

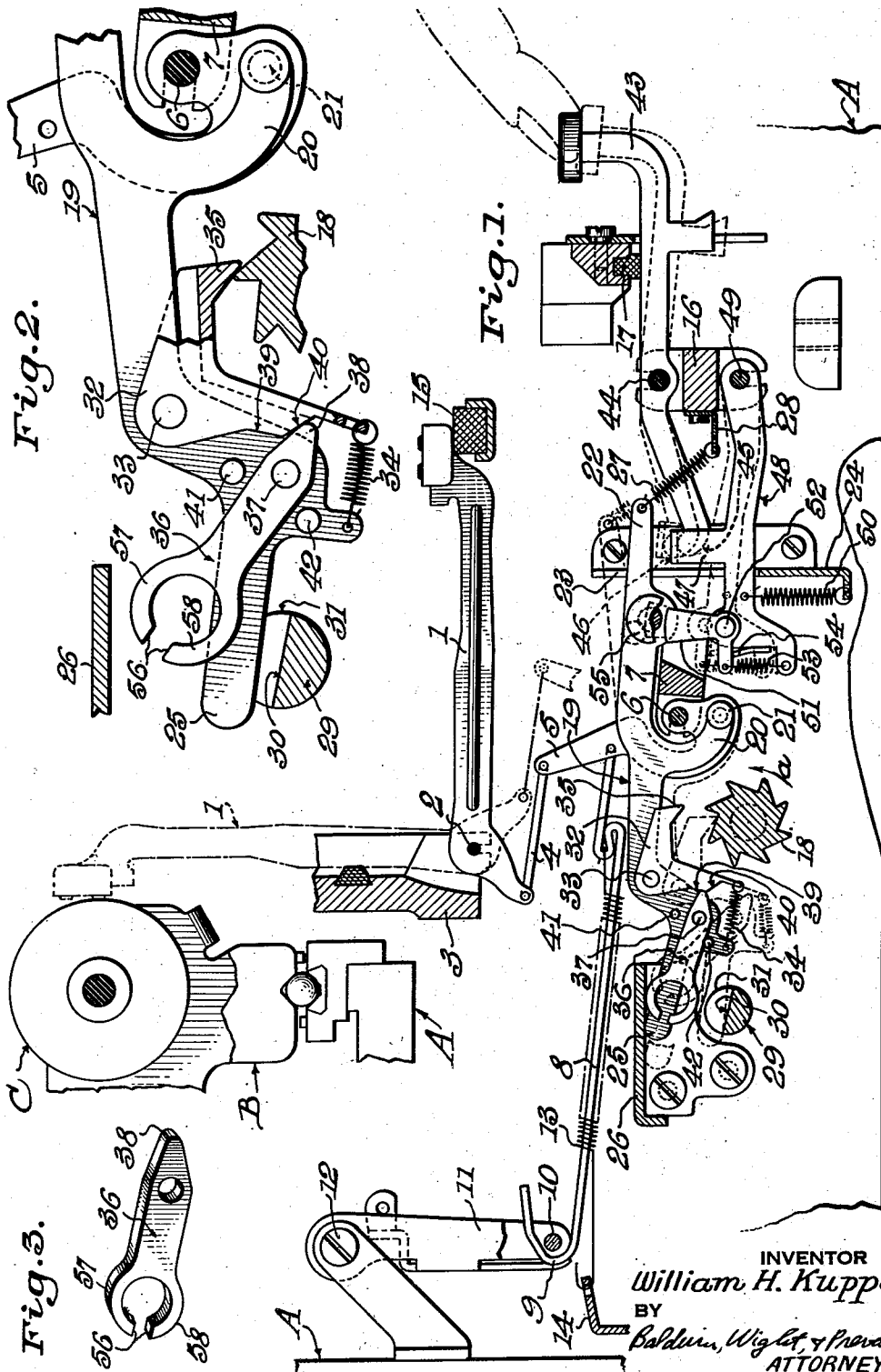
Sept. 18, 1951

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POWER OPERATING MECHANISM FOR
TYPEWRITERS OR LIKE MACHINES

2,567,945

Filed Feb. 3, 1948

2 Sheets-Sheet 1



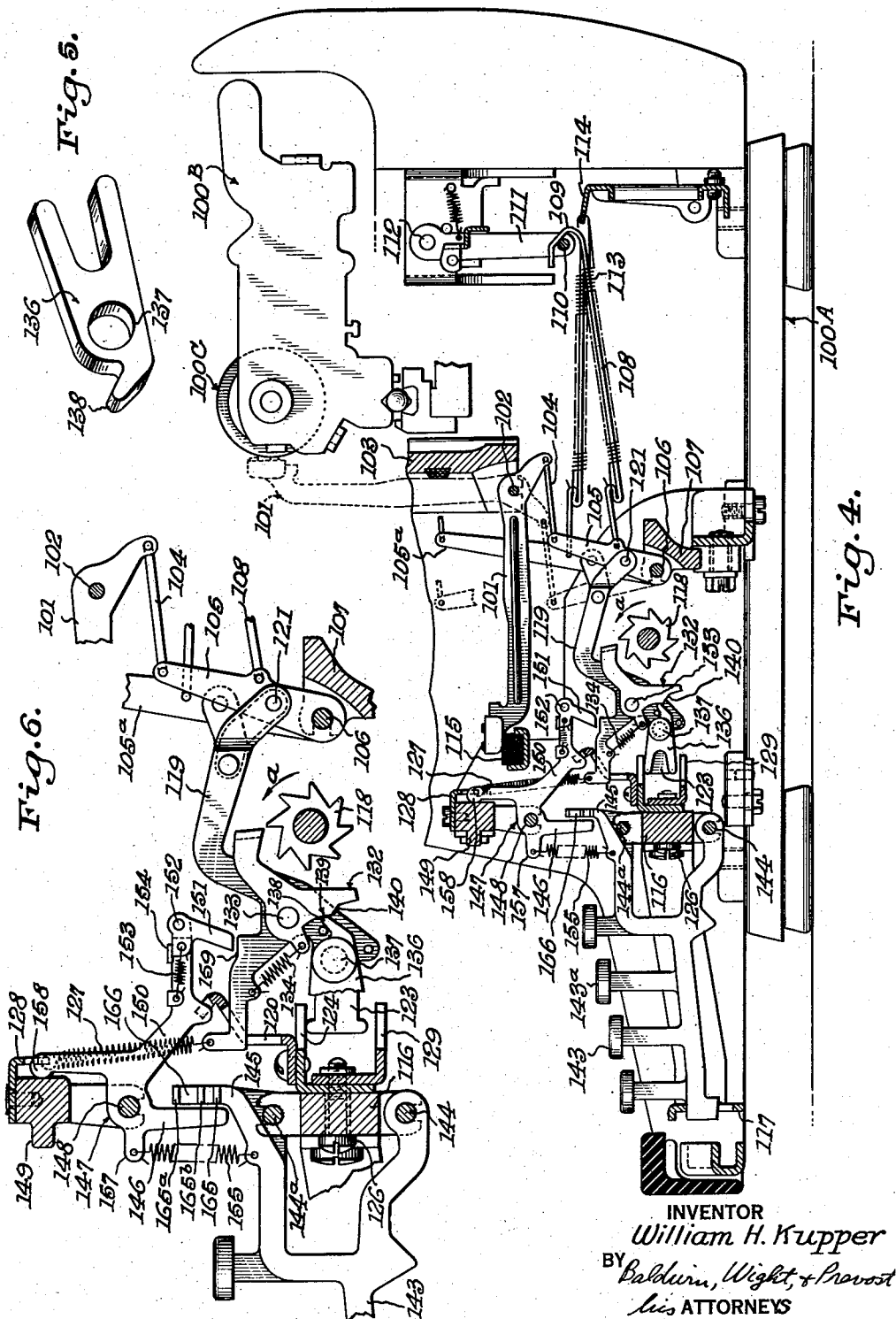
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UNITED STATES PATENT OFFICE

2,567,945

POWER OPERATING MECHANISM FOR
TYPEWRITERS OR LIKE MACHINES

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Application February 3, 1948, Serial No. 6,066

20 Claims. (Cl. 197—17)

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This invention relates to power operating mechanism for typewriters or like machines, and more particularly to mechanism of the class referred to in which a continuously moving driving member, e. g., a rotor or toothed snatch bar, normally disconnected from parts to be actuated, is adapted to be connected operatively to such parts under control of keys or other manually operable means.

