No. 833,270. PATENTED OCT. 16, 1906.

W. WEMHOENER.

MEANS OF FIXING CUTTERS IN MILLING AND CUTTING HEADS.

APPLICATION FILED JUNE 29, 1905.

Fig. 1.

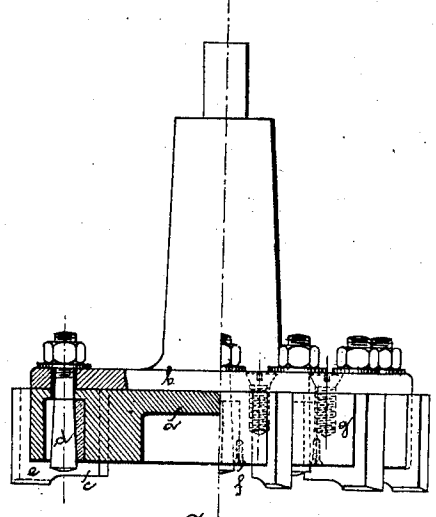


Fig. 2.

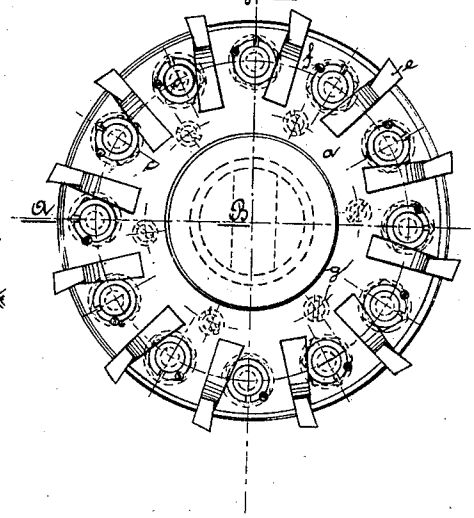


Fig. 3.

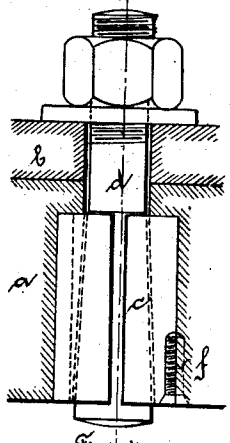


Fig. 4.

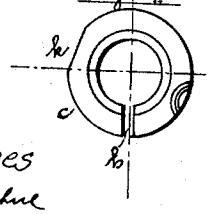
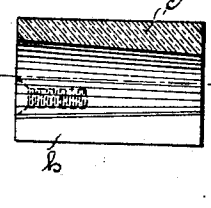


Fig. 5.



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MEANS OF FIXING CUTTERS IN MILLING AND CUTTING HEADS.

No. 833,270. Specification of Letters Patent. Patented Oct. 16, 1906.

Application filed June 29, 1905. Serial No. 267,665.

To all whom it may concern:

Be it known that I, WILHELM WEMHOENER, merchant, a subject of the King of Prussia, German Emperor, residing at 15 Schwanenwall, Dortmund, Kingdom of Prussia, German Empire, have invented Improved Means of Fixing Cutters in Milling and Cutting Heads, of which the following is a specification.

The fixing of cutter-bars in the known form of cutter-heads is effected either by means of traction or pressure screws or by round or flat cotters. These elements are sometimes also combined—that is to say, screw-cotters are employed. The cutter-heads formed in this manner may comprise cutter-bars which taper off dovetail fashion and are fixed by a cotter lying in the hollow stock of the head by means of a screw. Further, it is no longer novel to employ screws with conical shank or head for clamping the cutters. When this means is resorted to, behind each cutter one or more of these screw-cotters is let into the body of the cutter-head, so that the back of the cutter bears tightly against the peripheral face of the shank or the head of the screw which is directed toward it. This arrangement, however, presents the defect that the specific superficial pressure upon the screw is excessive, and large efforts cannot be transmitted by this means. Cutter-heads constructed in this manner are not suited for cutting coarse shavings.

The present invention has for its object to obviate these defects.

The characteristic feature of the invention is that the clamping action is obtained by means of slotted clamping-sockets formed with a flat and which are adapted to be expanded by means of conical screw-bolts situated inside the sockets, so that they bear against one side of the wedge-shaped cutter-foot, which they thereby clamp.

In the accompanying drawings, Figure 1 is a side elevation, partly in section, of the cutter-head. Fig. 2 is a plan view. Fig. 3 is an elevation of the socket with wedge-shaped bolt. Fig. 4 is a plan view of the socket, and Fig. 5 is a central section of the socket through the slot.

Similar letters refer to similar parts throughout the several views.

In the cutter-head *a*, on the rear side of which the plate *b* is fixed by means of countersunk screw-bolts *g*, dovetail grooves are formed for the reception of the cutters *e*, which fit snugly within them. In front of each groove there are bored in an axial direction one or more holes for the reception of the spring clamping-sockets *c*, according to requirements. These sockets *c*, as shown in Figs. 1, 3, and 5, are conically recessed and are provided with a slot *h*. They are also formed with a flat *k*. The socket *c* is inserted in the cutter-head *a* in correspondence with the tapering of the cutter in such a manner that the slot is directed toward the periphery of the cutter-plate, while the flat comes in contact with the cutter *e*. When this has been done, the countersunk screw-bolts *f*, Figs. 1, 2, and 3, are screwed in so as to secure the sockets and prevent their coming out, which might happen when changing the cutters. The conical screw-bolts *d* are then inserted and tightened up. By tightening the nuts of the conical screw-bolts *d* the slotted socket *c* is expanded, its flattened side being thereby pressed tightly against the wedge-shaped cutter-bar *e*, which is thus firmly secured.

The flat *k* on the socket *c* serves as a pressure-face, and as the cutter is supported both at its back and its bottom the fastening will withstand the greatest strains itself and enable the cutter-head to do the same.

What I claim as my invention, and desire to secure by Letters Patent, is—

The combination, in means for fixing the cutter-bars of milling and cutting heads with a body and a cutter have a dovetail-shaped foot, of conical screw-bolts, nuts thereon adapted to be tightened, and expansible slotted sockets surrounding the bolts and having a flat face against which bears one side of the cutter.

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

WILHELM WEMHOENER.

Witnesses:
OTTO KÖNIG,
HERMANN SCHRÖDER.