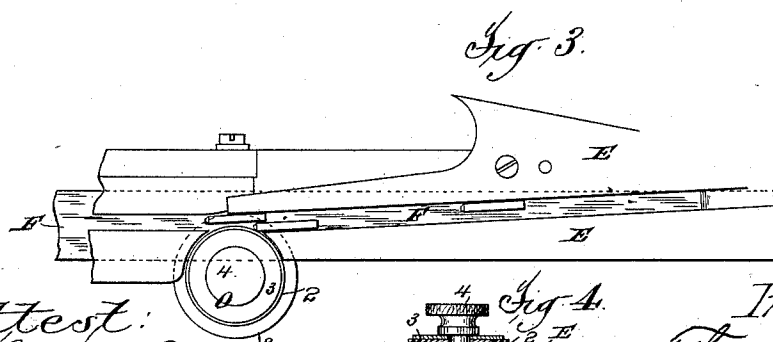
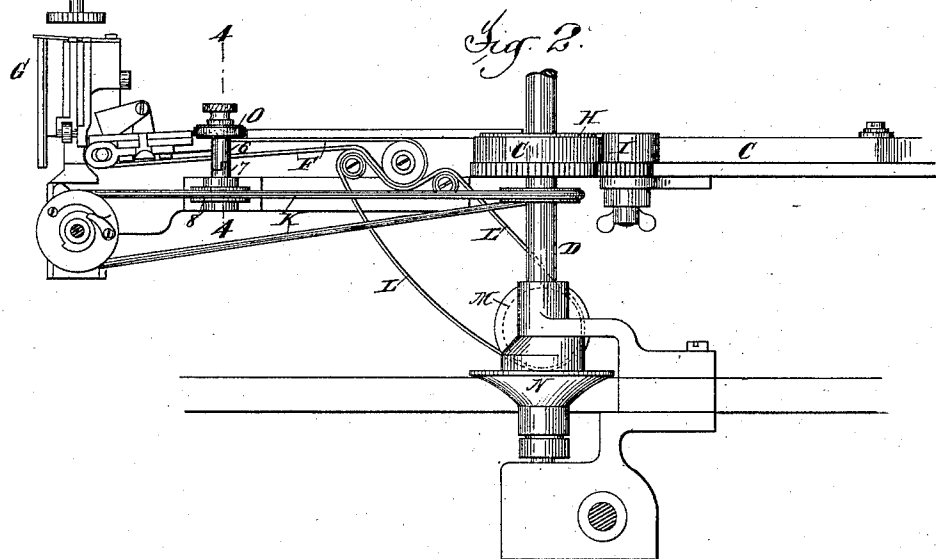
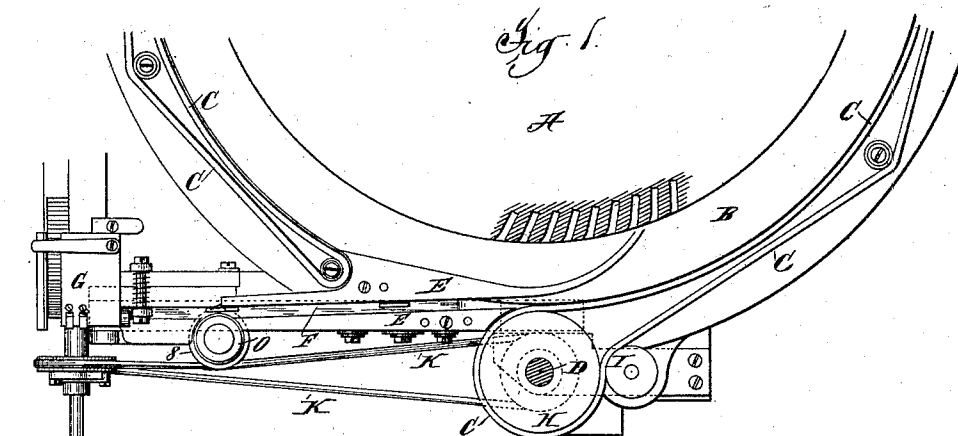


(No Model.)

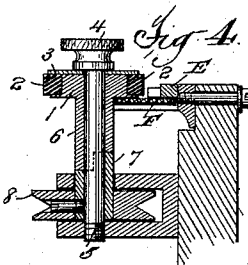
T. J. LUMIS.
TYPE SETTING AND DISTRIBUTING MACHINE.

No. 468,570.

Patented Feb. 9, 1892.



Attest:
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Inventor:
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by
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UNITED STATES PATENT OFFICE.

