Dec. 28, 1965 O. KRAUSS ETAL 3,225,884

TYPE LEVER ACTION CONTROL ARRANGEMENT

Filed Jan. 12, 1961 3 Sheets-Sheet 1

FIG. 1

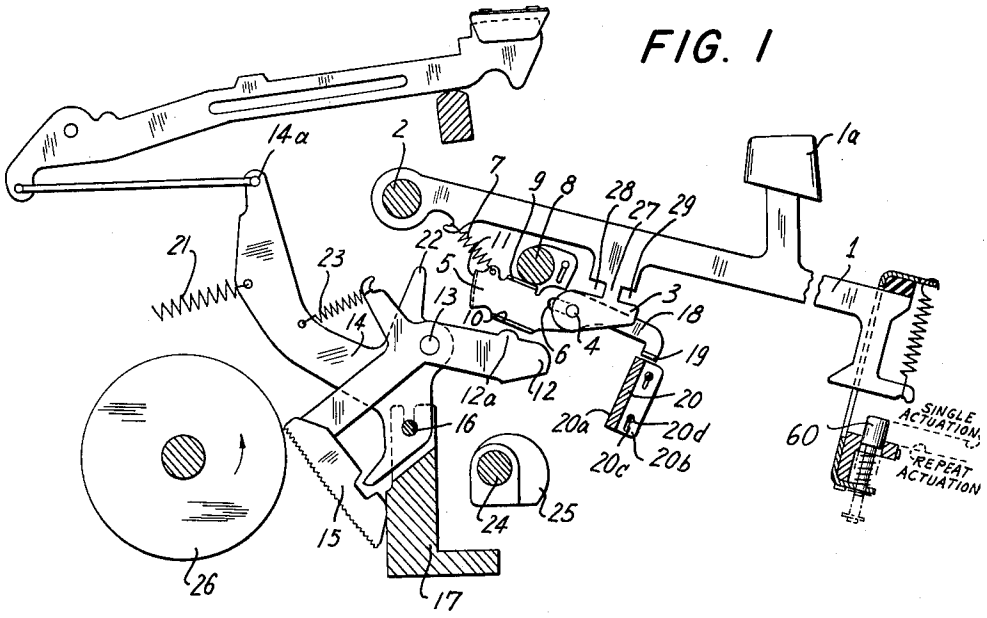

FIG. 2

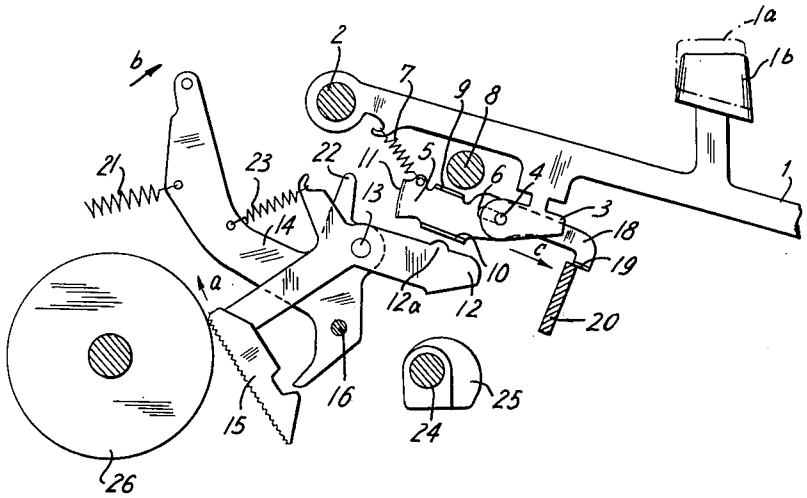

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FIG. 3

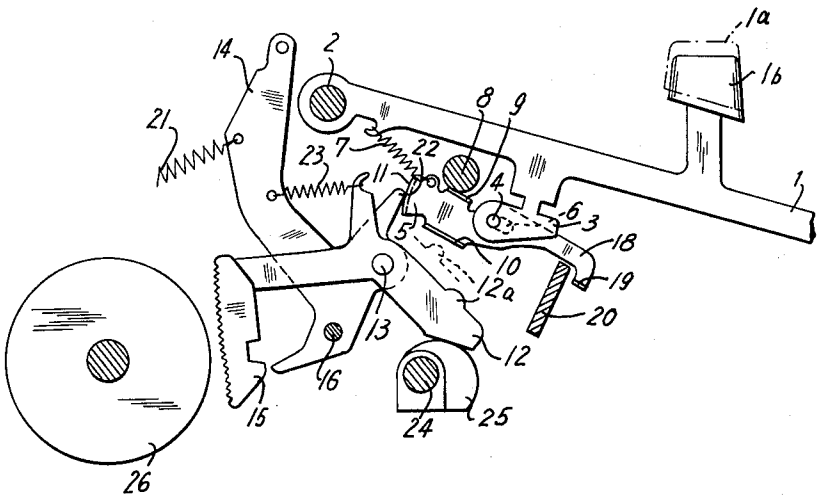
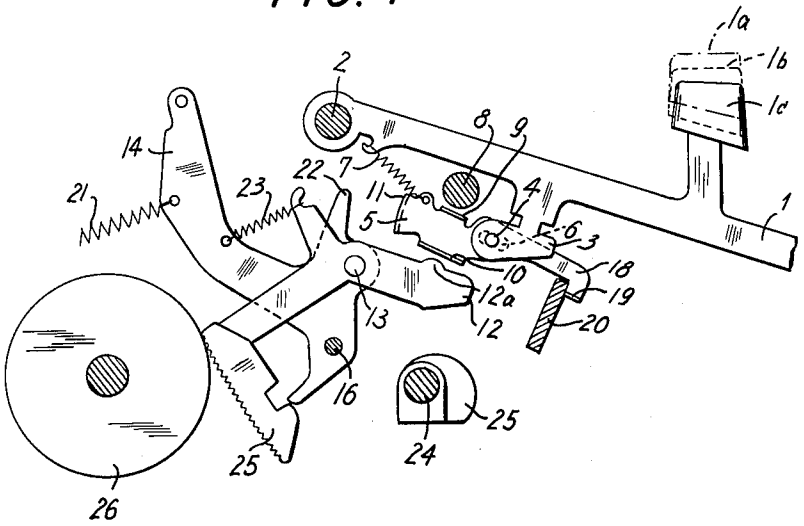


FIG. 4



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TYPE LEVER ACTION CONTROL ARRANGEMENT

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FIG. 5

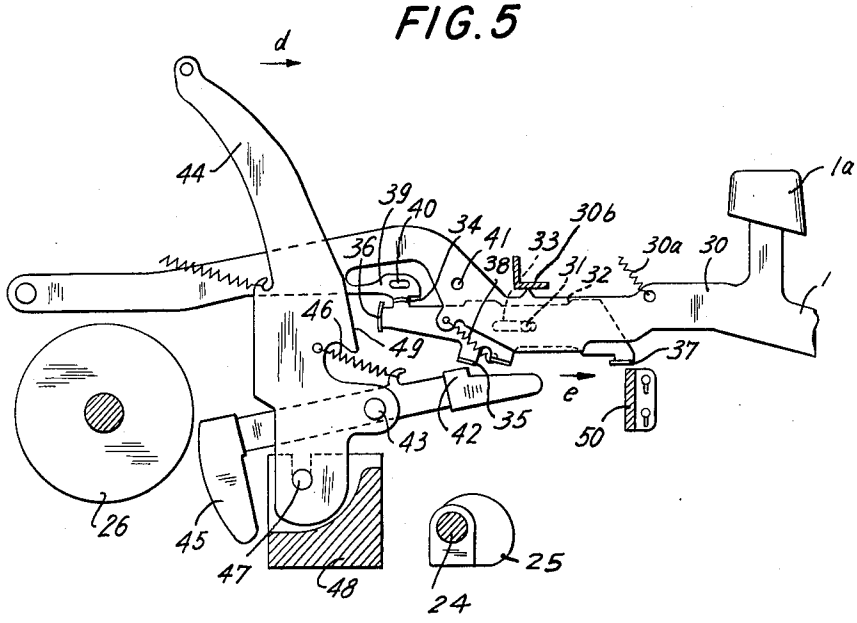
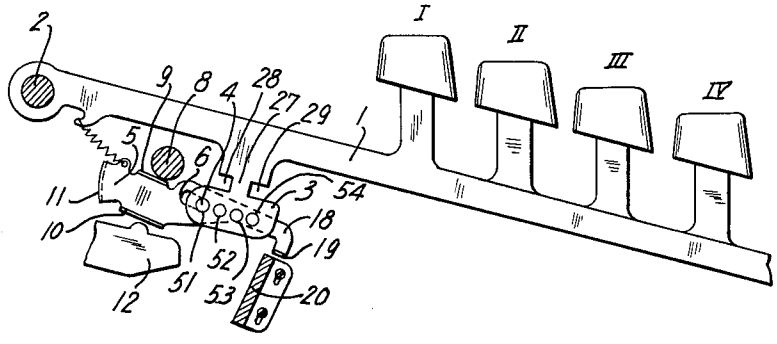


FIG. 6



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United States Patent Office

3,225,884

Patented Dec. 28, 1965

3,225,884

TYPE LEVER ACTION CONTROL ARRANGEMENT

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Filed Jan. 12, 1961, Ser. No. 82,285
Claims priority, application Germany, Jan. 12, 1960, G 28,779
14 Claims. (Cl. 197—17)

The present invention relates to a type lever action control arrangement, and more particularly to a control arrangement for the type lever actions of power driven business machines, such as electric typewriters in which the type lever actions are actuated by a rotary power roll.

