(No Model.)

G. McDONALD.

METAL PUNCH.

No. 316,160. Patented Apr. 21, 1885.

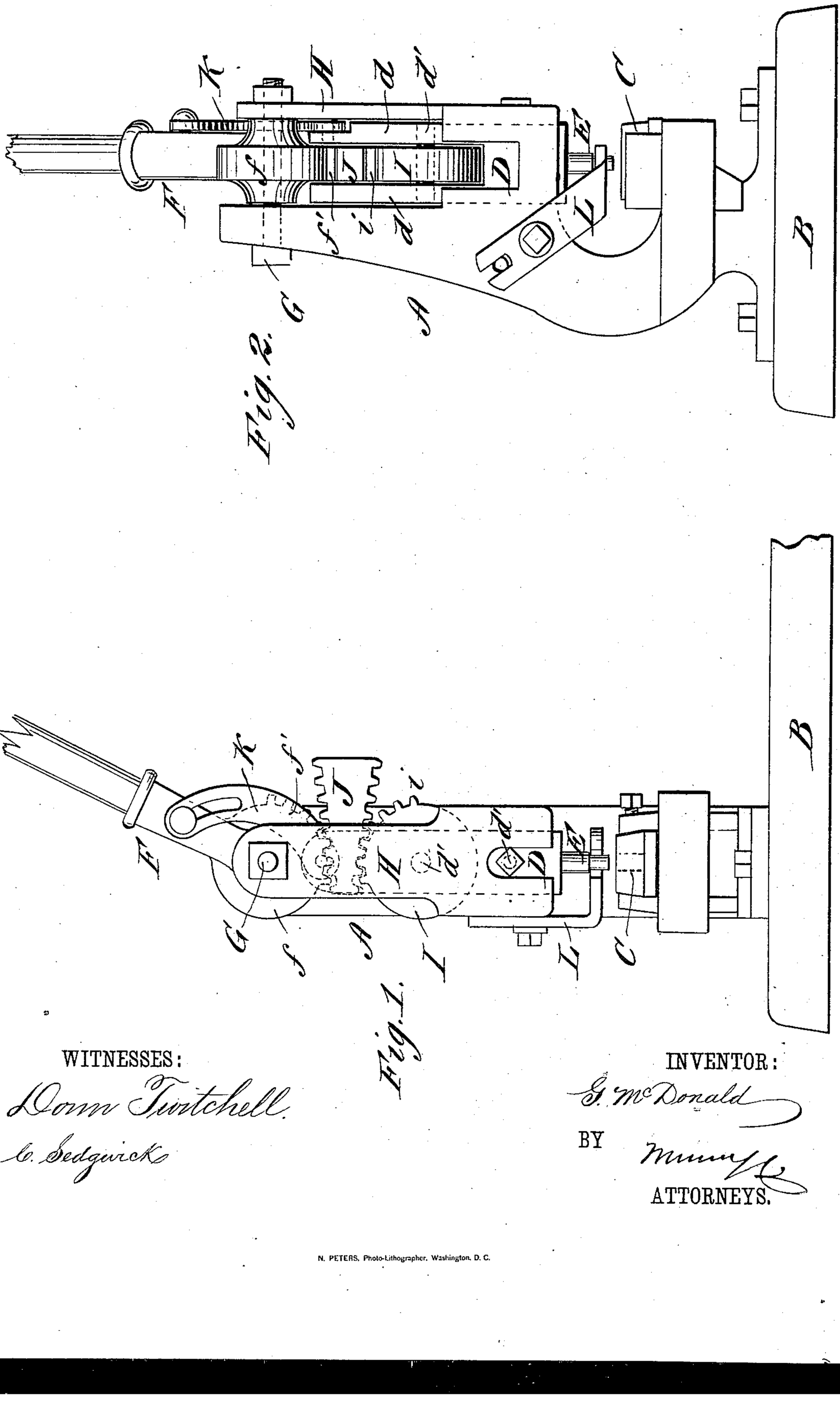

Fig. 2.

Fig. 1.

WITNESSES:

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UNITED STATES PATENT OFFICE.

GILBERT McDONALD, OF AUGUSTA, KANSAS, ASSIGNOR OF TWO-THIRDS TO DAVID BUNN, OF SILVER CITY, TERRITORY OF NEW MEXICO.

METAL-PUNCH.

SPECIFICATION forming part of Letters Patent No. 316,160, dated April 21, 1885.

Application filed July 29, 1884. (No model.)

To all whom it may concern:

Be it known that I, GILBERT McDONALD, of Augusta, in the county of Butler and State of Kansas, have invented a new and Improved Metal-Punch, of which the following is a full, clear, and exact description.

This invention relates to a metal punching or cutting machine, more especially designed for the use of tinners and blacksmiths for punching or cutting sheets or plates of metal, hot or cold; and the invention consists, principally, of a wedge having cogs or teeth formed upon its edges interposed between the power and the plunger which carries the punching or cutting tool.

The invention also consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in both figures.

Figure 1 is a front elevation of my new and improved punch, and Fig. 2 is a side elevation of the same.

The frame or standard A of the punch is bolted upon the bench, floor, or other support B, and is constructed to hold the die-block C and plunger D, which latter carries the punch or cutting-tool E.

F is the power-lever for reciprocating the plunger D, which lever is formed with the circular head *f* and segmental teeth *f'*, and is fulcrumed upon the bolt G, which passes through the plate H and the upper end of the frame or standard A.

The plunger D is divided at its upper end so as to form the parallel members *d d*, between which is journaled upon the bolt *d'* the roller I, which has the teeth or cogs *i* formed upon it, as shown clearly in Fig. 1.

Between the roller I and the circular head *f* of the lever F is placed the cogged wedge J, with the cog-teeth of which the cog-teeth *f'* and *i* engage, as shown clearly in Fig. 1, so that as the lever F is brought downward the wedge J will be carried forward, causing the plunger D and tool E to be forced downward with great force, sufficient to cause the tool E to cut or punch sheets or plates of metal placed upon the die-block C.

The upward movement of the lever F causes the cogs *f'* to force the wedge J backward, and the said lever at the same time lifts the plunger D and tool E by means of the slotted and curved plate K, which is attached to the plunger and to the lever F, as shown clearly in the drawings. Instead of the plate K a chain or other means might be used for lifting the plunger D by the backward or upward movement of the lever F.

During the upward movement of the plunger D and tool E the plate L serves to limit the upward movement of the piece of metal cut or punched with the tool, so that the tool will be withdrawn from the metal as in common punches.

Constructed in the manner described the punch is very powerful and practical, and not liable to get out of order, and it is cheap and durable.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a metal-punch, the combination, with a plunger and its operating-lever, of a wedge interposed between said plunger and lever, and operated by the latter, as set forth.

2. The lever F, having the cogs *f'*, and the plunger D, having cogged wheel I, in combination with the cogged wedge J, placed between the lever and roller, substantially as set forth.

GILBERT McDONALD.

Witnesses:
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