

(No Model.)

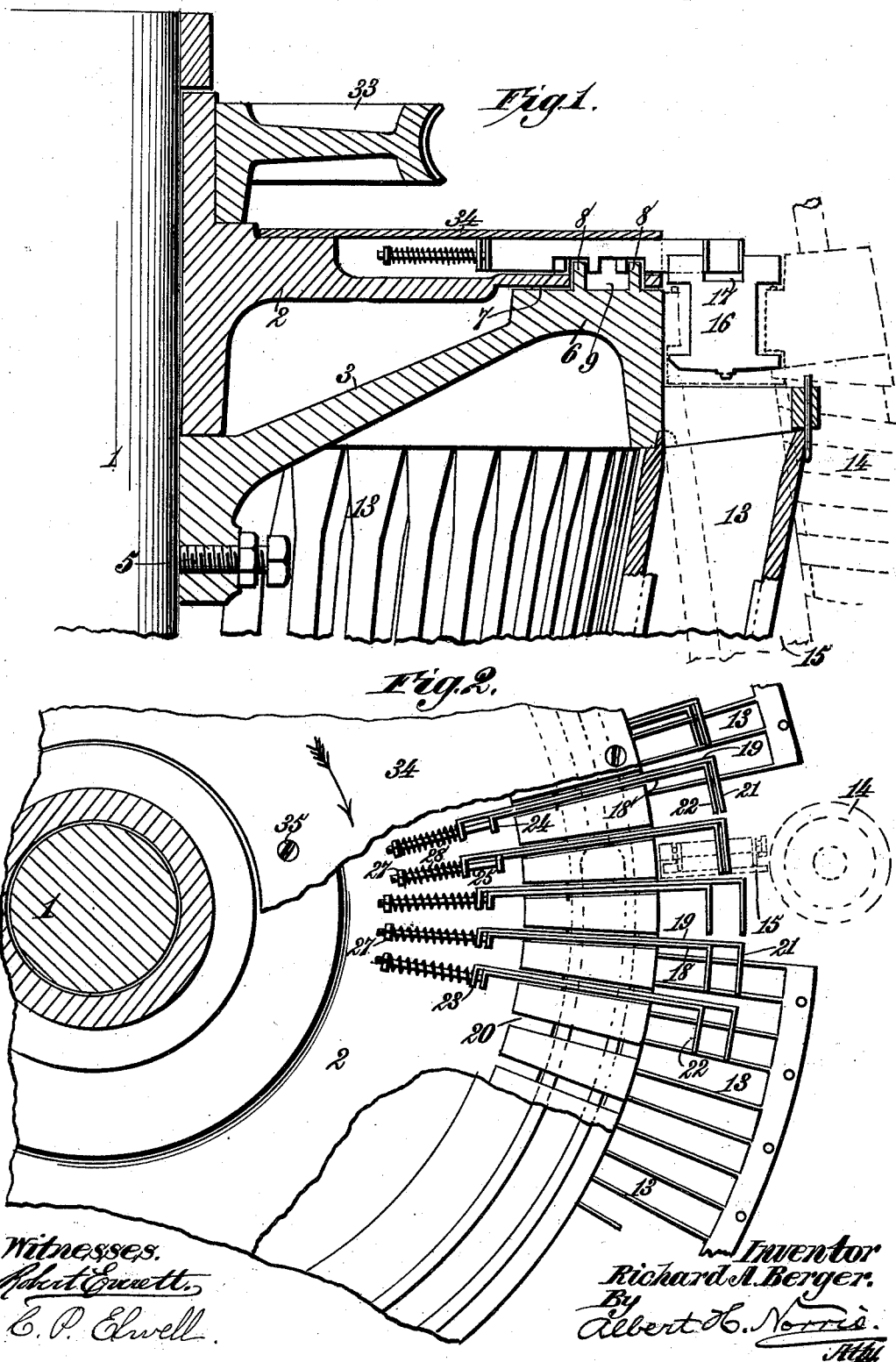
2 Sheets—Sheet 1.

R. A. BERGER.

TYPE DISTRIBUTER FOR LINE CASTING MACHINES.

No. 537,668.

Patented Apr. 16, 1895.



Witnesses.
Robert G. Swett.
C. P. Elwell.

