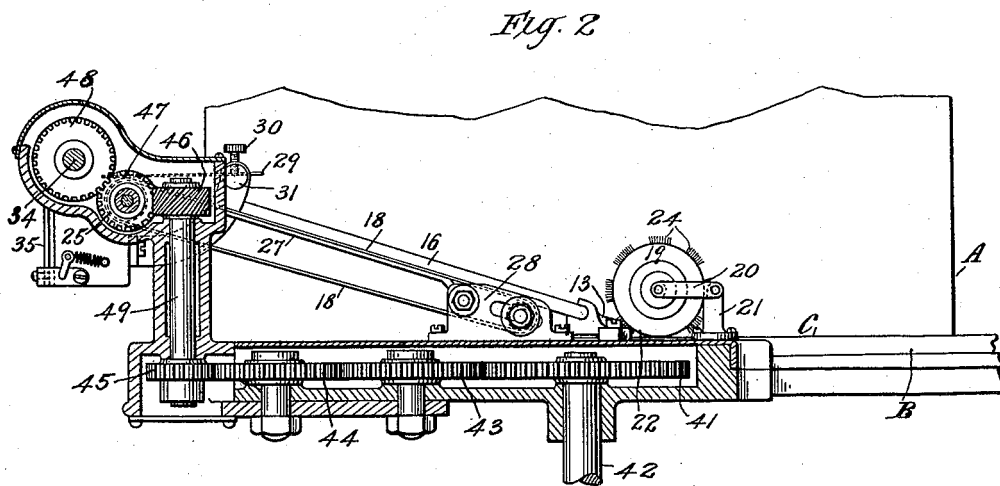
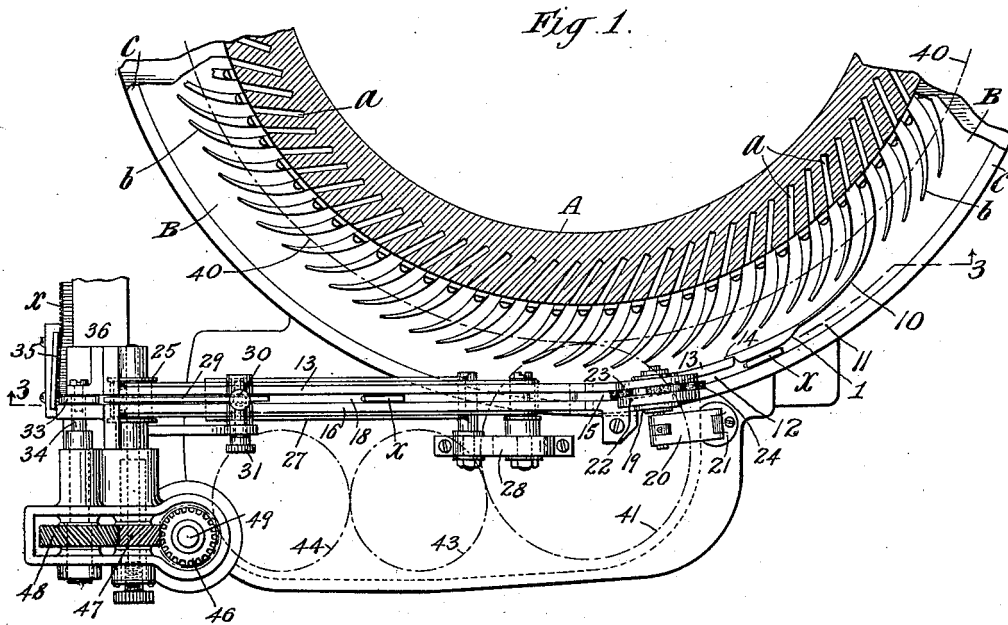


E. F. LINKE.
 TYPE SETTING MACHINE.
 APPLICATION FILED JULY 10, 1913.

1,150,134.

Patented Aug. 17, 1915.

2 SHEETS—SHEET 1.



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UNITED STATES PATENT OFFICE.

EMIL F. LINKE, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE UNITYPE COMPANY,
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TYPE-SETTING MACHINE.

1,150,134.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EMIL F. LINKE, 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 Machines, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

The object of the present invention is to provide improved devices for assembling in line the type received from the type channels of a type setting machine.

