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[54] REPEAT SPACING MECHANISM FOR TYPEWRITERS

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[52] **U.S. Cl.** **197/82**

[51] **Int. Cl.** **B41j 19/00**

[58] **Field of Search** ..... 197/64, 82, 84, 84 A, 197/84 B, 85, 86, 87, 88

[56] **References Cited**

UNITED STATES PATENTS

3,417,848	12/1968	Gallant	197/82
3,312,322	4/1967	Canny	197/82
1,388,230	8/1921	Woodward	197/82
3,258,101	6/1966	Decker	197/85 X
744,424	11/1903	Steiger	197/64
937,336	10/1909	Stickney	197/82
2,037,178	4/1936	Rohrer	197/82
2,728,436	12/1955	Kupper	197/82
2,896,767	7/1959	Barkdoll	197/82
3,028,942	4/1962	Page	197/88
3,472,353	10/1969	Canny et al.	197/82

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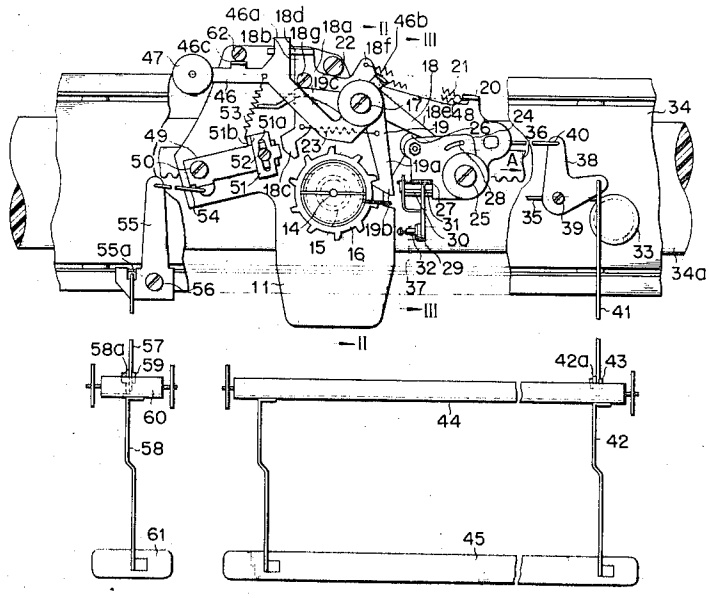
[57] **ABSTRACT**

A repeat spacing mechanism for typewriters, particularly manual typewriters, comprising an escapement mechanism including an escapement wheel and a pair of pawls cooperating therewith; and a repeat spacing key connected through a spring to a rockable lever having a weight attached to its free end and normally biased to an inoperable position to release the escapement mechanism, whereby, upon depression of the repeat spacing key, the lever is moved to an operable position by the spring to actuate the escapement mechanism, causing a carriage to perform a repeat spacing movement at a speed predetermined by the weight.

