

I. J. OTIS.
 ASSEMBLER BOX ELEVATOR FOR TYPE LINE CASTING MACHINES.
 APPLICATION FILED JUNE 1, 1916.

1,247,568.

Patented Nov. 20, 1917.
 3 SHEETS—SHEET 1.

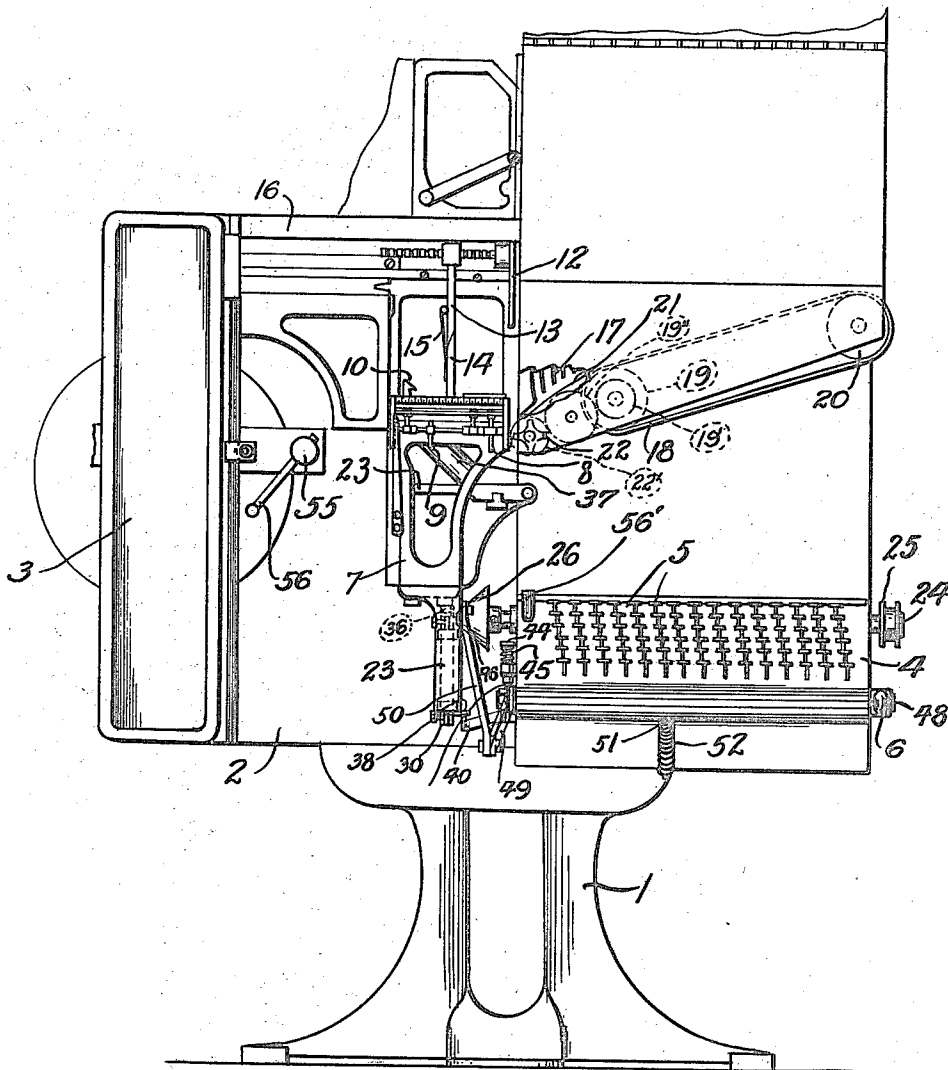


Fig. 1.

