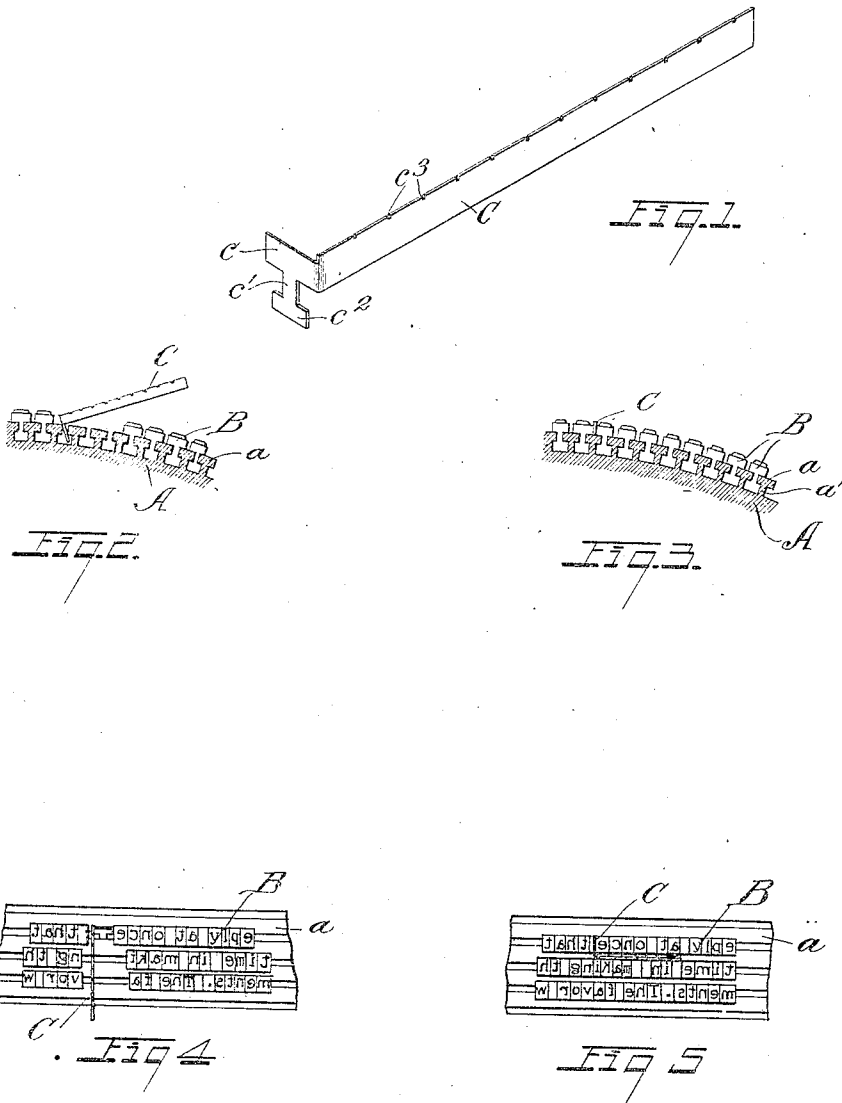


W. R. ALLEN.
 UNDERSCORING DEVICE FOR PRINTING MACHINES.
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1,052,201.

Patented Feb. 4, 1913.



Witnesses.

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UNITED STATES PATENT OFFICE.

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UNDERSCORING DEVICE FOR PRINTING-MACHINES.

1,052,201.

Specification of Letters Patent.

Patented Feb. 4, 1913.

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To all whom it may concern:

Be it known that I, WILLIAM R. ALLEN, a citizen of the United States, residing at Cleveland, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Underscoring Devices for Printing-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

The object of this invention is to provide a very simple and effective underscoring device for use on printing machines.

The invention is particularly well adapted for use with machines employing grooved type held in rows by overhanging rails. In such machines, the type is frequently of typewriter pattern, and accordingly, it is desirable, where emphasis is to be indicated, to provide a line beneath the word or words emphasized, after the manner of a typewriter. Where the lines are set a considerable distance apart, known as "double space", the underlining may be accomplished by suitably formed type designed for this purpose and set in the intermediate channel, though such arrangement brings the underscoring line an undue distance below the type; but where the character type are set in adjacent channels, in what is known as "single space" work, it has been a matter of difficulty to properly provide for any underscoring.

It has been proposed to accomplish underscoring of "single space" work by putting a piece of spring metal, like a portion of a watch spring, between the adjacent type rows, allowing the tendency of the metal to curve to frictionally hold it in place. This has been objectionable, because even the slight curvature of such spring metal renders its artificial character detectable. Furthermore, such piece of metal is liable to become displaced so that it underlines other characters than those desired, or it may work out of the form altogether.

