No. 764,167. PATENTED JULY 5, 1904.

J. TUNALEY.

ASSEMBLING MECHANISM FOR LINOTYPE MACHINES.

APPLICATION FILED MAR. 30, 1904.

NO MODEL.

Fig. 2.




Fig. 1.

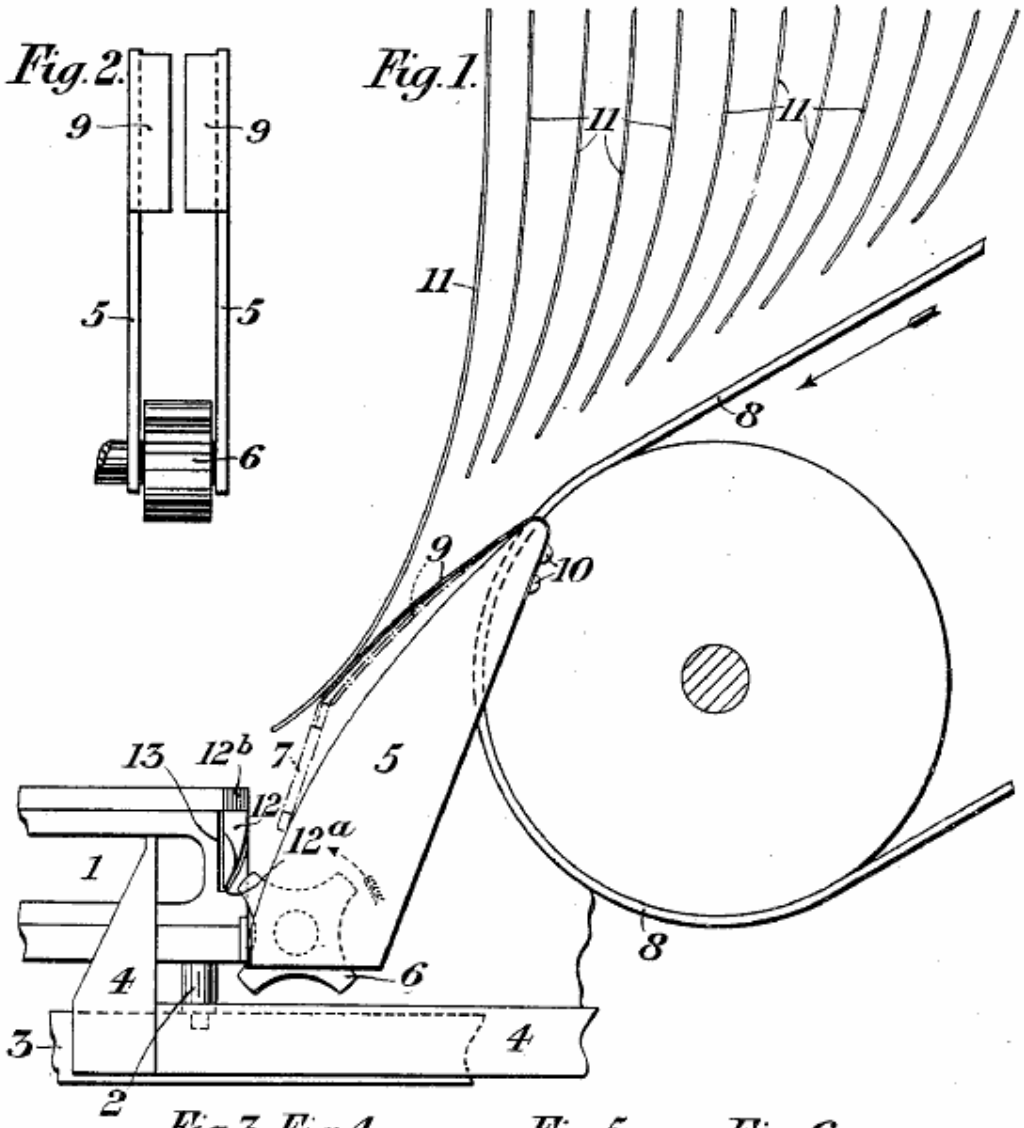



Fig. 3.

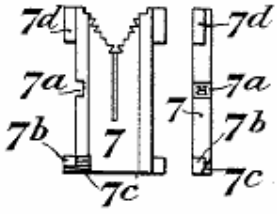



Fig. 4.




