

(No Model.)

J. M. FAIRFIELD.
INDICATOR DEVICE FOR TYPE WRITING MACHINES.

No. 553,520.

Patented Jan. 28, 1896.

Fig. 1.

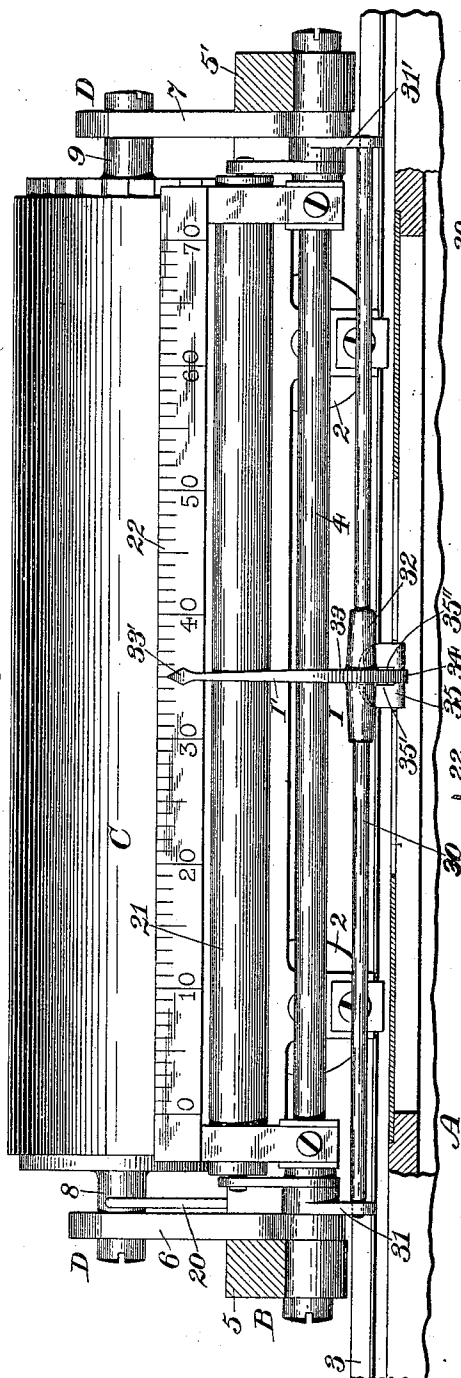
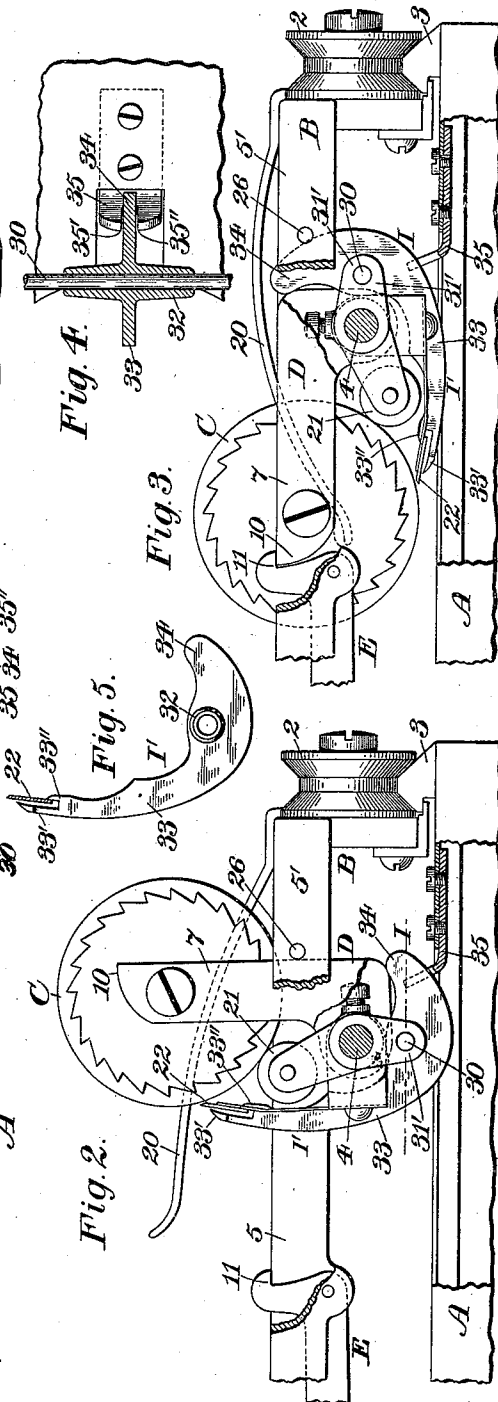


