

D. S. KENNEDY.
 TYPOGRAPHICAL MACHINE.
 APPLICATION FILED JULY 3, 1920.

1,397,971.

Patented Nov. 22, 1921.

3 SHEETS—SHEET 1.

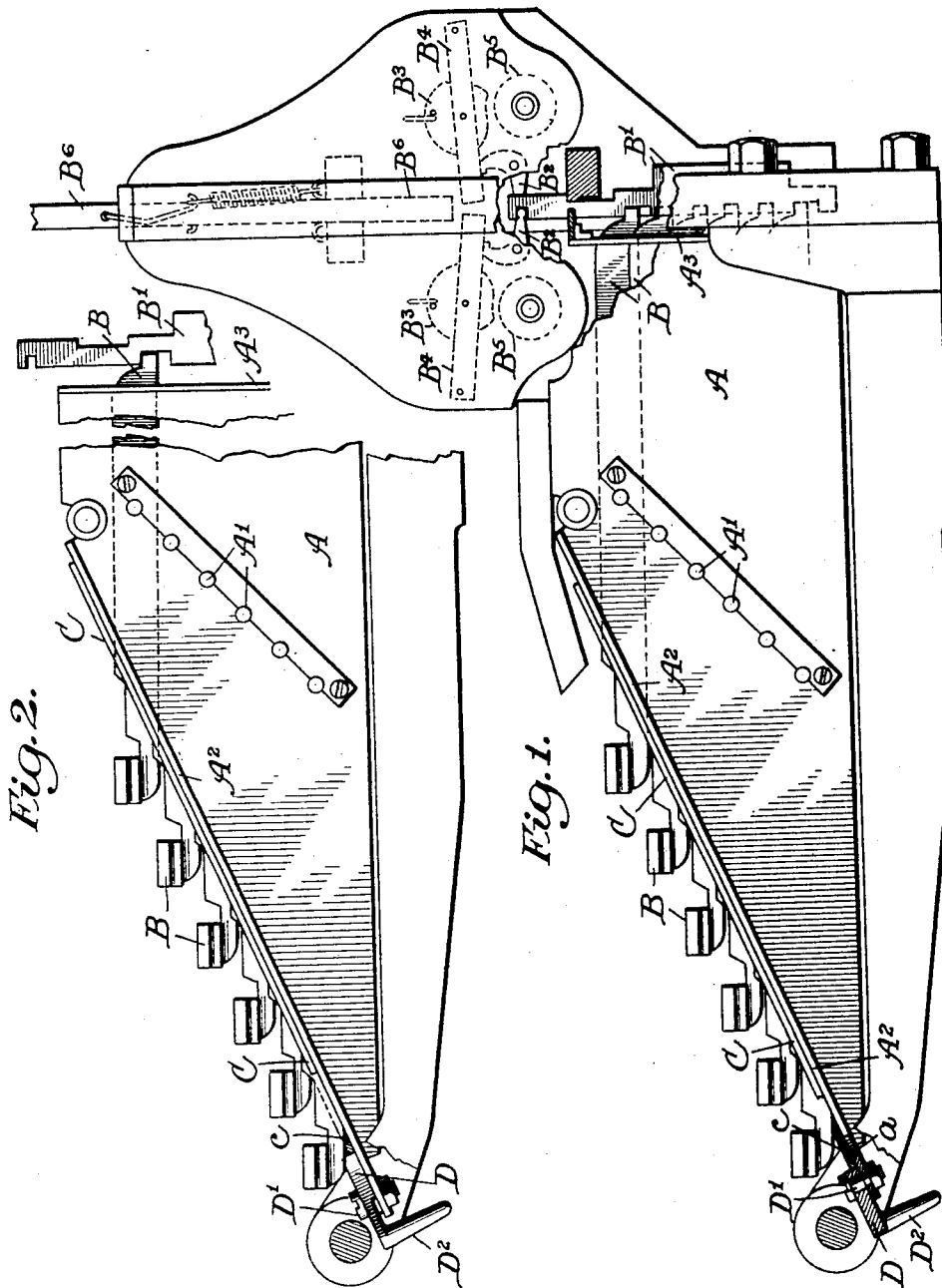


Fig. 2.