THOMAS J. LUMIS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE THORNE
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TYPE SETTING AND DISTRIBUTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 468,570, dated February 9, 1892.

Application filed September 23, 1891. Serial No. 406,551. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. LUMIS, a citizen of the United States, residing at Hartford, county of Hartford, and State of Connecticut, have invented certain new and useful Improvements in Type Setting and Distributing Machines, fully described and represented in the following specification and the accompanying drawings, forming a part
10 of the same.

This invention relates to type setting and distributing machines employing a type-conveying belt by which the type are advanced in line to a composing-stick or other receiver
15 or to mechanism requiring the type to be fed thereto singly and in order as delivered to the type-conveying belt.

The object of the invention is to provide an improved means for securing the delivery of
20 the type one by one and in the proper order.

In type-setting machines in which the type are delivered from the composing-case by key-operated mechanism and advanced by a type-conveying belt to the composing-stick or packing
25 ing mechanism therefor it has been found important for the rapid operation of the machine that some means should be provided for separating two or more type that are advanced by the type-conveying belt in such a
30 position as to pass to the galley or packing mechanism together.

I provide a simple and efficient construction in which the type-conveying belt is led at a slight angle to the guide or guides employed for retaining and guiding the type on
35 the belt, and a separating-roll, preferably rubber-faced, is mounted above the belt and rotated in a direction opposite to the movement of the belt, the roll being so positioned relatively to the guide on the opposite side of the
40 belt that it permits the free passage of a single type, but engages and retards a second type reaching the roll before the preceding type has passed. When the preceding type
45 has passed, the retarded type is carried by the belt away from the roll and against the guide on the opposite side, so as to pass the roll and be advanced in line.

While my invention is of general application in other classes of type setting and distributing machines, the construction embody-

ing the same has been devised especially for use in a type-setting machine of the general construction shown and described in United States Letters Patent Nos. 232,157, 283,934, 55 372,186, 372,187, and 417,057, and it will be shown and described as thus applied.

The organization and operation of the parts of the machine in connection with which the improvement of the present invention is used
60 are fully set forth in the above Letters Patent, and only a sufficient showing will be made to illustrate the application of the present improvement, reference being made to the above-named Letters Patent for a full showing and description of the packing mechanism
65 and other parts of the machine not fully shown and described herein.

In the accompanying drawings, forming a part of this specification, Figure 1 is a horizontal section of a type-setting machine of the general construction of the above-named Letters Patent, showing a portion of the composing-case in section. Fig. 2 is a side elevation of the same. Fig. 3 is a detail section of the separating devices on an enlarged scale. Fig. 4 is a section on the line 4 4 of Fig. 2 on the same scale.

Referring to said drawings, it will be understood that A is the composing-case; B, the
80 revolving type-carrying table; C, a guard-belt extending about the table and by which the table is driven from the shaft D; E, the side guides by which the type are guided from the type-carrying table and between which they
85 are advanced by the type-conveying belt F to the packing mechanism G, by which the type are packed in the composing-stick. The guard-belt C is driven from the shaft D by a pulley H, and an eccentrically-mounted tightening-roll I, driven from the shaft D, is used
90 to take up slackness in the belt C as it passes about the table B. The packing mechanism G is driven from the shaft D by a driving-belt K, actuated from a pulley on the shaft. The
95 type-conveying belt F is driven by a belt L, by which it is frictionally engaged, and which in turn is driven by a pulley M, actuated from the shaft D by a disk N, carried thereby, the pulley M being preferably geared to the shaft, 100 so as to be positively driven thereby, and the disk N, pressing against the pulley M suffi-

ciently to drive the belt and being run at a slightly-higher speed than the pulley M, so as to take up the slackness on the driving side of the belt L between the type-conveying belt 5 and driving-pulley M.

The general construction and operation of these parts as thus far described is substantially the same as that of the patents above referred to, except the arrangement of the 10 guard-belt C and the driving mechanism for the type-conveying belt, which, however, form no part of the present invention, but are described and claimed, respectively, in my applications, Serial Nos. 403,537 and 406,552, 15 filed August 26, 1891, and September 23, 1891. It will be understood that any other mechanism may be used for driving the type-conveying belt, the form of this mechanism being immaterial so far as the present invention is 20 concerned.

