

(No Model.)

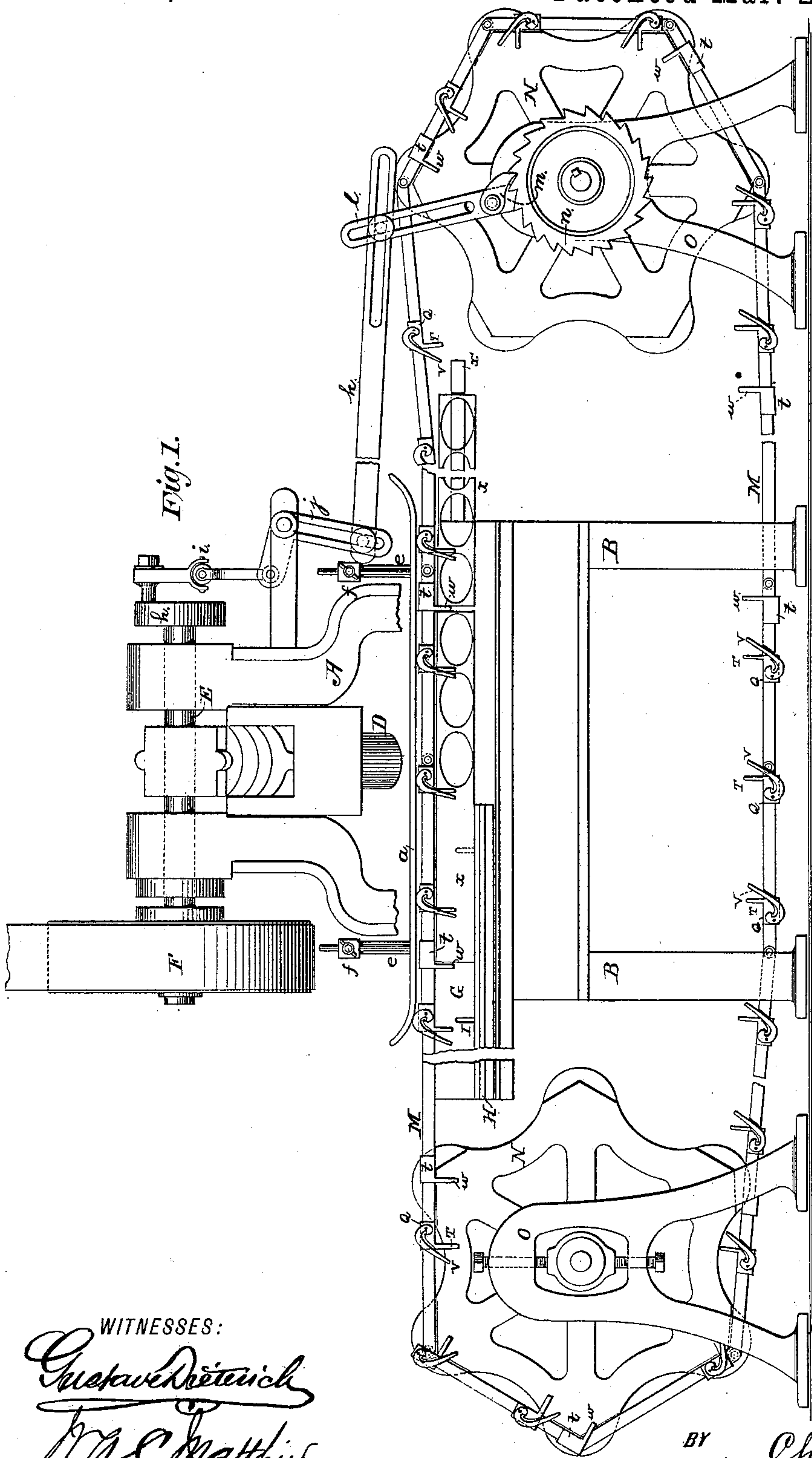
2 Sheets—Sheet 1.

W. HIPPERLING.

MACHINE FOR CUTTING BLANKS FROM TIN.

