J. A. B. SMITH.

TYPE WRITING MACHINE.

APPLICATION FILED MAR. 2, 1917.

1,281,087. Patented Oct. 8, 1918.

FIG. 1.

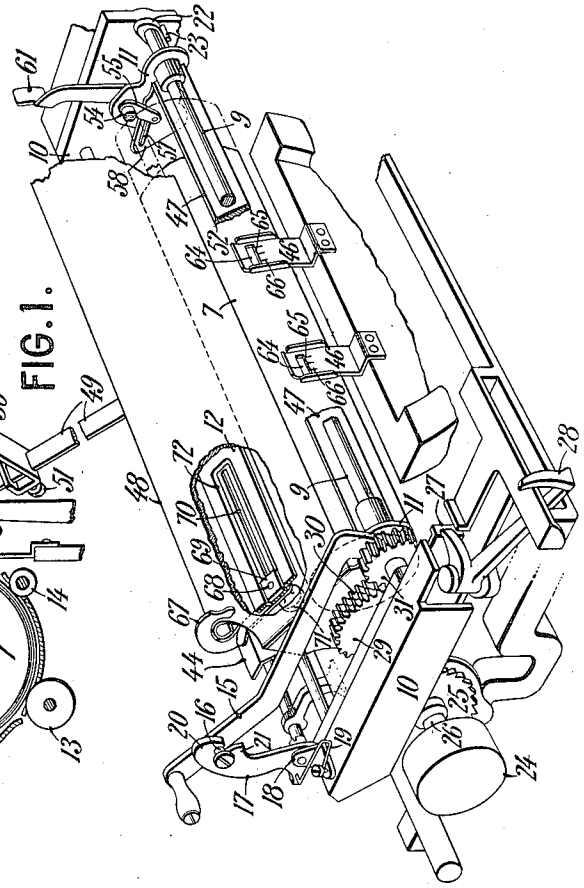


FIG. 3.

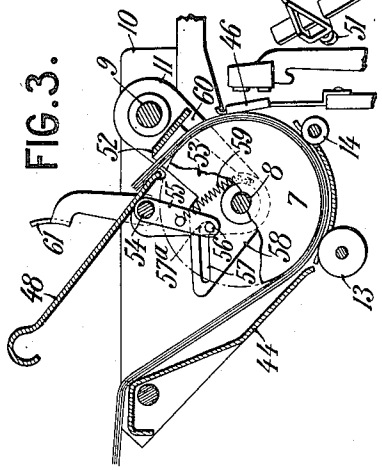


FIG. 4.

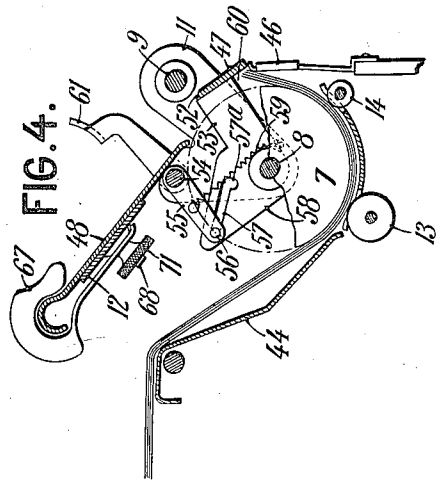
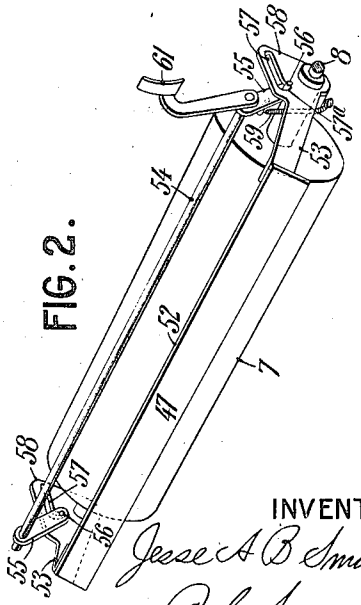


FIG. 2.



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TYPE-WRITING MACHINE.

1,281,087. Specification of Letters Patent. Patented Oct. 8, 1918.

Original application filed July 12, 1915, Serial No. 39,247. Divided and this application filed March 2, 1917. Serial No. 151,388.