Fig. 1.

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David S. Kennedy

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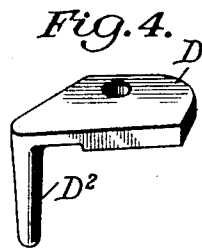
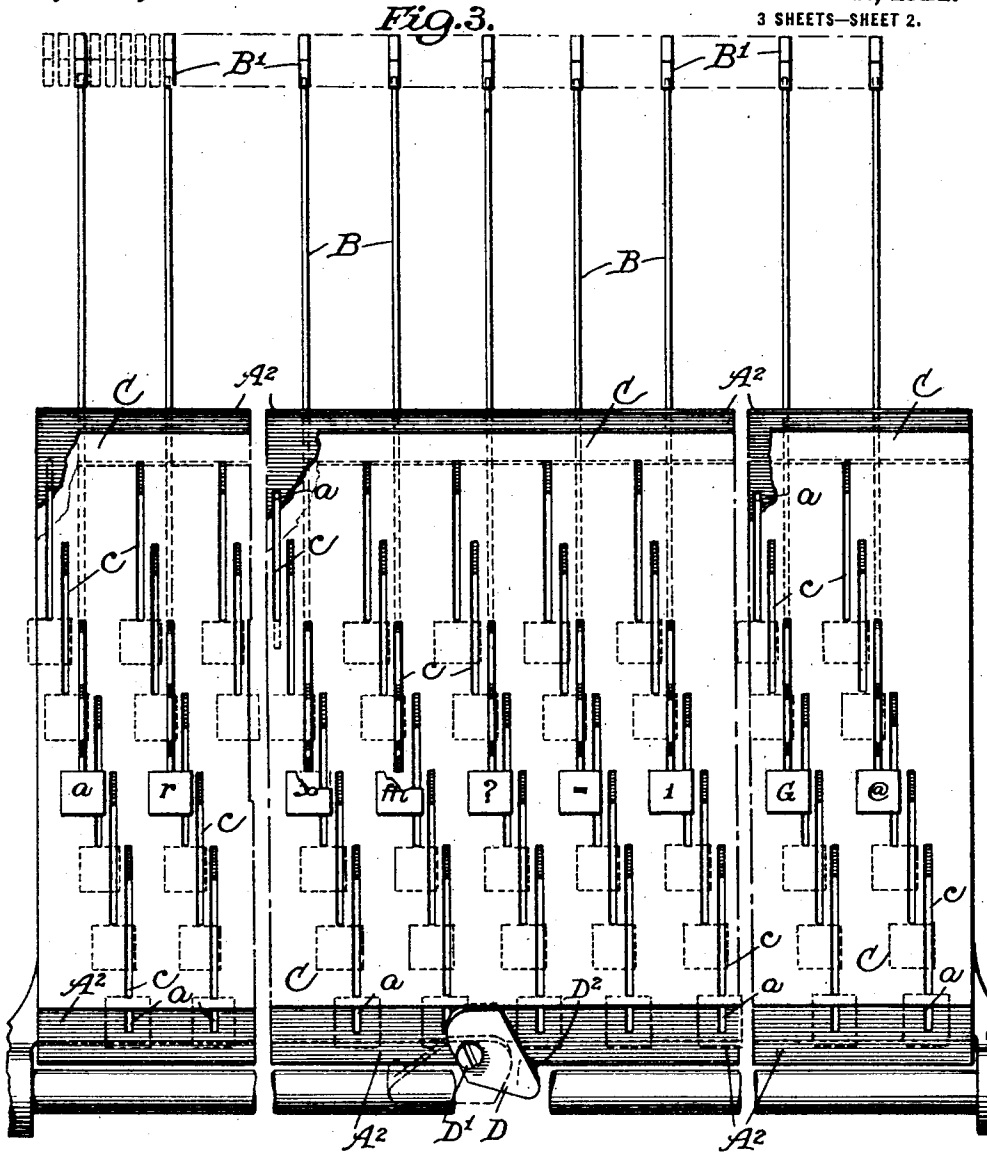
Rogers, Kennedy, & Campbell ATTORNEYS

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Fig. 5.

