G. W. HUBER & A. E. FLICKINGER.

Bench-Planes.

No. 145,106. Patented Dec. 2, 1873.

Fig. 1

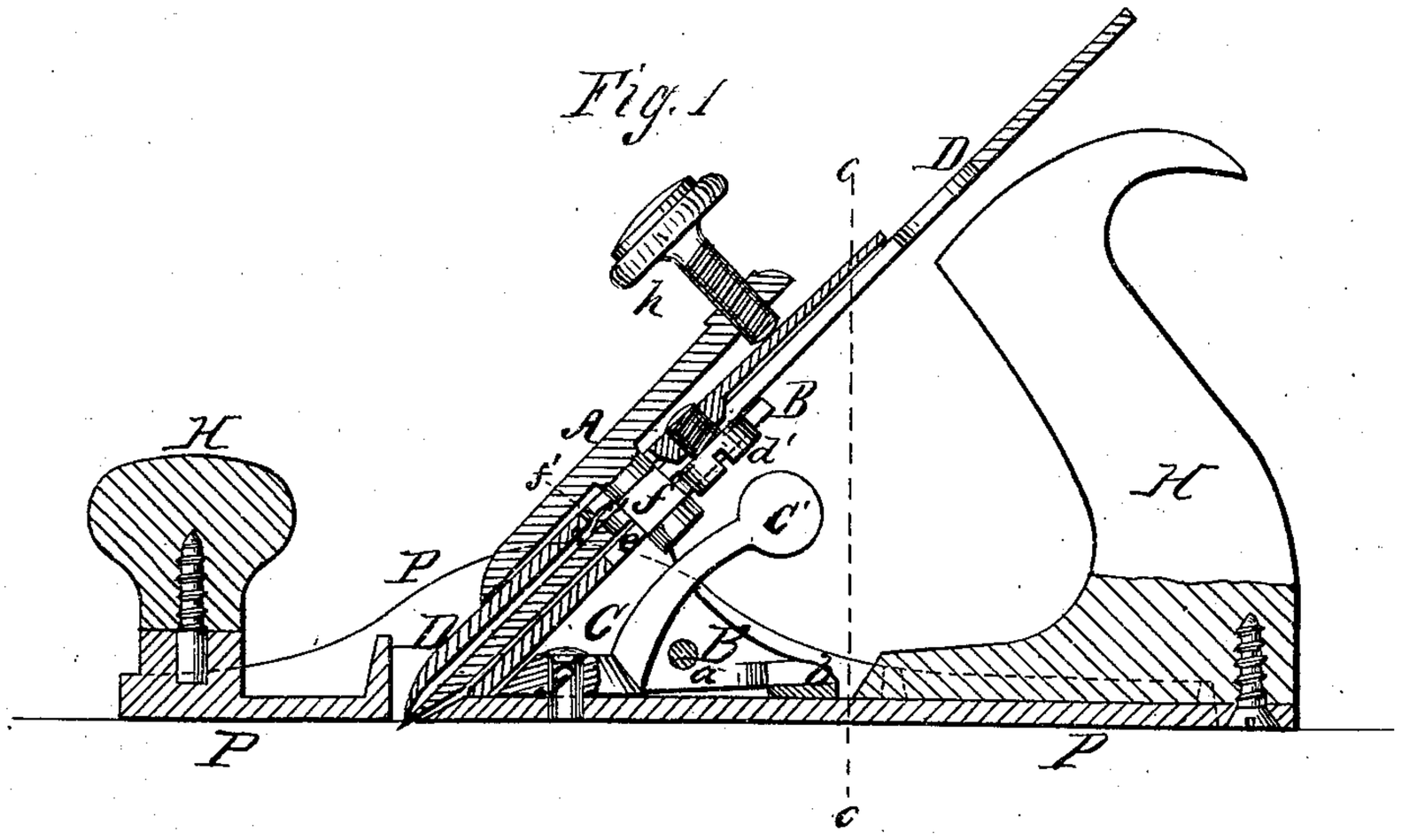
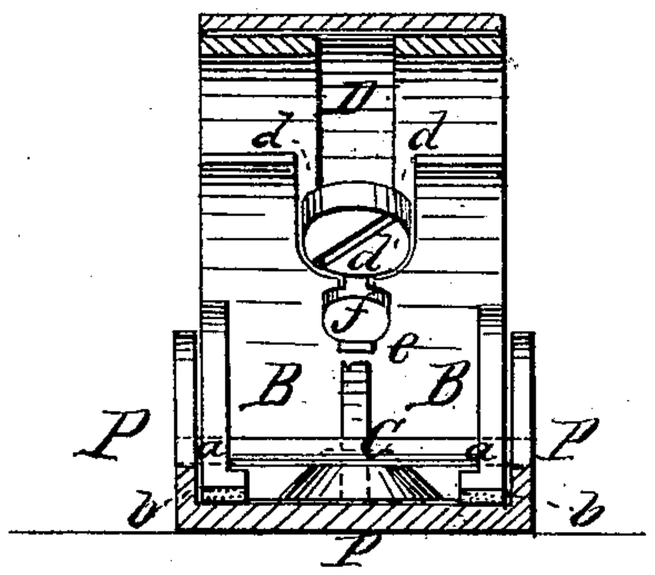