2 Claims, 6 Drawing Figures



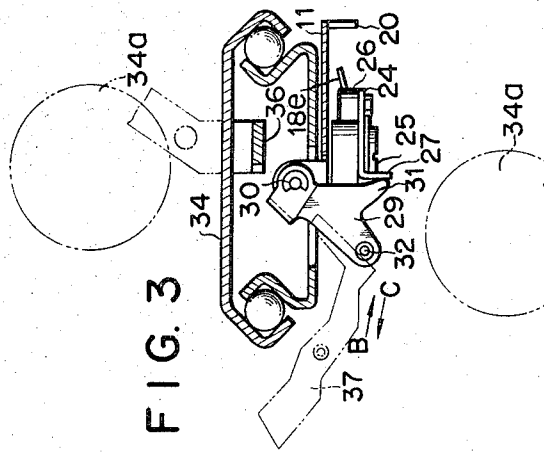


FIG. 3

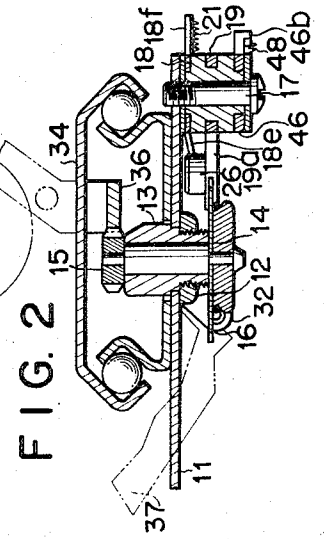


FIG. 2

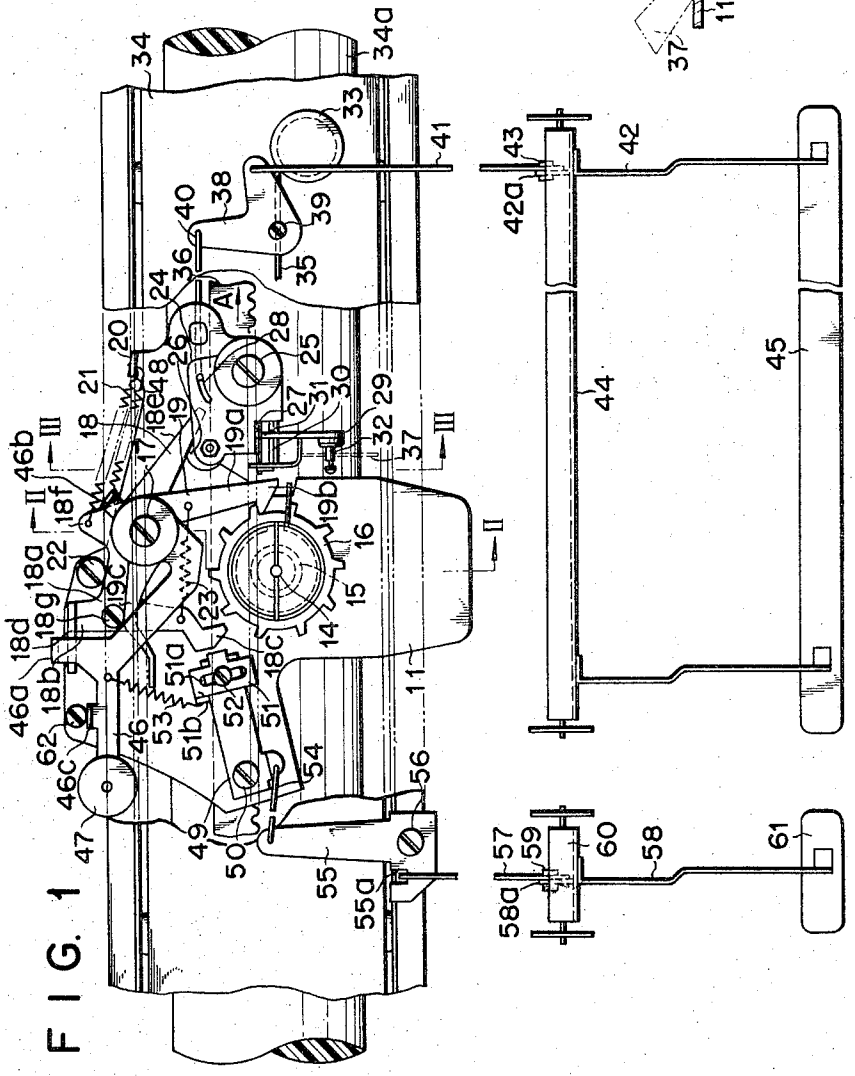


FIG. 1

FIG. 4

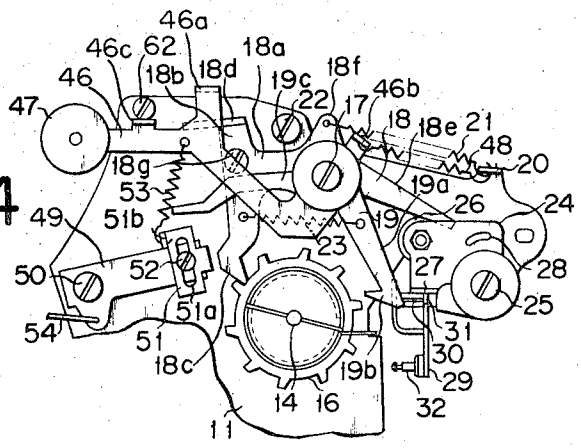


FIG. 5

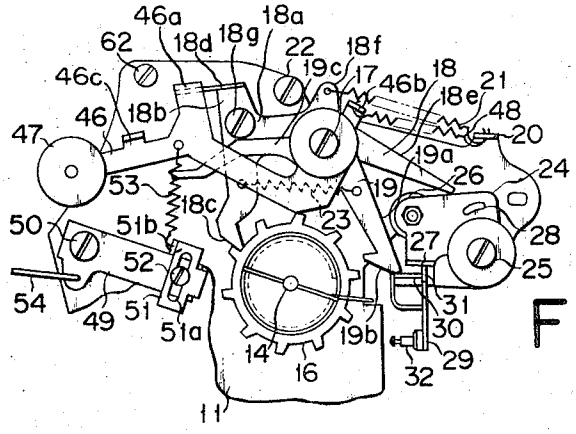
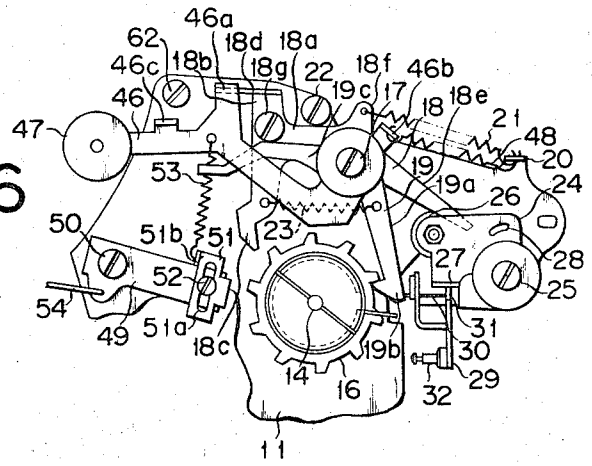


FIG. 6



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REPEAT SPACING MECHANISM FOR TYPEWRITERS

BACKGROUND OF THE INVENTION

The present invention relates to the repeat spacing mechanism of a manual typewriter or a similar typewriter and more particularly to a spacing mechanism which permits the carriage of such typewriter to make an automatic and continuous repeat spacing movement.

In the operation of a manual typewriter or a similar typewriter, for example, a so-called semielectrical typewriter which is electrically operated but lacks a power driven repeat spacing mechanism, there are occasions where it is desired to resume printing by skipping the carriage from a given printing position by several letter spaces. Such spacing has heretofore been effected by presetting the following printing position through operation of a tabulator, by actuating a carriage release lever mounted on the carriage or by repeatedly depressing the space bar.

The first process offers convenience when printing is made in a column having a fixed size as in tabulation. Where, however, it is desired to skip the carriage from one given printing position to another, there has to be repeated the setting and clearing of a tabulator stop, which is undesirably troublesome. With the second process, the typist must remove his hands each time from the keyboard for the desired movement of the carriage, resulting in the derangement of typing rhythm and loss of time. Thus the third process is generally followed. While, in this case, it is unnecessary to take the hands off of the keyboard, there is the trouble of depressing the space bar repeatedly until the carriage is brought to the following printing position.