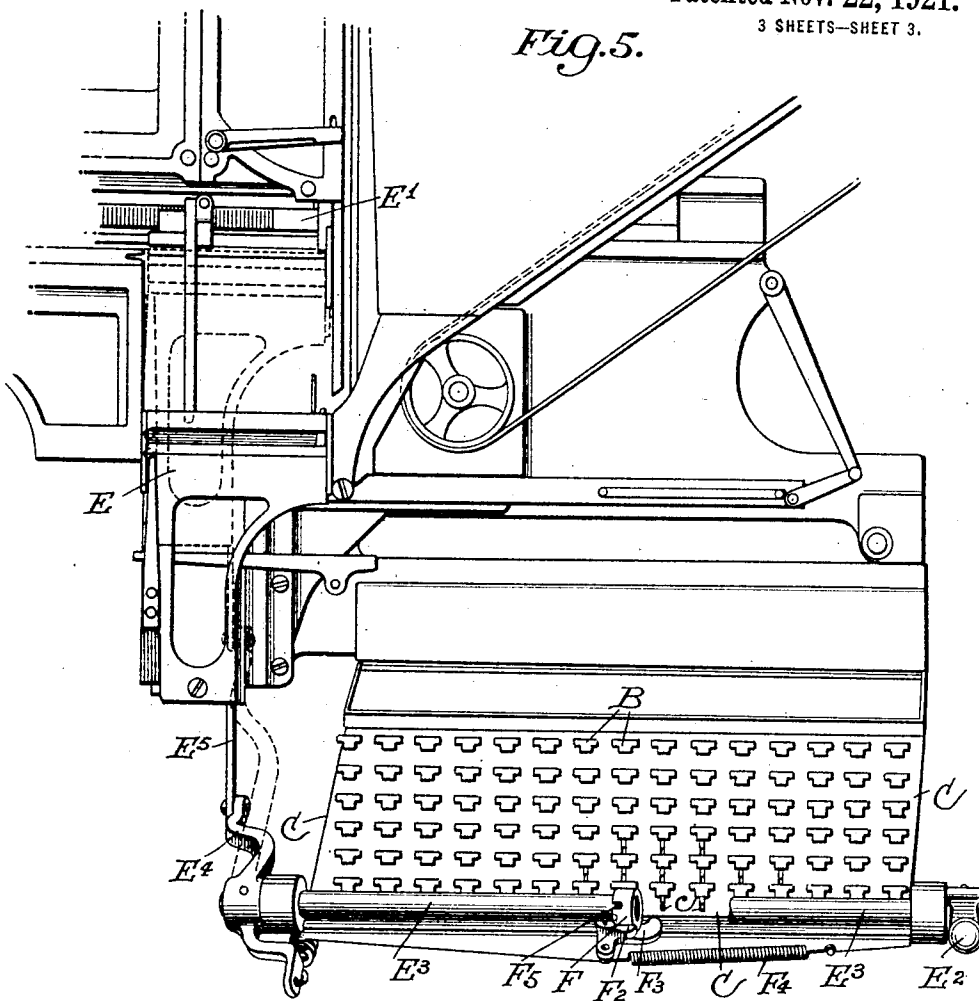
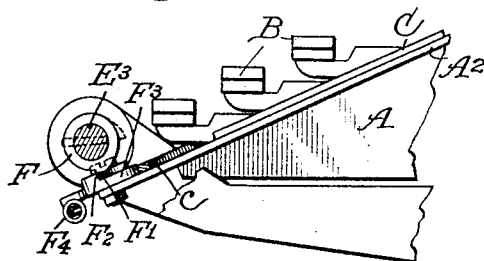


Fig. 6.



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UNITED STATES PATENT OFFICE.

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TYPOGRAPHICAL MACHINE.

1,397,971.

Specification of Letters Patent.

Patented Nov. 22, 1921.

Application filed July 3, 1920. Serial No. 393,856.

