

W. J. NEIDIG.
TYPE WRITING MACHINE.
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1,053,927.

Patented Feb. 18, 1913.

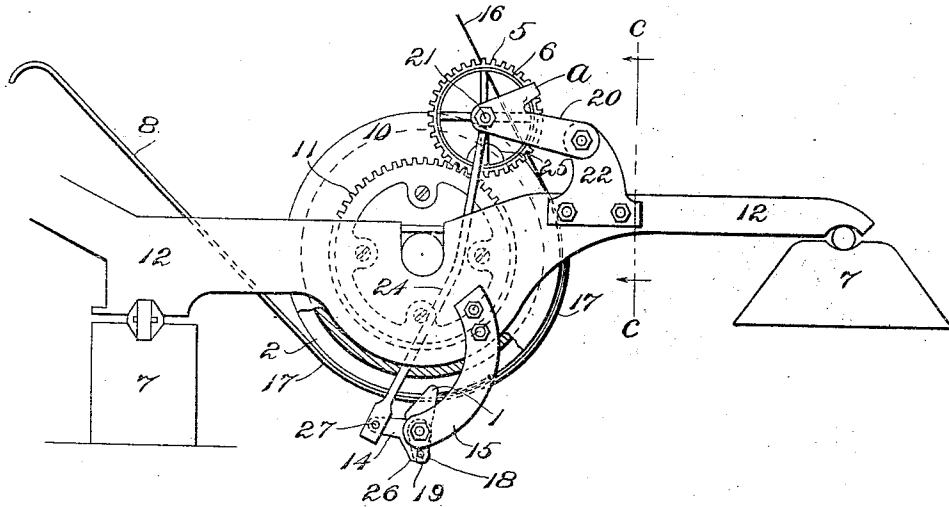


Fig. 1.

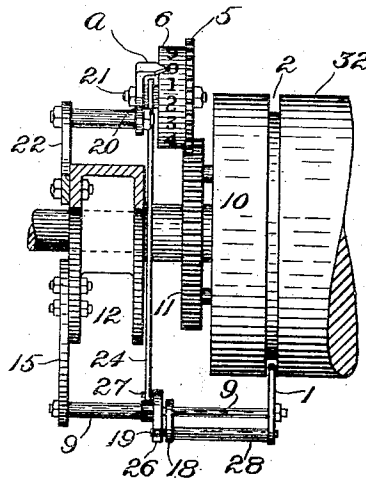


Fig. 2.

Witnesses:
Oscar F. Hill
James E. Connor

Inventor:
William J. Neidig
by Chas. F. Randall
Attorney.

UNITED STATES PATENT OFFICE.

WILLIAM JONATHAN NEIDIG, OF MADISON, WISCONSIN, ASSIGNOR, BY MESNE ASSIGNMENTS, TO CHICAGO TITLE AND TRUST COMPANY, TRUSTEE, A CORPORATION OF ILLINOIS.

TYPE-WRITING MACHINE.

1,053,927.

Specification of Letters Patent.

Patented Feb. 18, 1913.

Original application filed April 20, 1908, Serial No. 428,212. Divided and this application filed December 22, 1909. Serial No. 534,559.

To all whom it may concern:

Be it known that I, WILLIAM JONATHAN NEIDIG, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented a new and useful Improvement in Type-Writing Machines, of which the following is a specification.

My invention consists in means designed first, to give the operator a signal whereby he may know that the bottom of the sheet is near; and second, to indicate to him the distance from any later current printing point to the bottom edge of the sheet being printed, or in other words, the remaining bottom margin, and this beginning as far up the sheet as may be found useful, and ending at the very end of the sheet.