The present invention provides an underlining strip of metal, formed to rest between the type, such strip having a head which is adapted to occupy an adjacent row of type and be engaged by such type, whereby the strip is securely held in place. My strip is designed to be cut off in lengths which are multiples of the distance across a type, and the head prevents any longitudinal shifting of the strip, so that it will

always underline just the characters desired, and, furthermore, cannot work up in the form or accidentally drop out when the form is inverted.

As stated, my invention is particularly well adapted for use with machines having parallel rails with overhanging edges providing under-cut channels which are adapted to confine rows of type grooved on their opposite sides, and in such case, my underscoring device is made of a long strip adapted to rest on the face of a rail between adjacent type rows, and the head, preferably at one end of the strip, is formed somewhat similar to a type and adapted to occupy the under-cut channel which the type occupy. This head is preferably the same integral piece of sheet metal as the strip proper, being formed of a portion of that metal bent at right angles to the strip. Notches in the opposite sides of the head correspond to the grooves of the type and are adapted to be occupied by the overhanging portions of adjacent rails.

My underscoring device may be put in place by holding it transversely of the rails so that the enlarged foot of the head may pass into the type channel, when the strip is turned into position, and such enlarged foot, swinging around beneath the rail heads, holds the strip against removal, the type abutting the head on opposite sides and holding it against displacement. The thinness of the head enables it to be inserted wherever desired between words, without causing any perceptible irregularity in the printed impression.

In addition to the strip and head broadly, as above referred to, my invention includes other more specific features, as will be explained in the following description of a convenient embodiment of the invention.

In the drawings, Figure 1 is a perspective view of my underscoring device complete and detached; Fig. 2 is a sectional view of a portion of a type drum with the underscoring strip in the process of being put in place; Fig. 3 is a similar view with the underscoring strip in place; Figs. 4 and 5 are plans of a portion of such type-holding drum with the underscoring strip being applied, and with it in place, respectively.

Referring to the parts by reference letters, A represents any suitable member, which may, for example, be a rotary drum, and is provided with suitable parallel rails *a*, which

have overhanging heads surmounting reduced shanks or webs a' .

B represents the type which occupies the under-cut channels provided by the adjacent rails, this type having grooves on its opposite sides to enable it to be slid in endwise of the type channels and thereafter to be held against displacement as the drum rotates.

C represents my underscoring device, which has a long strip portion of a length corresponding to any desired number of type, and a height corresponding to the distance the type face stands above the periphery or surface of the rail face, and a thickness slightly less than the distance between the heads of type in adjacent rows. Accordingly, when the strip portion C rests on the face of the rail between rows of type, it underlines a portion of one of such rows and is substantially the same height to paper as the type itself. Integral with the strip portion C of the underscoring device is the head c , which is bent at right angles to the strip portion and is of substantially T-shape, having an upper portion of a width approximately that of a type, then a shank portion c' corresponding to the shank of the type, and a foot portion c'' corresponding to the foot of the type. The head c does not rise as high as the printing edge of the strip proper, so that no imprint is made by the head.

The head is so thin that it may be easily placed within a type channel at any point intermediate of a line and does not have to be shoved in endwise. After being so placed with the strip projecting transversely of the rails, a simple twisting of the device brings the head transversely of the rails and the strip longitudinally thereof, whereupon the strip can be pressed down between adjacent type lines, and the head will then stand alongside of the type in the channel which the head occupies.

Figs. 2 and 4 show the position of my underscoring device as it is being put in place. It is simply necessary to separate, by a short distance, the type in the line which the head is to occupy and a few of the adjacent type lines; then to put the head in the desired space with the strip partly occupying the space between separated type lines, and partly above the type form projecting transversely and diagonally away from the form, as shown in Fig. 2. Then, as the device is twisted into place, the strip passes over the type lines, which are to stand below it, for example, and may then be pushed down into place, between the type lines. Then the separated lines are closed up and the type matter assumes the form illustrated in Fig. 5.

The strip portion of my underscoring device stands midway between two adjacent

channels, so that the head, as may be most convenient, may be put in either the channel it is desired to underscore, with the strip extending below the type in such a channel, or in the next lower channel with the strip extending above the channel which it occupies, which will bring the strip below the channel it is desired to underscore.

In order to give the imprint produced by my underscoring device as close a similarity as possible to that of typewriting, I may notch the printing edge of the strip, as shown at c^3 , dividing it into short printing lines corresponding to the thickness of a type, and causing an interrupted underlining like a typewriter. These notches form a convenient guide for cutting off the strip, so that it may always be of the length just equal to that of the word or words intended to be underscored. Inasmuch as my strip does not rely on any spring action to hold it in place, it may be made of soft metal, easily cut with a pair of shears, enabling the strips to be conveniently trimmed to any desired length.

