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R. HEINRICH

1,831,447

METAL CUTTING INSTRUMENT

Filed March 11, 1929

Fig. 1

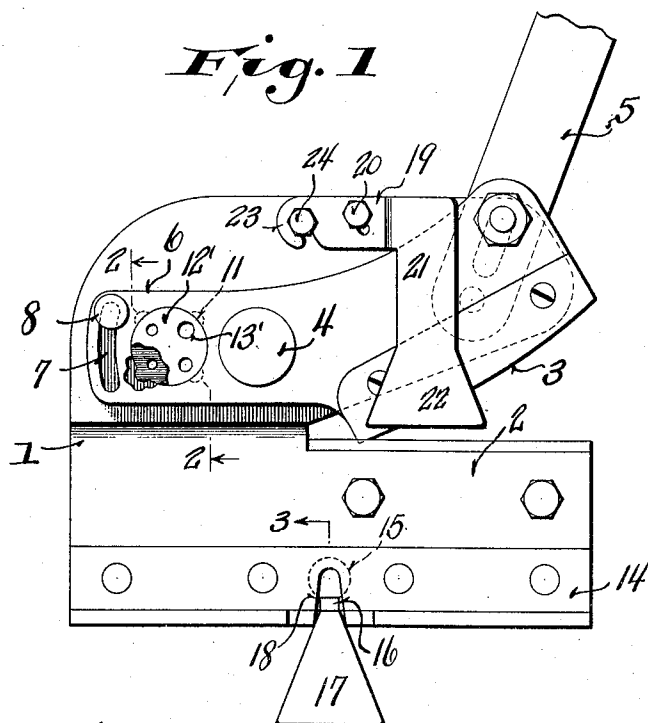


Fig. 3

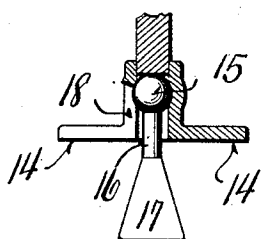
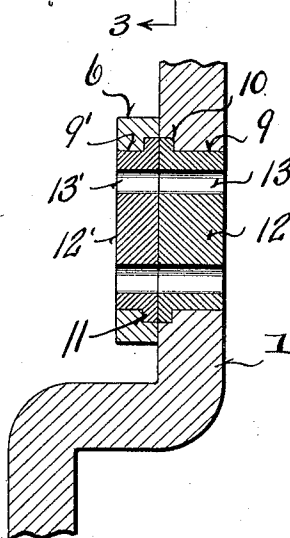


Fig. 2



Inventor:
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[Signature]
Attorneys:

UNITED STATES PATENT OFFICE

ROBERT HEINRICH, OF RACINE, WISCONSIN

METAL CUTTING INSTRUMENT

Application filed March 11, 1929. Serial No. 346,073.

This invention relates to improvements in metal cutting instruments and more particularly to a rod cutting attachment for metal shears such as illustrated in my application filed August 6th, 1927, Serial #211,172.

One of the objects of my invention is the provision of an attachment for metal shears which can be used for cutting drill rods and articles of a similar character and which is combined with the novel construction in metal shears such as illustrated in my application Sr. #211,172, thus combining two useful articles in one.

Another object of my invention is the provision of a rod cutting attachment of the above character, wherein the die members are removably positioned within opposed members, one of which is movable in an arc of a circle, whereby the movement of the one movable member will co-operate with the stationary member for severing rods placed within the die members.

A further object of my invention is the provision of a device of the above character, wherein the removable die members are provided with openings of different sizes so that drill rods or similar articles of various sizes may be readily operated upon.

With the above and other objects in view, the invention consists in the novel feature of construction, the combination and arrangement of parts hereinafter more fully set forth, pointed out in the claim and shown in the accompanying drawings wherein:

Figure 1 is a side elevation of the metal cutting instrument illustrating my improvement incorporated in the construction thereof; and

Figure 2 is a sectional view on the line 2—2 of Figure 1; and

Figure 3 is a detailed sectional view on the line 3—3 of Figure 1.

