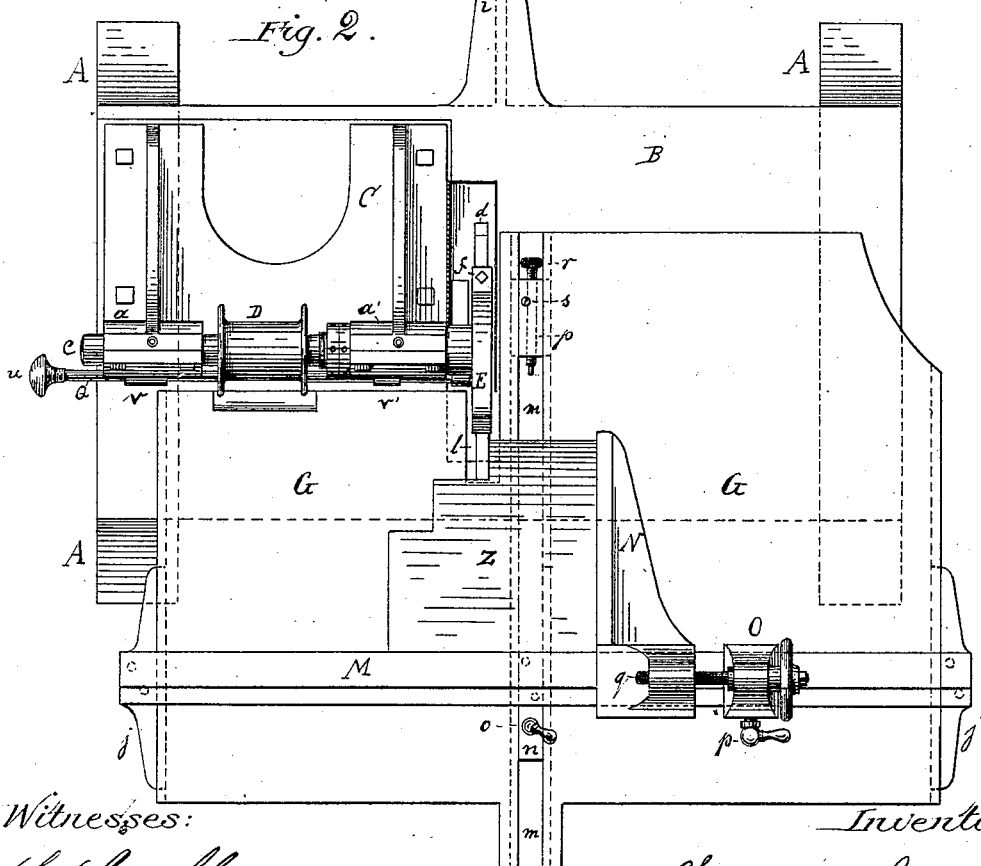
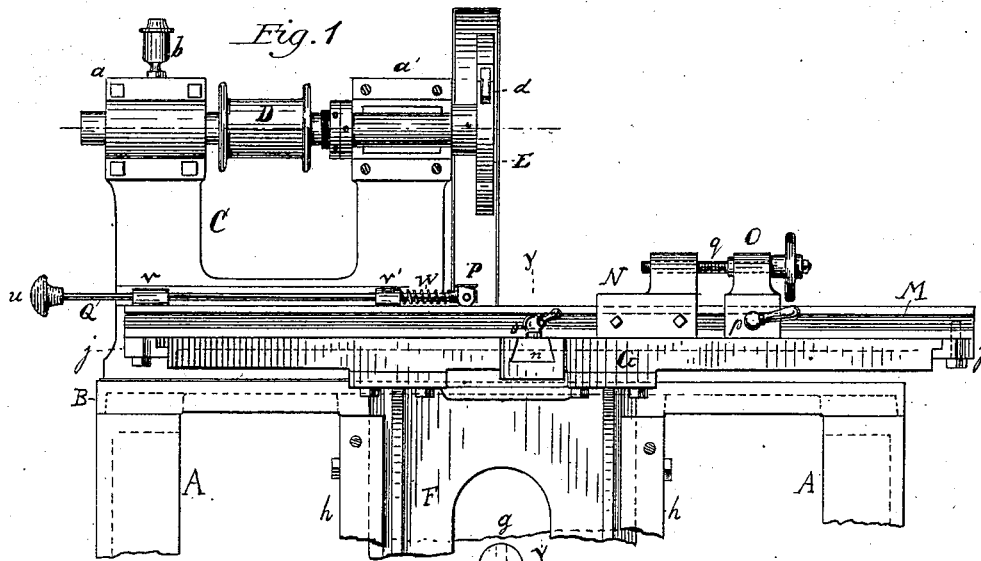


C. M. LETZ.

MACHINE FOR NOTCHING AND TRIMMING ELECTROTYPES.