Where, therefore, there is required the aforesaid spacing operation, there has been demanded from such a type of manual typewriter or a similar semielectrical typewriter a repeat spacing mechanism that is capable of performing the same action as the repeat depression of the space bar merely by a single depression of a particular key.

The present invention has been accomplished in view of the aforesaid situation and is intended to provide a repeat spacing mechanism for a manual typewriter or a similar semielectrical typewriter which comprises a platen supporting carriage; means for urging the carriage in the letter feed direction; a toothed member coupled with the carriage; a pair of pawl members for alternately engaging the toothed member upon depression of a type key or space bar, thereby causing the carriage to perform a normal single spacing movement in the letter feed direction; a manual member; means disposed between the manual member and paired pawl members for controlling the pawl members so as to cause the carriage to perform an automatic continuous spacing movement as the result of operation of the manual member; and an inertial mass increasing member acting on the paired pawl members so as to cause the carriage to conduct the automatic continuous spacing movement at a prescribed speed due to an inertial force, wherein the inertial mass increasing member is so associated with the action of the control means as to be inoperable to the paired pawl members when the carriage makes a normal single spacing movement but only act on said pawl members when the carriage is required to carry out an automatic continuous movement, thereby enabling the repeat spacing mechanism to be operable in very compact form independently of the normal single spacing movement of the carriage.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a bottom plan view of a repeat spacing mechanism according to an embodiment of the present invention;

FIGS. 2 and 3 are sectional views along lines II — II and III — III of FIG. 1 with said FIGS. 2 and 3 rotated 90° clockwise; and

FIGS. 4 to 6 illustrate the function of said embodiment.

