No. 754,619. PATENTED MAR. 15, 1904.

W. R. SPEECHLEY.

MEANS FOR PRODUCING NOTCHES IN LINOTYPES OR SLUGS AS THEY ARE CAST IN LINOTYPE MACHINES.

APPLICATION FILED OCT. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 1.

FIG. 1.

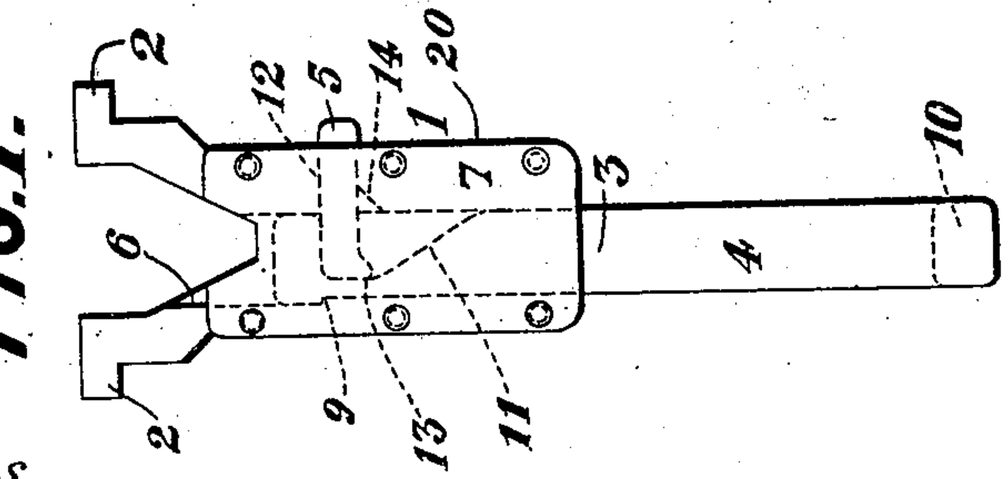


FIG. 2.

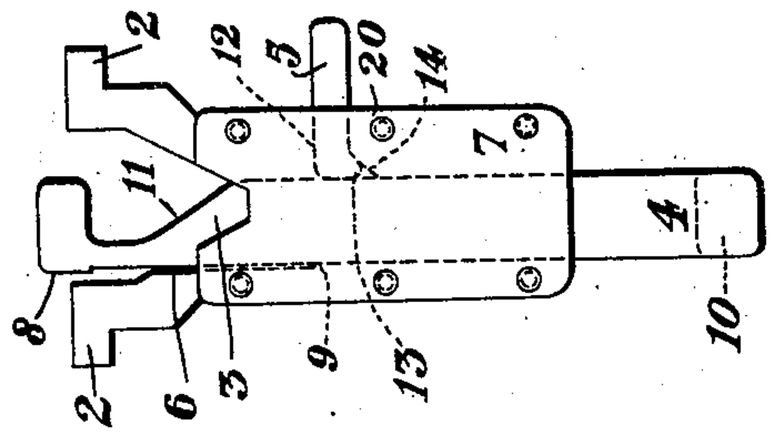


FIG. 3.

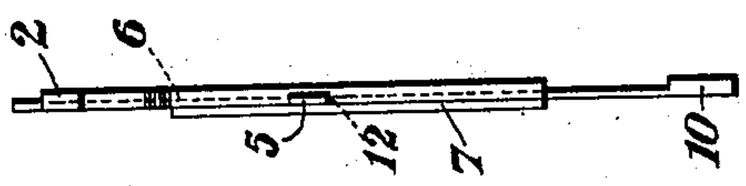


FIG. 4.

