

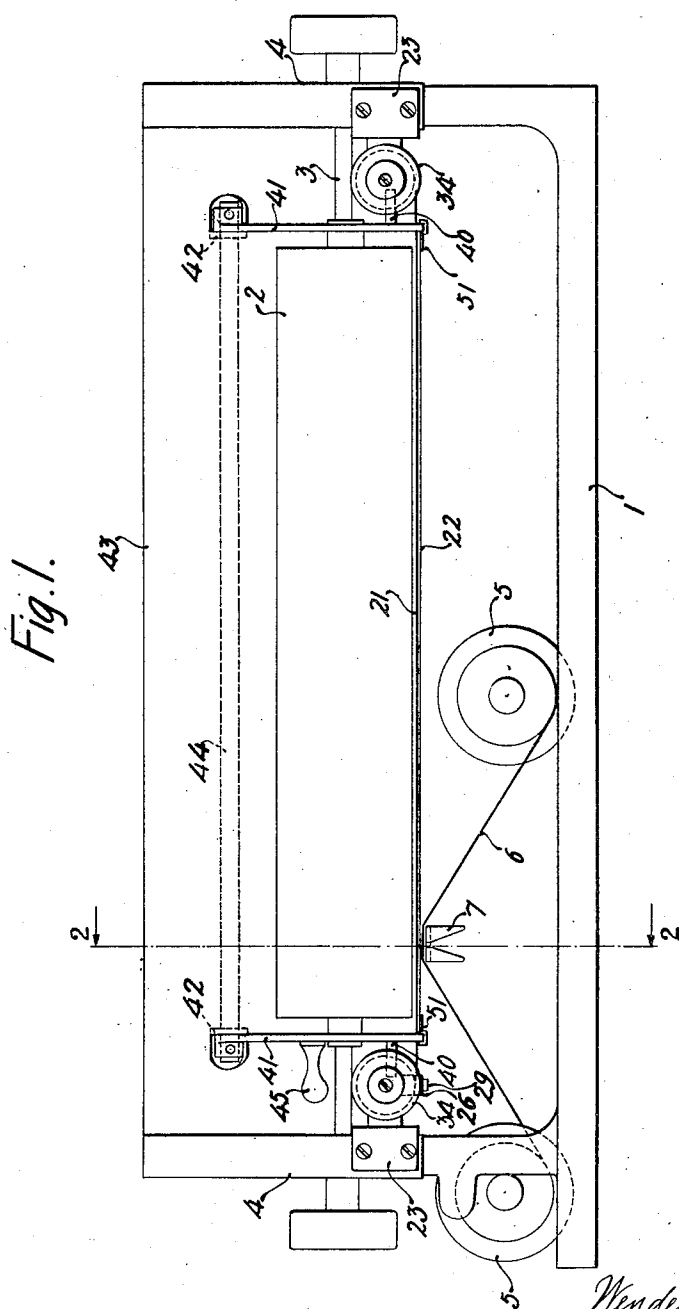
March 31, 1925.