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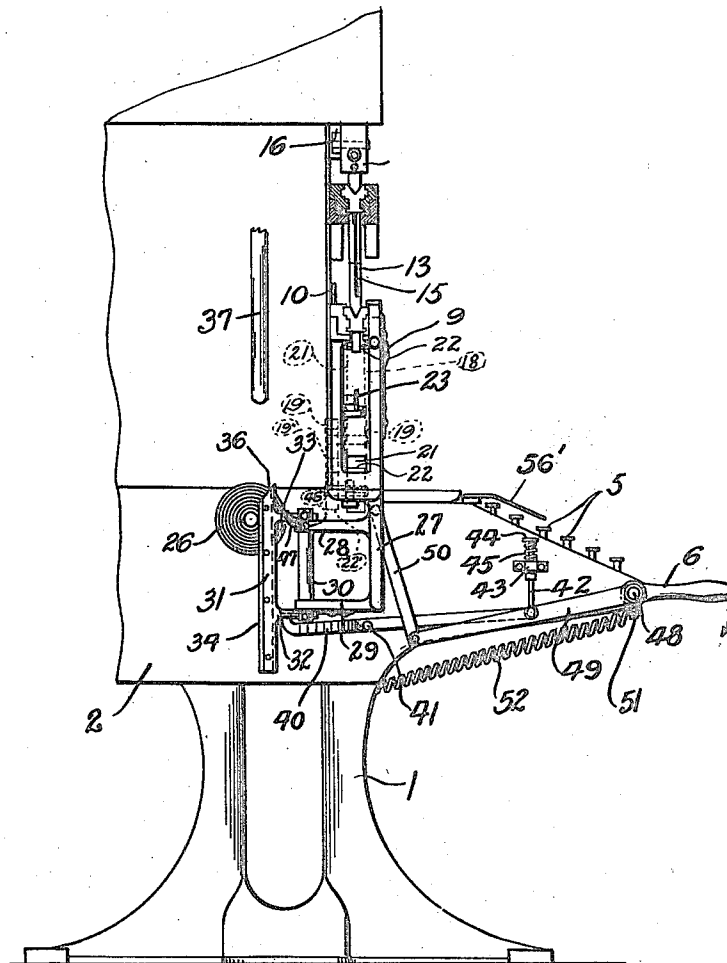


Fig. 2.

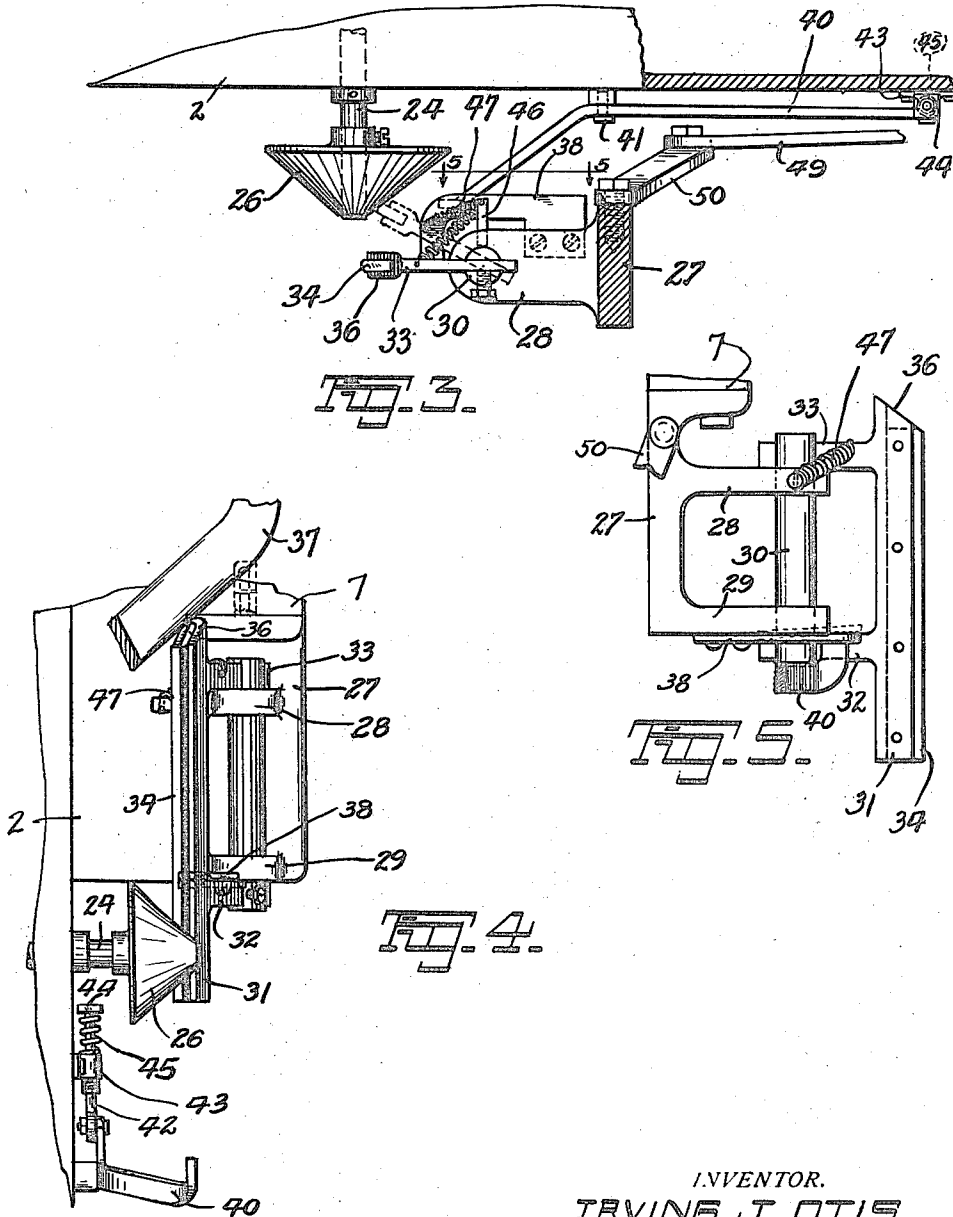
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UNITED STATES PATENT OFFICE.