It is known to provide electric typewriters with means for selectively effecting a single actuation of a type lever action, or a repeated actuation of the type lever action which continues as long as the key lever is held depressed.

It is desirable that the type lever actions of electric typewriters are actuated by a very small displacement of the key levers. Furthermore, it is also desirable that the displacement of the key levers necessary for an actuation of a type lever action, is the same in each row of key levers.

The distance of the key lever movement depends on the distance through which an actuating means controlled by the key lever moves until it effects engagement between a coupling member of the type lever action, and the driven power roll. In the known electric typewriters, these distances cannot be reduced beyond a certain minimum distance since otherwise undesired actuations are occasionally caused by shocks or by movements of the support of the machine. Such minimum distances require comparatively long actuating movements of the key levers.

It is one object of the present invention to overcome this disadvantage of known power driven typewriters, and to provide a control arrangement for type lever actions of a business machine requiring comparatively short travel of the key levers, although undesired actuations of the type lever actions are prevented.

The control arrangements of the type lever actions require adjustment during assembly of the machine, and it is another object of the present invention to provide type lever actions which can be adjusted in a very simple manner so that the machines can be economically manufactured.

Another object of the present invention is to provide a control arrangement for the type lever actions of a business machine with adjustment means by which all type lever actions of a row of type lever actions can be simultaneously adjusted.

Another object of the present invention is to provide a power driven typewriter in which the key levers of all rows of key levers move through the same distance for actuating the respective type lever actions.

Another object of the present invention is to provide a control arrangement for type lever actions effecting a single actuation of a type lever action when the key lever is moved to a first position, and effecting a repeated actuation of the type lever action when the key lever is moved to another position.

Another object of the present invention is to provide a control arrangement for a type lever action permitting an extremely rapid succession of single actuations of the same key lever for the purpose of successively actuating the same type lever without using the repeat actuation arrangement.

With these objects in view, one embodiment of the present invention comprises a power roll, an operating means forming part of a type lever action and including a coupling member cooperating with the power roll, a key lever, and an actuating means operatively connected to the key lever for movement of the same in one direction, and for movement relative to the same in another direction.

In accordance with the present invention, the actuating means preferably pivots about a fulcrum member when the key lever is actuated, and moves to an actuating position in which it engages the operating means to shift the same to a position in which the coupling member engages the power roll so that the type lever action is actuated.

A portion of the operating means engages the actuating means during such movement, and shifts the same to the displaced position. In this displaced position of the actuating means, it cannot engage the operating means, even if the key lever is held depressed, so that the type lever action is not again actuated, even if the key lever is held depressed.

However, if the key lever is moved to a lower position associated with a repeated actuation, the actuating means is also lowered, and is engaged during the return movement of the operating means of the type lever action to effect repeat actuations of the type lever action as long as the key lever is maintained in the operating position associated with repeat actuations.

The actuating means includes a spring connected to a key lever, and an actuating member having a slot in which a pin of the key lever is slidably located. The actuating member has a projecting portion cooperating with the fulcrum member, which is preferably an elongated bar extending across all key levers and type lever actions of one row of key levers. The actuating member has another portion abutting an abutment member under the action of the spring, and such abutment member is for example, an adjustable rod extending across all type levers of a row of type levers, or a portion of the respective type lever. Another preferably rounded portion of the actuating member cooperates with an operating member of the type lever action while the actuating member is shifted to its displaced position. A further portion of the actuating member cooperates with a portion of the coupling member. All these portions of the actuating member are preferably transverse projections, and the portion of the actuating member which cooperates with the fulcrum member is hook-shaped to act as a stop in the displaced position of the actuating member.

It is preferred that the abutment member and the fulcrum member are adjustable, and preferably the portion of the key lever on which the actuating member is mounted is provided with a bendable neck portion permitting a simple adjustment by a bending operation.

In one embodiment of the invention, the portion of the key lever on which the actuating member is mounted is provided with means permitting different connections between the same and the actuating member. In this manner, the same key lever can be used in different rows of the keyboard of the typewriter, the connection being made in such a manner that all key levers move to the same distance for actuating the key lever action.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawing, in which:

FIG. 1 is a fragmentary side view, partially in section, illustrating one embodiment of the invention in a normal initial position;

FIG. 2 is a view corresponding to FIG. 1 but showing the apparatus in another position;

FIG. 3 is a side view corresponding to FIG. 1 but showing the apparatus in another operating position;

FIG. 4 is a view corresponding to FIG. 1 but showing the apparatus in a position in which the type lever action is repeatedly actuated;

FIG. 5 is a fragmentary side view, partially in section, illustrating a modified embodiment of the invention; and

FIG. 6 is a fragmentary side elevation, partially taken in section, illustrating a modification of the embodiment of FIGS. 1 to 4.