Inventor
Richard A. Berger.
By *Albert H. Norris.*
Atty

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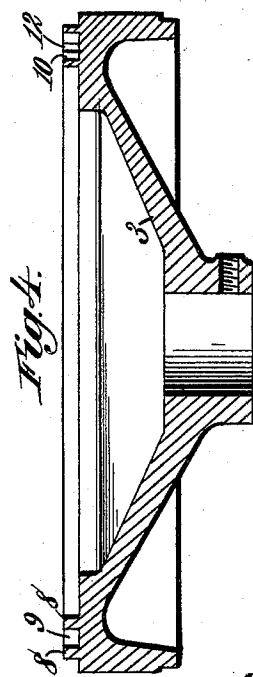
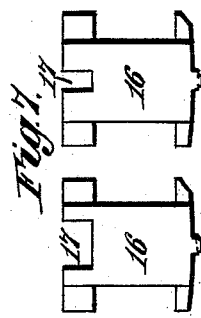
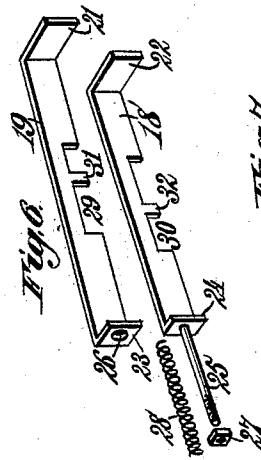
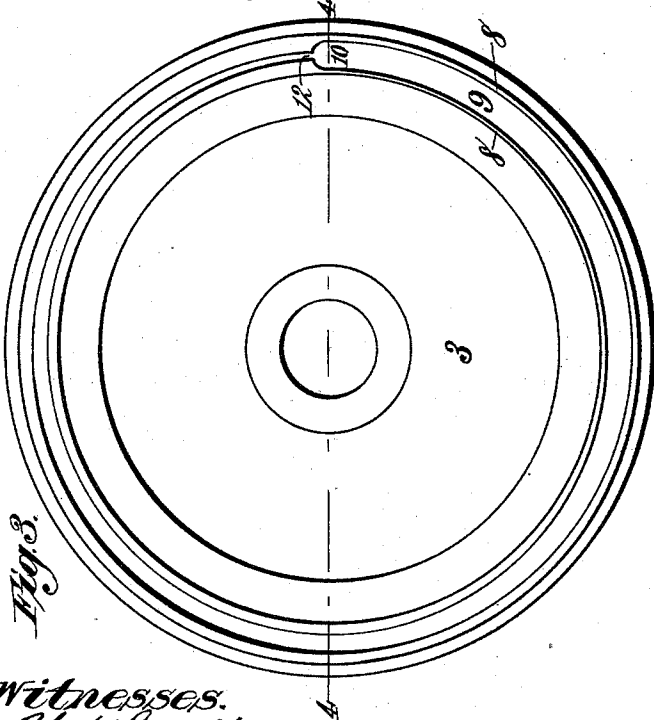
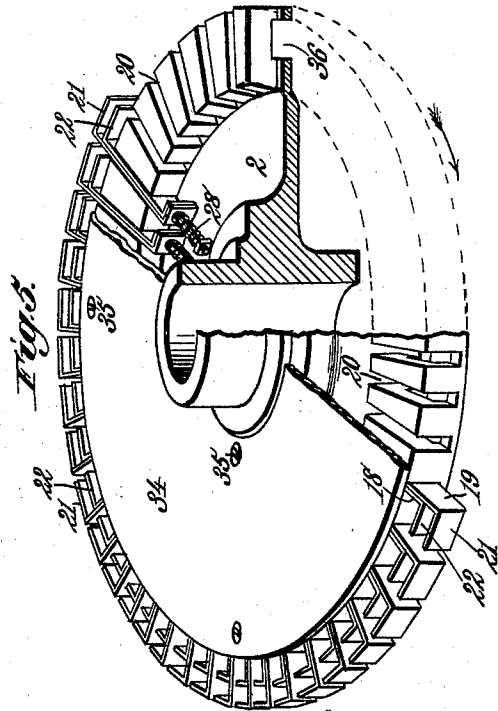
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UNITED STATES PATENT OFFICE.

RICHARD A. BERGER, OF BROOKLYN, NEW YORK.

TYPE-DISTRIBUTER FOR LINE-CASTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 537,668, dated April 16, 1895.

Application filed January 2, 1895. Serial No. 533,561. (No model.)

To all whom it may concern:

Be it known that I, RICHARD A. BERGER, a citizen of the United States, residing at Brooklyn, in the county of Kings and State of New York, have invented new and useful Improvements in Type-Distributers for Line-Casting Machines, of which the following is a specification.

This invention relates to type-line casting machines, or machines for producing type-high printing bars either by casting the printing-bar direct from a line of types bearing female characters, or by causing a line of male type to indent suitable matrix material to form a line of matrices from or by which the line of type or printing-bar is cast.

In type-line casting machines the types, whether male or female, are released from channels or cells in a magazine through the medium of finger-key mechanism, and are assembled in a line, and after the line of type or printing-bar is cast from or by the line of female types, or from or by a line of matrices produced by impressing male type into matrix material, the types are successively raised to a distributing mechanism and automatically assorted into the channels or grooves of the magazine.