IRVING J. OTIS, OF PETALUMA, CALIFORNIA, ASSIGNOR OF ONE-HALF TO HOMER W. WOOD, OF PETALUMA, CALIFORNIA.

ASSEMBLER-BOX ELEVATOR FOR TYPE-LINE-CASTING MACHINES.

1,247,568.

Specification of Letters Patent.

Patented Nov. 20, 1917.

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To all whom it may concern:

Be it known that I, IRVING J. OTIS, a citizen of the United States, residing at Petaluma, in the county of Sonoma, State of California, have invented a new and useful Assembler-Box Elevator for Type-Line-Casting Machines, of which the following is a specification, in such full and clear terms as will enable those skilled in the art to construct and use the same.

This invention relates to a device for raising the assembler box of a linotype machine to the position to discharge its line of mats to the mechanism for casting the type.

It will be understood by those skilled in the art that on the ordinary linotype machine there is a handle which is used by the operator for lifting the assembler box to the position to discharge its mats. The operation of said handle requires an appreciable length of time and tends to reduce the total output of the machine, so that in the present instance the object sought is to provide a key operated mechanism for raising the assembler box, thereby greatly facilitating the work of the operator and reducing the labor required of him.

It will be understood by those skilled in the art that while the device has been shown applied to a linotype line casting machine, that it is equally applicable to any other type of matrix carrying machine where it is necessary to operate it in the general manner illustrated herein.

Other objects of the invention will appear as the description proceeds.

An embodiment of the invention is shown in the drawing in which the same reference numeral is applied to the same portion throughout the several views, but I am aware that there may be many modifications thereof.

Figure 1 is a front elevation of a portion of a linotype machine showing the location of the present apparatus,

Fig. 2 is a view in side elevation of that portion of the linotype machine at the left of the key-board showing the application of this elevating device thereto,

Fig. 3 is an enlarged plan view of the apparatus described herein,

Fig. 4 is an enlarged side elevation of the apparatus described herein, the assembler box being shown raised and just on the point

of being disengaged with the lifting wheel, 55 and

Fig. 5 is an enlarged detail view showing the operation of the latch and releasing spring for enabling the lifting device to engage the lifting wheel on the line 5-5, 60 Fig. 3.

The numeral 1 indicates the base of the linotype machine, said base supporting a suitable frame 2 which carries the vise 3, keyboard 4 and other parts of the machine. 65 The keyboard is provided with a plurality of keys 5 and with a handle 6 which may be used at will to lift the assembler box 7.

