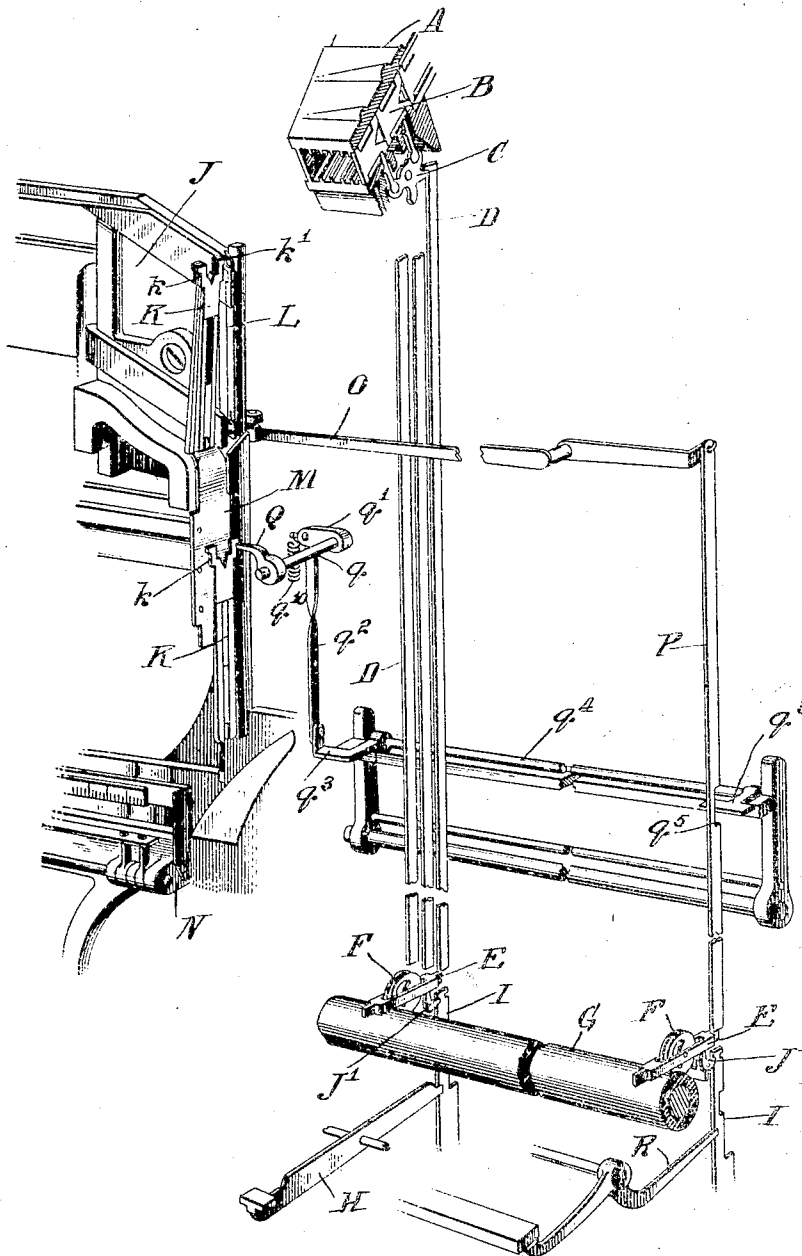


P. T. DODGE.
 TYPOGRAPHICAL MACHINE.
 APPLICATION FILED SEPT. 23, 1912.

1,056,267.

Patented Mar. 18, 1913.



Witnesses:
 L. L. Morrison
 W. R. Manning

Inventor
 Philip T. Dodge
 By his Attorneys
 Rogers, Kennedy & Campbell

UNITED STATES PATENT OFFICE.

PHILIP T. DODGE, OF NEW YORK, N. Y., ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

TYPOGRAPHICAL MACHINE.

1,056,267.

Specification of Letters Patent.

Patented Mar. 18, 1913.

Application filed September 23, 1912. Serial No. 721,828.

