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RIBBON POSITIONING DEVICE FOR TYPE WRITERS.

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**926,036.** Patented June 22, 1909.

Fig. 1.

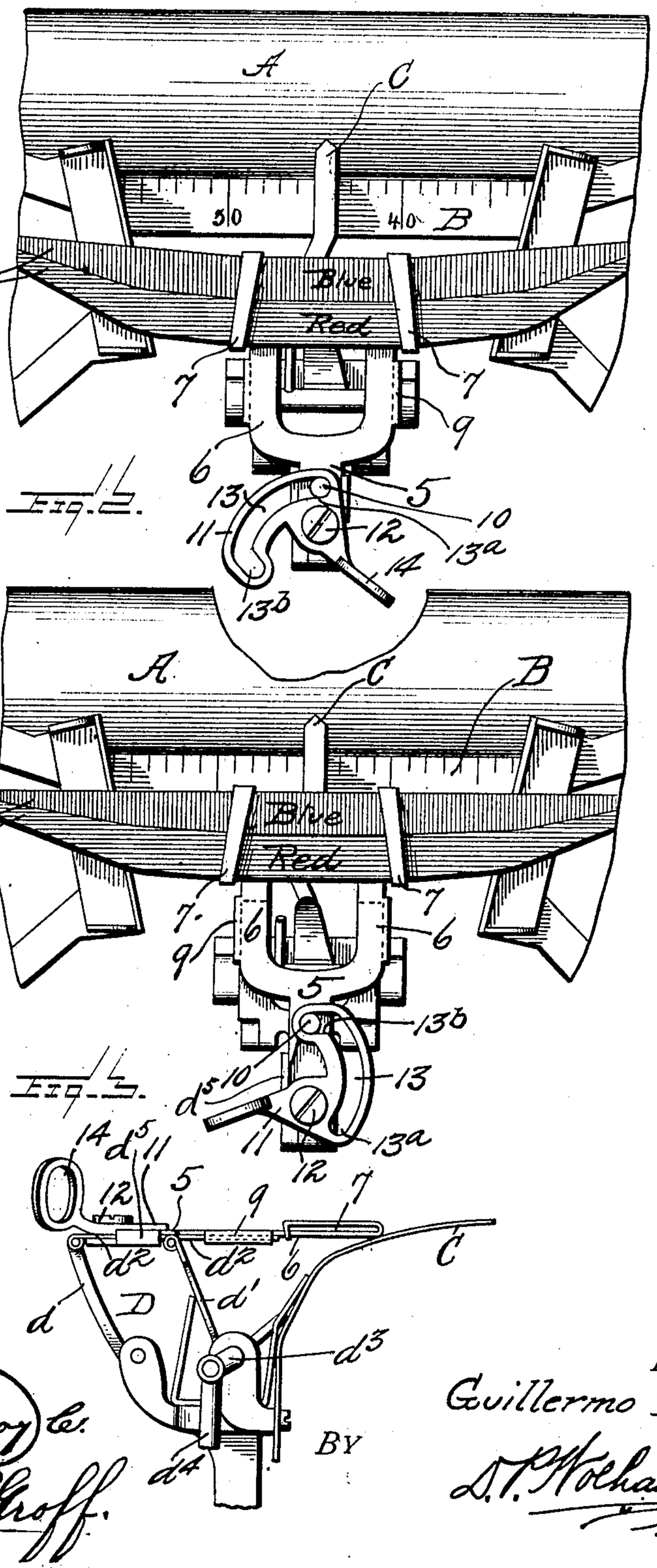


Fig. 2.

Fig. 3.

Fig. 4.

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# UNITED STATES PATENT OFFICE.

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## RIBBON-POSITIONING DEVICE FOR TYPE-WRITERS.

No. 926,036. Specification of Letters Patent. Patented June 22, 1909.

Application filed November 5, 1908. Serial No. 461,189.

*To all whom it may concern:*

Be it known that I, GUILLERMO TREJO, a citizen of Mexico, residing at Mexico City, Republic of Mexico, have invented certain new and useful Improvements in Ribbon-Positioning Devices for Type-Writers, of which the following is a specification.

My invention relates to improvements in ribbon mechanism for typewriting machines, and has particular relation to a novel and practical ribbon-shifting device for positioning predetermined portions of the width of a ribbon, or separate ribbons, over the line of writing.

