

D. J. RICHARDSON.
TYPE WRITING MACHINE.
APPLICATION FILED DEC. 23, 1907.

1,013,953.

Patented Jan. 9, 1912.

FIG. 1.

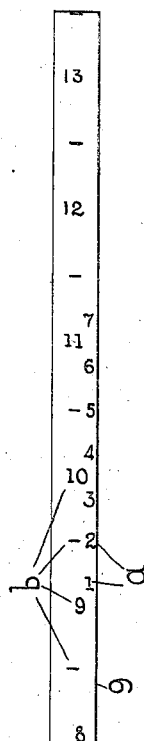
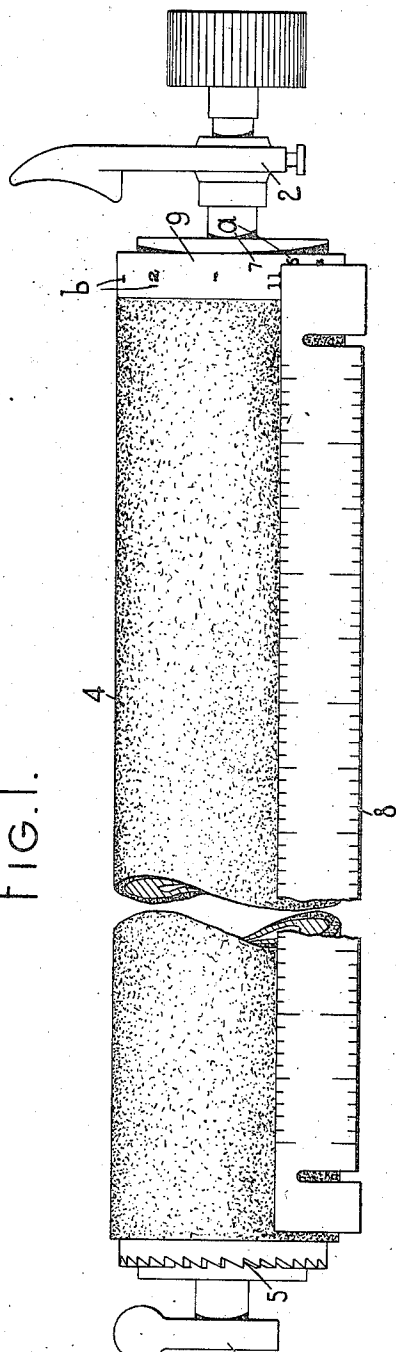
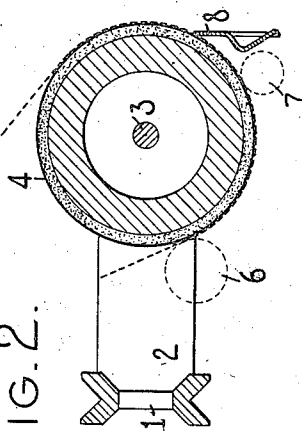


FIG. 3.

FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

DANIEL JUDSON RICHARDSON, OF SYRACUSE, NEW YORK, ASSIGNOR TO THE MONARCH TYPEWRITER COMPANY, OF SYRACUSE, NEW YORK, A CORPORATION OF NEW YORK.

TYPE-WRITING MACHINE.

1,013,953.

Specification of Letters Patent.

Patented Jan. 9, 1912.

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To all whom it may concern:

Be it known that I, DANIEL JUDSON RICHARDSON, citizen of the United States, and resident of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Type-Writing Machines, of which the following is a specification.

My invention relates to typewriting machines and more particularly to means for indicating when the bottom edge of the sheet is being approached and for indicating how many lines remain to be written before the end of the page is reached; and one of the objects of said invention is to provide simple, cheap and efficient means of the character specified.

A further object of the invention is to provide means such as those referred to which may be readily applied to various styles of typewriting machines without changing the structural features of said machines.

To the above and other ends which will hereinafter appear, my invention consists of the features of construction, arrangements of parts and combinations of devices to be hereinafter described and particularly pointed out in the following claim.

