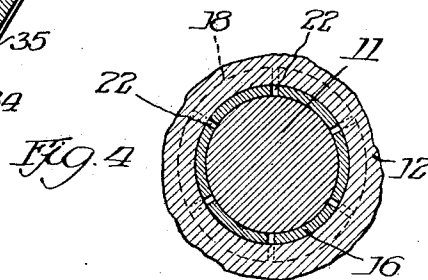
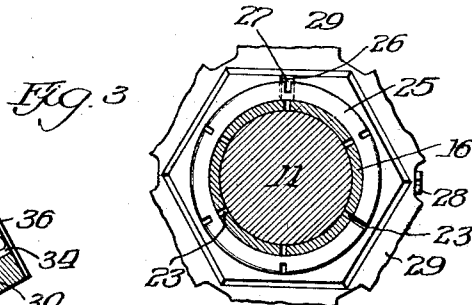
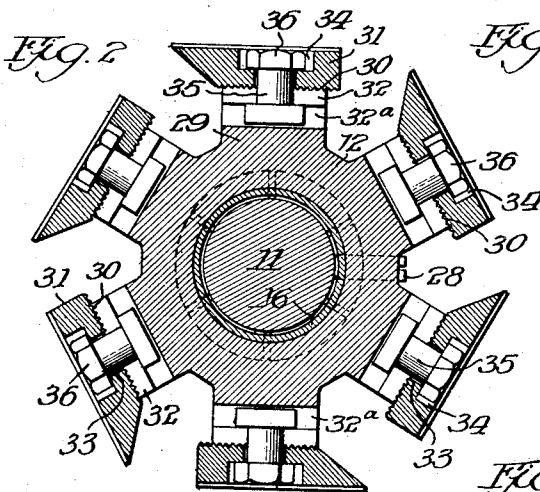
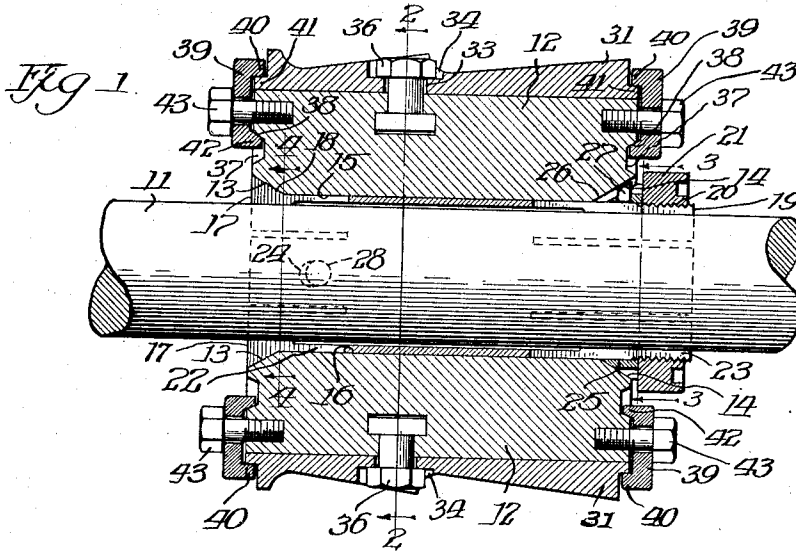


F. L. LANE.
 PROFILE CUTTER HEAD.
 APPLICATION FILED SEPT. 20, 1915.

1,226,896.

Patented May 22, 1917.



Witnesses:

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UNITED STATES PATENT OFFICE.

FRANKLIN L. LANE, OF BELOIT, WISCONSIN, ASSIGNOR TO P. B. YATES MACHINE COMPANY, OF BELOIT, WISCONSIN, A CORPORATION OF WISCONSIN.

PROFILE CUTTER-HEAD.

1,226,896.

Specification of Letters Patent.

Patented May 22, 1917.

Application filed September 20, 1915. Serial No. 51,540.

To all whom it may concern:

Be it known that I, FRANKLIN L. LANE, a citizen of the United States, residing at Beloit, in the county of Rock and State of Wisconsin, have invented certain new and useful Improvements in Profile Cutter-Heads, of which the following is a specification.

The invention has for its object the provision of improved means for clamping the cutter head on its shaft and also for securing the knives in place on the body of the head without unduly weakening the knife and in such manner as to increase the extent to which the knives may be ground down thus lengthening their lives.

In order that the invention may be readily understood I have in the accompanying drawings and in the following detailed description based thereon set forth a preferred embodiment of the same. As, however, the invention is susceptible of embodiment in other and varied constructional forms without departure from the essence or spirit thereof, it will be understood that the drawing and description are to be taken in an illustrative and not in an unnecessarily limiting sense. In the drawings

Figure 1 is a longitudinal section through a cutter head embodying the invention;

Fig. 2 is a transverse section on the line 2—2 of Fig. 1;

Fig. 3 is a transverse section on the line 3—3 of Fig. 1; and

Fig. 4 is a transverse section on the line 4—4 of Fig. 1.