The assembler box 7 has the usual thumb levers 8 and 9 for shifting the position of the type and it is provided with a hook 10 which holds it up until the fingers 11 carry the line of mats out of the box into the type casting position. There is a short finger 12 and a longer finger 13 carrying a jointed 75 finger 14, which is held in the position shown in Fig. 1 by means of a spring 15 bearing thereon. The fingers 12 and 13 are slidable in a guideway 16 and carry the line of mats into the vise where the cast is made. 80

The guides for the type are indicated at 17, the type from the guides dropping down on the belt 18 which passes around the two pulleys 19 and 20 and then on the slide or runway 21 from which position they are carried by means of a wheel 22 having notches therein into the assembler box. The assembler box is provided with a bar 23 which serves as a guide for the lower end of the spacers. The belt 18 drives the pulley 19 90 and gear 19', which latter engages a gear 19'' and drives the gear 22' and wheel 22''.

At the back of the keyboard there is a shaft 24 operated from a belt which passes around a pulley 25 and which shaft extends 95 far enough to the left of the keyboard to support a cone pulley 26, which is adjustable on the shaft 24, whereby the bar 31 will strike it at different places as may be desired to vary the speed of lifting the assembler box. 100

Depending from the assembler box there is a bracket 27. The bracket 27 has two rearwardly extending arms 28 and 29 which arms support a vertical shaft 30. The shaft 105 30 in turn carries a bar 31, the two arms 32 and 33 connecting said bar and shaft. The bar 31 has a groove extending longitudinally

thereof in which is mounted a strip of friction material 34. The upper end of the bar 31 is cut on a bevel as indicated at 36 and is adapted to contact with a bar 37 which dis-
 5 engages the bar from the cone 26 and sets it behind the spring 38 when the assembler box has been raised to the top of its throw.

The spring 38 is carried by the lower arm 29 and is so positioned that it can be re-
 10 leased from the arm 32 by an upward push from the lever 40. The lever 40 is pivoted at 41 on the side of the main frame of the machine and it has a rod 42 extending through a cleat 43 on the upper end of which
 15 is a push button 44, a spring 45 surrounding the rod 42 being used to restore the push button to its normal position. The upper arm 28 carries a short pin 46 which has a coil spring 47 connected therewith and
 20 with the upper arm 33 of the lifting bar, the object being to pull the lifting bar into contact with the cone with sufficient force to enable it to raise the assembler box. The operating handle 6 is carried by a trans-
 25 versely extending shaft 48, which shaft has an arm 49 connected therewith and with a link 50, which link is connected to the assembler box frame to enable the assembler box to be moved by hand whenever neces-
 30 sary.

The shaft 48 is provided with a depending lug 51 to which a stiff spring 52 is at-
 35 tached, the opposite end of said spring being connected with the frame 1 whereby the weight of the assembler box may be precisely balanced thereby reducing the power required to lift the assembler box to the exact amount required to lift the line of
 40 mats placed therein. The vise 3 is held in place by means of the vise lock 55, said lock being operated by means of the handle 56.

The keys 5 deposit the usual matrices found on this class of machine and there is also provided a key 56' for supplying
 45 spacers to the assembler box.

The operation of the apparatus is as follows: The linotype operator depresses the keys 5 and 56' in the usual manner necessary to deposit the supply of matrices and spacer
 50 bars in the assembler box, all of this being done in the well known manner accomplished by such machines. As soon as the line of matrices has been completed he will depress the button 44. This will immediately
 55 release the spring 38 from the arm 32 thereby allowing the strip of friction materials 34 to swing over into contact with the cone roller 26 and as it is continuously rotating the assembler box will be lifted to the level
 60 of the guide way 16, and as soon as it is so lifted the upper end of the bar 31 will contact with the cam arm 37 and will swing said bar back so that its arm 32 is reengaged by the end of the spring 38. At the same
 65 time the fingers 12, 13 and 14 will carry the

line of matrices over into the casting mechanism and the assembler box, will be dropped to its normal position as soon as the hook 10 is released, thereby enabling
 70 the workman to continue to operate the type keys and saving him the time ordinarily necessary to take to raise the assembler box with the lever 6.