Those skilled in the use of typewriting machines know that one of the greatest annoyances connected with the use of machines as at present constructed is that the operator is deprived of foreknowledge of the approach of the end of the sheet. This is more especially true in the case of the front-strike and top-strike machines, because in them the platen usually cannot be lifted, and the bottom edge of the sheet passes entirely out of sight behind the platen while a large portion of the sheet still remains unused. The operator is either obliged to guess at his bottom margin, or wait until the end of the sheet reappears—by which time there is usually very little bottom margin left. Certain classes of work demand liberal bottom margins—legal work, for instance, and thesis work, that has to be bound and trimmed. It has heretofore been the custom of the more careful operators to mark each sheet separately with the desired margin, either in lead pencil or by driving a small hole through the sheets a dozen at a time. Of the various mechanisms heretofore devised to give the operator a warning when time to remove his sheet, none is now in common use. My invention gives the operator such a warning in an improved and practicable manner. It does more than this. In addition to serving as a signal, it automatically measures for him line by line the decreasing amount of unused paper left upon his paper sheet irrespective of its length. The advantage of such a measuring device is that the operator without pre-

liminary care on his part is enabled to look ahead and tell whether he has room on his sheet for a group of matter like a table, or a chapter heading, that cannot be conveniently divided, and if he has not, to remove the sheet and start a new one, even though the point at which he would ordinarily wish to remove the sheet be not reached. This function I believe had never before been performed, but is novel to my invention.

A form of mechanism whereby I attain these results is illustrated in the accompanying drawings, in which—

Figure 1 is an end view of certain parts of a typewriting machine having an embodiment of my invention applied thereto. Fig. 2 is a front view thereof, partly in vertical section on line C, C, of Fig. 1, but with the paper sheet and platen removed.

The invention shown, described and claimed herein is a division of that of my application, Serial No. 428,212, filed April 20, 1908.

The principle of the invention will be apparent from the following description of the illustrated embodiment thereof. From the axle or pivot 9, which is supported at one end by the extension 15 of the carriage frame 12, swings the paper-feeler 1, the free end of which in the presence of the paper-sheet 16 lies against the said sheet outside the circumferential slot 2 in the platen 10. The normal position of the said paper-feeler is in the said slot. By normal position I mean the position the said paper-feeler has a tendency to assume: that is to say, the position it assumes in the absence of the controlling paper-sheet. Through the said paper-feeler and intermediate connections between the same and an arm the sheet 16 operates to control the position of the said arm, the latter bearing the pin 21 upon which freely turns the rotary member 6. This rotary member is unbalanced, with its center of gravity eccentric to its axis, by means of a rim weight 25, so that when free to turn around said axis it will come to rest always with the same point in its periphery uppermost; and it carries a conspicuously marked scale, in this instance comprising a consecutive series of numerals, although other markings or graduations may be added or employed instead. Fixed

combined with it is the toothed wheel 5. A toothed periphery 11 is likewise attached to the end of the platen 10 to revolve as a unit with the platen. During the presence of the paper sheet under the paper-feeler, the toothed wheel 5 is held clear of engagement with the toothed periphery 11 by the lifting action of the paper-feeler.

When the paper-feeding platen 10 is revolved in its advancing direction, the leading edge of the entering paper sheet encounters the paper-feeler 1, normally held in slot 2 by weight 28, that is to say having a normal position in the path of the sheet, and presses against it, rocking said paper-feeler upon axle 9 until the said feeler has entirely left slot 2, that is to say, is entirely clear of the paper-path. The sheet then passes between the paper-feeler and the platen, holding the feeler out of the slot until the bottom end of the sheet passes the feeler, whereupon the feeler, no longer controlled by the paper sheet, enters the circumferential slot 2 in the platen, permitting the arm 20 to move in the direction to engage the teeth of the wheel 5 with the toothed periphery 11, and thereby the rotary member 6 is operatively connected with the platen to cause it to turn in unison with the latter. The said member now enters upon the duties which satisfy the aim of the invention, attracts by its conspicuous movements the attention of the operator, and by bringing the indices or numerals with which it is provided successively into indicating relations with a stationary index or pointer *a* or the like indicates to the operator line by line the distance remaining to the bottom of the sheet from the current printing point. As the rotary member controlling the signaling agent and scale always returns to a constant starting position when the toothed wheel 5 is disengaged from the toothed periphery 11, and lies passive and stationary so long as the said toothed wheel and the toothed periphery are out of engagement with each other and until the end of the sheet reaches a predetermined distance from the printing point, and then through reengagement of the said toothed wheel and toothed periphery is caused to begin movement in unison with the sheet and continues to move synchronously with the sheet, it is able to do this.

