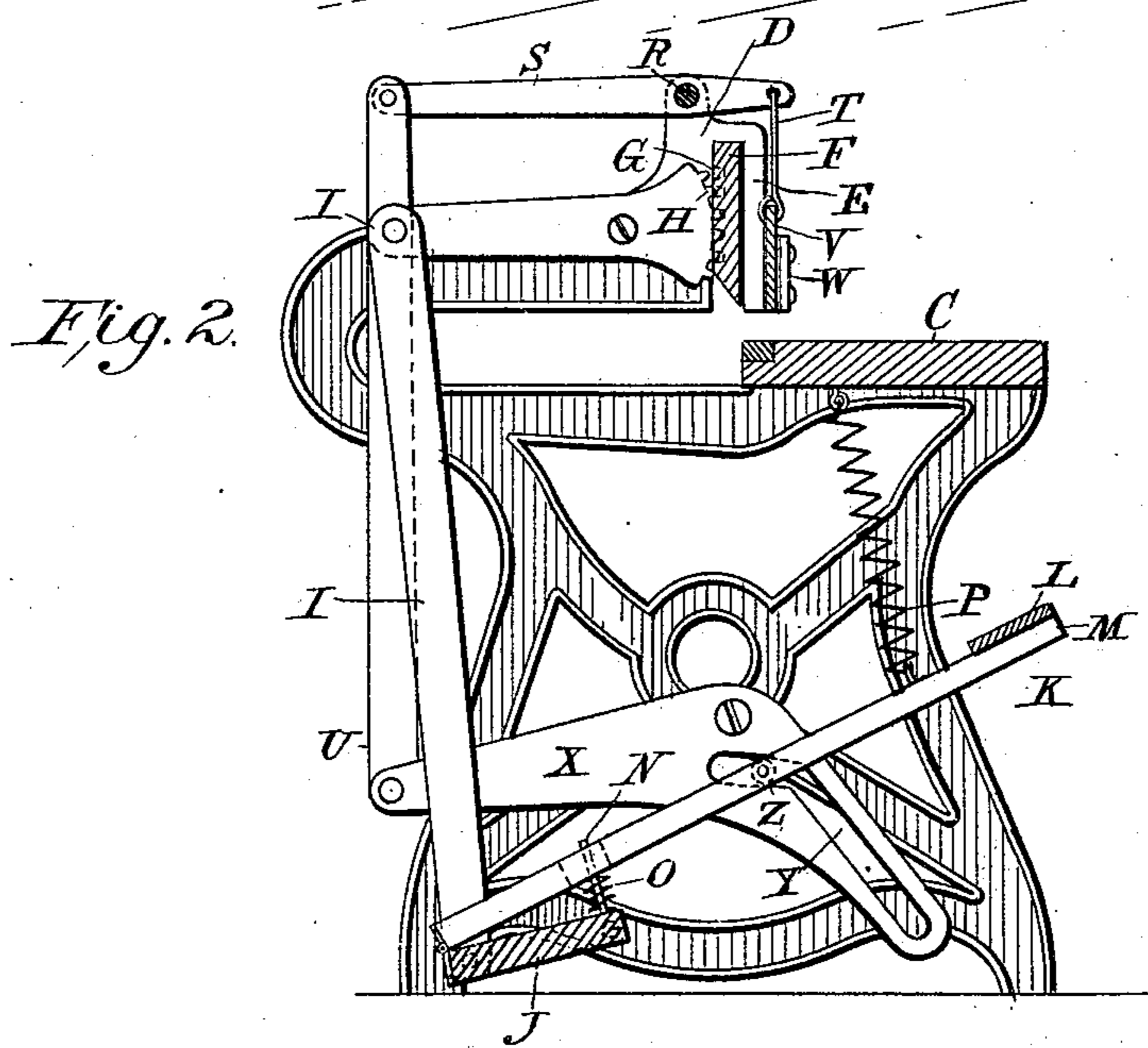
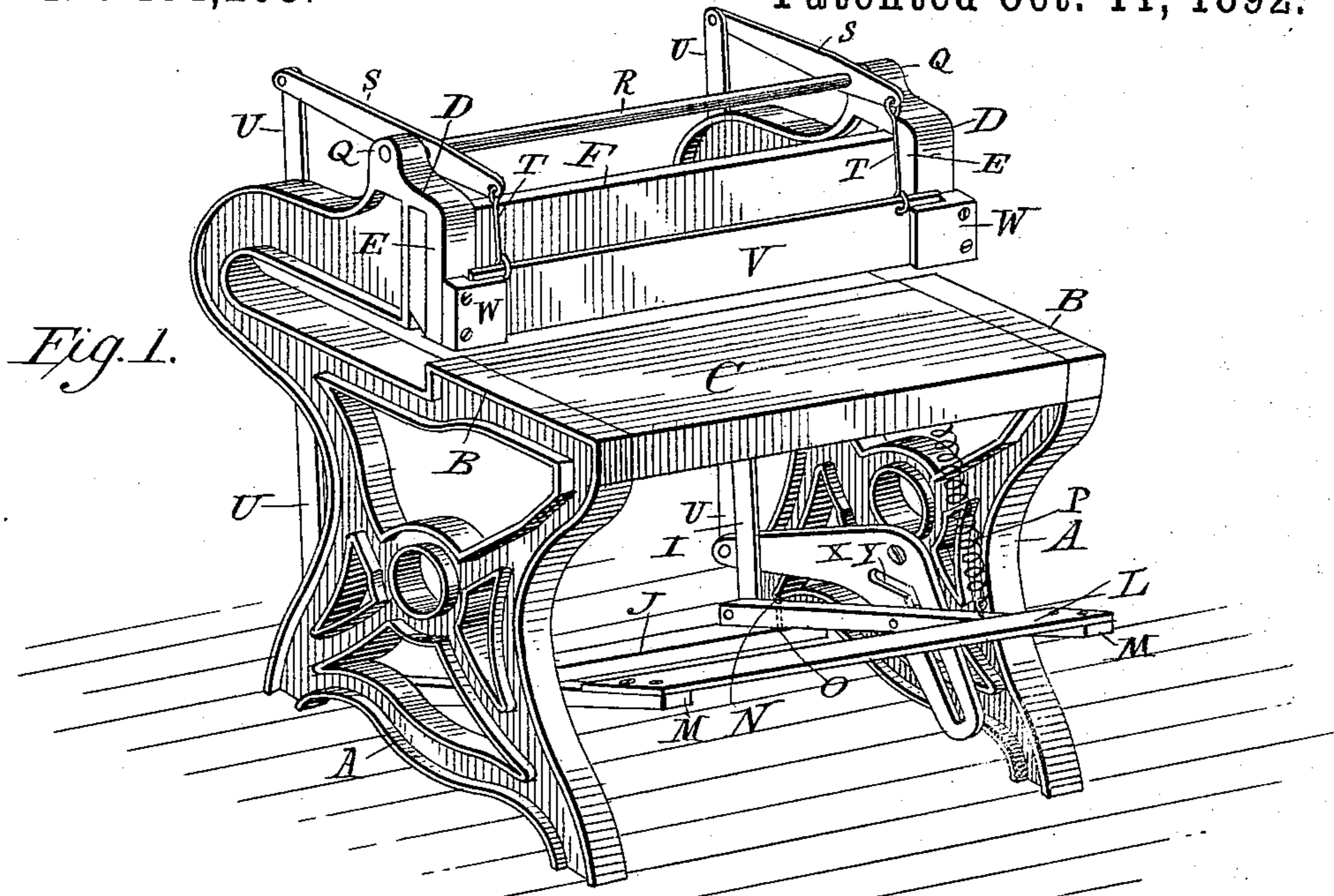