The invention pertains more particularly to that class of typewriting machines in which the ribbon is supported by a ribbon carrier movable to carry the ribbon into and out of a position over the line of writing, this feature being generally present in what are known as "visible-writing" machines. In this type of machines, the ribbon is usually narrow and no definite provision is made for providing for a change in the position of the width of the ribbon relative to the line of writing. However, in some typewriter structures, there is provided means for adjusting the throw of the ribbon-carrier, thereby shifting the position of the ribbon with respect to the line of writing, but this shifting is one of the resulting effects of adjustment for other purposes, for instance, the adjusting of the escapement mechanism. This kind of ribbon shift is not contemplated by the present invention as the same is only incidental to the adjustment of other parts, and is generally such as to place a particular portion of the ribbon over the line of writing.

The invention claimed herein contemplates a shift in the ribbon, for the purpose of placing either one of two parallel lines of the ribbon over the line of writing during the movement of the carrier, thereby permitting of the use of duplex or multiplex ribbons, viz.; ribbons having different colors extending in parallelism lengthwise of the ribbon, and commonly termed "multicolored" ribbons, or ribbons having the parallel portions thereof, respectively, "press-copying" and "record". It is to this particular feature that the present invention relates, and while it is herein shown as applied to the ribbon-carrier structure of the "Oliver" typewriting machine, it is to be understood that it is applicable for use with other machines in which the ribbon is movable to and from a position over the line of writing by means of a ribbon-carrier.

The object of my invention is therefore to provide a structure in which a ribbon may be accurately positioned in two or more predetermined positions on a ribbon-carrier so, as to present any particular one of separate, parallel portions of the ribbon over the line of writing without affecting the normal adjustment of the ribbon-carrier or its movements.

A further object is to provide a structure of this character in which the shifting mechanism is supported solely by and movable with the ribbon-carrier.

A further object is to provide a structure in which the line of adjustment is substantially in the plane of the line of movement of the ribbon.

A further object is to provide means for locking the ribbon-support of the carrier at its points of adjustment, and supporting it against a liability of displacement from adjusted position during the movements of the ribbon-carrier.

A further object is the provision of a structure which is simple and efficient in operation, durable in construction, readily applied, and of relative low cost of manufacture.

To these and other ends the nature of which will be readily perceived as the invention is hereinafter disclosed, said invention consists in the improved construction and combination of parts hereinafter fully described, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the drawings, in which similar reference characters indicate similar parts in each of the views,—Figure 1 is a top plan view of so much of the "Oliver" typewriter structure as illustrates the manner in which the invention is applied to the ribbon-carrier, the parts being shown in one of the adjusted positions. Fig. 2 is a similar view, the parts being shown in a different position. Fig. 3 is a side elevation of the ribbon-carrier and a portion of its support, and showing, in side elevation, the invention applied thereto.

As heretofore set forth, the drawings illustrate the invention as applied to the "Oliver" typewriting machine, the parts shown being the platen A, scale B, indicator

C. portions of the type-bar supporting structures, and the ribbon carrier D, the latter being the portion to which the present invention particularly pertains. The ribbon is indicated at E, being shown as of "duplex" form, viz., each half of the width of the ribbon has a different kind or color of ink applied thereto. The supports or spools for the ribbon are not shown, but it is to be understood that they are of the type of this particular machine and do not have their axial position varied during the movement of the ribbon.

The ribbon carrier D is mounted to swing toward and from the line of writing, (the latter in the present case being on a line longitudinally of the platen approximately in the plane of the end of the indicator C), by means of the links $d$ and $d'$ pivotally connected at one end to a plate $d^2$, the opposite end of link $d$ being pivoted to a portion of the frame, while the opposite end of link $d'$ is secured on a rock-shaft $d^3$ adapted to be moved by the rod $d^4$, the latter being connected to the universal bar of the machine from which the carrier has its movements. These connections cause the plate $d^2$ to move in an approximately horizontal plane toward and from the platen, and are practically the same as in common use, with the exception that the plate $d^2$ is of less length and the ribbon eyes omitted.

The attachment forming the present invention consists of a plate or ribbon-guide 5 having a U-shaped portion 6, the spaced ends of which are bent to form ribbon eyes 7, the shank or stem of the plate extending from the closed end of the U-shaped portion. The U-shaped portion 6 is provided with retaining flanges 9 adapted to retain said portion against vertical movement and in contact with the similar portion of plate $d^2$, said contact, however, permitting of a sliding movement of plate 5 over the upper surface of plate $d^2$, the flanges 9 and vertically-extending flanges $d^5$ carried with plate $d^2$ providing guides to prevent a lateral movement of plate 5—6. The shank of the plate 5 is provided with a stud 10.