Referring now to the drawings, and more particularly to FIGS. 1 to 4, a row of key levers **1** is mounted on a shaft **2**, only one key lever being shown for the sake of clarity. Each key lever **1** has a mounting portion **3** which is connected by a neck portion **27** to the main part of the key lever, the neck portion **27** being formed by two cutouts **28** and **29** and permitting adjustment of the position of the mounting portion **3** by a bending operation performed by a tool inserted into cutouts **28** and **29**.

A pin **4** is secured to mounting portion **3** and is located in a slot **6** of an actuating member or actuating lever **5** which is connected by a spring **7** to the key lever **1** and which may be considered a motion-transmitting means.

A fulcrum member **20** includes a bar **20***a* extending across all key levers **1** and actuating members **5** of one row of key levers, and a pair of brackets **20***b* at the ends of bar **20***a*. Each bracket **20***b* has two slots **20***c* in which a pair of screws **20***d* is located so that the position of bar **20***a* can be adjusted relative to the transverse projection **19** on the portion **18** of actuating member **5**. Spring **7** extends inclined to the direction of slot **6** and pulls actuating member **5** into its normal position in which pin **4** is located at one end of slot **6** and in which a lateral abutment portion **9** of actuating member **5** abuts an abutment member **8** which extends across all type levers **1** of the row. Abutment member **8** is shown as a cylindrical rod or bar and is secured by lateral brackets to side walls of the machine in the manner described with reference to the fulcrum member **20** so that the position of the abutment rod or bar **8** relative to the actuating members **5** of the row can be adjusted. Spring **7** and actuating member or lever **5** constitute an actuating means.

A set of type lever actions is arranged in alignment with the key levers **1**. Each type lever action includes an operating member **14** turnably mounted on a shaft **16** which is supported on a frame part **17** of the machine. A link is hooked into the opening **14***a* of operating member **14** and is connected to a conventional type lever. Each operating means of a type lever action further includes a coupling member **12** having a coupling portion **15** cooperating with the power roll **26** of the machine. A spring **23** connects coupling member **12** with operating member **14** and urges coupling member **12** into the position shown in FIG. 1 in which one end of the coupling portion **15** abuts the stationary part **17**. Another spring **21** is connected to a frame part, not shown, and operating member **14** and urges the operating means **14** and **12** to turn in counterclockwise direction to the normal inoperative position illustrated in FIG. 1. Coupling member **12** has a first control portion **12***a* cooperating with a transversely projecting lateral portion **10** of actuating member **5** and operating member **14** has a second control portion **22**. When coupling member **12** turns in clockwise direction, it eventually reaches a position in which its end abuts an adjustable stop in the form of an eccentric member **25** which is turnably mounted on a shaft **24**.

The second control portion **22** cooperates with the end face of a transversely projecting control portion **11** of actuating member **5** during turning movement of operating member **14** to the operative position in which the type lever action is actuated. Control portion **11** is curved, preferably along a circular line having its center in the axis of pin **4**.

The control arrangement illustrated in FIGS. 1 to 4 operates in the following manner: In the initial normal position of the arrangement, the key lever is in the position **1***a*, and all parts are in the position shown in FIG. 1. Actuating member **5** abuts abutment rod **8** and pin **4** is located at the right end of slot **6**. The friction face of coupling portion **15** is slightly spaced from the surface of the power roll **26**, and the angular projecting portion **19** is slightly spaced from fulcrum bar **20***a*. The lateral projection **10** is located opposite the first control portion **12***a* on coupling member **12**.

When the key lever **1** is depressed to the position **1***b* as shown in FIG. 2, pin **4** moves in a direction transverse to the direction of slot **6**, so that actuating member **5** is moved away from abutment member **8** and projecting portion **19** on one arm of actuating member **5** engages fulcrum member **20**. Lateral portion **10** on the other arm engages portion **12***a* in a position preceding the position of FIG. 2, so that coupling member **12**, **15** turns in clockwise direction about pivot pin **13** to an intermediate position in which the friction face of coupling portion **15** engages power roll **26** whereby coupling member **12** is first turned to the position of FIG. 2 in which the first control portion **12***a* is spaced from the lateral portion **10** of actuating member **5**, and is then further turned in clockwise direction until the end portion of coupling member **12** abuts stop **25** as shown in FIG. 3. The turning movement of coupling member **12** effects also turning movement of operating member **14** to which it is connected by spring **23**. During this movement, a type lever connected to operating member **14** is actuated in a conventional manner.

During turning movement of operating member **14**, the second control portion **22** reaches the end face on control portion **11** of actuating member **5**, and shifts actuating member **5** in a translatory movement in the direction of the arrow *c* relative to key lever **1** to a displaced position in which pin **4** is located at the left end of slot **6**, as shown in FIG. 3. During this longitudinal translatory movement of actuating member **5** in the direction of slot **6**, which extends in longitudinal direction of actuating member **5** and key lever **1**, projecting portion **19** slips off fulcrum member **20** so that actuating member **5** assumes a displaced position in which it can further pivot in clockwise direction under the action of spring **7** until it again abuts abutment member **8**. In this position, which is shown in FIG. 3, portion **10** is located higher than in the position of FIG. 1. Consequently, portion **22** and spring **7** act as releasing means causing the motion-transmitting actuating means **5** to move to an inoperative position in which the motion transmitting connection with the operating means is interrupted.

