A. L. HASTINGS.

Improvement in Machines for Cutting and Punching Metal.

No. 126,543. Patented May 7, 1872.

Fig. 1.

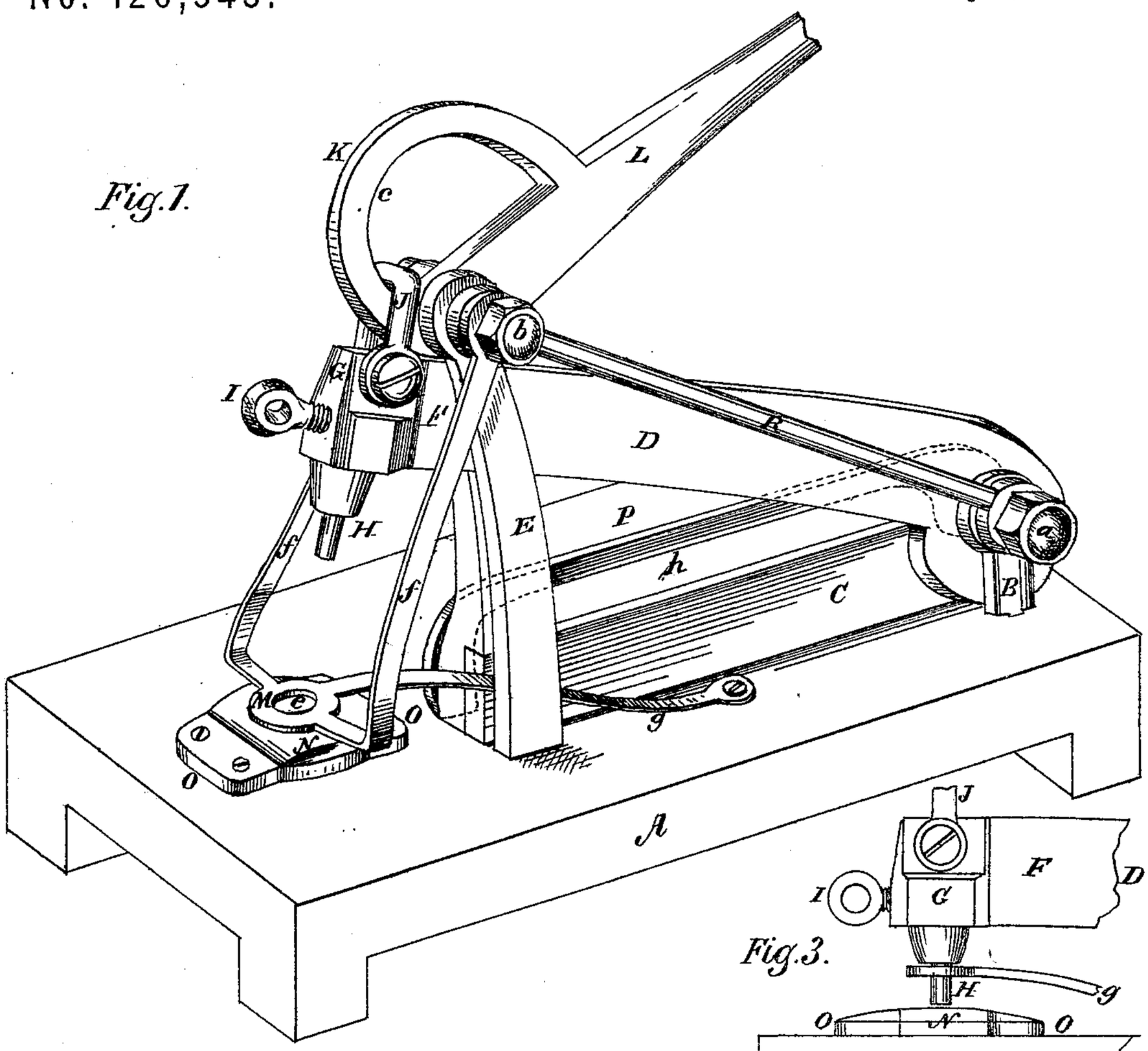
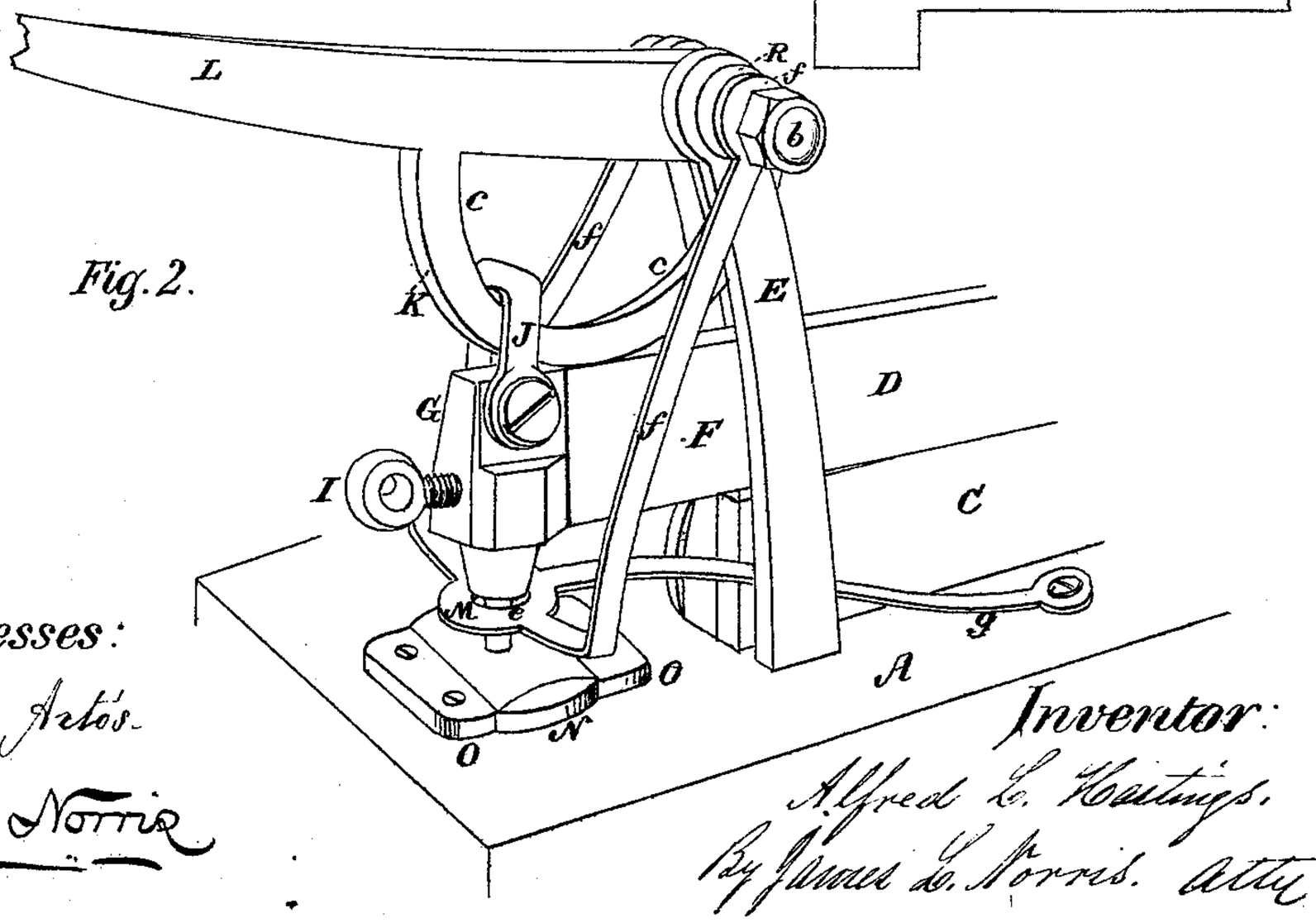


