

S. B. HARPER.
ATTACHMENT FOR TYPE CASTING MACHINES.
APPLICATION FILED MAR. 21, 1917.

1,264,067.

Patented Apr. 23, 1918.

Fig. 1.

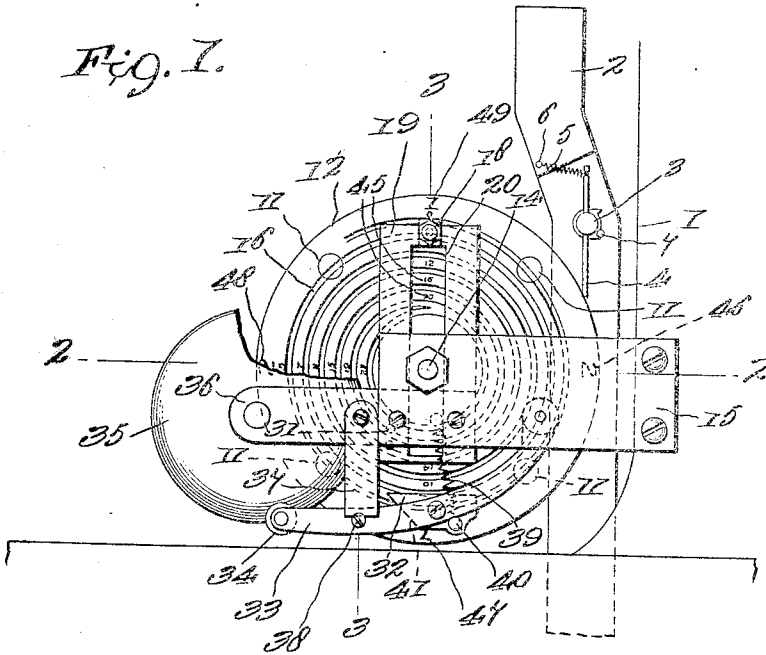


Fig. 2.

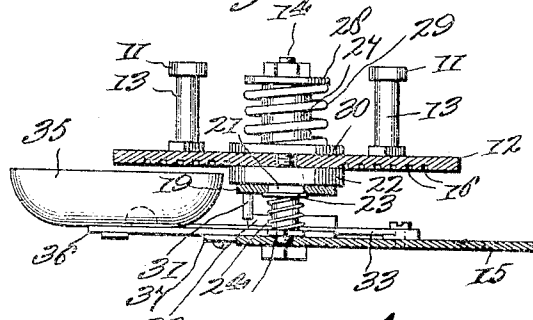
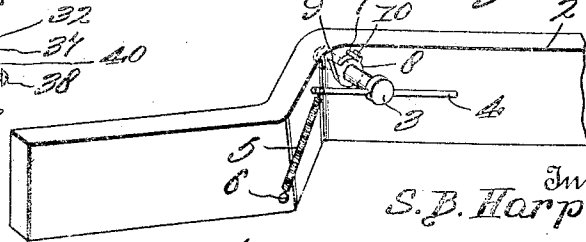


Fig. 4.



Witnesses
Edwin Beller.
R. J. Hawthornrey.

Inventor
S. B. Harper,
by Wilkinson, Gustaf Mackay
Attorneys.

UNITED STATES PATENT OFFICE.

SAMUEL B. HARPER, OF CHICAGO, ILLINOIS.

ATTACHMENT FOR TYPE-CASTING MACHINES.

1,264,067.

Specification of Letters Patent.

Patented Apr. 23, 1918.

Application filed March 21, 1917. Serial No. 156,389.

To all whom it may concern:

Be it known that I, SAMUEL B. HARPER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Attachments for Type-Casting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to improvements in attachments for typecasting machines, and more particularly consists in a device for indicating to the operator the number of lines composed irrespective of the length of these lines, which vary widely on pages with illustrations, or whether the lines are of double length on unusually wide pages, such as is known in the art as butted slug work.

Heretofore the absence of any indicating device on Mergenthaler, Intertype, or other slug casting machines has been the source of annoyance and loss of time to operators, resulting in increased prices in certain characters of work, more particularly in what is known as the butted slug work, wherein two slugs of cast type are fitted end to end to extend over an unusually wide page and are thus printed in a single line.

The variation in length of lines, which extend about illustrations also renders the position of the operator doubtful and entails the necessity of repeatedly counting the lines.

