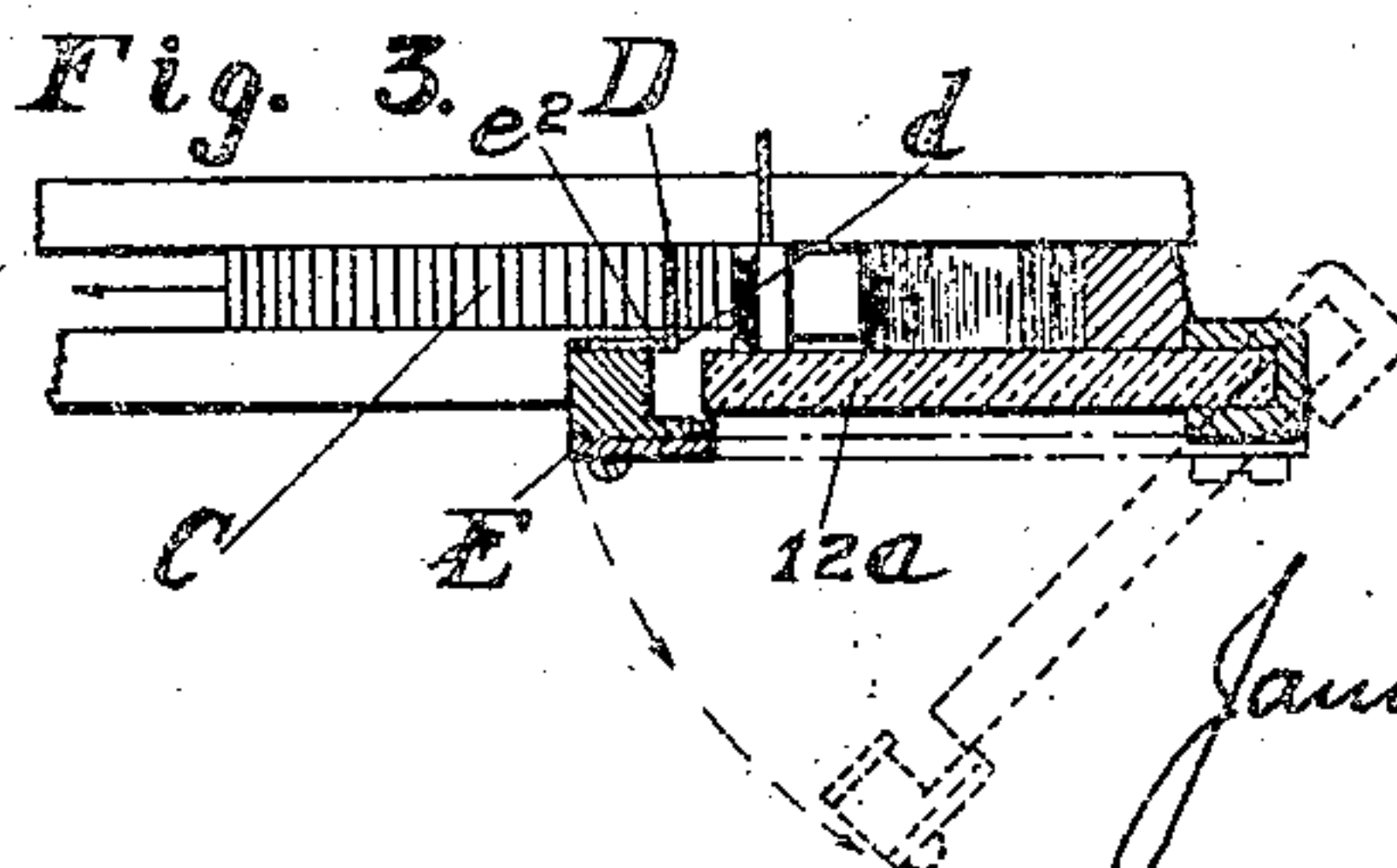
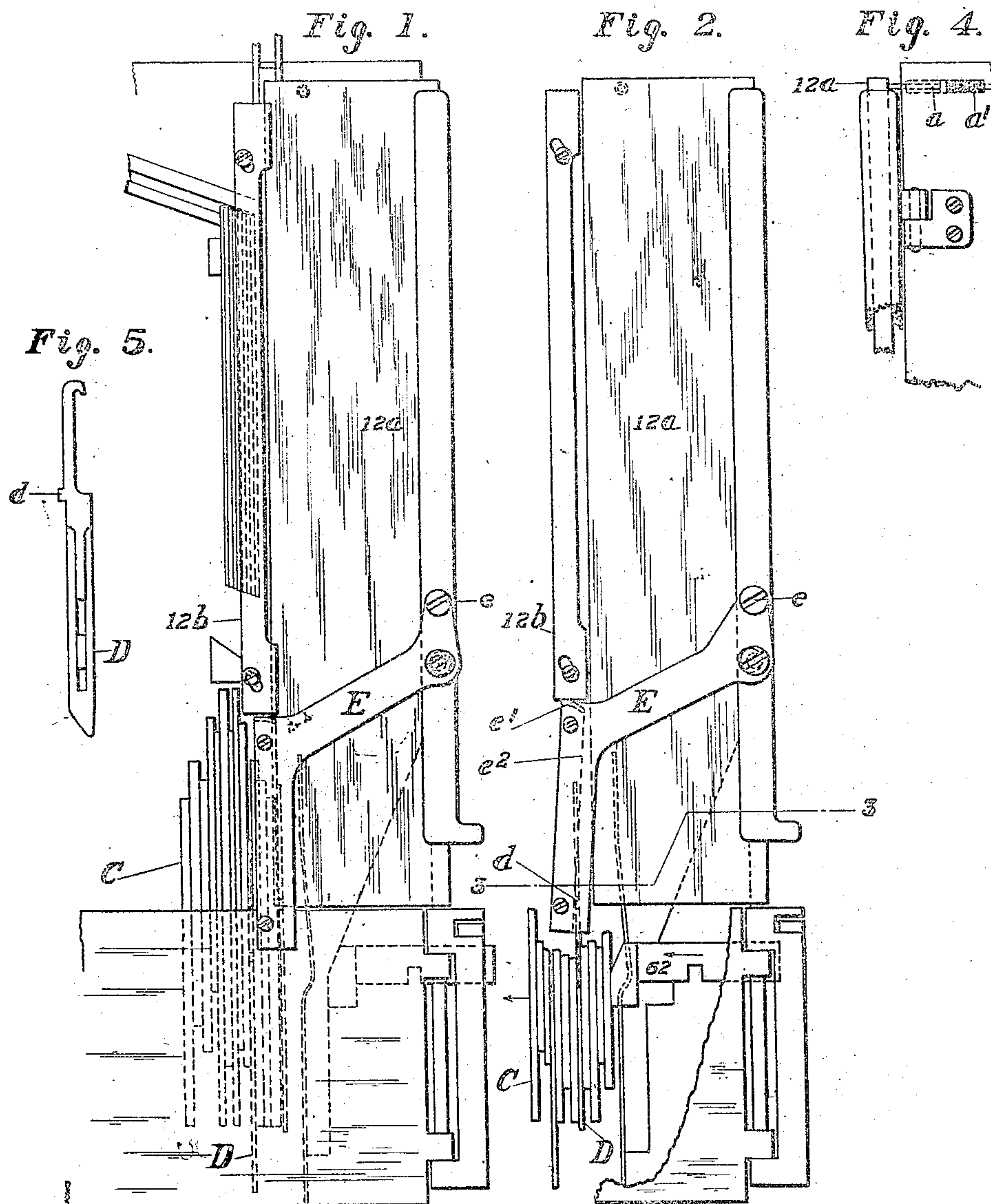


