

No. 864,862.

PATENTED SEPT. 3, 1907.

H. A. REYNOLDS.  
ROUTING MACHINE FIXTURE.

APPLICATION FILED JAN. 16, 1907.

3 SHEETS—SHEET 1.

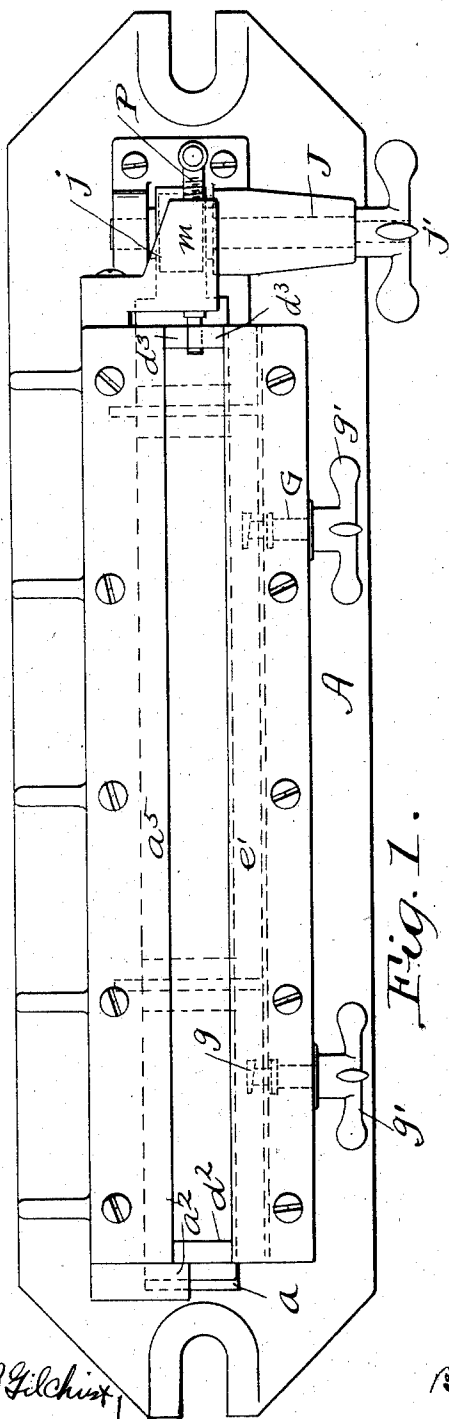
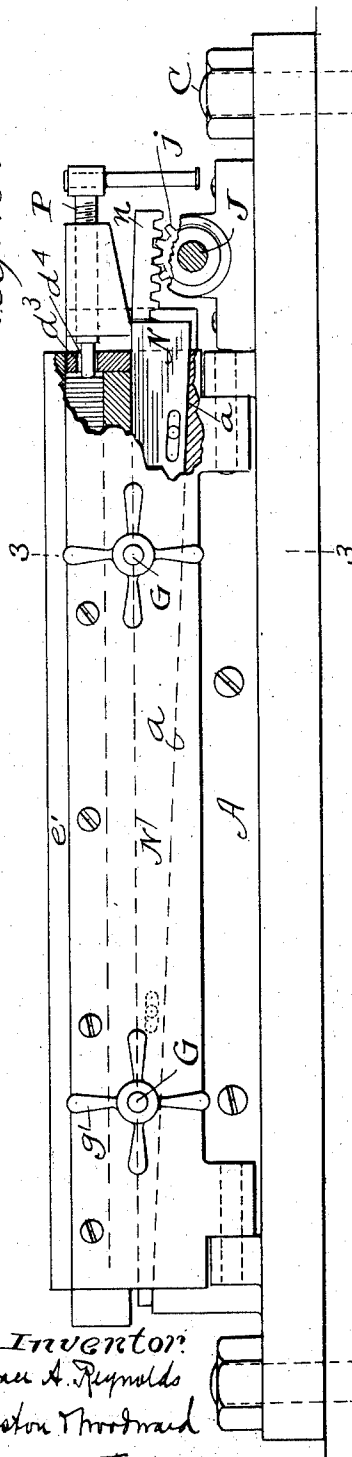


Fig. 1.

Fig. 2.



EB Gilchrist  
H B Sullivan } Witnesses.