No. 379,893.

Patented Mar. 20, 1888.



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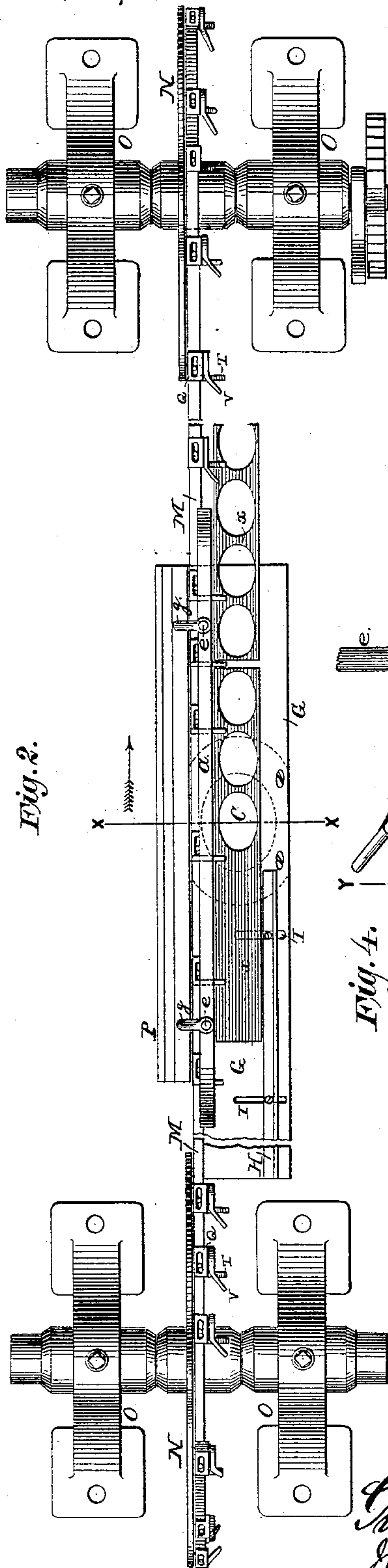


Fig. 2.