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 Type-Writing Machines, of which the following is a specification.

This invention relates principally to typewriting machines for writing upon a number of superposed webs or continuous sheets, especially those which are intended to be torn off in sections from the body of the web, as, for example, when the webs comprise a series of printed forms, each adapted to be removed when the typewriting thereon is completed. A machine of this general character is shown and described in the patent to Wernery & Smith, No. 1,132,055, dated March 16, 1915. In that machine, after a section of web, to compose a printed sheet, has been written, the platen is shifted away from the usual feed rollers to release the web and the interleaved carbon sheets; whereupon, by means of a carbon sheet holder, the carbon sheets are drawn back along the web into position thereon for the printing of the next web section; the web itself being drawn forward a measured distance for removal of the printed section thereof, and the next imprinted section thereof being positioned, with the carbon sheets therein, for the printing operation. The same carbon sheets are thus used over and over in the same web form.

A further object of the invention is to provide, in a machine of the character described, reliable means for guiding the leading edge of the web around the platen, past and beyond the printing line. It is common in these machines to have a knife blade, located above the printing line, for cutting off the printed sections of the web. Quite commonly, typewriting machines are provided with gage plates secured at the front of the machine which have base lines, with scale marks thereon at letter-feed distances apart, to assist the operator in alining and positioning a line of print for writing therein. Neither such cutters nor such gages have heretofore been used as paper guides in such a way as to assure absolutely certain guidance of the leading edge of the paper at or near the printing point. Such use of these parts is a feature of the present invention. To this end, the gage plates referred to are extended up in the form of spring clips to bear against the platen near the printing point, and to extend above the printing line. The scale lines of the gages at the printing line are formed by the base lines of the apertures cut through the gages at an intermediate part thereof. In order that the cutter may be used to guide the paper beyond the point where the gages cease to do so, the cutter is mounted to be moved downward, from its normal cutting position, to a point where it coöperates with the gages to form with the latter a substantially continuous guiding surface for the leading edge of the web at the front of the platen. For this purpose, the cutter may be mounted on arms adapted to be rocked on the platen shaft, and a key lever may be provided for holding the cutter in normal position, and for effecting movement of the same when desired.

A further feature of the invention relates to a means for assuring proper alinement of the leading edge of the web after it has been released, and when it is drawn forward to the gage, preparatory to the cutting operation. Without some such means the advanced section of the web, which at this time is loose in the machine, may be accidentally tipped to one side or other and held against the gage at an angle; so that, when cut, it will not be cut squarely. The preferred device of the present invention, for maintaining and assuring proper position of web for cutting, is a blade on the shelf over which the web is drawn to the gage; this blade serving as a guide for one edge of the web as the latter is drawn to the gage, and also serving, in conjunction with the gage, as a means for squaring up the advanced section of the web when the latter is at the gage. The guide is preferably adjustable lengthwise of the platen for webs of different widths.

This application is a division of my original application No. 39,247 filed July 12, 1915.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a perspective view of the invention applied to an Underwood type-

writing machine, the parts being in position to permit writing upon a work-piece.

Fig. 2 is a detail perspective view of the platen with the combined paper guide and cutter mounted on the platen shaft in operative relation to the platen.

Fig. 3 is a sectional view, of certain of the parts, assembled on the carriage, in normal or printing position.

Fig. 4 is a view similar to that of Fig. 3, except that the combined guide and cutter is shown in the position in which it acts to guide or direct the leading edge of the web around the platen to position, preliminary to printing.

Referring to the drawings, the platen 7 is fixed on the shaft 8 which is journaled in a frame fast to a rock shaft 9, having bearings in the end plates 10 of the platen carriage. This pivoted frame consists of end plates or arms 11 fast to the rock shaft 9, and connected by a brace bar 12. The platen has its bearings in the plates 11. The frame is normally held in the Fig. 3 position, with the platen down against the usual feed rolls 13 and 14. It is swung from its normal or printing position to its web-releasing position, as shown in United States Letters Patent 1,132,055, to Wernery and Smith, by means of an arm or handle 15 which is also fast to the shaft 9. For locking the platen frame in printing position, the handle 15 carries a pin 16 adapted to be engaged by a hook 17 pivotally mounted on a bracket 18 on the end plate 10 of the platen carriage. A spring 19 engages the hook and the bracket to hold the hook in platen-locking position and to return it to such position when free to do so. The nose of the hook is shaped at 20 to permit the pin 16 to cam it backward until the pin can pass under the nose, thereby making the locking operation automatic when the platen frame is swung down to normal position. A tooth 21 on the hook may serve to determine the return throw, and normal position, of the platen in conjunction with a pin or stop 23 on the right-hand end carriage-piece 10 at the front thereof. When the right-hand arm 22 fast on the shaft 9 strikes the pin 23, the platen frame is definitely arrested.

