is a vertical section of the same. Fig. 3 is a top plan view. Fig. 4 is a separate plan view of the guide-collar. Fig. 5 is a bottom view of the cutter-head on somewhat larger scale. Fig. 6 is a side view showing the detail of the cutter-head, a portion of its operating-shaft, and the guide-collar; and Fig. 7 is a section showing the form of the cavity.

Referring to parts, A and A' denote the supporting-frames or two metal plates respectively adapted for seating upon the top and under side of the timber B, where they are secured in position by bolts CC that pass through holes c formed in the laterally-projecting ends of the plates, and which bolts are provided with screw-nuts thereon, pref-

erably hand-wheel nuts C<sup>2</sup>, by means of which the plates can be clamped firmly in position, as indicated. The top plate, A, is provided with a flat seating-surface and an overhanging upwardly-projecting part a having a chamber E beneath and carrying upon its top an upright bearing-hub, a<sup>2</sup>, which is internally screw-threaded. The bottom plate, A', is provided with a flat seating-surface and a projecting part d, chambered, as at e, on its upper side.

D indicates a screw-threaded shaft fitted in the bearing-hub a<sup>2</sup> and carrying on its lower end the cutter-head F, said shaft having at its top end a handle or cross-bar H or means by which the shaft and cutter-head can be rotated. The cutter-head is provided with a hub for its support upon the end of the shaft D, to which it is secured to rotate therewith by a spline, set-screw 4, or other suitable means. Saw-toothed groovers or lip-cutters 3 are arranged at the peripheral angle of the head, and planing-cutters 5 are arranged through its bottom disk. (See Figs. 5 and 6.)

I I indicate guide-rods supported in suitable holes i formed through the projecting front portions of the plates A and A', said guide-rods being arranged parallel with the screw-shaft D and extending from the top to the bottom plate. A supporting-collar J is arranged on the shaft adjacent to the cutter-head, the shaft turning free within the collar, and said collar is provided with arms 6, having openings at their ends that engage with and slide upon the rods I, thereby sustaining the cutter-head laterally or in opposition to any tendency to crowd away from the work.

The chamber E of the upper plate is of sufficient size to receive the cutter-head when raised above the plane of the seating-surface of the plate or top surface of the timber; and the chamber e of the bottom plate is of sufficient depth to permit a clear cut through the bottom face of the timber without the cutters striking the plate. A series of holes c are best provided at the ends of the plates adapting the mechanism for twelve-inch, fourteen-inch, and sixteen-inch timbers, or for other sizes, as desired. The cutter-head F for ordinary pintles is about four and one-half inches in diameter, but such cutter-heads may be of

any diameter required, the different sizes being made interchangeable upon the end of the shaft, so that a larger or smaller cutter can be used thereon as occasion may demand.

5 Suitable side lugs  $n$  and gage-marks  $m$  may be formed on the plates to facilitate adjustment of the instrument in proper position upon the timber.

The operation is as follows: The threaded  
10 shaft D and cutter-head F carried thereby being at their highest position, the two plates or supporting appliances A A' are adjusted and clamped upon the timber, with the cutter-head above and axially in line with the end  
15 plane of the timber or other desired position for the pintle-cavity. The operator then, by means of the handles H, rotates the screw-shaft and runs the cutters through the timber, cutting or boring out a semicircular cavity, as indicated at  $x$ . The screw-thread feeds  
20 the cutters down with a regular and positive movement, regardless of the quality of timber, the groovers 3 cut in advance the circular outline of the cavity, and the planing-cutters take the intervening substance, whether  
25 soft wood or knots, to the depth governed by the screw-feed at each rotation, while the guide-rods I and supporting-collar J keep the cutter-head from deviating from the proper  
30 axial alignment, so that the cavity is quickly and accurately formed.

When it is desired to form a full circular cavity through a timber the mechanism can be used with the collar J and guide-rods I  
35 temporarily removed.

The mechanism can be readily shifted from one timber to another by first loosening the nuts C<sup>2</sup>.

40 I claim as my invention and desire to secure by Letters Patent—

1. In mechanism for cutting pintle-cavities in timber, the supporting-plates adapted for the top and bottom of the timber, each having laterally-projecting ends with corresponding  
45 holes therethrough; the top plate A being formed with a flat seating-surface and an integral upward-projecting and overhanging part having the chamber E beneath, and

carrying on its top the upright internally-threaded bearing-hub  $a^2$ ; the bottom plate A' 50 having the flat seating-surface and a projecting part  $d$  chambered at  $e$  on its upper side, said plates provided with side lugs  $n$  in the plane of the shaft-axis, and gage-marks  $m$  thereon, as described, in combination with 55 clamp-bolts arranged through the laterally-projecting ends of said plates, hand-nuts on said bolts, the rotatable screw-threaded shaft fitted in said bearing-hub, the cutter-head carried on the lower end of said shaft, and 60 the operating-handle on the upper end of said shaft, all substantially as and for the purpose set forth.

2. In a mechanism for cutting semicircular pintle-cavities in timber, the combination, 65 with the rotating cutter-head and its operating-shaft, of a bracing-collar arranged adjacent to the cutter-head and carried with the advancing and receding movement of the same, the shaft turning free within said collar; and a guide, parallel with the direction 70 of the cutter movement, with which a projecting part of said collar movably engages for supporting said collar in lateral opposition to the pressure of the work, for the purpose 75 set forth.

3. In a mechanism for cutting semicircular cavities in timbers, in combination, the frame or supporting-plates, means for securing said 80 plates upon a timber, the rotatable cutter-head with cutters therein, the cutter-operating shaft fitted in a bearing fixed on said top plate, the hand-lever or means for rotating said shaft, a screw-thread for positively advancing said shaft and cutter, guide-rods arranged axially parallel with said shaft, and a 85 supporting-collar mounted on said shaft adjacent to the cutter-head and having arms that engage with and slide upon said guide-rods, for the purposes set forth. 90

Witness my hand this 8th day of July, 1895.

GEORGE H. CUTTING.

Witnesses:

CHAS. H. BURLEIGH,  
ELLA P. BLENUS.