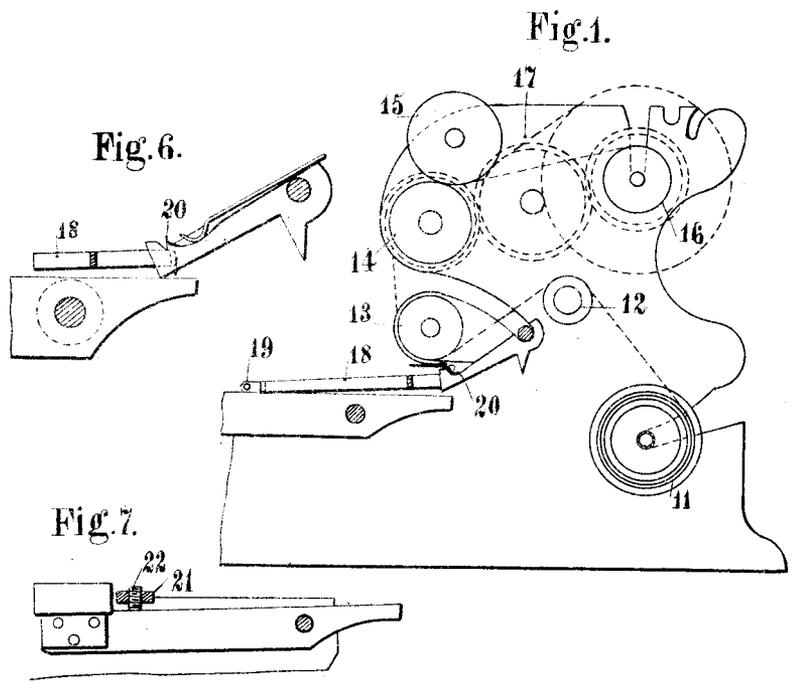


VICTOR-CHARLES DOLD.
PAPER FEEDING MECHANISM FOR TYPE WRITERS.
APPLICATION FILED JAN. 19, 1914.

1,167,156.

Patented Jan. 4, 1916.
2 SHEETS—SHEET 1.



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Fig. 2.

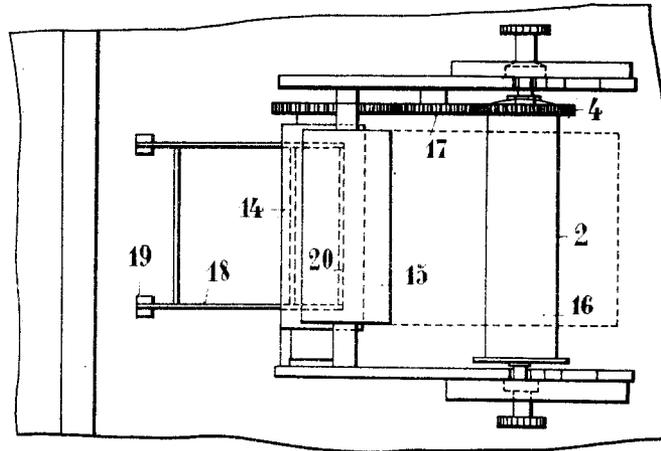


Fig. 3.

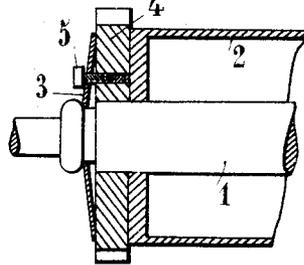


Fig. 4.

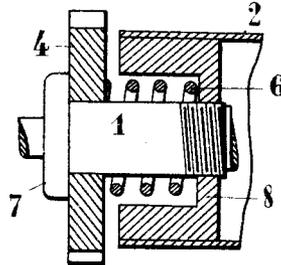
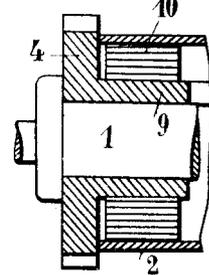


Fig. 5.



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UNITED STATES PATENT OFFICE.

VICTOR-CHARLES DOLD, OF VANVES, FRANCE, ASSIGNOR TO SOCIÉTÉ LA STÉNOPHILE BIVORT, OF PARIS, FRANCE.

PAPER-FEEDING MECHANISM FOR TYPE-WRITERS.

1,167,156.

Specification of Letters Patent.

Patented Jan. 4, 1916.

Application filed January 19, 1914. Serial No. 813,069.

To all whom it may concern:

Be it known that I, VICTOR-CHARLES DOLD, a subject of the Grand Duke of Luxembourg, and resident of Vanves, France, have invented new and useful Improvements in Paper-Feeding Mechanism for Stenographic Type-Writers, which are fully set forth in the following specification.

The present invention has reference to paper-feeding mechanism for typewriters, and it proposes certain hereinafter-described improvements in or relating to the construction and mounting of the roller whereon the paper is wound up as the operation of the instrument continues, the improvements being especially designed for incorporation in or application to, the so-called "stenographic" typewriters in which a continuous strip of paper is utilized. In the character of machine just specified, the paper feed is effected through the agency of gearing which is itself actuated when the pressure exerted upon the keys is removed, as is generally understood. At the beginning of the operation, the paper has a uniform feed, or, in other words, is fed forward to the same extent each time that the afore-mentioned gearing is actuated, but as the operation proceeds, and the diameter of the wound-up roll of paper increases, this feed varies and the spaces between successive lines of writing become proportionately greater and greater. My invention has been designed with the object in view of avoiding such defect, and to this end it resides in the provision of a pair of feeding rollers, one of which is positively driven, while the other is loosely mounted upon its supporting shaft and so disposed as to press the paper against the first-named roller: the winding roller, which is driven from the aforesaid first-named roller, is provided with a yielding-mounted gear which is adapted to rotate independently of the winding roller, after the latter has wound up the quantity of paper fed thereto, leaving said winding roller to remain stationary until such rotation has been completed.