To all whom it may concern:

Be it known that I, DAVID S. KENNEDY, a citizen of the United States, residing at Brooklyn, in the county of Kings 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 relates to typographical machines, such as linotype machines of the general organization represented in Letters Patent to O. Mergenthaler No. 436,532, wherein circulating matrices are released from a magazine by the manipulation of a keyboard in the order in which their characters are to appear in print and then assembled in line, the composed line transferred to the face of a mold, the mold filled with molten metal to form a slug or linotype against the matrices which produce the type characters thereon, and the matrices thereafter elevated and returned through a distributing mechanism to the magazine from which they started. My present invention is directed to an improved locking device for the keyboard of such machines and also contemplates the provision of means whereby the locking and unlocking of the keyboard is effected automatically at times when the finger-keys should not be actuated, all as will be fully pointed out in the detailed description to follow.

In the accompanying drawings, I have shown my invention merely in preferred form and by way of example, and as applied to a machine of the class stated, but obviously many changes and alterations may be made therein and in its mode of application, which will still be comprised within its spirit. Generally speaking, I desire it to be understood that I do not limit myself to any specific form or embodiment except in so far as such limitations are specified in the claims.

Referring to the drawings:

Figure 1 is a side elevation, partly in section, of the keyboard of a linotype machine having my improved locking device applied thereto;

Fig. 2 is a similar view, with the parts broken away at the rear, showing the locking device in active position;

Fig. 3 is a plan view of the keyboard, with

some of the parts broken away and omitted, as shown in Fig. 2;

Fig. 4 is a detail view;

Fig. 5 is a front elevation of a portion of a linotype machine illustrating the automatic adjusting connections for the keyboard locking device;

Fig. 6 is a side elevation of the lower portion of the keyboard as represented in Fig. 5 with certain parts shown in section to illustrate the manner in which they cooperate.

The keyboard herein illustrated is of the regular linotype variety comprising the supporting frame A and the series of horizontal finger-keys or key levers B pivotally mounted therein for vertical movement upon the transverse rods A' which sustain them in rows at different levels in the customary way. The finger-keys are guided in their vertical movements by the front and rear plates A² and A³ fixed to the supporting frame A and formed with elongated slots wherein the opposite ends of the finger keys are arranged, it being understood of course that the extent of the slots is such as to permit the required actuating movement of the finger-keys. The front plate A², which occupies an inclined position on the supporting frame to cooperate with the forward ends of the finger keys in the several rows, is clearly illustrated in several of the figures, its elongated slots being designated *a*. At their rear ends, the finger keys B are engaged with the single series of vertically movable bars or slides B¹ connected at their upper ends to the two series of trip dogs B² controlling the engagement of the cams B³ of the yokes B⁴ with the power-driven rolls B⁵ for the operation of the escapement actuating rods or reeds B⁶. The foregoing parts and their mode of operation are so well known that any further description would be superfluous, but if desired reference may be had to the Dodge Patent No. 530,931.

As before stated, my invention is directed to an improved locking device to prevent the actuation of the finger keys when the keyboard is not in use. In the present instance (Figs. 1, 2 and 3), such locking device is in the form of a plate C slidably mounted upon the fixed front plate A² and formed with elongated slots *c* through which the forward ends of the finger keys B ex-

tend, the plate C thus being practically a duplicate of the plate A². It will be seen, therefore, that by adjusting the plate C backwardly and forwardly upon the fixed plate A², the finger keys B may be locked or unlocked as desired. Thus in the forward or inactive position of the locking plate C, its slots *c* are in registry with the corresponding slots *a* of the fixed plate A² (Fig. 1), so that the finger keys are free to be depressed or actuated in the usual way; but when the locking plate is in its rearward or active position, its slots are out of registry with those of the fixed plate (Figs. 2 and 3) and present their lower end walls beneath and in engagement with the bottom edges of the finger keys, which are thus locked against depression or actuation. In other words and more broadly speaking, the keyboard is provided with adjustable locking means arranged to be engaged with and disengaged from the finger keys directly and notwithstanding their disposition at different levels, so as to prevent or permit the actuation of the keys according to the adjustment of the locking means. In addition to its locking function just described, the plate C also serves when adjusted rearwardly to active position to restore the finger keys and the connected parts to their proper condition. Thus, if at the time of adjustment of the locking plate, a finger key should be depressed (due for instance to the binding or sticking of its actuating slide B¹), the plate by acting with a cam effect beneath the forward end of such finger key will rock it back up to its normal horizontal position.