In the drawings, Figure 1 is a front elevation of a platen and parts of a platen frame or carriage equipped with the devices of my invention. Fig. 2 is a transverse sectional view of the same. Fig. 3 is a detached face view of the scale strip, shown flattened or straightened out.

I have shown my invention in the present instance embodied in a Monarch machine but it should be understood that the invention may be embodied in various styles of typewriting machines.

The carriage or platen frame comprises a slide and supporting bar 1 supported in the usual manner by anti-friction bearing rollers or balls. End plates 2 project forwardly from the slide and supporting bar near the ends thereof and have bearing openings for a platen shaft 3 which supports a rotative platen 4. The left-hand platen head is formed with a line space ratchet wheel 5 with which the usual line spacing mechanism (not shown) coöperates. Main feed rollers 6 (diagrammatically shown in Fig. 2) are provided at the side of the platen where the paper is introduced and forward feed rollers 7 are situated near the front of

the platen back of a platen scale 8 supported on the carriage in the usual manner. The parts thus far described are or may be of the usual construction embodied in the Monarch machine.

In order to explain my invention, it will be convenient to assign definite dimensions to certain parts of the machine. Thus, it will be supposed in the present instance that the platen 4 is $5\frac{1}{2}$ " in circumference, that there are thirty-three teeth in the line spacing ratchet wheel 5, the teeth being situated about one-sixth of an inch apart, and that it requires seven full line space movements of the platen or a movement equivalent to fourteen teeth of the line space wheel to bring the paper from its point of introduction into the machine at the feed roller 6 approximately to the printing line or to a point just above the platen scale; all of the above being true of the construction embodied ordinarily in the Monarch machine. This explanation is made since it will aid in an understanding of the invention, though it should be understood that the proportions specified may be varied according to circumstances.

A scale strip 9, shown detached in Fig. 3, consists of a band or strip of paper, celluloid, rubber or other suitable material which corresponds in length to the circumference of the platen, the strip being $5\frac{1}{2}$ " long in the present instance. This scale strip is pasted or otherwise secured to the face of the platen, preferably at one end thereof as shown in Fig. 1, so as to extend circumferentially around the platen to form a circular scale. The scale is provided with two sets of indices *a* and *b* arranged side by side, one set of indices *a* being numeric indices "1," "2," "3," "4," "5," "6," "7," spaced a full line space distance (one-third of an inch) apart, and the other set *b* comprising numeric indices "8," "9," "10," "11," "12," "13" spaced an inch apart, with intermediate marks to indicate half inches.

The indices *a* are arranged progressively and so that when the platen is turned forwardly, the index numerals commencing with the highest and ending with the lowest will be brought successively into register with the upper edge of the platen scale 8 near the right-hand end thereof. These index numerals *a* may be termed line indicating numerals and they are spaced apart to

correspond with the line spacing of the machine. Thus, if a full line spacing is ordinarily employed in the machine the distance between adjacent lines will correspond to the distance between two teeth of the line spacing wheel and the index numerals *a* should be spaced accordingly, care being exercised in applying the scale strip that one of the index numerals *a* appears just above the platen scale in a line space position of the platen. It requires in the present illustration a movement of two and one-third inches or seven full line spaces to move any given point on the sheet from the feed roller 6 to the printing line or to a point just above the platen scale so that the scale made up of the seven index numerals *a*, and about two inches in length, is sufficient to bring said scale into view at about the time when the end of the sheet is disappearing behind the platen. In the present instance the first index numeral "7" of set *a* appears just to the right of and above the index numeral "11" of the other set *b*, whereas the last index numeral "1" of set *a* appears to the right of and above the index numeral "9" of the other set, though this arrangement may be varied according to circumstances as will hereinafter appear. The set of indices *b* comprises the numerals "8," "9," "10," "11," "12" and "13," which refer to the lengths of sheets of paper in inches, the intermediate dash marks indicating the half inches. This marking constitutes a linear scale of a length equal to the circumference of the platen employed, which, in the present instance, is five and one-half inches.

