May 25, 1948. L. C. MYERS ET AL 2,442,244

RIBBON GUIDE FOR TYPEWRITERS OR LIKE MACHINES

Filed May 2, 1946 2 Sheets-Sheet 1

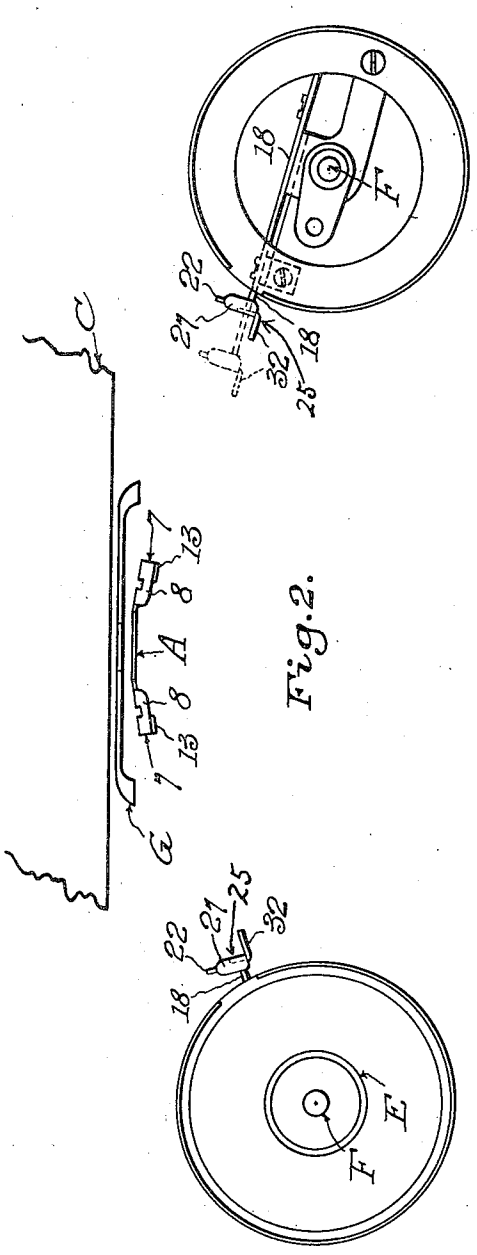


Fig. 2.