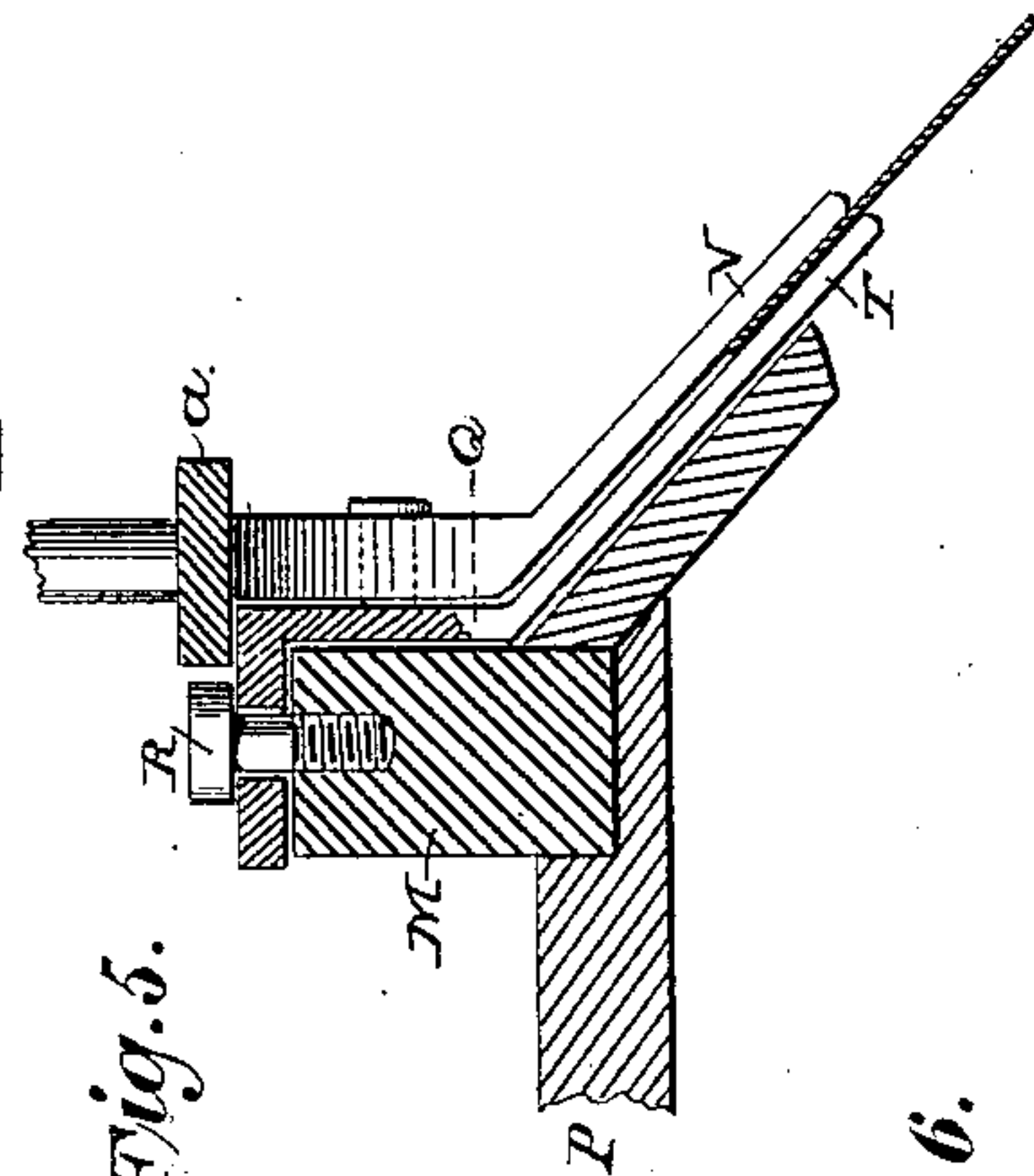


Fig. 5.