No. 267,353.

Patented Nov. 14, 1882.



Witnesses:

H. Buchl

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Inventor:

Charles M. Letz

By Wm H Lotz
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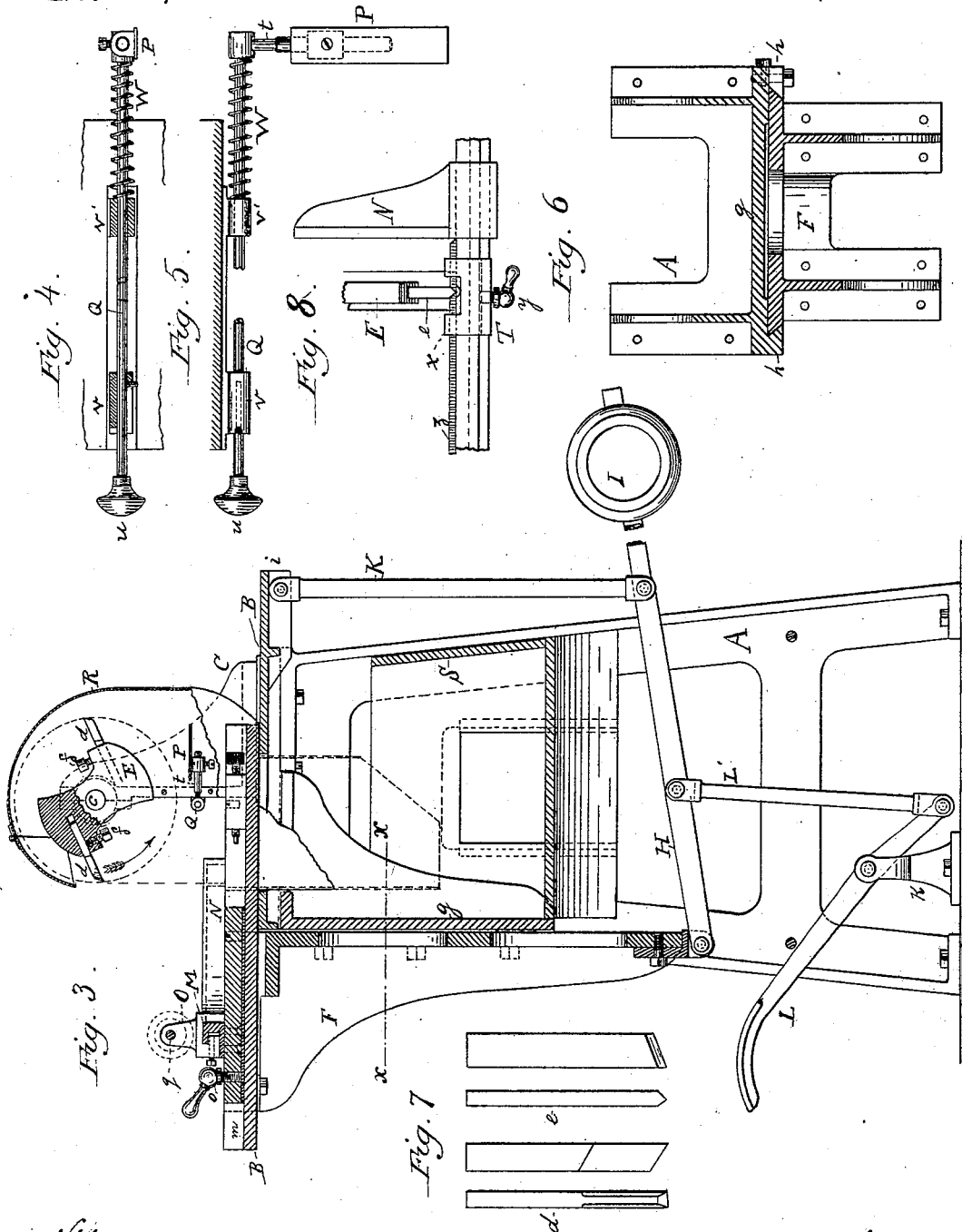
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UNITED STATES PATENT OFFICE.

CHARLES M. LETZ, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
A. ZEESE & CO., OF SAME PLACE.

MACHINE FOR NOTCHING AND TRIMMING ELECTROTYPES.

SPECIFICATION forming part of Letters Patent No. 267,353, dated November 14, 1882.

Application filed June 13, 1882. (No model.)

To all whom it may concern:

Be it known that I, CHARLES M. LETZ, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful
5 Improvements in Machines for Notching and Trimming Electrotypes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of
10 reference marked thereon, which form a part of this specification.

This invention relates to machines for trimming, squaring, notching, and shaping the edges of electrotypes; and it has for its
15 object to produce a machine in which such work can be performed with facility and accuracy.