DETAILED DESCRIPTION OF THE INVENTION

There will now be described by reference to the appended drawing an embodiment of the present invention. Numeral 11 denotes a base board. On this base board 11 is fixed by a stop nut 12 a bearing cylinder 13, FIG. 2. Into the bearing cylinder 13 is inserted a rotary shaft 14 in a manner to penetrate the base board 11. At the upper end of the shaft 14 is fixed a space pinion 15, and at the lower end thereof is disposed a saw-toothed member, for example, an escapement wheel 16. 17 represents a pawl shaft fitted to the underside of the base board 11 in parallel relationship with the rotary shaft 14. On the pawl shaft 17 are fitted the bent parts of the feed pawl 18 and keep pawl 19 in a superposed state, FIGS. 1 and 2. The feed pawl 18 is bent substantially at the center and comprises a vertical section 18*b* formed at the end of one-half portion 18*a* thereof, FIG. 1. Further at one end of the vertical section 18*b* is formed an engagement section 18*c* with the escapement wheel 16 and at the other end a projection or engaging member 18*d*. The opposite half portion of the feed pawl 18 is formed as a depressed arm 18*e*. Between the projection 18*f* of said feed pawl 18 and a spring holding strip 20 mounted on the base board 11 is stretched a strong draw spring 21. The elastic force of the spring 21 causes the aforesaid half portion 18*a* of the feed pawl 18 to contact the inside of the stopper 22 embedded in the base board 11 thereby to prevent the clockwise rotation (FIG. 1) of the feed pawl 18 and also causing the engagement section 18*c* of the feed pawl 18 to be disengaged from the wheel 16. Substantially at the central part of the vertical portion 18*b* is embedded a stopper 18*g*. The keep pawl 19 is also bent substantially at the center, FIG. 1. One-half portion 19*a* of the keep pawl 19 is disposed substantially parallel with the vertical section 18*b* of the feed pawl 18 and has an engagement section 19*b* integrally formed at the end which engages the escapement wheel 16 at a point several pitches apart from the aforementioned engagement section 18*c*. The opposite half portion 19*c* of the keep pawl 19 contracts the inside of the stopper 18*g* in superposed relationship with the half portion 18*a* of the feed pawl 18. Numeral 23 denotes a minor or weak spring stretched between the vertical section 18*b* of the feed pawl 18 and the half portion 19*a* of the keep pawl 19. This spring 23 normally pulls the keep pawl 19 so as to permit its rotation, and also causes the opposite half portion 19*c* of the keep pawl 19 to contact the stopper 18*g*, thereby allowing the keep pawl 19 to move jointly with the feed pawl 18. Under such condition, the en-

gagement section 18*c* of the feed pawl 18 and the engagement section 19*b* of the keep pawl 19 are maintained at such relationship that when either of them enters the rotation field of the escapement wheel 16, the other is removed therefrom.

Numeral 24 represents an actuator rotatably engaging a shaft 25 mounted on the base board 11 which faces the rotary shaft 14 and pawl shaft 17 so as to define a triangular shape therewith. Said actuator 24 comprises a contact roller 26 for contacting the depressed arm 18*e* of the feed pawl 18 to urge it against the elastic force of the draw spring 21, a depressed section 27 positioned between the rotary shaft 14 and aforesaid pivotal shaft 25 and a long arcuate idle hole 28 bored by the side of the contact roller 26. Numeral 29 denotes an interlocking member which comprises a pin-like urged member 32 and a push arm 31 pivoted by a horizontal shaft 30 fixed between the rotary shaft 14 of the base board 11 and pivot 25 and contacting the depressed arm 27 of the actuator 24, FIGS. 1 and 2.

