A. E. DURNER.

PUNCH AND SHEAR.

APPLICATION FILED JUNE 12, 1920.

1,368,906.

Patented Feb. 15, 1921.

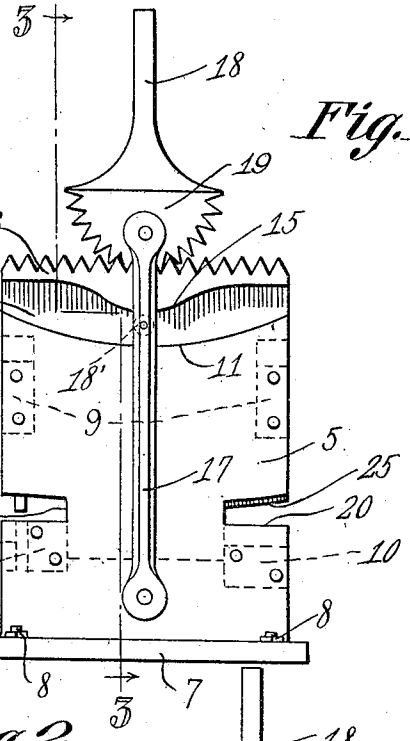


Fig. 1.

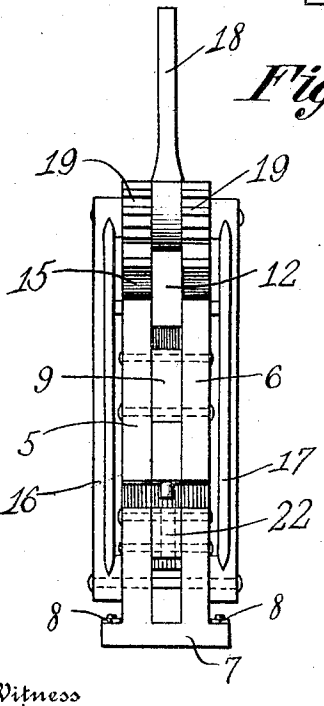


Fig. 2.

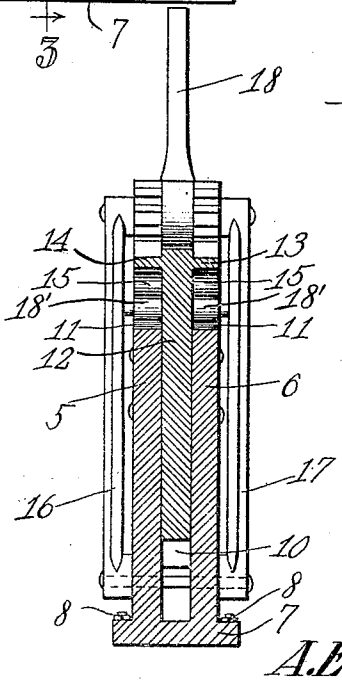


Fig. 3.

Witness

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UNITED STATES PATENT OFFICE.

AUGUSTUS E. DURNER, OF EVANSVILLE, WISCONSIN.

PUNCH AND SHEAR.

1,368,906. Specification of Letters Patent. Patented Feb. 15, 1921.

Application filed June 12, 1920. Serial No. 388,559.

To all whom it may concern:

Be it known that I, AUGUSTUS E. DURNER, a citizen of the United States, residing at Evansville, in the county of Rock and State of Wisconsin, have invented a new and useful Punch and Shear, of which the following is a specification.

This invention relates to hand operated cutting and punching machines, and more particularly to a combined cutting and punching machine having novel means for operating the cutter or punch independently of each other.

The primary object of the invention is to provide a device of this character wherein the operating means is so constructed to increase the leverage of the operating handle to cause the tool to be operated with the minimum amount of exertion on the part of the operator.

A further object of the invention is the provision of an operating means which includes comparatively few parts, and one which may be readily and easily dismantled to repair the same, or sharpen the tools operated thereby.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed, may be made within the scope of what is claimed, without departing from the spirit of the invention.

Referring to the drawing:—

Figure 1 illustrates a side elevational view of a machine constructed in accordance with the present invention;

Fig. 2 illustrates an end elevational view disclosing the punching mechanism of the machine;

Fig. 3 illustrates a sectional view taken on line 3—3 of Fig. 1.

