

E. H. JOHNSON.
 TYPOGRAPHICAL MACHINE.
 APPLICATION FILED SEPT. 16, 1914.

1,127,628.

Patented Feb. 9, 1915.

2 SHEETS—SHEET 1.

Fig. 1.

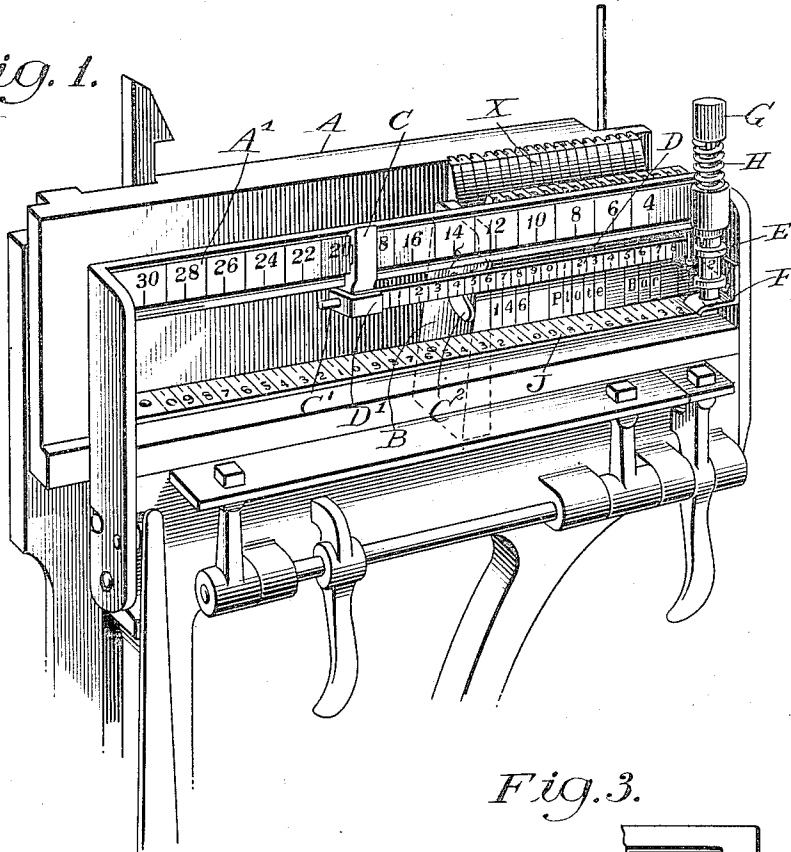


Fig. 3.

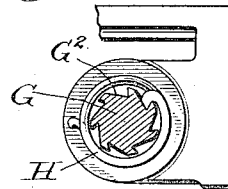


Fig. 2.

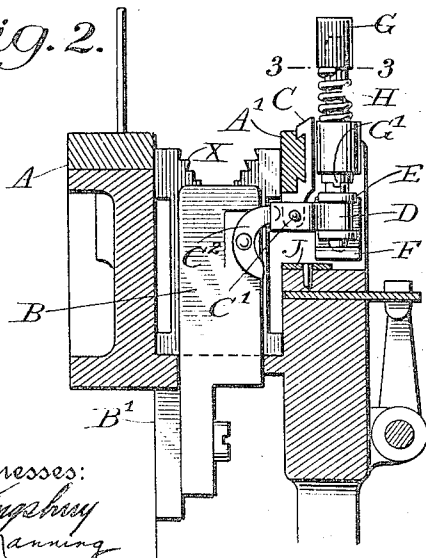
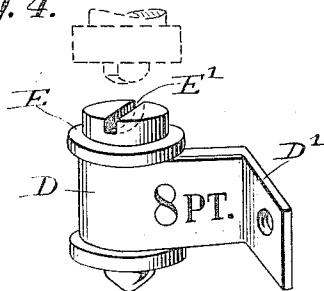


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 5.

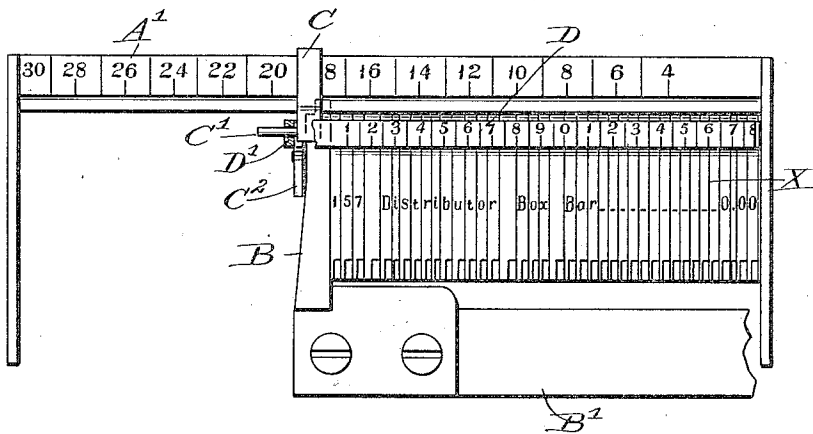


Fig. 6.

