(No Model.)

J. H. AUFDERHEIDE.

SHEARS.

No. 518,129. Patented Apr. 10, 1894.

Fig. 1.

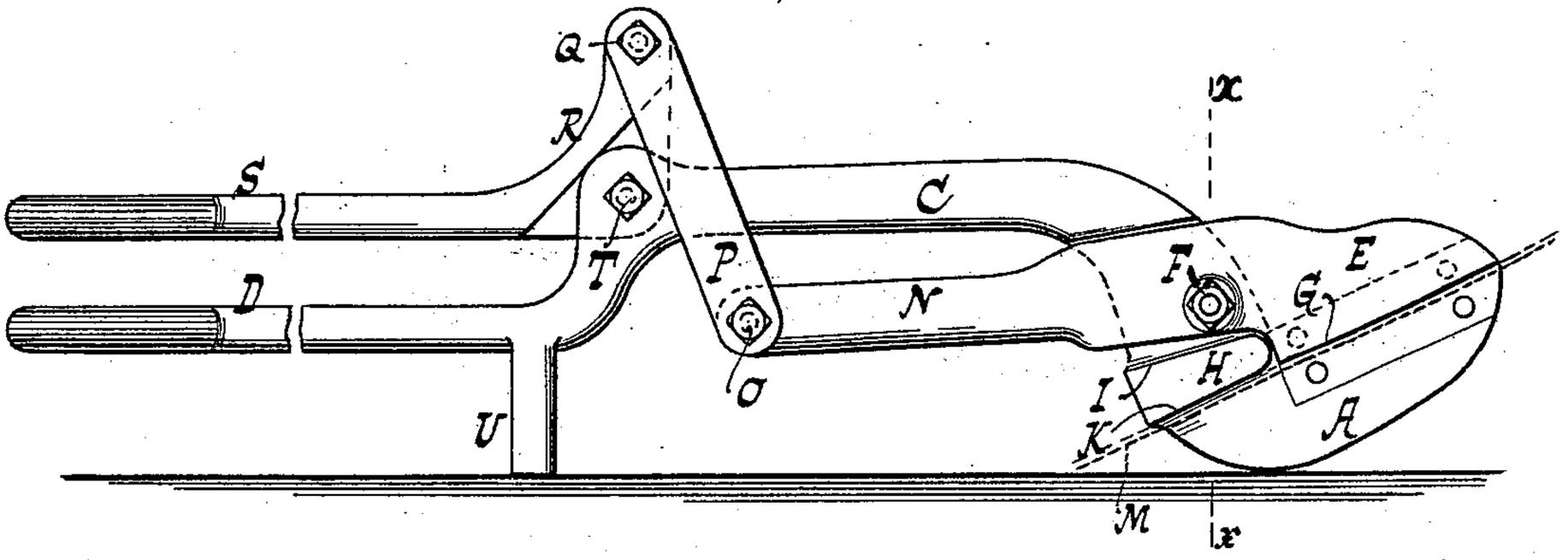


Fig. 2.