W. P. KEENE
TYPEWRITING MACHINE

Filed Dec. 9, 1920

1,531,402

2 Sheets-Sheet 1



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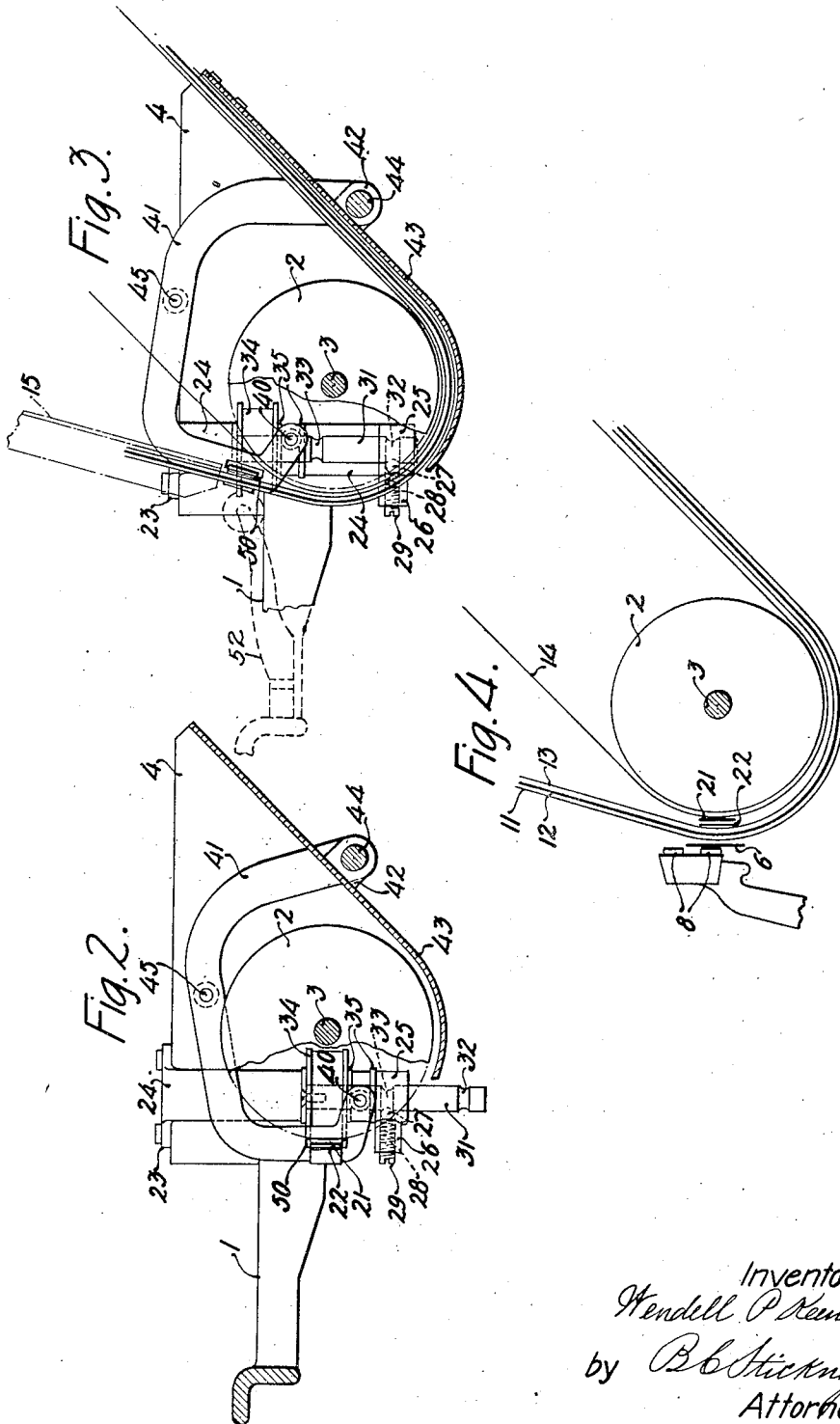
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2 Sheets-Sheet 2



Patented Mar. 31, 1925.

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UNITED STATES PATENT OFFICE.

WENDELL P. KEENE, OF BROOKLYN, NEW YORK, ASSIGNOR TO UNDERWOOD TYPE-WRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed December 9, 1920. Serial No. 429,310.

To all whom it may concern:

Be it known that I, WENDELL P. KEENE, a citizen of the United States, residing in Brooklyn Borough, in the county of Kings, city and State of New York, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

This invention relates to typewriting machines used for billing and other purposes, it being customary to use a condensed record-sheet next the platen. Over this record-sheet is usually placed a ledger-sheet, or a statement-sheet, or both, with intervening carbon-sheets. In practice the statement-sheet is sent to the customer at definite intervals, usually on the first day of each month, and a new statement-sheet must be inserted and a heading comprising the name and address of the customer typed thereon. However, such heading should not appear on the condensed record-sheet, since the same condensed record-sheet is to have typed thereon the items of several statements. Outer sheets, which may be statements or ledger-sheets, or both, may be successively inserted in the machine one after another, typed upon and removed, while an inner sheet, which may be a condensed record-sheet or tally-strip, may be left in the machine to receive items typed upon several successively-inserted outer sheets.

