

UNITED STATES PATENT OFFICE.

FREDERIC GODEAU, OF PARIS, FRANCE, ASSIGNOR TO PIERRE FERDINAND ARBEY, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR PLANING WOOD.

Specification forming part of Letters Patent No. **188,046**, dated March 6, 1877; application filed November 25, 1876.

To all whom it may concern:

Be it known that I, FREDERIC GODEAU, of Paris, France, have invented an Improvement in Machine for Planing and Molding Wood, of which the following is a specification:

In the accompanying drawing, Figure 1 represents a sectional side elevation, and Fig. 2 a plan view, of my improved machine for planing and molding wood. Figs. 3 and 4 are detail vertical sections, showing the improved construction of the cutting-tool. Figs. 5 and 6 are detail longitudinal and transverse sections of the journal-bearing of the cutter-shaft; and Fig. 7 shows in detail the parts forming the adjustable cutter.

Similar letters of reference indicate corresponding parts.

The invention will first be described in connection with the drawing, and then pointed out in the claims.

In the drawing, A represents the supporting-frame, at the vertical or inclined sides of which the cutting-tools are arranged, so as to be capable of vertical adjustment. The cutter-shafts are for this purpose supported in bearings of brackets or standards B of slotted base-plates B', that slide along the sides of frame A, and are secured into higher or lower position thereon by clamping-screw devices *a*. The cutter-shafts are revolved in suitable manner from the driving-shaft, and carry cutter-heads C, of any suitable shape, adapted to the shape of the cutting-knives, and to the purpose for which they are intended. The cutting-knives C' may be of straight, curved, conical, helicoidal, or of any other shape, according as planing and molding of different kinds are to be performed. The cutter-knives C' are secured to the faces of the cutter-heads by means of holding-plates D D', which bear firmly on the knives near the edges of the same, as shown clearly in detail sections in Figs. 3 and 4, of which Fig. 3 shows the holding-plates attached separately to the cutter-head, while Fig. 4 shows the plates attached to each other, and the lower one to the cutter-head, so that they may be jointly detached for being sharpened on the grindstone without removing the knife from the sustaining-plates. The knife C' rests on the front bear-

ing or cheek of the lower plate D, the rear part of which is of less thickness for the purpose of leaving the rear part of the knife free of pressure. The top plate D' bears by its front part or face on the knife, and is curved to be raised a short distance above the main part of the knife for the same purpose of leaving the knife free of pressure at the rear part. The lower plate D is secured by fastening-screws *b* passing down through the plate into the cutter-head, or from below, through the cutter-head, into the plate, as shown respectively in Figs. 3 and 4, according as the knives are sharpened directly on the cutter-head or detached therefrom for being sharpened.

The top plate D' is secured to the cutter-head by fastening-screws *d*, near the center of the plate, or to the lower plate, as described. A number of set-screws, *e*, pass through the rear part of the top plate D', and bear on the face of the cutter-head or lower plate, for the purpose of setting the knife tightly between the cheeks of the plates, and fit it closely to the shapes of the holding-plates and cutter-head.

The rear part of the knife C' has recesses *f* for the fastening-screws *d* of the top plate for being set forward or back, as required, while the top plate has longer recesses *f'* between the screws, for the purpose of readily regulating the position of the knife, and moving it forward between the holding-plates.

By releasing the pressure of the set-screws *e*, and loosening the fastening-screws of the top plate, the knife may be moved forward in proportion as the same is worn off by the work, to be then ground, so that the knife may be used up nearly to its entire width.

The pressure of the top plate D' imparts, simultaneously with the firm support given to the knife, a certain degree of flexibility and elasticity which protects the knife against the injurious influences of wood of different qualities and conditions, and secures a more reliable and effective cutting action of the same.

The knives, plates, and cutter-heads may be adapted either for planing or for molding, in which latter case they have to be shaped or profiled to correspond to the molding to be produced. The mode of attaching, adjusting,

and holding the knives remains in all cases the same, so as to produce a flexible and readily-adjustable cutting-tool.

The cutter-shaft is arranged with conical journals *g*, tapering toward the outer ends of the shaft. The journals *g* revolve in corresponding brass bearings or boxes *g*¹, having four or more longitudinal grooves or channels, *g*², for supplying the lubricating-oil in sufficient quantity to the journal to produce the turning of the same with the least possible friction. The oil is supplied in suitable manner from a lubricator, through an oil-duct, to the grooves, and prevented from escaping by closing end plates *h*. The boxes *g*¹ are of cylindrical exterior shape, and retained in fixed position in the supports or brackets *B* by top set-screws *h*'. The wear of the journal is compensated by the forward adjustment of the box, so that always a steady and solid bearing for the cutter-shaft is obtained.

For the purpose of sharpening the cutting-knives a grinding attachment is arranged at the top part of frame *A*, and attached to the side plates *E'* of frame *A* by fastening-screws, in such a manner as to be used for sharpening the cutters at either side of the same, by being placed in position on one side or the other of frame *A*. The side plates *E'* carry a lateral revolving shaft, *i*, on which is placed a laterally-sliding but axially-revolving emery-wheel, *E*, that is adjusted to the knife to be sharpened by means of a hand-lever, *F*, attached by a clutch device to a collar, *l*¹, of the center sleeve *l*² of the emery-wheel, the lever-handle being secured to a swiveled guide-sleeve,

m, of the clutch device, and pivoted to a lever, *n*, that swings on a pivot of an adjustable sleeve, *n*¹, sliding in a lateral cross-rod, *n*², of the side plates. The clutch *l* slides also by a guide-sleeve, *n*³, on the cross-rod *n*², and admits thus, by moving the lever-handle to either side, the ready following of the revolving emery-wheel.

When the cutter is moved up to the grinding-wheel, the knives may be sharpened with great facility in quick and convenient manner without the loss of time incident to the removal of the knives from the holding plates, so that the work is interrupted but a short time, and may be continued at the moment when the knives are sharpened and readjusted.

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

1. A cutter-head, provided with tool-holding plates, held together adjustably by a screw, *d*, and to the cutter-head only by a subjacent screw, *b*, as and for the purpose set forth.

2. The hand-lever *F*, attached by sliding clutch to the sleeve-collar *l*¹, secured to swiveled sleeve *m*, and pivoted to the sliding-sleeve lever *n*, in combination with the grinding attachment, as and for the purpose specified.

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

FREDERIC GODEAU.

Witnesses:

AUGUSTE CHÉRUT,
EUGÈNE L. TOURETZ.