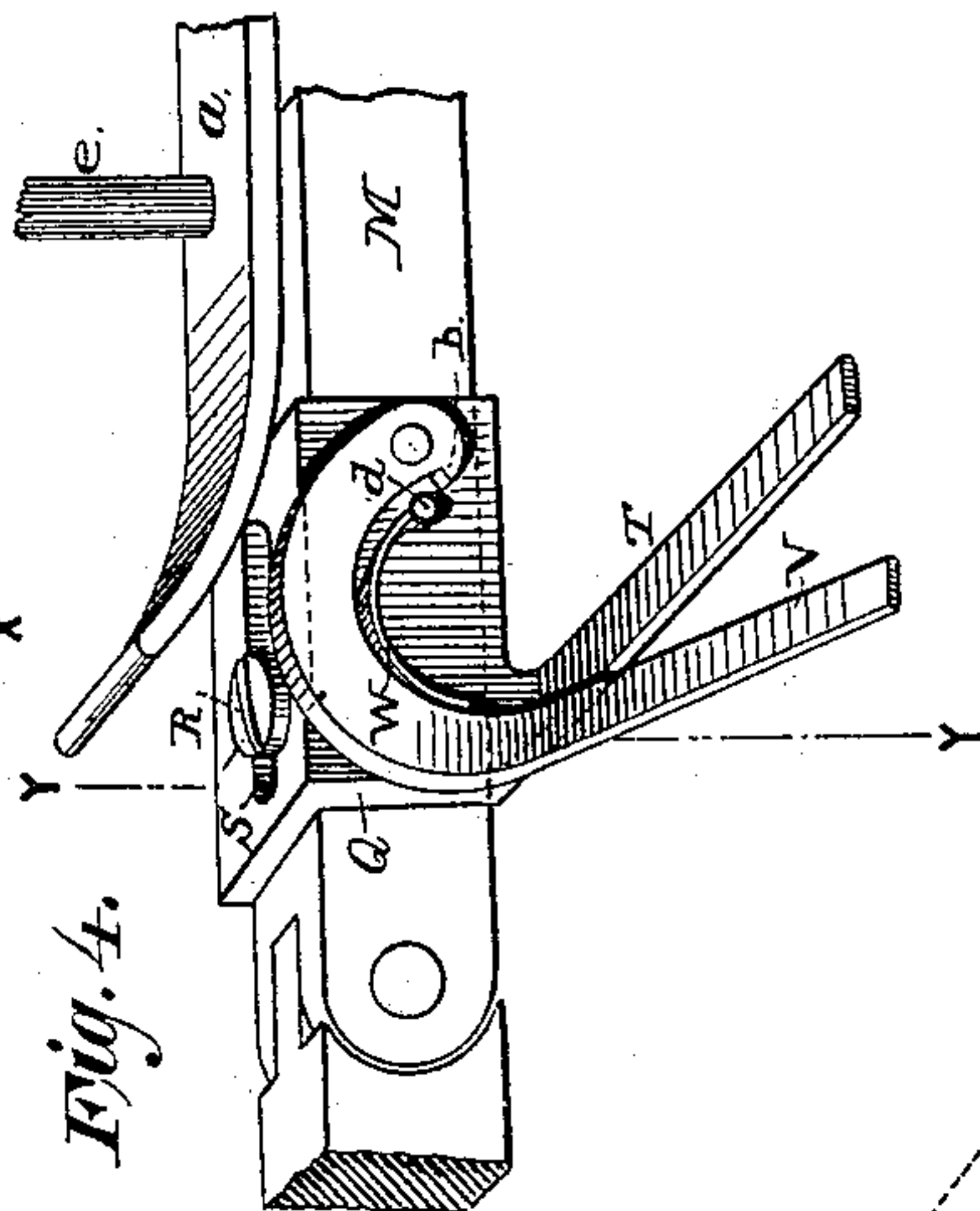


Fig. 4.