In this embodiment, an escapement mechanism comprises the escapement wheel 16, pawl shaft 17, feed pawl 18, keep pawl 19, actuator 24, shaft 25 and escapement plate 37. Numeral 33 represents a carriage urging member or spring drum in which there is accumulated an urging force when a carriage 34 is moved opposite to the direction indicated by the arrow A in FIG. 1. This urging force normally causes the carriage 34 to move in the letter feed direction, namely, in the direction of the arrow A in FIG. 1 through a connection string 35. On said carriage 34 is mounted a platen 34*a*. Numeral 36 denotes a rack fitted to the carriage 34. The rack 36 engages the space pinion 15, thereby causing the escapement wheel 16 to rotate clockwise (FIG. 1) due to the carriage travel. When the rack 36 is rotated counterclockwise from the position of FIG. 2, the rack 36 is disengaged from the space pinion 15. Numeral 37 denotes an escapement plate travelling back and forth in the directions indicated by the arrows B and C of FIG. 3 in conjunction with the reciprocation of a type key (not shown). The advance of the escapement plate 37 in the direction of the arrow B rotates the actuator 24 through the interlocking member 29 against the elastic force of the draw spring 21. Numeral 38 denotes a space lever, the bent portion of which is rotatably supported by a shaft 39 mounted on a machine frame (not shown). To one end of the space lever 38 is connected one end of a connection rod 40, the opposite end of which engages the long idle hole 28 perforated in the actuator 24. To the opposite end of the space lever 38 is connected one end of a connection rod 41. The other end of the latter connection rod 41 is rotatably fitted to the projecting portion 42*a* of a connection rod 42 by a shaft 43. One end of the last mentioned connection rod 42 is fixed to a rotatable member 44 assuming an L-shaped cross section which is rotatably fitted to the machine frame, and the opposite end of said connection rod 42 is fixed to a space bar 45. Thus the reciprocation of the space bar 45 is converted through the connection rod 42 to the reciprocation of the rotatable member 44, which in turn is converted through the connection rod 41 to the clockwise and counterclockwise reciprocating rotation of the space lever 38, said rotation being further transmitted through the connection rod 40 to cause the similar reciprocating rotation of the actuator 24.

Numeral 46 denotes a lever assuming a broadened L-shape. Its one-half portion is bent substantially at the center and the end of said portion is pivoted on the pawl shaft 17. The other half portion of the lever 46 is provided at the end with a weight 47 acting as an inertial mass increasing member. At the central part of the lever 46 is formed a projection of engaging member 46*a* so as to face the projection 18*d* of the feed pawl 18 with a suitable space therebetween. Between the projection 46*b* of the lever 46 and spring holding strip 20 is stretched a draw spring 48. The lever 46 is normally supplied with a clockwise rotating force by the draw spring 48. And the lever 46 is normally maintained in a normal position shown in FIG. 1 where a projection 46*c* formed on the lever 46 is engaged with a stopper 62 secured to the base board 11. Numeral 49 denotes a lever whose bent portion is rotatably pivoted to the base board 11 by a shaft 50. At one end of the lever 49 is a spring holding member 51 which is perforated with a long slot 51*a* extending lengthwise along the central line. The spring holding member 51 is fixed to the lever 49 by a screw 52 which is connected to the lever 49 through the long slot 51*a*. There is stretched a spring 53 between the spring holding strip 51*b* formed on the spring holding member 51 and the substantially middle part of the lever 46. The elastic force of the spring 53 causes the lever 46 to rotate counterclockwise against the action of the spring 48. To the opposite end of the lever 49 is connected one end of a connection rod 54, which in turn is connected at the opposite end to one end of a lever 55 assuming a substantially inverted L-shape. The bent part of the lever 55 is rotatably pivoted to the machine frame by a shaft 56. At the opposite end of the lever 55 is provided an engagement groove 55*a*, which engages one end of a connection rod 57. The other end of the connection rod 57 is pivoted to the projecting end 58*a* of a connection rod 58 by a shaft 59. One end of the connection rod 58 is fixed to a rotor member 60 assuming an L-shaped cross section which is rotatably pivoted to the machine frame. The other end of the connection rod 58 is fixed to a repeat spacing key 61. Upon depression of the repeat spacing key 61, the resulting moment is converted to the rotation of the rotor member 60, which in turn is converted to the counterclockwise rotation of the lever 55 through the connection rod 57. FUrther, the latter rotation is transmitted to cause the lever 49 to rotate clockwise.

