April 23, 1929. C. L. MATTISON 1,710,097

KNIFE HOLDER FOR CUTTER HEADS

Filed June 8, 1927

Fig. 1.

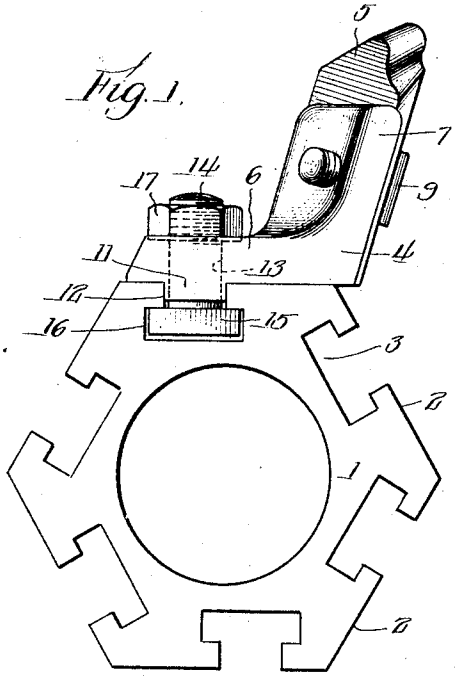


Fig. 2.

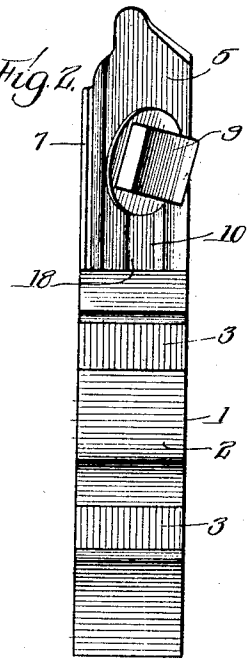
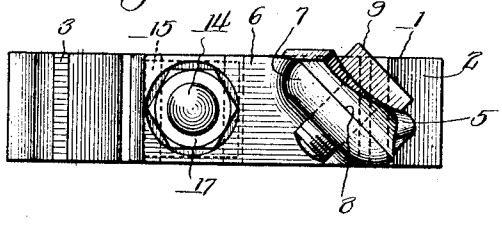


Fig. 3.



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UNITED STATES PATENT OFFICE.

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KNIFE HOLDER FOR CUTTER HEADS.

Application filed June 8, 1927. Serial No. 197,378.

The invention relates generally to cutter heads and more particularly to means for mounting the knives on the body of a cutter head. It is the general object of the invention to provide a new and improved knife holder for cutter heads.

It is another object of the invention to provide an improved knife holder for cutter heads of the radial type adapted to provide for a minimum knife edge diameter.

It is another object of the invention to provide an improved knife holder of minimum weight and maximum strength for T-slot radial type cutter heads adapted to back up a knife extending completely across the holder and provide a rigid mounting therefor.

It is a further object to provide an improved knife holder of rugged and simple construction angular in form and arranged to receive a knife on an outerside thereof so as to provide the maximum possible backing surface with a minimum extension of the holder beyond the cutter head body, together with readily accessible means for securing a knife to the holder and for securing the holder to the cutter head body.

Further objects will become apparent as the description proceeds.

In the drawings,

Figure 1 is an end view of a cutter head illustrating the preferred form of the invention.

Fig. 2 is a view looking at Fig. 1 from the right, i. e. showing the advance side of the knife.

Fig. 3 is a plan view of the cutter head illustrated in Fig. 1.

For purposes of disclosure, I have illustrated in the drawings and will hereinafter describe in detail the preferred embodiment of the invention with the understanding that I do not intend to limit the invention to the particular construction and arrangement shown, it being contemplated that various changes may be made by those skilled in the art without departing from the spirit and scope of the appended claims.

As illustrated in the drawings, an exemplary form of the invention is shown embodied in a cutter head having a body portion or cylinder 1 centrally apertured to admit a driving spindle (not shown). This body portion is provided with a plurality of sides 2 upon which knife supporting devices are mounted. These sides have longitudinally extending T-slots 3 arranged to admit headed clamping devices or bolts as hereinafter more fully described.

Knife holders 4 are mounted detachably on sides 2 of the cutter head cylinder and are arranged to provide a rigid backing for knives 5. As illustrated herein the knife holder is incorporated in a cutter head of the radial type and comprises a V-shaped or angular device having one leg 6 thereof in engagement with a side 2 of the cylinder and the other leg 7 extending substantially radially from the advancing side of the holder. This extending portion is provided with a knife receiving surface 8 against which the knife 5 may be clamped by means of a bolt 9 entered through a slot 10 in the knife and into engagement with a threaded aperture in the holder. The portion 6 of the holder is preferably provided with a tongue 11 extending longitudinally of a cutter head and arranged to fit snugly in the narrower portion 12 of the T-slot 3 so as to position the holder properly upon the cylinder. An aperture 13 is provided in this portion of the holder centrally and rearwardly disposed relatively to the knife receiving portion 7 to admit a clamping bolt 14 the head 15 of which is positioned in the wider portion 16 of the T-slot. Thus the holder 4 is of minimum transverse width and separately supported knives may be positioned immediately adjacent each other in the same T-slot.

The knife holder as illustrated herein provides a rigid support for the knife. With the knife receiving portion of the holder extending from the advancing side of the holder and the knife secured to the forward surface thereof the extending portion of the holder backs up the knife and is subjected to compressive forces against which it is well adapted to resist. The nut 17 of the clamping bolt 14 as well as the head of the knife securing bolt 9 are readily accessible to be engaged by suitable tools when it is desired to change the position of the knife or to remove or attach the knife holder.

It is apparent that a maximum backing surface for the knife is provided with a minimum length and weight of holder inasmuch as the knife can extend inwardly up to and against the body of the head. With a given body diameter which diameter is generally determined by the size of the spindle, this

construction provides for a minimum cutting edge diameter and thereby permits of increased speeds with safety inasmuch as the peripheral speed is still within safe limits.

I claim as my invention:

1. A cutter head comprising, in combination, a body portion having a plurality of sides, a T-slot extending longitudinally in each side, a plurality of V-shaped knife holders having one leg thereof mounted on said sides with a tongue thereon in said slot and the other leg extending from the advance end of the side, clamping devices positioned centrally of the leg cooperating with said T-slots to secure the holders to the body, and means to clamp knife blades on the advance side of said holders.

2. A knife holder for cutter heads comprising a unitary angular device of uniform width having one leg arranged to be clamped to one side of the cutter head so as to position the other leg extending radially from the advance end of said side and a knife receiving surface on the advance side of said extending leg.

3. A cutter head comprising, in combination, a body portion having a plurality of sides with T-slots extending longitudinally therein, knife holders having mounted portions arranged to abut said sides and provided with tongues adapted to engage in said slots to position the holders on the body, means engaging said portions substantially centrally thereof to secure the holders to the body, said holders having also substantially radially extending portions arranged to receive and support knife blades extending completely across the holders, and means to secure cutter knives on the advance side of said last mentioned portions.

4. A knife holder for cutter heads having a plurality of sides, comprising an angular device having one leg arranged to be clamped to one of said sides, the other leg being of substantially the same width and positioned at an obtuse angle with said first leg and having a knife receiving surface on the outer side thereof.

In testimony whereof, I have hereunto affixed my signature.

CARL LAWRENCE MATTISON.