Referring to the drawing in detail, the device is shown as including a body portion which comprises spaced side walls 5 and 6, each of which has its lower extremity provided with a flange 7 which is apertured to accommodate the securing bolts 8, by means of which the device may be secured and supported in an upright position.

The side walls 5 and 6 are supported in spaced relation with each other by means of the spacing blocks 9 and 10, which are disposed adjacent to opposite ends of the body portion.

As shown, the upper extremity of each of the side walls is curved as at 11 to provide a clearance for the movable member 12 which is of a thickness to operate between the side walls 5 and 6 of the body portion, and which movable member carries the punching element on one edge thereof, while the cutting element is carried on the opposite edge thereof.

Supported on the side surfaces of the movable member 12, adjacent to the upper end thereof are the rack bars 13 and 14, which are disposed on opposite sides of the movable member 12, the lower edge of each of these rack bars being curved downwardly as at 15 to provide camming surfaces for purposes to be hereinafter more fully described.

The pivoted arms 16 and 17 have connection with the side walls of the body portion to permit the same to move transversely of the body portion, the rollers 18′ which are carried by the respective arms being adapted to move over the camming surfaces of the rack bars to cause a movement of the movable member 12 longitudinally of the body portion.

Pivotally supported between the upper ends of the arms 16 and 17 is a segmental rack carried by the lower end of the operating lever 18, the rack being indicated by the reference character 19, and so disposed that the same will coöperate with the teeth of the rack bars 13 and 14, so that when the operating lever 18 is operated, the arms 16 and 17 are moved transversely of the body portion, thus causing the rollers 18′ to move over the camming surfaces of the rack bars to move the movable element of the machine longitudinally of the body portion.

Formed in opposite edges of the body portion of the machine, are the cut out portions 20 and 21, there being a supporting block 22 positioned between the side walls 5 and 6 of the body portion, adjacent the cut out portion 21, which supporting block is apertured as at 23 to accommodate the punching element 24, carried by the movable element of the machine, the punching element being constructed to operate on metal positioned in the cut out portion 21.

A cutting surface 25 is formed on the

movable member, and this cutting surface coöperates with the cut out portion 20 of the body portion to cut metallic bars or the like, which may be positioned in the cut out portion 20.

From the foregoing it is obvious that when the operating lever 18 is moved in one direction, the rollers 18′ are moved over the caming surfaces of the rack bars to cause the operation of the movable member to accomplish the purpose of the machine.

Having thus described the invention, what is claimed as new is:—

1. In a machine of the class described, a body portion including spaced walls, the opposite edges of said walls having cut out portions, a movable member operating between the walls, said movable member carrying a punching element on one of its edges, a knife carried on the opposite edge thereof, rack bars carried at the upper end of the movable member, a segmental rack coöperating with the rack bars, pivoted arms for supporting the segmental rack, said segmental rack adapted to move the pivoted arms laterally of the body portion, and roller means carried by the arm and adapted to engage the lower portions of the rack bars for moving the movable member longitudinally of the body portion.

2. In a machine of the class described, a body portion including spaced walls, a movable member operating in the body portion, a punching element carried by the movable member, a cutting element carried by the body, rack bars carried by the movable member, pivoted means coöperating with the rack bars for moving the rack bars and movable element longitudinally of the body portion, and said pivoted means adapted to move transversely of the body portion.

3. In a machine of the class described, a body portion including spaced walls, a movable member operating between the spaced walls, rack bars carried by the movable member, said rack bars having camming surfaces formed on the underside thereof, a punch and a cutting element carried by the movable member, pivoted arms carried by the body portion, means coöperating with the teeth of the rack bars for moving the arms, transversely of the body portion, and means carried by the arms and coöperating with the camming surfaces of the rack bars, for moving the movable member longitudinally of the body portion.

4. In a machine of the class described, a body portion including spaced walls, a movable member operating between the spaced walls, rack bars carried by the movable member, a segmental rack coöperating with the rack bars, pivoted arms having connection with the body portion, and adapted to support the segmental rack, means carried by the arms and coöperating with the movable member for moving the movable member longitudinally of the body portion, and a cutting and punching element carried by the movable element.

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

AUGUSTUS E. DURNER.

Witnesses:
J. W. Morgan,
Frank Erdman.