

(No Model.)

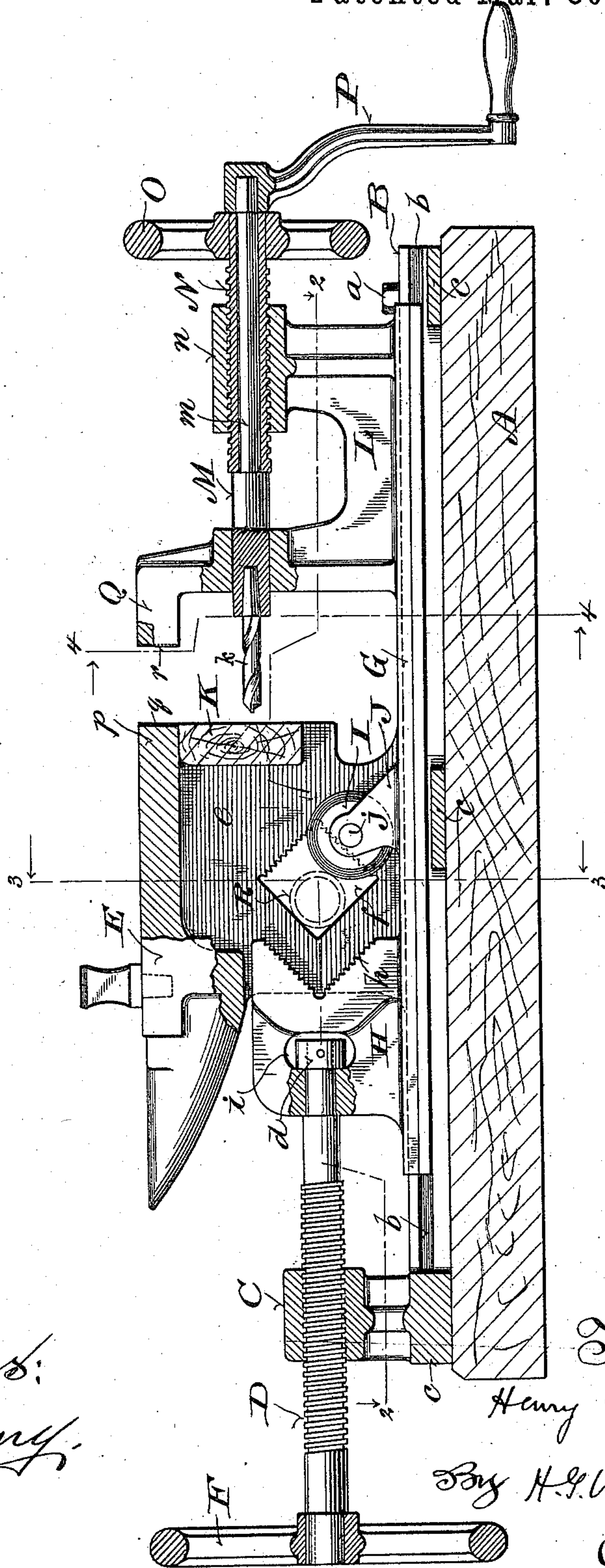
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H. F. LAST.
COMPOUND METAL WORKING MACHINE.

No. 579,592.

Patented Mar. 30, 1897.

Fig. 1.



Witnesses:
Geo. W. Young,
B. C. Roloff

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(No Model.)