As herein illustrated the shaft is represented at 11 and the cutter head at 12, the latter having a beveled approach 13 at one end and at the other a beveled approach 14 to a central longitudinal bore 15. The cutter head 12 is positioned upon and rigidly secured with relation to the shaft 11 by means of a sleeve 16 having an enlarged end 17 with a coned or beveled outer face 18. At the opposite end 19 the sleeve is threaded as indicated at 20 for the reception of a suitable nut 21. At its enlarged end the sleeve is provided with a plurality of longitudinally extending slots 22 and at its threaded end with a similar series of longitudinally extending slots 23. The sleeve is likewise provided at its enlarged end with an elongated orifice 24 having a purpose which will be hereafter made clear. The

sleeve is adapted to be encircled by a collar 25 which is split at one side and at the other side is slotted in order to lend the same expansibility. The beveled approach 14 to the bore 15 is provided with a recess 26 into which is adapted to take a stud 27 extending radially from the collar 25 in order to prevent the relative rotation of the collar and head.

In assembling the head upon the shaft the sleeve 16 is seated within the head and the whole is slid upon the shaft to approximately the desired position. The collar 25 is then placed upon the shaft with the stud 27 in engagement within the recess 26 and the nut 21 is then threaded upon the end of the sleeve forcing the collar into the beveled approach to the bore of the head, the inclined faces of the head and of the sleeve end and of the collar serving to contract the sleeve upon the shaft so as to effect a rigid coupling of the two. A set screw 28 is then inserted through the head radially thereof and through the orifice 24 to further assist in clamping the head and sleeve in place upon the shaft.

For the purpose of mounting the tools upon the head the latter is provided with a plurality of radial projections 29 having their outer faces longitudinally scored for coöperative engagement with the correspondingly scored faces 30 of the tool bodies 31.

Each of the head projections 29 is provided with an undercut or T-slot 32 extending parallel to the plane of rotation of the head and to a line tangent to the periphery thereof, these slots extending entirely through the projection 29 and being open at both ends to the space between the adjacent projections. The tool or knife 31 has a bolt aperture 33 and in register therewith a surface recess 34. A bolt 35 is adapted to be seated within the T-slot 32 with its head lying within the under-cut portion 32^a, the shank of the bolt extending upwardly through the aperture 33 into the recess 34 and receiving a nut 36 which is seated within the recess.

It will be readily understood that the provision of the undercut T-slot 32 extending parallel to the plane of rotation of the head enables the knife 31 to be adjusted forward and backward in the operation of jointing the knives and to be gradually advanced to

compensate for the wearing away and the grinding of the knife edge, the bolt traveling with the knife and the head of the bolt sliding within the slot 32. This arrangement has manifest advantages over the old method of fixing the bolt in the cutter head and providing the knife with a slot which travels upon the bolt, the provision of an aperture instead of a slot in the knife enabling the knife to be sharpened a great many more times and also weakening the knife less than if the same were provided with an extensive slot.

The knives having been adjusted upon the head and preliminarily secured in position by means of the bolt 35, they are additionally and permanently secured in adjusted position in the manner following: At each end of the head the projections 29 are provided with recesses 37 having the side walls beveled at 38, and clamps 39 are provided each of which has a lip 40 overlying the edge 41 of the knife 31, the clamp 39 having another lip 42, which enters the recess 37 and engages the beveled wall 38. The bolt 43 passes through the clamp 39 into threaded engagement with the head. It will be readily understood that when the bolt 43 is tightened it will serve to draw the clamp 39 inward, and the cooperation of the lip 42 with the inclined wall 38 will draw the clamp radially inward thus clamping the knife against the cutter head.

The clamps 39 may be dispensed with entirely, the employment of one or more bolts 35 engaging a corresponding number of parallel spaced T-slots 32, being sufficient to firmly hold each of the tools in place on the head.

I claim:

1. The combination with a shaft and a body to be clamped thereon, said body having a central bore with a beveled approach

at each end, and a sleeve adapted for insertion within the bore about the shaft and having one end enlarged with a beveled face to cooperate with the beveled approach at that end of the bore and threaded at the other end, a collar encircling the threaded end of the sleeve and having a beveled face to cooperate with the beveled approach at that end of the bore, the sleeve and collar being longitudinally slotted to lend contractibility, and a nut threaded on the sleeve exterior to the collar, the nut serving to force the beveled faces of the collar and sleeve toward each other and into cooperative engagement with the beveled approaches to the bore, whereby to contract the sleeve upon the shaft.

2. The combination with a shaft and a body to be clamped thereon, said body having a central bore with a beveled approach at each end, and a sleeve adapted for insertion within the bore about the shaft and having one end enlarged with a beveled face to cooperate with the beveled approach at that end of the bore and threaded at the other end, a collar encircling the threaded end of the sleeve and having a beveled face to cooperate with the beveled approach at that end of the bore, and a nut threaded on the sleeve exterior to the collar, the sleeve being slotted at its end to lend contractibility and the collar likewise being slotted, and a stud on the collar arranged to engage within a slot in the beveled approach to the bore to prevent relative rotation of the body and collar.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

FRANKLIN L. LANE.

Witnesses:

LEWIS T. GREIST,
T. D. BUTLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."