

(No Model.)

L. L. HAZEN.

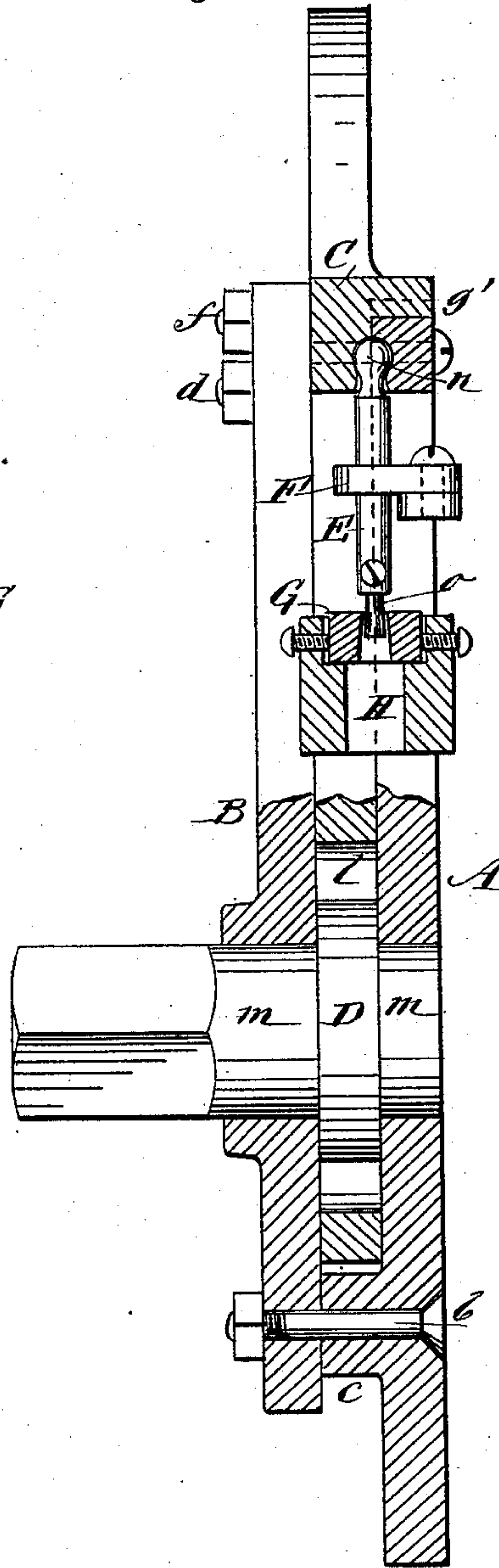
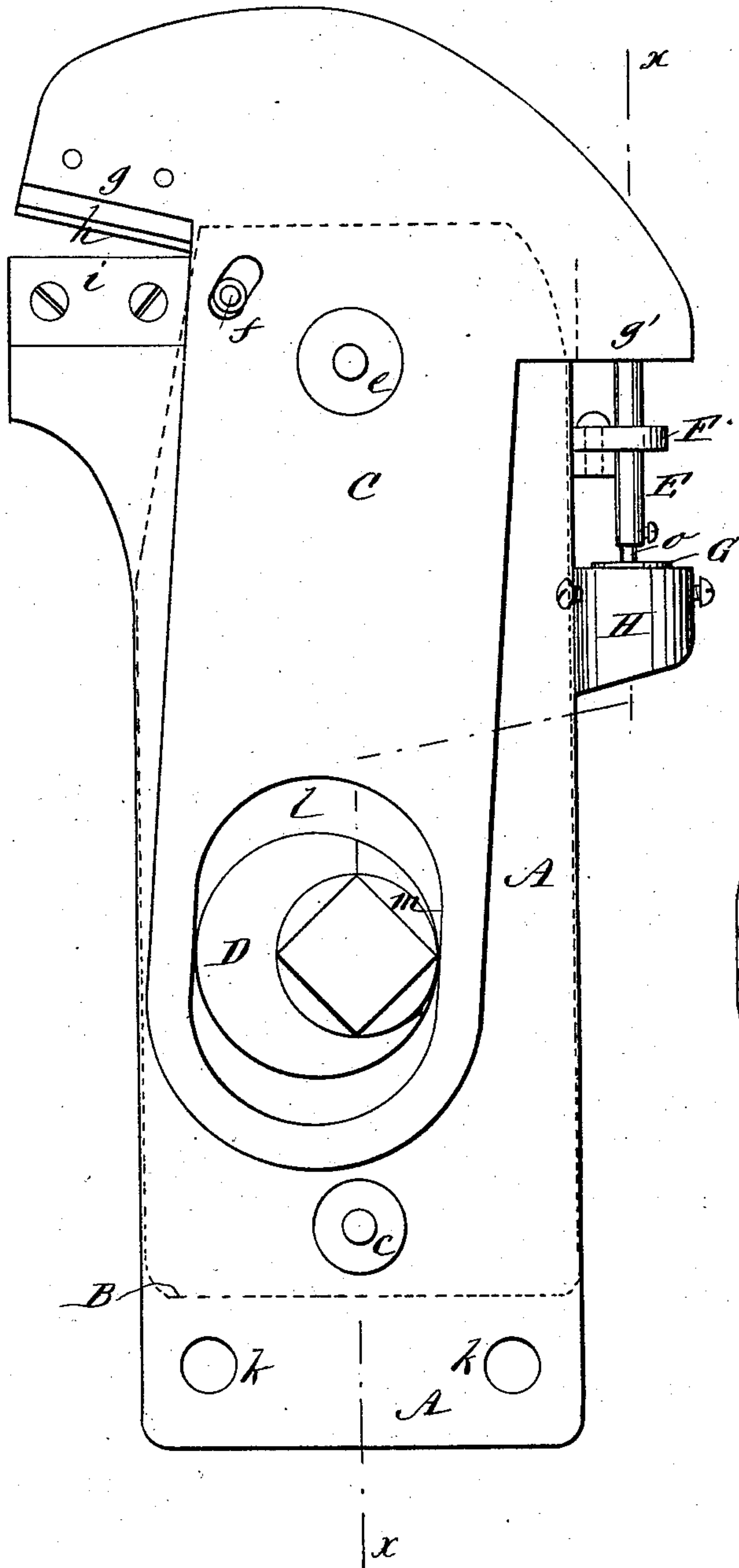
MACHINE FOR CUTTING METAL.

