

(No Model.)

J. L. McFARLANE.
CUTTING TOOL.

No. 572,559.

Patented Dec. 8, 1896.

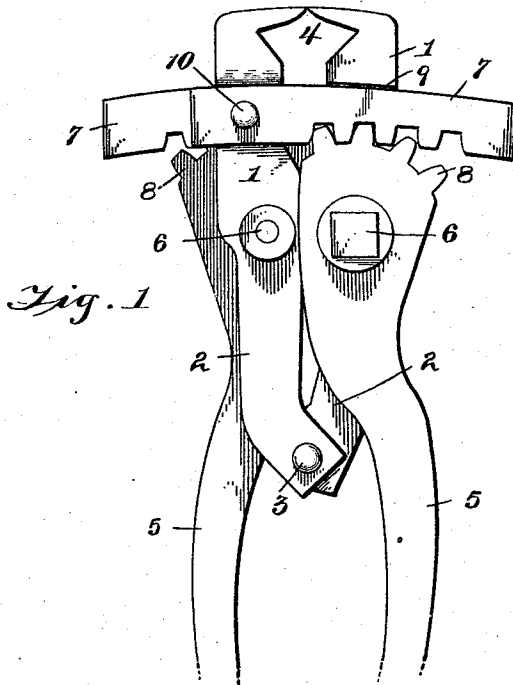


Fig. 1.

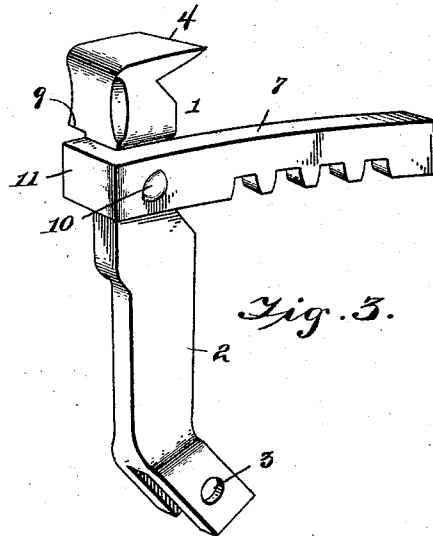


Fig. 3.

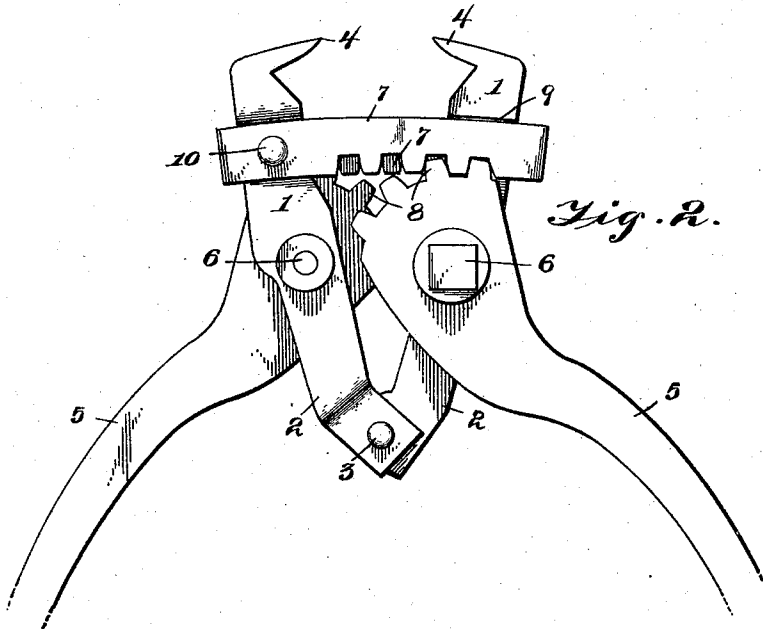


Fig. 2.

Witnesses

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By his Attorneys,

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UNITED STATES PATENT OFFICE.

JAMES L. MCFARLANE, OF MEDINA, WISCONSIN.

CUTTING-TOOL.

SPECIFICATION forming part of Letters Patent No. 572,559, dated December 8, 1896.

Application filed February 14, 1896. Serial No. 579,292. (No model.)

To all whom it may concern:

Be it known that I, JAMES L. MCFARLANE, a citizen of the United States, residing at Medina, in the county of Outagamie and State of Wisconsin, have invented a new and useful Cutting-Tool, of which the following is a specification.

My invention relates to a metal-cutting and hoof-trimming tool designed especially for the use of blacksmiths; and the object in view is to provide a device having high leverage power, whereby the force expended in the movement of the operating levers or handles is communicated with the minimum loss by friction to the knives.