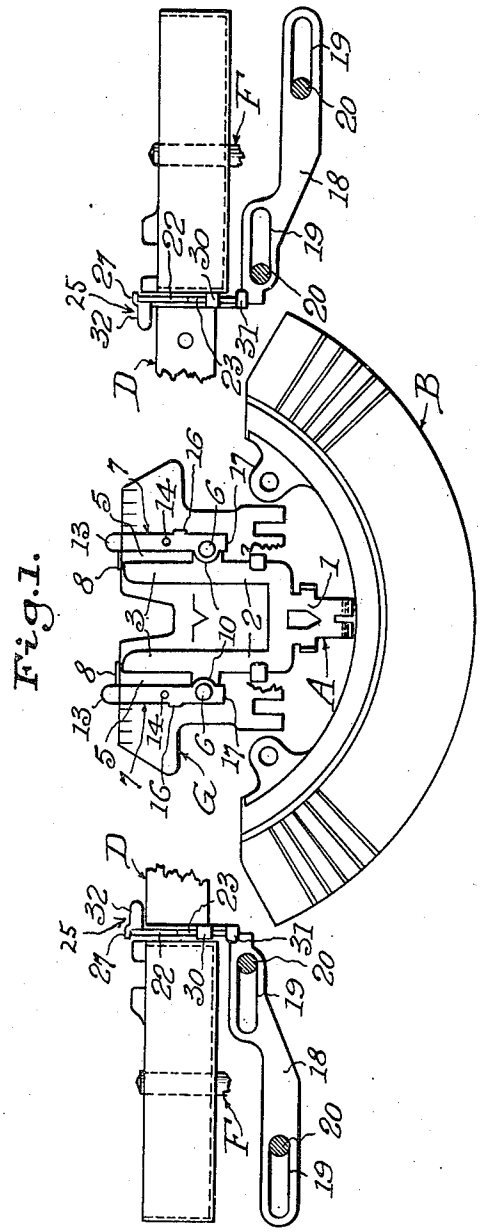


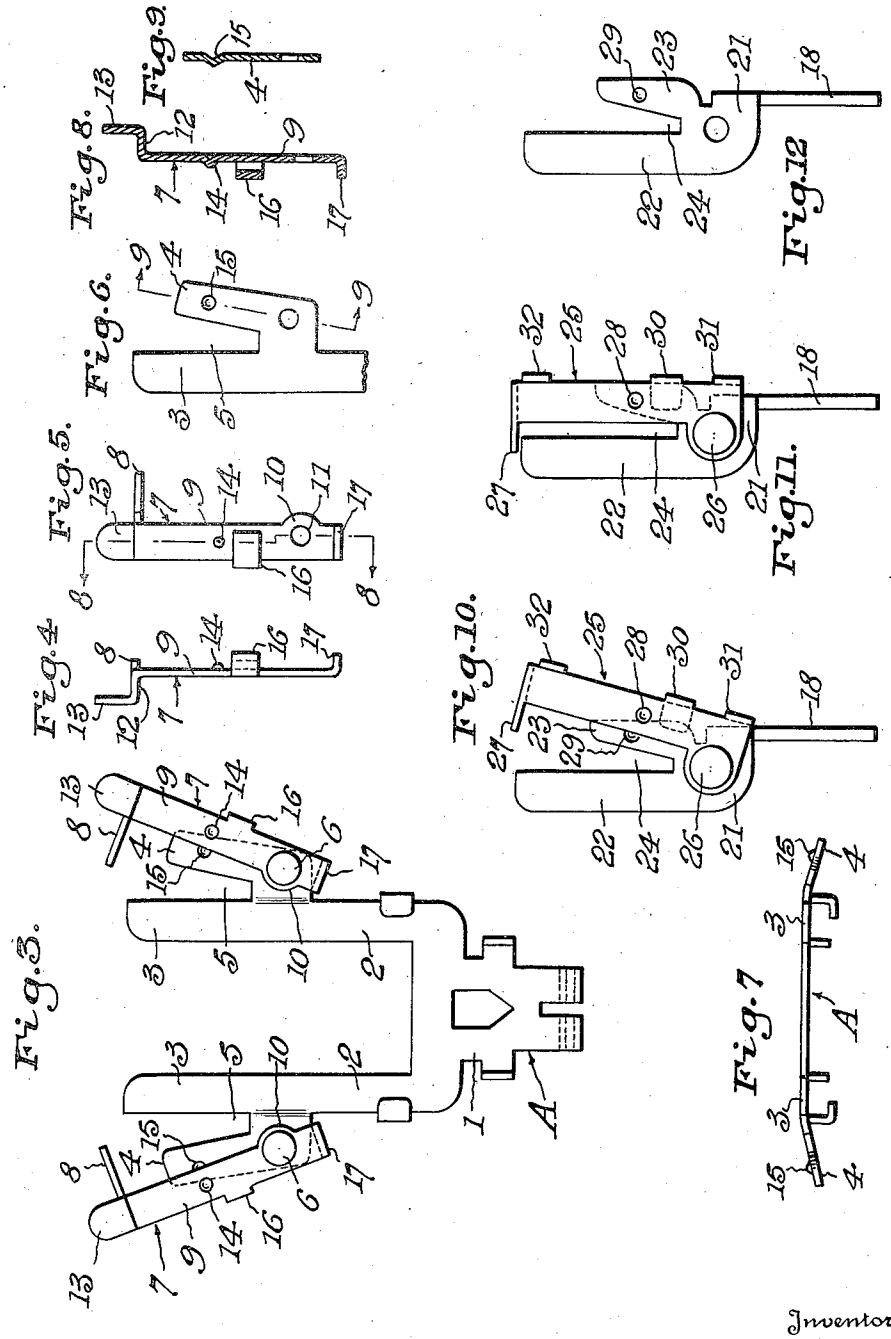
Fig. 1.

