

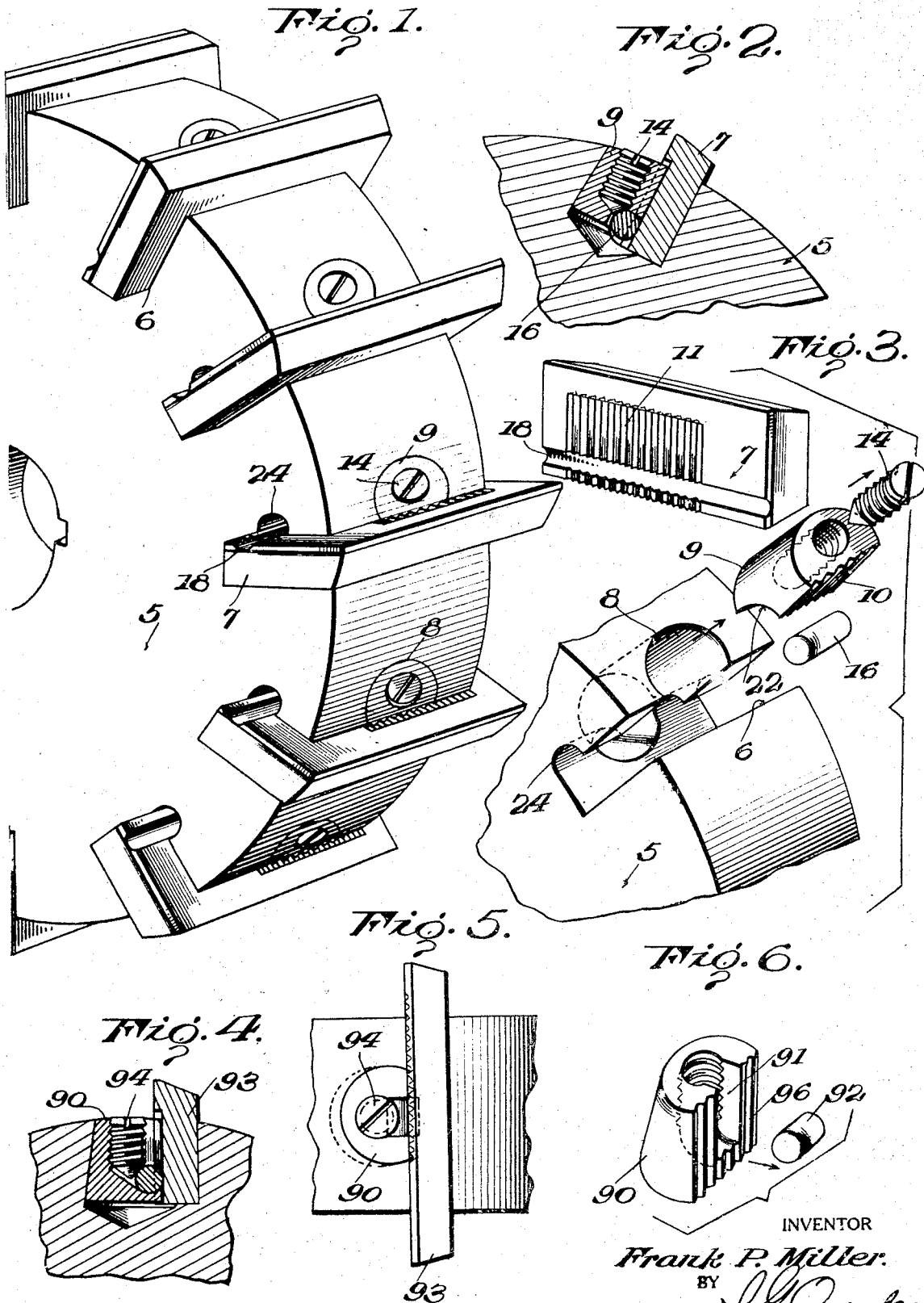
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INSERTED BLADE CUTTER

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INSERTED-BLADE CUTTER

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This invention relates to inserted blade rotary cutters, and has for an important object the provision of simple means whereby the blades may, upon insertion, be quickly and securely locked against endwise or outward shifting.

A further object of the invention is to provide a rotary cutter of the inserted blade type which is of highly simplified construction, easy to adjust and comparatively cheap to manufacture.

Other objects and advantages will be apparent during the course of the following description.

In the accompanying drawing forming a part of this application, and in which like numerals are employed to designate like parts throughout the same,

Fig. 1 is a fragmentary perspective of a milling cutter embodying the invention;

Fig. 2 is a detail sectional view through the milling cutter;

Fig. 3 is a group perspective of a blade and the holding means therefor;

Fig. 4 is a detail transverse sectional view illustrating a slight modification of the invention;

Fig. 5 is a fragmentary plan view through the form of invention illustrated in Fig. 4;

Fig. 6 is a group perspective illustrating the blade holding members for use in connection with the form of invention shown in Figures 4 and 5.

In the drawing wherein for the purpose of illustration are shown several preferred embodiments of the invention, the numeral 5 designates a body having an annular series of slots 6 for the reception of blades 7, the blades being ground in any preferred manner to produce the desired edge.