It is an object of the present invention to enable typing upon one or more outer sheets, and at the same time either to type upon or to avoid typing upon an inner sheet which remains in the machine. More particularly it is one of the objects of this invention to provide means for preventing the impressions of the type from being made on the condensed record or other inner sheet, while a heading, or other matter, is being typed upon a statement-sheet, or other outer sheet, which it is desired shall not appear upon the condensed record-sheet. It is understood that if a new ledger-sheet is used with a new statement, both may be inserted in the machine and similar headings typed thereon at the same time. If an old ledger-sheet is to be used with a new statement, the latter is inserted in the machine prior to the insertion of the ledger-sheet, and the heading typed thereon.

To accomplish the above noted objects, there is provided, in place of the usual car-

bon-sheet adjacent the condensed record-sheet, an inner ink ribbon resembling the ordinary ribbon of the typewriter. The additional or supplemental ribbon may be carried by the carriage, and means are provided for rendering the ribbon ineffective when the statement is to be headed, or other matter typed thereon which it is not desired should appear on the condensed record-sheet, which is left in the machine. To prevent ribbon impressions from the outer side of the inner ribbon from appearing on the back of the statement, ledger-sheet, or other front sheet, there is provided an impervious or non-inking silk shield in the form of a ribbon stretched in front of said carriage ink ribbon.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a plan view of an Underwood typewriter with the invention applied thereto, only such parts of the machine as co-operate with the invention being shown.

Figure 2 is a section on the line 2-2 of Figure 1, showing the additional or auxiliary ribbon in effective, or operative, position for printing on the condensed record-sheet, while the back of the adjacent outer sheet is protected by the shield.

Figure 3 is a view similar to Figure 2, showing the auxiliary ribbon in ineffective, or inoperative, position.

Figure 4 is a view similar to Figure 2 with some of the structure removed to show more clearly the relation of the various sheets and ribbons in the effective position of the auxiliary ribbon and its outer shield.

The device provides for a carriage-frame 1 of greater length than the ordinary carriage frame of the Underwood standard typewriter, the additional length being for a purpose hereinafter to be set forth. Mounted in the frame is the usual platen 2 fixed upon a shaft 3 journaled in end walls 4 of the carriage-frame. The usual ribbon spools 5 feed and wind the usual ribbon 6 in rear of the type-guide 7 adapted to guide types 8 to the printing point.

An inspection of Figure 4 shows that this machine is adapted to be used for typing several varieties of sheets. There are shown a statement-sheet 11, a carbon-sheet 12, a ledger-sheet 13 and a condensed record-sheet 14. The sheets 11, 12 and 13 are generally

fed over a collating table 15, with which machines of this type are usually provided. The ordinary outer ribbon 6 produces type impressions upon sheet 11, and carbon-sheet 12 produces impressions upon ledger-sheet 13. Impressions upon the condensed record-sheet 14, however, are produced by means of an additional or inner auxiliary ribbon 21, with which co-operates a silk ribbon 22 forming a shield at the outer side thereof, to prevent impressions from being produced on the rear of sheet 13, or from fouling said sheet by ribbon 21 when the sheet is withdrawn from the machine. The structure which comprises ribbons 21 and 22 and the means for rendering them effective or ineffective are now to be described.

