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ADJUSTABLE ESCAPEMENT MECHANISM FOR TYPEWRITERS

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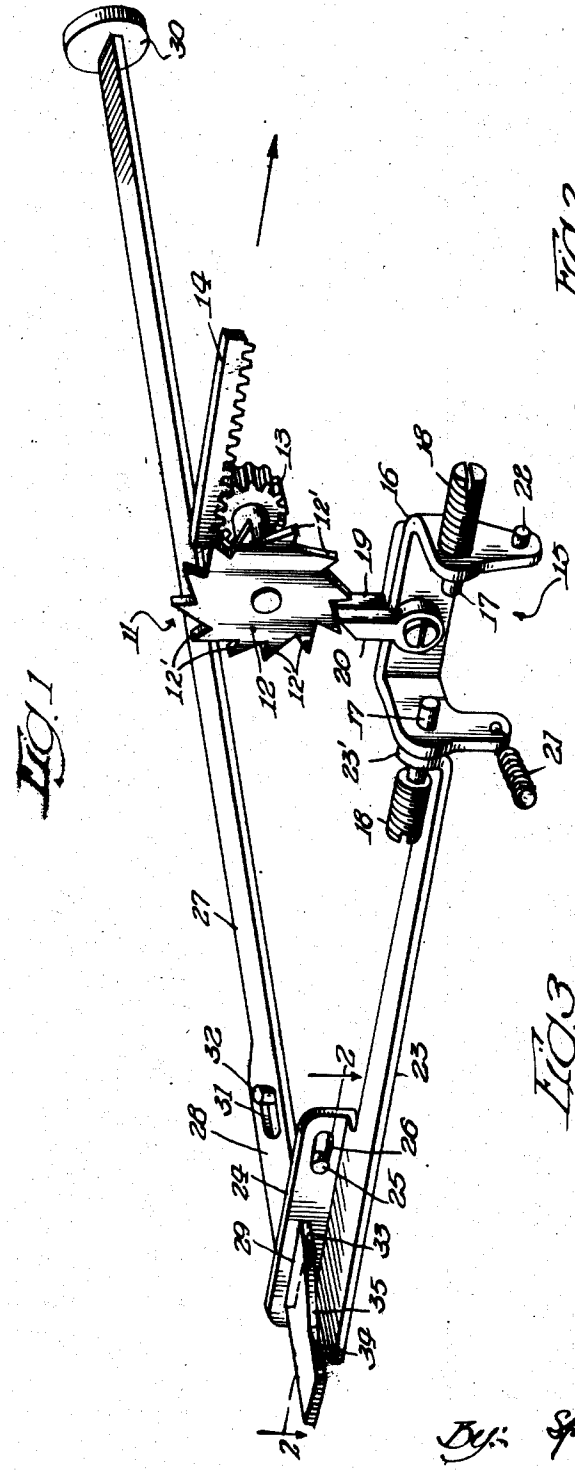