INVENTORS
Lewis C. Myers
William Graepel
BY
Baldwin & Wight
their ATTORNEYS

May 25, 1948. L. C. MYERS ET AL 2,442,244

RIBBON GUIDE FOR TYPEWRITERS OR LIKE MACHINES

Filed May 2, 1946 2 Sheets-Sheet 2



Inventors
Lewis C. Myers
William Graepel

By Baldwin & Wight
Their Attorneys

Patented May 25, 1948

2,442,244

UNITED STATES PATENT OFFICE

2,442,244

RIBBON GUIDE FOR TYPEWRITERS OR LIKE MACHINES

Lewis C. Myers, Freeport, and William Graepel, Brooklyn, N. Y., assignors to Royal Typewriter Company, Inc., New York, N. Y., a corporation of New York

Application May 2, 1946, Serial No. 666,744

10 Claims. (Cl. 197—170)

1

This invention relates to ribbon guides for typewriter or like machines, and more particularly to guides of the class referred to which are constructed or equipped to facilitate introducing a ribbon into the guide.

It is well known that commonly used conventional typewriter ribbon guides, for example those embodied in ribbon vibrators or in connection with ribbon reversing mechanism, are so constructed as to require the ribbon to be threaded lengthwise through the guide opening or to be slipped edgewise through a narrow entrance slot leading to the guide opening. This requires rather awkward fingering and handling of the ribbon with consequent loss of time and soiling of the operator's fingers. The same difficulties are encountered in removing an old ribbon.

An object of the present invention is to provide a ribbon guide of the general class referred to including improved means such as a latch or retainer for holding the ribbon against displacement from the guide slot, and which may be moved relatively to the other guide part or parts so as to facilitate inserting a ribbon in or removing it from the guide slot.

Another object of the invention is to provide a guide of the character stated in which the latch or retainer is of improved construction, and is so related to other parts of the guide as to be movable between two definite limit positions determined by stops to prevent damaging of the parts, which otherwise could occur if the latch or retainer were inadvertently to be forced beyond its normal range of movement.

Another object of the invention is to provide a ribbon guide of the kind described including simple and effective means for releasably holding the latch or retainer in closed position.

Another object of the invention is to provide a ribbon guide of the character referred to adapted for use in connection with typewriter ribbon vibrators and ribbon reversing mechanism.

Another object of the invention is to provide an improved ribbon guide construction including latches or retainers which are movable substantially horizontally to open and closed position.

Other objects will become apparent from a reading of the following description, the appended claims, and the accompanying drawings in which:

Figure 1 is a fragmentary front elevational view showing the improved ribbon guide embodied in a typewriter ribbon vibrator and ribbon reversing mechanism, and showing the relation of these parts to certain conventional parts of a typewriter, ribbon latches or retainers being shown in closed positions;

2

Figure 2 is a top plan view of the parts shown in Figure 1 and showing additionally a portion of the typewriter platen or printing cylinder;

Figure 3 is a front elevational view of the ribbon vibrator and associated ribbon latches drawn on an enlarged scale and showing the latches in open positions;

Figure 4 is an edge elevational view of the ribbon latch shown at the right hand side of the ribbon vibrator shown in Figure 3;

Figure 5 is a rear elevational view of the latch shown in Figure 4;

Figure 6 is a fragmentary view showing in front elevation the right hand portion of a ribbon guide part of the ribbon vibrator;

Figure 7 is a top plan view of the ribbon vibrator with the latching or retaining fingers omitted;

Figure 8 is a section on the line 8—8 of Figure 5;

Figure 9 is a section on the line 9—9 of Figure 6;

Figure 10 is an elevation drawn on an enlarged scale and showing ribbon guiding means associated with a ribbon reversing actuator as shown at the right in Figures 1 and 2, a ribbon latch being shown in open position;

Figure 11 is a view similar to Figure 10 but showing the latch in closed position; and

Figure 12 is an elevational view similar to Figure 10 but in which the movable latch or ribbon retainer is omitted.

