

(No Model.)

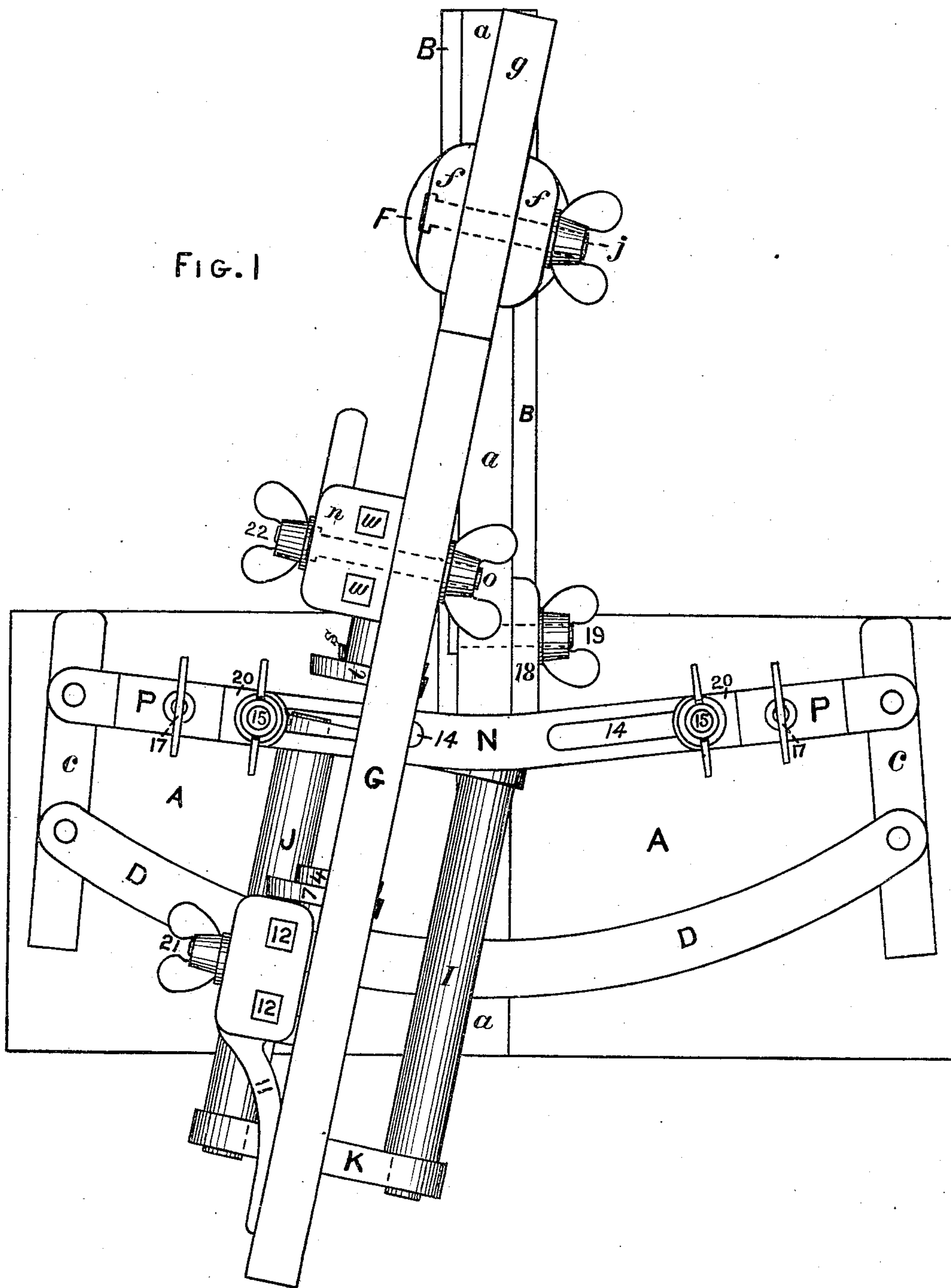
3 Sheets—Sheet 1.

E. M. WILBOR.

Machine for Cutting Sheet Metal.

No. 241,262.

Patented May 10, 1881.



WITNESSES;

John T. Whitman  
Herbert T. Whitman

INVENTOR;

Elijah M. Wilber  
By Porter & Hutchinson  
Atty

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3 Sheets—Sheet 2.

