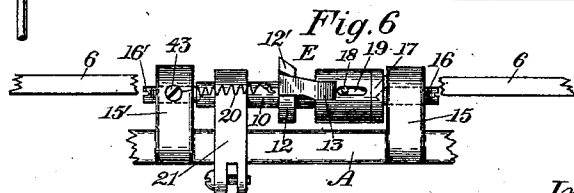
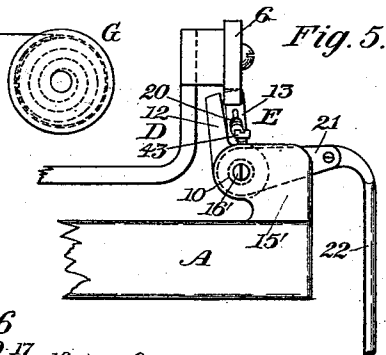
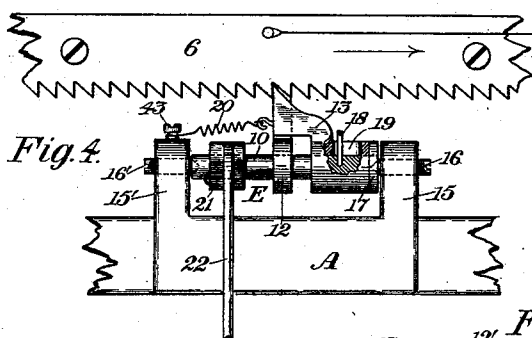
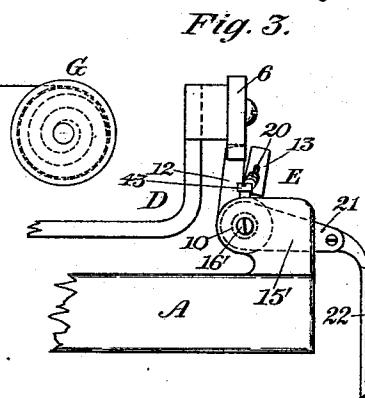
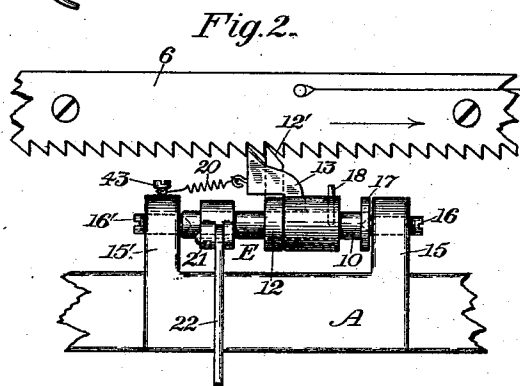
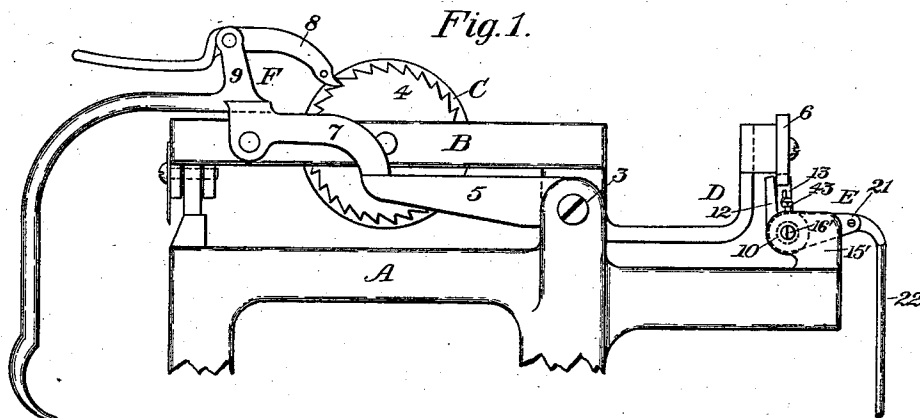


(No Model.)

J. M. FAIRFIELD.
TYPE WRITING MACHINE.

No. 536,025.

Patented Mar. 19, 1895.



Witnesses:

J. L. Edwards Jr.
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Inventor:

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UNITED STATES PATENT OFFICE.

JOHN M. FAIRFIELD, OF HARTFORD, CONNECTICUT.