11 designates a cam-lever secured to plate $d^2$ by a screw 12, said lever having a slot 13 formed therein, and being of a width to receive the stud 10, as shown in Figs. 1 and 2. The slot 13 is shaped to impart a reciprocating movement to the plate 6 through the medium of the stud 10 which rides in the slot, the extremes of the reciprocating movement being limited by the passage of the stud into the end portions of the slot as the lever is moved pivotally. The main portion of the slot is eccentric with respect to the pivot point formed by screw 12, while one end of the slot, as at $13^a$, (that which is in closest proximity to the pivot point), is formed substantially concentric with respect to said point, the length of this concentric portion being sufficient to permit of a slight movement therethrough before the stud reaches the end of the slot, thereby forming, with the stud 10, a lock against any tendency of the plate 6 having its adjusted position varied by the rapid reciprocations of the carrier in writing. The opposite end of the slot 13 extends at an abrupt angle, as at $13^b$, to the general direction of length of the main portion of the slot, and is also substantially concentric to the pivot point, thereby forming at that end of the slot a similar lock to prevent variations in the adjusted position. The slotted portion of the lever is of a form approximating that of the slot 13, while the opposite end is formed with a handle portion 14 by which the lever is manipulated.

The operation of the attachment is simple, consisting merely in moving the lever 11 to place the stud 10 in one end or the other of the slot 13, dependent upon which ribbon or ribbon section is to be positioned over the line of writing.

As will be readily understood, the movement of the plate 5 does not affect the movements of the operating mechanism, including plate $d^2$, as the said plate, when the stud is positioned at an end of the slot, is the equivalent of a fixed part of plate $d^2$, and therefore having all of its movements. The only effect produced by the adjustment of plate 6 is to change the distance of the ribbon from the line of writing when the carrier is at rest or in inoperative position, the distance traversed by the ribbon to and from the line of writing being the same regardless of the position of plate 5. And, by reason of the fact that the lever is firmly positioned on the plate $d^2$ and the fitting of the stud 10 in the slot 13, there is provided a non-yielding positioning connection between the plates $d^2$ and 5 which can only be disturbed by a movement of the lever on its pivot, the ends of the slot preventing such action under the movements of the carrier.

The presence of the attachment does not prevent the use of a single color ribbon if desired, one advantage of the structure being that it would permit the use of two lines of ribbon surface in an obvious manner.

The attachment is simple and efficient in operation, does not require the use of spring surfaces for retaining the parts in position, and the fact that the axes of the lever pivot and the stud 10 are parallel with each other, together with the size and form of the slot, form a positive lock readily manipulated without the use of any spring binding surfaces.

Having thus described my invention, what I claim as new is:

1. The combination with a shiftable ribbon-carrier, of a reciprocatory ribbon guide

slidably mounted on and movable with the carrier, and an adjusting device pivoted on the carrier and having a cam bearing that is slidable against the guide transversely of its direction of movement for shifting said guide.

2. The combination with a shiftable ribbon-carrier, of a ribbon guide adjustably mounted on and movable with the carrier, and an adjusting device for the guide pivotally mounted on the carrier, said guide and carrier being provided one with a cam slot and the other with a projection engaged in the slot.

3. The combination with a shiftable ribbon-carrier, of a reciprocatory ribbon guide mounted on and movable with the carrier, and an adjusting device for the guide pivotally mounted on the carrier in rear of said guide and having a slot disposed eccentrically to its axis of rotation, said guide having a projection engaged in the slot.

4. The combination with a ribbon-carrier for typewriting machines, said carrier having a fixed movement to and from the line of writing, of a positioning device for the ribbon, said device being supported by and movable with the carrier and comprising a ribbon-guide adjustable on the carrier in directions corresponding to that of the path of movement of the carrier, and a pivotally-mounted lever for imparting movement to the guide, said lever and guide having complemental means for locking the guide at either extreme of its movement.

5. The combination with a ribbon-carrier for typewriting machines, said carrier having a fixed movement to and from the line of writing, of a positioning device for the ribbon, said device being supported by and movable with the carrier and comprising a ribbon-guide adjustable on the carrier in directions corresponding to that of the path of movement of the carrier, a pivoted lever having a cam-slot, and a stud carried by the guide and extending into said slot, said slot being formed at its ends to lock the guide and lever against relative movement otherwise than by manipulation of the lever.

6. The combination with a ribbon-carrier for typewriting machines, said carrier having a fixed movement to and from the line of writing, of a positioning device for the ribbon, said device being supported by and movable with the carrier and comprising a ribbon-guide adjustable on the carrier in directions corresponding to that of the path of movement of the carrier, a pivoted lever having a cam-slot, and a stud carried by the guide and extending into said slot, said slot being formed at its ends to lock the guide and lever against relative movement otherwise than by manipulation of the lever, the axes of the lever pivot and of the stud being parallel with each other.

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

GMO. TREJO.

Witnesses:
JUAN D. VILLA,
JOSE LUZ GARCIA.