Fig. 4.

Fig. 3.

Fig. 5.

Fig. 2.



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INDICATOR DEVICE FOR TYPE-WRITING MACHINES.

SPECIFICATION forming part of Letters Patent No. 553,520, dated January 28, 1896.

Application filed January 17, 1895. Serial No. 535,221. (No model.)

To all whom it may concern:

Be it known that I, JOHN M. FAIRFIELD, a citizen of the United States, residing at Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Indicator Devices, of which the following is a specification.

This invention relates to indicator devices for that class of type-writers in which the paper is carried around a platen or impression-cylinder mounted upon a sliding carriage supported for oscillatory movement transversely of the direction of travel of said carrier, the object being to provide an indicator whereby the position of any point in a line of writing may be accurately read or indicated when the platen is shifted or raised from the type to its inoperative position to bring the line of writing into position for reading the same in the manner common to machines of this class.

In the drawings accompanying and forming a part of this specification, Figure 1 is a front elevation of the upper part of a type-writing machine embodying my present improvements and showing the platen and connected devices in the reading position, portions of the mechanism being removed for the sake of clearness. Fig. 2 is a sectional end elevation, looking from the right hand in Fig. 1, of a portion of the upper rear parts of the carriage mechanism and the frame, portions of the mechanism being also removed to more clearly illustrate the construction, the carriage and connecting devices being shown in the reading position, as in Fig. 1. Fig. 3 is a view similar to Fig. 2, and showing the carriage and connected devices in the normal or printing position. Fig. 4 is a detail sectional plan view showing the indicator and its supporting-rod and the stop device for preventing movement of said indicator longitudinally of the frame of the machine, and Fig. 5 is a detail sectional side elevation showing the indicator in operative relation with the paper-scale.

Similar characters designate like parts in all the figures.

In the drawings only so much of a type-writing machine is shown as will clearly illustrate the application and operation of my improvements. In said drawings the platen

or impression-cylinder is shown supported for lateral movement in an arc of a circle, for the purpose of bringing said platen to either one of two extreme positions, one of which will be its normal working or printing position and the other of which will be its elevated inoperative reading position, the manner of actuating a platen to bring it into either of these positions being well understood in the art.

My present improvements comprise, in part, an indicator-arm movable with the platen in transverse direction and held against longitudinal movement relatively to the frame and to the printing-point, and also substantially held against lateral movement relatively to the printing-line.

It also comprises, in part, and in combination with a platen movable in transverse direction relatively to the carriage, a paper-scale adjacent to the platen and movable therewith in transverse direction relatively to the carriage and an indicator held against longitudinal movement relatively to the main frame and having an indicator-arm movable with the paper-scale, and hence with the platen, in transverse direction relatively to the carriage and movable relatively to the paper-scale in longitudinal direction, so that the indicator-arm will be maintained substantially against transverse movement relatively to the paper-scale and to the printing-line in both the printing and the reading position of the platen and its connected mechanism, as will be hereinafter more fully described.