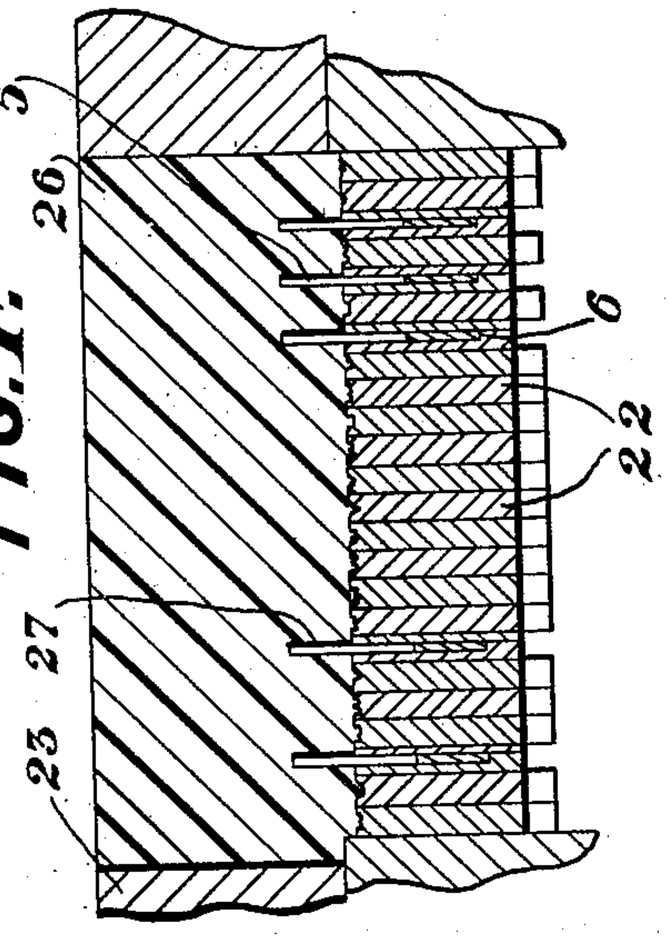
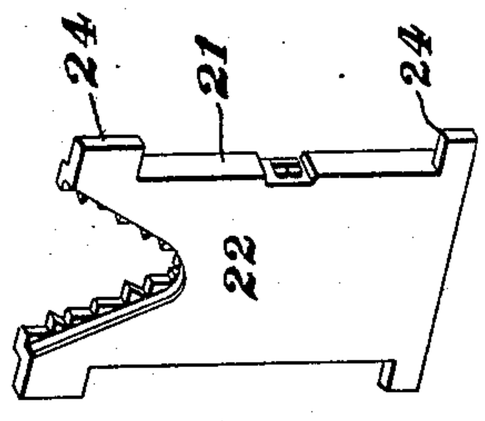


FIG. 5.



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APPLICATION FILED OCT. 23, 1903.

NO MODEL. 2 SHEETS—SHEET 2.

FIG. 7.

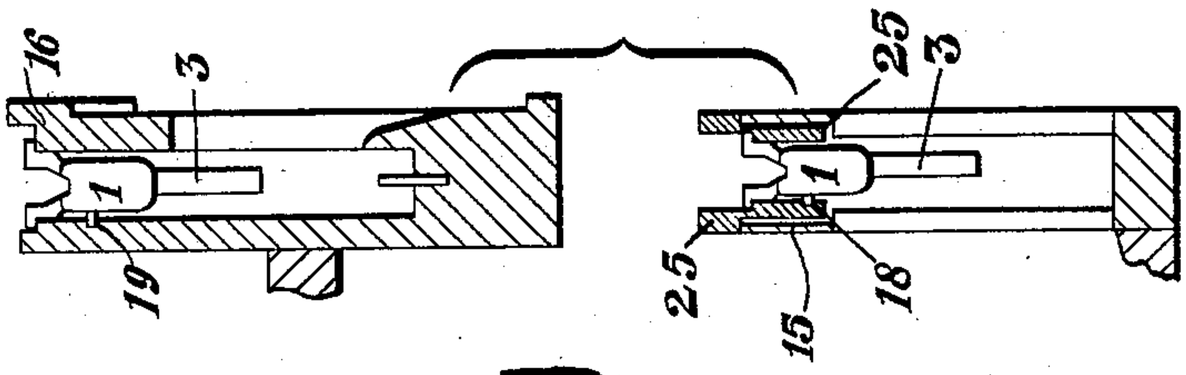


FIG. 6.