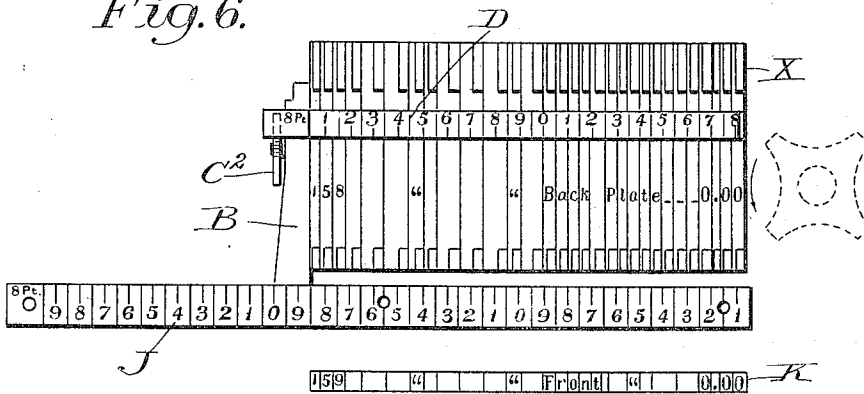
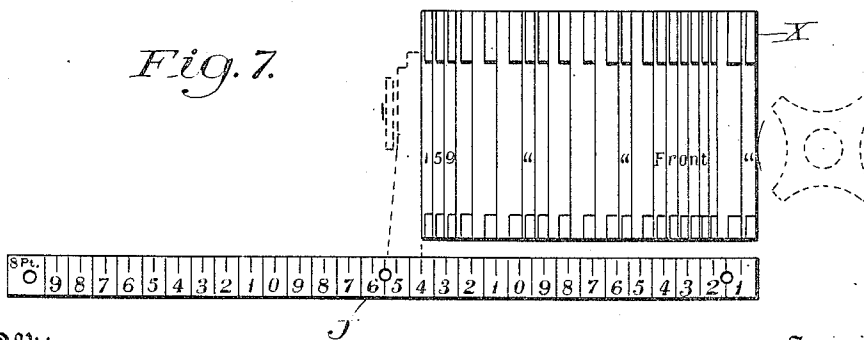


Fig. 7.



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UNITED STATES PATENT OFFICE.

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TYPOGRAPHICAL MACHINE.

1,127,628.

Specification of Letters Patent.

Patented Feb. 9, 1915.

Application filed September 16, 1914. Serial No. 861,956.

To all whom it may concern:

Be it known that I, ELMER H. JOHNSON, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented certain new and useful Improvements in Typographical Machines, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to typographical machines, such as linotype machines of the general organization represented in Letters Patent of the United States, No. 436,532 to O. Mergenthaler, wherein circulating matrices are released from a magazine or magazines in the order in which their characters are to appear in print, and then assembled in line, the composed line transferred to the face of a mold, the mold filled with molten metal to form a slug or linotype against the matrices which produce the type characters thereon, and the matrices thereafter returned to the magazines from which they started.

More particularly, it relates to the device or assembler wherein the line is composed, and is primarily intended to simplify the accurate location of matrices in successive lines.

In the accompanying drawings, I have shown my invention only in preferred form and by way of example, and as applied to the particular style of mechanism already referred to, but obviously many changes and variations may be made therein, and in its mode of application, which will still be comprised within its spirit. Similarly it may be adapted to other kinds of typographical machines, such as typesetters, typescasters, and the like, which handle type or dies, instead of matrices. Generally speaking, I desire it to be understood that I do not limit myself to any specific form or embodiment, except in so far as such limitations are specified in the claims.

In the drawings: Figure 1 is a perspective view of the assembler of a linotype machine with my invention embodied therein; Fig. 2 is a transverse vertical section thereof; Fig. 3 is a sectional detail on the line 3-3 of Fig. 2; Fig. 4 is a perspective detail; and Figs. 5, 6 and 7 are diagrammatic

views illustrating the use of the improvements.