There will now be described the operation of this embodiment arranged as described above. When the escapement plate 37 is retracted as shown in FIG. 3, the feed pawl 18 and keep pawl 19 are brought to a position shown in FIG. 1 by the elastic force of the draw springs 21 and 23. The engagement section 18*c* is disengaged from the escapement wheel 16, while the engagement section 19*b* engages therewith to arrest the carriage 34. When the escapement plate 37 travels forward in the direction of the arrow B interlockingly with the printing operation of a type key, the interlocking member 29 is urged in the forward direction in FIG. 3 to rotate the actuator 24 clockwise in FIG. 1, so that the contact roller 26 pushes the depressed arm 18*e* to rotate the feed pawl 18 against the draw spring 21, bringing the engagement section 18*c* of the feed pawl 18 into the rotation field of the escapement wheel 16. At this point the keep pawl 19 is urged by the stopper 18*g* to rotate in the same direction as that in which the

feed pawl 18 rotates, causing the engagement section 19*b* to be disengaged from the escapement wheel 16, so that said escapement wheel 16 is allowed to continue rotation until it engages the engagement section 18*c* to cause the carriage 34 to travel half the tooth pitch in the letter feed direction, thus resulting in the condition of FIG. 4. When the type key is brought back to its original position after printing and in consequence the escapement plate 37 is returned in the direction of the arrow C, FIG. 3, then the feed pawl 18 is rotated by the elastic force of the draw spring 21 until the half portion 18*a* of the feed pawl 18 contacts the stopper 22, thereby releasing the engagement section 18*c* of the feed pawl 18 from the escapement wheel 16 and pushing back the actuator 24 by the action of the depressed arm 18*e*. Further, the keep pawl 19 is rotated by the draw spring 23 in succession to the feed pawl 18 so as to bring the engagement section 19*b* of the keep pawl 19 into the rotation field of the escapement wheel 16. Accordingly, the escapement wheel 16 is allowed to continue rotation until it engages the engagement section 19*b* of the keep pawl 19 to cause the carriage 34 to travel half the tooth pitch. Thus the escapement wheel 16 is brought back to the position illustrated in FIG. 1. Each time printing is carried out by the type key through the aforementioned operation, the feed pawl 18 and keep pawl 19 are alternately engaged with and disengaged from the escapement wheel 16, permitting the carriage 34 to travel one pitch in the letter feed direction during one cycle of this operation.

Where the space bar 45 is used in effecting repeat spacing, there will also be carried out substantially the same operation as described above. Namely, when the space bar 45 is depressed, the space lever 38 is rotated clockwise (as viewed from FIG. 1) through the connection rod 42, rotatable member 44 and the connection rod 41 in turn, thereby rotating the actuator 24 clockwise through the connection rod 40. As in the previous case, therefore, the feed pawl 18 and keep pawl 19 assume the same relationship as illustrated in FIG. 4. When the space bar 45 is brought back to its original position to be released from depression, then there will be performed the reverse operation to that which is conducted when the space bar 45 is depressed. Thus the space lever 38 and actuator 24 together are rocked counterclockwise (as viewed from FIG. 1) and the feed pawl 18 and keep pawl 19 assume the relationship shown in FIG. 1, causing the carriage 34 to travel one tooth pitch.

Where the feed pawl 18 and keep pawl 19 are caused alternately to be engaged with and disengaged from the wheel 16 through operation of the type key or space bar 45 so as to advance the carriage 34 one tooth pitch each time, then the lever 46 is not rocked.

Next when under the condition of FIG. 1, there is depressed the repeat spacing key 61, then the lever 55 is rocked counterclockwise through the connection rod 58, rotor member 60 and the connection rod 57 in turn, and the lever 49 is rotated clockwise through the connection rod 54. Clockwise rocking of the lever 49 causes the lever 46 to rock counterclockwise by the elastic force of the spring 53 from the normal position against the force of the spring 48. As a result, the stepped projection 46*a* of the lever 46 contacts the stepped projection 18*d* of the feed pawl 18 to cause said pawl 18 to rock in the same direction. Thus the feed pawl 18 rocks against the force of the spring 21 to bring the engagement section 18*c* of the feed pawl 18 into the rotation field of the escapement wheel 16.