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FIG. 2

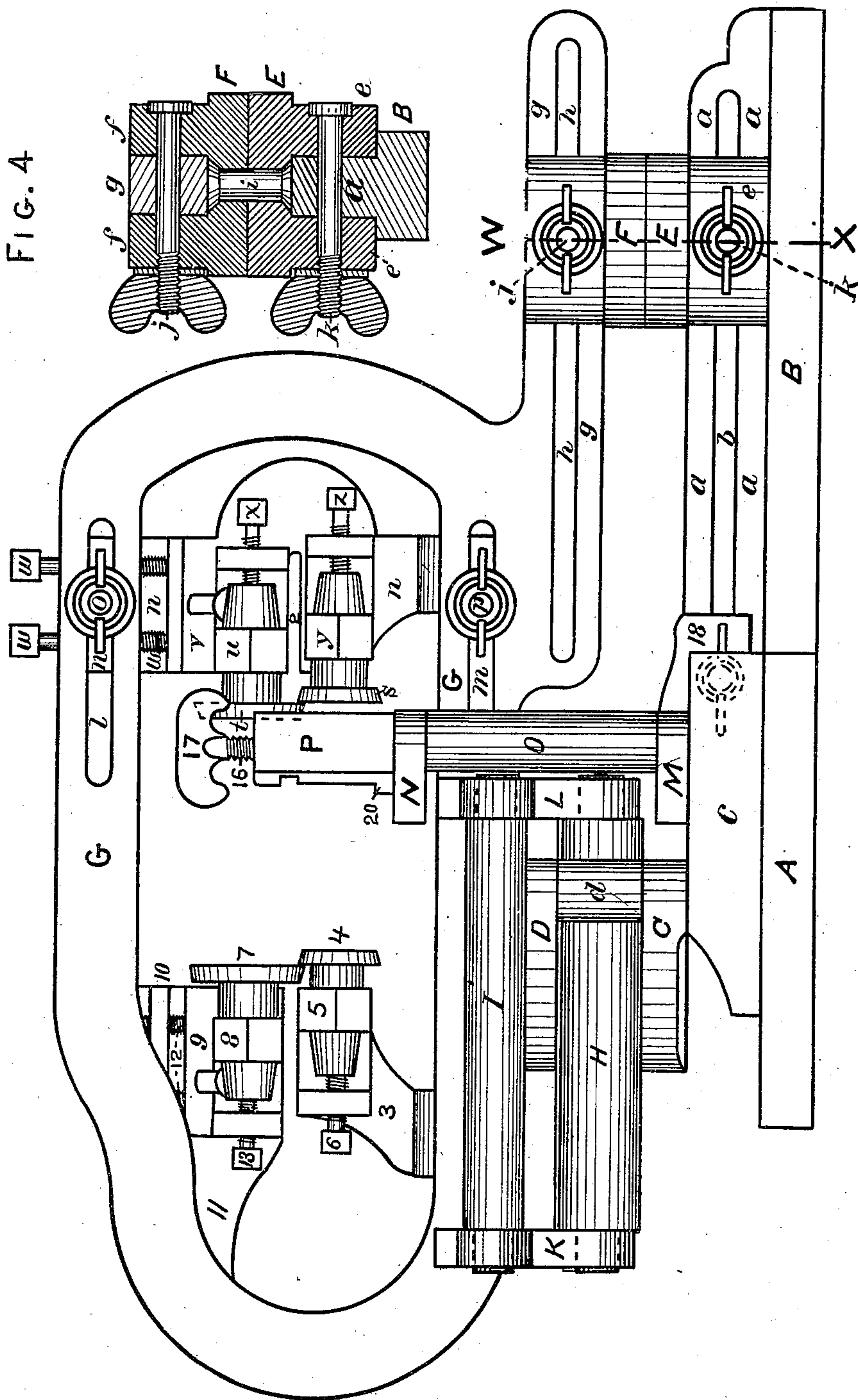
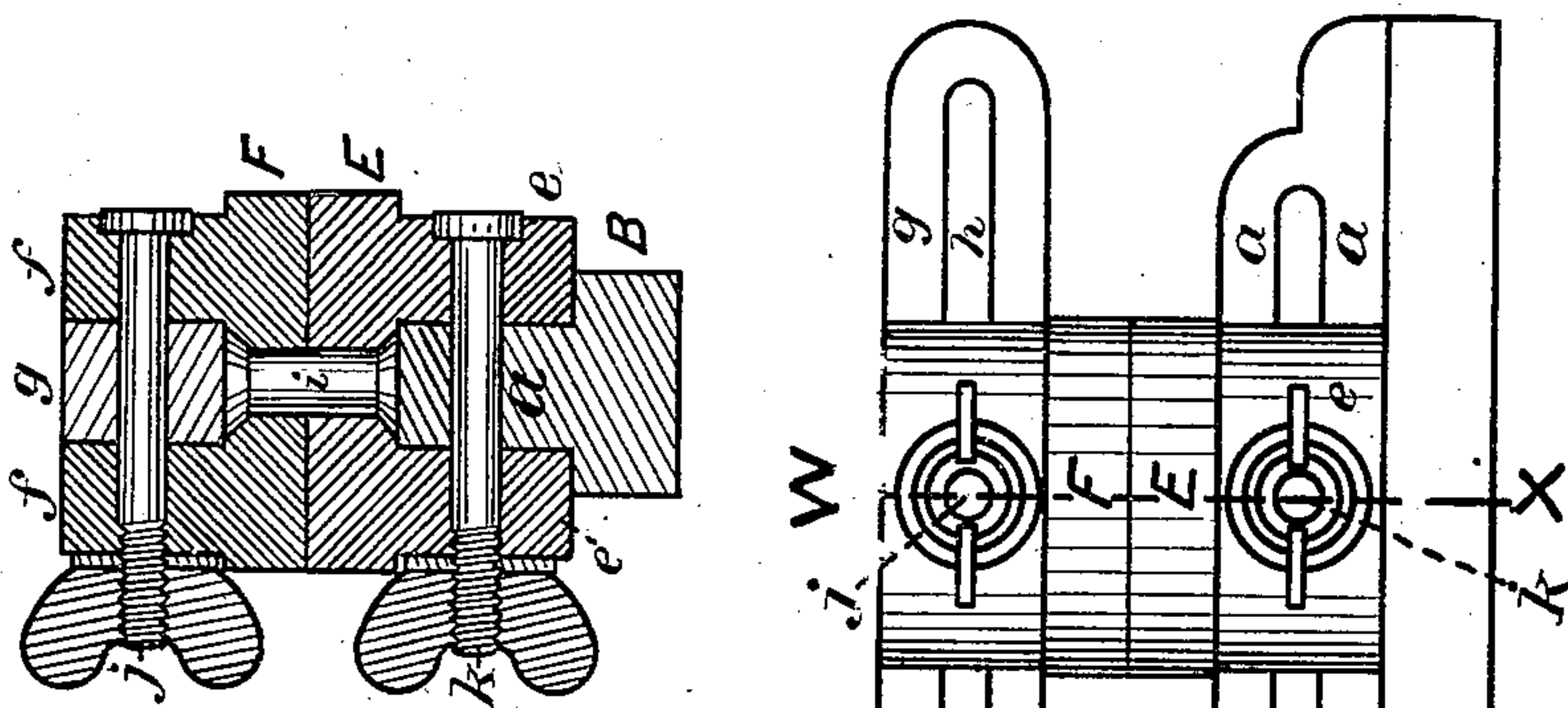