The object of the present invention is to provide new and improved means for successively taking the types from the elevating mechanism and carrying them over and automatically depositing them into the channels or cells of the magazine, each type in its proper compartment.

To accomplish this object my invention involves the features and the construction and combination of parts hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a broken sectional view, showing portions of the upper end of the magazine, the type-elevating screw, the rotary-carrying disk or wheel, and the fixed disk or plate. Fig. 2 is a broken top plan view of the same. Fig. 3 is a detail top plan view of the stationary disk or plate having the gradually diminishing channel or groove. Fig. 4 is a sectional view taken on the line 4—4, Fig. 3. Fig. 5 is a detail broken perspective view of

the rotary-carrying disk or wheel. Fig. 6 is a detail perspective view of one pair of relatively movable plates having jaws to engage the types; and Fig. 7 is a view showing in side elevation two types, one having a wide notch or slot, and the other a narrow notch or slot.

I will describe my invention with reference to the line-casting machine disclosed in Letters Patent No. 510,853, issued December 12, 1893, to Joseph C. Fowler, as my invention is an improvement in the devices located above the upper ends of the magazine channels, or cells for carrying the types over and automatically depositing them into said channels or cells, each type in its proper compartment. For this reason I do not consider it essential to illustrate more than is exhibited by the accompanying drawings, as all other parts, or parts not shown, may be the same, or substantially the same as described and shown in the patent referred to, or of any other construction suitable for the conditions required.

In the drawings the numeral 1 indicates the fixed vertical axis or column which rises from a suitable part of the machine frame, and constitutes at or near its upper end a bearing for the rotary carrying disk or plate 2, beneath which is located a non-rotary or stationary disk or plate 3 secured to the vertical axis or column in any suitable manner, preferably by a set-screw 5 passing through the central hub of the disk or plate, and engaging the axis or column. The rim 6 of the non-rotary disk or plate is horizontal or flat on its upper surface, as at 7, and this surface is provided in any suitable manner, preferably by upwardly extending flanges 8, with a channel or groove 9, which gradually and uniformly diminishes in width from the widest part, as at 10, Fig. 3, around to the point of beginning, or to the narrowest point, as at 12. The channeled or grooved plate or disk is arranged above the separate channels or cells 13 of the type-magazine, Fig. 1, from the lower ends of which channels or cells, the types are released in the order required to assemble or compose a line, through the medium of the usual escapements and finger-key connections. After the line of assembled types has been utilized either for in-

denting or for direct line-casting, the types are elevated by the spiral lift or screw 14 through the inclined guide 15, and are successively raised to the position shown in Fig. 1, the same, or substantially the same, as in the Letters Patent before mentioned. The types 16, Figs. 1 and 7, in the present invention, are, however, each provided in its top or upper edge, or the edge opposite the male or female character with a notch or slot 17. The notches or slots differ in width in all the types of the group or set employed in the machine, but the difference in width is gaged to a very slight degree, in order to practicably distribute all the types of the group or set in a comparatively small space. When each type reaches the position shown in Fig. 1, it is engaged and carried in a circular path by projections or jaws on pairs of plates which I will now describe in detail.

The plates 18 and 19 are arranged in pairs, and one plate of each pair is slidable lengthwise contiguous or adjacent to the other plate of the pair, and in practice there will be a sufficient number employed to distribute all the respective type characters used in the machine, as well as spacers, punctuation marks, and the like. Inasmuch as all the pairs of plates are, in substance, the same in construction and operation, a description of one pair is deemed sufficient for all.

The two plates 18 and 19 are flat pieces of steel, arranged vertically edgewise in a radial groove 20, constructed or provided in the upper side of the rotary carrying disk or plate 2. The outer ends of the steel plates are provided with laterally extending projections or jaws 21 and 22, and the inner ends of the plates are provided with flanges or lugs 23 and 24. The lug 24 carries a stem 25 which extends through an orifice 26 in the lug 23, and between the lug 23 and a nut 27, screwed on the inner end of the stem 25, is arranged a spiral or other suitable spring 28, in such manner that this spring constantly tends to press the lugs 23 and 24 together, and thereby spread the projections or jaws 21 and 22 apart.