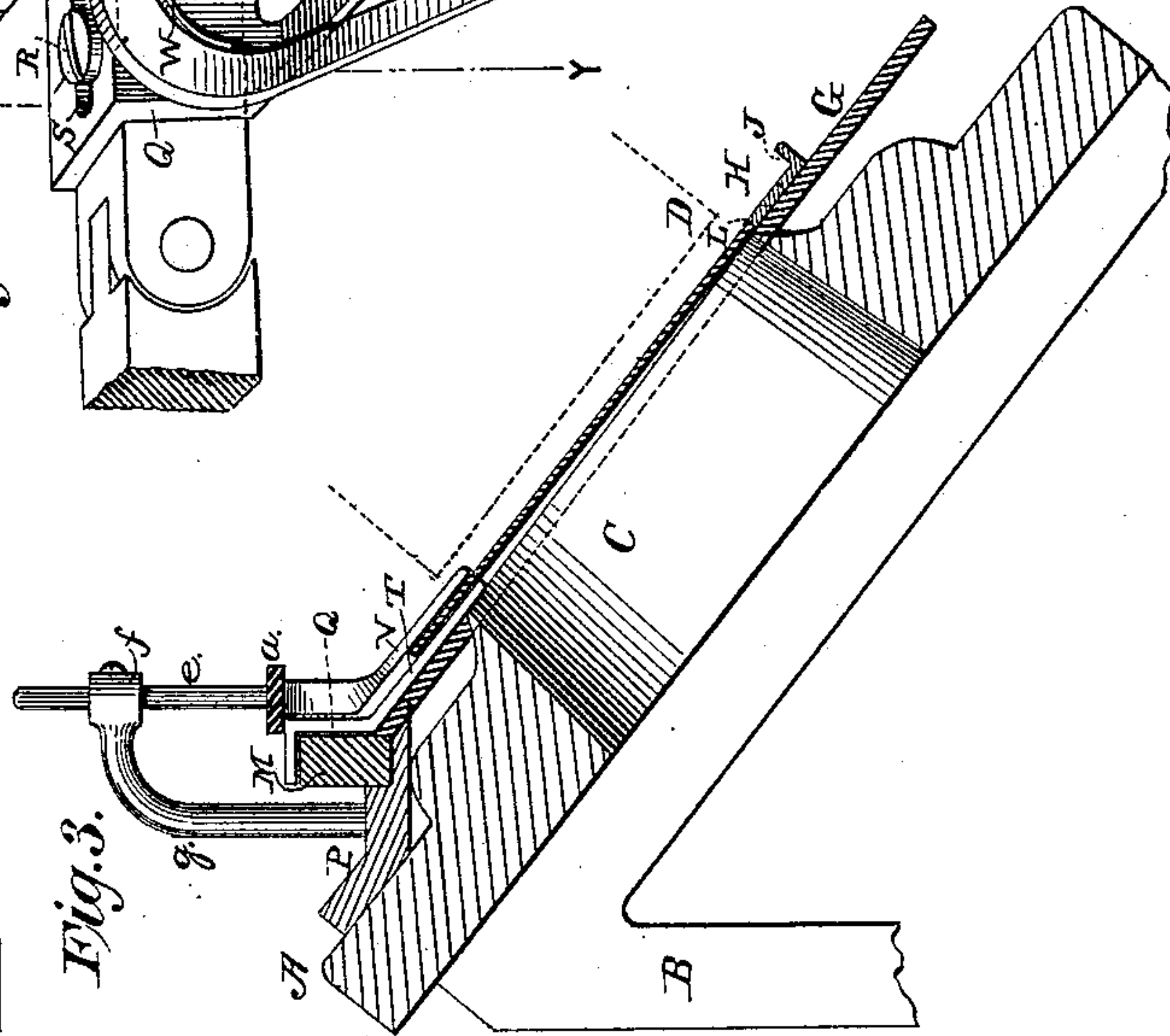


Fig. 3.

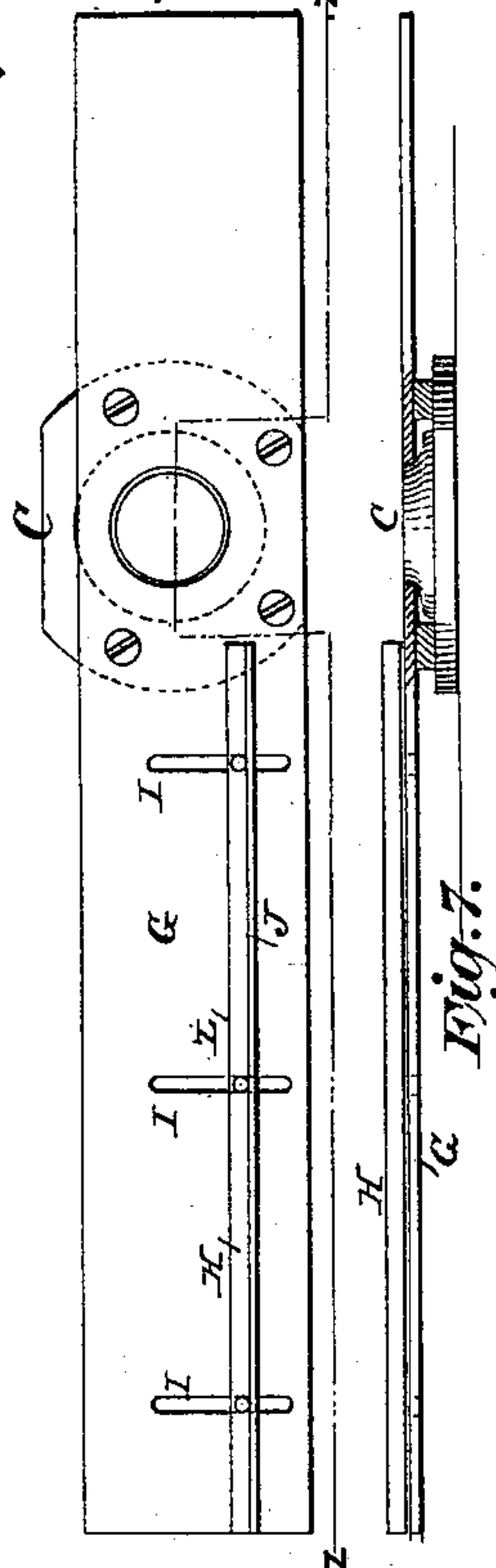


Fig. 6.

Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## MACHINE FOR CUTTING BLANKS FROM TIN.

SPECIFICATION forming part of Letters Patent No. 379,893, dated March 20, 1888.

Application filed December 5, 1887. Serial No. 256,991. (No model.)

### *To all whom it may concern:*

Be it known that I, WILLIAM HIPPERLING, a citizen of the United States, and a resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Machines for Cutting Blanks from Tin, of which the following is a specification.

The invention relates to improvements in machinery for cutting blanks from sheet metal; and it consists in the combination of the well-known die-press with mechanism having an intermittent movement for feeding the sheet metal to the dies, clamps for holding the sheets, and other details, all as hereinafter described, and pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a back view of the usual die-press and machinery embodying my invention; Fig. 2, a top view of same, all of the press except the female die being omitted; Fig. 3, an enlarged vertical section on the dotted line X X of Fig. 2; Fig. 4, an enlarged detached perspective view of a portion of the feeding-chain, one of the clamps (shown open) for holding the sheet of metal while being operated on by the press, and one end of an adjustable bar which closes said clamp on the sheet at the proper time; Fig. 5, a vertical section on the dotted line Y Y of Fig. 4, showing said clamp closed on a sheet of tin; Fig. 6, a top view of the lower die of the press and plate along which the sheets of tin are carried by the chain; and Fig. 7 is an edge view of same, partly in section, on the dotted line Z Z of Fig. 6.

In the drawings, A designates the usual press, supported upon legs B B and having the female die C and punch D, the die C being arranged in an inclined position and the punch D being given its reciprocating motion by the usual eccentric secured on the shaft E, to which power may be applied through a belt, F, as shown in Fig. 1.

Upon the bed-plate of the die C is secured, by screws, if desired, the feed-plate G, (see Figs. 2 and 6,) which is provided at one side of the press with the gage H, held in place by screws passing through the same and into the

slots I cut in the plate G. The gage H will have one edge turned upward, forming a shoulder, J, against which the edge of the sheet of tin may rest, while the thickness of the gage at its front edge forms another shoulder, L, against which the edge of the tin may rest when desired. The purpose of the shoulders J L is to facilitate the feeding of the sheets of tin, and their mode of operation will be described hereinafter. The slots I enable the attendant to adjust the gage H upon the plate or table G according to the width of the sheets of tin to be treated.

The endless chain is lettered M and is mounted upon the wheels N N, which are journaled between standards O O at opposite sides of the press A, as shown in Figs. 1 and 2, the position of the wheels N N being such that the chain will travel along the bed of the press at the side of the die C opposite to that of the gage H, as shown in Figs. 2 and 3, in which it will be observed that a guide-plate, P, is provided, upon which the chain may move. Upon the chain M, at equal distances apart, are secured the angle-plates Q by means of the screws R entering slots S in said plates, and which screws and slots permit the longitudinal adjustment of the plates on the chain to suit the sheets of tin to be fed through the press. The angle-plates Q carry the rigid fingers T, and also the pivotally-secured fingers V and springs W, which latter exert an upward tension on the fingers V, so that their normal position will be open, or that illustrated in Fig. 4.

The fingers T and V constitute clamps, and their purpose is to grip the upper edge of the sheets of tin after they have been placed upon the gage H and are to be fed through the press. The pivoted fingers V are caused to clamp upon the sheet of tin, as shown in Fig. 5, by their upper curved portion coming into contact with the under side of the pressure-bar a during the movement of the chain, the effect of the bar being to turn the fingers downward on their pivots and in this position retain them until they successively pass from under the bar, when the springs W will again elevate the fingers V, thus releasing the sheet



of tin. The upward movement of the fingers V is checked by their shoulder *b* striking the pins *d*. (See Fig. 4.) The ends of the bar *a* are turned upward, as shown, so as to facilitate the ingress and egress of the fingers V, and said bar is supported upon the rods *e*, which extend upward through and are vertically adjustable within sleeves *f*, formed on the upper ends of the standards *g*. The object of having the bar *a* secured by means which permit of its adjustment is to enable the attendant to so regulate its contact with the fingers V that the latter may be caused to firmly grip the varying thicknesses of material which may be fed to the press.