To all whom it may concern:

Be it known that I, PHILIP T. DODGE, a citizen of the United States, residing at New York, in the county of New York and State of New York, 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 has reference to typographical machines of the character represented in Letters Patent of the United States No. 436,532, wherein circulating matrices and circulating double wedge spaces or justifiers, stored in magazines, are released individually by finger keys, assembled temporarily in line, and the line presented momentarily to close the face of a slotted mold and form type characters on the edge of the printing slug or linotype cast therein, the line being thereafter transferred to distributing devices, by which the matrices and spacers are returned to their magazines.

In the machines as heretofore constructed, the spacers consist of two oppositely tapered wedges permanently united by a sliding joint, and are stored at a considerable distance above the level at which the lines are composed. When the keys are manipulated by very rapid operators, there is danger of the spacers and matrices being transposed, in other words, danger of a subsequently released matrix entering the line in advance of a spacer instead of behind it.

My invention is designed to prevent this occurrence.

To this end, it consists in means whereby the spacers are delivered one at a time from their magazine, necessarily remote from the composing point, and arrested and held in reserve at a point near the matrix line, so that when subsequently released, they may reach the line quickly and by a short movement,—the parts being so arranged that the final delivery of one spacer to the line is accompanied by the delivery of its successor from the magazine to the same point of detention.

I preferably arrange the parts so that the actuation of the spacer key effects both functions, first of releasing the spacer held in reserve near the line so that it may pass quickly thereinto, and second, of releasing another spacer from the magazine to take

the place of the previously mentioned one to be held similarly in reserve. Because of this arrangement, the spacer key is operated in the usual manner, namely, once between two consecutive words, the parts being so disposed that the spacer handling devices are entirely independent of the matrix delivering means. In this particular my invention is differentiated from that disclosed in the application of H. A. Armstrong, Serial No. 567,710, wherein the actuation of the spacer key releases a spacer from the magazine and delivers it to an arresting device, from which device it is subsequently released by the operation of the next matrix key through the connections therein shown and described. Because of my different construction, it will be seen that a spacer is always held in reserve in close proximity to the assembler, and may therefore be delivered thereto with such speed and certainty as to insure its proper position in advance of the subsequently released matrix or matrices.

In the accompanying drawing, I have shown my invention in preferred form and by way of example, and as applied to the Mergenthaler linotype machine, but obviously many variations and modifications therein, as well as in its mode of application, will suggest themselves to those skilled in the art without departure from its spirit.

The accompanying drawing is a perspective view, illustrating in outline the spacer magazine, the assembling elevator in which the line is composed, and the devices for releasing the matrices and spacers.

In the drawing, A represents the inclined channeled magazine in which the matrices B are stored as usual.

C represents one of the series of escapements for releasing the matrices from the magazine channels.

D represents the vertical escapement actuating reeds, one for each escapement.

E are the reed actuating yokes, mounted one below each reed, each yoke containing a lifting cam F arranged to contact with and ride upon a continuously rotating roll G.

H are finger keys representing the various matrix characters.

I are vertical bars, through which the angular yoke-sustaining dogs J are tripped,

and the yokes E permitted to descend in order that their cams may contact with the driving roll, so that when a key is operated, an escapement C is moved and the corresponding matrix released for delivery to the line in the course of composition, in the manner explained in Letters Patent of the United States, No. 530,931.

J is a stationary magazine in which the spacers or justifiers K are stored. These spacers are similar to those represented in Letters Patent of the United States No. 436,532, the shorter wedge having on its upper end lateral ears k by which they are suspended on the inclined side rails of the magazine.

L is one of a pair of vertical slides, by which the spacers are lifted clear of the detaining shoulders k' in the magazine and permitted to fall through a chute or channel M to the line in course of composition.

N is the assembling elevator formed with a horizontal channel to which the matrices and spacers are successively delivered, and in which they are composed side by side.

O is a centrally pivoted lever mounted in the main-frame, with one end connected to the spacer delivering slides L, and the opposite end connected to the vertical reed P, which receives its motion through a cam yoke mechanism and finger key R, identical with those employed for actuating the matrix escapements C, so that when the key R is depressed the slides L will deliver a spacer from the magazine. So far as described, the parts may be of the ordinary construction, well understood by those skilled in the art.