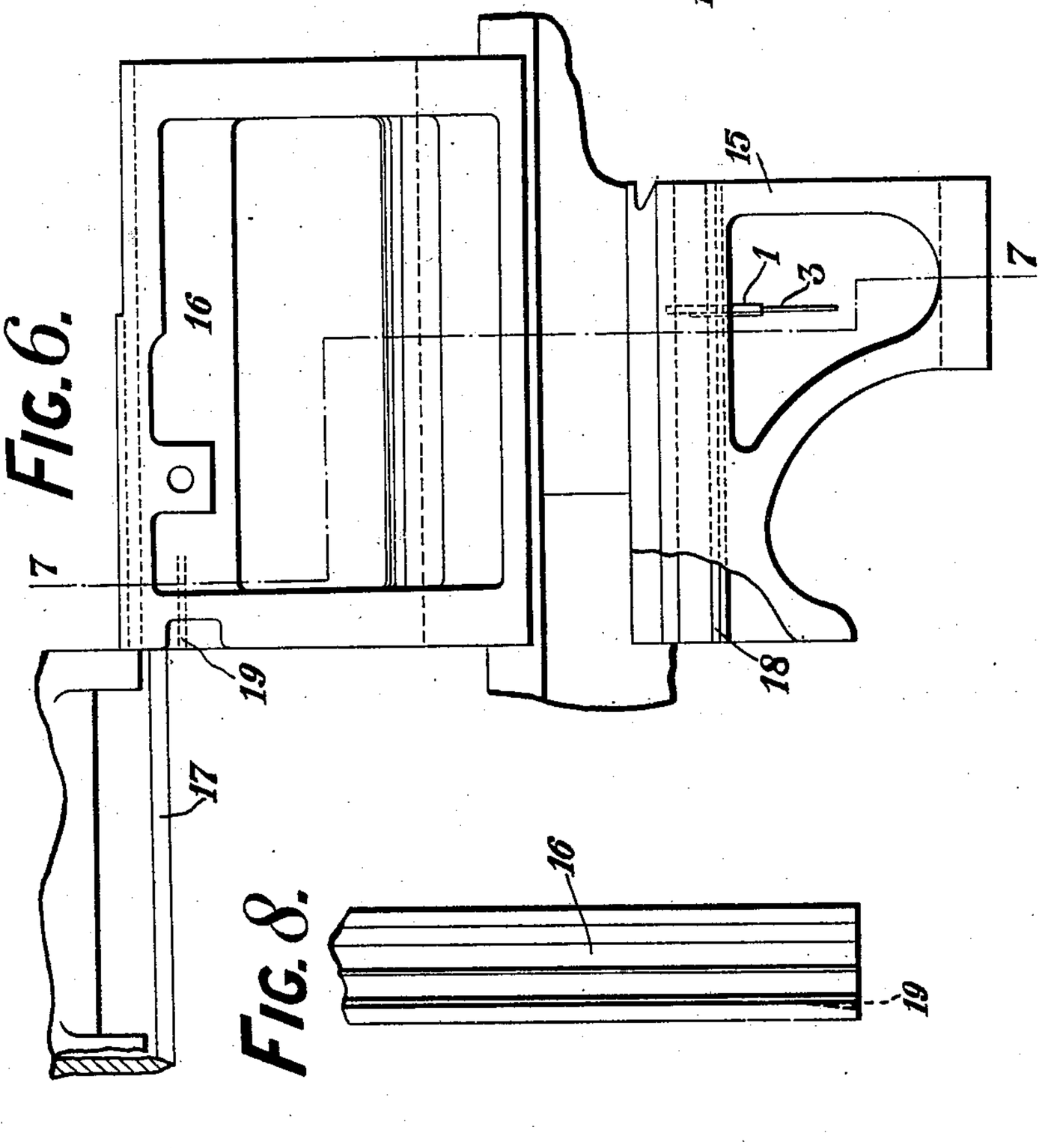
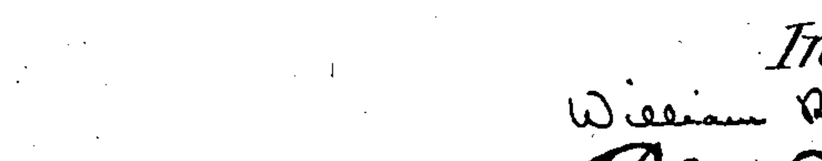


FIG. 8.



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UNITED STATES PATENT OFFICE.

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MEANS FOR PRODUCING NOTCHES IN LINOTYPES OR SLUGS AS THEY ARE CAST IN LINOTYPE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 754,619, dated March 15, 1904.

Application filed October 23, 1903. Serial No. 178,243. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ROBERT SPEECHLEY, of The Linotype Works, Broadheath, Altrincham, in the county of Chester, England, have invented certain new and useful Means for Producing Notches in Linotypes or Slugs as They are Cast in Linotype-Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The invention relates to means for producing notches in linotypes or slugs when they are cast in the molds of linotype-machines for use in tabular work, so that the successive linotypes thus cast will have their notches or recesses in line or in register with each other for the reception of rules to separate the columns of tabular matter printed therefrom, in the manner shown in United States Patent of C. M. Busch, No. 533,346.

The invention consists in a device adapted to be inserted in the composed line of matrices, and having a tongue movable in relation to the matrices and adapted to be projected into the mold to serve as a core for producing the required notch in the linotype. Any desired number of these devices may be used in one line, the distance between them being varied according to the width or measure of the respective columns in the form.