TYPE-WRITING MACHINE.

SPECIFICATION forming part of Letters Patent No. 536,025, dated March 19, 1895.

Application filed March 3, 1894. Serial No. 502,273. (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 Type-Writers, of which the following is a specification.

This invention relates to carriage-feed mechanism for type-writers; the object of the invention being to furnish in connection with a type-writer carriage a feeding-mechanism of improved construction and organization and which shall be simple, durable, effective in operation, of low cost, and which may be readily assembled and disassembled.

In the drawings accompanying and forming a part of this specification, Figure 1 is a side elevation of a portion of a type-writer embodying my improvement. Figs. 2 and 3 are rear and side elevations, respectively, on an enlarged scale, showing the carriage-feed mechanism in the position it occupies immediately preceding the shifting of the feed-rack. Figs. 4 and 5 are views similar to Figs. 2 and 3, showing the carriage-feed mechanism in its normal position. Fig. 6 is a plan view of a portion of said feed-mechanism in the position shown in Figs. 1 and 2, a portion of the feed-rack being broken away.

Similar characters designate like parts in all the figures.

In the drawings I have shown only so much of a type-writer frame and carriage as will suffice to illustrate the application of my improvements thereto.

The carriage B, which is, or may be, of any usual or suitable construction, is shown supported for longitudinal and vertical movement upon the guide-ways of the frame A in a manner common to type-writers of usual construction, it being pivotally supported at its rear end upon the guide-rod 3. Revolvably supported between the side rails of the carriage is the platen C, having the usual feed-wheel 4, at one end thereof.

Pivotally supported upon the guide-bar 3 is the feed-rack, designated in a general way by D, which rack has an arm, 5, projecting forward of its pivotal point, as shown in Fig. 1, and has a rack-bar, 6, at the rear end thereof in position and adapted for engagement with the escapement-feed mechanism, designated in a general way by E.

Pivotally supported near the forward end of the carriage B is a reciprocatory rack-bar-actuator, designated in a general way by F, which actuator has a rearwardly and downwardly projecting arm, 7, in position and adapted for engagement with the forwardly-projecting arm 5 of the feed-rack D, and carries at its upper end a platen-actuator, which in the form thereof herein shown, consists of a feed-pawl, 8, pivotally supported upon an upwardly extending arm, 9, of the actuator F, and engages the feed-wheel 4 of the platen.

The rack-bar 6 is provided at its under side with a series of ratchet-teeth in the usual manner, and will be moved forward in the direction of the arrow, Figs. 2 and 4, by means of a suitable spring, or other device, as G, connected by a cord or wire to said rack-bar, which spring or rack-bar-actuating device will be connected to some part of the framework of the type-writer in the usual manner.

The escapement-feed-mechanism which controls the forward movement of the rack-bar 6 and the carriage to which it is connected, comprises a rock-shaft, 10, a rock-shaft-actuator, and two overlapping reciprocatory rack-bar-engaging members, 12 and 13, respectively, one of which members is fixed against lateral movement upon the rock-shaft, and the other of which members is connected for a sliding movement longitudinally of said shaft, said members being supported at an inclination to one another and being organized to rock with the said rock-shaft. These members will in some instances be herein termed "escapement-arms." This rock-shaft is removably supported between uprights, 15 and 15', preferably by means of conically-pointed bearing-screws, 16 and 16', extended through said uprights with their conical ends seated in conical recesses formed in the ends of said rock-shaft. Formed upon or secured to one end of the rock-shaft, is a flange or abutment, 17, which forms a stop for limiting the movement of the escapement-arm or member 13 in one direction, and formed upon or secured to said rock-shaft, near the central portion thereof, is the escapement-arm or member 12 whose upper end is inclined at one side, as shown at 12', to correspond with the inclination of, and form a detent-catch for engagement with the teeth of the rack-bar 6. This escapement-arm 12 in the normal position of the rock-shaft and