FIG. 1

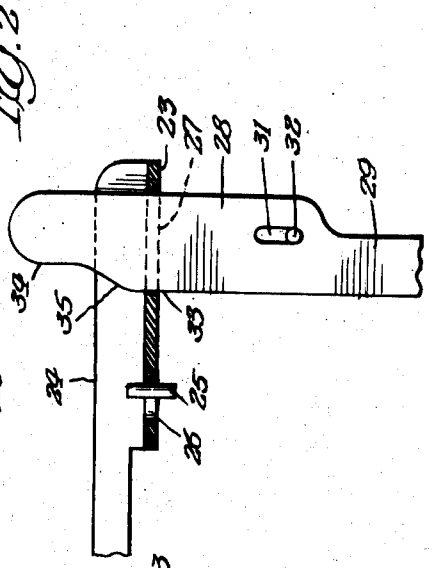


FIG. 2

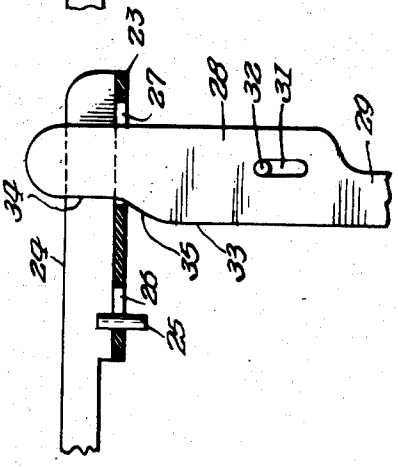


FIG. 3

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ADJUSTABLE ESCAPEMENT MECHANISM FOR TYPEWRITERS

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6 Claims. (Cl. 197—84)

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The present invention relates in general to typewriters, and more especially to typewriter escapement mechanisms; an important object of the invention being to provide escapement mechanism in a typewriter facilitating the correction of character omission errors by enabling the operator of the typewriter to easily erase and rewrite words, or character sequences, from which a letter or character has accidentally been omitted, the mechanism being adjustable to allow the complete correct character sequence or word to be rewritten in offset relationship in the space previously occupied by the erroneous character sequence, after erasure thereof.

Another important object of the invention is to provide a mechanism whereby characters normally may be written or impressed successively, in side by side spaced relationship, on a character receiving sheet, and, by adjustment of the mechanism, characters may be written or impressed on the sheet in offset relationship with respect to the position of such normally applied characters; a further object being to provide mechanism adjustable to apply characters successively on a receiving sheet in offset relationship, displaced with respect to normally applied characters by one half of the normal spacement of the normally applied characters.

Another important object is to provide a typewriter having escapement mechanism including an escapement wheel and cooperating shiftable dog means for determining the spacement of characters successively applied on a character receiving sheet, including means for adjusting the dog means at will, in the direction of rotation of the escapement wheel, between a normal operating position and a shifted position, so that characters applied on the sheet by the mechanism, when the dog means is in such shifted position, will be offset with respect to characters applied to the sheet by operation of the mechanism with the dog means in normal operating position.

The foregoing and other important objects, advantages and inherent functions of the invention will become apparent as the same is more fully understood from the following description, which, taken with the accompanying drawings, discloses a preferred embodiment of the invention.

Referring to the drawings:

Fig. 1 is a perspective view of typewriter escapement mechanism embodying the present invention; and

Figs. 2 and 3 are sectional views taken substantially along the line 2—2 in Fig. 1 and respectively showing the parts in position for normal and for offset operation of the typewriter.

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Typing errors, involving the omission of a type character in a word or series of characters, are normally corrected by first erasing the word or character series in which the omission has occurred, then backspacing the character receiving sheet carriage of the typewriter to the erased space, and finally inserting each letter of the correct series, in position offset one half of the normal character spacement, by holding the carriage successively in position while successively applying the several characters of the correct character sequence. This is a somewhat slow and awkward procedure.

The present invention contemplates the provision of means operatively associated with the escapement mechanism and instantly adjustable as by manipulation of a convenient control button or handle to condition the escapement mechanism so that the typewriter may be operated either in normal fashion to apply characters on the carriage mounted character receiving sheet, or in adjusted position to apply characters on the sheet in offset relationship therein with respect to characters normally applied.

To illustrate the invention the drawings show a typewriter escapement mechanism 11 for causing the character receiving sheet carriage of the typewriter to shift in step by step fashion either in response to the operation of a spacing bar or upon actuation of a type bar.

The escapement mechanism comprises a toothed escapement wheel 12 drivingly connected with a pinion 13, the wheel and pinion being suitably journaled in the frame of the typewriter. The pinion is formed for driving engagement with a rack 14 which is fixed on the shiftable type receiving sheet carriage of the typewriter, which travels in the direction indicated by the arrow in Fig. 1 under the control of the escapement mechanism, such movement being preferably accomplished by spring actuated tension means of the sort commonly provided in typewriter mechanism, or by any other suitable means.