Ribbon guides having some features in common with the guides disclosed herein are disclosed in the co-pending applications of David H. Collins, Ser. No. 666,742, filed May 2, 1946; Lewis C. Myers, Ser. No. 692,971, filed August 26, 1946; and Arthur E. Davis, Ser. No. 666,743, filed May 2, 1946.

A preferred form of improved ribbon guide constructed in accordance with the invention is shown in Figures 1 to 9 inclusive as being embodied in a ribbon vibrator A mounted for vertical reciprocation with respect to a conventional type bar segment B and printing cylinder or platen C. A typewriter ribbon D is shown as extending between ribbon spools E—E mounted respectively on shafts F—F; and a card guide scale is shown at G.

With the exception of the ribbon guide means with which it is provided, the ribbon vibrator A is of the form employed in Royal typewriters,

but it may be of other form or construction, and it will be understood that guide means constructed in accordance with the invention may be embodied in typewriter parts other than ribbon vibrators, and may be used in typewriters of different makes or constructions.

The ribbon vibrator A includes a lower portion 1 and two guide proper portions generally designated 2—2 spaced from each other above the portion 1 and being disposed in front of the writing line of the platen C. Each guide part 2 comprises a vertically extending relatively long finger or guide member 3, and a relatively short finger 4 extending generally upwardly but being inclined somewhat outwardly from bottom to top with respect to the associated finger 3. The fingers 3 and 4 of each guide part 2 are disposed in planes which are inclined with respect to each other as shown most clearly in Figure 7. Each pair of fingers 3 and 4 forms the bottom portion of an open ended guide slot 5 into which the ribbon may be introduced from above.

Pivoted by means of pins 6 on the respective guide parts 2 are ribbon latches or retainers 7, the upper ends of which are formed with keepers 8 adapted to extend across the tops of the associated slots 5 when the latches 7 are in the closed portions shown in Figure 1. When the latches are in closed position, the keepers 8 substantially meet the associated fingers 3 and preferably the keepers extend across or overlap the upper ends of the fingers. When it is desired to insert the ribbon in the slots 5—5, the latches 7 are moved to the open positions shown in Figure 3 and the ribbon is inserted downwardly in the slots 5 so as to pass in front of the latches 7 and fingers 4 and behind the fingers 3.

The latches preferably are made of sheet metal, and in accordance with the invention are formed in a novel manner so as to provide for easy manipulation, and so as to move substantially horizontally instead of vertically, thus dispensing with the necessity of moving the latches above the ribbon vibrator where they would be unsightly. The preferred latch construction is illustrated in detail in Figures 4, 5 and 8 which show the latch adapted to be mounted at the right of the ribbon vibrator as shown in Figure 3. The latch mounted at the left of the ribbon vibrator is of the same construction with the exception that the parts are reversed as to right and left hand. The right hand latch shown in Figures 4, 5, and 8 includes a shank 9 formed near its lower end with an enlargement 10 apertured as at 11 for receiving the pivotal mounting pin 6. The upper end of the shank 9 is turned over as at 12 to form a horizontal part, the lateral extension of which provides the keeper 8 previously referred to. At the front edge of the keeper 8 and parallel with the shank 9 is an upwardly extending finger piece 13.

