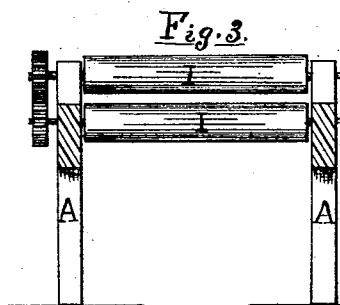
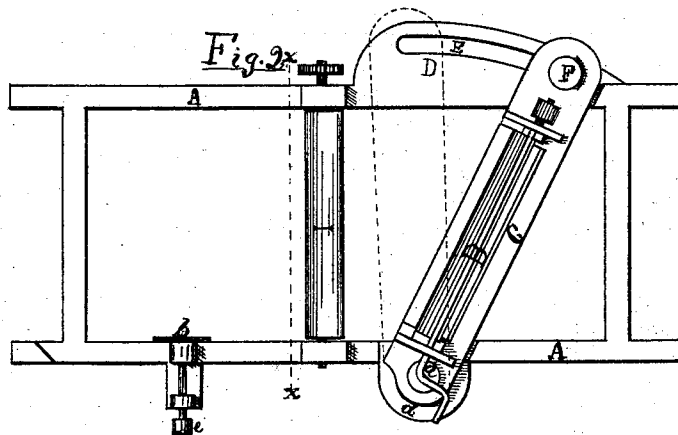
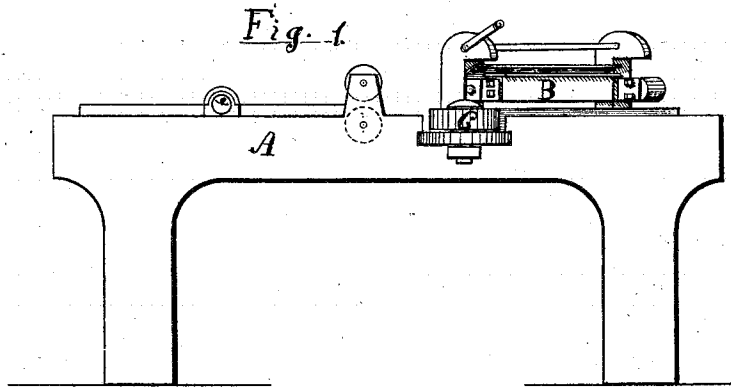


O. G. HOWES.
Planing-Machines.

No. 149,128.

Patented March 31, 1874.



Witnesses:

J. S. Brown,
E. M. Gallaher.

Inventor:

Orrison S. Howes
by his attorney
Wm. Frank Browne

UNITED STATES PATENT OFFICE.

ORSON G. HOWES, OF FORT ANN, NEW YORK.

IMPROVEMENT IN PLANING-MACHINES.

Specification forming part of Letters Patent No. **149,128**, dated March 31, 1874; application filed June 28, 1873.

To all whom it may concern:

Be it known that I, O. G. HOWES, of Fort Ann, county of Washington, State of New York, have invented a new and useful Improvement in Planing-Machines; and I do hereby declare that the following is a full and exact description thereof, reference being had to the accompanying drawings making a part of this specification.

Figure 1 is a side elevation of a planing-machine. Fig. 2 is a plan of the same. Fig. 3 is a cross-section in a plane indicated by line *x x* of Fig. 2.

Similar letters refer to corresponding parts in all of the figures.

The nature of my invention consists in a swinging cutter-head capable of being adjusted to and secured at any angle departing from a right angle that may be desired.

I employ a cast-iron frame, A, similar to those ordinarily used. To the sides of the frame A I cast projections D *d*, as seen in Fig. 2. In the projection D I make an elongated slot, E, the length of which is determined by the swing of the cutter-head and bar upon which it rests, and being described upon a radius the length of which is the distance between the centers of the two bolt-heads *a* F, thus the bolt-head *a* being the center of the arc of the circle described at E. The bolt *a* passes through the projection *d*, so as to allow of a nut being screwed upon it. C represents a bar of iron, upon which the cutter-head is secured by appropriate standards and boxes, and operated as in ordinary machines. The bar C is secured at one end by the bolt *a*, and at the other end by the bolt F, which passes through the slot E, and is held to its place by turning a nut on the under side of the projection D, thus securing the cutter-head at any angle required. I I are two feed-rolls. *e* is a pulley for driving the saw *b*.

The object of placing the cutter-head in the position shown in Fig. 2, or in some other oblique position, is, first, it requires less power to do the work required; second, it leaves a smooth or more finished surface than can be obtained by placing the cutter-head at right angles with the frame A, as shown by dotted lines in Fig. 2.

I find by experiment and practice that the best results are obtained by placing the cutter-head at an angle of forty-five degrees to the bed of the machine, or to the surface to be dressed. When the cutters are at an angle of forty-five degrees they are cutting diagonally across the grain of the wood, that being more of a drawing or shearing cut than is otherwise obtained by placing the cutters at any other angle between a right angle and an angle of forty-five degrees to the bed of the machine or surface to be dressed; but for particular materials or purposes some other angle may be preferred.

This machine is adapted to planing doors, although it can be used for all purposes that other planing-machines are used for.

The saw *b* is used for cutting the edges and inequalities from the edges of the doors as they pass through the machine.

What I desire to secure by Letters Patent is—

The cutter-head B, attached to the swinging bed, as shown and described, in combination with the frame A of a planing-machine, when all the parts are constructed and operate in the manner specified.

ORSON G. HOWES.

Witnesses:

E. M. GALLAHER,
R. D. O. SMITH.