As in ordinary practice, the matrices X are delivered to and the line is composed within the assembler A and against the yielding finger or resistant B connected to the assembler slide B¹, the front portion or gate A¹ of the assembler being provided with a scale to assist the operator in determining the length of the line and positioning the matrices for special purposes. This scale is however inadequate in some cases, as for instance where it is necessary to locate words in exact vertical columns in successive lines, or to set ditto marks, or to indent for side heads, etc., in which circumstances it is the general practice to remove certain matrices from the assembler and then to replace and try them in other positions, and thus to secure the desired result by a more or less laborious and uncertain system of approximation. These difficulties and inconveniences arise largely from the permanent scale, which is graduated to conform to only one "point" measurement, and therefore does not correspond to the characters of another font having different dimensions; and moreover, for the purposes above outlined, the scale reads in the wrong direction, and thus renders the location of the desired points more difficult. I have therefore devised means whereby scales based on the proper units may be employed in connection with any given font, and whereby also they may be read in the desired direction, or in both directions, at the will of the operator. To these ends I provide a plurality of different scales, preferably in the form of a flexible band or tape D, normally wound upon a spool E, which spool is detachably mounted on the assembler. In the form shown I mount an adjustable stop C upon the front A¹ of the assembler and connect the end of the scale D thereto, this being conveniently accomplished by engaging its end plate or tip D¹ with a pin C¹ on the stop.

The means for detachably holding the spool E comprise the spring plate F mounted on the assembler in position to engage the lower end of the spool, and a pin G formed with the tongue G¹ to engage a

groove E¹ in the upper portion of the spool, the resiliency of the plate F acting to hold the parts in position. A spiral spring H is also provided in connection with the pin G, one end of the spring being fastened to the assembler body and the other end adapted to engage one or another of the longitudinal teeth or grooves G² formed in the periphery of the pin, in such manner that when the band or tape is unrolled from the spool, the spring will be put under tension thereby and acts to hold the band in proper position.

In ordinary use, the stop C will be set to correspond to the length of the line. For instance in Fig. 1, the scale corresponds to an 8-point font, and the length of line is 18 ems. If a font of different measurement be next employed, a scale corresponding thereto will be substituted, and if the length of line be varied, the stop is correspondingly adjusted upon the assembler gate. It will also be noted that the scale D reads from left to right, as distinguished from the ordinary scale which reads from right to left, thus further simplifying the work of the operator in locating definite spaces as each line is composed. I also propose to employ in certain instances other detachable and interchangeable scales, such as the scale J, shown applied to the lower portion of the gate. It will be noted that the scale J corresponds in gradation to the scale D, but that it reads from right to left, so that when the scales D and J are used together, the operator will be able to read in either direction in units corresponding to the point measurement of the particular font in use.

The front finger or resistant B is preferably provided with a pivoted finger C², normally located in such position that its upper end contacts with the stop C (see Fig. 2) when the line has been filled out to the proper extent. However, if desired, the stop may be set short of the length of the line, so as to permit a slight amount of variation, say to the extent of one or two ems, in the composition of the line, in which circumstances the engagement of the finger C² with the stop moves the latter as the resistant advances, the extension of the scale D and its unwinding from the spool E being permitted by the yield of the spring H. The finger C² is pivotally mounted upon the resistant to permit its being moved out of operative position when desired, as for instance when the assembler is elevated.

Figs. 5, 6 and 7 illustrate one or more of the capabilities of my improved arrangement. Fig. 5 shows a composed line of matrices, such as would be used for a catalogue of machine parts, presenting the characters

"157 Distributor Box Bar----- 0.00".

Assuming that the next line is to be located immediately beneath it and is to contain also the words "Distributor Box," the operator reads the scale from left to right and notes that the middle of the word "Distributor" is located approximately at the scale mark 4½, and the middle of the word "Box" approximately at the scale mark 8½. He then composes the second line (see Fig. 6), and first sets the numerals "158" and then fills in with suitable quads and figure spaces until he reaches the point 4½, when he sets the ditto matrix. He then similarly fills in until he reaches the point 8½, when he again inserts a ditto matrix, after which he completes the rest of the line in the ordinary manner. In this way, and due partly to the correspondence of the scale to the measurement of the font in use, and partly to the fact that the scale reads from left to right, he is enabled to locate the ditto marks in exactly the proper position and with the minimum of mental effort.

It is to be noted that the scale J, with the same system of gradation but reading from right to left, is also shown in Fig. 6, but its desirability depends upon the particular character of the work in hand. In Fig. 7, at K, is illustrated the third line, embodying ditto marks in the same position as in Fig. 6, and with additional ditto marks at a further point in the line and beyond certain printed matter, that is to say, at the point 13½ of the scale D. The final matrix X contains the ditto marks last mentioned, it being noted that it was set into the line at the point 13½, which in the particular instance might be more conveniently located by the marks on the lower scale J which reads from right to left.

The above instances have been selected merely as illustrative of the capabilities of my arrangement, and to show more graphically the convenience involved therein as compared with the older method of experimental removal and replacement of the matrices. Many other examples will present themselves in the use of the machine. As previously stated, I have shown my invention only in preferred form and in a special mode of adaptation, but obviously many modifications and alterations therein, and in its mode of application, will suggest themselves to those skilled in the art, without departure from its scope.