Any suitable means may be employed for adjusting the locking plate to and holding it in its adjusted positions. For such purpose, there is herein provided a rotary cam plate D (Fig. 4) pivoted by a pin D¹ to the fixed front plate A² and arranged in engagement with the forward edge of the plate C. As will be apparent from the drawings, when turned anti-clockwise, the cam plate pushes the locking plate rearwardly to active position as shown by the full lines in Fig. 3, and when turned clockwise, allows the locking plate to slide forwardly by gravity to inactive position as indicated by the dotted lines in said figure. To facilitate its turning movements, the cam plate is provided with a depending grip or handle portion D², which also serves as a stop to arrest the plate in its different positions.

It is particularly noted that, in the foregoing arrangement, the parts are extremely simple and can be made at small cost and applied to the keyboard without the slightest difficulty or delay, and this without involving any radical alteration in the existing parts of such keyboard. In addition, the arrangement is strong, durable and compact

and such that it may be easily and conveniently manipulated. These and other advantages will be apparent to those skilled in the art.

Referring to Figs. 5 and 6, the arrangement therein illustrated is intended to provide for the locking and unlocking of the finger keys automatically by the assembling elevator E wherein the matrices are composed in line as they are released from the magazine by the manipulation of the keyboard. The elevator normally occupies the receiving position shown by the full lines in Fig. 5, but after the composition of each line, it is raised to the delivery position indicated by the dotted lines in said figure for the transfer of the composed line therefrom by the shifter E¹ and then lowered to its receiving position for the composition of the next line. These raising and lowering movements of the elevator are effected, as usual, by means of the hand lever E² connected thereto through the transverse rock shaft E³, the rearwardly expanding arm E⁴ and link E⁵. In carrying out my invention, I make use of the locking plate C above described and provide connections between it and the elevator whereby the plate is moved to its active and inactive positions as the elevator is moved from and to its normal receiving position, respectively. To this end, the rock shaft E³ is equipped with a collar F formed with a lip or shoulder F¹ arranged to cooperate with a lug F² on the upper side of a bell crank lever F³ pivoted to the fixed front plate A² of the keyboard. This lever F³ at one end engages the lower edge of the locking plate C and at its opposite end is connected to a spring F⁴ pulling thereon from a fixed part of the keyboard frame. By reason of this construction, when the assembling elevator is in its lowermost or receiving position as shown in Figs. 5 and 6, the lip F¹ is in engagement with the lug F² and holds the lever F³ retracted so as to permit the locking plate C to occupy its forward or inactive position as required; but when the elevator is raised from its receiving position, the lip F¹ is disengaged from the lug F², due to the turning of the rock-shaft E³ (see the dotted lines in Fig. 6), and releases the spring F⁴, which thereupon operates the lever F³ and shifts the locking plate C rearwardly to its active position. This latter condition of the parts will maintain until the elevator is restored to receiving position, when of course the lip F¹ reengages the lug F² and withdraws the lever F³ against the action of the spring F⁴ so as to permit the locking plate to slide forwardly by gravity back to its inactive position.

There are times when the operator may wish to lock the finger keys against actuation when the assembling elevator is in re-

ceiving position, as for instance when he leaves the machine or desires to make adjustments or repairs. The automatic connections above described are therefore arranged to be made or broken at will, which is herein accomplished simply by attaching the collar F to the rock shaft E³ by means of a pin and slot connection F⁵. As apparent, a slight axial movement of the collar F breaks its connection with the rock shaft E³ and releases the spring F⁴, which acts immediately to shift the locking plate rearwardly to active position. It hardly needs to be stated that the force of the spring F⁴ should be and is insufficient alone to turn the rock shaft E³ when the collar F is operatively connected thereto.