In carrying my invention into effect, I provide one or more stop fingers Q, mounted on a rock shaft q, and arranged in the path of the descending spacers, so that after each one is released from the magazine, it will be arrested thereby in the position shown in the drawing, with its lower end a short distance above the level at which the matrices are composed. The shaft q is provided with an arm q', connected by a link q'' to the rocker frame q'', which is mounted to turn on a stationary horizontal axis q'. This frame extends across the keyboard and its further end is arranged to enter a notch q⁵ in the reed P. When the key R is operated, the rod P is shifted and the slides L caused to deliver a spacer from the magazine J, the spacer descending until it is arrested by the stop Q immediately above the line. Due to the engagement of the notch q⁵ with the rocker frame q'', the movement of the reed P also effects the release of the preceding spacer K, temporarily held in reserve by the stop Q. It will be noted that to the arm q' is connected a spring q¹⁰, which acts to hold stop Q in its normal position and to return it speedily thereto when displaced.

The parts are so arranged and timed that they operate as follows: When the spacer key R is actuated, the corresponding cam F is thrown into engagement with the roll G and the reed P elevated. During this upward movement of the reed, the engagement of its notch q⁵ with the frame q'' rocks the stop Q upwardly and releases the spacer K held thereby, and simultaneously the slides L are lowered and engage under the ears k of the outermost spacer in the magazine J. The reed P then begins its return movement, the first effect of which is to permit the spring q¹⁰ to restore the stop Q to normal position. As this movement of the reed P continues, the slides L rise and elevate the next spacer K in the magazine, until its ears k clear the stop shoulders k', when it falls and is arrested by the stop Q, already in position to receive it. It will be seen, therefore, that a single operation of the spacer key R accomplishes two results: It first releases the spacer held in reserve by the stop Q and permits the restoration of the stop to normal position, and then releases another spacer from the magazine, which spacer is in turn arrested by the stop and held in position by it close to the line, so that the next actuation of the spacer key insures its speedy and certain delivery to the assembler in advance of the following matrix. From this construction and mode of operation, it follows that a spacer is always held in reserve at a point near the line in course of composition, and that thereby is avoided the liability to transposition which sometimes occurs at the hands of speedy or careless operators. As previously stated, I have shown my invention in preferred form and by way of example, but obviously many changes and alterations may be made therein and in its mode of application and still be comprised within 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 the spacer magazine, means for releasing spacers therefrom, and means to arrest a released spacer in advance of the line and subsequently to deliver it thereto, the operation of one of said means effecting the operation of the other.

2. In a typographical machine, the combination of the spacer magazine, means for releasing the spacers therefrom, means for arresting a released spacer in advance of the line, and a common actuating means for controlling both the releasing and arresting means.

3. In a typographical machine, the combination of the spacer magazine, means for arresting a spacer released therefrom, and connected means for releasing a spacer from

the magazine and controlling the arresting means.

4. In a typographical machine, the combination of the spacer magazine, means for releasing a spacer therefrom, means for arresting the released spacer in advance of the line, a key, and connections therefrom to control both the said releasing means and arresting means.

5. In a typographical machine, the combination of the spacer magazine, means to arrest a spacer released from the magazine, and conjointly-acting means to release the arrested spacer and to deliver another spacer from the magazine to the arresting means.

6. In a typographical machine, the combination of the spacer magazine, means for releasing a spacer therefrom, means to arrest the released spacer and subsequently to deliver it to the line, and connections between said releasing and arresting means, whereby a spacer delivered by the arresting device

will be replaced by another released from the magazine.

7. In a typographical machine, the combination of spacer releasing devices, means to arrest a released spacer and subsequently to deliver it to the line, and actuating means common to both the releasing devices and arresting means, and adapted to effect their operation at different periods.

8. In a typographical machine, the combination of a spacer magazine, means for arresting a spacer released from the magazine, matrix delivery means, and means independent of the matrix delivery means for causing the said arresting means to deliver the arrested spacer to the line.

In testimony whereof I affix my signature in presence of two witnesses.

PHILIP T. DODGE.

Witnesses:

E. J. LAMB,

WALTER MOBLARD.