By means of my invention, I provide an indicator in plain view of the operator when in his position at the keyboard, and which shows to him at all times the number of lines composed, whereby he is relieved of the task of repeatedly counting the lines, with the result that the work is more effectively and rapidly accomplished with a diminution in cost.

With these and other objects in view the invention consists in the novel details of construction and combinations of parts more fully hereinafter disclosed and particularly pointed out in the claims.

In the accompanying drawings forming a part of this application, and in which simi-

lar reference symbols indicate corresponding parts in the several views:

Figure 1 is a front elevational view, partly in section, of an attachment constructed in accordance with the present invention, and shown in connection with fragmentary parts of a type casting machine;

Fig. 2 is a horizontal sectional view taken along the line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view taken on the line 3—3 in Fig. 1; and

Fig. 4 is a fragmentary perspective view of a movable part of a type casting machine for effecting the operation of my improved attachment.

Referring more particularly to the drawings at 1 is designated a part of the framework of any approved form of type casting machine, and 2 represents a movable part of such machine, which for the sake of this description, I will designate as the transfer lever, which actuates the slide, transferring the line of composed matrices from the assembler to the first elevator. This lever 2 carries a rocking pin 3, holding a trigger 4, to which is connected one end of a spring 5, the other end being connected to the lever 2 as at 6.

A stop 7 is arranged near the pin 3, on which latter is a washer 8 having projections 9 and 10, engageable by the stop 7 when the pin 3 is moved in either direction.

In the position shown in Figs. 1 and 4, the pin 7 is shown as engaged with the shoulder 10, so that the lower part of the lever 4 cannot be further moved to the right; and therefore, when said lever 2 is swung over to actuate the slide, such lower portion of the trigger 4 will encounter the adjacent one of four projections 11 and rotate through a quarter of a revolution a disk 12, which carries such projections 11. As shown to advantage in Fig. 3, the projections 11 carry rollers or loose sleeves 13 against which the lower part of the trigger 4 is adapted to strike, and which facilitates the engagement of said trigger.

The disk 12 is mounted to turn on a central arbor 14, which is carried on a bracket 15, fastened in any suitable manner to the frame-work 1 of the machine. In the disk 12 is a volute groove 16, in which is received

a finger 17, held by a set screw 18, on a slide 19. The slide 19 has a central slot 20, by means of which it is received over and movable with respect to, the central arbor 14, and a guide nut 21 having sides which snugly fit the slot 20. This guide nut 21 is fitted over the central arbor 14 and against a block 22, which spaces the slide 19 from the disk 12, as clearly appears from Fig. 3.

The washer 23 is engaged over the central arbor 14 next adjacent the guide nut 21, and is of a width to extend to either side of the slot 20 in the slide 19, with a view to holding said slide in place on the guide nut and against the block 22. This washer 23 is yieldingly held in position by a coil spring 24, wound on a sleeve 25, surrounding the arbor 14, and interposed between the washer 23 and a second washer 26, bearing against the bracket 15. By this means the slide 19 is resiliently held in place, so as to be yieldable and permit the lifting of the finger 17 from engagement with the groove 16, whereby the slide may be rapidly re-set to zero or changed to any position desired.

A block 27, having a flange 28, is mounted on the arbor 14 in rear of the disk 12, and receives a coil spring 29, confined between said flange 28 and the washer 30, fitted against the rear side of said disk 12 for the purpose of imposing friction on the movement of said disk 12 and to aid in maintaining the disk in the proper position.

The slide 19 carries a pin 31 adapted to strike a pivoted finger 32 carried on an arm 33, which supports a hammer 34 for striking a bell 35. This bell is carried on an arm 36, fastened in any approved manner to the bracket 15, and has a stationary finger 37 projecting downwardly therefrom, as shown in Figs. 1 and 3, to engage a stop 38 on said arm 33 for the purpose of limiting the movement of the bell hammer. A coil spring 39 connects the rear end of the pivoted finger 32 to a point on the bracket 15 for the purpose of returning this pivoted finger 32 to the position shown in Fig. 1 after it has been tripped by the pin 31.