At this point, the keep pawl 19 is urged by the stopper 18*g* to rock in the same direction, thereby disengaging its engagement section 19*b* from the escapement wheel 16. Accordingly, the escapement wheel 16 is allowed to continue rotation until it engages the engagement section 18*c* of the feed pawl 18 to cause the carriage 34 to travel half the tooth pitch in the letter feed direction, thus resulting in the condition of FIG. 5. Under the condition of FIG. 5, a force to urge the carriage 34 in the letter feed direction is transmitted through the rack 36 and space pinion 15 to rock the escapement wheel 16 clockwise, so that the cam action jointly exerted by the teeth of the escapement wheel 16 and the engagement section 18*c* of the feed pawl causes said pawl 18 to rock in the direction in which there is applied the elastic force of the draw spring 21, against the elastic force of the spring 53. Upon disengagement of the engagement section 18*c* from the escapement wheel 16, the keep pawl 19 is rocked by the draw spring 23 in succession to the feed pawl 18 to bring the engagement section 19*b* of the keep pawl 19 into the rotation field of the escapement wheel 16. Thus the escapement wheel 16 is allowed to continue rotation until it engages the engagement section 19*b* of the keep pawl 19 to cause the carriage 34 to travel half the tooth pitch in the letter feed direction, presenting the condition of FIG. 6. Even under such condition, the lever 49 is still in a clockwise rocked position as shown in FIG. 6 since the repeat spacing key 61 is held depressed, so that the lever 46 is rocked counterclockwise again by the elastic force of the spring 53, with the stepped projection 46*a* of the lever 46 and the stepped projection 18*d* of the feed pawl 18 kept contacted by each other. Accordingly, the feed pawl 18 is rocked again against the force of the spring 21, to return to the condition of FIG. 5. Repetition of the aforesaid operations allows the feed pawl 18 and keep pawl 19 alternately to be engaged with and disengaged from the escapement wheel 16 again and again due to the cam action jointly applied by the elastic force of the spring 53, the teeth of the escapement wheel 16 and the engagement section 18*c* of the feed pawl 18, thus permitting the carriage 34 to perform a repeat spacing movement while the repeat spacing key 61 is depressed.

Upon release of the repeat spacing key 61, there is conducted an opposite sequence of operations to that which occurs at the time of key depression. Namely, the lever 49 rocks counterclockwise and prevents the spring 53 from exerting its elastic force on the lever 46, thus bringing the spacing mechanism back to the condition of FIG. 1 and arresting the repeat spacing movement of the carriage 34.

Even where, in the above case, the type key or space bar 45 is depressed to rock the actuator 24 and in consequence cause the engagement section 18*c* of the feed pawl 18 to engage the teeth of the escapement wheel 16, there occurs a cam action jointly exerted by the teeth of the escapement wheel 16 and the engagement section 18*c* to supply the engagement section 18*c* with a force to disengage itself from the escapement wheel 16. At this time, however, the contact wheel 26 of the

actuator **24** contacts the depressed arm **18***e* of the feed pawl **18**, limiting the movement of the feed pawl **18** for disengagement from the escapement wheel **16**. Accordingly, the engagement section **18***c* of the feed pawl **18** is not disengaged from the escapement wheel **16** until the type key or space bar **45** is released to bring the actuator **24** back to its original position. In this respect, the present invention has the advantage that since the actuator **24** is not operated when the repeat spacing key **61** is depressed, the feed pawl **18** is in a position to move freely, thus permitting the effective utilization of the aforesaid cam action. This offers the further advantage that where the repeat spacing key **61** is depressed by mistake, for example, when the type key or space bar **45** is depressed, depression of the type key or space bar **45** actuates the actuator **24** to restrict the movement of the feed pawl **18** for disengagement from the escapement wheel **16**, thereby preventing the occurrence of said erroneous repeat spacing movement.