The chain M has imparted to it an intermittent motion, so that as soon as one blank has been cut the sheet of tin may be fed sufficiently farther into the press to permit of the cutting of another blank, this operation being repeated until the whole sheet of metal has been used. The chain is given its intermittent motion from the power-shaft E, as illustrated in Fig. 1, through the medium of the crank-wheel *h*, jointed rods *i*, bell-crank lever *j*, rods *k* *l*, pawl *m*, secured to the rod *l*, and the ratchet *n*, which is keyed to the shaft of the wheel N, carrying one portion of the chain. The rotation of the shaft E and crank-wheel *h* operates through the rods *i* to rock the lever *j*, and this imparts a reciprocating motion to the rod *k* and an oscillating motion to the rod *l*, which secures through the pawl *m* an intermittent rotary movement of the ratchet *n* and wheel N.

Upon the chain M (see Fig. 1) are also secured at regular distances apart the angle-plates *t*, having the fingers *w*, which do not clamp the sheets of tin, but merely come into contact with their upper outer edge and aid in moving them through the press. The position of the plates *t* on the chain M will be regulated according to the length of the sheets of tin, it being desirable that they appear at each end of the sheet, as shown in Fig. 1, (*x* denoting the tin,) in order that one sheet may follow another into the press in rapid succession.

*x'* is a bar which supports the end of the sheet of tin as it leaves the press.

In the operation of the mechanism above described the sheet of tin is first placed on the table or plate G, its lower edge, for convenience, at this point resting against the shoulder J of the gage H and its upper outer edge being allowed to be caught by the finger *w*. The sheet is then moved upward on the inclined table or plate G until its lower edge falls against the shoulder L of the gage H and its upper edge is secured between the fingers

T V. The shoulders J L are both provided, since the space between the fingers T V is slight, and it is thought that it might be difficult to at once insert the upper edge of the sheet of tin fairly between said fingers without first resting the lower edge of the sheet against the shoulder J and then moving the sheet upward between the fingers until its lower edge fell against the shoulder L. The sheet of tin being in position, as described, the motion of the chain will carry it through the press, the punch D in the meantime cutting blanks in rapid succession therefrom. The form of the blank will vary according to the form of the punch and die, and the blanks, when cut, may be used for the top and bottom of cans, or for any other purpose to which they may be adapted.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The press and feed-table, combined with the chain having an intermittent motion, the clamps consisting of fingers T V, secured to said chain, and the pressure-bar for closing said clamps on the edge of the sheet of metal, substantially as and for the purposes described.

2. The press and feed-table, combined with the chain mounted on wheels at opposite sides of the press, the clamps consisting of fingers T V, secured to said chain, the pressure-bar for closing said clamps, a gage on the feed-table for the sheets of metal, and mechanism, substantially as described, between the power-shaft of the press and the shaft of one of the chain-wheels for imparting to the chain an intermittent motion, substantially as set forth.

3. The press and feed-table, combined with the chain having an intermittent motion, the clamps consisting of the fingers T V, secured to said chain, the fingers *w*, also secured to said chain, a gage on said feed-table, and the pressure-bar for closing said clamps, substantially as and for the purposes set forth.

4. The press and feed-table, combined with the endless chain having an intermittent motion, the angle-plates Q, having fingers T, secured to said chain, the pivoted spring-fingers V, the vertically-adjustable pressure-bar *a*, for closing the fingers V, and the gage H, applied upon said table, substantially as and for the purposes set forth.

Signed at New York, in the county of New York and State of New York, this 25th day of November, A. D. 1887.

WILLIAM HIPPERLING.

Witnesses:

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W. A. C. MATTHIE.