Fig. 3.

Fig. 2.



Witnesses:

Fredk. Artos.

A. H. Norris

Inventor:

Alfred L. Hastings.

By James L. Norris. Atty

UNITED STATES PATENT OFFICE.

ALFRED L. HASTINGS, OF HORTON, IOWA, ASSIGNOR TO HIMSELF AND CHARLES R. HASTINGS, OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR CUTTING AND PUNCHING METAL.

Specification forming part of Letters Patent No. 126,543, dated May 7, 1872.

To all whom it may concern:

Be it known that I, ALFRED L. HASTINGS, of Horton, Bremer county, and State of Iowa, have invented an Improved Machine for Cutting and Punching Metal, &c., of which the following is a specification:

My invention relates to a machine for cutting and punching metal—such as sheet metal, iron, &c.—which is so constructed as to secure great durability and economy, and also great facility in the execution of the work designed to be accomplished. My invention consists in rigidly mounting upon a bed or platform the lower jaw of a pair of metal-cutting shears, and pivoting upon its rear end the top or cutting-jaw exceeding in length the lower jaw, which extension or prolongation thus formed being provided with a socket to receive the shank of a punch or cutting-tool, the same being held in position by a set-screw or its equivalent, the said top jaw thus constructed being elevated and depressed in the operation of cutting and punching by means of a lever formed with a cam, which cam operates upon the said top shear, and is connected with the same by a pivoted link, so as to elevate the said top jaw after the cutting or punching operation. With the cam-lever and the shears and punch, as above mentioned, is combined the punch-stripper, suspended from the same bolt or pin that forms the axis of the cam-lever, and that secures in place the braces arranged between the axis of the shears and the front standards.