Mechanism having some structure generally resembling the structure shown in the present application is disclosed in the co-pending application of John J. Kittel, Serial No. 607,293 filed July 27, 1945, now Patent No. 2,474,741, dated June 28, 1949.

An object of the invention is to provide a mechanism of this kind which is of novel and improved construction and which has new and desirable operating advantages.

Another object of the invention is to provide improved key-controlled drive-transmitting connections and controlling means for enabling a drive-transmitting interponent, such as a pawl, to be moved certainly and quickly into complete and positive driving engagement with the continuously moving driving member, without any possibility of causing only a partial engagement of the interponent and driving member, with consequent scraping or rasping of the parts.

A further and important object of the invention is to provide an improved mechanism of the character referred to which has the advantage that depressing and then lifting a typing or control key when the driving member is not operating will not leave the drive-transmitting connections operatively coupled to or engaged with the driving member.

Other objects will become apparent from a reading of the following description, the appended claims, and the accompanying drawings, in which:

Figure 1 is a fragmentary, vertical, fore-and-aft sectional view of typewriting machine mechanism embodying the invention, some parts being shown in elevation;

Figure 2 is a fragmentary view, partly in section and partly in elevation, showing a part of an actuator and associated drive-transmitting connections on an enlarged scale;

Figure 3 is a detail perspective view of an interponent controlling trigger;

Figure 4 is a vertical fore-and-aft sectional view of another structural form of typewriting machine mechanism embodying the invention, some parts being shown in elevation;

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Figure 5 is a detail perspective view of a pawl-controlling trigger included in the construction shown in Figure 4; and

Figure 6 is a fragmentary vertical sectional view of part of the mechanism shown in Figure 4, drawn on an enlarged scale, part of a pawl-restraining trigger being omitted in order that other parts may be disclosed more clearly.

FORM SHOWN IN FIGURES 1 TO 3

The invention may be embodied in power mechanism for operating various parts of a typewriting machine or other machines having typing mechanism, e. g., printing adding machines, calculators, or the like. Typewriting machine parts which may advantageously be operated by power include the type bars, the carriage return mechanism, the back spacing mechanism, the line spacing mechanism, the case shift mechanism, and the tabulating mechanism. For the purposes of illustration, a preferred form of power mechanism embodying the invention is illustrated in connection with type bar mechanism adapted to be operated by the power mechanism.

The drawing shows only a few conventional typewriter parts to assist in understanding the co-relating of power mechanism embodying the invention with other or conventional parts of a typewriter. The conventional parts shown include a frame A on which a carriage B is mounted for letter spacing and return travel in the usual manner. A printing platen or cylinder C is supported on the carriage B. A type bar 1 is pivoted at 2 on a frame-mounted segment 3. The heel of the type bar 1 is connected by a link 4 to a front lever 5 which is pivoted at 6 on a frame cross bar or mounting rail 7. A link 8 is connected at its front end to the lever 5, and at its rear end is formed with a hook 9 which receives a universal bar 10 forming part of a rocker frame 11 pivoted as at 12 on a bracket carried by the frame A. A spring 13, connected between the front end portion of the link 8 and a spring anchor plate 14, yieldably maintains the type bar in its inactive position with its head resting on a cushion 15, as shown in full lines in Figure 1. The structure shown also includes a key lever mounting rail or bar 16 and a key lever cushion abutment 17, both of which are carried on the main frame.

