J. A. B. SMITH.

TYPEWRITING MACHINE.

APPLICATION FILED NOV. 13, 1919.

1,433,857. Patented Oct. 31, 1922.

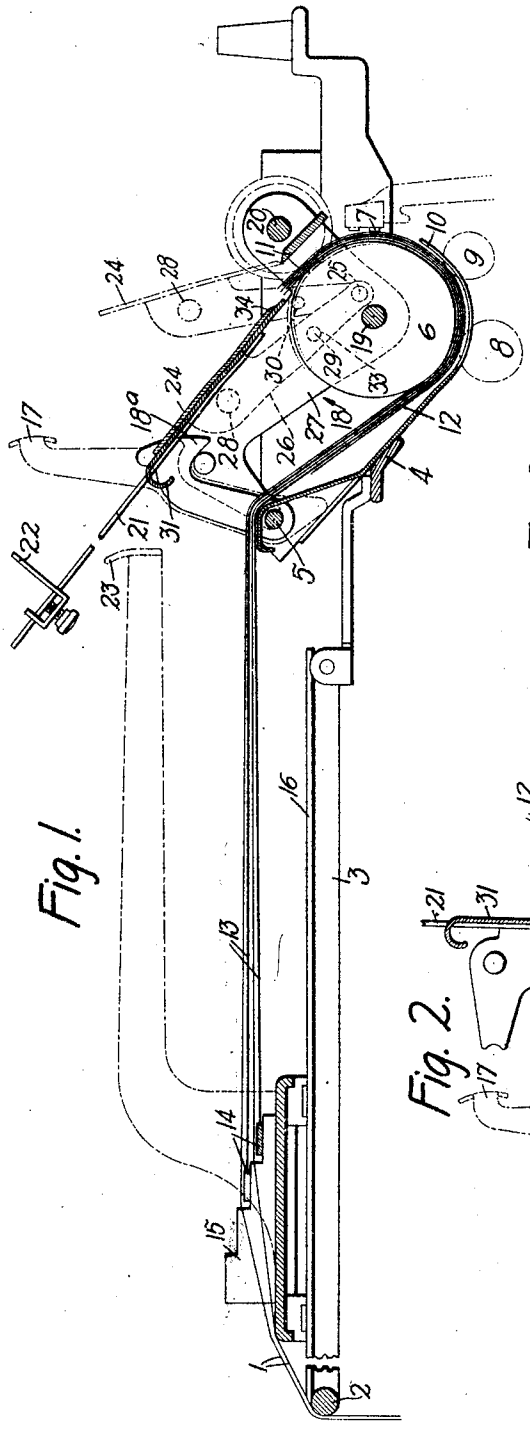


Fig. 1.

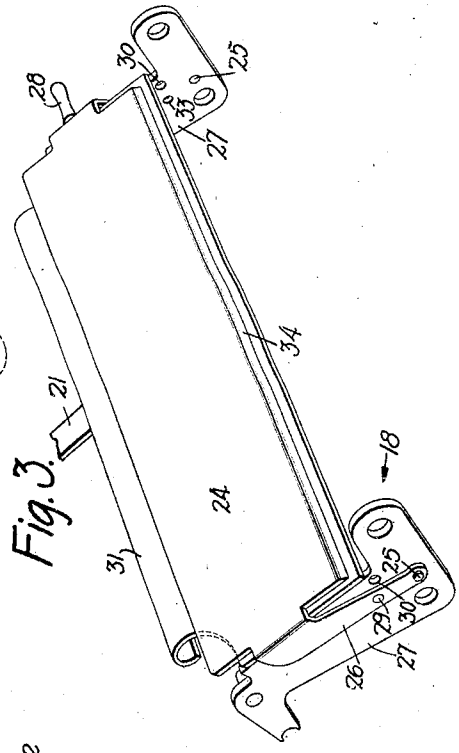


Fig. 3.