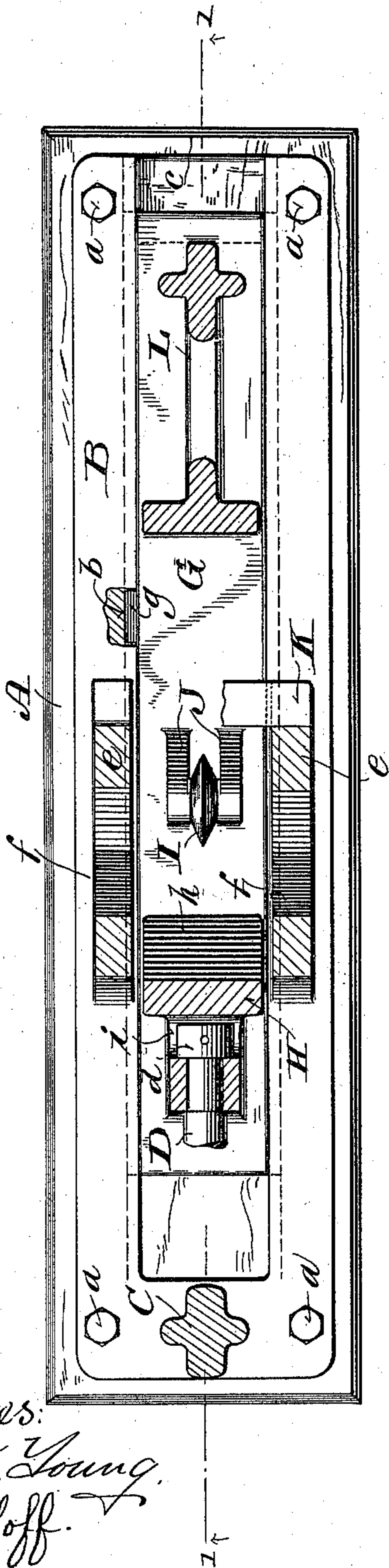
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Fig. 2.



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Fig. 4.