The tendency of the escapement wheel 12 to rotate under the influence of the tension means is controlled in the illustrated embodiment by escapement mechanism 15 comprising a frame 16 pivotally supported for rocking movement on an axis parallel with respect to the plane of the wheel 12, the frame being so mounted on pivot pins 17, which preferably comprise axial extensions on threaded mounting plugs 18 supported in the frame of the typewriter. The frame 16 carries an escapement dog 19 fast thereon, and a dog 20 shiftably mounted on the frame 16. The wheel 12 is provided with circumferentially

spaced teeth 12', and the escapement operates in response to rocking movement of the frame 16, on the pins 17, whereby the dogs 19 and 20 are reciprocably shifted transversely with respect to the teeth of the wheel 12.

A spring 21, attached at one end on an arm of the frame 16 and at the other end on the frame of the typewriter, normally urges the frame 16 in one direction on the pivot stems 17. The frame 16 also has an arm carrying a rocking pin 22 by means of which the frame is connected with the spacing bar and with the type bar actuating mechanism of the typewriter. The frame 16 is normally supported in position with the dog 19 blocking rotation of the wheel 12 by engagement with a tooth of said wheel. Upon depression of the spacing bar or of a type bar actuating key of the typewriter, the frame 16 will be rotated by the spring 21, in a direction to disengage the dog 19 from the tooth of the wheel 12, said tooth thereupon engaging the dog 20, which may yield in a direction allowing the wheel 12 to turn past the dog 19 through a partial rotation sufficient to allow the carriage to be displaced a distance equal to a half space, only. Upon release of the spacing bar of the type bar actuating key, the frame 16 may be returned to normal position, the tooth engaged with the dog 20 releasing said dog and passing behind the dog 19 thereby allowing the carriage to advance another half space by engagement of the succeeding tooth of the wheel 12 with the dog 19.

The frame 16 is axially movable on the pins 17 in one direction under the influence of the spring 21, such movement being normally restrained by a holding bar 23 having an end 23' abutting one side of the frame 16, the other end of the bar 23 being formed with a flange portion 24. The bar 23 is slidably mounted upon the frame of the typewriter for movement in the axial direction of the mounting pins 17, the extent of such movement being preferably limited and guided by means of a pin 25 on the frame of the typewriter and extending into a slot 26 formed in the flange portion 24. The adjusted position of the member 23 is determined by a control bar 27, which normally holds the member 23 in position supporting the frame 16 on the pivot pins 17, against the influence of the spring 21, so as to dispose the dogs 19 and 20 in normal operating position to control the escapement mechanism for normal operation of the carriage, permitting the application of characters in normal successively spaced position on a character receiving sheet mounted on the carriage. By adjusting the control bar 27, however, the frame may be supported in relatively offset position to thus present the dogs 19 and 20 for operation in relatively offset relation with respect to the normal operating position thereof, the extent of the offset preferably corresponding with a half space displacement of the sheet carriage.

To this end the control bar 27 may have an enlarged portion 28, at one end thereof, extending through a slot 29 in the flange portion 24 of the bar 23. The member 27 at its opposite end may be provided with a control button 30 in position in the typewriter mechanism conveniently accessible to the operator thereof, the bar 27 being mounted for limited longitudinal movement on the frame of the typewriter. In this connection the bar may be provided with a slot 31 adapted to slidingly receive a guiding and motion limiting pin 32 mounted on the frame

of the typewriter. The bar portion 28 also may provide a pair of spaced abutment shoulders 33 and 34 at an edge thereof, and an interconnecting inclined edge portion 35, said shoulders and inclined portion being located on the bar portion 28 for selective engagement with the bar 23, at the end of the slot 29, in accordance with the longitudinally adjusted position of the control bar 27. When the control bar is adjusted for normal operation of the typewriter, the shoulder 33 serves to support the bar 23 in projected position, against the influence of the spring 21, to condition the escapement mechanism for normal operation of the typewriter. By shifting the bar 27 to dispose the abutment 34 in the opening 29, the bar 23 and frame 16 may be retracted under the influence of the spring 21 to offset position presenting the dogs 19 and 20 in position allowing operation of the typewriter to apply characters on a receiving sheet, mounted in the carriage, in half space offset relation with respect to characters applied on the sheet when the mechanism is conditioned for normal operation.