The invention, in most of its features, is applicable generally in type setting machines; but the invention has been made in connection with machines of that class employing a rapidly rotating type carrying disk or table, and certain specific features of the invention are limited to such a construction. The invention will, therefore, be illustrated and described as applied to such a machine.

For a full understanding of the invention a detailed description of a construction embodying all the features of the same in their preferred form will now be given in connection with the accompanying drawings forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings—Figure 1 is a horizontal section of a part of a composing cylinder of a type setting machine now well known as the Unitype machine or Simplex machine, with the assembling devices of the present invention. Fig. 2 is a front elevation with parts broken away to show the construction. Fig. 3 is an elevation in section on the line 3 of Fig. 1. Fig. 4 is a detail section on the line 4 of Fig. 3. Fig. 5 is a side elevation in section on line 5 of Fig. 3. Fig. 6 is a plan of the typeway and rotating table, and Fig. 7 is a sectional elevation in detail of the type adjusting device.

Referring now to the drawings, A is the composing cylinder having the usual type channels *a* and fingers *b*, between which fingers the type *x* are delivered onto the rotating table B. The table B has an upwardly extending flange or guard *c* rotating with the table against which the type are

moved by centrifugal force as the table rotates, all of these parts being well known.

As shown in Figs. 1 and 6, one of the fingers *b* has a spring extension 10 so shaped as to form with the flange *c* a converging channel 11, and said extension has a rounded shoulder 1 on the inner side of the channel. This channel is the entrance to a typeway 12 formed on one side by the flange *c* and on the other by the resilient extension guard 10 and a rigid guard 13. Should two type be carried by the rotating table to the typeway at the same time, the inner type will be temporarily detained by the shoulder 1 on the resilient guard, while the outer one, in contact with the flange *c*, will be carried past and into the typeway ahead of the other: the guard 10 first yielding to prevent breaking or jamming of the type and then springing back into place when the second type is free to move forward from the shoulder 1 in its turn. A lug 14 upon the guard 10 contacts with the guard 13 to limit the outward movement of the guard 10.

As shown in Figs. 3 and 6, the typeway 12 curves in an arc and then continues in a tangent line 15, and the typeway leaves the surface of the rotating table at the end of the curve and rises at an incline, the typeway now being formed by the guard 13, guard 16, and inclined plate 17, all of which parts form a stationary bridge from the end of which the type are delivered to a rapidly moving belt 18 which carries them to the place of assembly.

The movement of the type from the rotating table B to the belt 18 through the stationary part of the type-way is made certain by a brush wheel 19, the lower brush part of which contacts with the type just as they leave the table B and drives them up the inclined way or bridge to the belt. As shown in Figs. 1 and 2, this wheel is carried by an arm 20 pivoted to a standard 21 attached to the frame, the construction permitting vertical movement of the wheel. In Fig. 5, the part 22 of the periphery of the wheel is shown in frictional contact with the flange *c* of the rotating table B, and the weight of the wheel together with the method of mounting causes it to be driven by this contact with the flange *c*. The part 23 of the wheel is shown in the same figure as just clearing the guard 13 while the brush part 24 clears the bottom of the typeway.

It is found in practice that it is preferable to use a brush wheel formed with its brush surface in sections, and spaces between the sections, as shown, a better feeding action
 5 on the type being thus secured, the spaces between the sections affording openings into which the leading end of a type may be fed and preventing choking which otherwise might occur.

10 The belt 18 is mounted upon pulleys 25, 26, the latter of which is adjustable as indicated in Figs. 1 and 2 in order to vary the belt tension. A suitable space is provided between the end of plate 17 and the pulley
 15 26 to permit of this adjustment. The belt is further provided with a plate 27 bolted to the standard 28 the purpose of which is to steady the type carrying part of the belt and prevent flapping or undue vibration.

20 The type are carried endwise and in serial order by the belt and as they reach the delivery end of the belt they pass underneath a light spring 29, best shown in Figs. 3 and 7, which operates to maintain the type
 25 in a horizontal position during the time they are moving off the belt as it passes over the periphery of pulley 25. The tension and position of the spring 29 are determined by the screws 30 and 31 shown in
 30 Fig. 1. The screw 30 acts to hold the spring 29 in adjusted longitudinal position in the spring carrier, which spring carrier is mounted to rotate in its support for adjusting the spring tension, and is locked in ad-
 35 justed position by set screw 31.