As the slide 19 moves downwardly with respect to the position, as shown in Fig. 1, this pin 31 will engage the rear end of the pivoted finger 32, and as there is a stop 40 carried on said finger 32 and engaging the under side of the arm 33, such finger 32 will not be permitted to swing, but a further downward movement of the slide 19 will cause the pin 31 to carry both the finger 32 and arm 33 before it, moving the hammer 34 away from the bell 35, and the stop 38 away from the fixed finger 37. As this downward movement of the slide 19 continues, the arm 33 will be swung to a position where the tip of the finger 32 will escape from the pin 31, whereupon said arm 33 will

be released to the action of the spring 39, which will quickly return the same to the position shown in Fig. 1, causing the hammer 34 to strike and sound the bell 35, at the same time the stop 38 striking the fixed finger 37 in a manner to prevent the hammer 34 from muffling the sound of the gong.

The pivoted finger 32, as shown, is provided with a beveled lower edge 41, over which rides the pin 31 when the slide 19 is returned in the upward direction. This riding of the pin 31 over the beveled edge 41 causes the finger 32 to move on its pivot in opposition to the spring 39 in order to allow the pin 31 to escape past the same, after which the spring 39 will return the finger 32 to the normal position, with its stop 40 resting against the swinging arm 33, as shown in Fig. 1.

The operation of the device may be briefly described as follows:

After the operator, by means of usual mechanism associated with the keyboard of the type casting machine, has secured the delivery of the proper number of matrices to the assembler for composing any given line, the usual mechanism is operated to cause the assembler to elevate such composed line of matrices and to subsequently shift the lever 2 toward the left, as shown in Fig. 1, whereupon the slide is actuated to transfer the composed line of matrices to the first elevator, from which it is later caused to descend into operative relation with the casting wheel.

When the lever 2 springs to the left, as shown in Fig. 1, the lower part of the trigger 4 will engage the nearest projection 11, and will carry the disk 12 around on the arbor 14 through substantially one-quarter of a revolution, thus bringing #1 on the disk opposite to the indicating finger 17. This number is clearly observable by the operator at the keyboard, and informs him that a single line has been composed.

On the return movement of the lever 2, the coil spring 5 will yield when the lower part of the trigger 4 engages the next successive projection 11, and will permit such trigger to swing past same, this being also permitted by the shoulder 9, being removed from the stop 7. This shoulder 9, however, will engage the stop 7 and arrest any undue movement of the trigger 4. The transfer lever 2, having gained its initial position, it is in readiness for the next operation, after the operator has composed the second line of matrices, and desires to deliver same from the assembler to the first elevator.

On the second operation of the transfer lever a similar action is produced by the trigger 4 striking the next successive pin 11, and similarly rotating the disk 12, through a second movement, which will

bring the numeral 2 on said disk opposite the indicating finger 17, thus showing that two lines have been formed. In like manner the disk 12 is actuated at each successive composition, while the finger 17 traverses the volute groove 16 in the disk 12 thus moving the slide 19 in rectilinear direction downwardly, as shown in Figs. 1 and 2, and when such finger 17 approaches the center of the disk 12, the pin 31, carried thereby, will be brought into operative engagement with the finger 32, such that the gong 35 will be sounded to advise the operator that the indicator is to be re-set.

The indicating numerals above referred to on the disk 12 are represented in Fig. 1 at 45; such numerals being arranged in radial lines, each adjacent the volute groove 16 and being disposed in arithmetical progression successively at 90° apart, so that as the disk 12 intermittently rotates counter-clockwise through a quarter of a revolution, the indicating numbers will be brought successively in their numerical order to the top at the point where zero is shown in Fig. 1, and will be brought to the attention of the operator when in this position by the finger 17.

The above operation is that described more particularly for use in composition of comparatively short lines, such, for instance, as five inches or less; but when the casting machine is producing butted slug work it becomes important for the operator to know which half of the line on which he is at any particular time working.

As is well known in this butted slug work two type slugs after having been cast separately, are fitted end to end, and a single line of double the length of a single slug is printed simultaneously from both such slugs. In assembling the matrices and casting, the operator may terminate the first slug of any particular line by breaking a word without regard to a syllable ending; this for the reason that the second slug which completes the butted line, is fitted close up against the first slug and may have the remaining portion of the uncompleted word thereon in such a way that when printed the word divided between the ends of the butted slugs will be fitted neatly together, and will give the appearance of being continuous and as though printed from a single slug.

