G. D. HARTLEY.

LINOTYPE MACHINE.

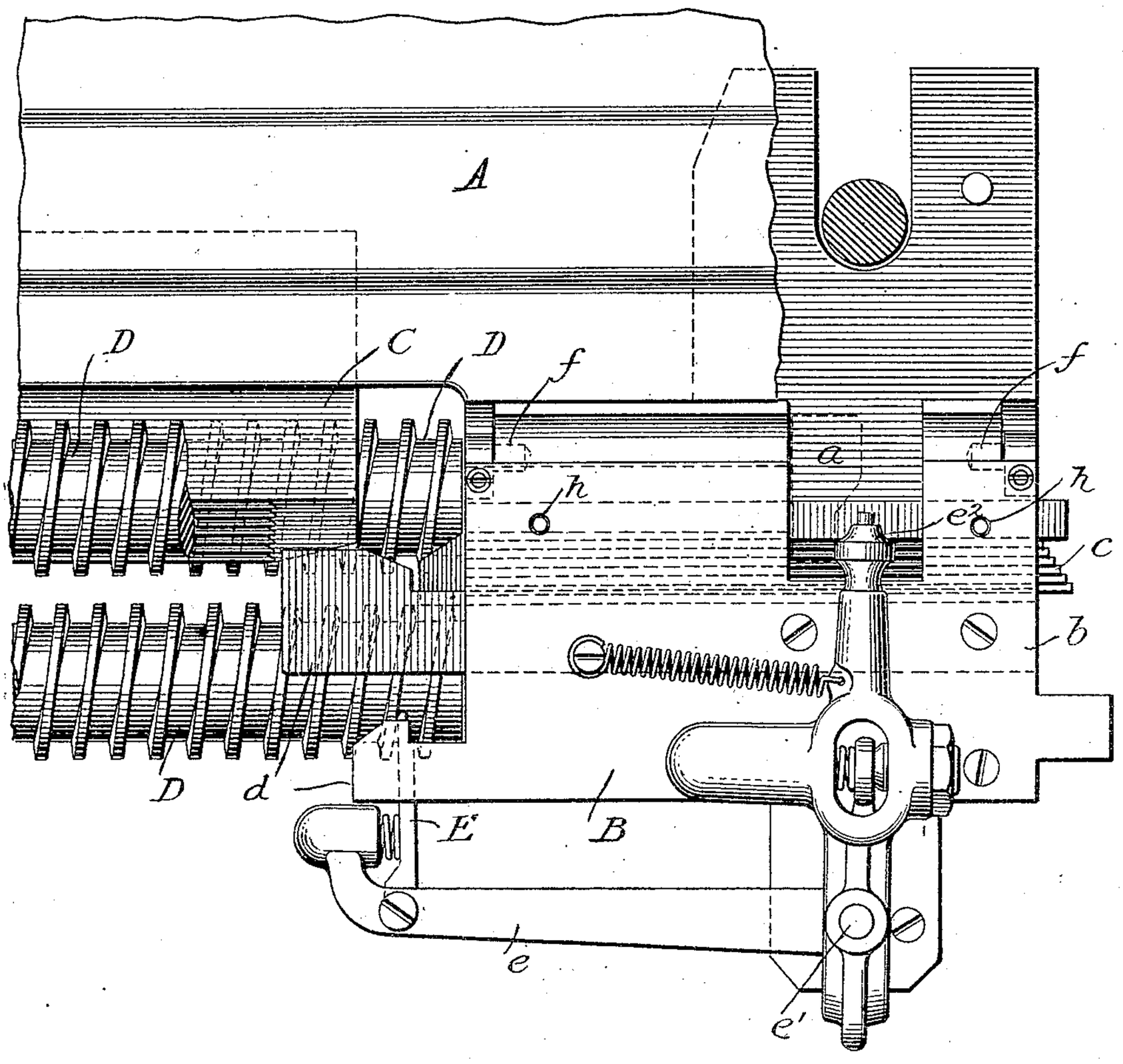
APPLICATION FILED FEB. 2, 1910.

956,344.

Patented Apr. 26, 1910.

2 SHEETS—SHEET 1.

Fig. 1.



Witnesses

Raymond F. Barnes.

