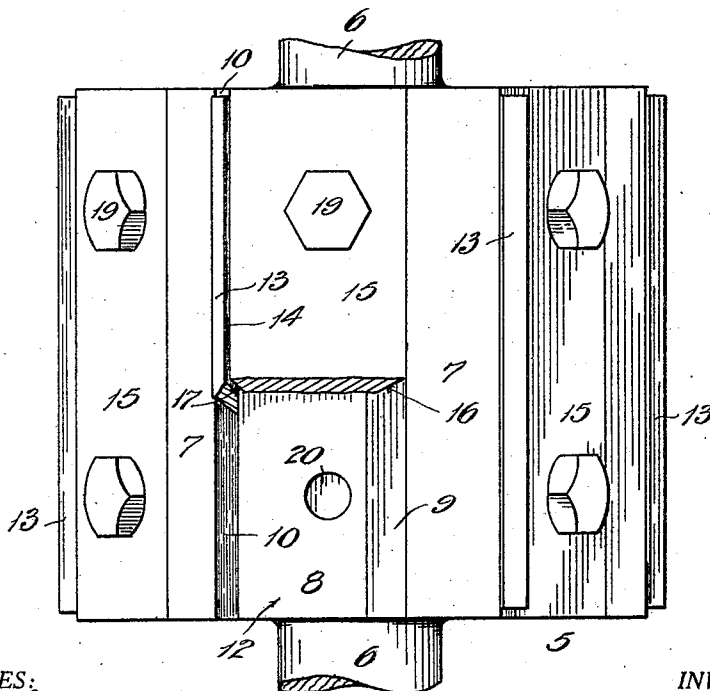
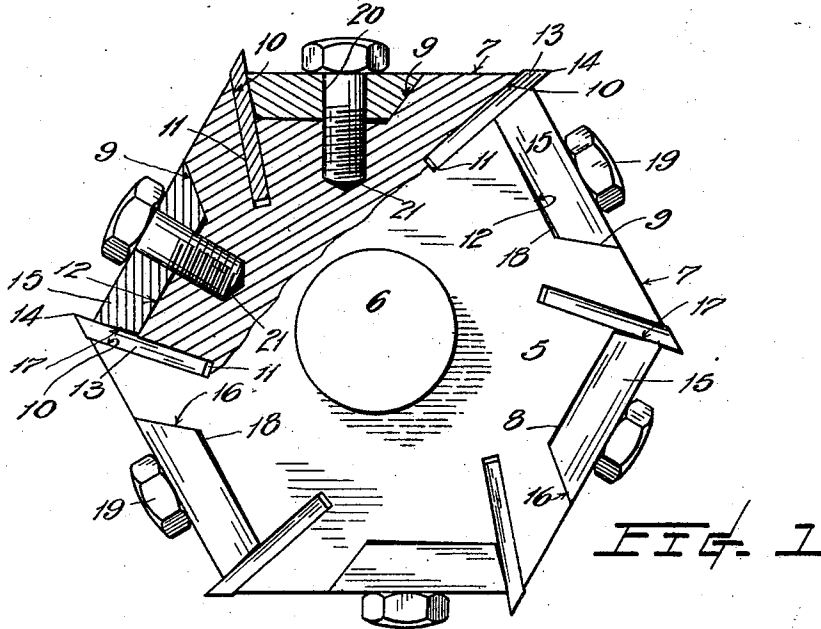


J. W. GRAY.  
 PLANER HEAD.  
 APPLICATION FILED OCT. 22, 1908.

934,436.

Patented Sept. 21, 1909.



WITNESSES:  
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# UNITED STATES PATENT OFFICE.

JAMES W. GRAY, OF TACOMA, WASHINGTON, ASSIGNOR TO GRAY FINISHING HEAD COMPANY, OF TACOMA, WASHINGTON, A CORPORATION OF WASHINGTON.

## PLANER-HEAD.

934,436.

Specification of Letters Patent. Patented Sept. 21, 1909.

Application filed October 22, 1908. Serial No. 459,050.

*To all whom it may concern:*

Be it known that I, JAMES W. GRAY, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented certain new and useful Improvements in Planer-Heads, of which the following is a specification.