FIG. 4



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(No Model.)

3 Sheets—Sheet 3.

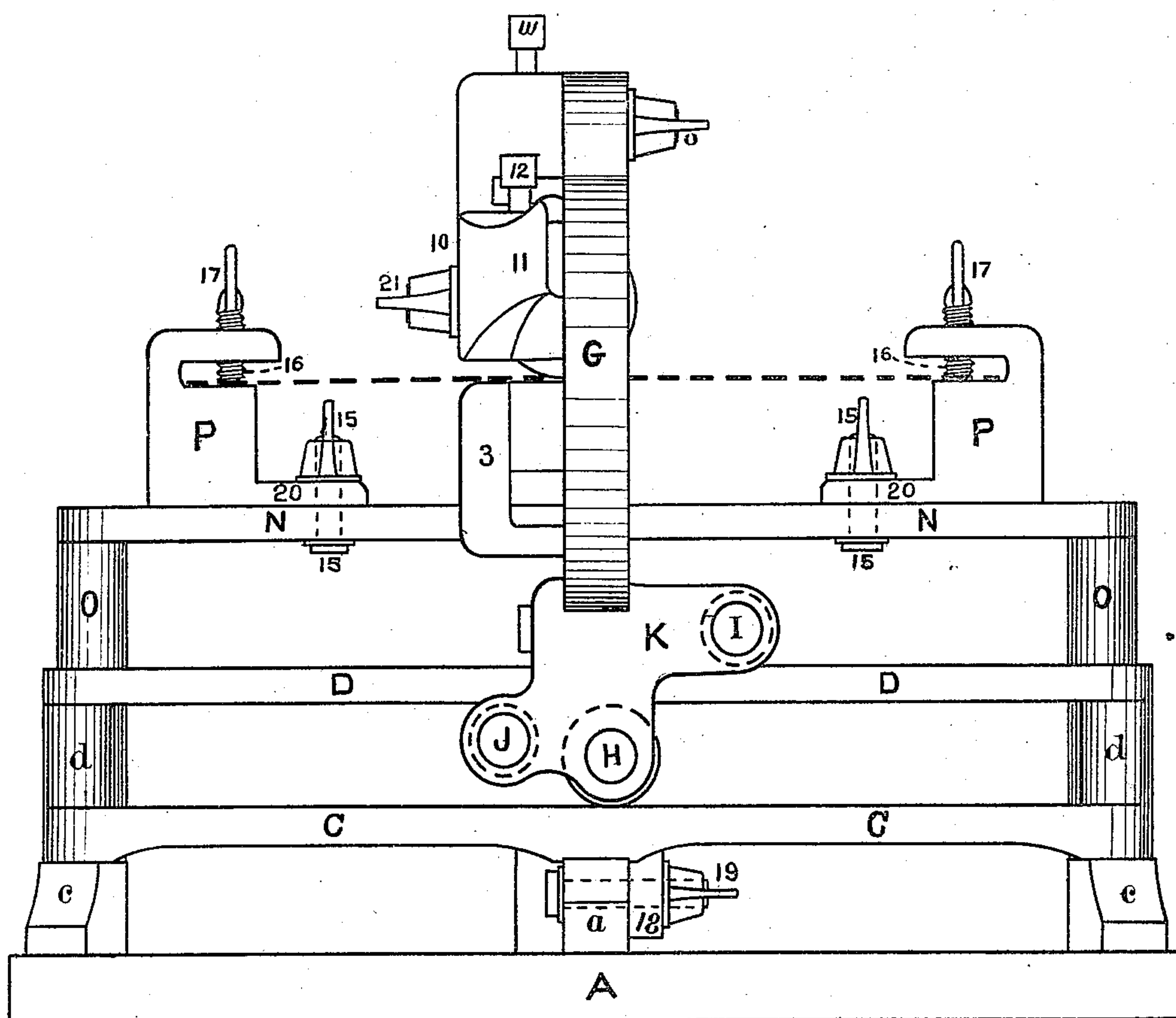
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FIG. 3



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# UNITED STATES PATENT OFFICE.

ELIJAH M. WILBOR, OF TAUNTON, MASSACHUSETTS.

## MACHINE FOR CUTTING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 241,262, dated May 10, 1881.]

Application filed December 6, 1880. (No model.)

*To all whom it may concern:*

Be it known that I, ELIJAH M. WILBOR, of the city of Taunton, State of Massachusetts, have invented an Improved Machine for Cutting Sheet Metal, of which the following is a specification.

This invention relates to certain improvements in machines which are adapted to cut sheet metal into arcs of circles of any desired width, usually for forming shallow dishes with flaring sides, such arcs being denominated by tin-workers as "pan-sections;" and my invention will be hereinafter fully described, and specifically defined in the appended claims.

Figure 1 is a top or plan view of a machine embodying my invention. Fig. 2 is a side elevation of the same as viewed from the right in Fig. 1. Fig. 3 is a front elevation of the same as viewed from the left hand of Figs. 1 and 2. Fig. 4 is a transverse vertical section taken on line W X, Fig. 2.

In these views, A represents the bed-plate, and B is a narrow projection extending from the side thereof. A thinner rib, *a*, is formed upon projection B, and a horizontal slot, *b*, is formed in said rib, as shown in Fig. 2. A slotted pivot-block, E, is formed to sit astride said rib, and to slide freely thereon, and is locked in position by bolt *k*, which passes through lugs *e* of said block and the slot *b* in rib *a*, as shown in Fig. 4, so that said block may be moved to any point on said rib, and there be locked. A corresponding pivot-block, F, is united to block E by the pivot *i*, as shown, and so as to be rotated on said pivot relatively to block E. The extension *g* of frame G is fitted to slide freely between the lugs *f* of block F, and is locked in position by bolt *j*, which passes through said lugs and slot *h* in said extension. The object of these devices will be explained in due course.

