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PORTABLE MACHINE FOR SHEARING STEEL
RODS, WIRE ROPES, AND THE LIKE
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Fig. 1.

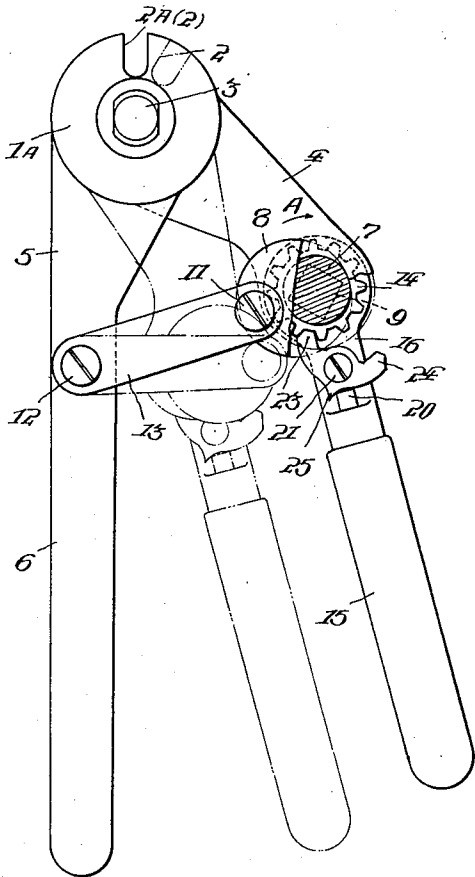
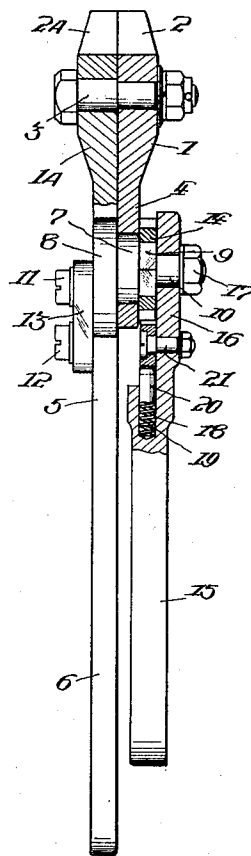


Fig. 2.



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PORTABLE MACHINE FOR SHEARING STEEL RODS, WIRE ROPES AND THE LIKE

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2 Claims. (Cl. 30—250)

This invention relates to a simple portable machine which makes possible to shear easily by means of human power steel rods, wire ropes, and the like.

This portable machine for shearing steel rods, wire ropes, and the like consists of two pieces of disk-shaped cutters pivoted together, each of which has a U-shaped groove provided in the periphery thereof. The cutters are connected with a link whose ends are freely rotatable around pins of which one is fixed to a long arm extending from one of the above disk-shaped cutters and the other is disposed eccentrically to a short shaft provided in a short arm extending from the other disk-shaped cutter. Further, to the aforesaid short shaft, not only a ratchet wheel is fixed but also a hand lever is attached as to be freely rotatable. This hand lever is provided with a antireversing device for making possible the intermittent rotation of the aforesaid ratchet wheel by the reciprocating movement of said hand lever. Further objects and advantages of my invention will appear from the detailed description.

Figure 1 is a plan view with a partial section of a portable machine embodying my invention and the chain line shows its movement.

Figure 2 is a side view with a partial section of the portable machine of Figure 1.

