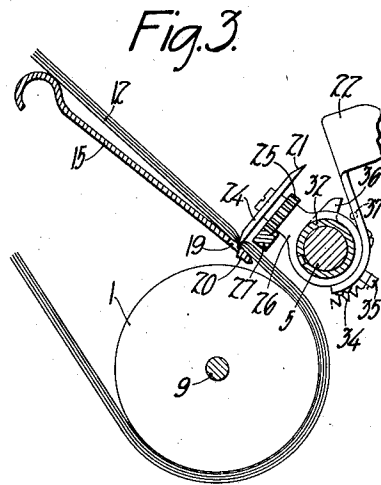
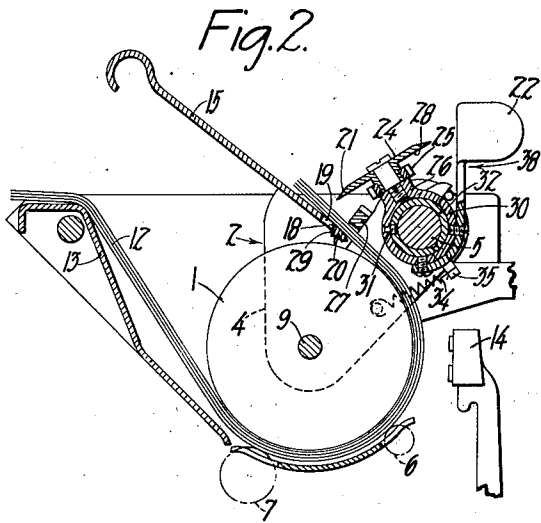


1,362,544.



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UNITED STATES PATENT OFFICE.

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

TYPEWRITING-MACHINE.

1,362,544.

Specification of Letters Patent.

Patented Dec. 14, 1920.

Application filed June 19, 1918. Serial No. 240,717.

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.

My invention relates to typewriting machines, and more especially to devices or attachments to enable typed webs to be severed into lengths. The invention is herein disclosed as applied to the so-called fan-fold Underwood typewriting machine, embodying the general structure shown in the patent to Wernery & Smith, No. 1,132,055, dated March 16, 1915, wherein the usual platen of the Underwood typewriting machine is adapted to be lifted clear of its feed-rolls and to be swung up to such an extent that the web may be drawn straight forward across the rear paper table beneath the platen. There has hitherto been provided on such fan-fold and other machines, a fixed knife not far from the printing line against which a work-sheet or web could be drawn to detach therefrom a written-on portion.

According to the present invention, the knife may move relatively to the paper and may be in the form of two cutting edges which close together, thereby cutting as a pair of scissors would cut, thus affording the possibility of cutting with a smoother edge, especially when a plurality of plies are severed or cut off at the same time. To enable this to be done, the paper table of the Wernery & Smith machine may be so constructed as to furnish one of the cutting edges, while the other cutting edge may be in the form of a revolving knife, which is adapted to be drawn across the carriage transversely of the web, thereby severing it. The revolving knife may be positively driven, one simple form of such drive being a rack adjacent the hub of the knife, with which rack a pinion fast to the knife may mesh.

Other features and advantages will hereinafter appear.

In the accompanying drawings,

Figure 1 is a perspective view of an Un-

derwood typewriting machine carriage of the fan-fold type, showing my invention as applied thereto.

Fig. 2 is a cross-section of the same during writing.

Fig. 3 is a view similar to Fig. 2, but showing the paper at the moment of being cut.

In the Underwood fan-fold typewriting machine, the platen 1 is journaled in a swing frame 2 which includes end plates 3 and 4 journaled on a front bar or rod 5 extending across the carriage, so that the platen 1 and its frame 2 may be swung up clear of the front and rear feed-rolls 6 and 7 against which the platen usually bears, to enable work-sheets to be fed around the platen. The platen is shown as geared, in the usual manner, to the line-space mechanism by means of a pinion 8 fast on its axle 9, said pinion meshing with an idler 10 fast on the front shaft 5, which idler in turn meshes with a pinion 11 fast to the usual line-space wheel, not shown.

In writing on the machine, the platen normally occupies the position shown in the drawings, with a web 12 drawn from the rear over the rear paper table 13, down around the platen, past the feed-rolls to the printing point, opposite the type 14, and then up and somewhat rearwardly across the front paper table 15. In the usual operation of these machines, the web is drawn forward until the leading edge thereof strikes an adjustable end gage 16 mounted on an extension 17 of the front paper table 15; the web is then severed, having been previously written on.

According to the present invention, the severing may be effected by a knife 18 formed as an edge of an opening 19 in the front paper table 15, said edge advantageously being in the form of a piece of steel 20, thicker than the paper table and forming part of the surface thereof, said edge being separated from the upper part of the paper table by the opening 19 in which the co-operating edge or knife 21 is adapted to work. In order to sever a web in the form of the invention herein disclosed, the web may be firmly held upon the surface of the paper table 15, and is preferably at the same

time also firmly held by the feed-rolls 6 and 7. The operative then, with one hand, seizes a finger-piece 22 slidable on the front rod 5, so that a bracket 23 forming an extension of said finger-piece will carry down, against the cutting edge, a cutting wheel or knife 24 journaled on a stub-shaft projecting from a boss 26 carried by said bracket, with the result that if the finger-piece 22 is caused to travel along the typewriter carriage, the two cutting edges will sever the web lying between them. To make this severing positive, the cutting wheel 24 may be positively driven, being for this purpose provided with a pinion 25 fast to its hub, which pinion is adapted to mesh with a fixed rack 27 extending longitudinally of the carriage just far enough above the surface of the paper table 15 to permit webs to easily be inserted between it and the paper table. The drawing of the cutting wheel along the paper table, therefore, will cause it to be positively rotated, thus eliminating the likelihood of heaping up the paper in front of the wheel, instead of severing it.