Two blocks, *c c*, are mounted, or may be formed, upon bed A, as shown, and upon them is mounted the frame composed of the curved bars C D, which are united by the studs *d d*, as shown. Said bars and studs may, if desired, be formed entire of cast metal.

Upon frame G are formed or secured the brackets K L, in which are pivoted the three rollers H I J, roller H being arranged between said bars C D, and fitting the space between

them, while roller I bears upon the top of said bar, and roller J beneath the same, so that when frame G is moved from left to right (as viewed in Fig. 3) in the act of cutting, said rolls I J serve to hold said frame in a vertical plane, while roller H prevents vertical displacement of the same.

The device for holding the sheet of metal when being cut is formed as follows: Two curved bars, M N, united at their ends by studs O, rest upon said blocks *c*, as shown in Figs. 1, 2, and are adjusted in relation to bars C D by means of bolt 19, which passes through slot *b* in rib *a* and extension 18 of said lower bar, M, as shown. Two clamping-blocks, P P, are adjustable on bar N by means of the locking-bolts 15, which respectively pass through slots 14 in said bar, and through the thin extension 20 of said blocks, as shown in Fig. 3. Near the top of said blocks is formed a slot, 16, for the insertion of the sheet of metal (shown by dotted line) which is to be cut, and which is clamped by set-screws 17, which are threaded in that part of the blocks which is above slots 16.

The rotary cutters and the attachments by which they are secured to and adjusted on frame G are described as follows: The two front cutters, 4 7, which cut the convex line of the pan-section, are respectively supported by brackets 3 and 11, the former of which is secured to the lower and the latter to the upper part of frame G, as shown. The arbor of cutter 4 is journaled in bearing 5 of bracket 3, and is held from end-thrust by the pivot-screw 6, while cutter 7 is journaled in bearing 8 of the support 9, and is held from end-thrust by pivot-screw 13. The support or minor bracket 9 is secured to bracket 11 by set-screw 21, and is held from vertical displacement by set-screws 12, threaded in bracket 11, and which bear upon the upper edge of support 9, as shown in Fig. 2. The rear bracket, *n*, is secured to frame G by the bolts *o p*, which pass through said bracket and the slots *l m*, respectively formed in the upper and lower part of said frame, as shown in Fig. 2, and by means of said bolts bracket *n* may be so adjusted as to bring the cutters *s t* at the required distance from cutters 4 7 to cut a section of the required width. The cutter *s* is journaled in bearing *y*, formed on bracket *n*, and



is held from end-thrust by the axial supporting-screw *z*; and cutter *t* is journaled in bearing *w*, formed on minor bracket *v*, and is held from end-thrust by axial supporting-screw *x*. Minor bracket *v* is secured to bracket *n* above passage 5 2 by a bolt or other suitable means, and is held from vertical displacement by set-screws *w*, which are threaded in the top of bracket *n*, and bear upon the top of minor bracket *v*, as shown 10 in Fig. 2. By means of such vertical adjustment of cutters 7 and *t* relatively to their co-acting lower cutters all said cutters may be reduced in diameter by use and sharpening, and yet be so adjusted as to be effective.

15 By means of the lineal adjustment of frame *G* in pivot-block *F*, as before described, the required radius of the circle (through an arc of which cutters 4 7 move) may be thereby insured, and by the adjustability of pivot-block *E* line- 20 ally upon extension *B* the frame *G* and its attachments may at all times (irrespective of the radius of the circle for which the sections are being cut) be kept in proper relation to the fixed bars *C D* and the limitedly-adjustable clamp- 25 ing-frame *L M*.

I claim as my invention—

1. In a metal-cutting machine having the traveling or vibrating frame *G*, with the cutters thereto attached, the combination therewith, and with the bed-plate, of the pivotally-con- 30 nected blocks *E F*, constructed and arranged to be lineally adjusted upon such bed and swinging frame, substantially as specified.

2. In a metal-cutting machine, the combina- 35 tion of the traveling or vibrating cutter-carrying frame *G*, the supporting-frame *C D*, and the guiding and retaining rolls *H I J*, substantially as specified.

3. In a metal-cutting machine, the combina- 40 tion of the bed, the vibrating cutter-frame, the pivot-blocks *E F*, the supporting-frame *C D*, and the clamping-frame, with its clamps *P P*, all constructed and arranged to operate substantially as specified.

ELIJAH M. WILBOR.

Witnesses:

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F. V. WOOSTER.