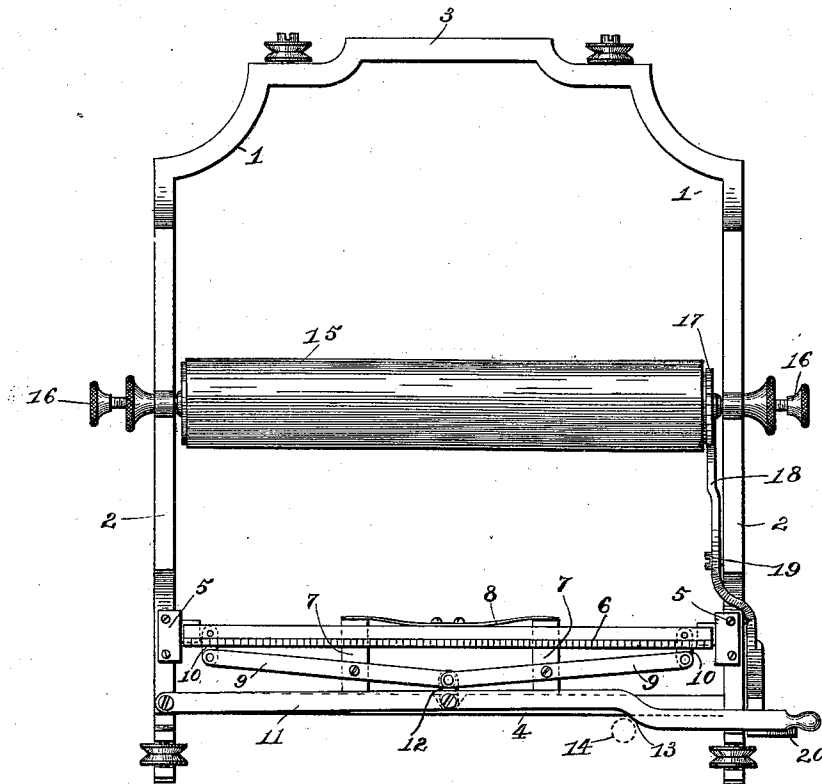


(No Model.)

J. F. McLAUGHLIN.
TYPE WRITING MACHINE.

No. 532,691.

Patented Jan. 15, 1895.



ATTEST:

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UNITED STATES PATENT OFFICE.

JAMES F. McLAUGHLIN, OF PHILADELPHIA, PENNSYLVANIA.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 532,691, dated January 15, 1895.

Application filed November 7, 1887. Serial No. 254,546. (No model.)

To all whom it may concern:

Be it known that I, JAMES F. McLAUGHLIN, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in a Reverse Movement and Carriage for Electrical Type-Writing Machines; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawing, and to the figures of reference marked thereon, which forms a part of this specification.

My invention relates to the traveling carriage of an electrical type-writing machine, and has for its object to furnish an improvement upon the mechanical devices for reversing or returning the traveling carriage to the beginning of the next succeeding line after the desired space has been made between the completed line and the next to be printed, which subject-matter is shown and described in my separate concurrent application, Serial No. 244,434, filed July 16, 1887; and the improvement upon the aforesaid application relates more particularly to the appliances for shifting or reciprocating the toothed rack-bar of a traveling carriage, out of engagement with the step-by-step pawls of the advancing motor, when such carriage reaches a certain predetermined point in its line of travel, where it must assume the proper relative position for automatic recoil.

With this object in view, my invention consists in certain details of construction, arrangement and combination of parts, all of which will be more fully and accurately described hereinafter and the specific points of novelty in which will be designated in the appended claims.

Referring to the accompanying drawing, figure 1 is an inverted plan view of the traveling carriage shown detached from its platform, and provided with the improved shifting mechanism for the rack-bar.

Like numbers of reference indicate like or corresponding parts in the drawing.

It will be understood that in the class of type-writers to which this invention relates there is provided a retracting spring for the

carriage, put under tension as the carriage is advanced, and that the rack bar is engaged by both a feeding or actuating pawl and by a holding pawl.

In the aforesaid separate pending application is shown a system of shifting mechanism embracing, essentially, a pivoted lever having one end attached to the rack-bar, and the other free end projecting in the line of travel of the traveling carriage so as to engage a fixed obstruction at a certain predetermined point in the path of said free end of the lever, so that when the carriage reaches this predetermined point the obstruction engages and diverts said free end of the lever, thereby reciprocating the laterally movable rack-bar out of engagement with its actuating pawls and leaving the traveling carriage free to the exertion of the retracting agency. However, by the above described construction, it may happen that the force imparted to said shifting lever, by its diversion, may not be exerted centrally or equally upon all lateral points on the rack-bar, and, consequently, the rack-bar will not be moved squarely from its bearings, and may hang and fail to operate with the desired precision and ease that is necessary to co-operate with other successive mechanical operations. Therefore, to preclude the possibility of such a contingency I have devised the improvement now about to be described in detail.