(No Model.)

E. T. HORNER.  
METAL SHEARS.

No. 484,203.

Patented Oct. 11, 1892.



Witnesses:  
*S. R. Seibert*  
*Jas. B. Lackey*

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By *Taylor & Hays* Attys

# UNITED STATES PATENT OFFICE.

ELWOOD T. HORNER, OF CAMBRIDGE CITY, INDIANA, ASSIGNOR OF ONE-HALF TO JOHN A. SPENCE, OF SAME PLACE.

## METAL-SHEARS.

SPECIFICATION forming part of Letters Patent No. 484,203, dated October 11, 1892.

Application filed February 15, 1892. Serial No. 421,586. (No model.)

*To all whom it may concern:*

Be it known that I, ELWOOD T. HORNER, a citizen of the United States, residing at Cambridge City, in the county of Wayne and State of Indiana, have invented certain new and useful Improvements in Metal-Shears; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it ap-  
10 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.

My invention relates to improvements in  
15 metal-shears or machines for cutting sheet metal; and it consists in certain novel features which will be hereinafter described and claimed.

The primary object of my invention is to  
20 provide a simple and efficient machine by which the metal plates may be cut without the expenditure of a great deal of labor and in which the plate will be securely held while being cut. This object I accomplish by the  
25 use of the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a machine constructed in accordance with my invention, and Fig. 2 is a vertical transverse section of  
30 the same.