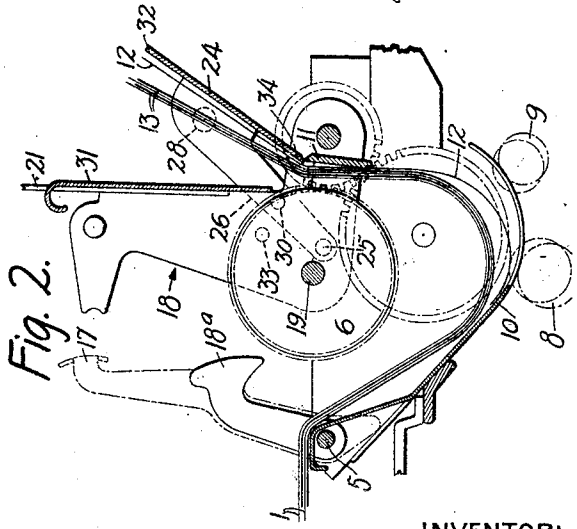


Fig. 2.

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UNITED STATES PATENT OFFICE.

JESSE A. B. SMITH, OF STAMFORD, CONNECTICUT, ASSIGNOR TO UNDERWOOD TYPEWRITER COMPANY, OF NEW YORK, N. Y., A CORPORATION OF DELAWARE.

TYPEWRITING MACHINE.

Application filed November 13, 1919. Serial No. 337,733.

To all whom it may concern:

Be it known that I, JESSE A. B. SMITH, a citizen of the United States, residing in Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Typewriting Machines, of which the following is a specification.

This invention relates to typewriting machines, and is herein disclosed as applied to an Underwood typewriting machine of the type known as the continuous fan-fold billing machine.

In using such machines, as well as other types of machines, for the making out of bills, with the simultaneous typing of carbon copies of the bills, certain difficulties arise in making the bills attractive and neat, inasmuch as the bills hitherto used have usually been typed upon continuous fan-folded webs, which were afterwards severed longitudinally and transversely. Where a fan-folded web of this type was employed, the plies of web were necessarily all of the same kind of paper, which, from motives of economy, was usually a rather low grade of paper, frequently presenting a rather unattractive appearance, especially if much handled.

According to the present invention, many of the advantages of such machines may be preserved, and yet the bill may be typed upon any desired kind or size of work-sheet or bill head, while the typed carbon copies are made out simultaneously upon the usual web, which may be severed as desired.

In obtaining these and other advantages, I have found it advantageous to use a plate or gage, which normally may form a collating table or part of a collating table, but which is adapted to be swung away from its normal position to permit a bill head or other work-sheet to be inserted behind it and be guided by it down in front of the platen.

This device is especially useful when it is employed in connection with the continuous fan-fold biller described above, one form of which is shown in the patent to Wernery & Smith, No. 1,132,055, dated March 16, 1915. In such a machine, it is found convenient to swing the platen and usual front paper table upwardly in the usual swing frame, so that the front paper table stands nearly vertical. The front plate or gage may be then swung outwardly, and the webs which lie beneath the platen may be pulled upwardly behind the gage or platen, so that the bill head or work-sheet is readily inserted behind the plate and in front of the webs and carbon sheets, and slides down behind the usual knife, which is shown in the patent to Jesse A. B. Smith, No. 1,237,716, dated August 21, 1917, and thence around beneath the platen. Both the ends of the webs and the top of the bill head may be aligned against the gage or plate, and held gaged while the swing frame is swung rearwardly to carry the platen against the feed-rolls. Then the platen may be rotated backwardly to bring the desired line upon the bill head to the printing point, and the typing proceeds as usual. When the typing is finished the platen may be swung upwardly in the usual manner, the carbon sheets pushed rearwardly, the bill head removed, and then the platen frame swung back and the webs severed against the knife.