My underscoring device may be used equally well where the printing is through an inked fabric or where the ink is supplied direct to the type by a roller. The head insures the strip being held in place whatever method of inking is used, or whether the form is removable or stationary.

I have shown the underscoring device as applied to single space work, which has heretofore presented the greatest difficulty. It is equally adapted, however, to double spacing or to the bottom line on the page or other locations where it is not between adjacent printing lines. In such cases it is only necessary to set a few spaces or quads in the vacant channel adjacent to the line to be underscored, or insert one or more metal stops sprung in between the rails, such quads, spaces or stops rising to an ample height to prevent any displacement or bending of the strip.

Having thus described my invention, what I claim is:

1. In an underscoring device, the combination of a printing strip, and a retaining head forming a permanent part thereof and extending from the side of the strip and having a grooved side.

2. An underscoring device having a strip-portion, and a head portion at one end at right angles to the strip, said head portion being at the side of the strip portion and having a groove in its side edge.

3. An underscoring device having a strip-portion, and a head portion at right angles thereto and being of substantially T-shape.

4. An underscoring device having a strip-portion, and a head portion at right angles thereto and being of substantially T-shape, the top of the T being lower than the top of the strip-portion, and the shank and a

foot on the T being lower than the bottom of the strip-portion.

5. In an underscoring device, the combination of a printing strip and a retaining head connected therewith and extending lower than the strip and having a projecting foot.

6. An underscoring device made of a single piece of sheet metal and having a strip-portion and a head portion extending from the side of the strip portion at one end and at right angles to the strip, said head portion having a groove in its edge.

7. An underscoring device adapted for use in connection with a railed member adapted for carrying grooved type, said underscoring device having a comparatively long strip adapted to stand on the face of a rail, and a comparatively short head extending to one side and adapted to stand in the space between the said rail and the adjacent rail.

8. The combination with a member having parallel rails with overhanging heads, of an underscoring device having a strip-portion, and a head with a reduced shank and a projecting foot adapted to occupy a channel between adjacent rails and be held thereby.

9. The combination with a member having parallel rails with overhanging heads, of an underscoring device having a strip-portion, a head with a projecting foot adapted to occupy the channel between adjacent rails and be held thereby, said head being thin enough so that when turned out of normal position its enlarged foot may be passed between the heads of the rails.

10. The combination with a member having parallel overhanging rails, of an underscoring device having a strip-portion and a head with a reduced shank and a projecting foot, said foot being adapted to be passed into the type channel between the rails and turned therein to bridge the under sides of the rail heads, and the strip in such position standing on the face of one of the adjacent rails.

11. An underscoring device comprising a strip having its printing edge notched regularly corresponding to the characters of abutting type, and a notched retaining head secured to said strip and projecting to one side thereof.

12. In an underscoring device, the combination with rails for holding rows of type, of a strip formed to be held between adjacent rows of type and rest on a rail engaging both rows, said strip having its printing edge notched regularly corresponding to the thickness of the type.

13. An underscoring strip made of a single piece of sheet metal and having a strip-portion and a head portion at right angles to the strip portion, the head portion having a projecting foot beneath a notch in the edge of the head.

14. An underscoring strip made of a single piece of sheet metal and having a strip-portion and a head portion at right angles to the strip-portion, the head portion having a reduced shank and a projecting foot, and standing less high than the printing edge of the strip-portion.

15. An underscoring strip made of a single piece of sheet metal and having a strip-portion and a head portion at right angles to the strip-portion, the head portion standing less high than the printing edge of the strip-portion and having a reduced shank and a projecting foot, the strip-portion being notched on its printed edge.

16. The combination with a member having parallel type holders, of an underscoring device having a strip-portion, and a projecting head adapted to be positioned in an adjacent type row.

17. The combination with a member having parallel type holders, of an underscoring device having a strip-portion, and a head at one end of the strip adapted to be positioned in an adjacent type row and be held thereby, said strip being adapted to be engaged on opposite sides by the adjacent rows of type.

18. An underscoring strip made of a single piece of sheet metal and having a strip portion and a projecting head portion, the strip portion standing higher than the head portion, and the head portion having a retaining foot beneath an edge notch therein.

19. An underscoring strip made of a single piece of sheet metal and having a strip portion and a head portion bent therefrom, said head portion having a notch in its side.

20. The combination, with a member having parallel overhanging rails, of type grooved on their opposite sides and adapted to stand between said rails with their heads overhanging the same, and an underscoring strip adapted to rest on the surface of the rail between type lines and stand type high, and holding means on said strip adapted to stand between individual type in one of said lines between the rail on which the strip stands and an adjacent rail.

In testimony whereof, I hereunto affix my signature in the presence of two witnesses.

WILLIAM R. ALLEN.

Witnesses:

FRED C. JONES,

THOS. I. DICKSON.