In order that the latch 7 may be releasably retained in closed position, it is formed with a pressed out button 14 adapted to engage frictionally in a depression 15 formed in the associated short finger 4 of the ribbon vibrator A. The parts 14 and 15 provide a simple and effective surface catch means for holding the latch against accidental displacement from its closed position.

In the assembled construction, the shanks 9 of the latches 7 are disposed in face-to-face contact with the front faces of the short fingers 4. In order to prevent relative fore-and-aft separating movement of the latches with respect to the fingers 4 on which they are mounted, the latches are formed respectively with ears 16 extending from the shanks 9 past the outer edges of and then behind the associated fingers 4. The shanks 9 and associated ears 16 thus embrace the fingers 4 and support the latches 7 against fore-and-aft movement, thereby preventing the pivot pins 6 from being subjected to harmful strain. The portions of the ears 16 which extend past the outer edges of the associated fingers 4 are engageable with these edges for limiting the closing movement of the latches, thereby preventing bending of the keepers 8 which would result if the latches were moved beyond their proper closing positions and the keepers were forced against the tops of the fingers 3.

In use, in order to insert the ribbon in the guide slots 5, the latches 7 are swung to the open positions shown in Figure 3 where they are stopped in predetermined positions by engagement of ears 17 on the bottoms of the latches with the guide parts 2. The form and relation of the parts are such that the latches 7 will be stopped in these predetermined positions when the keepers 8 are disposed entirely out of the lines of the slots 5. The ribbon can then be inserted by a direct downward movement into the unobstructed slots formed by the pairs of long and short fingers 3—4.

The latches 7 are then moved to the closed positions shown in Figure 1. This movement may be effected conveniently by simultaneously pressing the forefinger and thumb of either hand against the outsides of the respective finger pieces 13 and pinching or squeezing the two latches toward each other. When the latches have been moved to their closed positions, the fingers 3 and associated shanks 9 of the latches will define guide slots having substantially parallel vertical sides, with the keepers 8 overlapping the tops of the fingers 3 so as effectively to close the upper ends of the slots 5.

Figures 1, 2, 10, 11 and 12 show one other of the many constructions in which the invention may be embodied. As is well known, some typewriters are equipped with ribbon reversing mechanism in which a part for actuating the reversing gears or control train therefor is moved by a button or projection on the ribbon when the ribbon has been nearly unwound from one spool. Figures 1 and 2 show such reversing actuators 18—18 mounted in connection with or adjacent the ribbon spool shafts F. The actuators 18 are adapted to be connected to other parts of the reversing mechanism (not shown) which may be of known construction, for example a construction of the kind shown in United States Patent 2,050,177 to Handley. The actuators 18 are formed respectively with two slots 19—19 which receive fixed pins or bars 20—20 to mount the actuators for sliding movements. Each actuator 18 is formed with an upstanding projection 21 comprising finger or guide parts 23—23 delineating an open ended guide slot 24. Latches 25, generally similar to the latches 7 described previously, are pivotally mounted at 26. The latches 25 have keepers 27, and buttons 28 frictionally engageable in depressions 29 in the guide parts 23. Ears 30 on the latches are bent to extend past the outer edges of the fingers 23 and behind the latter for limiting the closing movement of the latches and for supporting them against relative separating movement with respect to the fingers 23. Ears or lugs 31 on the lower ends of the latches 25 are engageable with the actuators

18 for limiting opening movement of the latches. The latches may also be formed with finger pieces 32.

The construction disclosed embodies the invention in its preferred form, but it will be understood that changes may be made without departing from the invention as defined in the claims.

We claim:

1. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the opposite side of said slot; and means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and substantially meets said member when said latch is in closed position.

2. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the opposite side of said slot; and means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and overlaps said member when said latch is in closed position.

3. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the oposite side of said slot; means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and substantially meets said member when said latch is in closed position; and surface catch means on said member and said latch for releasably holding said latch in closed position.