The paper-feeler 1 rocks upon the pivot-axle 9 and with it rock as a unit the horizontal weight 28, the arm 18, and the pin or stop 19 projecting from said arm. Upon the same axle also rocks loosely the rocking-piece 14, provided with the lug 26, and connected by means of the pin 27 with the lower end of the rod 24, the upper end of the said rod being connected with the axle 21 carried by the arm 20. When the paper sheet presses the paper-feeler 1 out of the

circumferential slot 2 in the platen the projecting pin or stop 19 engages with the lug 26 and operates to swing the rocking-piece 14 about the axle 9, which operates through the rod 24 to move the arm 20 outward and thereby break the gear-connection between the rotary member 6 and the platen. Thereupon the rim weight 25 returns the rotary member 6 to its constant starting position. When the bottom end of the sheet passes the paper-feeler the rotary member 6 is thrown into connection with the platen, together with the signaling means, or scale, or both, that it controls. Backing-up movement of the sheet after the bottom end of the latter has passed the feeler is provided for by mounting the paper-feeler so as to permit it to bend or hinge idly backward out of the way without doing any work. When the feeler is acted upon by the bottom edge of the sheet in a backing-up operation the feeler simply turns backward idly upon the axle 9, the pin or stop 19 separating from the lug 26 of the piece 14, without disturbing the position of the latter. As the movements of the paper-feeler effect the position of the arm 20 to disengage the toothed connections 5 and 11 only when the feeler is pressed forward by the advancing leading end of the sheet so as to cause the pin 19 to bear against the rocking-piece 14 and rock or swing the latter, and as the feeler is free to swing backwardly as well as forwardly in the circumferential slot 2, the backing-up movement is taken care of without embarrassment. The weight 28 upon the paper-feeler restores the feeler to a working position in the circumferential slot.

The signal I prefer to employ is given as follows: Upon the peripheral surface of the rotary member 6, I place a conspicuous mark, or a series of conspicuous marks, or colors, or both, preferably black upon white. These are brought into view, or into motion, when the rotary member 6 begins to move in unison with the platen. The marks need not have any symbolic content, but may be purely meaningless and arbitrary. Such a signaling means could be used alone, without the addition of a scale. Any of the ordinary audible or visual signaling devices heretofore proposed for use in like connections in typewriting machines is within the scope of my invention and may be employed as for instance in my application of April 20, 1908, aforesaid. The signaling means consisting of a periphery conspicuously stationed and marked I regard as the most perfect form of signaling agent, for it involves no additional working parts, it is silent, it is adequate, and it repeats and continues its warnings. The invention is not necessarily restricted to an operative member 6 that is rotary for controlling the marked signaling surface.

The scale I prefer to employ is an annular scale carried upon the periphery of the rotary member 6. As the said rotary member 6 when free of engagement with the platen stands in a constant starting position, to which it is returned by the action of the rim weight 25 upon it, and moreover remains in this constant starting position until again engaged with the platen, I mark my scale 0 at a point thereon which stands opposite the index or pointer *a* when the member 6 is in its constant starting position. I mark the next stopping point of the rotary member 6 to indicate the extent of the remaining portion of the sheet at that moment, whatever the length of such portion may be, and this will be the greatest margin or length the device is intended to indicate. From thence I mark the successive stopping points to indicate the decreasing distances line by line from the line on which printing is about to be or is being effected down to a single line. In my drawings I show the scale numbered to count by the ordinary doubled spaced line, instead of by the single or "solid". I do this for two reasons, first, because this is the spacing ordinarily used by operators, and second, because the lettering or numbering can be made more conspicuous. The peripheral scale which I show I regard as the most perfect form of scale, and the rotary member 6 as furnishing the most perfect form of control; but any form of operative scale could be adapted to the purpose and the controlling member need not be rotary.