James Atkins

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Fig. 2

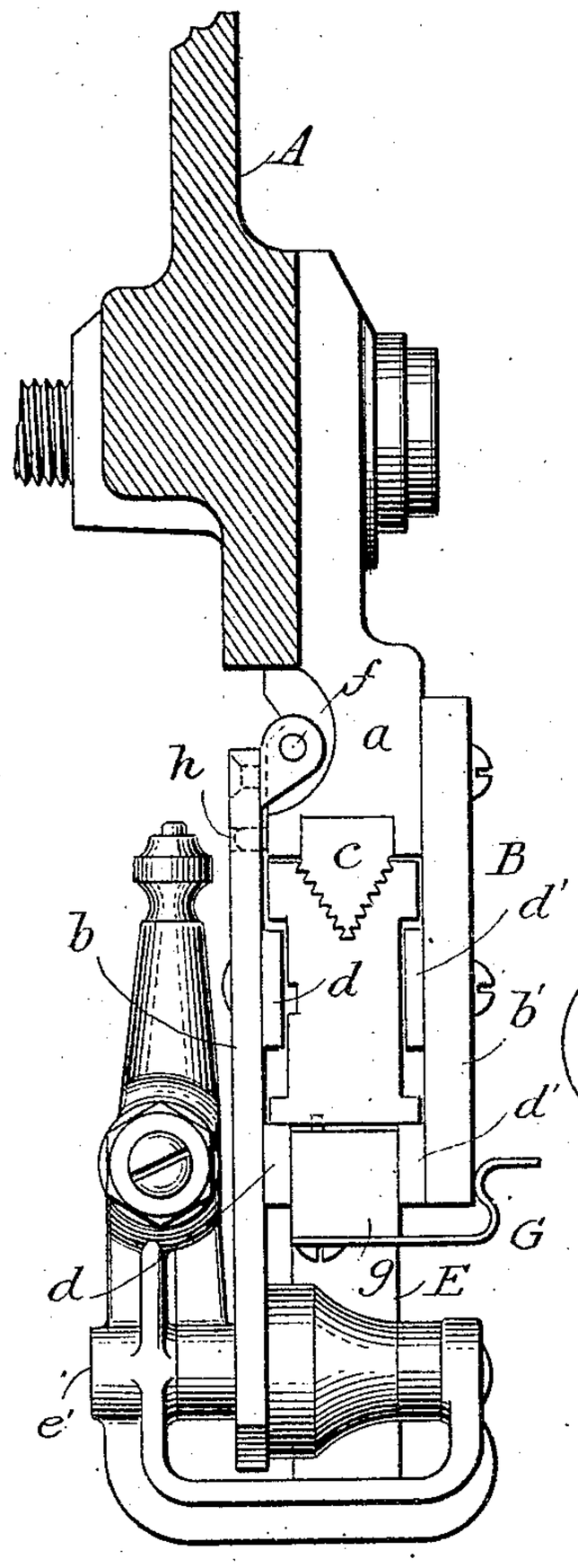
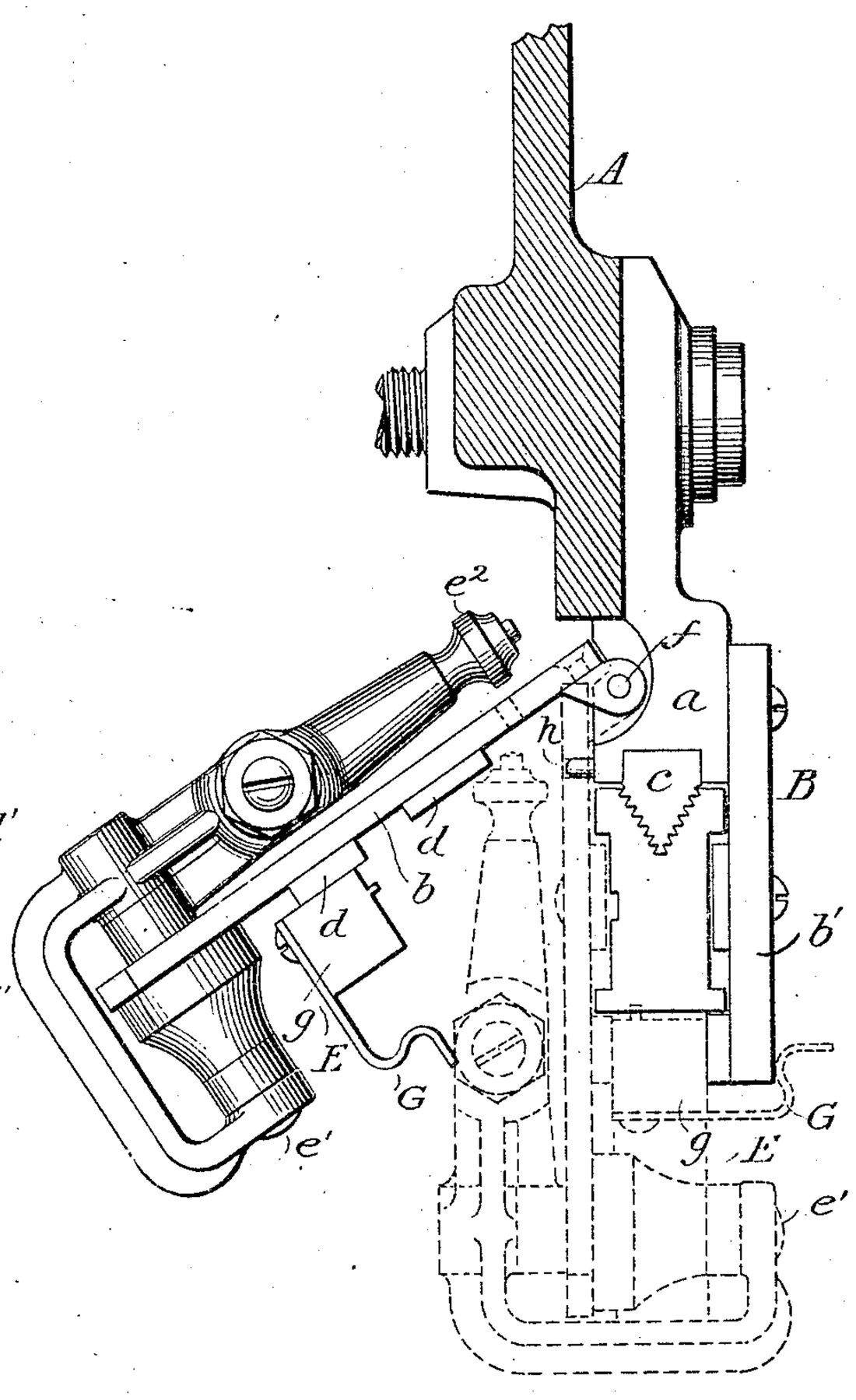