The type-conveying belt in the patents above referred to, however, is run parallel with the guide, while in the present case it is preferably run at a slight angle to the 25 guides E, as shown, this construction resulting in holding the type against the inner guide E as they are advanced by the belt. I mount above the belt E at a short distance from the packing mechanism a horizontally-rotating separating-roll O, this roll projecting 30 over the belt F and being positioned so that its rim moves at the proper distance from the inner guide E to permit the passage of a single type, but to engage and retard a second type reaching the roll before the preceding 35 type has passed it.

The separating-roll O may be constructed, mounted, and actuated in any suitable manner so as to rotate in the opposite direction 40 to the movement of the type-conveying belt F; but the roll is preferably faced with rubber or similar yielding friction material, so as to provide a yielding friction-surface for engaging the type. As shown, the roll consists of a disk 1, surrounded by a ring 2, of 45 rubber or similar material, clamped in position against a shoulder on the disk by a washer 3, pressed by a thumb-piece 4, having a screw-threaded shank 5, which is screwed 50 into the frame of the machine and forms the shaft upon which the disk rotates. The disk is provided with a shank 6, which is engaged by a sleeve 7, loose upon the shaft 5 and provided with a pulley 8, which is engaged by 55 the driving-belt K of the packing mechanism, as shown in Figs. 1 and 2, so as to be driven thereby.

The operation of the devices will be readily understood from the drawings and a brief 60 description.

The type are received from the channels of the composing-case by the type-carrying table B and advanced thereby to the guides E and through the guides to the type-conveying 65 belt F. As the type are advanced by the type-conveying belt they are carried against and held close to the inner guide E, because

of the angle made by the line of movement of the belt and the guide. If the type are in proper position as they reach the separating-roll O, they pass freely; but if two type reach 70 the separating-roll together, as shown in Fig. 3, the roll engages the second type and forces it back or retards it until the leading type has passed the roll, when the second type is 75 carried away from and past the roll by the type-conveying belt.

It will be seen that the type retarded by the separating-roll O is always that last delivered to the belt, so that the feeding of the 80 type in proper order, as well as in line, is thereby secured.

While I have shown two guides E, and this is the preferred construction, it is evident that the outer guide may be omitted opposite the belt, with the type-conveying belt 85 led as described, as the belt and inner guide will retain the type. The outer guide, however, assists in securing the correct operation of the separating-roll O in retarding the type. 90 While the belt F will preferably be led at a slight angle to the guide E, as shown, and this forms an important feature of my invention, the separating-roll may be used with a belt led parallel with the guides, and such 95 a construction forms a part of my invention, although the best results are not thus obtained.

It is evident that my invention is not to be limited to use with the specific form of machine or any of the specific forms of co-operating devices shown. 100

While I have shown and described my invention as applied to type setting and distributing machines, and this is the use for 105 which it is especially adapted, it is applicable also to use in machines in which articles other than type are to be fed in single line by a conveying-belt, and such uses are within my invention. 110

What I claim is—

1. The combination, with one or more guides, of a conveying-belt and a horizontally-rotating separating-roll above the belt, moving in the opposite direction to the belt, said roll 115 being mounted in position to permit the passage of a single type between it and the opposite guide, but to retard a type reaching the roll before the preceding type has passed it, substantially as described. 120

2. The combination, with one or more guides, of a conveying-belt moving at a slight angle to the guide or guides and a horizontally-rotating separating-roll above the belt, moving 125 in the opposite direction to the belt, said roll being mounted on the side opposite the guide toward which the belt carries the type and in position to permit the passage of a single type between it and the opposite guide, but to retard a type reaching the roll before the preceding type has passed it, substantially as 130 described.

3. The combination, with one or more guides, of a conveying-belt moving at a slight angle

to the guide or guides and a horizontally-rotating separating-roll above the belt, moving in the opposite direction to the belt, said roll being faced with rubber or similar material and mounted on the side opposite the guide toward which the belt carries the type and at a distance from the guide to permit the passage of a single type, but to retard a type reaching the roll before the preceding type has passed it, substantially as described.

4. The combination, with the composing-case A, of the rotating type-carrying table B, guide or guides E, to which the type pass from the type-carrying table, type-conveying belt F, moving at a slight angle to the guide or guides, packing mechanism G, to which the type are conveyed by the type-conveying belt,

and horizontally-rotating separating-roll O above the belt, rotating in the opposite direction to the movement of the belt, said roll being mounted on the side opposite the guide toward which the belt carries the type and at a distance from the guide to permit the passage of a single type, but to retard a type reaching the roll before the preceding type has passed it, substantially as described.

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

THOMAS J. LUMIS.

Witnesses:

ROBERT W. NELSON,
A. L. ULRICH.