In the accompanying drawings, which are to be taken as part of this specification and read therewith, Figure 1 is an elevation of one of the improved coring devices with the coring-tongue in its normal or inoperative position; Fig. 2, an elevation of the same coring device with the coring-tongue in its protruded or operative position; Fig. 3, an elevation as seen from the right of Fig. 2, showing the same coring device in the position in which it is represented in Fig. 2; Fig. 4, a horizontal section showing five of the coring devices in an assembled line of linotype-matrices in casting position in front of the casting-mold; Fig. 5, a perspective view of one of the linotype-matrices with which the coring devices are shown assembled in Fig. 4; Fig. 6, a front elevation, partly broken away, of part of a linotype-machine modified so as to enable it to effect the coring according to this invention; Fig. 7, a transverse vertical section on the line 7 7 of Fig. 6; and Fig. 8, a part plan of the upper portion of Fig. 6, this view being shown at right angles to Fig. 6. Fig. 9 is a perspective view of a linotype containing notches such as are formed by my device.

Each of the before-mentioned coring devices comprises three main parts—viz., an upper or shorter part 1, constituting the body of my device, having front and rear supporting-lugs 2 2, a lower or longer part 3, hereinafter called a "slide," having a downwardly-depending tail 4, and a tongue 5, capable of sliding longitudinally in the part 1, so that its rear end may be caused to protrude more or less from the rear edge of the part 1.

The part 1, excepting that it is not wedge-shaped in general contour, somewhat resembles the upper or shorter part of a space-bar, such as described in the specification to Letters Patent No. 436,532, dated September 16, 1890, and in its progress through the linotype-machine it is supported by its lugs 2 2 in the same manner as is such a space-bar. One side of the part 1 is recessed, as at 6, to form a guide for the slide 3, which is retained in the said guide by a cover-plate 7, riveted to the part 1, as shown in Fig. 1, or secured to it in any other convenient manner. For convenience of description the part 1, together with its cover-plate 7, is referred to as the "body" 1. The slide 4 is formed with a small forward extension 8 at its upper part, which by abutting against a shoulder 9 in the body 1 limits the movement of the said slide relatively to the body 1 in one direction, while in the other direction this relative movement is limited by an enlargement 10 on the lower end of the slide 4 abutting against the under side of the body 1. The slide 4 is also provided with an inclined cam 11, adapted to engage with the tongue 5, so as to move the latter rearward. The tongue 5 is guided in a recess or guide 12, perpendicular to the guide 6, its rear end projecting out beyond the rear edge of the body 1, while its forward end is

provided with an enlargement 13, which by engaging with a shoulder 14 on the body 1 prevents the said tongue from being entirely withdrawn from the said body.

Referring now to Figs. 6, 7, and 8, 15 is the matrix-delivery channel, through which, as in existing linotype-machines, the assembled line passes on its way to the first elevator. 16 is the intermediate space-bar channel, through which as ordinarily the space-bars are conducted to their magazine, and 17 is the ordinary matrix-guide bar, which in the usual manner serves to aline the matrices before they are moved into engagement with the so-called "second elevator."

The back of the matrix-delivery channel 15 is provided with a horizontal groove 18, so as to enable the tongues 5, which are then in their normal positions, to pass therealong, as shown in Figs. 6 and 7, and the back of the intermediate space-bar channel 16 is provided with an inclined cam-surface 19, Figs. 6 and 8, which engages with the then-projected tongues 5, as shown in Fig. 7, to return them to their normal positions.

In Fig. 7 two of the before-described coring devices are represented, one in the matrix-delivery channel 15, as it would be when traveling toward the casting position, and the other in the intermediate space-bar channel 14, as it would be after the casting operation and just before distribution.

By the term "casting-face" as hereinafter employed is meant the face 20 of the coring device or the face 21 of the matrix 22, Fig. 5, as the case may be, which during the casting operation is coincident, or partially so, with the front face of the mold-block 23, Fig. 4.

In the normal position of the tongue 5 it does not project rearward from the casting-face 20 of the coring device farther than do the rear lugs 24 24 of the matrices 22 from the casting-face 21. This arrangement admits of the said coring devices being assembled in the assembly-box by hand, as is now usually the practice when inserting a sorts-matrix therein.

The before-described coring devices are inserted in the assembling line at the end of each measure, and after the line is completed it is in the ordinary manner moved through the matrix-delivery channel 15 on its way from the assembly-box to the first elevator. The two latter devices and other hereinafter-mentioned parts of the linotype-machine are not represented in the accompanying drawings, as they are not affected by the present invention. During this movement of the coring devices they are supported by their lugs 2 2, traveling along the usual space-bar-supporting ledges 25 25 at the front and back of the channel 15 and tongues 5 meanwhile passing along the groove 18.