However, it is important that the operator know when he is working on the second slug, as such second slug terminates the line, and he must see to it that the line ends either with a completed word or with a proper syllable ending together with the hyphen. Much time is at present lost, as the operator in actual practice is continually confused as to the particular part of a line on which he is working, and consequently much time is lost in locating himself. For

this reason such butted slug work is quoted by all printers at at least price and one-half, and for some characters of more complex work, double price, and even triple price.

The cost of actual composition may be reduced by having my improved indicator at all times announce to the operator on which half of the line he is working, and for this purpose I place the large numerals shown in Fig. 1 at the outermost edges of the disk 12, which four numbers are indicated at 46, 47, 48 and 49. These numbers are 1, 2, and 1, 2, respectively, so that as the disk 12 is turned to successive quarter revolutions a number 1, as at 49, is first presented before the finger 17, and successively the number 2, as shown at 46, so that it will be clear to the operator at all times by glancing at the indicator which of the two slugs he may at any time be assembling or transferring.

When doing this butted slug work the slide 19 may be out of operation if desired, and in its lowermost position, and the gong 35 also necessarily out of operation. However, if, in addition to representing the particular slug, it is desired also to count the number of double lines thus made in this butted slug work, the slide 19 may be used as in the case above described, but, of course, a calculation must be made in order to rectify the double count which would otherwise be made. By dividing the registered number by two, or taking half of such registered number, the number of lines already composed will thus be ascertained, as the device as constructed and shown in the drawings makes a count for each slug, and therefore when two slugs are employed to constitute one line the two slugs must be divided by two in order to give the one line which they impose on the printed page. This calculation, however, is not difficult, and is readily arrived at by the high class of labor necessary to the operation of slug casting machines of this character.

I do not desire to limit myself to any particular construction of gong, or gong sounding mechanism, as it is obvious that other alarms might be provided, and I reserve the right to change the constructions, combinations and arrangements herein shown and described, as permitted by the appended claims.

Having thus described my invention, what I claim and desire to secure by Letters Patent of the United States, is:

1. A device of the character described including an arbor, a disk mounted to rotate on said arbor and having a volute groove therein, a guide on said arbor, a slide having a slot fitting said guide, a finger on said slide occupying the groove in said disk and adapted to shift the slide when the disk is revolved, means for spacing said disk and

slide, a sleeve on the arbor in rear of said disk, a shoulder on said sleeve, a washer bearing against said disk, a spring coiled about said sleeve and having its ends engaging against said shoulder and washer for imposing a tension on said disk, means for intermittently rotating said disk in opposition to the tension imposing means, and means for yieldingly pressing said slide against said spacing means, substantially as described.

2. A device of the character described including an arbor, a revoluble disk on said arbor having a volute groove therein, guide means on said arbor, a slide having a slot received on said guide means, a finger on said slide occupying the groove in said disk, spacing means between said slide and disk, a sleeve on said arbor in front of said slide, a washer of greater width than the slot in said slide and bearing up against the outer face thereof, a bracket for holding the arbor, a spring wound about said sleeve and yieldingly pressing said washer against said slide, and means for intermittently rotating said disk, substantially as described.

3. A device of the character described including a bracket, an arbor held in said bracket, a rotary disk on said arbor having a volute groove therein, a guide on said arbor, a slide having a slot fitted over said guide, means for spacing said slide and disk, a finger carried by said slide and engaging in the groove in said disk, a washer

bearing up against the rear of said disk, a shouldered part on the arbor in rear of said washer, a spring interposed between the shoulder on said part and said washer for imposing friction resistance to the movement of said disk, means for intermittently rotating said disk in opposition to said friction resisting means, a second washer bearing against said slide, and spring means engaging said last-named washer to yieldingly hold the slide against said spacing means, substantially as described.

4. A device of the character described including a bracket, an arbor carried in said bracket, a rotary disk on said arbor having a volute groove, guide means on said arbor, a slide fitted over said guide means, a finger on said slide engaged in the groove in said disk, means for spacing said disk and slide, a washer bearing against the rear face of said disk, spring means for urging said washer against said disk to frictionally resist the turning thereof, means for rotating said disk in opposition to said friction means, a washer bearing against the front face of said slide, and spring means for yieldingly bearing against said last-named washer to hold the slide in position with the finger resting in said groove, substantially as described.

In testimony whereof, I affix my signature.

SAMUEL B. HARPER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents Washington, D. C."