No. 365,517.

Patented June 28, 1887.

*Fig. 1*

*Fig. 2*



WITNESSES:

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# UNITED STATES PATENT OFFICE.

LORING L. HAZEN, OF ARCOLA, ILLINOIS.

## MACHINE FOR CUTTING METAL.

SPECIFICATION forming part of Letters Patent No. 365,517, dated June 28, 1887.

Application filed November 11, 1886. Serial No. 218,523. (No model.)

*To all whom it may concern:*

Be it known that I, LORING L. HAZEN, of Arcola, in the county of Douglas and State of Illinois, have invented new and useful Improvements in Machines for Cutting Metal, of which the following is a full, clear, and exact description.

This invention consists in a shears of cheap, simple, and durable construction for cutting iron and other metal, substantially as hereinafter described, and pointed out in the claims.

The machine, which may be made mainly of cast-iron, is of that description in which the working or cutting lever is operated by an eccentric, and is mainly designed to be used in blacksmiths' shops and to be secured to a bench or post for operation by hand. Combined with the machine is a peculiarly-fitted and operating punch, as hereinafter set forth.

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

Figure 1 represents an outer side elevation of my improved machine, with the front plate of the main frame shown by dotted lines only; and Fig. 2, a vertical section of the same upon the irregular line *xx* in Fig. 1.

The main frame is composed of an inner or back plate, A, and an outer or front plate, B, between which the cutting-lever C works, and by which it is steadied and guided. These plates are united at a suitable distance apart on their faces, in part by a lower screw-bolt, *b*, arranged to pass through a boss, *c*, and in part by an upper screw-bolt, *a*, arranged to pass through a hub projection, *e*, on the inner or back plate, and which forms an enlarged bearing for the cutting-lever C to work or vibrate upon. There is also provided a regulating-screw, *f*, in proximity to the upper left-hand corner of the plates A B, near the cutting or jaw end *g* of the lever C, to spring said plates together against said jaw and prevent them from working apart at such point under the influence of the cutting strain, and whereby a steadier and truer action is obtained for the cutters. In the drawings this bolt is shown as passing through a slot in the lever C; but this might be avoided by arranging it outside of the lever.

The jaw or cutting part *g* of the lever is fitted with any suitable upper knife or cutter, *h*, and the inner plate, A, with a corresponding knife or cutter, *i*, for the purpose of shearing the metal placed across and between the cutters. Bolts arranged to pass through apertures *k* near the lower end of the inner plate, A, will serve to screw the machine to a bench or post.

The lower end of the lever C is constructed with an oblong slot, *l*, the walls of which form a yoke for vibrating the lever C to effect the cut by means of an eccentric, D, arranged to work within the yoke, and having enlarged bearings *m m* in the inner and outer plates, A B, and adapted to receive a crank or handle for the purpose of rotating it to vibrate the cutting-lever. The disposition of the eccentric and yoke relatively to the knives or cutters is a very effective one.

Upon the opposite side of the machine to which the cutters or shearing devices are arranged is a punching attachment for punching holes in the metal under operation. Thus E is a punch stock or holder fitted by a ball-and-socket joint, *n*, in the head end *g'* of the lever C, and fitted so as to be capable of sliding up and down through a guide, F, attached to the inner plate, A. This stock or holder E carries any suitable punch, *o*, in its lower end for operation, as the lever C is vibrated, in connection with a suitable die, G, in a tubular bracket, H, secured to the inner frame-plate, A. The ball-and-socket connection *n* of the punch-stock E with the head end *g'* of the lever C allows of said stock accommodating itself to the curvilinear motion of the head end of said lever, and to allow of it sliding in a straight course through the guide F, so as to keep the punch in register with the die.

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

1. The combination of the inner frame-plate, A, adapted to carry a cutter, *i*, on its one side, the outer frame-plate, B, secured in parallel relation with the inner plate, A, as described, the vibrating lever C, interposed between said plates and provided with a cutting-jaw or head end, *g*, also having a yoke-shaped slot, *l*, in its lower or tail end, the regulating-screw

f, adapted to force the frame-plates together at or near the upper cutting end of the machine, and the operating-eccentric D, having its bearings in the frame-plates A B, substantially as shown and described.

2. In a machine for shearing or cutting metal, the combination, with the frame of the machine, of the vibrating lever C, provided with opposite head ends  $g$   $g'$ , the one of which

forms a cutting-jaw, the punch stock or holder to E, secured by a ball-and-socket joint,  $n$ , in the opposite head end  $g'$  of the lever C, the guide F, and the die-holder H, essentially as specified.

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Witnesses:

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