In order to obtain a clear cut, the wheel 24 is provided with a flat face 28, adapted to bear against the adjacent flat face 29 of the fixed cutting knife. In order to hold the knife 24 normally clear of the front paper-table 15, the finger-piece by which the wheel is operated includes a collar 30, by which it slides on the front bar 5, said collar including a key 31 adapted to ride in a slot in a sleeve 32, which encircles the whole length of the front bar, over which the finger-piece is slidable, that is to say, substantially from one end plate to the other. The sleeve normally holds the wheel 24 clear of the front paper-table, because a spring 34, attached to a post 35 on the sleeve, rocks the sleeve to such a point that the key will carry the finger-piece toward the front of the machine, thereby lifting the wheel 24 to the position seen in Fig. 2. The throw of the sleeve 32 by the spring is limited by a lug 36, which strikes a pin 37 projecting inwardly from an end piece of the platen frame.

As herein shown, the finger-piece proper 38 is formed of a piece of sheet-metal screwed to the collar, and comprises a turned-up end, by which the finger-piece may be drawn along the carriage. In ordinary operation of the machine, it will probably be found most convenient to allow the finger-piece to remain at the right-hand side of the carriage beyond the end of webs of ordinary width.

The machine may be provided with an adjustable side gage 39 of the usual type, by which the web may be trued up in the machine, with the result that when so trued, the severing of the web by the cutting wheel 24 will always cut the end thereof off at

right angles to the side as gaged by the side gage. It will be noted that the rack 27 may be so located behind the front bar 5 as to conceal little or no more writing than is concealed by said bar in the machine as ordinarily now in use.

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 revoluble platen about which work-sheets are adapted to be passed, of a rack adjacent said platen, a knife adapted to travel along said rack and be revolved thereby, and a fixed knife with which the first-named knife coöperates to sever the work-sheets.

2. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a rack adjacent said platen, a knife adapted to travel along said rack and be revolved thereby, a fixed knife with which the first-named knife coöperates to sever the work-sheets, a slide on which said revolving knife is journaled, a rod along which said slide is slidable, and a finger-piece for sliding said slide along said rod to turn said revolving knife.

3. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen including a fixed knife, a revolving knife adapted to be carried along said fixed knife to coöperate therewith to sever the work-sheets, a rack adjacent said table, and a pinion on said revolving knife meshing with said rack to be turned thereby as it moves along the table.

4. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen including a fixed knife, a revolving knife adapted to be carried along said knife to coöperate therewith to sever the work-sheets, a rack adjacent said table, a pinion on said revolving knife meshing with said rack to be turned thereby as it moves along the table, a slide on which said pinion is journaled, a rod on which said slide is adapted to slide during the cutting operation, and means whereby the rod normally holds the revolving knife clear of the paper-table.

5. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen including a slot, said slot being bounded along one side by a strip of hardened and tempered steel having a sharpened edge thus

constituting a fixed knife, and a revolving knife adapted to enter said slot and travel therealong in coöperation with the knife edge to sever the work-sheets.

5 6. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen including a slot, a knife forming one edge of said slot, a revolving knife adapted to enter said slot and travel therealong coöperating with the knife edge to sever the work-sheets, a rack adjacent said slot, and a pinion fast to said revolving knife meshing with said rack and adapted to turn the revolving knife as it is drawn along the slot.

7. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen including a slot, a knife forming one edge of said slot, a revolving knife adapted to enter said slot and travel therealong coöperating with the knife edge to sever the work-sheets, a rack adjacent said slot, a pinion fast to said revolving knife meshing with said rack and adapted to turn the revolving knife as it is drawn along the slot, a slide on which said pinion is journaled, a rod on which said slide slides, and a spring normally holding said rod to keep said revolving knife clear of the paper-table.

8. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen, a rack

above said paper-table, but adjacent thereto, so that work-sheets pass between the rack and table, and a knife adapted to be swung down against said rack and to be drawn across said table to sever the work-sheets. 40

9. In a typewriting machine, the combination with a revoluble platen about which work-sheets are adapted to be passed, of a paper-table above said platen, a rack 45 above said paper-table, but adjacent thereto, so that work-sheets pass between the rack and table, a knife adapted to be swung down against said rack and to be drawn across said table to sever the work-sheets, 50 means normally holding said knife clear of the table, and a finger-piece for swinging the knife against the table and then drawing it along to effect severing.

10. In a typewriting machine, the combination with a revolving knife, of a pinion for causing it to revolve, a rack with which the pinion is adapted to mesh to revolve the pinion, a slide forming a journal for said pinion, a rod on which said slide is slidable, a spline in said rod to hold the slide against turning thereon, means normally holding the pinion clear of the rack, and a finger-piece for swinging the pinion into the rack and then drawing the pinion along the rack to cause it to revolve the knife. 65

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Witnesses:

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JENNIE P. THORNE.