Inventor  
Homer A. Reynolds  
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Attorney

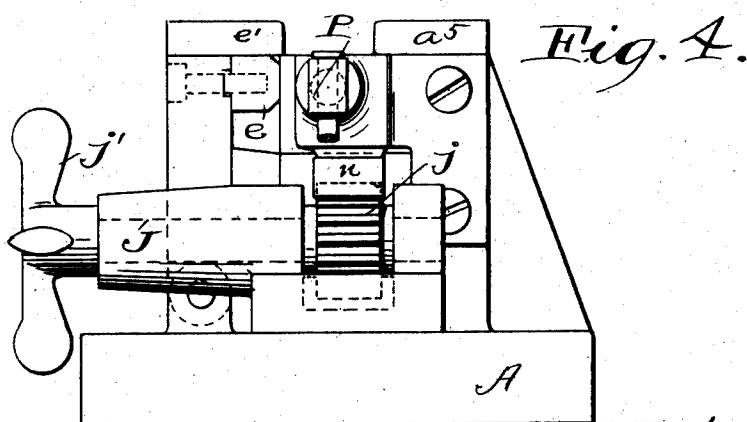
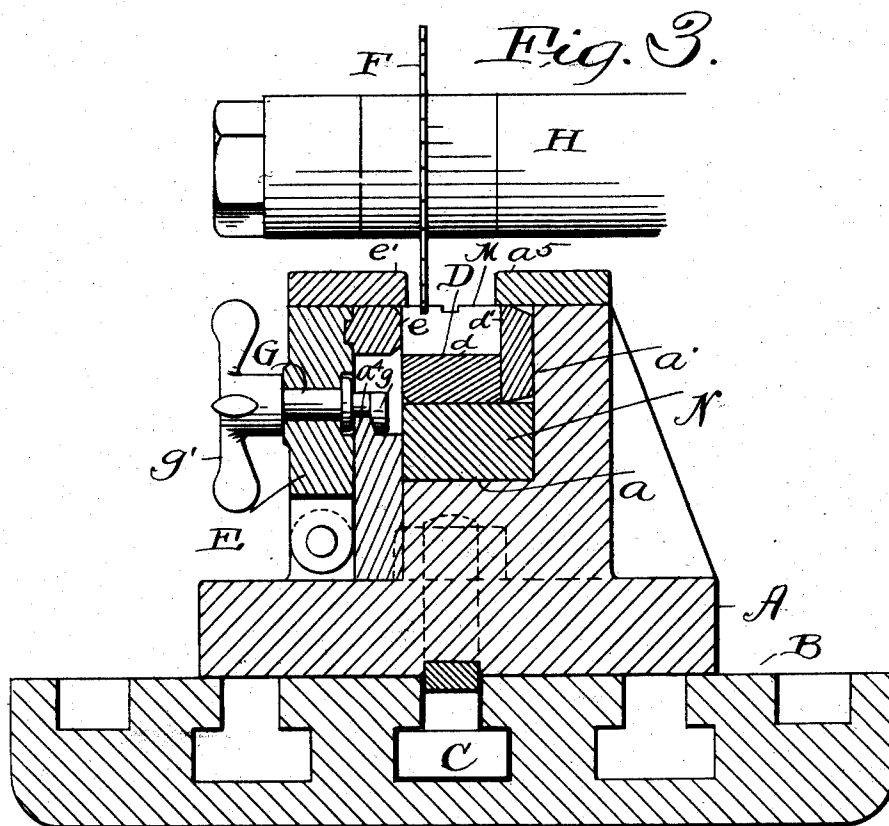
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3 SHEETS—SHEET 2.



Witnesses  
E. B. Gilchud  
H. B. Sullivan

*Inventor.*  
*Horace A. Reynolds*  
*By Thurston Woodward*  
*attorney*

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3 SHEETS—SHEET 3.

*Fig. 5.*

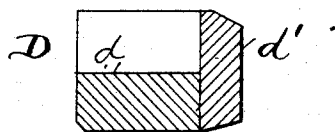


*Fig. 6.*

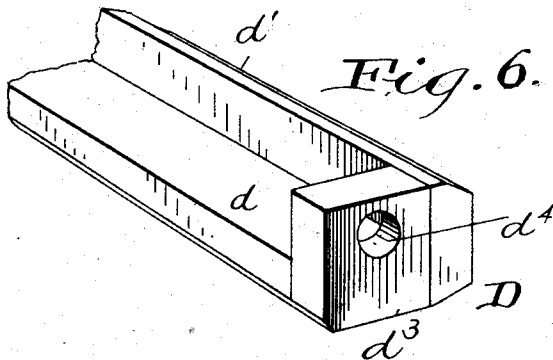
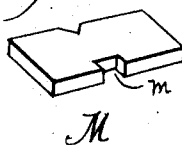


*Fig. 7.*



Witnesses  
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# UNITED STATES PATENT OFFICE.