As previously stated, I have herein shown my invention only in preferred form and by way of example and as applied to a particular kind of machine, but obviously many modifications and alterations therein and in its mode of application will suggest themselves to those skilled in the art without departing from the scope of the invention.

Having thus described my invention, its construction and mode of operation, what I claim is as follows:—

1. A keyboard for typographical machines including, in combination, a supporting frame, a series of finger-keys movably mounted therein and disposed at different levels, and locking means adjustable to active and inactive position independently of the actuation of the finger-keys and arranged to be engaged with and disengaged from the finger-keys directly so as to prevent or permit their actuation according to the adjustment of said locking means.

2. A keyboard for typographical machines including, in combination, a supporting frame, a series of finger-keys movably mounted therein and disposed at different levels, and a locking plate mounted on the supporting frame and adjustable to active or inactive position as desired independently of the actuation of the finger-keys, the said plate having portions arranged to be engaged with and disengaged from the finger-keys directly as it is adjusted to its active and inactive positions, respectively.

3. A keyboard for typographical machines including, in combination, a supporting frame, a series of finger-keys movably mounted therein, and a locking plate mounted on the supporting frame and formed with elongated slots through which the finger-keys extend, the said locking plate being adjustable so as to shift the end walls of its slots into or out of engagement with the finger-keys as desired.

4. A keyboard for typographical machines including, in combination, a supporting frame, a series of finger-keys movably

mounted therein, and a locking plate mounted on the supporting frame at the front and formed with elongated slots through which the forward ends of the finger-keys extend, the said locking plate being adjustable so as to shift the end walls of its seats into or out of engagement with the finger-keys as desired.

5. A keyboard for typographical machines including, in combination, a supporting frame, a series of finger-keys movably mounted therein, a front plate fixed to the supporting frame and formed with elongated slots wherein the forward ends of the finger-keys are movably arranged, and a locking plate slidably mounted on the fixed front plate and formed with corresponding elongated slots through which the finger-keys extend, the said locking plate being adjustable to active or inactive position so as to shift its slots out of or into registry with those of the fixed front plate and thereby prevent or permit the actuation of the finger-keys according to the adjusted position of the locking plate.

6. A keyboard as specified in claim 1 and also including manually operated means for positively holding the locking means therein referred to in active position.

7. A linotype machine equipped with a keyboard as specified in claim 1 and provided with connections between the locking means of said keyboard and some movable part of the machine; whereby the locking and unlocking of the finger-keys is effected automatically at predetermined periods.

8. In a linotype machine, the combination of a series of finger keys, a locking plate formed with elongated slots wherein the forward ends of the finger keys are arranged and adjustable to shift the end walls of its slots into and out of engagement with the finger keys so as to prevent or permit the actuation of the finger keys according to the position of the locking plate, and automatic means for effecting the required adjustments of the locking plate at predetermined periods.

9. In a linotype machine, the combination of a series of finger keys, a locking plate formed with elongated slots wherein the forward ends of the finger keys are arranged and adjustable to shift the end walls of its slots into and out of engagement with the finger keys so as to prevent or permit the actuation of the finger keys according to the position of the locking plate, an assembling elevator movable to and from matrix receiving positions, and connections between said elevator and the locking plate whereby the latter is adjusted to its active and inactive positions as the elevator is moved from and to its matrix receiving position, respectively.

10. In a linotype machine, the combination of means for releasing matrices from

the magazine, including a series of movable actuating elements disposed at different levels, and locking means adjustable to active and inactive position independently of said actuating elements and arranged to be engaged with and disengaged from the actuating elements directly so as to prevent or permit their actuation according to the adjustment of said locking means.

11. In a linotype machine, the combination of means for releasing matrices from

the magazine, including a series of pivoted actuating elements disposed at different levels, and a locking plate formed with elongated slots through which the actuating elements extend, the said locking plate being adjustable to shift the end walls of its slots into or out of engagement with the actuating elements as desired.

In testimony whereof, I have affixed my signature hereto.

DAVID S. KENNEDY.