Therefore my invention consists of the novel devices and combinations of devices hereinafter described and specifically claimed.

In the accompanying drawings, Figure 1 represents a front elevation of the machine having my improvements; Fig. 2, a plan view of the same; Fig. 3, a vertical cross-section on
25 line *yy* in Fig. 1; Figs. 4 and 5, an elevation and plan view of the cutter-gage detached; Fig. 6, a sectional view on line *xx* in Fig. 3; Fig. 7, side and edge views of the cutter-tools by me employed in this machine, and Fig. 8 a
30 detached plan view of the adjustable gage-bar and angle-bar on top of the table and the clamp for securing a brass rule to be mitered.

Corresponding letters in the several figures of the drawings designate like parts.

35 A denotes the frame of the machine, which is preferably made a solid casting of four legs, that are connected by longitudinal and cross bars and plates in a manner to combine lightness with strength, and upon the top of this
40 frame I rigidly secure an iron plate, B, which forms the base-plate for the spindle-head C. This spindle-head C is shaped somewhat like a lathe-head, having journal-boxes *a a'*, in which the spindle is pivoted, each journal-box
45 being provided with an oil-cup, *b*, for supplying the lubricant to the spindle in uniform quantities. A flanged pulley, D, is mounted upon the spindle *c* between the journal-boxes *a a'*, and a cutter-head, E, is secured upon the over-
50 hanging end of such spindle *c*.

The cutter-head C consists of a shallow disk, that is notched out from two opposite sides, so as to have two segmental wings. A rectangular slot is cut in each wing, that is diagonal to the radial line, and in each such slot is inserted a cutter-tool, *d* or *e*, which is adjustably
55 secured therein by a set-screw, *f*.

The front side of frame A is formed with a vertical plate, *g*, having to its edges dovetailed guides *h*, one of which is cast solid with the
60 frame and the other one is adjustably secured thereto by screw-bolts, and between such guides *h* is fitted the vertically-sliding support F for table G.

To the bottom end of support F is pivotally
65 connected the end of lever H, which at about its middle is suspended to an extension, *i*, of frame top plate B by a link, K, and that carries on its opposite end a balance-weight, L. A
70 pedal-bar, L, is pivoted in a standard, K, that is secured upon the floor, and its end is pivotally coupled to the forward portion of lever H by a connecting-bar, L', in a manner that table
75 G will be raised by depressing the pedal L. The table G is planed to be perfectly horizontal, and has a notch, *l*, of just sufficient width and length to clear the cutters *d* or *e* of the rotating
80 head E, so as to provide as much supporting-surface for the electrotypes as possible, and to prevent the wood backing from breaking out while being notched or trimmed. The table G
85 also has a dovetailed groove, *m*, that is planed transversely therein, or parallel with the face of cutter-head E and notch *l*. A bar, *n*, is fitted in groove *m*, having a set-screw, *o*, by which
90 to secure it at any desired position. A bar, M, that is L-shaped in cross-section, is rigidly secured to bar *n*, so as to rest upon table G longitudinally and to be rectangular to the face of the cutter-head E. This bar M has guide-heads
95 *j* to its ends, that are fitted to slide in the end edges of table G and to insure a parallel movement of such bar M.

Upon the L-shaped bar M is fitted an angle-bar, N, that also rests upon the table G, is
100 rectangular with bar M, and slides thereon longitudinally. A block, O, also fitted upon bar M so as to slide thereon, is made rigid with such bar at any desired position by a set-screw, *p*. In a projecting lug of this block O is journaled

an adjusting-screw, *q*, having a hand-wheel upon its end, and the screw-threaded end of this screw *q* enters the screw-threaded lug of angle-bar *N*, so as to move the same longitudinally any desired short distance.

A block, *p*, that carries a thumb-screw, *r*, is fitted in groove *m*, and is secured at any desired point by a set-screw, *s*. By means of the screw *r*, the bar *n*, and therewith the bar *M*, can be adjusted laterally in a manner that an electrotpe-block is held to the exact position relative to the cutters *d* or *e*, so as to rest upon the table *G* and with one edge against the bar *M*, while its other edge is in contact with the angle-bar *N*, which can be adjusted longitudinally.