Referring more particularly to the drawings, it will be noted that the device comprises a main body portion 1 carrying a stationary cutting blade 2 and a movable blade 3, pivotally mounted as indicated at 4 and provided with an operating handle 5.

In constructing a metal cutting instrument of the above character for the purpose of in-

corporating within its construction my improvement as outlined above, the blade 3 is provided with an extension 6, projecting beyond the pivot point 4 and provided with an arcuate slot 7. The slot 7 has arranged therein a headed pin 8 carried by the body 1 for limiting the movement of the blade 6.

The body 1 and the blade 3 are provided with transverse openings 9 and 9'. Both of these openings 9 and 9' are provided at their opposed ends with recesses 10 annularly arranged in spaced relation as indicated in Figure 1 for receiving the lugs 11, formed on the opposed faces of the die members 12 and 12'.

The die members 12 and 12' are positioned within the openings 9 and 9' with the die member 12 arranged in opening 9 and the die member 12' arranged in opening 9'. It will be noted that the recesses 10 are arranged upon the inner or opposed faces of the body 1 and the blade 3, so that when the die members are placed in position, the lugs 11 will fit into the recesses 10 and securely retain the die members against rotative movement. These die members 12 and 12' are provided with corresponding openings 13 and 13', a plurality of openings being formed in each one of the die members with the openings in one die member adapted to co-operate with the same sized opening in the other die member as illustrated in Figure 2. Any number of openings 13 and 13' may be formed in the die members and they may be of different sizes.

It will be apparent that in severing a drill rod or similar articles, the rod is inserted through the aligned openings 13 and 13' and by actuating the handle 5 of the blade 3, the rod will be quickly severed through the relative movement of the blade 3 and will produce a clean even cut of the rod. The die members, as explained heretofore, are removably positioned within the openings 9 and 9' and can be readily interchanged by removing the pivot point 4 and the head pin 8, disconnecting the blade 3 from the body 1 to permit changing of the die members. The device, as stated heretofore, is preferably in the form of an attachment on my improved metal cutting instrument of the character illustrated

in Figure 1, and is extremely simple in its nature and can be produced at a very small cost.

The body portion 1 has attached to its lower edge the opposed angular plates 14 and arranged between the plates substantially midway of their ends is a ball member 15 mounted for rotative movement and having a shank member 16 extending outwardly therefrom carrying a substantially triangular shaped member 17. The member 17 is adapted to be clamped in a securing member such as a vise or the like and the shank 16 is movable through the slot 18 formed in one of the angular plates 14. From this, it will be apparent that the member 17 is secured in position against movement and the body 1 may be moved to various angular positions relative to the securing means.

In order to retain the work against upward movement when the movable cutting blade 3 is moved upwardly, I provide an arm 19 which is pivotally mounted upon the upper portion of the body by means of the bolt 20.

Extending downwardly from one end of the arm is a shank 21 terminating at its lower end in a flared portion 22. The flared portion 22 is preferably disposed just above and to one side of the cutting blade 2 and is adapted to be arranged above the work so as to prevent the work from rising upwardly when the movable cutting blade 3 is on its upward movement. The flared portion 22 will also guard the operator's hand against coming in contact with the blades 2 and 3 while holding the work down or guiding the work in its movement between the cutting blades.

The arm 21 may be swung upwardly away from the blade 2 on its pivot 20 and retained in various positions. The arm 21, however, is retained in operative position by having the hook portion 23 engaged with the adjustable bolt 24.

I claim:

A metal cutting instrument including a supporting body, an arm pivotally mounted thereon, a shank depending from one end of the arm, a flared portion at the lower end of the shank, a hook at the other end of the arm and an adjustable bolt carried by the body and adapted to be engaged by the hook to retain said shank in a substantially vertical plane relative to the body.

In testimony that I claim the foregoing I have hereunto set my hand at Racine, in the county of Racine and State of Wisconsin.

ROBERT HEINRICH.