

No. 877,407.

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E. CARSTENS.
CUTTER HEAD FOR PLANING MACHINES.
APPLICATION FILED DEC. 28, 1905.

Fig 1.

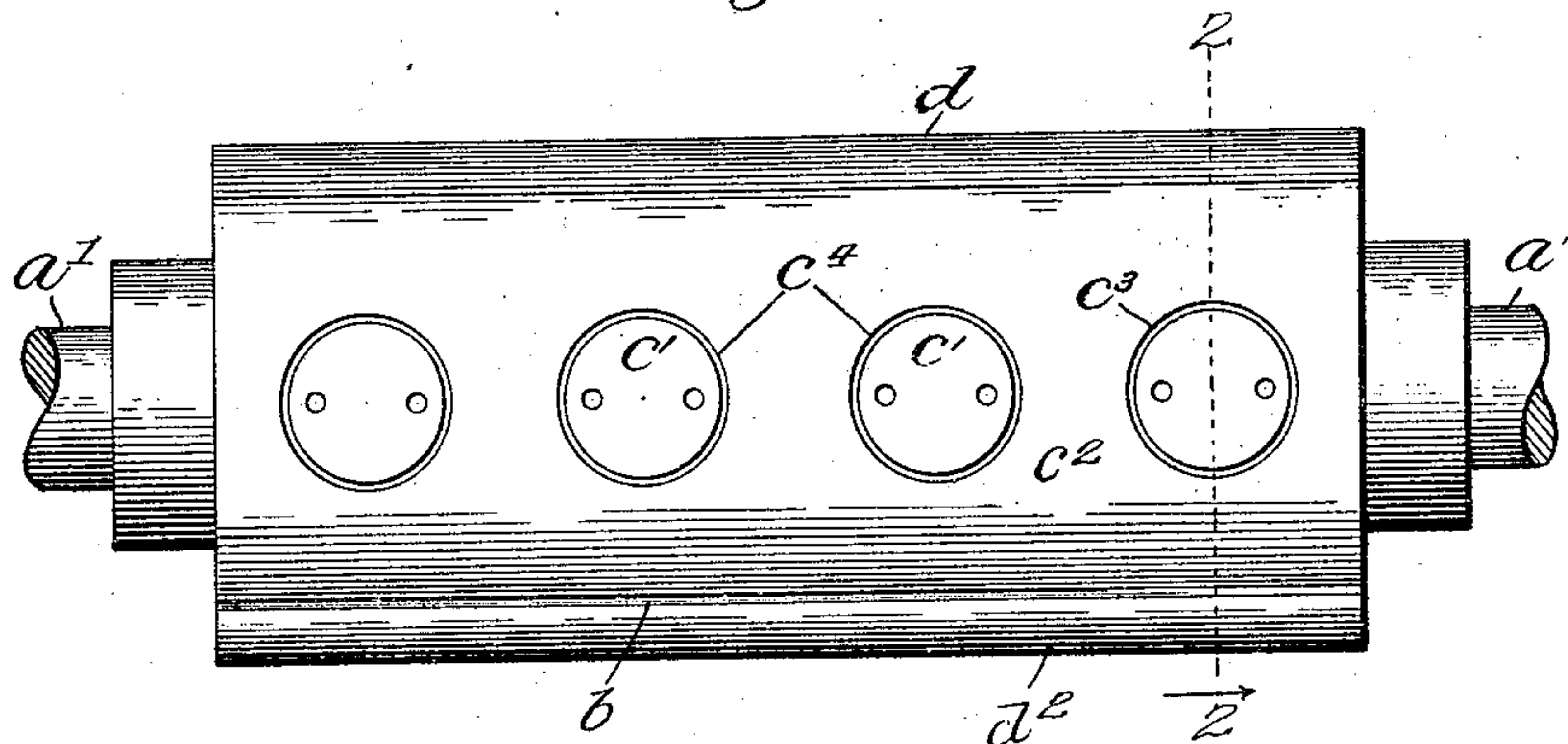
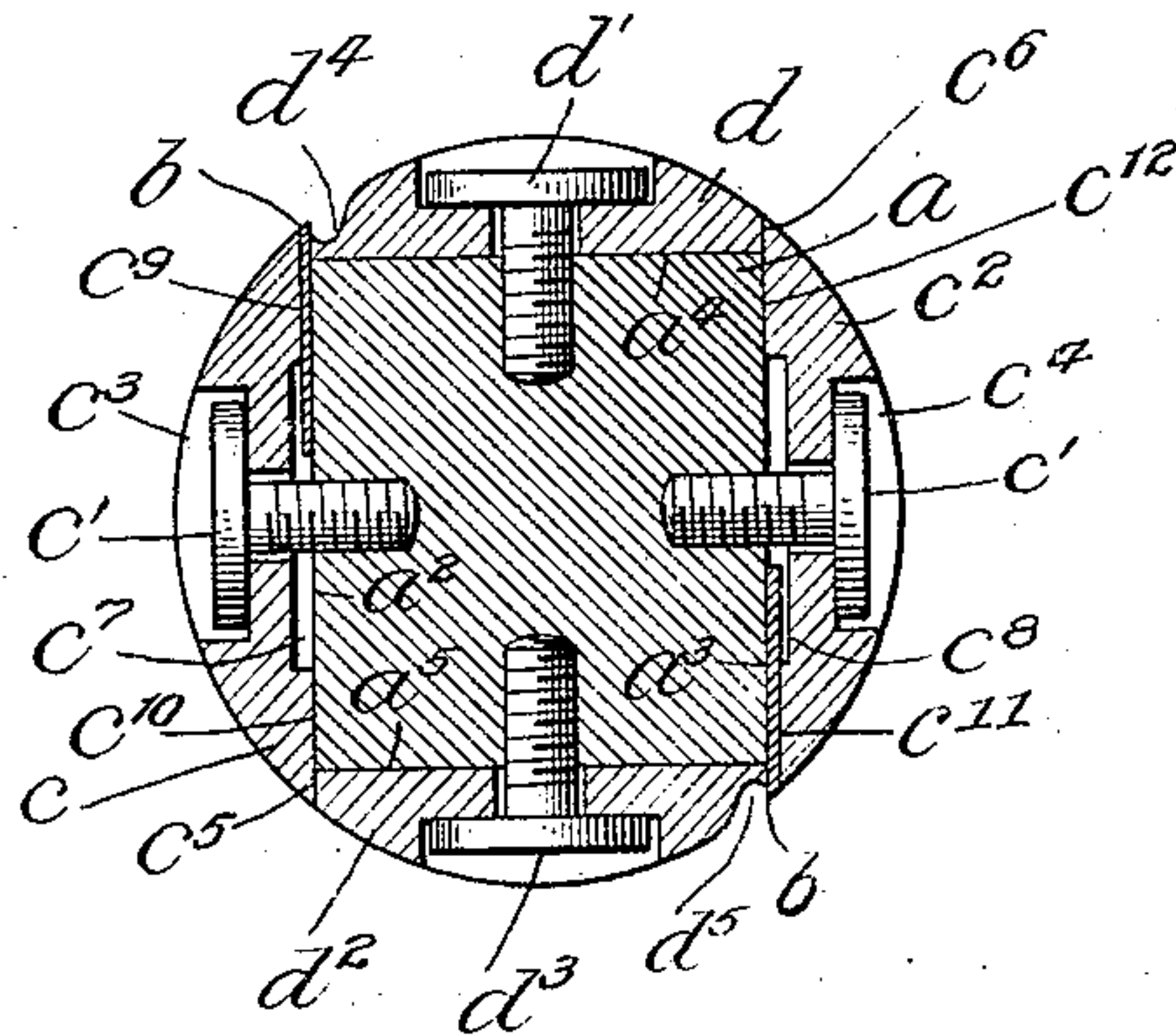