During the actuation of the type lever coupling member **12** moves in the direction of the arrow *a* and turns operating member **14** in the direction of the arrow *b*. When coupling member **12** abuts stop **25**, operating member **14** continues its movement to throw the type lever against the paper sheet on the platen of the machine. Directly after the impact, springs **21** and **23** are effective to turn the operating means **14**, **12**, **15** in the opposite direction to the initial position shown in FIG. 1. The angular displacement between operating member **14** and coupling member **12** during the turning movement of operating member **14** in the position of FIG. 3 permits the coupling portion **15** to pass the power roll without engaging the same.

When coupling member **12** has returned to its initial position shown in FIG. 1, the actuating member **5** has not yet assumed its initial position shown in FIG. 1, but its hook-shaped end portion **18** may engage fulcrum member **20** in the position shown in FIG. 4, since spring **7** pulls actuating member **5** to this position as soon as portion **11** is released by portion **22** of operating member

14. In this displaced position, projecting portion 19 does not abut fulcrum member 20 and portion 10 is located higher than in its initial position shown in FIG. 1 since actuating member 5 can be farther turned by spring 7 until abutting abutment member 8 and therefore projection 12*a* cannot engage portion 10 of actuating member 5 when coupling member 12 has returned to its initial position. Therefore, a second actuation, or several successive actuations cannot take place.

When key lever 1 is released to return to the initial position 1*a*, pin 4 raises actuating member 5 which may turn about the abutment rod 8 until the hook-shaped projecting portion 18 is sufficiently high to slip over the upper edge of fulcrum member 20 to the initial position shown in FIG. 1. Spring 7 is effective to pull actuating member 5 to the left as viewed in FIG. 3 to its normal position as soon as the projection 19 is located above the upper edge of fulcrum member 20. In this manner, the initial position of all parts is restored.

The first operating position 1*b* of each key lever 1 is limited by an adjustable stop 60, see FIG. 1, which can be shifted to a "Repeat Actuation" position in which movement of key lever 1 to a lower operating position 1*c* is possible. In the position 1*c* shown in FIG. 4, the type lever action is repeatedly actuated as long as key lever 1 remains in the position 1*c*.

The first actuation of the type lever action under control of operating lever 14 takes place as above described. However, since type lever 1 is now in a lower position, pin 4 is also lower, and lateral portion 10 is located further downward. Consequently, when springs 21 and 23 are effective to turn operating member 14 and coupling member 12 to the initial position shown in FIG. 1, projection 12*a* of coupling member 12 cannot assume the initial position shown in FIG. 1 in which the friction face of coupling portion 15 is spaced from the power roll 26. Before this position is reached, projection 12*a* abuts the lowered portion 10 of actuating member 5, so that the friction portion 15 is stopped in a position in which it is again engaged by the surface of the power roll 26, so that the operating member 14 and the type lever are again actuated, and these actuations are repeated until key lever 1 is released and free to return either to position 1*b* or to the normal position 1*a*. In the position 1*a*, actuating member 5 is pulled by spring 7 to a higher position abutting abutment member 8, as shown in FIG. 3, and consequently the returning coupling member 12 is not stopped by portion 10 and can assume its normal position in which the friction face of coupling portion 15 is spaced from the power roll 26. During the return of key lever 1 to the normal position 1*a*, actuating member 5 is also raised sufficiently to permit the hook-shaped projection 18 to pass over the edge of fulcrum member 20.

The distance through which key lever 1 has to move from the normal position 1*a* to the "Single Actuation" position 1*b* can be exactly adjusted. When abutment rod 8 is upwardly shifted and adjusted, actuating member 5 can move to a higher position in which portion 10 and control portion 12*a* are farther spaced. Consequently, key lever 1 must travel a longer distance to position 1*b* to effect an actuation.

The same effect can be obtained by adjusting the position of fulcrum member 20. When fulcrum member 20 is lowered, the small space between transverse projection 19 and the upper edge of fulcrum bar 20*a*, see FIG. 1, is increased so that key lever 1 must move farther down before projection 19 abuts the upper edge of fulcrum bar 20*a*, and actuating member 5 can pivot about this fulcrum to engage coupling member 12 by portion 10.

If it is desired to adjust the mechanism to an even greater travel of the key levers, fulcrum member 20 and abutment member 8 are correspondingly adjusted.