Further objects and advantages of this invention will appear in the following description, and the novel features thereof will be particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side view of a cutting-tool constructed in accordance with my invention, the jaws or cutters being shown closed. Fig. 2 is a similar view showing the jaws or cutters open. Fig. 3 is a detail view in perspective of one of the jaws with the attached rack.

Similar numerals of reference indicate corresponding parts in all the figures of the drawings.

The opposed jaws 1 are extended rearwardly to form shanks 2, which are pivotally connected at 3 at a greater or less distance from the front ends of the jaws which carry the cutters or knives 4. The operating levers or handles 5 are fulcrumed, as at 6, upon the rearwardly-extending arms or shanks of the jaws, and hence between the cutters or knives and the pivotal point of connection of said shanks.

Each jaw carries a rack 7, secured rigidly thereto and arranged parallel with the plane of movement of the jaws and in position for engagement by the toothed segment 8 of the operating lever or handle which is mounted on the other jaw, the thrust of the toothed segment being resisted by a guide or shoulder 9 on the jaw which carries said lever or handle to receive the pressure of the front or convex edge of the rack.

The jaws are mounted to operate in a common plane, and the racks, which are prefer-

ably bolted, as at 10, to the jaws near their front or free extremities, are secured, respectively, to opposite sides of the jaws and have lateral ears 11 at their fixed ends to engage the outer surfaces of the jaws to reinforce said securing-bolts. The operating levers or handles are mounted upon the sides of the jaws, respectively, in the planes of the racks with which they mesh, the racks being curved centrifugally with the pivotal point of connection of the jaws.

From the above description it will be seen that pressure applied to the operating levers or handles will operate through the intermeshing segments and racks to communicate motion to the jaws, the force applied being multiplied in accordance with the ratio of the lengths of the two arms of each lever; but in addition to this the fulcrums of the operating levers or handles are movable instead of being "dead" (or mounted upon a rigid frame or base) in that they are carried by the jaws, and hence the leverage of the handles, as above noted, is increased by the shanks or extensions of the jaws, which form levers of the third class.

In the communication of motion from a lever or handle to the jaw upon which it is fulcrumed a lever of the second class is formed, in that the point of intermeshing of the segment and rack of the other jaw forms the fulcrum, and the fulcrum-point of said lever or handle forms the point of application of power. Hence each operating lever or handle operates upon the jaw which carries its fulcrum by means of a lever of the second class and upon the other jaw, which carries said rack, by a lever of the first class, the pivotally-connected shanks of the jaws forming levers of the third class, which serve to increase the extent of movement of the outer or operating extremities of the jaws.

In practice various changes in the form, proportion, and the minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of this invention.

Having described my invention, what I claim is—

1. A cutting-tool having pivotally-connected jaws, operating levers or handles fulcrumed respectively upon the jaws between

their pivotal point and their free ends, and connections between each lever or handle and the jaw upon which the other lever or handle is fulcrumed, substantially as specified.

- 5 2. A cutting-tool having jaws provided with rearward extensions or shanks pivotally connected at their extremities, operating levers or handles fulcrumed respectively upon the extensions or shanks of said jaws and provided with toothed segments, and racks carried respectively by the jaws, the toothed segment of each lever or handle meshing with the rack secured to the opposite jaw, substantially as specified.
- 10 3. A cutting-tool having jaws provided with rearward extensions or shanks pivotally connected at their extremities, operating levers or handles fulcrumed respectively upon the extensions or shanks of the jaws and provided with toothed segments, a rack secured to each jaw in the plane of the toothed segment of the lever or handle mounted upon the other jaw and engaged thereby, and a guide or shoulder carried by each jaw in contact with
- 15 the opposite side of the rack from that which

is engaged by the toothed segment, substantially as specified.

4. A cutting-tool having jaws provided with rearward extensions or shanks arranged in a common plane and pivotally connected at their extremities, operating levers or handles fulcrumed, respectively, upon the extensions or shanks of the jaws upon opposite sides of the plane thereof and provided with toothed segments, a rack secured to each jaw in position for engagement by the toothed segment on the lever fulcrumed upon the other jaw, means for guiding and resisting the thrust of each rack caused by the pressure of the segment in engagement therewith, and lateral extensions or shoulders on said racks to engage the outer sides of the jaws to which they are secured, substantially as specified.
- 20 35 40 45

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

JAMES L. MCFARLANE.

Witnesses:

FRANK VAN DOREN,
CHARLES SWEETSOR.