parts shown in Figs. 1, 4 and 5, lies with its rear edge in close proximity to, but at one side of the teeth of the rack-bar and in position for engagement with one of said teeth, as will be clearly understood by reference to said figures referred to. The other member, or escapement-arm 13, in the form thereof herein shown, consists of the tubular body-portion fitted for sliding movement upon the rock-shaft 10 between the fixed escapement-arm 12 and the abutment 17, and having the upwardly and outwardly projecting arm which constitutes the escapement-arm 13 proper. This escapement-arm is shown as secured for longitudinal movement upon the rock-shaft 10 by means of a pin, 18, secured to the shaft and projected through an elongated opening, 19, formed through the upper edge of the body-portion of said escapement-arm, as clearly shown in Figs. 4 and 6 of the drawings. It is obvious, however, that the said escapement-arm might be splined to the shaft instead of being secured in the manner shown, without departing from my invention. This escapement-member 13 lies with its rack-bar-engaging arm at one side of the rack-bar-engaging portion of the escapement-arm 12, and when in engagement with the rack-bar, as shown in Fig. 4, said arm 13 lies in a parallel plane transversely with the arm 12. This escapement-arm 13, when the arm 12 is in engagement with the rack-bar, lies with its tooth-engaging face in position for engagement with the next adjacent tooth in the rear of the tooth engaged by said arm 12, said arm 13 being retracted to this position by means of a spiral spring, 20, in engagement at one end with the sliding member 13 and at its opposite end with a projection or fixed point, 43, upon the framework A.

The actuator for operating the rock-shaft comprises the lever or arm, 21, secured to the rock-shaft 10, and an actuating-rod, 22, pivotally connected at its upper end to the outer end of said lever 21, said actuating-rod being connected with an actuator (not shown) which will be operatively connected with the key-levers (not shown) of the type-writer in any usual or suitable manner.

In the operation of my improved carriage-feed-mechanism, assuming the parts to be in the position shown in Figs. 4 and 5 of the drawings, a depression of the actuating-rod 22 will throw the lever 12 from the position shown in said figures into engagement with a tooth of the rack-bar, as shown in Figs. 2 and 3, which holds the rack-bar against forward movement until the release or elevation of the actuating-rod 22. This shifting movement of the escapement-arm or member 12 throws the arm or member 13 out of engagement with the rack-bar, and, through the medium of the retracting-device, said bar is immediately shifted from the position shown in Figs. 4 and 5 to that shown in Figs. 2 and 3 which brings it into position for engage-

ment with the tooth next adjacent to the tooth in engagement with the arm 12. Upon the release or elevation of the actuating-rod 22, the shaft 10 is rocked together with the two members 12 and 13 which throws the sliding member 13 into engagement, and the fixed member 12 out of engagement with the rack-bar, when, owing to the stress of the spring, or other rack-bar-moving device, said rack-bar is moved forward carrying the sliding member 13 with it until said member is stopped by the abutment 17, this movement being generally the distance of one tooth.

In some cases, it may be desirable, that the rack-bar be fed a distance of two or more teeth at each operation of the escapement-mechanism, in which case provision will be made for increasing the length of sliding movement of the escapement-arm or member 13 which may be done by adjusting the abutment 17, or the arm 12 upon the shaft to increase the space between said parts, which will extend the limit of movement of said arm 13.

Having thus described my invention, I claim—

1. In a type-writer, the combination with the framework and with the carriage supported for sliding movement thereon, of a carriage-feed mechanism comprising a rack-bar carried by the carriage; and an escapement device in position and adapted for engagement with said rack-bar and consisting of the rock-shaft, and actuator therefor, a fixed dog secured to said shaft, a movable dog mounted for longitudinal reciprocatory movement along said shaft but fixed against transverse and longitudinal oscillatory movements with respect to said shaft and the fixed dog said movable dog having its rack-engaging end overlapping that of the fixed dog and in a different plane therefrom, and means for retracting said movable dog, substantially as described.

2. The combination with the feed-rack of a type-writing machine; of an escapement-feed device consisting of a rock-shaft having thereon a lateral abutment or flange and a fixed dog, a movable dog supported for reciprocatory movement along the shaft between the abutment and the fixed dog but fixed against transverse and longitudinal oscillatory movements with respect to said shaft and the fixed dog and having its rack-engaging end in a different plane from that of the fixed dog, a retracting device for said movable dog, and an actuator connected with said shaft for rocking the same to throw the dogs alternately into and out of engagement with successive teeth of the rack-bar, substantially as described.

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Witnesses:

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