Fulcrum member 20 and abutment member 8 extend across the entire machine and cooperate with the actuating members 5 of all the type lever actions which are controlled by a row of key levers 1. Therefore, all key levers of the respective row are simultaneously adjusted by adjustment of members 8 and 20. If an individual adjustment of one or several of the key levers 1 is desired, the neck 27 of portion 3 is bent so that pivot pin 4 is displaced relative to the pins of other key levers 1. The cutouts 28 and 29 receive prongs of a suitable tool so that neck 27 can be very accurately bent. It is evident that lowering of pin 4 by bending mounting portion 3 in counterclockwise direction, will move portion 10 to a position closer to coupling lever 12, so that a shorter travel of the respective adjusted key lever 1 is necessary for effecting actuation of the respective type lever action.

FIG. 5 illustrates a modified arrangement whose construction and operation substantially corresponds to the embodiment described with reference to FIGS. 1 to 4. However, instead of an abutment member common to all actuating members of the row, each actuating member cooperates with an abutment member on the respective associated type lever.

Referring now to FIG. 5, a key lever 30 is biased by spring 30*a* to normally abut against an abutment 30*b*. Key lever 30 has a pin 31 projecting into an elongated slot 33 of actuating member 32. A spring 38 connects lever 30 with actuating member 32 and urges the latter to the position illustrated in FIG. 5 in which pin 31 is located at one end of slot 33. In this position, the projection 37 is located above and slightly spaced from the fulcrum member 50, while the abutment portion 34 abuts the abutment portion 39 which is connected by a thin neck to the main part of the key lever 30. Abutment portion 39 has an opening 40, and the main portion of the key lever 30 has a correlated opening 41, so that the prongs of a tool can be inserted into openings 40 and 41 for the purpose of bending the neck of abutment portion 39 until the position of abutment portion 39 relative to the actuating member 32 is exactly adjusted.

Actuating member 32 has an actuating portion 35 cooperating with a portion of a coupling lever 42 which has a coupling portion 45 cooperating with a power roll 26. Coupling member 42 is mounted on a pivot pin 43 of operating member 44 for turning movement, and is urged by a spring 46 to the illustrated position.

When key lever 30 is depressed, portion 37 of actuating member 32 abuts the fulcrum member 50 so that actuating member 32 turns about the latter to a position displacing coupling member 42 until coupling portion 45 engages the power roll 26 which effects turning movement of the operating means 42, 45, 44 until the control portion 49 of operating member 44 engages the curved control portion 49 of actuating member 32 and shifts actuating member 32 to the right as viewed in FIG. 5 to a displaced position in which projecting portion 37 is located behind the fulcrum bar 50 so that actuating member 32 can pivot to a higher position under the action of spring 38. In this higher position of the actuating member 32, its lateral portion 35 is located so high that it cannot be engaged by the returning coupling member 42 whereby a repeated actuating is prevented.

Travel of the key lever 30 can be adjusted by adjustment of fulcrum member 50, or by bending of abutment portion 39, or by both adjustments.

As described with reference to FIGS. 1 to 4, the key lever 13 may be depressed to a repeat actuation position in which portion 36 is located so low that the returning coupling lever 42 abuts portion 35 before coupling portion 45 releases power roll 26 so that the actuations are repeated.

The direction of turning movement of operating member 44, which actuates the type lever, is indicated in FIG. 5 by the arrows *d*, an the direction of movement of the actuating member 32 by operating member 44 is indicated by the arrow *e*.

FIG. 6 illustrates a modified arrangement of the embodiments of FIGS. 1 to 4. The mounting portion 3 of

each type lever **1** has, for example, four bores **51, 52, 53, 54** corresponding to a keyboard having four rows of keys I to IV. The pin **4** is mounted in the bore **51** if the key lever **1** belongs to row I, while the same standard key lever **1** is used for row II by inserting the pin into bore **52**. The slots **6** of the actuating members **5** are correspondingly shifted in the actuating members **5** which are used in association with the key levers **1** of different rows I to IV. In this manner, it is assured that all key levers of the four rows will have to move to the same distance of travel to position **1***b* to effect actuation of the respective type lever action.

A corresponding modification can be made in the embodiment of FIG. 5 by arranging the slots **33** in different positions for the key levers of each row.

It will be understood that each of the elements described above or two or more together, may also find a useful application in other types of type lever actions differing from the types described above.

While the invention has been illustrated and described as embodied in a control arrangement for a type lever action of an electric typewriter, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis the foregoing will so fully reveal the gist of the present invention that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims:

What is claimed and desired to be secured by Letters Patent is:

1. A type lever action control arrangement comprising, in combination, a power roll; a spring-loaded operating means including a coupling member, said operating means being movable between a normal inoperative position, an intermediate position, and in one direction to an operative position, said coupling member engaging said power roll in said intermediate position so that said operating means is moved to said operative position; a key lever means; a fulcrum member and an abutment member located in the plane of movement of said key lever means; an actuating means including a spring biasing said actuating means to abut said abutment member; mounting means supporting said actuating means on said key lever means for turning movement and for translatory movement in said one direction longitudinally of said key lever means, said actuating means having a portion located opposite said coupling member in the path of movement of said operating means and abutting said abutment member under the action of said spring, said actuating means having a normal position in which said portion is turnably supporting said actuating lever on said fulcrum member, and a longitudinally shifted and angularly displaced position in which said portion is spaced from said fulcrum member and said actuating means is spaced from said coupling member a greater distance than in said normal position so that when said key lever means is depressed a distance smaller than said greater distance, said actuating means in said normal position turns about said fulcrum member to an actuating position engaging said coupling member for moving said operating means to said intermediate position, whereby said operating means engages said actuating means and shifts said actuating means in said translatory movement to said displaced position to prevent a repeat actuation by the depressed key lever means due to said greater distance between said actuating means and said coupling member.