To effect the line-space feed or rotation of the platen, there are provided the usual hand wheel 24 and ratchet wheel 25, both fast to a short shaft 26, mounted to rotate in the left-hand end piece 10 of the carriage. In printing position, the shaft 26 is concentric with the platen shaft 8. The ratchet is actuated by a pawl (not shown) on a slide 27, engaged by a line-space lever 28. The driving connection between the shaft 26, whose axis is not changeable, and the platen shaft 8, which swings from one to another position, consists of gears 29, 30 and 31. The gear 29 is fast to the shaft 26: The gear 30 is fast to the platen shaft, and is of the same size and number of teeth as gear 29: and the gear 31 is loose on the axle 9 around which the platen frame swings, and has a face of sufficient width to simultaneously mesh with gears 29 and 30. The driving connection between the shaft 26 and platen is thus maintained in all positions of the platen.

In Patent No. 1,132,055, to Wernery & Smith, above referred to, it is shown that in the operation of removing a printed length from the web, and in re-adjusting the web for printing the next length, the platen is swung from printing position to a position away from the feed rolls, so that the web no longer wraps around the platen, but may be moved freely in substantially a straight line from back to front of the machine. When the platen is in this position, the carbon sheets between the plies or folds of the section of the web to be removed, are drawn back into the length or section of web next to be printed; and, after removal of a length of the web, and re-positioning of the web, the platen is returned to its normal position against the feed rolls.

The web is led across the table and over the top of a paper guide 44 behind the platen (see Fig. 4), whence it is passed down between the platen and the pressure rolls 13 and 14, and thence up between the platen and a pair of paper guides or spring clips 46, one of which is on each side of the printing point. From the guides 46 the web passes between the platen and the web-cutting blade 47, onto the paper shelf 48, to which is secured a gage in the form of a bar 49 having adjustably mounted thereon, the gage-piece 50. The latter is a bent metal strip having openings through which the bar 49 passes, and an offset portion against which the web can be drawn in measuring the length of the sheet to be cut from the web at the cutter 47. The gage-piece 50 is adjustable along the bar 49 for any desired length of sheet, and is held in adjusted position by a thumb screw 51. The shelf 48 is screwed to the brace 12, which forms part of the swinging platen frame, so that, (as in the machine of the Wernery & Smith Patent 1,132,055, above referred to) the paper shelf may swing with the platen in opening a clear and straight path for the web when a sheet is to be cut therefrom, and when re-adjustment is to be made for the printing of another sheet.

The cutter 47 is shown as a blade having a knife edge 52 against which the web can be turned and drawn to cut a section therefrom. Normally it is supported in Fig. 3 position by a pair of arms 53 pivotally mounted on the platen shaft 8. Journaled in the side plate 11 of the platen frame is a rock shaft 54, fast to which are arms 55

having pins 56 which work in cam slots 57 in plates 58 integral with the cutter-supporting arms 53. A spring 59 secured at one end to one of the arms 55 and at the other end to the hub of the adjacent cutter arm 53, locks the cutter in normal position with the pins 56 in pockets 57[a] in the forward ends of the cam slots 57. It will be noted, on reference to Fig. 3, that when the parts are in normal position, there is a space 60 between the guides 46 and the cutter. Such a space would offer an opportunity for the leading edge of the web to be fed outside of the cutter, instead of between the cutter and the platen. To eliminate this possibility, the cutter is adapted to be swung down to Fig. 4 position to catch the web and to guide it in the proper direction. In order that the cutter may have this function as a paper guide, the rock shaft 54, by means of which it is held in normal position, has, fixed thereto, a finger key 61, which may be drawn forward, against the action of the spring 59, from Fig. 3 to Fig. 4 position. This movement of the key 61 forces the pins 56 rearward along the cam grooves 57, thereby rocking the cutter arms downward with the cutter, until the rear ends of the cam grooves determine the Fig. 4 position of the cutter; in which it will be noted that the space between the cutter and the guides 46 has been closed, so that the web must strike the cutter and be guided properly to the shelf 48. It is necessary to have the cutter in the Fig. 4 position only in first adjusting the forward length of the web for printing; and consequently, during this operation, the cutter may be held in this position by sustained pressure on the key 61. As soon as the key is released, the spring 59 returns the cutter to normal Fig. 3 position.