The parts described so far are generally similar in construction and relative arrangement to the construction and relative arrangement of conventional parts in the well known Royal standard typewriter. The present invention relates

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to other parts to be described later, and to the combination or relative arrangement of such other parts with the conventional parts referred to. Although only one type bar and associated set of operating connections are illustrated in the drawing, it will be understood that, in practice, the invention is embodied in a complete machine including a plurality of type bars. The other type bars (not shown) and their associated operating connections are similar to the type bar 1 and its operating connections. Inasmuch as the whole set of type bars of a complete machine is pivoted on an arcuate segment, some of the operating connections, such as the counterparts of the links 4 and levers 5, may vary in dimensions; but the general arrangement and operating principle are the same with respect to each type action. Accordingly, a description of the present invention, as applied in connection with the single illustrated type bar 1, will serve also as a description of the application of the invention to the several type bars in a complete machine.

Power mechanism forming part of or used in connection with apparatus embodying the invention includes a driving element which operates continuously, and controllable driving connections which normally are inoperative or ineffective but which may be conditioned by the operator to effect operative driving connection between the continuously moving driving member and the type bar 1. In the mechanism shown in the drawing, the driving member is constituted by a continuously rotating element, more particularly a toothed snatch roll or bar 18, which may be of known form, and which is adapted to be driven in the direction of the arrow *a* in Figure 1 by any suitable prime mover such as an electric motor (not shown).

The connections for transmitting drive from the driving member 18 to the type bar 1 include an actuator 19 which extends fore-and-aft of the typewriter and above the member 18. The actuator is formed with a downward extension 20 which is pivoted as at 21 to the front lever 5, the pivot 21 being offset relatively to the pivot 6. A forwardly extending part 22 of the actuator 19 projects through a slot 23 in a guide plate 24 mounted in fixed relation to the frame A. The actuator 19 also includes a rearwardly extending part 25 which is disposed under an abutment or guide plate 26 carried by the frame A. A spring 27, interposed between the front end 22 of the actuator and an anchor plate 28 on the cross bar 16, yieldably urges the actuator to rock clockwise, and thus normally maintains the actuator in the full line position shown in Figure 1 with its rear end 25 bearing against the abutment or guide plate 26. Another abutment 29, the purpose of which will be described later, is mounted below and in spaced relation to the abutment 26 so as to underlie the actuator rear end 25. The abutment 29 is formed with a flat upper surface 30 and with a round bearing portion 31 suitably mounted or journaled to enable the abutment 29 to be adjusted about an axis parallel to the axis of rotation of the driving member 18.

In order to drive the type bar 1 to the printing position shown in dotted lines in Figure 1, the actuator 19 is operatively but indirectly connected to the driving member 18, the actuator itself never engaging the driving member. Mechanism for bringing about the operative connection of the actuator 19 to the member 18 in-

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cludes an interponent pawl 32 which is pivoted as at 33 on the actuator. A spring 34, anchored to the actuator 19 and connected to the lower end of the pawl 32, urges the latter to rock clockwise so as to move its nose 35 into engagement with the snatch roll 18. Normally, the pawl is maintained out of engagement with the snatch roll by the restraining action of a control element or trigger 36 which is pivoted as at 37 on the actuator 19. In the normal position of the trigger, shown in full lines in Figure 1, its front end 38 engages a holding surface 39 on the pawl so as to prevent the spring 34 from rocking the pawl into drive-transmitting engagement with the driving member 18. The pawl 32 is formed with an inclined cam face 40 which is located just below the holding surface 39, and which is acted upon by the trigger, in a manner to be described later, for rocking the pawl counterclockwise and thus re-setting it in normal, inoperative position. Movement of the trigger 36 about its pivot 37 is limited by stop pins 41 and 42 on the actuator 19.