The portions of a type-writer which I have shown herein, and which are necessary for illustrating the construction and operation of my improved indicator and the organization of said indicator, with the co-operating elements of the apparatus, are the frame A adjacent to the basket of the type-writer, the carriage B, supported for longitudinal movement upon the frame A, a platen or impression-cylinder C, a carrier D for the platen, means for elevating the platen relatively to the carriage B, locking devices for holding the platen in its working position, and a paper-scale mounted upon and movable with the platen-carrier, all of which parts may be of any construction suitable for maintaining the indicator against longitudinal movement

relatively to the main frame upon which the carriage is mounted and against lateral movement relatively to the platen and the paper-scale, the preferred forms of these several co-acting elements being shown herein, however, and hereinafter more fully described.

The carriage B may consist of a suitable frame supported for longitudinal movement upon the usual ways, one of which, the rear track-rod, is shown at 3 as carried in the usual frame or bed A of the machine and co-operating with the track-rolls, such as 2, of the carriage.

The platen or impression-cylinder C, which is or may be of any usual construction, is pivotally supported at its opposite ends in lateral arms of the carrier D, so that said platen will be capable of an upward and backward or reading-shift movement for bringing the printing-line into position for inspection of the writing.

The platen-carrier, in the form thereof herein shown, consists of a shaft 4, journaled at its opposite ends in bearings formed in the side rails 5 and 5' of the carriage, and two carrier-arms, which are shown at 6 and 7 as secured to the carrier at opposite ends thereof and adjacent to the side rails 5 and 5', said carrier-arms extending out laterally from said shaft 4 and having aligned bearings formed transversely in their forward or outer ends, in which are seated the trunnions 8 and 9 of the platen C. In the drawings these carrier-arms are shown as L-shaped, and as pivotally connected with the shaft 4 at points relatively remote from their points of pivotal connection with the platen. The forward ends of the carrier-arms will preferably be curved or inclined, as shown in Figs. 1, 2, and 3 of the drawings, to form a bearing-face 10, adapted to co-operate with a similar bearing-face 11 upon the locking or detent member of the platen-locking means, (designated herein in a general way by E,) and through which the carrier is normally held with its platen in printing position. This locking means may be any usual or suitable detent member adapted for releasing and engaging the forward or free end or ends of either or both of the carrier-arms 6 and 7.

As a means for imparting a reading-shift movement to the platen relatively to the frame A of the machine and to thereby bring the printing-line into sight, I preferably employ a tension device or lifting-spring, which is shown at 20 as secured to the rear side of the carriage and as bent upward and bearing against the under side of one of the trunnions of the platen. It will be evident that when the platen is released from its locked engagement with the carriage by the release of the locking means E the spring 20 will tend to lift the platen and carry it to its inoperative or reading position, the momentum of the platen and its carrier, when actuated, being sufficient to carry said platen and its carrier through the latter part of said move-

ment. By means of this lifting-spring the platen will be automatically carried to its reading position; but it is evident that for the purposes of the present invention any other means for elevating the platen and the carrier, either automatically or manually, might be substituted.

The usual friction-roller 21 and paper scale or clip 22 are shown secured to the carrier-shaft 4, so as to be maintained in the same relative position to the platen during all the movements thereof. A stop 26 is also shown upon one of the side rails of the carriage in a position for limiting the backward movement of the platen-carrier.

The indicator, which is designated herein in a general way by I, is shown as comprising a fixed member or stop device secured to the frame of the machine and an indicator-arm held by said fixed member against movement longitudinally of the machine and movable transversely of the machine and relatively to said fixed member.

The indicator-arm, which is designated herein by I', is adapted to have a pivotal connection with a carrier, which is shown herein as a rod 30, maintained in fixed relation and in parallelism with the shaft 4 and normally in the rear of and substantially in the same horizontal plane as said shaft 4, the connecting means for joining said carrier and shaft being shown herein as a pair of similarly-disposed radial arms 31 and 31', fixedly secured to the shaft 4. The indicator-arm is shown herein as preferably provided with a long journal-bearing, formed by a sleeve 32, disposed transversely of the body 33 of the indicator-arm, this main body being also preferably intermediate of the extreme ends of the sleeve. The organization of the several parts of this indicator-arm I' may be any desired one capable of permitting oscillatory movement thereof with the rod 30 while maintaining a determined relation with the platen and its carrier.