The paper guides 46, (see Figs. 1 and 4), are spring metal strips attached to the type-bar segment bridge, one on each side of the type guide and each bearing on the paper at or about the printing line, and near the printing point. These guides serve in the double capacity of paper fingers and line gages; and for the latter purpose, have apertures 64, the lower edges 65 of which serve as base lines for the line of printing on the web and have scale markings 66, to indicate the true letter-positions. By alining the writing with the two base lines thus provided, and by positioning letters in the line at the scale markings, the proper position for any letter to be inserted at the printing point is accurately ascertained.

When the platen frame is thrown up to release the web, and the web is drawn forward to the gage-piece 50 preliminary to cutting, all friction of the several parts on the web has been relieved, with the undesirable consequence that the web in front of the platen may be rocked from true position and may be cut other than squarely, unless care is used in properly alining its leading edge at the gage. To assure this correct positioning of the web at the gage, and to guide the web as it is drawn to the gage, there is mounted, on brace 12 of the swinging frame, a guide in the form of a metal strip 67 which is brought around the upper edge of the shelf 48, and forward a short distance down the outer face of the same, to present a smooth guiding surface for one edge of the web. To secure proper alinement of the web for cutting, it is only necessary, in drawing the paper to the gage-piece 50, to keep its edge in contact with the guide 67. To accommodate the guide 67 to webs of different widths, the guide 67 is adjustable on the platen frame. It is held by a stud 68, which passes from a block 69 on one side of the brace 12 through a slot 70, which extends longitudinally of the brace, and through the supporting portion of the guide 67, to be engaged by a threaded head 71, which may be loosened to permit adjustment of the guide along the slot, and tightened to lock the guide in place. The brace is stamped to provide a channel 72 in which the block 69 may be moved without interference with the overlying shelf 48.

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. The combination with a rotary platen, of means for feeding a web to the platen, normally ineffective means for guiding the web around the platen including a blade against which the web may be drawn for the cutting of sections therefrom, and a finger-piece for shifting the blade to guiding position.

2. The combination with a rotary platen, of means for feeding a web to the platen, normally ineffective means for guiding the web around the platen including a blade supported on the platen axle, against which the web may be drawn for the cutting of sections therefrom, and a finger-piece for rotating the blade to guiding position.

3. The combination with a rotary platen, of means for feeding a web to the platen, and an adjustable blade which in one position acts as a guide for the web, and in another position serves as a cutter for removing printed sections of the web.

4. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting printed sections from the web, arms loosely mounted on the platen shaft for supporting said blade, and means for rocking said arms to move the blade to and from cutting position.

5. The combination with a rotary platen, of means for feeding a web to the platen, a

blade for cutting printed sections from the web, arms loosely mounted on the platen shaft for supporting said blade, and a cam for throwing the blade to and from cutting position.

6. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting printed sections from the web, arms loosely mounted on the platen shaft for supporting said blade, and a key having a cam-slot connection with one of the blade-supporting arms to throw the blade to and from cutting position.

7. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting printed sections from the web, arms loosely mounted on the platen shaft for supporting said blade, and a cam for throwing the blade to and from cutting position, said cam having stops to determine the several positions of said blade.

8. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting printed sections from the web, arms loosely mounted on the platen shaft for supporting said blade, and an operating lever carrying a pin which engages a cam-slot in one of the blade-supporting arms to throw the blade to and from cutting position.

9. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting printed sections from the web, arms loosely mounted for supporting said blade, and a cam for throwing the blade to and from cutting position.

10. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting printed sections from the web, arms loosely mounted for supporting said blade, and an operating lever carrying a pin which engages a cam-slot in one of the blade-supporting arms to throw the blade to and from cutting position.