In carrying out the invention, one side wall of each slot 6 is provided with a transverse groove 8 tapered toward the outer end thereof and receiving an approximately semi-circular wedge block 9. The flat face of the tapered wedge member 9 is toothed or serrated, as indicated at 10, for locking engagement with the teeth or serrations 11 in the opposed face of the blade 7. The engagement of the serrations 10 and 11 positively

holds the blade against endwise shifting and by reference to Figure 1, it will be seen that the teeth 11 extend beyond the sides of the block 9 to provide for adjustment. Figure 3 illustrates that the teeth 11 are continued to the inner edges of the blade to permit of the insertion and removal of the blade.

Each semi-circular block 9 has a threaded opening for the reception of a locking screw 14, the inner end of which is pointed for engaging the intermediate portion of a locking member in the nature of a pin 16. Figure 2 clearly illustrates that the locking pin 16 which is positioned in a groove 18 in the blade and in a recess 22 in the block 9, is forced into binding engagement with the wall of the groove by the screw 14 whereby to lock the blade in place.

It will be seen that the tightening of the screw 14 will force the locking pin 16 into binding engagement with the blade and at the same time will force the tapered wedge block 9 outwardly into binding engagement with the blade whereby a double locking effect is brought about to positively hold the blade against shifting, either endwise or edge-wise.

The pin 16 may be inserted by way of the groove 24 disposed at right angles to the groove 8 and communicating with the same. As the groove 24 extends out through both sides of the body 5, the pin may be inserted from either side.

Attention is directed to the fact that the screws 14 are provided at the outer ends thereof with grooves or other suitable tool engaging means whereby the screws may be conveniently turned. In other words, the accessibility of the tightening or wedging screws 14 makes it a simple matter to adjust the improved rotary cutter as the occasion requires.

Figure 2 plainly illustrates that the screw 14 serves the dual purpose of forcing the pin 16 into binding engagement with the blade to hold the blade against outward shifting and forcing the wedge block 9 outwardly and laterally into binding engagement with the blade 7.

In the form of invention illustrated in Fig-

ures 4 to 6 inclusive, the wedge block 90 which is in the form of a semi-circle is provided with a slot 91 for the entrance of a comparatively short locking pin 92 which may be forced into engagement with the blade 93 by means of the locking screw 94 threaded into the tapered block 90. The pin 92 upon being passed through the slot 91 is received in a longitudinal groove in the opposed side of the blade. This form of invention is especially adapted for use in a reaming bar where it is not convenient or possible to insert the locking pin from one end of the bar.

Attention is especially directed to the fact that the slotting of the block 90, as indicated at 91, cannot result in the spreading of the block for the reason that the engagement of the serrations 96 at opposite sides of the slot with the serrations on the opposed side of the blade 93 prevent this. In other words, the slot 91 does not destroy or reduce the effectiveness of the wedge block.

Having thus described the invention, what is claimed is:

1. A cutter comprising a body, a blade and a block carried thereby, a pin engaged with the blade, and a screw having threaded engagement with the block and engaging and forcing the pin into binding engagement with the blade and simultaneously forcing the block outwardly, there being means whereby the block is moved into flat and uniform pressure engagement with the blade to brace the blade and hold the same in adjusted position.

2. A cutter comprising a body, a blade and a block carried thereby, a pin engaged with the blade, and a screw carried by the block and engaging and forcing the pin into binding engagement with the blade and simultaneously forcing the block outwardly, there being means whereby the block is moved laterally into flat and uniform pressure engagement with the blade to brace the blade and hold the same in adjusted position, said block being provided with means opening out through one side thereof for the reception of said pin.

3. A cutter comprising a body, a blade and a block carried thereby, a pin engaged with the blade, and a screw carried by the block and engaging and forcing the pin into binding engagement with the blade and simultaneously forcing the block outwardly, there being means whereby the block is moved laterally into flat and uniform pressure engagement with the blade to brace the blade and hold the same in adjusted position, said block being provided with a recess opening out through one end thereof and adapted for the insertion and removal of said pin.

4. A cutter comprising a body, a blade and a block carried thereby and having the opposed surfaces thereof provided with interfitting serrations, a locking member engaged with the blade, and a screw having threaded

engagement with said block and having the forward end thereof tapered for engaging and forcing the locking member inwardly and laterally into binding engagement with the blade and simultaneously forcing the block outwardly, there being means whereby the block is moved laterally into uniform pressure engagement with the blade to brace the blade and hold the same in adjusted position.

5. A rotary cutter having a slot and a transverse groove in one wall of said slot, a blade in said slot, a block received in said groove and having a slot opening out through one side thereof, a pin in said slot and said block and adapted to engage said blade, the slot in said block forming a passage for said pin, and means carried by said block to force the pin into locking engagement with said blade and to force the block into binding engagement with said blade.

6. The construction set forth in claim 5, said block and said blade being provided with interfitting serrations to hold the blade in place and to hold the block against spreading.

7. In a cutter, a body having a slot, one side of which is formed with a groove having a smooth tilted wall, a blade in said slot, a block in said groove, and a screw having threaded engagement with said block to urge the block endwise in one direction into uniform pressure engagement with the tilted wall of the groove and the opposed side of the blade, there being means responsive to the screw pressure to urge the blade in the direction opposite the endwise direction in which the block is urged.

In testimony whereof I affix my signature.
FRANK P. MILLER.