Fixed to the end carriage walls are brackets 23 having depending portions 24, the latter being provided at their lower ends with bearings 25, the left bearing having a boss 26 in which operates a detent 27 pressed by a spring 28 whose tension may be adjusted by a screw 29. Mounted for reciprocating movement in each of said bearings is a vertical shaft 31, the left shaft having a lower grooved portion 32 and an upper grooved portion 33. Upon the upper end of each shaft 31 is journaled a ribbon-spool 34, and beneath said spool are two spaced collars 35, on the shaft 31. The inner inking ribbon 21 is carried by the spools 34 and extends from the forward sides of these spools along the front of the platen 2, to cover the printing point on the platen inward from the outer ribbon 6, as shown in Figures 1 and 4. It is thus apparent that the axes of the spools for the auxiliary ribbon are parallel to the axes of the spools 5 of the ordinary ribbon, and that the auxiliary ribbon is therefore fed to the printing point without any twisting throughout its length. Since the ribbon spools 34 lie in a horizontal plane laterally outward from the adjacent ends of the platen, it necessitates the lengthening of the carriage, as previously mentioned, a distance greater than twice the diameter of a spool. Projecting into the space between the collars 35 on each shaft 31 is a pin 40 at the end of an arm 41 pivoted to a bracket 42 on the under side of the usual paper-table 43. The two arms are connected by a rod 44, so that they move in unison, and one of the arms is provided with a finger-piece 45. Near their forward ends the arms are provided with slots 50 through which the auxiliary ribbon 21 is passed, for guiding it. Also the ends of the silk ribbon 22 pass through the openings 50, encircle the front parts of the arms, and are fastened to themselves, as at 51, so that the forward ends of the swinging arms 41 form a shield-carrier, the silk ribbon 22 being stretched between the arms 41 at the front of the inner inking ribbon 21.

The operation of the device is as follows:

Ordinarily the device is in the Figure 2 position with the various sheets and ribbons as shown in Figure 4. The type striking the ordinary ribbon 6 produces impressions on statement 11, the carbon 12 produces impressions on ledger-sheet 13, the auxiliary ribbon 21 produces impressions upon record-sheet 14, while the silk ribbon 22 prevents impressions from being printed by the auxiliary ribbon 21 on the rear of the ledger-sheet 13. If a new statement is inserted requiring the typing of the name and address which should not appear on the condensed record-sheet, the arms 41 are swung upwardly by the finger-piece 45, the pins 40 lifting the ribbon spools to the Figure 3 position, where the spring detent engages the lower groove 32 to hold the mechanism in ineffective position. The silk ribbon and the auxiliary ribbon move with the arms which carry up the spools of the auxiliary ribbon at the same time. The printing ribbon for the condensed record-sheet having been removed from the printing point, the statement may be headed without making any impressions on the record-sheet.

When the heading, comprising the name and address, has been typed upon the statement, the arms 41 are swung downwardly, thereby to return the inner inking ribbon 21 and its shield 22 from the upper or ineffective position shown in Figure 3 to the lower or typing position shown in Figures 2 and 4, so that now any items typed upon the outermost sheet or statement 11 by means of the outer inking ribbon 6, and upon the intermediate ledger-sheet 13 by means of the carbon-sheet 12, will also be typed upon the inner sheet or condensed record-sheet 14 by means of the inner ribbon 21, while the back of the intermediate sheet 13 will be protected from receiving impressions from the outer side of the inner ribbon 21 by means of the interposed shield 22.

Also, in the case of any kind of work in which it may be desirable, it is to be noted that the present invention provides for either typing upon or omitting from an inner sheet any part of the matter which is typed upon one or several outer sheets, in view of the fact that the inner ribbon 21 and its protective shield 22 are shiftable between their effective and ineffective positions while all of the sheets remain in the machine, without disturbing these sheets or interfering with the typing operation.