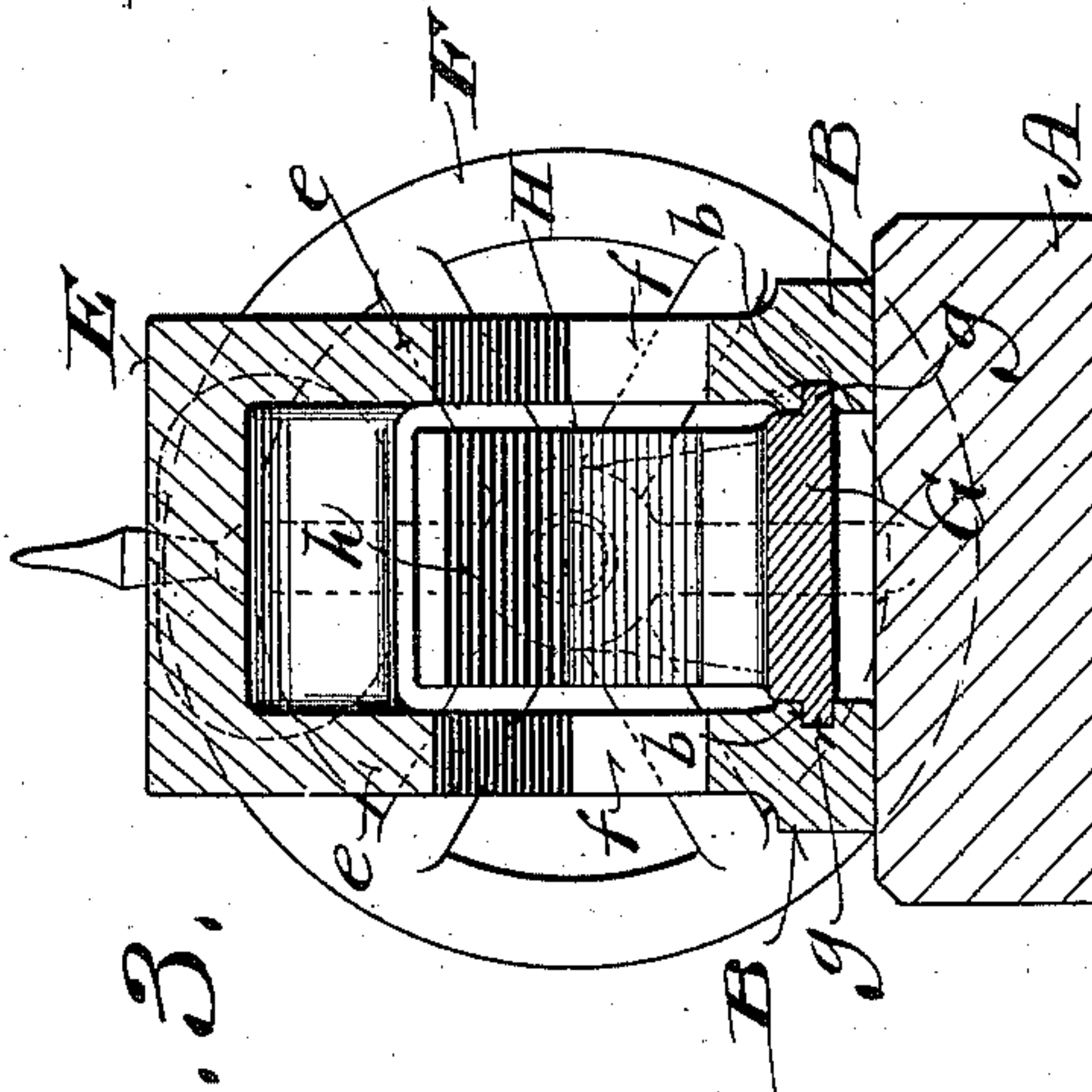
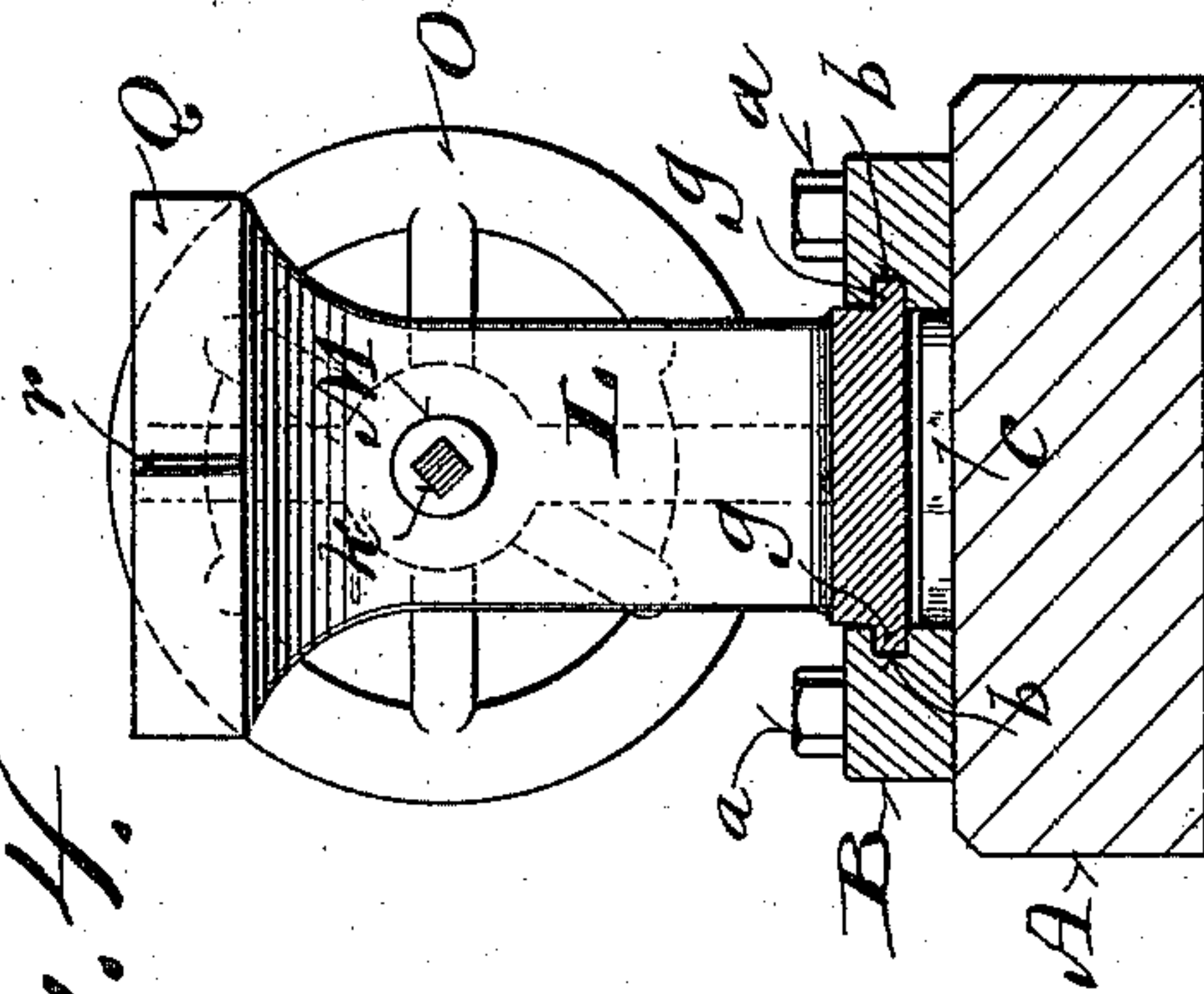