4. In a ribbon guide for a typewriter or like machine, a guide member including a guide part forming one side of a guide slot; a ribbon latch for forming the opposite side of said slot; means pivotally mounting said latch on said member to be moved selectively to a closed position in which the slot-forming portions of said member and said latch are relatively parallel and to an open position in which said slot-forming portions are relatively divergent towards the ends thereof remote from said pivotal mounting, said latch having a keeper which is spaced laterally from said guide-forming part of said member when said latch is in open position, and which extends across the end of the slot and substantially meets said member when said latch is in closed position; and inter-engaging means on said member and said latch for limiting the opening movement of said latch to stop the latch in a position in which the latch and the slot-forming part of said member are divergent and said keeper is disposed out of the line of the slot with parallel sides as formed when the latch is in closed position.

5. In a ribbon guide for a typewriter or like machine, a guide member including a long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a ribbon latch; and means pivotally mounting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger and is spaced from and is substantially parallel to said long finger so that said long finger and said latch define the slot sides, and to an open position in which said latch and said long finger diverge from the bottom of the slot, with said latch being disposed outwardly beyond the edge of said short finger adjacent said slot, said long and short fingers providing a ribbon-receiving slot independently of said latch when said latch is in open position.

6. In a ribbon guide for a typewriter or like machine, a guide member including a long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a ribbon latch; means pivotally mounting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger and is spaced from and is substantially parallel to said long finger so that said long finger and said latch define the slot sides, and to an open position in which said latch and said long finger diverge from the bottom of the slot; and a keeper on said latch which is spaced laterally from said long finger when said latch is in open position, and which extends across the end of said slot and substantially meets said long finger when said latch is in closed position.

7. In a ribbon guide for a typewriter or like machine, a guide member including a long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a ribbon latch; means pivotally mounting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger and is spaced from and is substantially parallel to said long finger so that said long finger and said latch define the slot sides, and to an open position in which said latch and said long finger diverge from the bottom of the slot, with said latch being disposed outwardly beyond the edge of said short finger adjacent said slot, said long and short fingers providing a ribbon-receiving slot independently of said latch when said latch is in open position, and inter-engaging surface catch means on said short finger and said latch for releasably holding said latch in closed position.

8. In a ribbon guide for a typewriter or like machine, a sheet metal guide member including a long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a sheet metal ribbon latch; and means pivoting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger against one face thereof and to an open position in which said latch and said long

finger diverge from the bottom of the slot, said latch having an ear bent to extend past the side edge of said short finger remote from the slot and to project in face-to-face relationship to the other face of said short finger for holding said latch and said short finger against substantial relative separating movement.

9. In a ribbon guide for a typewriter or like machine, a sheet metal guide member including a long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a sheet metal ribbon latch; means pivoting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger against one face thereof and to an open position in which said latch and said long finger diverge from the bottom of the slot; and interengaging surface catch means on the contiguous faces of said short finger and said latch, said latch having an ear bent to extend past the side edge of said short finger remote from the slot and to project in face-to-face relationship to the other face of said short finger for holding said latch and said short finger against substantial relative separating movement.

10. In a ribbon guide for a typewriter or like machine, a sheet metal guide member including a

long finger and a short finger spaced from said long finger and being connected thereto to form the bottom part of a ribbon slot; a sheet metal ribbon latch; and means pivoting said latch on said member to be moved selectively to a closed position in which said latch overlaps said short finger against one face thereof and to an open position in which said latch and said long finger diverge from the bottom of the slot, said latch having a keeper which extends across the end of said slot when said latch is in closed position, said latch being formed with a lug engageable with said member for limiting opening movement of the latch to stop it in a position in which said keeper is disposed out of the line of the slot formed when the latch is in closed position.

LEWIS C. MYERS.
WILLIAM GRAEPEL.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
702,447	Manning	June 17, 1902
855,542	Van Anden	June 4, 1907
1,570,218	Handley	Jan. 19, 1926