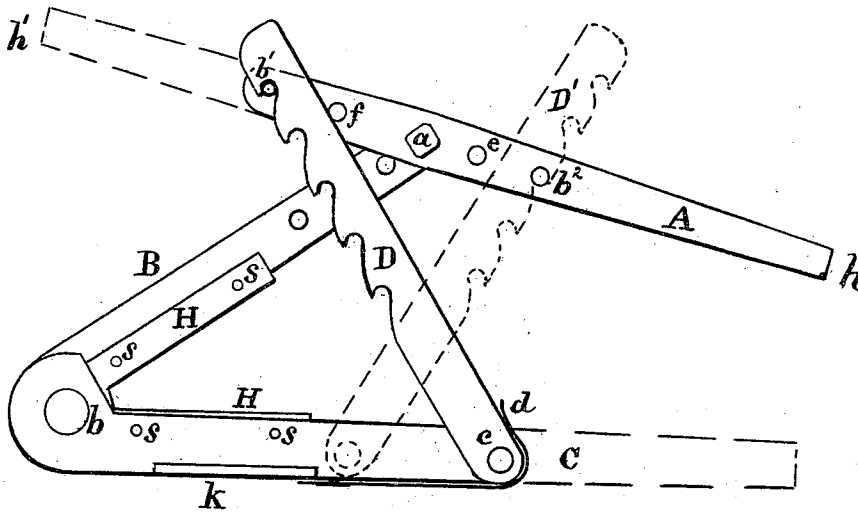


P. BROADBOOKS.
SHEARING-MACHINE.

No. 171,766.

Patented Jan. 4, 1876.



Witnesses :

H. Anthon.
G. B. Fawles.

Inventor :

Peter Broadbooks
By W. Purres Atty.

UNITED STATES PATENT OFFICE.

PETER BROADBOOKS, OF BATAVIA, NEW YORK.

IMPROVEMENT IN SHEARING-MACHINES.

Specification forming part of Letters Patent No. **171,766**, dated January 4, 1876; application filed April 29, 1875.

To all whom it may concern:

Be it known that I, PETER BROADBOOKS, of Batavia, in the county of Genesee and State of New York, have invented certain new and useful Improvements in Mechanical Movement and Methods of Applying Lever-Power; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to which it pertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

The drawings represent a side elevation of the levers and operating devices.

My invention consists of an improved combination of levers and their devices for operating shears for cutting iron, and for other purposes, as hereinafter described.

In the drawings, A represents a lever, pivoted at *a* to an upper power-lever, B, which is pivoted at *b* to a lower lever, C. D represents a toothed bar, pivoted at *c* to the lever C, and provided with a spring, *d*, to bear the bar against a stud or bolt, *b'*, in the end of lever A. H H represent shears, attached by bolts or screws *s* at the inner edges of levers B C, for cutting iron. K represents a plate, attached to the bottom of lever C, for fastening the lever to a bench or block.

The lever A may be made with one or two handles, as shown at *h*, and by dotted lines at *h'*, in Fig. 1; and the lever may be adjusted to be operated by the foot as a treadle, and by bolt *b'* it may be fastened to lever B, forming of the two levers one jointed lever.

The location of the toothed bar may be varied as required, and two toothed bars may be used, as shown at D' in Fig. 1, adjusted oppo-

site each other to give double action to the lever. The lever B may be constructed and adjusted to work on either or both sides of lever A, or the two levers may be constructed for lever B to work in a slot or between two jaws of lever A. By placing the pivots *a* and *b'* in holes *e f* the lever-power will be increased.

When the handle end *h* of the lever A is raised the bolt *b'* is lowered and catches in a lower notch in the bar D, thus giving the lever a new purchase; and when two toothed bars are used the lowering of the end *h'* throws bolt *b'* into a lower notch of bar D', and thus, with each upward and downward movement of the lever, it is given a new purchase.

This combination of levers may be readily applied to shears for cutting iron, as shown, and to punches, saw-gummers, and to a great variety of tools and machines where great power is required.

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

1. One or more toothed bars, D, with or without spring *d*, in combination with levers A B C and bolt *b'*, substantially as and for the purposes described.

2. The levers A B, provided with perforations to receive bolts *a b'*, and adjusted to be used as double levers, and to be joined by the bolts and used as a simple lever, in combination with lever C, substantially as described.

In testimony that I claim the foregoing as my own invention I affix my signature in presence of two witnesses.

PETER BROADBOOKS.

Witnesses:

JEROM ROWAN,
CHARLES TRIETLY.