Fig. 3.

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UNITED STATES PATENT OFFICE.

HENRY F. LAST, OF EMMETT, WISCONSIN.

COMPOUND METAL-WORKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 579,592, dated March 30, 1897.

Application filed September 26, 1896. Serial No. 607,042. (No model.)

To all whom it may concern:

Be it known that I, HENRY F. LAST, a citizen of the United States, and a resident of the town of Emmett, in the county of Dodge and State of Wisconsin, have invented certain new and useful Improvements in Compound Metal-Working Machines; and I do hereby declare that the following is a full, clear, and exact description thereof.

My invention relates to a compound metal-working machine; and it consists in certain peculiarities of construction and combination of parts, as will be fully set forth hereinafter and subsequently claimed.

In the drawings, Figure 1 is a vertical longitudinal section through a device embodying my present invention on the line indicated by 1 1 in Fig. 2. Fig. 2 is a horizontal longitudinal section on the line indicated by 2 2 in Fig. 1. Figs. 3 and 4 are transverse vertical sections on the lines indicated by 3 3 and 4 4, respectively, in Fig. 1.

Referring to the drawings, A represents any suitable base or platform to which my machine may be secured, as by bolts *a a*, passing through the base proper, B. This latter consists, primarily, of parallel strips with longitudinal guiding-grooves *b b* formed in their opposing inner faces, and which strips are rigidly connected together by transverse bottom pieces *c c*, which are below the said grooves, except at one end, from which end there rises a standard C, formed with a screw-threaded bore therethrough for the reception of a screw-threaded spindle D, having a hand-wheel F secured to its outer end and a collar *d* on its inner end.

E is an anvil whose sides *e e* rise from and are rigid with the parallel strips of the base B. These side pieces are each perforated with a lozenge-shaped opening *f*, two of the inclined walls of which are smooth and the other two toothed or notched, as shown.

G is a slide having reduced side edges *g g*, which fit within the described guiding-grooves *b b* in the base B, and near one end this slide carries a vise-head H, integral or rigid therewith, the operative face of said vise-head having a V-shaped opening *h*, notched or toothed, as shown in Fig. 1, the wall of said opening being just the opposite of the notched or toothed

portions of the walls of the openings *f* in the anvil sides *e*.

The inner end of the heretofore-described screw-spindle D is shouldered and reduced in diameter and enters a longitudinal bore in the outer end of the said vise-head H and projects into a transverse opening *i* in said vise-head, and there receives the described collar *d*, whereby when the spindle D is revolved by its hand-wheel F the slide G is moved forward or back in the grooves *b*, according to the direction in which said hand-wheel is turned. I is a cutting-disk having a journal *j* rigid therewith, which revolves in standards or bearings rising from the slide G. The anvil sides *e e* are cut out at one end to receive a wooden block K, extending transversely from one side *e* to the other to form a bearing-plate for articles being drilled, as hereinafter explained.