Fig. 2.



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UNITED STATES PATENT OFFICE.

GEORGE W. HUBER AND AARON E. FLICKINGER, OF NORWALK, OHIO.

IMPROVEMENT IN BENCH-PLANES.

Specification forming part of Letters Patent No. **145,106**, dated December 2, 1873; application filed October 18, 1873.

To all whom it may concern:

Be it known that we, GEORGE W. HUBER and AARON E. FLICKINGER, of Norwalk, in the county of Huron and State of Ohio, have invented a new and Improved Plane, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a vertical longitudinal section of our improved plane; and Fig. 2, a vertical transverse section of the same on the line *c c*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The object of our invention is to construct an improved plane, which is light, handy, and easily adjustable to any thickness of shaving without the use of a hammer. Our invention consists in the firm mounting of the plane-iron between a cap-piece with connecting clamping-bolt and set-screw, and a supporting-shoe, which is pivoted to the sides of the base-piece, and adjusted, together with the plane-iron, by a conical eccentric pivoted to the base.

In the drawing, P represents the base-piece of the plane, provided with front and rear handles H, and made preferably of cast-iron. The shoe B is pivoted at *a* to the side flanges of base A, and supports on its inclined front part the plane-iron D, while the backward-extending bracket-shaped sides rest with their broader ends on rubber cushions *b*, by which a certain degree of spring action is imparted to shoe B, so as to offer a yielding support to the plane-iron. The face part of shoe B is provided with a recess, *d*, and extension-slot *e*, for giving play to the screw-head *d'* of the plane-iron D and clamping-bolt *f* of the cap-piece A. The plane-iron D has a perforation, *f'*, for the passage of bolt *f*. A conical eccentric, C, is pivoted to a lug, *g*, of base P, under the lower extremity of shoe B, and produced under the same inclination of its sides as the front part of shoe B, so as to raise or lower shoe B, as the eccentric C is turned, by means of its handle C'. The plane-iron is thus raised or lowered with shoe B, and the thickness of the planing regulated thereby. The slot through which the plane-iron projects is widened on lowering the iron, so that the thicker shavings may freely pass through the same; while, in raising the iron, the slot is narrowed in proportion to the thinner shavings, and thus the tearing up of the wood or the veneers prevented, and a neat and smooth surface produced. The cap-piece A is placed on the top of the plane-iron D, its clamp-bolt *f* passing through the slotted part of the iron and into slot *e* of shoe B. The sides of bolt *f* are recessed to correspond exactly to the width of slot *e*, while its broad head projects over the sides of slots *e*, and holding thereby the plane-iron and shoe in position. By means of a set-screw, *h*, at the upper end of cap A, the shoe B may be firmly tightened on the iron D, clamping it rigidly between cap A and shoe B. The plane iron is in this manner easily and firmly set into the plane, and readily adjusted to any degree of planing in a neat and convenient manner, economizing time, and forming a compact and strong implement for the trade.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The improved adjustable plane, consisting of base-piece P, pivoted shoe B with rubber cushions *b*, conical eccentrics C C', perforated plane-iron D, and clamping cap-piece A, constructed substantially as and for the purpose described.

GEORGE W. HUBER.
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Witnesses:
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