Fig. 3.



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UNITED STATES PATENT OFFICE.

GEORGE DOWNING HARTLEY, OF BROOKLYN, NEW YORK, ASSIGNOR TO MERGENTHALER LINOTYPE COMPANY, A CORPORATION OF NEW YORK.

LINOTYPE-MACHINE.

956,344. Specification of Letters Patent. **Patented Apr. 26, 1910.**

Application filed February 2, 1910. Serial No. 541,493.

To all whom it may concern:

Be it known that I, GEORGE DOWNING HARTLEY, of borough of Brooklyn, county of Kings, and State of New York, have invented a new and useful Improvement in Linotype-Machines, of which the following is a specification.

This invention has reference to line casting machines such as represented in Letters Patent of the United States No. 436,532 and kindred machines, wherein circulating matrices are composed in lines, the lines presented temporarily to the face of a mold to form type characters on metal slugs cast therein, and finally the line elevated to a distributing mechanism by which the individual matrices are returned to the channels of a magazine from which they were delivered.

In these machines the matrices, having a toothed notch in the upper end, are lifted one at a time from the end of the composed line between horizontal feed screws which engage their edges and carry them horizontally along a distributer bar having its lower edge toothed to engage and sustain the individual matrices until they arrive over their respective channels in the magazine.

My invention has special reference to the means for lifting the individual matrices from the line to the distributer bar and screws, this mechanism being known commercially as the distributer lift box. As ordinarily constructed, this mechanism comprises a box-like structure with vertical side plates between which the matrix line is advanced endwise in a horizontal direction, in order to present the matrices at the front of the line successively against stop shoulders and over a finger by which they are lifted to the screws and the distributer bar, the matrices during their passage through the box being engaged at the upper end by a horizontal, toothed bar which prevents them from twisting or turning, and assists in maintaining them in the proper position. The box is usually provided at the forward end with a stop finger known as the "font distinguisher." The matrices of each font are notched to pass this finger freely, and if a matrix of a wrong font, or a matrix in a reversed position engages the stop, the distributer is thereby arrested until the offending matrix is removed. As heretofore constructed, the various parts of the box were permanently united, and the removal of an offending matrix required an awkward manipulation of parts attended by loss of time, or the momentary removal of the box from the machine.

The object of my invention is to overcome this annoyance and loss of time by so constructing the box that access may be instantly gained to its interior and to the matrix line remaining therein. To this end I construct the box in such manner that its side wall, hinged or otherwise secured in place, may be instantly moved away from its operative position, and I preferably arrange the parts so that the same movement will withdraw the lifting finger, thus leaving the matrix line exposed and supported in such manner that one or more matrices may be instantly removed.

The essence of the invention lies in providing for the instantaneous opening of the box, and in the ready removability of the lifting finger.

I have shown my invention incorporated in a distributer lift box of the type now commonly used in the commercial Mergenthaler machines generally known under the trade mark "Linotype."