From the foregoing it will be seen that omission errors may be easily corrected merely by erasing the character sequence or word containing the error and adjusting the bar 27 to offset writing position, with the abutment 34 disposed in the slot 29, and then typing the correct character sequence in the erasure space, in half space offset relationship with respect to the adjoining character sequences applied by normal operation of the typewriter. After the correction has thus been made the bar 27 may instantly be returned to normal writing position.

It is thought that the invention and its numerous attendant advantages will be fully understood from the foregoing description, and it is obvious that numerous changes may be made in the form, construction and arrangement of the several parts without departing from the spirit or scope of the invention, or sacrificing any of its attendant advantages, the form herein disclosed being a preferred embodiment for the purpose of illustrating the invention.

The invention is hereby claimed as follows:

1. A typewriter escapement mechanism comprising an escapement wheel drivingly connected with a character receiving sheet carriage, dog means rockable transversely of the escapement wheel on an axis parallel with respect to the plane of the wheel, spring means normally urging said dog means axially in one direction, and adjustable support means for holding said dog means against the influence of said spring means in any selected one of a plurality of adjusted positions longitudinally of said axis.

2. A typewriter escapement mechanism comprising an escapement wheel drivingly connected with a character receiving sheet carriage, dog means rockable transversely of the escapement wheel on an axis parallel with respect to the plane of the wheel, said dog means comprising a frame rockable on said axis, a dog tooth on said frame, spring means normally urging said frame axially in one direction, and adjustable support means for holding said frame against the influence of said spring means in any selected one of a plurality of adjusted positions longitudinally of said axis.

3. A typewriter escapement mechanism comprising an escapement wheel drivingly connected with a character receiving sheet carriage, dog means rockable transversely of the escapement wheel on an axis parallel with respect to the

plane of the wheel, spring means normally urging said dog means axially in one direction, and adjustable cam means for holding said dog means against the influence of said spring means in any selected one of a plurality of adjusted positions longitudinally of said axis.

4. A typewriter escapement mechanism comprising an escapement wheel drivingly connected with a character receiving sheet carriage, dog means rockable transversely of the escapement wheel on an axis parallel with respect to the plane of the wheel, spring means normally urging said dog means axially in one direction, support means for holding said dog means against the influence of said spring means, and manually operable cam means for adjusting said support means into any selected one of a plurality of adjusted positions longitudinally of said axis.

5. A typewriter escapement mechanism comprising an escapement wheel drivingly connected with a character receiving sheet carriage, dog means rockable transversely of the escapement wheel on an axis parallel with respect to the plane of the wheel, spring means normally urging said dog means axially in one direction, a longitudinally shiftable bar forming support means for holding said dog means against the influence of said spring means in any selected one of a plurality of adjusted positions longitudinally of

said axis, and manually operable means for shifting said bar and for holding the same in any selected one of a plurality of adjusted positions longitudinally of said axis.

6. A typewriter escapement mechanism comprising an escapement wheel drivingly connected with a character receiving sheet carriage, dog means rockable transversely of the escapement wheel on an axis parallel with respect to the plane of the wheel, spring means normally urging said dog means axially in one direction, a longitudinally shiftable bar forming support means for holding said dog means against the influence of said spring means in any selected one of a plurality of adjusted positions longitudinally of said axis, a manually shiftable member, and cooperating cam means on said bar and member for shifting the bar in response to operation of the member and for holding the bar in any selected one of a plurality of adjusted positions longitudinally of said axis.

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