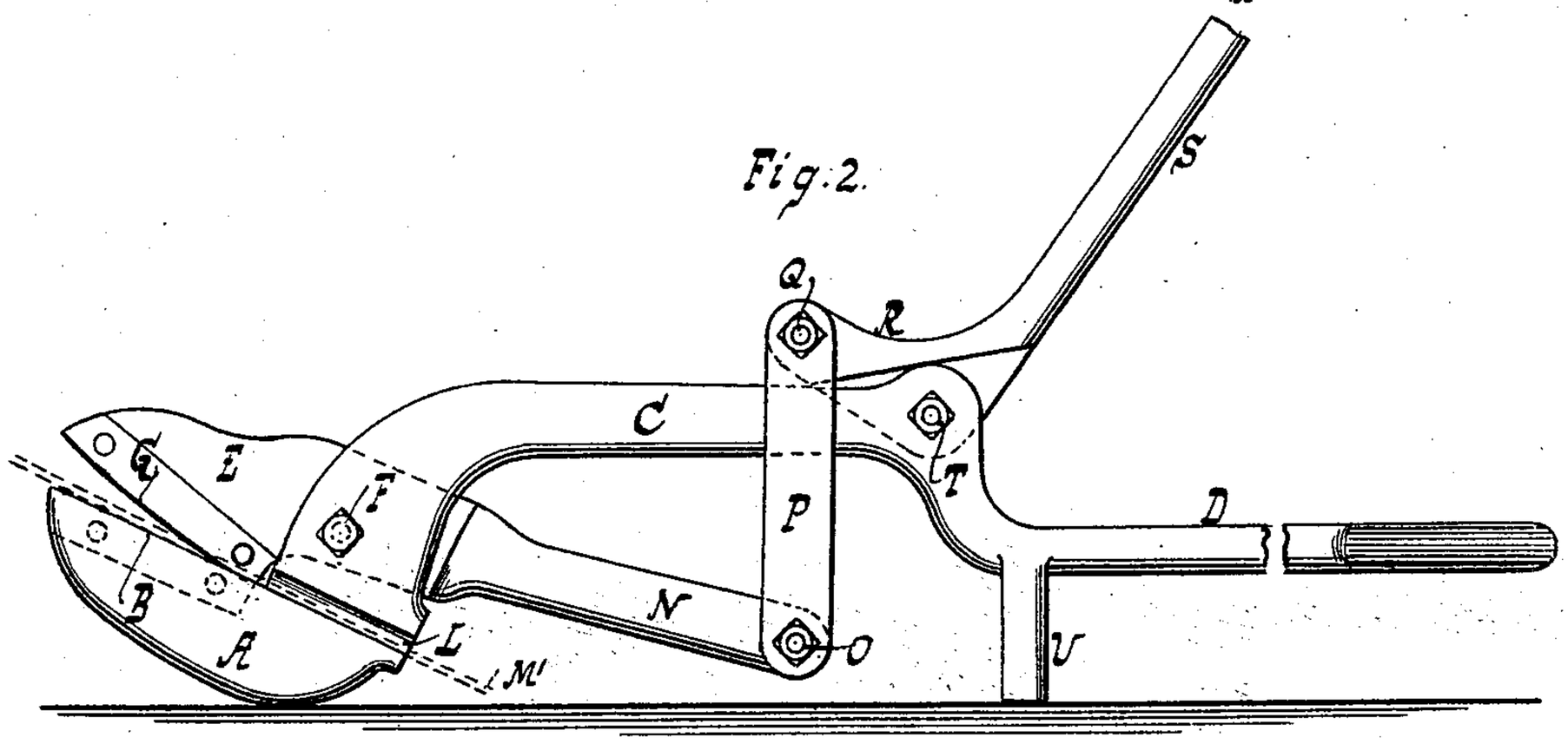
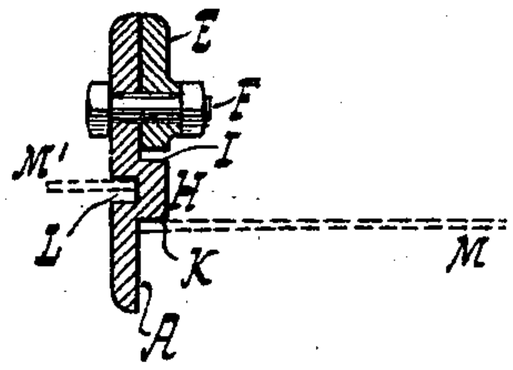


Fig. 3.



WITNESSES:
William Miller
Chas. E. Pomeroy

INVENTOR:
Johann Heinrich Aufderheide
BY
Hauff & Hauff
ATTORNEYS.

THE NATIONAL LITHOGRAPHING COMPANY
WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

JOHANN HEINRICH AUFDERHEIDE, OF KAISERSLAUTERN, GERMANY, ASSIGNOR TO HEINRICH AUFDERHEIDE, OF BROOKLYN, NEW YORK.

SHEARS.

SPECIFICATION forming part of Letters Patent No. 518,129, dated April 10, 1894.

Application filed May 4, 1893. Serial No. 472,978. (No model.)

To all whom it may concern:

Be it known that I, JOHANN HEINRICH AUFDERHEIDE, a subject of the German Emperor, residing at Kaiserslautern, in the German Empire, have invented new and useful Improvements in Shears, of which the following is a specification.