2. A type lever action control arrangement comprising, in combination, a power roll; a spring-loaded operating means including a coupling member, said operating means being movable between a normal inoperative position, an intermediate position, and in one direction to an operative position, said coupling member engaging said power roll in said intermediate position so that said operating means is moved to said operative position; a key lever means; a fulcrum member and an abutment member located in the plane of movement of said key lever means; an actuating means including a spring and an actuating lever connected to said spring and urged by the same against said abutment member; mounting means supporting said actuating lever on said key lever means for turning movement and for translatory movement in said one direction longitudinally of said key lever means, said actuating lever having one arm with a projecting portion and another arm with a lateral portion located opposite said coupling member and with an end face located in the path of movement of said operating means and another lateral portion abutting said abutment member under the action of said spring, said actuating lever having a normal position in which said projecting portion is turnably supporting said actuating lever on said fulcrum member and said lateral portion is spaced a first distance from said coupling member, and a longitudinally shifted and angularly displaced position in which said projecting portion is spaced from said fulcrum member and said spring turns said other arm of said actuating lever a second greater distance away from said coupling member so that when said key lever is depressed a distance smaller than said greater distance, said actuating lever in said normal position turns about said fulcrum member to an actuating position in which said other arm engages said coupling member for moving said operating means to said intermediate position, whereby said operating means engages said other arm of said actuating lever and shifts said actuating lever in said translatory movement to said displaced position to prevent a repeat actuation by the depressed key lever means due to said greater distance between said actuating lever and said coupling member.

3. A type lever action control arrangement comprising, in combination, a power roll; a spring-loaded operating means including a coupling member, said operating means being movable between a normal inoperative position, an intermediate position, and in one direction to an operative position, said coupling member engaging said power roll in said intermediate position so that said operating means is moved to said operative position; a plurality of key lever means; a fulcrum member and an abutment member extending across said plurality of key lever means; an actuating means including a spring and an actuating lever connected to said spring and urged by the same against said abutment member; mounting means supporting said actuating lever on said key lever means for turning movement and for translatory movement in said one direction longitudinally of said key lever means, said actuating lever having one arm with a projecting portion and another arm with a lateral portion located opposite said coupling member and with an end face located in the path of movement of said operating means and another lateral portion biased by said spring into a position abutting said abutment member, said actuating lever having a normal position in which said projecting portion is under the action of said spring with said fulcrum member and said lateral portion is spaced a first distance from said coupling member, and a longitudinally shifted and angularly displaced position in which said projecting portion is spaced from said fulcrum member and said spring turns said other arm of said actuating lever a second greater distance away from said coupling member so that when any one of said key lever means is depressed to move said smaller distance, said actuating lever in said normal position turns about said fulcrum member to an actuating position in which said other arm engages said coupling member for moving said operating means to said intermediate position, whereby said

operating means engages said other arm of said actuating lever and shifts said actuating lever in said translatory movement to said displaced position to prevent a repeat actuation by the depressed key lever means due to said greater distance between said actuating lever and said coupling members; means for adjusting said abutment member for varying said distances; and means for adjusting said fulcrum member for varying the displacement of said actuating lever by said key lever.

4. A type lever action control arrangement as set forth in claim 3 wherein each key lever means includes a mounting portion and a neck portion supporting said mounting portion on said key lever means, said mounting means mounting said actuating lever on said mounting portion so that by bending of said neck portion the position of each actuating lever relative to the other actuating levers and to the respective coupling member can be adjusted.

5. A type lever action control arrangement as set forth in claim 3 wherein said operating means includes an operating member, and a spring connecting said operating member with said coupling member, said coupling member having a portion engageable with a lateral face of said actuating lever, and said operating member having a portion engageable with an end face of said actuating lever for shifting the same in said translatory movement.

6. A type lever action control arrangement as set forth in claim 3 wherein said abutment member is a portion of said key lever means and includes a neck portion adapted to be bent for adjusting said abutment member.

7. A type lever action control arrangement as set forth in claim 3 wherein said mounting means includes a pin, and wherein said actuating lever has a longitudinal slot receiving said pin so that said actuating lever is turnable about said pin and movable in longitudinal direction of said slot.

8. A type lever action control arrangement as set forth in claim 3 wherein said actuating lever has a hook-shaped end portion including said projecting portion.