Fig. 5.

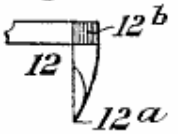
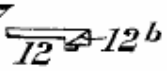



Fig. 6.


Fig. 7.




Witnesses

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No. 764,167. Patented July 5, 1904.

# UNITED STATES PATENT OFFICE.

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## ASSEMBLING MECHANISM FOR LINOTYPE-MACHINES.

SPECIFICATION forming part of Letters Patent No. 764,167, dated July 5, 1904.

Application filed March 30, 1904. Serial No. 200,680. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN TUNALEY, of 54 Oxford street, Derby, in the county of Derby, England, have invented certain new and useful Improvements in the Assembling Mechanism of 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 present invention relates to improvements in the assembling mechanism of the linotype-machine described in the specification of Letters Patent No. 436,532, granted September 16, 1890; and the object of it is to prevent a matrix battering in with its foot the right-hand side wall of the formative cavity of the immediately-preceding matrix assembled in the assembly-box. This battering is always possible, because a matrix moves foot foremost and in an oblique direction toward the assembly-box and stands upright in the latter as soon as it has fairly entered it, at the same time, however, holding its formative cavity at about the level at which the foot of the following matrix can or is likely to strike it before the said following matrix turns into its upright position.

In the accompanying drawings, which are to be taken as part of this specification and read therewith, Figure 1 is a front elevation of as much of a linotype-machine as is necessary to illustrate the application of my invention thereto. Fig. 2 is an elevation of parts of the apparatus shown in Fig. 1 as seen when looking from the left and toward the right of the latter figure. Figs. 3 and 4 are elevations taken at right angles to each other of a matrix adapted for use according to the present invention, and Figs. 5 and 6 are elevations taken at right angles to each other, and Fig. 7 a plan of a part of one of the improved spring-detents of the assembly-box.

In carrying the invention into effect the normal position of the assembly-box 1 (of which only a part of the rear portion is shown in Fig. 1) is raised a little, preferably by the securing of a support or packing-piece 2 to the assembler-slide brake-lever 3, upon which, as ordinarily, the assembly-box rests when in its lower or assembling position, as shown in Fig. 1. The assembler is raised in order to bring the assembling line or level of the matrices a little higher than usual in relation to the usual assembling star or wheel 6, hereinafter referred to. When the assembly-box 1 is thus resting on the brake-lever 3, the said box through the usual brake (not shown in the drawings) and in the usual manner serves to lock the assembler-slide 4 in any position to which it may be moved by the gradual lengthening of the assembling-line. When the assembly-box 1 is raised to move the assembled line upward toward the casting position and its weight is thereby removed from the brake-lever 3, the before-mentioned brake is, as ordinarily, caused to release the assembler-slide 4, which in the well-known manner immediately thereafter returns horizontally toward the right to its starting position.

The foregoing parts, including the assembler-slide and brake-lever, are all foreign to the present invention and may be of any ordinary construction. The brake-lever is the mechanical equivalent of and has the same function as the dog or lever $i^5$ and its connections in Letters Patent No. 436,531.

The usual guide-cheeks 5, between which the star-wheel 6 rotates, as shown best in Fig. 2, and which serve to guide the matrices 7 between the time they leave the assembly-belt 8 and reach the assembly-box 1 are fitted each with a spring-plate 9, which at its right-hand part is bent over the top of the appropriate guide-cheek 5 and secured thereto by screws 10 or in other convenient manner. The left-hand portions of the spring-plates 9 extend downward toward the assembly-box 1 at a distance above the guide-cheeks 5; but these plates are sufficiently resilient that in their normal position their free ends will press lightly and yieldingly against the leftmost of the series of guides 11 of the assembler-plate by which the matrices are directed