A rear guide-arm or tailpiece 34 is shown as extending rearwardly of the journal-sleeve 32 and in line with the forward arm or pointer 33.

A bracket, which may be of any suitable construction adapted for engaging the indicator-arm I' and preventing movement of the indicator-arm longitudinally of the main frame, is shown at 35, fixedly secured to the upper side of the basket of the machine at a point corresponding to the printing-point—that is, at a point in line with the zero designation upon the paper-scale—when the carriage is retracted to its extreme right-hand position, corresponding to the beginning of a line. This stop device or bracket is shown as slotted transversely of the machine to form two indicator-engaging walls 35' and 35'', substantially in line with the side walls of the arm 34, so as to snugly engage said arm. These indicator-engaging walls, in connection with the long journal-bearing of the indicator-

arm upon the rod 30, constitute a means for securely holding the indicator-arm against movement longitudinally of the frame, so that said indicator-arm will be substantially as rigid in this direction as if it were an integral portion of the frame.

In order to prevent interference of the bracket or stop 35 with the free movement of said indicator-arm about the shaft 4 as a center the outer edges of the two members 33 and 34 may be curved approximately upon an arc struck from the axis of the shaft 4 as a center, so that a sufficient portion of the indicator-arm will at all times be engaged between the stop-walls 35' and 35'' to maintain the longitudinal positioning of said indicator-arm. This feature, however, I do not deem essential, the only requisite being that some portion of the indicator-arm shall always be engaged between the aforesaid stop-walls of the bracket 35.

In order to maintain a fixed relation transversely of the machine between the platen its carrier and the paper-scale on the one hand and the indicator-arm on the other hand the forward member 33 of said indicator-arm is shown herein as transversely slotted at the extreme forward end thereof to form a bifurcated index-finger made up of the stop-finger 33' and the rear paper-scale-engaging lip or tongue 33''. This lip 33'' is of sufficient length to prevent jarring of the paper-scale out of operative relation to the indicator-arm when the platen is actuated from its working to its reading position, and vice versa, during the operation of the machine.

From the foregoing description it will be evident that as the carriage is actuated from the beginning of the line to the end thereof by the striking of the keys and the space-bar (not shown) in the usual manner the carriage will move from the right to the left hand side of the machine, step by step, and the rod 30 will slide through its bearing in the sleeve 32 of the pointer without affecting the longitudinal position of the indicator relatively to the frame. Upon the shifting of the platen-carrier, however, from the working to the reading position (and, conversely, from the reading to the working position) the indicator-arm I' will oscillate with the rod 30 and with the platen and its carrier without moving laterally relatively to any of said parts, so that the indicator-arm, the paper-scale, the platen, the platen-carrier, and the rod 30 will constantly maintain the same position relatively to each other, transversely of the machine, whether said platen and its connected parts are in the working or in the reading position.

60 Having thus described my invention, I claim—

1. The combination in a type-writer, having a platen-carrier movable longitudinally and transversely of the machine, of an indicator-arm movable transversely with said carrier, and adjacent, and substantially in fixed, transverse relation with the printing-line of

the platen at all times, whether said platen is in its normal operative or inoperative position, or is moving from its operative to its inoperative position, or vice versa, and also in fixed longitudinal relation with the main-frame of the machine and the printing-point, substantially as described.

2. The combination in a type-writer, having a transversely oscillatory platen-carrier movable longitudinally of the machine, of an indicator-arm oscillatory with said carrier, and adjacent, and substantially in fixed, transverse relation with the printing-line of the platen, whether said platen is in its normal operative or inoperative position, or is moving from its operative to its inoperative position or vice versa, and also in fixed, longitudinal relation with the main-frame of the machine and the printing-point, substantially as described.