Rising from the end of the slide G farthest from the vise-head is the drill-standard L, the front or inner part of which has a smooth longitudinal bore therethrough, and M is a shaft mounted therein, whose forward end is socketed for the reception of a drill *k*, the rear part *m* of said shaft being reduced in diameter and provided with a sleeve N, having exterior screw-threads meshing with the threads in the bore of a nut *n*, rigid on the rear or outer part of the standard L. The said sleeve N has a hand-wheel O rigidly secured to its outer end, and the projecting outer end of the reduced shaft *m* is squared and receives a crank P, all as shown in Fig. 1. The inner end of the standard L is formed into a straight transverse vise-head Q, the other face of the vise being the rear end *p* of the anvil E, and both faces being preferably smooth, except for a central vertical notch in each, as shown at *q r*, respectively, for the purpose of better clamping a small article, such as a bolt or nail, between their opposing faces.

The operation of my machine will be readily understood from the foregoing description of its construction, taken in connection with the accompanying drawings.

I have already described how the slide G is moved in either direction by means of the hand-wheel F and the parts connected there-

to. When it is desired to use the vise-head H, the slide G is driven backward until the cutting-disk I is beyond the line of the openings *ff* in the anvil sides *ee*. Then the article to be clamped is inserted through said openings, and the backward movement of the slide is continued until said article is firmly clamped between the notched walls of said openings and the notched surface *h* of the vise-head. If it is desired to cut a pipe, the same is pushed through the openings *ff*, and the slide G is moved forward until the cutting-disk I comes snugly against the pipe, forcing the latter against the smooth walls of the openings *ff*, as shown in Fig. 1, where the dotted circular lines R represent the pipe. Then the pipe is seized by a pipe-wrench and turned round against the edge of the cutting-disk I. If the smooth-faced vise is to be used, the drill *k* (or the wooden block K) is removed and the hand-wheel F operated to bring the vise-head Q up against or toward the end *p* of the anvil. If the drill is to be used, the article to be drilled is held against the block K, and then the hand-wheel O is turned, which by the action of the screw-threaded sleeve N in the nut *n* forces the shaft M and drill *k* carried thereby forward till the drill-point is in contact with the article to be drilled, and then the crank P is operated quickly, drilling the required hole.

My described machine will be found extremely convenient, combining as it does a large number of iron-working tools in proximity to each other.

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

A compound metal-working machine comprising a base having parallel guiding-grooves therein, a standard rising from one end of said base and having a screw-threaded bore therethrough, a longitudinal slide mov-

ing in said guiding-grooves, a rotary cutting disk mounted upon said slide, a screw-threaded spindle passing through the bore of the standard on the base and connected with said slide, a standard rising from the other end of said slide and having its inner end formed into a straight transverse vise-head, rigid with said slide and having a V-shaped, roughened, operative face on its inner end and provided with a transverse perforation communicating therewith through its outer end, through which the screw-spindle passes, the said screw-spindle being provided with a collar and hand-wheel, vertical side pieces rising from the base on each side of the slide having lozenge-shaped openings therethrough and united by an anvil-top whose rear end forms a roughened, straight transverse face in line with the straight transverse vise-head on said slide-standard, a double standard rising from the rear end of the slide, the forward part of said standard having a smooth longitudinal bore therethrough, and the rear part of said standard having a longitudinal nut rigid thereon, the sleeve having exterior screw-threads meshing with the threads in the bore of said nut, the shaft whose forward end passes through the smooth bore in the forward part of the standard, socketed for the reception of a drill, and having its rear end reduced in diameter and passing through the bore of said sleeve, and a crank secured to the projecting end of the shaft, all combined, arranged and operating as hereinbefore set forth.

In testimony that I claim the foregoing I have hereunto set my hand, at Watertown, in the county of Jefferson and State of Wisconsin, in the presence of two witnesses.

HENRY F. LAST.

Witnesses:

DONELD W. SCOTT,
EMIL LAST.