Referring more particularly to the drawings, A A designate a pair of standards having the forward extensions B, to and between which I secure a bed-plate C, the said standards and bed-plate constituting the supporting-frame of the machine. The standards are further provided with the vertical guide portions D, to which I secure the caps E, between  
35 which and the said guide portions the reciprocating jaw F plays. The reciprocating jaw F and the bed-plate C are provided with knives, which act on each other with a shearing movement, so as to cut the metal. The reciprocating jaw is further provided in its  
40 rear side near its ends with the racks G, which are engaged by the segmental gears H, pivoted to the inner sides of the standards. The rear ends of the said segmental gears are connected by the links I with the rear end of a  
45 treadle J, which is pivoted near its front edge to the standards. The foot-rest K consists of

a plate L and the arms or levers M, extending rearward from the said plate and having their rear ends hinged to the rear edge of the treadle. A bolt or headed pin N rises from  
55 the treadle near the front edge of the same and passes through a longitudinal slot in the arms M. Springs O are arranged between the treadle and the said arms, so as to hold the same normally upraised. A spring P is  
60 arranged between the foot-rest and the bed-plate and tends to lift said foot-rest, so that it will act upon the treadle and its connections to hold the reciprocating jaw in its raised position.  
65

At the upper end of the standards I provide the bearings Q, in which a rock-shaft R is journaled. This rock-shaft is provided at its end with the vibratory arms S, having the connecting-rods T U, pivoted to and depending  
70 from their front and rear ends, respectively. To the lower ends of the front connecting-rods T, I secure the presser-bar V, which is arranged in advance of the reciprocating jaw and is guided in its movements by  
75 the keepers W, which are secured to and project inward from the caps E. The rear connecting-rods U have their lower ends pivoted to the rear end of angle-levers X, which are  
80 fulcrumed on the inner sides of the standards and are provided with the bent slots Y, which are engaged by studs Z on the sides of the arms M.

In practice the metal which is to be acted upon is placed on the bed-plate with the  
85 length which is to be cut off extending under the reciprocating jaw. The operator then depresses the foot-rest, and the presser-bar and the jaw are in consequence successively brought down onto the metal plate, so as to  
90 act on the same. When the foot-rest is depressed, the studs Z first ride along the shorter arm of the angle-slot Y, so as to oscillate the angle-levers X, thereby raising the  
95 rear ends of said levers, and consequently oscillating the crank-arms S, so as to depress the presser-bar V and cause the same to bear on the metal plate, so as to hold the same firmly against the bed-plate while being cut  
100 and at the same time remove any corrugations or other irregularities in the metallic plate. By the time the studs Z have reached

the bend in the slots Y the springs O will be compressed to such an extent that the continued downward movement of the foot-rest will oscillate the treadle and lift the rear end thereof, thereby vibrating the segmental gears, which act on the jaw so as to lower the same, and thereby bring the knife into action to cut the metal. Upon relieving the pressure on the foot-rest the spring P instantly lifts the same and causes a reverse movement of the several parts, thereby restoring them to their initial positions.

My improved machine is very simple in its construction and is composed of few parts, so that it can be built at a comparatively-slight cost, and as it is free from complicated combinations it will be found very durable. The arrangement of the several parts is such as to produce a powerful action with the expenditure of a minimum amount of force, and the advantages of the machine are thought to be obvious.

It will be noted that in my machine the presser-bar is first brought down onto the sheet of metal and clamps the same against the bed-plate, so that it will not buckle while being cut.

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

1. In a machine for cutting metal, the com-

bination of a presser-bar, vibratory arms connected with said presser-bar, an angle-lever connected with said vibratory arms by connecting-rods and provided with an angle-slot, and an operating-arm provided with a stud engaging the said slot.

2. In a machine for cutting metal, the combination of a reciprocating jaw, a treadle, intermediate connections between the jaw and the treadle, a foot-rest having rearwardly-extending arms hinged at their ends to the rear end of the treadle, studs rising from the treadle and passing through the said arms, and springs arranged between the treadle and the arms.

3. In a machine for cutting metal, the combination of a treadle, angle-levers provided with angle-slots, an arm hinged on the treadle and adapted to operate the same and provided with studs engaging the angle-slots, the angle-levers, springs holding the said arm normally raised, a presser-bar, a knife-carrying jaw, connections between the said jaw and the treadle, and connections between the presser-bar and the angle-levers.

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

ELWOOD T. HORNER.

Witnesses:

H. B. BOYD,  
C. H. TABKE.