It will be seen at once that a marked signaling surface such as is first referred to can be made to serve also as such a scale, if the signaling marks be given the form, say, of numerals; for, although the marked and colored periphery that I propose to use as a signaling means need not have any of the essential attributes of a scale, at the same time it can just as well have all the essential attributes of a scale without the slightest prejudice to its functions as a signaling means, and I so show it. By using conspicuous marks that are also scale symbols I am able to make my marked signaling surface do duty also as a scale; and thus I bring my invention to its highest state of efficiency and simplicity.

It is to be understood that while in the illustrated embodiment of my invention I have employed a rim-weight for utilizing gravity to return my operative member to a constant starting position, and have mounted said member upon an independent axle, and have shown the connecting means between the said member and the platen as consisting of toothed peripheries meshing together, I do not regard these as essential in all cases. Various modifications in the construction and in the arrangement of

parts are permissible within the scope of my invention and without involving a departure from the spirit thereof. My invention requires only that an operative member controlling a signaling means, or a suitably marked scale, or both, be brought to a constant starting position, and then at a fixed moment in the progress of the bottom edge of the sheet be given a movement synchronous with that of the sheet.

The devices shown in the drawings and described herein are part of a series of closely related inventions or improvements which are presented in a number of co-pending applications for Letters Patent filed by me. The said devices have a number of general objects in common with those forming the subject-matter of different applications in the said series, and to a certain extent embody and utilize various principles and features which are common to devices shown and described in one or another of the said applications. Some of the said common principles and features are claimed broadly in my application filed April 20, 1908, aforesaid, and in my applications filed Dec. 15, 1909, Serial No. 533,309, and Mar. 30, 1912, Serial No. 687,463. The branch of the general invention that is covered hereby is distinguished by the characteristic features which are specified in the following claims.

Having thus clearly explained the nature and objects of my invention and the manner of constructing, applying and using it, I claim as new and desire to secure by Letters Patent,—

1. In a typewriting machine, in combination, a platen having a circumferential slot therein, an operative member, indicating means called into operation through said member, and sheet-controlled means for coördinating the position of said member with that of the sheet, including means for giving the member a constant starting position, means for giving it simultaneous movement with the platen from such position, and a paper-feeler movable into the slot in the platen.

2. In a typewriting machine, in combination, a platen having a circumferential opening, an indicator, and sheet-controlled means for coördinating the position of said indicator with that of the sheet, including means for giving the indicator a constant starting position, means for giving it simultaneous movement with the platen from such position, and a paper-feeler movable into the opening in the platen.

3. In a typewriting machine, in combination, a platen having a circumferential slot therein, an index-carrier supplied with indices, and sheet-controlled means for coördinating the position of said index-carrier with that of the sheet, including means for