11. The combination with a rotary platen, of means for feeding a web to the platen, a blade loosely supported on the platen shaft, said blade having a position away from the printing line in which it serves as a cutter, and another position nearer the printing line, in which latter position the blade catches and turns the leading edge of the web to guide the same around the platen, and means for shifting said blade from one to the other of said positions.

12. The combination with a rotary platen, of means for feeding a web to the platen, a blade having a position away from the printing line in which it serves as a cutter, and another position nearer the printing line, in which latter position the blade catches and turns the leading edge of the web to guide the same around the platen, and means for shifting said blade from one to the other of said positions.

13. The combination with a rotary platen, of means for feeding a web to the platen, a clip having an aperture with a scaled base line to assist in positioning a line of print at the printing line, a blade for cutting sections from the web, and means for throwing the blade from cutting position to a position where it coöperates with said clip to guide the leading edge of the web beyond the printing line.

14. The combination with a rotary platen, of means for feeding a web to the platen, a clip having an aperture with a scaled base line to assist in positioning a line of print at the printing line, a blade for cutting sections from the web, and means for throwing the blade from a cutting position beyond the printing line to a position nearer the printing line, where it overlaps the clip to cooperate with the latter in providing a continuous guide for the leading edge of the web beyond the printing line.

15. In a typewriting machine, a rotary platen, a platen carriage, means for holding a web to the platen, means for shifting the platen from said web-holding means to release the web, a gage to which the web may be drawn when released by the platen, for determining the length of sections to be cut from the web, and a blade for cutting said sections, means for effecting proper alinement of the web at the gage preliminary to the cutting operation, and means for shifting said blade to position to guide a new end of the web toward the gage.

16. In a typewriting machine, a rotary platen, a platen carriage, means for holding a web to the platen, means for shifting the platen from said web-holding means to release the web, a gage to which the web may be drawn when released by the platen, for determining the length of sections to be cut from the web, a blade for cutting said sections, and means for shifting the blade to cause it to be effective to guide the web to the gage.

17. In a typewriting machine, a rotary platen, a platen carriage, means for holding a web to the platen, means for shifting the platen from said web-holding means to release the web, a gage to which the web may be drawn when released by the platen, for determining the length of sections to be cut from the web, a blade for cutting said sections, means for guiding the web in proper alinement to the gage, said guiding means being adjustable lengthwise of the platen to different widths of web, and means for shifting said blade to position to guide a new end of the web toward the gage.

18. In a typewriting machine, a rotary platen, a platen carriage, means for holding the web to the platen, means for shifting the platen from said web-holding means to re-

lease the web, a gage to which the web may be drawn when released by the platen, for determining the length of sections to be cut from the web, a blade for cutting said sections, a paper shelf on the shifting platen frame between the platen and the gage, a paper-guiding finger adapted to guide the web upward from beneath the platen, and means for shifting said blade to position to guide a new end of the web toward said gage from said finger.

19. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting sections from the web, a device for moving said blade to position to act as a guide, and means for positively holding said blade in normal cutting position.

20. The combination with a rotary platen, of means for feeding a web to the platen, a pivoted blade for cutting sections from the web, and a finger-piece having a pin-and-slot connection with the blade for moving the latter to another position, said slot having an extension adapted to positively hold said blade by said pin when the blade is in a cutting position.

21. The combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting sections from the web, pivoted arms for supporting said blade in position to act as a guide, a finger-piece having a pin-and-slot connection to one of said arms for moving said blade from paper-cutting position to a paper-guiding position, and means automatically made ineffective by said finger-piece for normally positively holding the blade in its cutting position.

22. In a typewriting machine, the combination with a blade adapted to act as a guide, of a finger-piece for moving said blade from a paper-cutting position to a paper-guiding position, a spring normally drawing it to cutting position and means for positively holding said blade in position until released by action of the finger-piece.

23. In a typewriting machine, the combination with a rotary platen, of means for feeding a web to the platen, a blade for cutting sections from the web, pivoted arms for supporting said blade, one of said arms being slotted, a finger-piece, a rock shaft movable by said finger-piece, an arm extending from said rock shaft, and a projection on said arm extending into the slot in one of said pivoted supporting arms, said slot having a depression at one end thereof into which the projection of said arm seats itself to positively hold the blade against accidental movement when the latter is in a cutting position.

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