When used with the Wernery and Smith structure, the plate or gage may sometimes be fixed in front of the usual front paper table, thus rendering it unnecessary to swing the gage clear of the table.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a sectional side view, largely diagrammatic, of an Underwood standard typewriting machine of the kind referred to.

Figure 2 is a similar view, showing the platen lifted and the bill head and work-sheets being aligned.

Figure 3 is a perspective view of the collating table and the gage or plate thereon.

In the Underwood fan-fold continuous billing machine, webs 1 are drawn forwardly over the rear bar 2 of an extension 3 of the typewriter carriage 4, and, passing over a bar 5, bend downwardly around the platen 6 and are carried to the printing point at the type 7, diagrammatically shown in Figure 1. The webs 1 are held against the platen by feed-rolls 8 and 9 and an apron 10, beneath the platen 6, and bend rearwardly above the printing line beneath a knife 11, lying near the platen above the printing line. The feed-rolls may be moved to their outer dotted line positions by the usual means.

In order to make carbon copies upon the webs 1 of matter typed upon an outside work-sheet or bill head 12, there are provided carbon sheets 13, which are clipped to the bars 14 of the usual carbon carriage 15 of the Underwood fan-fold billing machine. The carbon paper carriage 15 runs upon rails 16, forming part of the extension 3. When all the matter to be typed upon a bill head 12 has been typed, the platen 6 having been advanced by the usual line-space lever, not shown, the typist presses rearwardly a finger-piece 17 to release a hook 18ª, which normally holds a swing frame 18, in which the platen is journaled by its axle 19, so that the platen rests against the feed-rolls 8 and 9. The typist then swings the swing frame 18 forwardly upon the shaft 20 on which it is journaled, usually swinging the frame until an upper extension 21 thereof, having an adjustable end gage 22, is horizontal. This permits the typist to draw the webs 1, together with the carbon sheets 13, forwardly practically straight beneath the platen, and gage the webs against the gage 22, the typist, according to the present invention, also usually holding the work-sheet 12 against the extension 21. Then the typist usually pushes rearwardly a handle 23, forming part of the carriage 15, thus pushing the carbon sheets 13 rearwardly between the work-sheet 12 and webs 1, until the front ends of the carbon sheets are behind the knife 11.

The typist then usually swings the swing frame 18 rearwardly, so that it is again caught by the hooks 18ª, and, according to the present invention, usually removes the work-sheet 12 and then severs the webs 1 by drawing them against the edge of the knife 11. This leaves the webs 1 a little lower than the point seen in Figure 1, and also leaves the carbon sheets 13 a little lower, both as measured at the knife 11. Then if a swinging gage 24 is used, which forms a guide-plate erected at the front of the platen, the typist draws the plate or gage 24 upwardly and forwardly, from a rearwardly inclined to a forwardly inclined position, around its pivots 25, by which its arms 26 are pivoted upon the side pieces 27 of the swing frame 18. The gage 24 may be provided with a handle 28 to permit it to be swung, and may also be provided with a detent or boss 29 adapted to catch in an opening or depression 30 to hold it so swung forwardly, its new position being shown in the broken lines of Figure 1, in which its beveled lower edge lies just behind the knife 11. Then the typist advances the webs 1 and carbon sheets 13 by rotating the platen, so that the webs and sheets ride upon the face of the usual rearwardly inclined or slanting front collating table 31, above the platen, advancing them to a position where they may be readily seized by the thumb and finger of the typist when reaching over the top of an upper edge of the plate 24. Next the typist releases the swing frame 18, by actuating the finger-piece 17, and swings the swing frame to bring the extension 21 to a convenient angle, which is about vertical in practising the present invention. Then the typist seizes an unused work-sheet or bill head 12 and passes it down between the outside carbon 13 and the back of the plate 24, as seen in Figure 2, and gages the bill head 12, and, if desired, in addition, the ends of the webs 1 against the top edge 32 of an upper extension of the plate 24, which thus forms a leading edge gage, while the knife 11 and apron 10 form a chute for guiding the bottom of the work-sheet 12 rearwardly. Next the typist, while holding the webs and work-sheet 12 thus gaged, swings the swing frame 18 rearwardly, bringing the platen 6 against the feed-rolls 8 and 9, thus holding the webs 1 and work-sheet 12 properly aligned. To bring the work-sheet 12 and webs 1 to the proper writing line, the platen may be rotated rearwardly to bring them, say, to the Figure 1 position, at which position the plate or gage 24 may be swung rearwardly to lie upon the table 31, and may itself serve as a table for the advancing webs and work-sheet in the ensuing typing operation. When the typing is completed, the webs are advanced and severed as described above.