Fig 2



Witnesses:

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UNITED STATES PATENT OFFICE.

ERNST CARSTENS, OF NUREMBERG, GERMANY.

CUTTER-HEAD FOR PLANING-MACHINES.

No. 877,407.

Specification of Letters Patent.

Patented Jan. 21, 1908.

Application filed December 28, 1905. Serial No. 293,661.

To all whom it may concern:

Be it known that I, ERNST CARSTENS, whose post-office address is Rosenplütstrasse 19, Nuremberg, Bavaria, in the Empire of Germany, have invented a certain new and useful Improvement in Cutter-Heads for Planing-Machines; and I do hereby declare the following to be full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to rotary cutting heads for planing machines and the like of that class in which a head is provided having a circular cross section.

According to my invention the improved cutting head is made up of a central supporting body portion and a plurality of strips mounted upon the exterior thereof in such a manner as to substantially inclose and protect the central or body portion, certain of said strips serving to hold in place the cutting knives or blades.

The invention will be more fully described in connection with the accompanying drawing and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawing Figure 1 is a view in side elevation of a cutting head embodying the main features of my invention. Fig. 2 is a cross sectional view thereof on line 2—2 of Fig. 1.

As shown the central supporting body portion is designated by a and desirably forms a spindle for the cutting head, the trunnions a' being adapted to engage suitable bearings not shown. Preferably the supporting body a is polygonal in cross section and as shown is equilateral or square although this particular shape is not essential to a full realization of the invention.

In the form shown the parallel side faces of the body portion are designated by a^2 , a^3 , a^4 and a^5 and a plurality of members preferably in the form of strips are secured to said side faces and desirably said strips entirely inclose the body portion a . In order to obtain the well known advantages derived from a cutter head of circular cross section said strips or members are rounded on their outer faces so that when they are clamped in place upon the body portion a the head is given a substantially circular cross section. The strips designated by c and c^2 are desirably

secured upon opposite and parallel faces a^2 and a^3 by means which as shown consists of screws c' , the heads of which seat in recesses c^3 and c^4 formed in the strips c and c^2 . Conveniently said screw heads are provided with apertures adapted to receive a spanner or like instrument whereby the screws may be tightened or released. Said strips c and c^2 as shown are somewhat greater in width than the faces a^2 and a^3 of the body portion and overhang the corners thereof slightly.

Interposed between the strips c and c^2 , which are preferably designated as clamping strips, are filling strips d and d^2 secured in place by means desirably in the form of screws d' and d^3 . Said filling strips are desirably equal in width to the faces a^4 and a^5 and engage the overhanging margins c^5 and c^6 of the clamping strips c and c^2 at diagonally opposite corners of the body a . At their opposite margins said strips d and d^2 are recessed at d^4 and d^5 to provide a thin marginal fin adapted for engagement with the cutting blades, hereinafter described, the recessed portion permitting an effective cutting action of the blades and also affording effective engagement therewith by the filling strips.

As shown the cutting blades are designated by b and are disposed at diagonally opposite corners of the body a and project slightly beyond the periphery of the cutter. Said blades are clamped between the strips c and c^2 and the body a and near their cutting margins they are engaged on one side by the strips c and c^2 and on their other sides by the fins formed upon the filling strips d and d^2 . Thus it will be seen that a most effective anchorage for the cutting blades is provided adjacent the knife edge or cutting portions which are subjected to the greatest strain. Said clamping strips are recessed at c^7 and c^8 whereby engaging portions c^9 and c^{10} and c^{11} and c^{12} are formed. The engaging portions c^9 and c^{11} are shorter than the portions c^{10} and c^{12} to accommodate the thickness of the cutting blades b and the recessed portions c^7 and c^8 provide an intervening space between the engaging portions which intervening space is spanned by the clamping strips and serves to weaken the same. It will thus be seen that when the screws c' are tightly set the central portions of the clamping strips yield and thereby afford a very effective engagement at the points of contact of parts c^9 to c^{12} inclusive. This construction is of great advantage.

tage in cases where the parts may not be accurately machined as it insures an effective engagement of substantially uniform pressure at all points which advantage could not be realized as effectively if the inner faces of the clamping strips were flat. It will thus be seen that in case of injury the body portion *a* is fully protected by being inclosed by the filling and clamping strips and thereby the cost of repair is restricted to renewal of said strips and the cutting blades.

