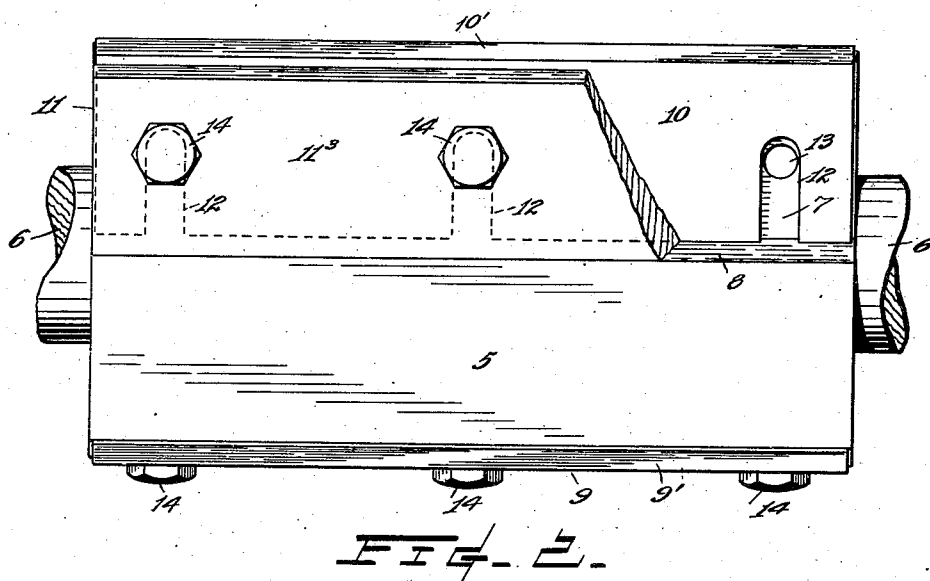
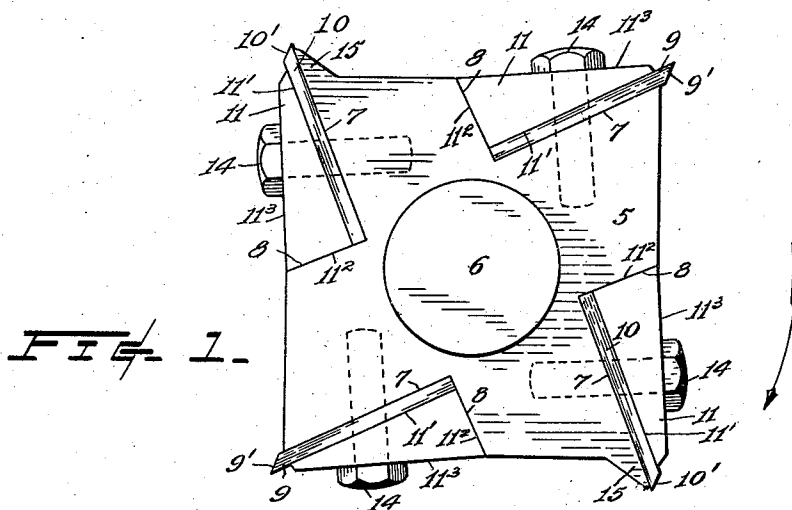


No. 853,170.

PATENTED MAY 7, 1907.

J. W. GRAY.
 PLANER HEAD.
 APPLICATION FILED JULY 2, 1906.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES W. GRAY, OF TACOMA, WASHINGTON.

PLANER-HEAD.

No. 853,170.

Specification of Letters Patent.

Patented May 7, 1907.

Application filed July 2, 1906. Serial No. 324,313.

To all whom it may concern:

Be it known that I, JAMES W. GRAY, a citizen of the United States of America, 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, reference being had therein to the accompanying drawings, in which—

Figure 1 is an end view of a planer finishing-head embodying my invention and indicating by an arrow the direction in which it is designed to rotate; and Fig. 2 is a front elevation of the same, with one of the caps broken away.

The object of this invention is the perfection of cutter heads for wood-planing machines and, more particularly, to provide a device of this character with which refractory or cross grained wood may be planed to smooth surfaces.

A further object of the invention is the provision of a head wherein the cutting knives are readily adjusted and securely held at such various set positions.

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

In the drawings, the reference numeral 5 designates a planer-head which is rigidly mounted upon or formed integral with a centrally disposed mandrel 6. The head may be of length suitable to the work or to the machine with which it is utilized and is substantially square in cross section with reentrant angles forming recesses contiguous and to the rear of each of the longitudinal corners and extending the entire length thereof.

The advanced face or seat 7, as it will be hereinafter denominated, of each said recess is inclined at an angle of twenty degrees, approximately, from a radial plane projected through the respective corner; while the rear face 8 is inclined from the other face at about ninety degrees.

9 and 10 are planer knives of substantially the ordinary type and are arranged upon the said recess seats so that the bevel faces 9' of the former will be upon the advance side, and the like face 10' of the other will be upon the

following side. With new knives the back edges thereof may advantageously be placed against said rear faces and may be so continued until they have been worn down, through work and grinding in re-sharpening, whereupon they may be protruded outwardly as required.

The knives are severally held in their operative adjusted positions by caps 11 having its inner faces 11' and 11² adapted to register with the back face of the respective knives and the corresponding rear face 8 of the recesses, while the exposed faces 11³ of the caps preferably incline outwardly from their rear edges toward the respective knives, in order to furnish more body and consequent stiffness at their apexes with the adjacent faces 11'. Extending through apertures of the caps and slots 12 of the knives into screw-threaded holes, such as 13, in the head are securing bolts 14 which are desirably arranged perpendicular to the faces 11³ of the caps.

15 are truncated angular tongues or chip-breakers, protruding outwardly from the head in advance of the knives 10 for the purpose of turning and breaking the chips as they are severed from the work.

In operation, the knives are revolved at a high velocity in the direction indicated by the arrow in Fig. 1 and as the work or lumber traverses the machine therebelow the presented surface of the wood is planed evenly and smoothly notwithstanding the nature of its grain or of its direction. By the disposition of the knives, that is with their beveled edges alternately arranged, the cuts made by one pair thereof, are in the nature of incisions which sever the wood fibers and by the others to remove the several chips through a scraping action. The knives being held, as aforesaid, in diagonal planes are firmly seated and thus maintained without danger of their becoming displaced through any action to which they are subjected.

What I claim, is—

A planer-head comprising a body portion substantially square in cross section, said body portion being formed integral with an operating shaft, and provided with recesses on each of its faces near the corners thereof,

cutter knives arranged on each of two of its
opposite faces and secured within said re-
cesses, that side of said body portion on
which said knife bears being provided with
5 truncated tongues, scraper knives arranged
on the other two of its opposite faces within
the other two of said recesses, and a plate
adapted to be received within each of said

recesses and securely hold said cutter-knives,
and said scraper-knives within said recesses. 10

In testimony whereof I affix my signature
in presence of two witnesses.

JAMES W. GRAY.

Witnesses:

PIERRE BARNES,
ALFRED C. ST. G. KEMP.