3. The combination in a typewriter, having a transversely-oscillatory platen-carrier movable longitudinally of the machine; of an indicator fixedly secured at its rear end to the frame of the machine, and having an indicator-arm oscillatory with said carrier in a plane passing transversely through the printing-point, and adjacent, and substantially in fixed, transverse relation with said carrier and the printing-line at all times, whether said carrier is in its normal operative or inoperative position, or is moving from its operative to its inoperative position, or vice versa, substantially as described.

4. In a type-writer, the combination with a transversely-oscillatory platen-carrier movable longitudinally of the machine, and having an indicator-carrying rod fixedly secured to said carrier in parallelism with the platen; of an indicator fixedly secured at its rear end to the frame of the machine, and having its forward end oscillatory with, and substantially held against oscillatory movement relatively to the platen-carrier and said rod and to the printing-line, said forward end having a transverse-bore, adapted to receive said rod and permit longitudinal movement thereof, relatively to the indicator, substantially as described.

5. In a type-writer, the combination with a transversely-oscillatory platen-carrier movable longitudinally of the machine, and having an indicator-carrying rod fixedly secured to said carrier in parallelism with the platen; of an indicator having a rear member fixedly secured to the frame of the machine, and having also a forward indicator-arm journaled upon said rod, and held against longitudinal movement relatively to the machine, by said fixed member; and a paper-scale mounted upon said platen-carrier, in substantially fixed relation thereto, and in fixed engagement, transversely of the machine with the index-arm of said indicator, and movable longitudinally, relatively to said indicator-arm, substantially as described.

6. In a type-writer, the combination with

a transversely-oscillatory platen-carrier movable longitudinally of the machine, and having an indicator-carrying rod fixedly secured thereto in parallelism with the platen; of a
5 fixed stop secured to the frame of the machine; an indicator-arm journaled upon said rod, and in fixed engagement, longitudinally of the machine with said stop, and movable transversely of the machine, relatively to said
10 stop, and having an index-finger bifurcated longitudinally of the machine, and in alignment with the printing-point; and a paper-scale mounted upon said platen-carrier in substantially fixed relation thereto, and en-
15 gaging in the bifurcation of said index-finger, and thereby adapted to hold said indicator-arm against transverse movement, relatively to the platen-carrier and to the paper-scale, and to permit longitudinal movement of such
20 paper-scale, relatively to the indicator-arm, substantially as described.

7. In a type-writer the combination with a swinging-platen adapted to move longitudinally of the machine; of an indicator adapted
25 to swing with said platen, and having one end thereof adjacent and in fixed transverse relation to the printing-line of the platen, at all times, whether said platen is in its normal operative or inoperative position, or is moving from its operative to its inoperative position, or vice versa, and having its other end transversely movable relative to the machine
30 and fixedly connected to the machine against

longitudinal movement relatively thereto, substantially as described. 35

8. In a type-writer, the combination with a platen-carrier movable longitudinally and transversely of the machine, of a slotted bracket connected to the machine, a rod connected to said carrier, and adapted to move
40 therewith, an indicator journaled on and adapted to swing with said rod, and adapted to slide in said slotted bracket, whereby said indicator is adapted to move transversely with the carrier, but held against longitudinal
45 movement, relative to said carrier.

9. In a type-writer, the combination with a platen-carrier movable longitudinally and transversely of the machine, of a slotted bracket connected to the machine, a rod connected to said carrier, and adapted to move
50 therewith; an indicator journaled on and adapted to swing with said rod, the rear end thereof being adapted to slide in said slotted bracket, and the opposite end thereof being
55 held adjacent, and in substantially-fixed relation with the printing-line of the platen, whereby said indicator is adapted to move transversely with the carrier, but held against longitudinal movement, relative to said carrier. 60

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