HORACE A. REYNOLDS, OF WOONSOCKET, RHODE ISLAND, ASSIGNOR TO ELECTRIC COM-  
POSITOR COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

## ROUTING-MACHINE FIXTURE.

No. 864,862.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed January 16, 1907. Serial No. 352,620.

*To all whom it may concern:*

Be it known that I, HORACE A. REYNOLDS, residing at Woonsocket, in the county of Providence and State of Rhode Island, have invented a certain new and useful Improvement in Routing-Machine Fixtures, of which the following is a full, clear, and exact description.

Matrices such as are used in linotype machines are always provided with one or more notches in one or both edges. It is necessary that these notches be accurately formed and placed.

This invention is designed for the primary purpose of enabling an operator to form these notches in matrices very quickly and with absolute accuracy.

The invention is to be used in a suitable machine which may be in the nature of a milling machine; and it may be used for routing any group of metal blocks, whether or not they are intended for use as matrices.

The invention consists of a fixture to be attached to the movable carriage of such a machine, and a removable holder for fitting said fixture for holding a row of the matrices or other blocks, combined with means, substantially as shown, for firmly clamping the matrices or blocks in the holder and the holder upon said fixture, in definite relation with the cutter of the machine.

In the drawing, Figure 1 is a plan view of said fixture and holder and the mechanism associated with them. Fig. 2 is a side elevation of the same parts,—one end of the clamping part of the fixture being broken away. Fig. 3 is a transverse sectional view, in about the plane indicated by line 3—3 of Fig. 2, showing, in addition to the parts illustrated in Fig. 2, the top plate of the machine carriage. Fig. 4 is an end view of the mechanism shown in Figs. 1 and 2, as seen from the right end of said figures. Fig. 5 is a transverse vertical section of the matrix holder. Fig. 6 is a perspective view of one end of that holder. Fig. 7 is a perspective view of a matrix having several notches *m* of the sort which may be quickly and accurately made in a large number of matrices by the use of the described invention.

Referring to the parts by letters, A represents the base block of the fixture, which is adapted to be secured by any appropriate mechanism, as, for example, bolts C, to the top B of the machine carriage.

F represents the routing cutter, which is preferably a milling cutter which is attached to the rotating spindle H of a milling machine.

The base block of the fixture has a floor *a*, which is inclined downward from one end of the block to the other, as shown by dotted line in Fig. 2. It has also a vertical rear wall *a'*, which extends its entire length, and it has also an end plate *a<sup>2</sup>*. A sliding wedge block

N, having its lower surface inclined complementarily to the inclined floor of the fixture, rests upon said floor,—and its horizontal top surface serves as a seat for the holder D. A movable front side E is pivoted on a longitudinal pivot to the front side of the base block. It carries two or more short rock shafts G, each having a beveled clamping button *g*, on its inner end, and a wheel *g'* on its outer end, whereby the shaft may be turned. The base block has a corresponding number of beveled flanges *a<sup>4</sup>* with which the buttons *g* may engage. And the front side E has near its top edge a rib *e* adapted to engage with the ends of the matrices; and above that there is a flange *e'* adapted to overhang said wedge block N. The corresponding flange *a<sup>5</sup>* is secured to the rear side of the base block so as to overhang said wedge block, and may for some work be wide enough to permit dispensing with the flange *e'*.

