

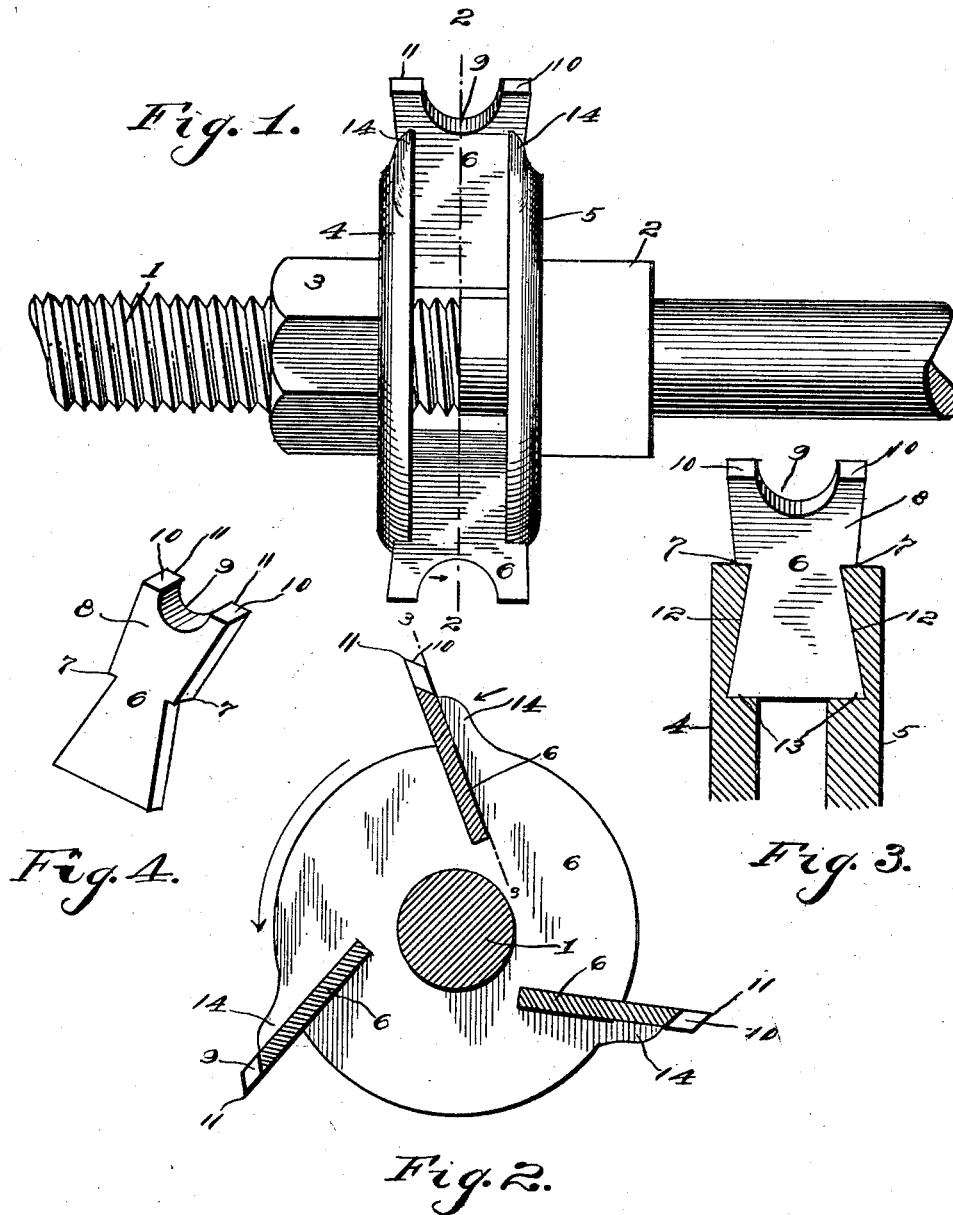
No. 676,754.

Patented June 18, 1901.

M. MEEHAN.
CUTTER HEAD.

(Application filed Feb. 27, 1901.)

(No Model.)



Witnesses

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UNITED STATES PATENT OFFICE.

MICHAEL MEEHAN, OF TONICA, ILLINOIS.

CUTTER-HEAD.

SPECIFICATION forming part of Letters Patent No. 676,754, dated June 18, 1901.

Application filed February 27, 1901. Serial No. 49,121. (No model.)

To all whom it may concern:

Be it known that I, MICHAEL MEEHAN, a citizen of the United States, residing at Tonic, in the county of LaSalle and State of Illinois, have invented a new and useful Cutter-Head, of which the following is a specification.

This invention relates to rotary cutter-heads, and has for its object to provide an improved device of this character which is especially designed for cutting moldings and rabbets. It is furthermore designed to have the cutting-teeth removable, so as to be replaced for cutting moldings and rabbets of different shapes and also arranged for the accurate adjustment of the teeth without requiring any particular degree of skill or experience, and finally to arrange for the convenient application and removal of the device from the ordinary arbor or mandrel of a molding-machine or lathe without altering or changing the same in any respect.

With these and other objects in view the present invention consists in the combination and arrangement of parts, as will be herein after more fully described, shown in the accompanying drawings, and particularly pointed out in the appended claims, it being understood that changes in the form, proportion, size, and minor details may be made within the scope of the claims without departing from the spirit or sacrificing any of the advantages of the invention.

