

I. F. THOMPSON.
CUTTER-HEAD.

No. 184,806.

Patented Nov. 28, 1876.

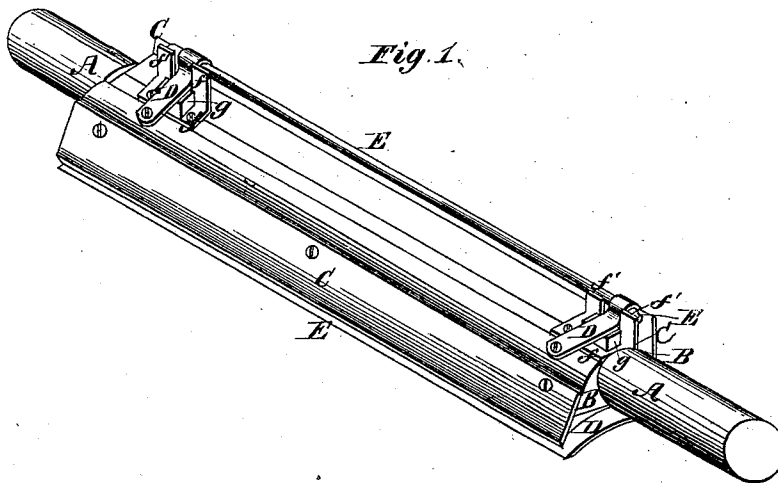


Fig. 1.

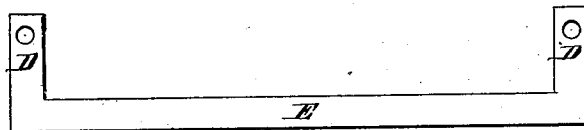


Fig. 3.

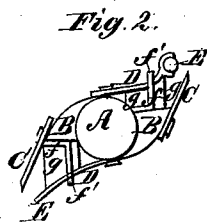


Fig. 2.

Witnesses.

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by his Atty-
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UNITED STATES PATENT OFFICE.

IRA F. THOMPSON, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN CUTTER-HEADS.

Specification forming part of Letters Patent No. 184,806, dated November 28, 1876; application filed May 5, 1874.

To all whom it may concern:

Be it known that I, IRA F. THOMPSON, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain Improvements in Cutter-Heads for Wood-Planing Machines, of which the following is a specification:

In the accompanying drawings, forming a part of this specification, Figure 1 represents a perspective view, and Fig. 2 a side view, of a cutter-head with my invention applied, and Fig. 3 represents a top view of one form of my invention detached from the cutter-head.

This invention relates to that class of rotary cutter-heads for planing-machines in which the edges of the cutters are substantially parallel with the axial line of the head on which they are located. It has for its object to provide an improved pressure-bar attachment for this class of cutters which shall rotate with the cutters, and bear upon the stock being planed immediately in advance of the cutters, in such manner as to prevent the splintering of the fibers under the influence of the cutters.

To this end my invention consists in the combination, with the rotary cutter-head of the above-named class, of pressure-bars attached to the cutter-head in such position and manner as to rotate with it and bear with a yielding pressure upon the surface being planed, immediately in advance of the cutters so long as they act on said surface, as I will now proceed to describe.

In the drawings, A represents a rotary cutter-head of any suitable construction, having any desired number of cutters, C, two being the number preferred. E E represent pressure-bars, which are connected by arms D to the cutter-head A, and are adapted to rotate with the cutter-head and bear with a yielding pressure upon the stock being planed immediately in advance of the cutters. A bar, E, accompanies each of the cutters C, and is so located as to strike the surface of the material being planed immediately in advance of the edge of the cutter it accompanies, its normal position being substantially parallel with the edge of the cutter, and separated from said edge only by a space sufficient to prevent it from coming in actual contact therewith,

the portion that strikes the surface of the stock having a radius slightly exceeding that of the edge of the cutter.

I prefer to make the bars E in the form of elastic plates straight longitudinally and concavo-convex in cross-section, the convex side being outward. These plates are suitably secured to the arms D, and are sufficiently elastic in themselves to afford the necessary yielding pressure when they strike the surface of the stock, the arms D being preferably rigid when the bars are made in this form. If desired, however, the bars may be made rigid, in which case the arms should either be elastic in themselves or should bear upon elastic cushions *g* interposed between the arms and the head A. The bars E, when made rigid, may be of any desired form in cross-section. I prefer to make them round, and, in some cases, provide them with friction-rollers.

It will be seen that the combined operation of the rotary cutters and bars E is much the same as that of an ordinary carpenter's plane, the bars E always moving in advance of, and at substantially the same distance from, the cutters they accompany, and being as near the edges of the cutters when they enter as when they leave the stock, as the forward part of the body of a plane moves in advance of, and at a uniform distance from, the edge of the cutter. This uniform relation of the pressure-bars to the cutters prevents the formation of the transverse parallel depressions which are often seen in the surface of stock planed by a machine employing the ordinary independent pressure-bar, which varies in its relation to the cutters, the latter being farther from the independent pressure-bar when they enter the stock than when they leave it, and, consequently, being modified in their operation less uniformly than by my rotary pressure-bar, which slides upon and compresses the surface of the stock at a hardly appreciable distance ahead of the edges of the cutters.

I am aware of the previous use of pressure-plates adapted to rotate with the cutters of a planing-machine in which the cutters are located at right angles with their axial line, and rotate in a horizontal plane, and I do not claim such an arrangement.

I claim—

1. In combination with a rotary cutter-head, having cutters C substantially parallel with its axial line, the pressure bar or bars E connected by arms D to the cutter-head, and adapted to rotate with the head and bear with a yielding pressure upon the stock in front of, and close to, the edges of the cutters, substantially as described, for the purpose specified.

2. The combination of the pressure-bars E,

arms D, elastic cushions g, and head A, substantially as described.

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

IRA F. THOMPSON.

Witnesses:

CARROLL D. WRIGHT,

SAML. M. BARTON.