The plate or gage 24 may be normally detained against the table 31 by an opening or depression 33, which is adapted to cooperate with the boss 29 in the normal position of the plate 24. The plate 24 may be formed as an integral structure of light metal, and have its arms or ears 26 integral therewith. The pivots 25, on which the ears 26 swing, are advantageously a little above and in front of the bearings of the platen axle 19, with the result that the lower end 34 of the plate 24 in its Figure 2 position lies just below and back of the top of the knife 11, thus making it impossible for the bill head 12 to catch upon the knife while sliding down, while the knife co-operates with the plate 24 to guide the bill head.

It will be noted that the bill head 12 may be of any desired quality of paper, and the webs 1 may be of any other desired quality, thus rendering it possible to use a fine lithographed bill head to advantage with as cheap or as expensive a record web as may be desired. The plate 24 may be of a size suitable for the standard sizes of bill heads, and the gage 22 may be adjusted to give any desired blank space between copies of successive bills, making any desired allowance for blank spaces at the top and bottom of the typed bills.

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, the combination with a platen and a paper table above it, of a collating plate normally lying upon said table, a printing instrumentality in front of the platen, and a support for said plate on which it can be swung from the table to a position where it will guide behind said printing instrumentality a work-sheet inserted behind it from above.

2. In a typewriting machine, the combination with a platen and a paper table above it, of a collating plate normally lying upon said table, a printing instrumentality in front of the platen, a support for said plate on which it can be swung from the table to a position where it will guide behind said printing instrumentality, a work-sheet inserted behind it from above, and an upper extension of said plate adapted to serve as a leading-edge gage for said work-sheet.

3. In a typewriting machine, the combination with a platen and a platen frame, of a knife for severing a work-sheet passed around the platen, a plate having an upper surface adapted to serve as a collating table, and a mounting for said plate adapted to permit it to be swung upwardly so that a work-sheet inserted behind it will be guided behind the knife.

4. In a front-strike typewriting machine, the combination with a platen and a frame in which it is journaled, of a carriage, a support for the frame in the carriage to permit the platen to be lifted up, a paper table slanting rearwardly above the platen and forming part of the frame, and a paper-guide normally lying upon the table but adapted to be swung forward in a lifted position of the platen to guide a work-sheet down at the front of the platen.

5. In a typewriting machine, the combination with a platen and a frame in which it is journaled, of a shaft about which said frame is adapted to swing to lift the platen, a knife swinging with the frame and lying at the front of the platen, a plate over which work-sheets passed around the platen normally pass, and ears on said plate pivoted on said frame to enable the plate to be swung to the knife to enable it to guide a work-sheet behind the knife.

6. In a typewriting machine, the combination with a platen and a frame in which it is journaled, of a shaft about which said frame is adapted to swing to lift the platen, a knife swinging with the frame and lying at the front of the platen, a front paper table including an end gage, a plate normally lying upon said table, ears supporting said plate and pivoted upon the frame to permit it to be swung toward the knife to form a front guide for a work-sheet, and a top edge on said plate forming an end gage for the work-sheet inserted behind it.

7. In a front-strike typewriting machine having a platen, the combination with a front paper table and an end gage thereon, of a normally inoperable second gage nearer the platen than said gage, and pivots on which said second gage may be swung to operable position.