The object of this invention is the provision of a planer-head which is capable of carrying the cutter-knives in a most rigid manner, thus allowing of the head being rotated at an exceptionally high speed and also to make deeper cuts in the work and produce smooth and plane surfaces and that, too, even in cross grained wood, and in either green or seasoned material.

With these ends in view the invention consists in the novel construction and adaptation of devices as will be hereinafter described and claimed.

In the accompanying drawings forming a part of this specification: Figure 1 is a view shown partly in end elevation and partly in vertical section of a cutter-head constructed to embody my invention. Fig. 2 is a plan view of the same with one of the cutter-knives and the retaining block therefor shown partly broken away.

The reference numeral 5 designates the cutter-head cylinder and 6, the spindle therefor. The head is formed of a polygonal shape in cross section to afford a plurality of faces 7 which are disposed symmetrically with respect to the head axis. From each of said faces is a recess 8 extending longitudinally the entire length of the head and each such recess is formed with its advance side 9 inclined from radial planes to approximately forty degrees. The opposite sides 10 of the respective recesses are likewise inclined from such radial planes to an extent of about fifteen degrees. The inclination of the sides 9 and 10 converge inwardly from the respective faces 7. At the rear of each said recess is a groove 11 which extends to some distance inwardly of the inner face 12 of the recess and are severally disposed so that the planes of the respective faces 10 will coincide with the planes of the rear faces of the adjoining grooves.

Fitted to each groove is a planer-knife 13 having a chisel edge 14 and are set so that these edges will be disposed concentrically of the head's axis and project outside of the adjacent edges of the head-faces 7. For

securing the various knives in such adjusted positions there is provided for each recess a quadrilateral block 15 the two lateral edges 16 and 17 of which are inclined to be in angular relation with each other slightly less, say one-half of a degree, than the angle formed of the corresponding inclinations of the recess sides 9 and 10, but the width of each block is less than the distance between these sides by an amount equal to the space occupied by the respective knives 13.

The thickness of the blocks at the advance ends is desirably less than the depths of the individual recesses to furnish a space 18 beneath each block for the inward adjustments of the latter to effect a wedging and locking action of the blocks against the respective knives. Adjustment and securement of the blocks 15 are obtained through the employment of cap screws 19 which extend through apertures 20 in the blocks to engage in screw threaded holes 21 in the head. These apertures are positioned to be in proximity to the advance edges 16 of the respective blocks.

The knives are firmly held in operative positions by the coöperative action of the seatings in the grooves and the wedging action due to the blocks. The latter effect being more or less according to the tension put upon the cap screws.

Having described my invention, what I claim, is—

1. A planer head, comprising in combination, a poly-faced head having parallel-sided slots formed therein at each peripheral edge, and at angles other than radial, said head also having recesses formed adjacent each slot so as to lie to one side thereof and extend into the respective face, the faces of said slots and recesses being convergent inwardly, and the bottoms of said recesses slanted downwardly from said slots, cutters extended in said slots, blocks conformed to the space in said recesses and sized to wedge therein with a space below, said spaces being formed wedge-shaped between said blocks and said slanted bottom whereby to permit said blocks to bear with a continuously greater pressure against said cutters along the bottom edges of said blocks as said blocks are carried inwardly, and means for wedging said block in said recess to secure said cutters.

2. A planer head, comprising in combina-

tion a poly-faced head having parallel sided slots formed therein at each peripheral edge, and at angles other than radial, said head also having recesses formed adjacent each  
5 slot so as to lie to one side thereof, and extend into the respective face, the faces of said slots and recesses being convergent inwardly, and the bottoms of said recesses being slanted downwardly from said slots,  
10 cutters extended in said slots, blocks conformed to the space in said recesses and sized to wedge therein with a space below, said spaces being formed wedge-shaped between

said blocks and said slanted bottom whereby to permit said blocks to bear with a continuously greater pressure against said cutters along the bottom edges of said blocks as said blocks are carried inwardly, and means operative on said blocks over the larger end of said wedge-shaped spaces to  
15 20 secure said cutters.

JAMES W. GRAY.

Witnesses:

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