No. 711,435. Patented Oct. 14, 1902.

I. MORRIS.

METAL SHEARS.

(Application filed Mar. 24, 1902.)

(No Model.)

Fig. 1.

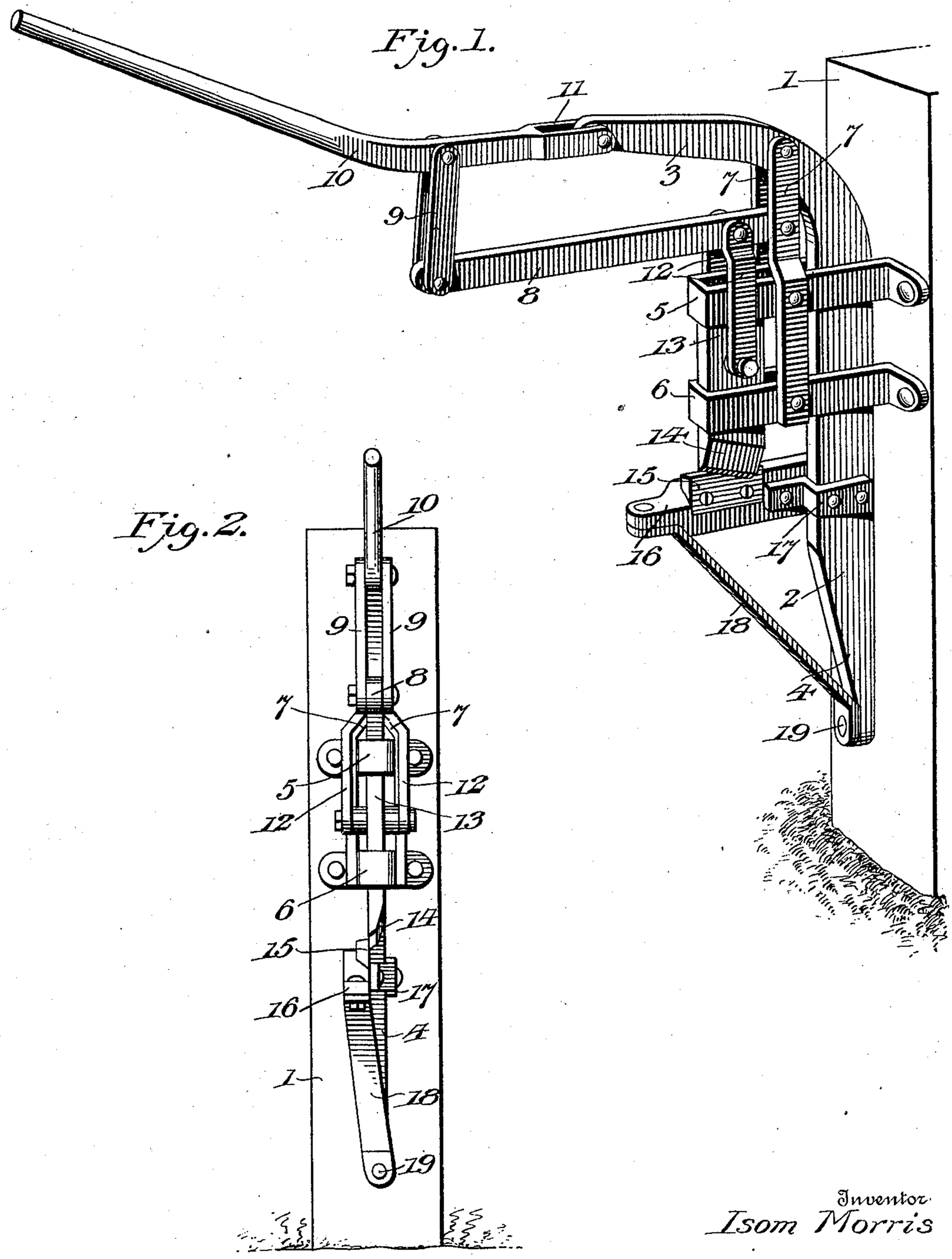

Fig. 2.

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METAL-SHEARS.

SPECIFICATION forming part of Letters Patent No. 711,435, dated October 14, 1902.

Application filed March 24, 1902. Serial No. 99,739. (No model.)

To all whom it may concern:

Be it known that I, ISOM MORRIS, a citizen of the United States, residing at Humboldt, in the county of Humboldt and State of Iowa, have invented certain new and useful Improvements in Metal-Shears, of which the following is a specification.