The matrix holder is in the form of a trough D with the front side omitted. That is to say, it has a bottom plate *d*, a rear plate *d'* and an end plate *d<sup>2</sup>*. As shown it has also an end plate *d<sup>3</sup>* at the opposite end; and a hole *d<sup>4</sup>* is formed through said end plate *d<sup>3</sup>*. A row of matrices M are placed within this holder, each resting upon the edge which is opposite to that in which the notch is to be formed. Then the holder is put into the embrace of the fixture resting upon the horizontal top of the movable wedge block N. When the holder containing a row of matrices, is placed upon the wedge block the front side E is turned up, and clamped in place by means of the engagement of the clamping buttons *g* with the beveled flanges *a<sup>4</sup>*. The rib *e* engages with the front end of all of the matrices which are thereby pushed backward snugly against the rear wall of the holder, and the holder is also pushed firmly backward against the rear wall *a'* of the fixture. The edges of the two flanges *e'* and *a<sup>5</sup>* overhang the top of the matrices. The wedge block is then moved lengthwise, thereby lifting the holder until the tops of all of the matrices are brought snugly against the overhanging parts of these flanges. The wedge block is moved as described by means of a pinion *j*, secured to a shaft J mounted in one end of the fixture, and having a hand wheel *j'* by which it may be turned. The pinion *j* engages with a rack bar *n* on the wedge block. A screw P which is mounted at one end of the fixture passes through the hole *d<sup>4</sup>* in the end plate *d<sup>3</sup>* of the holder, and engages with one end matrix of the row, and thereby pushes the entire line snugly together with the other end of said matrix row against the left end plate *d<sup>2</sup>* of the holder, which is also pushed against the end plate *a<sup>2</sup>* of the fixture. By means of the described mechanism the matrices are brought into definite relation with accurately positioned parts of the fixture; and therefore they are in proper relation to the cutter which occupies also a definite position relative to said fixture. By moving the carriage along

under the revolving tool, the required grooves are cut in all of the matrices, said grooves being in the proper position, and of the required depth.

Having described my invention, I claim:—

- 5 1. A routing-machine fixture comprising, in combination, a vertically movable horizontal seat adapted to support a matrix holder, a vertical rear wall, a vertical end wall, and a flange overhanging said seat, means for raising the seat to bring a row of matrices in a holder resting upon said seat against said overhanging flange, means for applying pressure to the end matrix in the row to move said row endwise, and means for pressing said matrices crosswise of the holder, substantially as specified.
- 10 2. A routing-machine fixture comprising, in combination, a vertically movable horizontal seat, a vertical rear wall, a vertical end wall, a movable front clamping plate, mechanism for forcing it toward the rear wall, a flange overhanging said seat, means for raising the seat, mechanism for applying pressure to the end matrix of a row which is in a holder resting upon said seat.
- 15 3. A routing-machine fixture comprising, in combination, a floor which is inclined from one end to the other, a vertical rear wall, a vertical end wall, a movable front clamping plate; mechanism forcing said clamping plate in the clamping direction,—that is to say rearward, a wedge block resting upon said inclined floor, mechanism for moving it lengthwise of said floor, a flange overhanging said wedge block, and an endwise movable pressure device adapted to engage with a row of matrices in a holder upon said wedge block.
- 20 4. A routing-machine fixture, comprising, in combination, a vertically movable horizontal seat, a vertical rear wall, a vertical end wall, a hinged front clamping plate, clamping devices by means of which said plate, when in a substantially vertical position, may be forcibly drawn
- 25 35 towards said rear wall, a flange secured to the top of

said rear wall overhanging said horizontal seat, means for moving said seat vertically, and an end pressure device for engaging with a row of matrices in a holder resting upon said seat.

5. A routing machine fixture comprising, in combination, a vertically movable horizontal seat, a vertical rear wall, a vertical end wall, a hinged front clamping plate, having on its inner face an inwardly projecting clamping flange, an inwardly projecting flange secured to said rear wall overhanging said seat, means for moving said horizontal seat vertically, means for moving said clamping plate rearwardly, and a clamping device for moving endwise a row of matrices in a holder resting upon said seat.

6. A routing machine fixture comprising, in combination, a floor which is inclined from end to end, a fixed vertical rear wall, a fixed vertical end wall, a flange overhanging said floor, a wedge block resting upon said inclined floor and provided with a rack, a pinion engaging with said rack, means for rotating said pinion, a front clamping plate, and an end clamping device.

7. A routing-machine fixture comprising, a vertically movable horizontal seat adapted to support a matrix holder, a vertical rear wall, a vertical end wall, and a flange overhanging said seat, means for raising the seat to bring a row of matrices in a holder resting upon said seat against said overhanging flange, means applying pressure to the end matrix in the row to move said row endwise, and means for pressing said matrix row crosswise of the fixture, combined with a removable matrix-holder adapted to rest upon said seat and having a base plate, a rear wall and one end wall.

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

HORACE A. REYNOLDS.

Witnesses:

G. L. HAMMOND,  
T. L. CLARK.