9. A type lever action control arrangement as set forth in claim 3 wherein said key lever means includes a row of bores, and a pin mounted in one of said bores, and wherein said actuating lever has a slot receiving said pin so that said actuating lever is supported on the same for turning and translatory movement, said pin being adapted to be mounted in any one bore.

10. A type lever control arrangement as set forth in claim 3 including means for moving said type lever means at least said greater distance toward said coupling member to a repeat actuation position in which said actuating lever in said displaced position is in a position spaced a smaller distance from, and engaged by said coupling member during movement of said operating means from said operative position to said normal position whereby said operating means are repeatedly actuated.

11. A type lever action control arrangement comprising, in combination, a power roll; a spring-loaded operating means including a coupling member, said operating means being movable between a normal inoperative position, an intermediate position, and in one direction to an operative position, said coupling member engaging said power roll in said intermediate position so that said operating means is moved to said operative position; a plurality of key lever means; a fulcrum member and an abutment member, each including a bar extending across said plurality of key lever means; an actuating means including a spring biassing said actuating means to abut said abutment member; mounting means including a pivot pin fixed on each key lever means and a longitudinal slot formed in each actuating means and receiving said pivot pin for supporting said actuating means on said key lever means for turning movement and for translatory movement in said one direction longitudinally of said key lever means, said actuating means having a projecting portion and being located opposite said coupling member in the path of movement of said operating means and abutting said abutment member, said actuating means having a normal position in which said projecting portion is turnably supporting said actuating lever on said fulcrum member, and a longitudinally shifted and angularly displaced position in which said projecting portion is spaced from said fulcrum member and said spring turns said actuating means away from said coupling member a greater distance than in said normal position so that when any one of said key lever means is depressed a distance smaller than said greater distance, said actuating means in said normal position turns about said fulcrum member to an actuating position engaging said coupling member for moving said operating means to said intermediate position, whereby said operating means engages said actuating means and shifts said actuating means in said translatory movement to said displaced position to prevent a repeat actuation by the depressed key lever means due to said greater distance between said actuating lever and said coupling member; means for adjusting said abutment member for varying said distances; and means for adjusting said fulcrum member for varying the displacement of said actuating lever by said key lever.

12. An arrangement as set forth in claim 11 and wherein each key lever means has a mounting portion carrying said pivot pin and a neck portion connecting said mounting portion to said key lever means so that by bending of said neck portion the position of each actuating means relative to said coupling means can be adjusted.

13. In a typewriter, in combination, type means; operating means cooperating with said type means and movable from an inoperative position in which said type means is in inoperative position to an operative position in which said type means is in operative position, and back; drive means engaging said operating means during movement thereof from said inoperative position to said operative position and moving said operating means into said operating position, while permitting said operating means to return from said operative position after reaching the same into said inoperative position thereof; key lever means movable a first distance between inoperative and operative positions; motion transmitting means movable between a motion transmitting position spaced said first distance from said operating means and adapted to establish driving connection between said drive means and said operating means when said key lever means is moved said first distance to said operative position and an inoperative position spaced a second greater distance from said operating means in which it does not establish driving connection between said drive means and said operating means when said key lever means is moved said first distance to said operative position; and releasing means controlled by said operating means during movement thereof from said inoperative toward said operative position thereof to move said motion transmitting means into said inoperative position thereof before the operating means reaches its operative position, whereby motion transmitting connection between said key lever means and said operating means is interrupted due to said greater distance in said operative position of said key lever means while said operating means is in said operative position thereof and during return of said operating means from said operative into said inoperative position thereof whereby repeat actuation by holding said key means in said operative position is prevented.

14. In a typewriter, in combination, type means; operating means cooperating with said type means and movable from an inoperative position in which said type means is in inoperative position to an operative position in which said type means is in operative position, and back; drive means engaging said operating means during movement thereof from said inoperative position to said operative position and moving said operating means into said operating position, while permitting said operating means to return from said operative position after reaching the same

into said inoperative position thereof; key lever means movable a first distance between inoperative and operative positions; motion transmitting means mounted on said key lever means for turning and translatory movement between a motion transmitting position spaced said first distance from said operating means and adapted to establish driving connection between said drive means and said operating means when said key lever means is moved said first distance to said operative position and an inoperative position spaced a second greater distance from said operating means in which it does not establish driving connection between said drive means and said operating means when said key lever means is moved said first distance to said operative position; and releasing means including a portion secured to said operating means for movement therewith and engaging said motion transmitting means during movement from said inoperative position toward said operative position to shift said motion transmitting means in said translatory movement out of said motion transmitting position, and biasing means for turning said shifted motion transmitting means to move said motion transmitting means into said inoperative position thereof before the operating means reaches its operative position, whereby motion transmitting connection between said key lever means and said operating means is interrupted due to said greater distance in said operative position of said key lever means while said operating means is in said operative position thereof and during return of said operating means from said operative into said inoperative position thereof whereby repeat actuation by holding said key means in said operative position is prevented.

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