8. In a front-strike typewriting machine, the combination with a platen and a platen frame, of a knife in said frame along the platen, an end gage in said frame and normally in an inoperable position, a support for said gage on which it is adapted to be swung to operable position, and a lower end of the gage lying in its swung position behind the knife to guide clear of the knife a sheet inserted behind the gage.

9. In a front-strike typewriting machine, the combination with a platen and a platen frame, of a knife in said frame above the printing line, a plate in said frame adapted to be swung against the knife to guide behind the knife a work-sheet inserted from above, and an apron below the knife adapted to guide the work-sheet below the platen, so that the knife and apron form a chute.

10. In a front-strike typewriting machine, the combination with a platen and a liftable platen frame in which it is journaled, of a knife for severing webs and lying near the platen when lifted, a plate in said frame adapted to guide a front inserted work-sheet behind the knife, and an apron below the knife forming therewith a chute to guide the work-sheet down and behind the platen.

11. In a front-strike typewriting machine, the combination with a platen and a liftable platen frame in which it is journaled, of a knife for severing webs and lying near the platen when lifted, a plate in said frame having an upper edge adapted to serve as a gage and adapted to guide a front inserted work-sheet behind the knife, and an apron below the knife forming therewith a chute to guide the work-sheet down and behind the platen.

12. In a typewriting machine, the combination with a platen and a paper-table above it, of a collating plate normally lying upon said table, a knife in front of the platen, and a support for said plate on which it can be swung from the table to a position where it will guide behind the knife a work-sheet inserted behind it from above.

13. In a typewriting machine, the combination with a platen and a paper-table above it, of a collating plate normally lying upon said table, a printing instrumentality in front of the platen, a support for said plate on which it can be swung from the table to

a position where it will guide behind said printing instrumentality, a work-sheet inserted behind it from above, and an apron below the platen in position to co-operate with said collating plate for guiding the work-sheet rearwardly around beneath the platen.

14. In a typewriting machine, the combination with a platen and a platen-frame, of a plate having an upper surface adapted to serve as a collating table, and supporting means for said plate to permit it to swing as a whole upwardly and forwardly away from the platen from a rearwardly inclined to a forwardly inclined position to permit a work-sheet to be inserted behind it downwardly at the front of the platen past the printing point.

15. In a typewriting machine, in combination, a revoluble platen, means for supporting and guiding a web below and around the platen from the introductory side thereof, means including a guide-plate erected at the front of the platen for guiding behind it a front-inserted work-sheet from the delivery side of the platen around beneath the platen at the outside of said web, and a front collating table, said guide-plate being mounted for movement from a position against the front of said collating table to a sheet-guiding position in spaced relation thereto forwardly therefrom.

16. In a typewriting machine, in combination, a revoluble platen, means for supporting and guiding a web below and around the platen from the introductory side thereof and including an apron forming a guide below the platen, means including a guide-plate erected at the front of the platen and co-operative with said apron for guiding behind said plate a front-inserted work-sheet from the delivery side of the platen around beneath the platen above said apron at the outside of said web, and a front collating table, said guide-plate being mounted for movement from a position against the front of said collating table to a sheet-guiding position in spaced relation thereto forwardly therefrom.

17. In a typewriting machine, in combination, a revoluble platen, means for supporting and guiding a web below and around the platen from the introductory side thereof and including an apron forming a guide below the platen, means for raising the platen away from said apron, means including a guide-plate erected at the front of the platen and co-operative with said apron for guiding behind said plate a front-inserted work-sheet from the delivery side of the platen around beneath the platen above said apron at the outside of said web, and a front collating table, said guide-plate being mounted for movement from a position against the front of said collating table to a sheet-guiding position in spaced relation thereto forwardly therefrom.

JESSE A. B. SMITH.

Witnesses:
EDITH B. LIBBEY,
JENNIE P. THORNE.