It will be seen that there is presented the novelty of silencing the auxiliary ribbon 21 by shifting it up just clear of the types 8 and there detaining it, whereby the front work-sheet 11 may be typed upon without typing upon the back work-sheet 14, which is a desideratum in many kinds of work. When it is again desired to use the auxiliary

ribbon 21, it is only necessary to press down one of the arms 41 to carry the auxiliary ribbon down to typing position. The auxiliary ribbon is moved upwardly and backwardly by means of the arms 41 between the front and back work-sheets without becoming unthreaded, that is, without losing its position between said sheets, and without disturbing the typing position of the front sheet 11 relatively to the platen, so that said sheet 11 remains supported by the platen at the type-strokes, as it is well known that the work-sheet must be solidly supported by the platen at the point where the type impact falls. The operation of silencing the auxiliary ribbon 21 involves shifting of the ribbon up just enough to clear the types 8, but not enough to become unthreaded or dislodged from its position between the sheets 11 and 14. Hence, in restoring the auxiliary ribbon, it is not necessary to rethread it between the sheets, but only to drop it down a short distance to working position. The sheets may be held against the platen at the printing line in the usual manner by the usual Underwood guide or finger 52, whether the interposed ribbon is elevated or in normal position.

It will be observed that the usual paper-holding means 52, Figure 3, keeps the work-sheets against the front of the platen at the printing line, enabling the work-sheets to be backed up solidly by the platen at the blows of the types 8, thereby insuring clear and even type impressions; said paper-holding means as usual directing the work-sheets back over the platen; while the auxiliary ink-ribbon 21, which extends along the platen, is constantly interposed between work-sheets and hence kept against the platen by said paper-holding means 52; and that the guiding means for said interposed ribbon 21 is mounted for reciprocation for temporarily shifting the ribbon 21 to and fro, while threaded between the work-sheets, from the printing line location, Figure 2 (and in an upward and rearward direction in a rearward curve eccentric to the curve of the platen and during that movement guided always close thereto), to a non-printing location, Fig. 3, just above the printing line; all the work-sheets being kept against said platen at and above the printing line and directed rearwardly therefrom by said usual paper-holding means 52, preparatory to typing upon the outer sheet through said main ribbon 6 without duplicating the type impressions through said interposed ribbon 21, said reciprocatory guiding means being thereafter returned, for restoring the interposed ribbon to printing location preparatory to typing therethrough.

Variations may be resorted to within the scope of the invention, and portions of the improvements may be used without others,

Having thus described my invention, I claim:

1. In a typewriting machine, comprising a carriage having a paper-table and having journaled therein a platen around which a plurality of sheets are adapted to be fed, the combination with brackets on said carriage, of shafts slidably mounted in said brackets for vertical movement, ribbon-spools on the carriage, one mounted on each of said shafts, said spools having a ribbon adapted to produce impressions on a lower sheet, and means for rendering said ribbon ineffective, said means comprising arms pivoted on said paper-table, and means on said arms engaging said shafts for sliding said spools upwardly when the arms are swung upwardly.

2. In a typewriting machine, comprising a carriage having a paper-table and having journaled therein a platen around which a plurality of sheets are adapted to be fed, the combination with brackets on said carriage, of shafts slidably mounted in said brackets for vertical movement, ribbon-spools on the carriage, one mounted on each of said shafts, said spools having a ribbon adapted to produce impressions on a lower sheet, spaced collars on said shafts beneath said spools forming grooves, and means for rendering said ribbon ineffective, said means comprising arms pivoted on said paper-table, and pins on said arms engaging said grooves for sliding said spools upwardly when the arms are swung upwardly.

3. In a typewriting machine, comprising a carriage having a paper-table and having journaled therein a platen around which a plurality of sheets are adapted to be fed, the combination with brackets on said carriage, of shafts slidably mounted in said brackets for vertical movement, upper and lower grooves in one of said shafts, ribbon-spools on the carriage, one mounted on each of said shafts, said spools having a ribbon adapted to produce impressions on a lower sheet, spaced collars on said shafts beneath said spools forming grooves, and means for rendering said ribbon ineffective comprising arms pivoted on said paper-table, pins on said arms engaging the grooves between the spaced collars for sliding said spools upwardly when the arms are swung upwardly, and a spring-detent in the lower end of one of said brackets adapted to co-operate with the grooves in the shaft to hold the arms in upper or lower position.