In the drawings, Figure 1 is a side elevation of the improved cutter-head applied to a mandrel. Fig. 2 is a sectional view thereof, taken on the line 2 2. Fig. 3 is a detail sectional view taken on the line 3 3 of Fig. 2. Fig. 4 is a detail perspective view of one of the removable cutting-teeth.

Like characters of reference designate corresponding parts in all of the figures of the drawings.

Referring to the drawings, 1 designates the screw-threaded outer end of the mandrel of a molding-machine, lathe, or the like, which has the usual stationary annular shoulder 2 at the inner terminal of the screw-threaded part and the adjustable binding-nut 3, all of which parts are common or usual and have been shown to more adequately illustrate the application and operation of the present improvements.

In carrying out the present invention there is provided the opposite duplicate disk-like plates or head-sections 4 and 5, which are provided with corresponding central openings for the reception of the mandrel, one of the sections—as, for instance, the section 5—being in contact with the outer side of the fixed or stationary shoulder 2, while the opposite section is spaced outwardly from the former section and lies against the adjustable binding-nut 3. Between these head-sections lie the cutting-teeth 6, which are duplicates, and therefore a description of a single tooth is deemed sufficient.

As clearly shown in Figs. 3 and 4, each tooth has a dovetailed shank portion the opposite edges of which incline inwardly in opposite directions, and thereby produce the opposite stop-shoulders 7, which are located substantially midway between the opposite ends of the tooth. The crown portion 8 of the specific form of tooth shown in the drawings has an arcuate bifurcation 9 and at opposite sides of the bifurcation the extremity of the tooth is beveled in the same directions, as indicated at 10, so as to form a chisel or cutting edge 11. It will be understood that the crown portion of the teeth may have any shape, and it is designed to provide a plurality of sets of teeth having different shapes of cutting edges, so as to produce all of the shapes of moldings and rabbets required.

Each tooth is held between the head-sections and arranged substantially tangential with respect to the mandrel, the inner faces of the head-sections being provided with corresponding grooves 12, (best shown in Fig. 3,) that incline from the peripheral edges of the sections outwardly toward the centers thereof and also toward the outer faces of the sections, thereby terminating in the transverse shoulders 13.

In setting up the cutter-head the sections are first applied to the mandrel, and then the teeth are slid endwise into the corresponding grooves in the head-sections until the inner end portions thereof rest against the inner terminal shoulders or ends of the grooves and the transverse shoulders 7 of the teeth strike the peripheral edges of the head-sections, said shoulders being inclined or shaped to fit snugly against the curved peripheries

of the sections. The adjustable binding-nut 3 is then set tightly up against the outer head-section, so as to slide the latter longitudinally upon the mandrel and toward the 5 opposite section, which lies against the fixed shoulder 2, whereby the teeth are clamped rigidly between the two head-sections. In view of the dovetailed shape of the shank of each tooth, with the larger end at the inner 10 end of the tooth, the latter is effectually held against outward displacement or looseness, and inward movement is also prevented by the shoulders 7 and 13.

To brace the projecting outer ends of the 15 teeth, the head-sections are provided with corresponding tangentially-disposed marginal projections or shoulders 14, which form continuations of the backs of the grooves, so as to lie in contact with the backs of the teeth 20 and terminate short of the cutting edges thereof, so as not to interfere with the cutting operation of the teeth. It will be understood that the cutter-head rotates in the direction indicated by the arrow in Fig. 2 of 25 drawings.

It is desired to call especial attention to the fact that the direction of rotation of the mandrel and the cutter-head is opposite to that of the tightening rotation of the binding-nut, 30 so that any tendency of the head to slip backwardly would result in a movement of the nut to more firmly clamp the head-sections upon the teeth and against the fixed shoulder 2, whereby slipping of the head is effectually prevented. 35

From the foregoing description it is apparent that there is no change required in the mandrel or arbor and the head-sections may be conveniently tightened and loosened to 40 permit of the application and removal of the teeth without removing the entire head from the mandrel.

What is claimed is—

1. A cutter-head, comprising opposite head- 45 sections provided with corresponding marginal projections, and a tooth clamped between the sections, and having its projecting

portion lying against the adjacent pair of marginal projections.

2. A cutter-head, comprising opposite head- 50 sections provided with corresponding grooves in their inner faces, and marginal projections at the rear sides of the respective grooves, and a tooth having its shank portion lying within corresponding grooves, its 55 projecting portion lying against the adjacent pair of marginal projections, and also provided with intermediate opposite shoulders lying against the outer marginal edges of the respective head-sections. 60

3. A rotary cutter-head, comprising opposite disk-shaped head-sections, having corresponding central openings for the reception of a mandrel, and also provided in their inner faces with corresponding grooves that are 65 arranged tangentially with respect to the central openings, the outer end of each groove opening outwardly through the outer marginal edge of the section, and the back of the groove inclining outwardly toward the outer 70 face of the section and terminating in an inner stop-shoulder, and integral projections upon the peripheral edges of the sections and forming continuations of the rear sides of the respective grooves, and one or more cutting- 75 teeth clamped between the head-sections, each tooth having a dovetailed shank portion, the opposite longitudinal edges of which incline inwardly in opposite directions to snugly fit the correspondingly-inclined grooves, and 80 also form opposite intermediate transverse shoulders which rest against the outer marginal edges of the respective head-sections, the back of the projecting portion of the tooth resting against the front sides of the adjacent 85 pair of marginal projections.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

MICHAEL MEEHAN.

Witnesses:

GEO. H. FORSTER,
ELIAS H. DOANE.