on to the assembly-belt 8 or toward the assembly-box from the magazine-mouths above, which latter having no connection with the present invention are not represented in the drawings. The matrices 7 after leaving the assembly-belt 8 or the guides 11 therefore travel down the spring-plates 9, the resilience of which is not too strong for the thinnest matrix to force them downward away from the leftmost side guide 11, while it is yet strong enough to act as a slight brake upon the momentum acquired by the falling matrices and to serve to tip up each matrix for an appreciable amount, as indicated in dotted lines in Fig. 1, so that it will enter the assembly-box 1 much more vertically than heretofore. As a further precaution against the before-described battering in of the formative cavities $7^a$ of the matrices 7 the rear bottom lug $7^b$ of each matrix, as shown in Figs. 3 and 4, is beveled off, as at $7^c$, so as to remove the portion by which such battering of a preceding matrix would otherwise be effected. As a still further precaution against such battering in of the matrices I substitute for the ordinary spring-detents which are provided at the entrance into the assembly-box 1 other spring-detents 12, which, as shown in Figs 1, 5, and 6, are much longer than heretofore, so as to project lower down into the box 1. They thus serve as a guard to prevent the foot of a matrix 7 entering the assembly-box until the said foot has descended past the lower ends $12^a$ of the detents 12, by which time the said matrix will be in an almost vertical position, and therefore incapable of damaging the formative cavity $7^a$ of the immediately-preceding matrix already assembled in the assembly-box. When the matrices are pressed forward by the star-wheel 6, the detents 12 are in the ordinary way forced outward by the action of the matrix-lugs $7^d$ upon the inclined faces $12^b$ of the said detents, the downward extensions of the latter then being received in recesses 13, formed in the back and front walls of the assembly-box. (Only the recess in the back wall is shown in the drawings.) The matrices are thus free to be moved into the assembly-box, and when they have passed the inclined ends $12^b$ the detents 12, as ordinarily, spring inward behind the matrices to prevent their return.

It will be obvious that instead of the before-described support or packing-piece 2 being secured to the brake-lever 3, as in the example illustrated, the said packing-piece may be secured to the under side of the assembler-box 1.

I claim—

1. In a linotype-machine the combination of the assembly-box, assembler-slide brake-lever, a packing-piece interposed between the said assembly-box and lever, adapted to limit the former's descent, guide-cheeks guiding the matrices between the assembly-belt and assembly-box, spring-plates fast to the said cheeks and adapted to bear lightly and yieldingly against the leftmost guide of the assembler-plate, matrices having formative cavities therein, bottom lugs on the matrices, and bevels on the under side of the rearmost of said lugs at the leading side of the matrices.

2. In a linotype-machine the combination of the assembly-box, assembler-slide brake-lever, and a packing-piece interposed between the said assembly-box and lever adapted to limit the former's descent.

3. In a linotype-machine the combination of the assembly-box, assembler-slide brake-lever, and a packing-piece fast to the brake-lever and interposed between it and the assembly-box, and adapted to limit the latter's descent.

4. In a linotype-machine the combination of the assembly-box, assembly-belt, guide-cheeks adapted to guide the matrices between the assembly-belt and assembly-box, and spring-plates fast to the said cheeks and adapted to bear lightly and yieldingly against the leftmost guide of the assembler-plate.

5. In a linotype-machine, the combination of the assembler to receive the successive matrices, means for directing the matrices downward successively to the assembler, and a spring underlying the matrix path and free to rise adjacent to the assembler, whereby the matrix is tipped upward to an approximately vertical position as it approaches the assembler.

6. In a linotype-machine, the combination of the matrix-delivery belt, an assembler to receive the successive matrices, the intermediate matrix-supporting cheeks or guides 5, and a yielding spring 9 overlying the guide and free to rise at the lower end.

7. In a linotype-machine, the combination of an assembler to receive the successive matrices, a rotary wheel or pusher 6 to advance the matrices in the assembler, a guide 5 over which the matrices descend, and a spring 9 overlying the guide and free to rise at the lower end, whereby the matrices are tipped to an upright position as they approach the assembler.

8. In a linotype-machine and in combination with an assembler to receive the successive matrices, yielding detents to engage and hold the incoming matrices, said detents provided with projections to engage the lower ends of the matrices and retard their advance into the assembler, whereby the advance of the matrix to its final position is prevented until it has assumed a substantially vertical position.

9. In a linotype-machine, an assembler to receive and aline the successive matrices, in combination with detents 12, to retain the incom-

ing matrices, said detents having projections 12ª to retard the horizontal advance of the lower ends of the matrices, as and for the purpose described.

10. In a linotype-machine, the combination of an assembler to which the matrices are successively delivered, and movable detents adapted to encounter the lower ends of the incoming matrices and retard their horizontal advance, substantially as and for the purpose described.

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

JOHN TUNALEY.

Witnesses:

SQUIRE ELLIS PICKERSJILL,

EDWARD FREDERICK BERRY.