The plates 18 and 19 are constructed intermediate their extremities with recesses 29 and 30 and pendent studs 31 and 32. The recesses 29 and 30 receive the flanges 8 which constitute the sides of the channel or groove 9, and the studs 31 and 32 project into said channel or groove, all in such manner that when the carrying-disk or plate 2 is rotated in the direction of the arrow, Figs. 2 and 5, the studs 31 and 32 at the narrowest part of the channel or groove 9 will be acted upon by the sides of the channel or groove to hold the projections or jaws 21 and 22 contiguous or in close proximity, so that they can enter the notch or slot 17 of the type standing in the position indicated in Fig. 1. The projections or jaws 21 and 22 enter the notch or slot 17 of the type, while the studs 31 and 32 are at the narrowest part of the channel or groove 9, and the instant the studs emerge from the nar-

rowest part of the channel or groove into the widest part thereof, as at 10, the two plates 18 and 19 are moved by the spring 28 relatively to one another, so that the projections or jaws 21 and 22 are separated and caused to bind against the side edges of the notch or slot 17 in the type, thereby holding the type and carrying it in a circular path. The widths of the notches or slots 17 in the type 16 will correspond substantially in regular order with the dimensions in cross section of the channel or groove over the respective channels or cells of the magazine, so that when the projections or jaws 21 and 22 engage the side edges of the notch or slot 17 in a type, the studs 31 and 32 will not be acted on by the side edges or walls of the channel or groove 9 until the point is reached where the type is over the magazine channel or cell in which it should be deposited or dropped, whereupon the side edges or walls of the channel or groove will impinge against the studs 31 and 32, and instantly move the projections or jaws slightly toward one another, thereby releasing the type and permitting it to descend by gravity into the appropriate magazine channel or cell.

The carrying disk or plate 2 is provided with a worm-wheel 33, fixed to the hub of the disk or plate, and rotated in the same manner as is disclosed in Fowler's patent referred to. The spiral lift or elevating screw 14 is also rotated in the same manner as the spiral lift or screw in the patent mentioned, and all the parts are so timed as to their speed of rotation that the types will be successively raised to the position represented in Fig. 1, to be immediately engaged by the projections or jaws 21 and 22 of the pairs of plates 18 and 19. The radial movements of the plates 18 and 19 are confined within certain limits by the edges of the recesses 29 and 30 engaging the flanges 8.

The pairs of plates 18 and 19 are all confined within the proper radial grooves 20 by a cap-plate 34, applied to the upper side of the rotary carrying disk or plate 2, and secured thereto by screws 35, as will be clearly understood by reference to Fig. 5.

The lower side of the rotary carrying-disk or plate is constructed with an annular groove, as at 36, Fig. 5, to receive and accommodate the flanges 8 provided on the upper side of the non-rotary disk or plate 3.

The non-rotary disk or plate 3 is preferably made of cast iron, and the pairs of radially movable plates 18 and 19 are preferably made of steel, so that wear is reduced to a minimum.

The invention provides novel, simple, and efficient means for use in connection with circulating types to deposit all types bearing the same character or letter into the same channel or cell of the magazine.

In the practical use of a machine embodying my invention I propose to use Fowler's elastic spacers, all of which will be provided with notches or slots of the same width, so

that all will be deposited in the same channel or cell from which they will be released by a finger-key in the same manner as in Fowler's machine.

5 The construction and arrangement of the rotary and non-rotary disks or plates are such that I am enabled to place the upper ends of the channels or cells of the magazine quite near the suspended types, so that the latter
10 drop perpendicularly directly into the channels or cells.

Having thus described my invention, what I claim is—

1. The combination in a type-distributing
15 mechanism, of a disk or plate having an annular channel or groove gradually diminished in width, a movable disk or carrier having pairs of movable plates, each pair provided with projections pressed apart to engage and
20 hold a type and with studs moving in the channel or groove and operated upon by the sides thereof to release the projections of the plates from the types when they reach the magazine channels or cells in which they
25 should be deposited, substantially as described.

2. The combination in a type-distributing mechanism, of a disk or plate having an annular channel or groove gradually diminishing in width from a certain point around to
30 said point of beginning, a rotary disk or carrier having pairs of radially movable plates, each pair provided with projections pressed apart to engage and hold types and with studs
35 moving in said channel or groove and acted upon by the sides thereof to release the types when they reach the magazine channels or

cells in which they should be deposited, substantially as described.

3. The combination in a type-distributing
40 mechanism, of a disk or plate having an annular channel or groove gradually diminishing in width from a certain point around to said point of beginning, a rotary disk or carrier having radial grooves and pairs of radi-
45 ally movable plates arranged in said grooves, each pair of plates provided with projections pressed apart to engage and hold types and with studs moving in said channel or groove and acted upon by the sides thereof to release
50 the types when they reach the magazine channels or cells in which they should be deposited, substantially as described.

4. The combination with the channels or cells of a magazine, of types having notches
55 or slots of varying width, a rotary disk or carrier having pairs of radially movable plates, each pair having projections or jaws to enter and engage the opposite edges of the notches or slots in the types, means for moving the
60 projections or jaws and causing them to engage the edges of the notches or slots in the types, and means for moving said projections or jaws to release the types when they reach
65 the magazine channels or cells in which they should be deposited, substantially as described.

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

RICHARD A. BERGER.

Witnesses:

CHARLES J. BRADLEY,
GERALD DORMAN.