I claim:

1. A cutter head for planing machines and the like, comprising a central body of polygonal cross-section, a plurality of outwardly rounded clamping and filling strips or plates inclosing said central portion and forming a cutter head of circular cross-section, and blades interposed between the clamping strips and the central portion, the cutting margins of the blades projecting beyond the periphery of the cutter, the filling strips engaging the blades on sides opposite to the points of engagement by said clamping strips and near the cutting margins of said blades, said filling strips being recessed adjacent the engagement thereof with said blades.

2. A cutter head for planing machines and the like, comprising a central body of polygonal cross-section, a plurality of outwardly rounded clamping and filling strips or plates inclosing said central portion and forming a cutter head of circular cross-section, and blades interposed between the clamping strips and the central portion, the cutting margins of the blades projecting beyond the periphery of the cutter, the filling strips engaging the blades on sides opposite to the points of engagement by said clamping strips and near the cutting margins of said blades, said clamping strips extending beyond the central body portion and engaging the filling strips at points opposite the knives.

3. A cutter head for planing machines and the like, comprising a central body of polygonal cross-section, a plurality of outwardly rounded clamping and filling strips or plates inclosing said central portion and forming a cutter head of circular cross-section, and blades interposed between the clamping strips and the central portion, the cutting margins of the blades projecting beyond the periphery of the cutter, the filling strips engaging the blades on sides opposite to the points of engagement by said clamping strips and near the cutting margins of said blades, said filling strips being recessed adjacent the engagement thereof said with said blades, said clamping strips extending beyond the central body portion and engaging the filling strips at points opposite the knives.

4. A cutter head for planing machines and the like, comprising a central body of polygonal cross section, a plurality of outwardly

rounded clamping and filling strips or plates secured to said central body and forming a cutter head of circular cross section, and blades interposed between the clamping strips and the central body, the cutting margins of the blades projecting beyond the periphery of the cutter, the filling strips engaging the blades on sides opposite to the points of engagement by said clamping strips and near the cutting margins of said blades.

5. A cutter head for planing machines and the like, comprising in combination a solid supporting body provided with four parallel and continuously flat faces, clamping strips disposed on opposite parallel faces of said body and having their lateral margins overhanging the corners of the same, a cutting blade interposed between said strips and body at diagonally opposite corners of the latter and projecting beyond the margins of said strips and overhanging adjacent corners of said body, and filling strips engaging the remaining faces of said body portion, each of said filling strips engaging with one of its margins the adjacent overhanging margins of the clamping strips and with its other margins the overhanging portions of said cutting blades.

6. A cutter head for planing machines and the like, comprising in combination a solid supporting body provided with four parallel and continuously flat faces, clamping strips disposed on opposite parallel faces of said body and having their lateral margins overhanging the corners of the same, a cutting blade interposed between said strips and body at diagonally opposite corners of the latter and projecting beyond the margins of said strips and overhanging adjacent corners of said body, and filling strips engaging the remaining faces of said body portion, each of said filling strips engaging with one of its margins the adjacent overhanging margins of the clamping strips and with its other margins the overhanging portions of said cutting blades, said filling and clamping strips serving to completely inclose said body.

7. A cutter head for planing machines and the like, comprising a central body of polygonal cross section, a plurality of clamping and filling strips secured to said body, and blades interposed between the clamping strips and said body, the cutting margins of the blades projecting beyond said clamping strips, the filling strips engaging the blades on the sides opposite to the points of engagement by the clamping strips and near the cutting margins of said blades, said clamping strips being recessed to form engaging portions abutting against the cutting blades at one point and against the body and filling strips at another point.

8. A cutter head for planing machines and the like, comprising in combination a solid

supporting body of polygonal cross section,
a plurality of clamping and filling strips,
blades interposed between the clamping
strips and said body, the filling strips engag-
5 ing the blades on sides opposite the points of
engagement therewith by the clamping strips,
said clamping strips having engaging por-
tions abutting against the cutting blades at
one point and against the body and filling

strips at another point and spanning the 10
space between the points of engagement.

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

ERNST CARSTENS.

Witnesses:

ALEX WIELE.

MAX SCHNEIDER.