In the drawing, Figure 1 is a perspective view of the improved machine for cutting and punching metal arranged upon a movable bed or platform, the cutting and punching jaw being elevated. Fig. 2 is a perspective view of the front portion of the same, the top jaw being depressed as in the act of cutting and punching. Fig. 3 is a side view of the socket formed on the extended front end of the upper jaw, the punch, stripper, and die, the rear portion of the jaw and bed being broken away.

In the drawing, the letter A designates a bed or platform upon which the machine is rigidly mounted, which, in the present instance, is so constructed as to form a part of and be transported with the machine, and be firmly secured upon a floor or bench by means of hooks or other fastening devices, of a strength sufficient to resist the great strain brought to bear upon it when the machine is accomplishing the work designed. B B are vertical supports or standards, formed with shanks which extend through the bed A, and are secured in place by nuts or otherwise. Between these standards is arranged the stationary lower jaw C and swinging upper cutting-jaw D, being secured in place and to the standards by a bolt or pin, *a*, passing through the same. E E are vertical standards and guides, being secured upon the bed A in a manner similar to the standards B, and are joined at their top by a bolt or pin, *b*, which forms the axis of a cam-lever, the support of a punch-stripper, and a means of fastening the front and rear standards, as will be mentioned hereinafter. The cutting-jaw is arranged in respect to the lower jaw, as usual, and is of the ordinary construction, except that it is made of a length exceeding the lower, which prolongation or extension F is formed or provided with a socket, G, to receive the head of a punching-tool, H, which tool is retained or released from the socket by means of a set-screw, I, or its equivalent. A link, J, is loosely bolted or pivoted upon the extension F of the jaw D, and connects the cam portion K of the operating-lever L with the said jaw D in such a manner that, when the said lever is elevated after being depressed, as in the act of cutting or punching, it will raise the jaw D out of contact with the material being operated upon, the link riding or traveling upon the inside cam portion *c* of the lever. The lever L has its axis upon the bolt *b* at the top of the standards E E, and has its cam portion operating upon the back of the prolongation or extension F of the jaw D, so that the power required in cutting or punching depends upon and is governed by the length of the lever employed. M represents the punch-stripper, the opening *e* of which is arranged directly below the center of the punching or cutting-tool H. It is suspended from the bolt or pin *b* by two arms, *f f*, and braced and prevented from swinging out of position by means of the brace *g* connected with the bed A. This stripper is formed with the two arms *f f*, and is elevated above the die N, as shown in Fig. 3, so as to permit the free insertion of the metal to be operated upon, and prevent its rising and following the

punch when the same has performed its office. The die N is arranged between the plates O O upon the bed A, preferably by a dovetail, so as to be readily removed and others inserted to correspond with the various sizes and forms of tools desired to be used in the socket. To prevent that portion of the metal passed between the jaws, which is desired to be severed or cut off, from springing or bending up along the side of the cutting-jaw, a guard, P, is arranged along the side of, but higher, than the lower jaw, and bolted upon the front and rear standards, the metal passing through the space *h* and bearing upon the under side of the guard. The front and rear standards or supports E E and B B are braced substantially for action; the strain upon the axis *b* of the cam-lever also counteracted, resisted, and strengthened by the employment and arrangement of the inclined rods or braces R R, arranged one on each side of the machine.

The parts constituting this machine are simple, compact in form, easily constructed by any mechanic with the aid of ordinary tools; and owing to its simplicity in its structure and operation, and its durability, will readily recommend itself over those more complicated. By the combination of parts brought together a combined machine for cutting and punching metal, &c., is produced, which will not only be found effective and economical in use for the mechanic, but also for those dealing in and selling metal, who are required to resort to laborious means for supplying the demands in certain specified quantities.

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

1. The cutting-jaw D, formed with the prolongation F and tool-socket G, and pivoted to the jaw C, in combination with the cam-lever L, link J, and stripper M, arranged and operating substantially as herein shown and described, for the purpose set forth.

2. The guard P, jaws C D, link J, cam-lever L, and incline brace-rods R R, in combination with the bed A, upright standards B B and E E, all arranged and operating substantially as described.

In evidence that I claim the above I hereunto set my hand.

ALFRED L. HASTINGS.

Witnesses:
C. R. HASTINGS,
W. L. STOCKWELL.