In the accompanying drawing, an embodiment of the invention has been represented as applied to the well-known (foreign) Stenophile-Bivort stenographic typewriting machine, but obviously no limitation to such specific application is either contemplated or necessary, since the improve-

ments constituting said invention may be applied to any other standard machine with equal facility.

Of said drawing: Figure 1 is a diagrammatic vertical section; Fig. 2 is a plan view of Fig. 1; Fig. 3 is an enlarged fragmental section, illustrative of one form of mounting for the gear on the winding roller; Figs. 4 and 5, are views similar to Fig. 3, but showing alternative mountings; and Figs. 6 and 7 are views of details.

Referring more particularly to the drawing, 11 indicates the roll of paper which is unwound during the operation of the machine. 12 a guide roller over which the paper passes on its way to the platen 13, and 14 and 15 the rollers which feed the paper to the winding roller 16. These parts, with the exception of the winding roller, which is hereinafter described in detail, may be of the type ordinarily in use in the Stenophile-Bivort machine, or of any other desired type, and, as previously stated, the lower roller 14 is driven positively, through the agency of the mechanism or devices employed in the afore-mentioned machine, or in any other suitable manner, while the upper roller 15 is loose on its supporting shaft and serves to press the paper against the said roller 14.

The improved winding roller consists of a hollow, cylindrical shell 2, which forms the body of the roller, and an axial supporting shaft 1 whereon said shell is fixed. The ends of the shaft 1 project beyond those of the roller, and upon one of them is loosely mounted a gear 4 which is driven from the feeding roller 14 by means of an intermediate gear 17. The gear 4 is forced against the adjacent end face of the shell 2 by a Belleville spring washer 3, (best shown in Fig. 3), provided with a screw 5 which enables its tension to be adjusted at will, but while this construction is preferred, the said washer 3 may be replaced by either a helical spring 6, (Fig. 4), or a coil spring 10, (Fig. 5). In the former modification, the inner end of the spring 6 bears against the end wall of an adjustable cup 8, which is fitted in the shell end and serves to regulate the tension of the spring, and the outer end of said spring bears against gear 4 and forces it against the winding roller fast on shaft 1, while in the other modification the gear is formed with an inwardly-extending, axial

sleeve 9, through which the shaft end loosely passes, the inner end of spring 10 being secured to said sleeve and its outer end to the inner wall of shell 2.

5 In each of the forms, however, the operation is substantially the same; that is to say each time that roller 14 is rotated, the paper strip which passes between it and the upper roller 15, is advanced to the pre-
10 determined extent irrespective of the diameter of the roll of paper wound upon the winding roller at such time. This is due to the fact that the mounting of the gear 4 is of such a character as to provide, in effect,
15 for a differential movement of the winding roller, the extent of movement depending upon the diameter of the roll of paper on the roller, so that where the paper fed to said roller is wound up thereon before the
20 movement of the gear 4 is completed, the roller will remain stationary during the surplus rotary movement of said gear.

In order to facilitate reading of the symbols printed upon the paper, means is preferably provided for printing a line upon the
25 said paper simultaneously with the symbols, thereby fixing the position of the latter relatively to such line. The means in question is here shown as consisting of a
30 frame 18, (Figs. 1, 2 and 6), the sides of which are pivoted at 19 on suitable fixed bearings, the said frame having its front member 20 resting on the type bars and provided with the necessary type for printing
35 the desired line. To take up the play of the keys, and thus cause the symbols to be printed on the same line, the device represented in Fig. 7 may be utilized, such device consisting, as therein shown, of a bar 21 which
40 is secured to the framework of the machine, and through which passes, to the right of the key stems, a screw 22, or similar adjusting member.

I claim:—

45 1. In a typewriting machine, the combination, with mechanism for feeding a continuous strip of paper embodying a pair of superposed rollers between which the strip passes; of a winding device to which said

strip is fed, comprising a differentially-
50 movable roller, and a gear yieldingly connected with one end thereof; and a gear connection between one of said superposed rollers and the first-named gear.

2. In a typewriting machine, the combi-
55 nation, with mechanism for feeding a continuous strip of paper; of a winding device to which the strip is fed comprising a differentially-movable, cylindrical shell where-
60 on said strip is wound, a supporting shaft therefor, and a spring-controlled gear mounted upon said shaft at one end of said shell; and a gear connection between said
65 feeding mechanism and the first-named gear.

3. In a typewriting machine, the combi-
70 nation, with mechanism for feeding a continuous strip of paper; of a winding device to which the strip is fed comprising a differentially-movable roller, a supporting
75 shaft therefor, a gear loosely mounted upon said shaft at one end of said roller, and a spring washer engaging said gear to force the latter into frictional engagement with
80 said roller end; and a gear connection between said feeding mechanism and the first-named gear.

4. In a typewriting machine, the combi-
85 nation, with mechanism for feeding a continuous strip of paper; of a winding device to which the strip is fed comprising a differentially-movable roller, a supporting
90 shaft therefor, a gear loosely mounted upon said shaft at one end of said roller, a Belleville washer engaging said gear for forcing the latter into frictional engagement with
95 said roller end, and means for adjusting the pressure of said washer upon said gear; and a gear connection between said feeding mechanism and the first-named gear.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

VICTOR-CHARLES DOLD.

Witnesses:

EMILE LEDRET,
HANSON C. COXE.