The delivery of the type into the assembling channel 32 is completed by fingers 33 mounted upon a rotating shaft 34 which contact with the type as it is delivered from
 40 the belt, and carry it against a stop plate 35 preferably formed of celluloid or such similar material as will not injure the face of the type, and pack the assembled type downward through the curved delivery
 45 channel 36, the plate 35 preferably being inclined, as shown in Fig. 1 to align the type and correct any failure of the fingers 33 to complete this part of the work during the assembling.

50 The driving mechanism may be of any suitable character, but the driving mechanism shown is simple and efficient and is preferably used. The rotating table is provided with a gear indicated at 40 in Fig. 1
 55 which is driven by a gear 41 carried upon a vertical driving shaft 42. The gear 41 also drives the vertical shaft 49 through the gears 43, 44, and 45. The vertical shaft 49 drives the belt pulley 25 through gears 46
 60 and 47 while the shaft 34 carrying the fingers 33 is driven from gear 47 by means of gear 48.

It will be understood that the assembling devices may be used with other suitable type
 65 selecting means, and that the invention is

not to be limited to the specific construction or arrangement of parts shown as forming my improved assembling devices; but that these may be modified while retaining the invention as defined by the claims. 70

The invention has been described as embodied in a machine for handling ordinary printers' type, but it will be understood that it may be applied also in machines for handling matrices, and the term "type" used
 75 herein is to be understood as including matrices. Certain features of the invention may be embodied, also, in devices for handling other small articles, and these features are claimed for all such uses. 80

What is claimed is:—

1. A typeway having a converging entrance and including a resilient guard forming a wall of the entrance, said guard being provided with a rounded shoulder to prevent
 85 choking the entrance by a plurality of type entering together.

2. A typeway having a converging entrance, a fixed wall on one side of the entrance, and a resilient guard forming the
 90 opposite wall of the entrance.

3. A typeway having side walls and a moving bottom, one of the side walls being fixed and the other adapted to yield later-
 95 ally.

4. The horizontally rotating table B, and flange c, in combination with resilient guard 10 having shoulder 1, and a typeway receiving the type from the guard.

5. A horizontal type-carrier, a type-carrier
 100 inclined upwardly in the direction of movement of the type, a bridge or chute connecting the carriers, and means for moving the type across the bridge from the horizontal type-carrier onto the upwardly in-
 105 clined type-carrier.

6. A horizontal typeway having a moving bottom, an upwardly inclined typeway having a moving bottom, a bridge connecting the two ways, and a rotating brush wheel
 110 to impel the type across the bridge onto the moving bottom of the upwardly inclined typeway.

7. A horizontally rotating carrying table, a type carrier comprising a moving belt
 115 adapted to support and carry the type endwise and in series, and a guideway for directing the type from the table to said type carrier, and a rotating brush in said guideway for feeding the type to the carrier. 120

8. A type carrier comprising a moving belt in combination with means pressing upon the type transversely to the belt as it leaves the delivery end of the belt with such pressure as to hold the type in hori-
 125 zontal position as they leave the belt.

9. A type carrier comprising a moving belt in combination with a spring pressure device acting transversely to the belt against the type on the delivery end of the belt with 130

such pressure as to cause the delivery of the type in a horizontal position.

5 10. A type carrier comprising a moving belt inclined from the horizontal in combination with a horizontal plate spring pressing upon the type transversely to the belt at the delivery end of the belt with such pressure as to cause the delivery of the type in a horizontal position.

10 11. In combination, the inclined belt 18, belt pulleys 25 and 26, and spring 29 pressing on the type on pulley 25 with such pressure as to hold the type in horizontal position as they leave the belt.

15 12. In combination, the belt 18, pulleys 25 and 26, and spring 29 pressing on the

type on pulley 25, and rotating packer 33, said spring acting to hold the type horizontal as they pass from the belt to the packer.

13. In combination, the belt 18, pulleys 25 and 26, spring 29 pressing on the type on pulley 25, rotating packer 33, curved type channel 36, and stop plate 35.

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

EMIL F. LINKE.

Witnesses:

S. E. BROWN,
T. F. KEHOE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."