- giving the carrier a constant initial position, means for giving it simultaneous movement with the platen from such position, and a paper-feeler movable from sheet-controlled position into the slot in the platen.
4. In a typewriting machine, in combination, a platen having a circumferential slot therein, an operative member, indicating means called into operation through said member, means for giving said member a constant starting position, and sheet-controlled means for connecting said member with the platen, including a paper-feeler movable into the slot in the platen and toothed gearing connectible under the control of said paper-feeler.
5. In a typewriting machine, in combination, a platen supplied with a circumferential opening, an index-carrier with indices thereon, means for giving said carrier a constant starting position, and sheet-controlled means for connecting said carrier to move with the platen, including a paper-feeler movable into the opening in the platen and toothed gearing connectible under the control of said paper-feeler.
6. In a typewriting machine, in combination, a platen having a circumferential slot therein, an operative member, indicating means called into operation through said member, and sheet-controlled means for coordinating the position of said member with that of the sheet, including a weight for returning said member into a constant starting position, toothed wheels one thereof attached to rotate with the platen and the other attached to rotate with the member, and a paper-feeler movable into the slot in the platen.
7. In a typewriting machine, in combination, paper-feeding means, indicating means, and sheet-controlled means controlling the actuation of the said indicating means, including a paper-feeler and an intermediate part having a common axis therewith, one thereof operative upon the other when actuated in one direction but not when actuated in the other direction.
8. In a typewriting machine, in combination, paper-feeding means, indicating means, and sheet-controlled means controlling the actuation of the said indicating means, including a paper-feeler having a sheet-controlled position adjacent to the paper-path and movable therefrom upon the passing of the sheet into a normal position in the paper-path and from which it is movable backwardly and a backing-up movement of the sheet after having been released by the sheet.
9. In a typewriting machine, in combination, paper-feeding means, indicating means, and sheet-controlled means controlling the actuation of the said indicating means, including a paper-feeler having a normal position in the paper-path and movable in two directions from the said normal position out of the said path.
10. In a typewriting machine, in combination, a platen, a paper-feeler having a normal position in the paper-path and movable in two directions therefrom, indicating means, and intermediate means giving the said feeler operative control of the said indicating means when actuated in one direction from its said normal position but permitting idle movement of the feeler in the other direction.
11. In a typewriting machine, in combination, a platen, a paper-feeler having a normal position in the path of the sheet and movable from said position in two directions, indicating means, and intermediate means between the said indicating means and the feeler, including a stop rendering the feeler operative upon the said indicating means when actuated in one direction but not when actuated in the other.
12. In a typewriting machine, in combination, a platen, a paper-feeler having a normal position in the path of the sheet and having an idle movement in one direction and a working movement in the other, means for automatically returning the said feeler into said position after movement therefrom, and indicating means controlled by the movement in working direction of the said feeler.
13. In a typewriting machine, in combination, a platen, a paper-feeler having a normal position in the path of the sheet and movable from said position in two directions, a weight for returning the said feeler into said position after movement therefrom, and indicating means controlled by the movement in working direction of the said feeler.
14. In a typewriting machine, in combination, a platen having a slot therein, an operative member, signaling means called into operation through said member, a paper-feeler movable into the platen slot, means rendered effective through the said paper-feeler under control of the sheet for giving the said member a constant starting position, and means rendered effective by the passing of the sheet-end for giving the said member simultaneous movement with the platen from the said starting position.
15. In a typewriting machine, in combination, a platen; an operative member; indicating means called into operation through said member; a paper-feeler having a sheet-maintained position adjacent to the paper-path, and operative therefrom upon the passing of the sheet into a normal position in the paper-path, and operative in a late backing-up movement of the sheet backwardly from the said normal position out of the paper-path; means rendered ef-

fective through the said paper-feeler under the control of the sheet for giving the said member a constant starting position; and means rendered effective by the passing of the sheet-end for giving the said member simultaneous movement with the platen from the said starting position.

16. In a typewriting machine, in combination, a platen, an operative member, indicating means called into operation through said member, an intermediate part having an axis and a paper-feeler having the same axis and operating the said part when moved in one direction but not when moved in the other, means rendered effective by the said part, under control of the paper-feeler, for giving the said member a constant starting position, and means rendered effective by the passing of the sheet-end for giving the said member simultaneous movement with the platen from the said starting position.

17. In a typewriting machine, in combination, a platen having a circumferential opening therein, a revoluble member, indicating means called into operation through said member, and means cooperating with the slotted platen to coordinate the position of the revoluble member with the position of the sheet, including a sheet-controlled controlling part movable into the opening in the platen.

18. In a typewriting machine, in combination, a platen having a circumferential opening therein, an operative member, a series

of indices and a cooperating index, one thereof moving in unison with the said member, and means for giving the operative member a constant starting position and thereafter coordinating its position with that of the sheet, such means including a sheet-controlled controlling part movable into the opening in the platen.

19. In a typewriting machine, in combination, a platen having a circumferential opening therein, a carrier supplied with indices, means for giving the said carrier a constant starting position, and means for giving the carrier movement coordinate with that of the sheet, including a paper-controlled controlling part having action into the said opening in the platen.

20. In a typewriting machine, in combination, a platen having a circumferential slot therein, a revoluble member, signaling means called into operation through said member, and sheet-controlled means cooperating with the slotted platen to coordinate the position of the revoluble member with the position of the sheet, including means for giving the member a constant starting position, means for giving it movement with the sheet therefrom, and a paper-controlled controlling member which works in the said slot.

WILLIAM JONATHAN NEIDIG.

Witnesses:

HERBERT QUICK,
JOHN R. CORAMOUS.