Although no space-bars are represented in the accompanying drawings, it will be understood that they may be inserted in the assembling line at such parts as will not disturb the alinement of the recesses in the respective linotypes when these latter are subsequently placed in the necessary juxtaposition for printing, the justification of the separate lines being effected by the expansion of these space-bars in the usual manner.

When the assembled line is presented in front of the mold 23, the justification-block ascends as it ordinarily does to effect the justification, and thereby raises the before-described slides 3, so as to cause the cams 11 thereon to move the tongues 5 rearward into the mold-cavity, as shown in Fig. 4. The linotype 26 is then cast, a recess 27, adapted to receive a rule, being produced at each part at which a tongue 5 projects into the mold.

After the casting operation and the usual withdrawal of the mold the first elevator ascends to the matrix guide-bar 17 and if the slides 3 have not already fallen by gravity brings their upper ends against the under side of the said matrix guide-bar, so as to depress them relatively to the tongues 5, thereby leaving the latter free to be returned to their normal positions.

As the composed line is being moved from the first elevator to the second elevator the rear ends of the tongues 5 are moved over the inclined cam-surface 19 in the intermediate space-bar channel 16, and thereby return to their original positions.

Before the space-bar grabber has returned the space-bars to their magazine the machine is stopped and the before-described coring devices are taken out of the intermediate space-bar channel 16 by hand and returned to the sorts-box or other convenient receptacle wherein they are stored.

I claim—

1. In a device for producing notches in linotypes, the combination of a body having lugs to support it in the linotype-machine, a tongue horizontally movable in said body, and a slide vertically movable in the body and having a cam-surface to act upon the tongue.

2. In a device for coring notches in linotypes, the combination of a body adapted to be sustained in the machine, a tongue horizontally movable in the body, and a vertically-movable slide mounted in the body, its upper portion adapted to advance the tongue, and its lower end adapted to be acted upon by the justification-block of the machine.

3. In a device for coring notches in linotypes, the combination of a body portion substantially as shown, a tongue horizontally movable therein, a tongue-operating slide movable vertically in the body, said slide provided with a stop to limit its movement.

4. In a device for coring notches in linotypes, the combination of a body adapted to interlock with the linotype-machine, a tongue having a limited horizontal movement in the

body; and a vertical tongue-actuating slide mounted in the body and provided with a stop to limit its motion.

5. In combination with a linotype-machine, a body having lugs for supporting it therein, a tongue movable horizontally in the body and adapted for projection into the mold, a tongue-actuating slide also mounted in the body, and a cam on the machine to move the tongue forward.

6. In combination with a linotype-machine, a body adapted to be supported in the matrix-delivery channel of said machine, a tongue horizontally movable in the body and adapted to enter the mold, and a vertically-movable tongue-actuating member, also mounted in the body, the matrix-delivery channel of the machine being grooved to receive the tongue as described.

7. In combination with a linotype-machine, the body adapted to sustain itself in the intermediate space-bar channel of the machine, a tongue horizontally movable in the body, a vertically-movable slide to actuate the tongue, and a cam-surface in the machine to return the tongue to its normal position.

8. In a linotype-machine, a tongue adapted to be projected into the mold, in combination with means for projecting and withdrawing the same independently of the matrix-line.

9. In a linotype-machine, a device intended to be assembled in a line of matrices, provided with a tongue movable forward and backward in relation to the matrices, into and out of the mold, and means for effecting said movement.

10. A device for use in a linotype-machine, to produce a notch in the edge of the linotype, comprising a body portion adapted to be assembled in the line of matrices and to remain normally at rest, a movable tongue mounted in the body and adapted to be projected into the mold, and a sliding member adapted to effect the projection of the tongue.

11. In a linotype-machine and in combination with the coring device comprising the body portion, the movable tongue and its actuating-slide, 4, means for positively effecting the retreat of the tongue.

12. In a linotype-machine, in combination with the coring device comprising a body portion and the movable tongue 5, therein, a cam 19, in the path of the matrix-line to cause the retreat of the tongue.

13. In a linotype-machine, as a means of forming notches in the linotypes, a device comprising a body portion adapted to be assembled and locked in the matrix-line, a relatively movable tongue adapted to be projected into the mold, and means for effecting the movement of the tongue.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

WILLIAM ROBERT SPEECHLEY.

Witnesses:

ARTHUR K. SMITH,

HAROLD SOUTHWORTH.