J. McNAMARA.
 LINE CASTING MACHINE.
 APPLICATION FILED JAN. 11, 1909.

920,617.

Patented May 4, 1909.



WITNESSES:
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UNITED STATES PATENT OFFICE.

JAMES McNAMARA, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR TO MERGENTHALER
LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINE-CASTING MACHINE.

No. 920,817.

Specification of Letters Patent.

Patented May 4, 1909.

Application filed January 11, 1909. Serial No. 471,555.

To all whom it may concern:

Be it known that I, JAMES McNAMARA, of Montreal, Province of Quebec, and Dominion of Canada, have invented a new and useful
5 Improvement in Line-Casting Machines, of which the following is a specification.

My invention has reference to line casting machines for producing printed bars or slugs, such, for example, as the machines known to
10 commerce under the trade marks "monoline," "linotype," etc. In these machines, circulating matrices stored in magazines are released in the order in which characters are to appear in print, and assembled or com-
15 posed in lines, together with expansible wedge spacers or justifiers, the composed lines being transferred to the face of a slotted mold, where they form type characters on the edges of type metal slugs cast suc-
20 cessively in the mold, after which the matrices and spacers are distributed and returned to their magazines. In this class of machines the spacers or justifiers consist of two oppositely tapered connected wedges.
25 After the composition of the line is completed, one wedge of each pair is lifted through the line past its companion and past the matrices, for the purpose of extending or thickening the spacer within the line, in order
30 to extend the latter to the predetermined length, this action being technically known as "justification." In practice it frequently happens during the composition of a line that one of the members of a spacer will fail to de-
35 scend to its proper position, and will extend too far above the adjacent matrices in the line. When this occurs, the upper ends of the elevated spacers are liable to contact with other parts of the machine during the
40 transfer of the line, with the result that they are injured or broken, and the proper operation of the machine prevented.

The aim of my invention is to cause an automatic indication of the fact whenever a
45 spacer stands above the proper level, and also cause an automatic stoppage of the composition.