1 represents the frame-work of the traveling carriage of any desirable shape to conform with its co-operating parts and provided with the side bars 2, 2, the front portion 3, and the rear brace-rod 4, which latter is secured rigidly at each end to the side-bars 2, 2. Secured to the side bars 2, are guiding strips 5, 5, for the rack bar 6. It will be understood that these strips 5, are each grooved for the ends of the rack bar, though such grooves are not shown in the drawing.

7, 7 are two transverse pieces attached rigidly to the brace-rod 4, and to other portions of the frame-work. (Not shown.)

8 is a retractile spring centrally secured to the rack-bar 6, and having its free ends bearing upon the stationary pieces 7, 7.

9, 9 are two levers of equal length, connected each at the inner ends to the rack-bar 6, by the links 10, 10, which are also of exact and

equal length and are secured to the rack-bar at a relative and equal distance from the extremities thereof.

As will be observed, the levers 9, 9 are respectively pivoted to the pieces 7, 7, not exactly in the center, but having their greater leverage between their fulcrum points and their inner ends, and are pivotally connected together, and to the shifting lever 11, by the link 12. (See Fig. 1.)

The shifting lever 11, is pivoted at its inner end to one of the side-bars 2, 2, and is also attached near its center to the levers 9, 9, in the manner before stated. The forward free portion of this lever is provided with a curved cam-portion 13, which is designed to engage the fixed obstructing roller 14, shown in dotted lines in Fig. 1, and which, as before stated, is located at a certain point in the line of travel and is mounted upon a suitable bearing stud or arbor (not shown) which, in turn, is rigidly attached to a stationary portion of the machine.

15 designates the paper-roll pivotally supported through the side-bars 2, 2, by the adjustable bearing-screws 16, 16. On one end of this roller 15, is secured a ratchet disk 17, which is engaged by suitable pawls (not shown) on the front end of a lever 18, pivoted at the point 19, to the side bar 2. This lever 18 is curved downward and under the side bar 2, and at its rear end terminates in a head or cam portion 20. When the lever 11 is in its rearmost position this head 20, rests on its upper face, but when the lever 11 is moved inwardly by the roller 14, the head 20, will drop behind it and there hold it until the said head 20 is lifted out of the path of said lever.

The operation of the shifting mechanism for the rack-bar, is as follows, viz: When the traveling carriage has been advanced in a step-by-step manner owing to the intermittent actuations of the letter spacing motor, until the curved portion 13, of the lever 11 engages the roller 14, the free end of said lever 11 will be forced inwardly, causing the link 12, to bear equally upon and correspondingly press inwardly the outer end of the levers 9, 9, whose inner ends will be forced outwardly pulling the rack-bar outwardly from engagement with the actuating pawls. Now the carriage is free to return through the agency of the retracting power. Thus it will be apparent, that inasmuch as the force imparted for shifting the rack-bar is exerted relatively upon all parts thereof, there can be no impediment to the free reciprocation of said rack-bar. When the traveling carriage is reversed, and just as it assumes its initial

position for the next advance, the cam-portion 20, of the lever 18, engages a trip (not shown) arranged upon the frame-work and thereby throws up the rear end of lever 18, and, consequently, depresses its forward end which carries the feed mechanism and rotates the ratchet-disk, the distance equal to one line space. When the rear end of the lever 18, is lifted by the trip, the head or cam portion 20, is moved out of the path of the lever 11, thus releasing the said lever to the action of the spring 8, whereby the rack bar is moved into engagement with the actuating pawls. It will thus be seen that, as the carriage reaches the end of its travel, the rack bar is moved out of engagement with the actuating pawls by the roller 14, coming in contact with the cam portion 13, of the lever 11, and as the lever is then locked by the head 20, of the lever 18, the carriage will be returned to its initial position before the rack bar is again released and put into engagement with its actuating pawls.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. The combination with a laterally reciprocating rack-bar, of two fulcrumed levers of equal length connected by links at corresponding points to said rack-bar, and pivotally connected at their forward ends to each other and to a pivoted shifting lever, a shifting lever and means for automatically shifting said lever.

2. The combination with a laterally reciprocating rack-bar, of two fulcrumed levers of equal length connected by links at corresponding points to said rack-bar, and pivotally connected at their forward ends to each other and to a pivoted shifting lever, a shifting lever, and means for automatically shifting said lever, and a spring for retracting said rack-bar, after it is released from the shifting agency.

3. The combination with a laterally reciprocating traveling rack-bar, of the pivoted levers 9, 9, connected to said rack-bar by links 10, 10, the link 12, the traveling shifting lever 11, having the cam guiding portion 13, and a fixed agency for engaging and diverting the portion 13 of the lever at a certain point in its travel.

In testimony whereof I affix my signature in presence of two witnesses.

J. F. McLAUGHLIN.

Witnesses:

THOS. J. HUNT,
GEO. H. TICHENOR.