4. In a front-strike typewriting machine having a traveling carriage, a revoluble platen carried thereby, types to strike at a printing point on the front of the platen, means for guiding work-sheets around the platen and up past the printing point thereon, and means for holding an outer inking ribbon to cover the printing point at the outside of all the work-sheets on the platen,

the combination of a vertical spool-carrying shaft at each end of the carriage mounted to slide vertically therein, a ribbon-spool carried by each of said shafts to partake of its vertical movement and carrying an inner inking ribbon to extend along the front of the platen to cover the printing point inward from said outer ribbon, a device for sliding said spool-carrying shafts upwardly to raise said inner ribbon above the printing point on the platen, and a shield separate from said inner ribbon to cover the printing point on the platen at the outer side of said inner ribbon for protecting the back of the work-sheet next outward from said inner ribbon from receiving impressions from the outer side of said inner ribbon.

5. In a front-strike typewriting machine having a traveling carriage, a revoluble platen carried thereby, types to strike at a printing point on the front of the platen, means for guiding work-sheets around the platen and up past the printing point thereon, and means for holding an outer inking ribbon to cover the printing point at the outside of all the work-sheets on the platen, the combination of a vertical spool-carrying shaft at each end of the carriage mounted to slide vertically therein, a ribbon-spool carried by each of said shafts to partake of its vertical movement and carrying an inner auxiliary inking ribbon to extend along the front of the platen to cover the printing point inward from said outer ribbon, a shield separate from said inner ribbon to cover the printing point on the platen at the outer side of said inner ribbon for protecting the back of the work-sheet next outward from said inner ribbon from receiving impressions from the outer side of said inner ribbon, and means for silencing said auxiliary ribbon, including a device for sliding said spool-carrying shafts upwardly to raise said inner ribbon to a position just above the printing point on the platen without unthreading the auxiliary ribbon from the work-sheets and for concomitantly raising said shield above the printing point along with said inner ribbon, said shield being carried by said device to move therewith, and means for detaining said auxiliary ribbon in its silenced position.

6. In a typewriting machine having the usual main ribbon and the usual revoluble cylindrical platen and in which the type blows fall upon the front of the platen, and having the usual paper-holding means keeping the work-sheets against the front of the platen at the printing line, enabling the work-sheets to be backed up solidly by the

platen at the type blows and thereby insuring clear and even type impressions, said paper-holding means directing the work-sheets back over the platen, the combination with an auxiliary ink-ribbon extending along the platen and constantly interposed between work-sheets kept against the platen by said paper-holding means, of guiding means for said interposed ribbon, said guiding means mounted for reciprocation for temporarily shifting the ribbon to and fro between the work-sheets from printing location, and in a direction eccentric to and upwardly and rearwardly of the platen and guided always close thereto, to a non-printing location just above the printing line, all the work-sheets being kept against said platen at and above the printing line and directed rearwardly therefrom by said paper-holding means, preparatory to typing upon the outer sheet through said main ribbon without duplicating the type impressions through said interposed ribbon, and for restoring the interposed ribbon to printing location preparatory to typing therethrough.

7. In a front-strike typewriting machine, the combination with a revoluble platen, a platen-frame, and a main ribbon mechanism to co-operate with the types, of a device mounted upon the platen-frame and capable of either supporting a rear auxiliary ribbon in typing position in front of the platen or silencing said auxiliary ribbon, at will, said device being mounted to shift said auxiliary ribbon from normal typing position upwardly and rearwardly back of the front work-sheet to an abnormal position just clear of the types, while said auxiliary ribbon remains threaded between front and back work-sheets, and without disturbing the typing position of the front work-sheet relatively to the platen, and means to detain said ribbon-supporting device in said silencing position, whereby typing may proceed upon only the front work-sheet while said auxiliary ribbon remains silenced, and whereby said auxiliary ribbon may be restored to typing position by depressing said device to normal position, said device including ribbon-carrying arms mounted on said platen-frame at the ends of the platen, and means mechanically connecting said arms for simultaneous movement; said detaining means being yieldable to permit pressure upon either arm to swing said device down.

WENDELL P. KEENE.

Witnesses:

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CATHERINE A. NEWELL.