My invention is susceptible of embodiment in a great variety of alternative or equivalent
50 forms, which will suggest themselves to the skilled mechanic after reading the following description.

For the purpose of illustration, I have shown my invention applied to a monoline
55 machine of the character represented in Let-

ters Patent of the United States #605,141 to W. S. Scudder, the arrangement being such that the elevated spacers act to unlatch the transparent door covering the channel
60 through which the matrices descend to the line, so that further composition is impossi- ble.

Referring to the accompanying drawings: Figure 1 is a front elevation showing the parts by which the line is assembled, with
65 my improved devices applied thereto,—the parts being in their normal or operative position. Fig. 2 is a similar view, illustrating the manner in which an elevated spacer acts to unlatch the transparent door. Fig. 3 is a
70 horizontal section on the line 3—3 of Fig. 2. Fig. 4 is a side elevation, showing the spring by which the door is automatically opened after being unlatched. Fig. 5 is a view of one
75 of the spacers.

Referring to the drawings, 12^a represents the vertical transparent door behind which the matrices and spacers descend to the end of the line in course of composition. The door is hinged at the right edge, so that it
80 may swing around horizontally, and it serves to close the front edge of the channels through which the matrices and spacers descend and assist in guiding them to the line, so that when open the addition of further
85 matrices to the line is prevented. The door is held normally in a closed position by a latch bar 12^b, having oblique slots through which pass retaining screws, the construc-
90 tion being such that the latch or slide descends by gravity toward the door so as to overlap its edge and hold it closed, as shown in Fig. 1.

So far as described, the parts may be constructed and arranged to operate in all re-
95 spects like the parts indicated by the same letters in the patent above referred to.

In carrying my invention into effect, I mount in the frame a horizontal sliding pin
100 *a*, bearing at one end against the inner face of the door and urged constantly forward by a spring *a*¹, so that when the door is unlatched by the rising movement of the slot-
105 ted bar 12^b, it will be automatically thrown open, as shown in Fig. 3. The matrices *C*, which are carried in the usual magazine, are released one at a time and descend behind the door to the end of the line which is being
110 composed, suitable devices being provided to assemble the matrices and spacers side by

side and to arrest the individual matrices—each of which contains several characters—at different heights, in order to bring the selected characters, one on each matrix, to a common line, as usual. The spacers D are of the form shown in Fig. 5 and described in detail in the patent above-referred to. They are released and descend behind the door 12^a one at a time, to the end of the line, in the same manner as the matrices. As successive matrices or spacers are added to the line, it is pushed forward to the left by the ejector slide 62, as in the original machine. Each spacer D should settle down in the line to the level shown in Fig. 1, but it will sometimes happen that a spacer will remain at a higher position, as shown in Fig. 2. For the purpose of causing these elevated spacers to release the door 12^a, I provide the lever E, pivoted to the frame at *e*, and arranged to bear at *e*¹ beneath the latch 12^b. This lever has a downwardly extending end with a vertical flange *e*², in such position that whenever an advancing spacer in the line stands above the proper position, the shoulder *d* of the spacer will encounter the flange and move the lever from the normal position shown in Fig. 1 to the position shown in Fig. 2, thereby lifting the slide 12^b and releasing the door 12^a, which is immediately thrown open as shown in Fig. 3 by the spring before referred to. When the door is thus opened, further composition is impossible, and the operator is compelled to push the spacer down to its proper place in the line and close the door before he can proceed with his operation.

It will be perceived that my contrivance serves not only as an indicator to warn the operator of an improperly placed spacer, but also as a stop to prevent further composition.

It will be obvious to the skilled mechanic that the devices may be connected with the usual stop mechanism of the machine, if desired, to positively prevent continued oper-

ation of the machine, or of any desired part of the same.

In the form shown the parts act both as an alarm or indicator to call the attention of the operator to the improper position of the spacer—and also as a means of positively preventing additions to the line until the spacer is in the proper position.

It will be understood that both the matrices and spacers may be of any practical form, and that my stop devices may be actuated by elevated matrices as well as by the spacers,—the lever E or its equivalent being shaped and located in each case, as the skill of the mechanic will dictate, to correspond with the other parts.

It is to be observed that my device, although compelling an interruption of the composition, permits all the operative parts of the machine to continue in action.

Having thus described my invention, what I claim is:

1. In combination with the hinged door to aid in guiding matrices to the line in course of composition, means controlled by high spaces in the line to cause the opening of the door.

2. In combination with the hinged door, a spring connection to open the same, a latch to hold the door closed means to support the composed line, and means operated by high members in the line to disengage the latch.

3. In combination means to support the composed line, the door, its confining latch, and the latch operating lever arranged to be operated by high members in the composed line.

In testimony whereof I hereunto set my hand this fourth day of January, 1909, in the presence of two attesting witnesses.

JAMES McNAMARA.

Witnesses:

WESLEY BARRETT,
WM. J. ROGERS.