This invention relates to an improvement in shears, and the invention consists in the novel features pointed out in the following specification, and claims and illustrated in the annexed drawings, in which—

Figure 1 is an elevation of one side of the shears the latter being closed. Fig. 2 is an elevation of the opposite side of the shears the latter being open. Fig. 3 is a section along *x x* Fig. 1.

In the drawings the letter A indicates a blade hereinafter termed the primary blade of the shears. Said blade A has an edge or cutting part B, a rearwardly extending arm C and handle D. The secondary blade E is jointed at F to blade A and said blade E has an edge or cutting part G. The blade A as seen in Fig. 3 is formed of one piece into ⌐ shape so as to have a projection H with upper edge or shoulder I and lower edge or shoulder K, and also a channel or way L. The material to be cut can be made to run back, with one cut portion M under the edge K and the other cut portion M′ through channel L. The secondary blade E has an actuating arm N made to extend backwardly entirely clear of the shoulders I K of the primary blade so as to be free for the application of motive power. By jointing to said arm N at O a link P, jointed at Q to lever R S fulcrumed at T, considerable power can be brought to bear on blade E so as to cause it to force or cut its way through refractory material such as sheet metal or plates. The primary blade has a horn or arm U for insertion into a bench or support so as to have the instrument in convenient position for work. The edge G of the secondary blade E is made depending so as to lie in alignment with shoulder K when the shears are closed and the edge B of blade A is in alignment with channel or recess L. The cut portions M M′ can thus travel back in straight lines so as to avoid the necessity of bending the cut material which bending is sometimes laborious as in case of strong sheet metal. The upper shoulder I forms a seat over which the secondary blade E can be adjusted toward and from the primary blade by properly screwing or turning the bolt or pivot F, so that the wear of the blades can be compensated. The outer face of the secondary blade is left free or uncovered so as to be unobstructed in its adjustment away from the primary blade as required, for example, on the insertion of fresh cutters B G. The lever R S is bell cranked, its link engaging arm R being extended at an angle so as to carry the link P toward the fulcrum T by the closing movement of the shears, thereby increasing the lever power toward the close of the cutting movement of blade E at which time the blades A E or their cutters or edges B C are cutting the material at or near the point of the shears and farther from joint F than when starting the cutting operation at or near the rear ends of blades A E. The increasing lever power thus compensating for the increasing power required for causing the cutters B G to cut from their rear ends clean up to their points, the actuating power applied to lever arm S for working the shears can be uniform or practically so, whereby the labor of working the shears by hand is eased or equalized.

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination with a stationary blade having a rearwardly-extending stationary arm and handle, of a pivoted blade provided with a rearwardly extending arm, a bell-crank lever pivoted to said stationary arm and having a handle located in operative relation to the handle of the stationary arm, and a link connecting one arm of the bell-crank lever with the rearwardly-extending arm of the pivoted blade and moved toward the fulcrum of the bell-crank lever when the latter is operated to close the pivoted blade, substantially as described.

2. The combination with a primary blade formed in one piece in ⌐ shape so as to form an upper and a lower shoulder of a secondary blade jointed to said primary blade and provided with a depending edge adapted to come

into alignment with said lower shoulder, substantially as described.

3. The combination with a primary blade formed with an upper and a lower shoulder substantially as described of a secondary blade seated over said upper shoulder and made adjustable toward and from the primary blade, the outer face of the secondary blade being left free or unobstructed, substantially as described.

4. The combination with a primary blade formed in one piece in ⌙ shape so as to form an upper and lower shoulder of a secondary blade jointed to said primary blade, said secondary blade being provided with an actuating arm made to extend backward entirely clear of the shoulders of the primary blade so as to be free for the application of motive power, substantially as described.

5. The combination with a primary blade formed in one piece in ⌙ shape so as to form an upper and a lower shoulder and a channel or recess, of a secondary blade jointed to the primary blade, said secondary blade having its edge aligned with the lower shoulder and the primary blade having its edge aligned with the channel, substantially as described.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

JOHANN HEINR. AUFDERHEIDE.

Witnesses:

ALVESTO S. HOGUE,

FRANK H. MASON.