For adjusting the longitudinal bar *M* and the angle-bar *N* to bring any electrotpe in proper position to the cutter *d*, a reversible gage-plate, *P*, that is of the exact width and shape of the cutters, and which has a sleeve, is adjustably secured by a set-screw upon an arm, *t*, which is rigidly mounted upon the end of a cylindrical rod, *Q*, having a knob-handle, *u*. This rod *Q* is pivoted in sleeve-bearings *v v'*, that are secured against the spindle-head *C*, and a coiled spring, *W*, is interposed between arm *t* and bearing *v* upon rod *Q*, which will push such rod *Q* and gage *P* toward the cutter-head. A short feather, *w*, is fixed to rod *Q*, that will engage with either one of two diametrically-opposite notches in bearing *v'*, so as to permit a semi-revolution of the gage-plate *P*, and to lock such gage-plate at either one of its two extreme positions. For the rearward position the notch is shallow, but with turning the gage forward by first disengaging the feather *w* from the rear notch such gage-plate is swung forward without touching the cutter-head and cutters until reaching the front notch in bearing *v'*, that is cut a sufficient depth for the spring to push the gage-plate *P* under and just in line vertically with the cutters *d* or *e*, so as to indicate on the electrotpe that is placed below such gage-plate the exact outline of the cut that is made. By its peculiar attachment this gage-plate *P* can be swung forward or backward while the cutter-head is rotated without coming in contact therewith.

The cutter-head *E* is incased at its sides, rear, and top, by a box *R*, the overhanging front end of which is connected by a hinge, so that it can be opened. This box will catch the chips, which will dump into a chamber, *S*, that is formed inside of frame *A*, whence these chips may be removed from time to time, or spouted into a suitable receptacle that may be arranged under the machine.

The operation of the machine is as following, to wit: An electrotpe-block, *Z*, that is to be notched or trimmed is placed upon the table *G*, with two of its edges against the bars *M* and *N*, which are adjusted by swinging gage *P* to hold such electrotpe at the proper position relative to the cutters. The cutter-head

being imparted a fast rotating movement, the table *G* is raised by depressing the pedal *L* until such electrotpe has been passed vertically by the cutters. In Fig. 8 a device is shown for cutting and mitering brass rules in this machine. For this purpose a clamp, *T*, is fitted over bar *M*, the rear flange of which (that is to hold and grasp the ruler) is slotted out, and a set-screw, *y*, is tapped through the front flange for drawing such ruler against the rear face of bar *M*. The cutter-tools, having a pointed or diamond edge, are secured into the cutter-head *E*, and the angle-bar *N* is employed as a gage for regulating the exact lengths the bars *z* are to be cut. The table *G* being raised slowly by the pedal, a triangular groove will be cut, that will sever the rules at the proper line and will miter their ends at the same time.

As will be seen, the entire machine is simple in its construction, is arranged for fine and ready adjustment, and will perform very exact work with expediency.

What I claim is—

1. In machines for notching and trimming the edges of electrotypes, the rotating cutter-head *E*, provided with slots for holding cutters *d* or *e* by set-screws *f*, in combination with the vertically-sliding table *G*, having slot *l*, all substantially as and for the purpose set forth.

2. In machines for notching and trimming the edges of electrotypes, the rotating cutter-head *E*, in combination with the vertically-guided table *G*, suspended to the top plate, *B*, of frame *A* by rod *K* and lever *H*, having counter-weight *I*, and being elevated by a treadle, *L*, and rod *L'*, all substantially as and for the purpose set forth.

3. In machines for notching and trimming the edges of electrotypes, the rotating cutter-head *E*, in combination with the vertically-sliding table *G*, provided with slot *l* and groove *m* for guiding and holding the longitudinal gage-bar *M*, having cross-bar *n* and set-screw *o*, all substantially as and for the purpose described and shown.

4. In machines for notching and trimming the edges of electrotypes, the rotating cutter-head *E*, in combination with the vertically-sliding table *G*, provided with slot *l* and dovetailed groove *m* for guiding and holding the longitudinal gage-bar *M*, that has cross-bar *n* and set-screw *o*, and forms the guide for an angle gage-bar, *N*, all substantially as and for the purpose set forth.

5. The vertically-sliding table *G*, provided with dovetailed groove *m* for bar *p*, that has adjusting-screw *r* and set-screw *s*, and for bar *n*, secured to longitudinal bar *M*, and having set-screw *o*, all substantially as and for the purpose set forth.

6. The combination, with the table *G* and laterally-adjustable gage-bar *M*, of the angle-bar *N* and block *O*, both sliding upon bar *M*, such block *O* being provided with a set-screw, *p*, and both bar *N* and block *O* being connected

by an adjusting-screw, *g*, all substantially as and for the purpose set forth.

7. The combination, with the spindle-head C and rotating cutter-head E, having cutters *d* or *e*, of the gage-plate P, adjustably secured to arm *t* of rod Q, having handle *u*, such rod Q sliding in bearings *v* and *v'*, and being provided with coiled spring W and with feather *w*, which latter engages with notches in bearing *v*, all constructed and arranged to operate

substantially in the manner and for the purpose set forth.

In testimony that I claim the foregoing as my invention I affix my signature in presence of two witnesses.

CHARLES M. LETZ.

Witnesses:

H. HUEHL,
R. G. SCHMID.

15