Having thus described my invention, its construction and mode of operation, what I claim and desire to secure by Letters Patent of the United States, is as follows:

1. In a typographical machine, the combination of means for assembling the type or matrices in line, an indicating scale by which the length of line may be determined, and a supplemental indicating scale corre-

5 sponding to the point-measurement of a given font of type or matrices, the said supplemental scale being replaceable by another corresponding to the point-measurement of a different font.

10 2. In a typographical machine, assembling mechanism comprising, in combination, an assembler wherein the line is composed, an indicating scale attached to the assembler and by which the length of line may be determined, and a supplemental indicating scale carried by the assembler and corresponding to the point-measurement of a given font, the said supplemental scale being replaceable by another corresponding to the point-measurement of a different font.

15 3. In a typographical machine, the combination of means for assembling the type or matrices in line, and two indicating scales therefor reading in opposite directions and corresponding to a given point-measurement, said scales being replaceable by others corresponding to a different point-measurement.

20 4. In a typographical machine, assembling mechanism comprising, in combination, an assembler wherein the line is composed, and two indicating scales carried by the assembler and reading in opposite directions and corresponding to a given point-measurement, the said scales being replaceable by others corresponding to a different point-measurement.

25 5. In a typographical machine, the combination of means for assembling the type or matrices in line, and an indicating scale therefor, said scale being capable of being set in different positions to correspond to different lengths of lines.

30 6. In a typographical machine, an assembling mechanism comprising, in combination, an assembler wherein the line is composed, and an indicating scale carried by the assembler and capable of being set in different positions thereon to correspond to different lengths of lines.

35 7. In a typographical machine, the combination of means for assembling the type or matrices in line, a flexible indicating scale therefor, a winding spool for the scale, means for holding said spool in a given position, and an adjustable piece connected to the free end of the scale.

40 8. In a typographical machine, an assembling mechanism comprising, in combination, an assembler wherein the line is composed, a flexible indicating scale, a winding spool therefor mounted on the assembler in a given position, and an adjustable piece also mounted on the assembler and to which the free end of the scale is connected.

45 9. In a typographical machine, the combination of means for assembling the type or matrices in line, a line resistant adapted to be advanced progressively by the line during

composition, a movable stop piece adapted to be engaged by the line resistant, and an indicating scale connected to the stop piece and movable longitudinally thereby.

50 10. In a typographical machine, assembling mechanism comprising, in combination, an assembler wherein the line is composed, a line resistant adapted to be advanced progressively by the line during composition, a movable stop piece mounted on the assembler and adapted to be engaged by the line resistant, and an indicating scale connected to the stop piece and movable longitudinally thereby.

55 11. In a typographical machine, the combination of means for assembling the type or matrices in a line, a line resistant adapted to be advanced progressively by the line during composition, a movable stop piece adapted to be engaged by the line resistant, a flexible indicating scale connected at one end to the stop piece, a rotatable spool to which the opposite end of the scale is connected, and means for holding the spool in position, the said means being yieldable to permit a slight rotation of the spool when the scale is drawn along by the movement of the stop piece.

60 12. In a typographical machine, an assembling mechanism comprising, in combination, an assembler wherein the line is composed, a line resistant adapted to be advanced progressively by the line during composition, a movable stop piece mounted on the assembler and adapted to be engaged by the line resistant, a flexible indicating scale having one end connected to the stop piece, a rotatable spool carried by the assembler and to which the opposite end of the scale is connected, and yielding means to hold the spool against rotation; whereby a slight rotation of the spool is permitted to allow the scale to be drawn along by the stop piece when the latter is engaged by the line resistant.

65 13. In a typographical machine, assembling mechanism comprising, in combination, the assembler A, the flexible indicating scale D, the winding spool E therefor, and the detent F for holding the spool in position upon the assembler.

70 14. In a typographical machine, assembling mechanism comprising, in combination, an assembler wherein the line is composed, a flexible indicating scale thereon, and a winding spool for the scale, the said spool being detachably mounted upon the assembler so as to be removable therefrom at will.

75 15. In a typographical machine, the combination of means for assembling the type or matrices in line, an indicating scale therefor graduated according to a given point-measurement, and a supplemental indicating

scale graduated according to a different point-measurement, for the purpose described.

16. In a typographical machine, assembling mechanism comprising, in combination, an assembler wherein the line is composed, an indicating scale thereon graduated according to a given point-measurement, and a supplemental indicating scale mount-

ed on the assembler and graduated according to a different point-measurement, for the purpose described.

In testimony whereof, I have affixed my signature in presence of two witnesses.

ELMER H. JOHNSON.

Witnesses:

LAURA WILSON,
EDNA D. JOHNSON.