The index numerals "8" to "13" may be varied at will, though the marking shown is preferred as it provides for the use of paper from 8 to 13½ inches long, which covers the lengths of sheets ordinarily employed. With a platen of 5½ inches in circumference, any desired variation within 5½ inches in the length of the paper employed may be effected whether very short sheets or very long sheets are used, the scale being changed accordingly. Thus, if sheets from 15 to 20½ inches long are employed the scale marks *b* would be from "15" to "20" with the intermediate and additional dash marks to indicate the half inches.

In using the invention as it is shown applied in the present instance, let it be supposed that a sheet 8 inches long is to be employed. The platen is turned until the numeral "8" of set *b* is in register with the platen scale. The sheet is then introduced into the machine with its leading edge at the point of engagement between the main feed roller 6 and the platen. The operator then turns the platen forward and proceeds with the writing in the usual manner without further reference to the indices *b*. Be-

fore the platen has completed a rotation, however, the index numeral 7 of the set *a* will appear in register with the top platen scale and this will indicate to the operator that there are seven lines that may be written on the sheet before the end is reached and as each additional line space is effected a lower index numeral will appear in register with the scale until the numeral "1" is reached which indicates to the operator that only one more line may be written. In a like manner if the sheet 11 inches long is employed the operator first sets the platen so that the index numeral "11" of set *b* appears in register with the indicator or platen scale as shown in Fig. 1 and then introduces and writes on the sheet as before. During the second revolution of the platen the index numerals *a* appear successively in register with the platen scale and indicate to the operator how many lines may be written before the end of the sheet is reached.

It is desirable in practice to leave a given extent of lower margin between the last line written and the bottom of the sheet which may be, say, one inch. According to the arrangement shown substantially this extent of margin will be provided. This margin may be increased or decreased, however, by moving the set of indices *a* up or down with reference to the set of indices *b*. If the indices *a* are brought farther down, less bottom margin will be left, whereas if the indices *a* are moved farther up on the scale strip more margin will be provided for.

It will be understood that I have provided two sets of indices which progress in the same direction and which are fixed relatively to each other and to the platen; that one set *b* determines the position to which the platen should be turned or adjusted to receive the paper; that the position to which the platen is adjusted depends on the length of the sheet employed; and that an index *b* corresponding to the linear measurement of the sheet is brought into register with the indicator or platen scale to properly position the platen to receive such sheet and to properly bring the line indicating indices *a* into use. It will also be understood that the indices *a* and *b* and the relation between them may be varied according to various circumstances; and that I do not limit myself to the construction and arrangement shown as various changes may be rendered necessary by the style of the machine in which the invention is embodied, by the circumference of the platen, by the extent of bottom margin desired, by the extent of movement of the platen necessary to introduce the sheet into the machine, and by the lengths of the sheets employed. If a greater range of variation than that afforded by a

scale which corresponds in length to the circumference of the platen is desired, the indices *b* may extend around the platen more than a single turn; they may be spirally or otherwise arranged to provide a linear scale of more than the circumference of the platen and various modifications may be made without departing from the invention.

From the foregoing description it will be seen that the invention is simple in construction, inexpensive to manufacture, is efficient in use and may be readily applied to existing forms of typewriting machines without changing the structural features of said machines.

What I claim as new and desire to secure by Letters Patent, is:—

In a typewriting machine, the combination of a rotative platen, an index strip encircling the platen and affixed directly to the face thereof at one end, said strip having

two sets of indices placed side by side and which extend around the platen, one set of indices being of linear measurement corresponding to the circumference of the platen and the other set being numerical indices progressively arranged and spaced apart according to the line spacing of the machine, the extent of the last mentioned set of indices corresponding approximately to the extent of rotation of the platen required to feed a sheet from the point of introduction to the printing line, and an indicator co-operating with both sets of indices.

Signed at the city of Washington, District of Columbia, this 23rd day of December A. D. 1907.

DANIEL JUDSON RICHARDSON.

Witnesses:

HENRY H. ANGELL,
C. R. HARBAN.