This invention relates to metal-shears; and the main object of the same is to provide a simple and effective device of this kind which can be conveniently set up in operative position and embodies a structural organization of elements which gives an increased amount of cutting power or leverage by a minimum amount of applied operating power and is adapted to cut either hot or cold metal.

The invention consists in the construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a perspective view of a shear embodying the features of the invention. Fig. 2 is a front elevation thereof.

Similar numerals of reference are employed to indicate corresponding parts in the views.

The numeral 1 designates a post or analogous support against which a main frame-bar 2 of suitable dimensions is disposed and has an upper forwardly-curved extremity 3 and a lower reduced extremity 4, the latter extremity having its front edge cut away at a downward and inward bevel for a purpose which will be presently explained. Terminally secured to the post or other support 1 are a pair of outwardly-projecting horizontally-disposed strap-metal loops 5 and 6, which have suitable dimensions and are spaced apart in vertical alinement. The main frame-bar 1 passes through the said loops 5 and 6 and is connected to the latter by depending metal straps 7, attached at their upper extremities to the curved extremity of the frame-bar and have their lower portions bent outwardly and firmly bolted or riveted to the opposite side members of the loops 5 and 6. The straps 7 resist the downward strain exerted on the upper forwardly-curved extremity 3 of the frame-bar 2, and pivotally attached to the said straps above the plane of the upper loop 5 is a power-transmitting lever 8, having pivoted to its outer end a pair of links 9, which are also attached to an upper operating-lever 10, formed with an inner bifurcated terminal 11, pivotally connected to the end of the curved extremity 3 of the frame-bar. The transmitting-lever 8 also has a pair of links 12 pivotally connected thereto a short distance in advance of the straps 7, the said links depending over the opposite sides of the upper loop 5 and pivotally connected to a sliding cutter 13, having a lower beveled cutting edge 14 of suitable form and obliquity, which coöperates with a fixed cutting-block 15, having an upper straight edge and rigidly secured to an outstanding horizontally-disposed arm 16, attached at its rear end to the frame-bar 2 by an angle-strap 17. The outer end of the arm 16 has the upper end of an oblique brace 18 secured to the under side thereof and also to the lower end of the frame-bar 2, the fastening 19 passing through the lower end of the brace 18 also extending through the lower end of said frame-bar 2 into the post or support 1. The lower extremity of the frame-bar 2 is reduced, as heretofore explained, to permit the brace 18 to be applied as set forth.

The operation of the shears is as follows: The metal in either hot or cold condition to be cut is placed on the upper edge of the block 15, the sliding cutter 13 being first elevated by drawing upwardly on the operating-lever 10, which through the links 9 elevates the outer extremity of the power-transmitting lever 8 and the latter through the links 12 raising the cutter, which moves through the loops 5 and 6. After the metal to be cut is set in proper position the operator applies a downward force on the lever 10 and lowers the outer end of the lever 8, thereby forcing the sliding cutter 18 downwardly through the medium of the links 12, and owing to the beveled and oblique construction of the lower end of said latter cutter a shear cut results, the cutter 13 being guided and held in positive position by the loops 5 and 6. Through the system of levers and links set forth a great amount of power is concentrated on the sliding cutter 13 with a minimum amount of operating power applied to the lever 10, and in view of the loops, which are thoroughly braced and rigidly held, the sliding cutter 13 will be prevented from slipping away from

the work, and loss of motion and power is thereby avoided.

The improved metal-shears is particularly adapted for use by blacksmiths; but it will be understood that it is capable of general service, and to adapt it for different purposes changes in the proportions and dimensions may be resorted to without departing from the spirit of the invention.

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

In metal-shears of the class set forth, a frame-bar secured against the support and arranged in vertical position, the said frame-bar having upper forwardly-projecting extremities, a pair of loops secured to the support and disposed in vertical alinement, straps secured to the upper extremity of the frame-bar and to the said loops, an arm projecting outwardly from the frame-bar and carrying a fixed cutting-block located below the said loops, a power-transmitting lever pivotally connected to the straps and having links depending therefrom, a vertically-sliding cutter mounted in the loops to which the lower ends of said links are also pivotally attached, an operating-lever movably attached to the end of the upper extremity of the frame-bar and links connecting the operating-lever and power-transmitting lever.

In testimony whereof I affix my signature in presence of two witnesses.

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