If, in case, the lever **46** is not fitted with a weight **47** acting as a member for increasing inertial mass, the weight of the lever **46** and the elastic force of the spring **53** are not properly selected, then it is likely that upon depression of the repeat spacing key **61**, the engagement section **18***c* of the feed pawl **18** will be engaged with or disengaged from the escapement wheel **16** irregularly or at a prominently accelerated speed. In this respect, provision of the weight **47** as used in the present invention has the advantage that the resultant inertial force properly retards the response speed of the feed pawl **18** to the cam action jointly exerted by the spring **53**, engagement section **18***c* and the teeth of the escapement wheel **16**, enabling the carriage **34** to perform a repeat spacing movement at a suitable fixed speed.

Further, adjustment of the fitting position of the spring holding member **51** by loosening the screw **52** permits the free control of the elastic force of the spring **53** applied on the lever **46**. Accordingly, the response speed of said lever **46** or feed pawl **18** to the cam action jointly produced by the spring **53**, engagement section **18***c* of said feed pawl **18** and escapement wheel **16** can be varied with the magnitude of a spring force applied on the lever **46**, with the resultant control of the speed at which the carriage **34** conducts a repeat spacing movement.

According to the aforesaid embodiment constructed as described above, the inertial mass increasing member such as a weight **47** is only actuated upon depression of the repeat spacing key **61** to cause the carriage **34** to carry out a repeat spacing movement at a suitable fixed speed and, in case of single spacing, is not operable on the feed pawl **18**, so that the action of said weight **47** does not affect the single spacing movement of the carriage **34** upon depression of the type key or space bar **45**. As in an ordinary typewriter lacking the aforesaid repeat spacing mechanism, the typewriter of the present invention enables the type key or space bar **45** to be lightly operated.

What is claimed is:

1. A repeat spacing mechanism for typewriters comprising:

a. a base board;

b. a platen supporting carriage on said base board and movable both in a letter feed direction and in the opposite direction;

c. means for urging said carriage in the letter feed direction;

d. an escapement mechanism for an incremental spacing movement of said carriage in the letter feed direction upon each typing operation, said escapement mechanism comprising, a wheel shaft vertically and pivotally mounted on said base board, a toothed wheel secured to said wheel shaft and operatively connected to said carriage, a pawl shaft mounted on said base board in parallel relation to said wheel shaft, a feed pawl and a keep pawl separately provided and each registered with said toothed wheel and rockably mounted on said pawl shaft in a plane parallel to said toothed wheel, a first spring stretched between said feed pawl and keep pawl, connecting means for connecting said feed pawl with said keep pawl as a unit so as to alternately engage said wheel, a second spring connected to said feed pawl for biasing said feed pawl and keep pawl so as to rotate both of said pawls in a first direction in which said feed pawl is normally disengaged from said toothed wheel and said keep pawl is normally engaged with said toothed wheel;

e. a first lever pivotally mounted on said base board for rocking in a plane parallel to the plane of said toothed wheel and engageable with said feed pawl;

f. spring means for biasing said first lever in a direction in which said first lever is disengaged from said feed pawl;

g. a stopper for halting said first lever against the bias force of said spring means and normally holding said first lever disengaged from said feed pawl in co-operation with said spring means;

h. a weight secured to one end of said first lever;

i. a depressible repeat spacing key;

j. a second lever pivotally mounted on said base board and connected to said repeat spacing key for rocking in a plane parallel to the plane of said base board upon depression of said repeat spacing key;

k. a third spring stretched between said first lever and said second lever for biasing said first lever to cause said first lever to engage with said feed pawl upon depression of said repeat spacing key so as to effect rotation of said feed pawl and said keep pawl against the bias force of said second spring in a second direction in which said feed pawl is engaged with said toothed wheel and said keep pawl is disengaged from said toothed wheel, and

l. an engagement section formed on said feed pawl and engageable with said toothed wheel to cause cam action to be exerted between said engagement section and said toothed wheel so as to rotate said feed pawl and said keep pawl in said first direction together with said first lever against the bias force of said third spring in co-operation with said urging means through said toothed wheel and said second spring during depression of said repeat spacing key, whereby said feed pawl and said keep pawl rock in both said first direction and said second direction together with said first lever to cause a repeat spacing movement of the carriage in the letter feed direction while said repeat spacing key is held depressed.

2. The repeat spacing mechanism for typewriters as defined in claim 1, wherein said second lever is provided with a spring holding means movable lengthwise in the axial direction of said third spring to adjust the bias force thereof.

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