The following is an explanation of the drawings: The disk-shaped cutter 1 has on its periphery a U-shaped groove 2 whose edges are formed into cutting blades. Likewise, the disk-shaped cutter 1A has in its periphery a U-shaped groove 2A, and these two disk-shaped cutters 1 and 1A are positioned one on top of the other and are pivoted in their center with a shaft 3. From the disk-shaped cutters 1 and 1A extend in one body a short arm 4 and a long arm 5, respectively, with the tip of the long arm 5 being the handle 6. At the end of the short arm 4 a short shaft 7 is fitted so as to be freely rotatable and on one side of it, i.e., the side of the long arm there is provided in one body and adjoining thereto a revolving disk 8 which is larger than the short shaft 7 and on the opposite side there are provided in one body and adjoining to the short shaft 7 in order a square shaft 9 slightly smaller than the short shaft 7 and a round shaft 10 of a still smaller diameter having screw threads on its tip. On the revolving disk 8 at the outer edge there is provided projecting therefrom a pin 11 eccentrically to the shaft 7. The ends of a link 13 are coupled at one end to this pin 11 and at the other end to a pin 12 provided at a suitable location on the long arm 5 and projecting therefrom with both ends being freely rotatable. A ratchet wheel 14 having a square hole is fitted unrotatably to the aforesaid square shaft 9 and to the round shaft 10 and eyed piece 16 projecting from one side of the tip of the hand lever 15 is fitted as to be freely rotatable. 17 is the nut which is screwed into the screw thread at the tip of the round shaft 10. At the base of the above eyed piece 16 in the tip of the

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hand lever 15 there is a small hole in which is fitted a spring 19 and a sliding stop 20. In between the aforesaid ratchet wheel 14 and the sliding stop 20 a switching piece 22 is pivoted to a pin 21 affixed to the eyed piece 16, and this switching piece 22 is provided with pawls 23 and 24 at the tips thereof and a projection in its middle.

The portable machine for shearing steel rods, wire ropes, and the like of this invention is used as follows:

This machine is first made to assume the position as shown in Figure 1, i.e., where the U-shaped grooves 2 and 2A are in alignment with each other. The wire rope and the like to be sheared are then placed in these grooves and the hand lever 15 is actuated with a back and forth motion. When this is done, the ratchet wheel 14 is made to rotate intermittently in the direction A as shown by the arrow in Figure 1 by means of the pawl 23, and concomitantly with a linked motion of the revolving disk 8, the pin 11 and the link 13 occurring, the distance between the short arm 4 and the long arm 5 narrows as shown by the chain line in Figure 1. Simultaneously with this the grooves 2 and 2A becoming staggered in relation to each other, the shearing of the wire rope and the like is completed. When it is necessary that the arms 4 and 5 that have once been made to approach each other be separated as when it is desired to stop the shearing midway, the switching piece 22 is turned with the fingers and the pawl 24 is made to engage the ratchet wheel 14 while at the same time the projection 25 is made to move to the other side of the sliding stop 20. In this case, by the back and forth movement of the hand lever 15, the ratchet wheel 14 turns opposite to the direction of arrow A and thus the arms 4 and 5 are moved away from each other.

And thus the machine of this invention being of very simple construction can be made light in weight, and moreover because of its ease and simplicity of manipulation, it is especially suitable for shearing wire ropes and the like at high places above the ground.

Although certain embodiments of the invention have been shown and described for purpose of illustration, it is to be understood that the invention may be applied to various uses and that changes and modifications may be made therein as will be apparent to a person skilled in the art.

What is claimed is:

1. A portable machine for shearing steel rods, wire ropes, and the like which comprises two pieces of disk-shaped cutters pivoted together, each having a U-shaped groove in the periphery thereof, characterized in that said cutters are connected with a link whose ends are freely rotatable around pins of which one is fitted to a long arm extending from one of said disk-shaped cutters and the other is disposed eccentrically to a short shaft provided in a short arm extending from the other of said disk-shaped cutters, and further, a ratchet wheel is fixed to said short shaft together with a hand lever attached as to be freely rotatable, said hand lever being provided with an antireversal means for intermittently rotating said ratchet wheel with the reciprocating movement of said hand lever.

2. A portable machine for shearing steel rods, wire ropes, and the like according to claim 1 wherein a switching piece having pawls at both of its tips and a projection in the middle thereof is pivoted to an eyed piece at the tip of a hand lever, said hand lever being provided with a sliding stop engaging said projection and a spring which presses said sliding stop.

No references cited.