Since it is necessary to have manual means for operating the assembler box should any-
 75 thing happen to get out of order with the mechanical means for operating the same, the handle 6 is allowed to remain on the machine and the assembler box may be raised with it whenever convenient.
 80

Having thus described my invention what I claim as new and desire to secure by Letters Patent of the United States, is as follows, express reservation being made of
 85 permissible modifications:

1. The combination with a type line casting machine having keys, matrix delivering and transferring devices, of an assembler box, a friction wheel, a bar carried by the as-
 90 sembler box and adapted to engage the friction wheel to elevate the assembler box, means to hold said bar normally away from said friction wheel, and a key for releasing the bar to allow it to engage said friction wheel to raise said assembler box.
 95

2. A type line casting machine having a set of keys, matrix delivering and transferring devices, an assembler box, a friction wheel, a bar carried by the assembler box and adapted to engage the friction wheel
 100 to elevate the assembler box, a latch to hold said bar normally out of engagement with said friction wheel, a spring to cause the bar to engage the friction wheel with sufficient pressure to raise the assembler box,
 105 a cam to disengage the bar from the friction wheel at the end of the travel of the assembler box, and a key to release said bar to allow it to engage the friction wheel to raise the assembler box.
 110

3. The combination with a type line casting machine having a set of keys, matrix delivering and transferring devices, of an assembler box, a revoluble friction wheel, a bar pivotally supported on the assembler
 115 box, a latch for holding said bar normally out of engagement with said friction wheel, a spring to cause said bar to engage said friction wheel when the latch is released, and a key for releasing said latch to allow
 120 the assembler box to be elevated.

4. The combination with a type line casting machine having a plurality of keys, matrix delivering and transferring devices, of an assembler box, said assembler box
 125 having a vertically extending arm pivotally supported thereby, a revoluble cone friction wheel against which said arm is adapted to bear to elevate the assembler box, a spring catch to engage the arm supporting the bar
 130

to hold it out of engagement with said friction wheel, and a key and lever for operating the same.

5 The combination with a stype line casting machine having keys, type delivering and type transferring devices, of an assembler box, a revoluble cone friction wheel, a bar pivotally mounted on the assembler box, a spring to pull said bar into engagement with said friction wheel when the bar is released, a spring adapted to hold the bar out of engagement with said friction wheel, a finger key for releasing said bar to allow it to swing into engagement with said friction wheel to raise the assembler box, and means to disengage said bar from said wheel at the end of its travel and reset the same to repeat the operation at will.

6. A mechanical elevator for type line casting machines comprising an assembler box, a revoluble friction wheel, a bar carried by the assembler box, a spring to cause said bar to engage the friction wheel to lift the assembler box, means to disengage said bar, a latch for holding it when so disengaged, and a key for releasing said latch to permit the assembler box to be raised.

7. In an assembler box elevator, the combination of an assembler box, a revoluble wheel, a pivoted bar connected with the box, means to hold said bar out of engagement with said wheel, means to release the bar to engage the wheel, and means to release the bar from the wheel at the end of the travel of the assembler box.

8. In an assembler box elevator, the combination of an assembler box, a revoluble wheel, a pivoted bar connected with the box,

means to hold said bar out of engagement with the wheel, means to release the bar, and means to pull it into engagement with the wheel to lift the assembler box.

9. In an assembler box elevator, the combination with an assembler box of a pivoted bar connected thereto, a latch to hold the bar out of engagement with the wheel, means to release the latch, means to move the bar into engagement with the wheel when the latch is released, and means to reset the bar behind the latch when the box has been raised.

10. An assembler box elevator comprising the combination with an assembler box of a bar pivotally mounted thereon to swing laterally, a revoluble wheel, a latch to hold the bar out of engagement with the wheel, means to release said latch, and means to swing the bar into engagement with the wheel when released to raise the assembler box.

11. An assembler box elevator comprising the combination of an assembler box, a laterally movable bar pivoted thereon, a latch to hold the bar in a given position, a revoluble wheel, a key operated lever to release said latch, means to pull the bar into engagement with the wheel whereby the box will be raised and means to reset the bar behind the latch when the box has been raised to the proper height, the box thereafter returning to its initial position by gravity.

In testimony whereof I have hereunto set my hand.

IRVING J. OTIS.