While I have shown a form and arrangement of parts which I consider best adapted for general use, it will be understood by the skilled mechanic that the construction and arrangement of parts may be widely modified without passing beyond the limits of my invention.

Referring to the drawings, Figure 1 is a side view of the distributer box, with the parts in operative position. Fig. 2 is an end view of the same. Fig. 3 is an end view of the box, with the side opened to give access to the interior.

Referring to the drawings, A represents a portion of the main frame of the machine, and B the distributer box, secured thereto; C the usual distributer bar, and D, D the usual screws for feeding the matrices along the bar.

The distributer box consists principally of a top bar, *a*, the two vertical side plates *b* and b^1 attached thereto, and the toothed bar *c*, also attached to the top bar between the side plates, so that the matrix line may be advanced endwise between the side plates with the matrix teeth in engagement with the bar *c*.

d and d^1 represent the horizontal rails secured to the inner walls of the side plates, and provided at their forward ends with shoulders d^2 to engage the ears of the foremost matrix, and thus arrest the advance of the line, which is urged constantly forward by the ordinary means, so that when one matrix is lifted the next one may take its place as usual.

E represents the vertical, movable finger for lifting the matrices successively from the line between the feed screws D to the distributer bar C, as usual. This finger is carried at one end of a lever e, having its lower end made of U-form and connected by a horizontal pivot e^1 to the side plate b. The lever is extended up above its pivot and provided with a roll, e^2, which is acted upon as usual by a cam to move the lever in one direction, against the stress of a spring which moves it in the reverse direction as usual, these features being well known in the art and having no connection with my invention.

So far as described the parts are constructed and adapted to operate in the ordinary manner. Instead of securing the side plate b to the box rigidly and permanently in place as heretofore, I now hinge it so that it may be swung upward and outward at will, together with the lift actuating lever e. To this end I provide the plate at the upper edge with ears which are connected by horizontal pivots f to the plate a, this arrangement permitting the plate, together with the lever and the lift E, to be swung back from their operative positions in the manner shown in full lines in Fig. 3, this movement serving to expose the suspended line of matrices within the box, and to remove the finger E and one set of the detaining shoulders from the line, so that the foremost matrix will be grasped and removed instantly without affecting the remainder of the line. It also permits the line as a whole to be grasped and removed endwise if desired.

The movable side of the box may be held in position by any means which will admit of its being instantly opened. I recommend for the purpose a spring catch G, secured to a bar g, which latter is attached rigidly to the plate b. The form of this catch is such that when the plate b is dropped to its operative position the catch will engage the opposite plate, b^1 with a spring pressure and hold the movable plate snugly to its operative position. The bar g serves as a spacing piece to limit the distance between the two plates or side walls of the box.

As the two sides of the box should be held in an exact relationship, they may be provided with any suitable interlocking guides or members, such, for instance, as the dowel pins h attached to the bar a and adapted to enter holes in the plate b.

As the principal requirement is to gain access to the forward matrices in the line, it is manifest that a portion of the plate b may remain in position, and that only the forward portion with the lifting device shall be arranged to move from their operative positions. It is also obvious that in some cases it will be sufficient to move the lifting lever and the bottom rail d away from the operative position, as this alone will be sufficient to give access to the foremost matrix and permit its ready removal. It is preferable, however, to have the entire side of the box swing outward, because of the greater convenience in adjusting and removing the matrices.

Having described my invention, what I claim is:

1. In a machine of the class described, a distributer lift box having its side movable at will from the operative position to expose the internal matrices, and having, also, means to sustain the matrices when the side is removed.

2. In a machine of the class described, the distributer lift box provided with means to sustain the line of matrices therein, and having the swinging side wall movable at will from its operative position to expose the matrices.

3. In a line casting machine the distributer lift box, having a lifting finger and its actuating lever mounted to swing away from the operative position at will to expose the foremost matrix.

4. In a line casting machine a distributer lift box, comprising the side walls or plates, a toothed bar c, shouldered rails d, d^1, and a lifting lever and finger, one of the side walls, together with its rails, d, and the lifting devices being mounted for movement from the operative position at will to expose the interior of the box.

5. In a line casting machine a distributer box of the class described, having one wall and the matrix lifting devices mounted to swing upward and outward from the operative position, as described.

6. A distributer lift box of the class described having internal means for maintaining a line of matrices, and having an outer side wall hinged to swing from its operative position to expose the matrices, and a spring latch for holding said wall in operative position.

In testimony whereof I hereunto set my hand this thirty-first day of December, 1909, in the presence of two attesting witnesses.

GEORGE DOWNING HARTLEY.

Witnesses:

A. KUNZ,

WALTER MOBLARD.