Key controlled means is provided for bringing about operative driving connection between the member 18 and the actuator 19. This means includes a key 43, pivoted as at 44 on the cross bar 16, and having a heel or rear end portion 45 which underlies and engages a lug or horizontally extending ear 46 at the upper end of the arm 47 of an operating lever 48 which is pivoted at 49 on the bottom of the cross rail 16. The operating lever 48 extends through the guide slot 23, and is urged downwardly or counterclockwise by a spring 50 connected between the lever 48 and the guide plate 24. A limber dog or flipper 51, pivoted as at 52 on the lever 48, is yieldably held by a spring 53 against a stop 54 on the lever 48. The arrangement is such that the dog 51 can swing clockwise from the position shown in Figure 1, but can not move counterclockwise beyond this illustrated position. The upper end of the limber dog 51 is curved and normally underlies a headed pin 55 on the actuator 19.

Operation

Normally, the parts will be in the positions illustrated in full lines in Figure 1, and the driving member 18 will be rotating in the direction of the arrow *a*. In order to cause the type bar 1 to be driven to printing position, the key 43 is depressed. The heel 45 of the key, acting on the lug 46, will raise the lever 48, that is, rock it clockwise, so as to cause the flipper 51 to press upwardly on the pin 55 on the actuator 19. In this manner, the actuator is initially rocked counterclockwise about its pivot 21 to an extent sufficient to move the lower part of the rear end of the trigger 36 against the abutment surface 30, thereby rocking the trigger clockwise about its pivot 37 and causing the trigger end 38 to move off and below the holding face 39 of the pawl 32. This releases the pawl from the restraining action of the trigger, and enables the spring 34 to rock the pawl 32 quickly so as instantaneously to bring the pawl nose 35 into complete and effective drive-transmitting connection with the driving member 18, as shown in dotted lines in Figure 1. Inasmuch as the pawl 32 is moved by spring action, as distinguished from being moved manually into engagement with the snatch roll 18, there is no possibility of moving the pawl nose 35 just barely into the path of the teeth on the snatch roll. Thus, once the key 43 has been

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depressed sufficiently to move the trigger 36 to pawl-releasing position, the pawl 32 will snap immediately and completely into the effective drive-transmitting position shown in dotted lines in Figure 1.

The pawl 32, and with it the actuator 19, then will be driven toward the left, as viewed in Figure 1. Consequently, the actuator pivot 21 will be moved so as to rock the front lever 5 clockwise about its pivot 6, thereby pulling forwardly on the link 4 and moving the type bar 1 toward printing position. After a predetermined movement of the actuator and the pawl as a unit, they will be thrown or cast off by the momentum of the moving parts to free the pawl from the driving member 18, whereupon the spring 27 will rock the actuator clockwise to move its rear end portion 25 upwardly into engagement with the guide plate 26. Upward movement of the actuator rear end portion 25 will also bring the top part of the rear end of the trigger 36 into engagement with the trigger re-setting means 26, thus rocking the trigger counterclockwise about its pivot 37. This will cause the trigger front end portion 38 to bear against the pawl re-setter cam device 40, thereby rocking the pawl 32 to position its nose 35 well above the level of the driving member 18. The rocking of the trigger 36 will be sufficient to move its end 38 into restraining position in contact with the holding surface 39 on the pawl 32. The spring 27 will then move the actuator 19 forwardly to its initial position. This movement of the actuator 19, and the pulling action of the spring 13, will move the type bar 1 to its position of rest, thus completing an operating cycle.

In order to provide for adjusting or regulating the timing of the connection of the pawl 32 to the driving member 18, and the re-setting of the pawl in restrained position, the rear end of the trigger 36 is so made that its opposite sides may be deformed as by pressing, bending or mauling to vary the positions the several parts will occupy when the trigger rear end engages the abutments 30 and 26. Preferably, the trigger rear end is formed as an opening circle with a peripheral split 56 dividing the circle into bifurcations or parts 57 and 58. The parts 57 and 58 may be bent, pressed, or mauled individually so as to effect the desired adjustment of the timing of the associated parts.

It may be desirable also to adjust simultaneously the timing of the throw-off points of all of the pawls 32 of a complete machine. This may be accomplished by rotating the stop 29 so as to vary the inclination of the abutment face 30.

If the key 43 were to be held down, no repeat operation of the actuator 19 and associated mechanism would take place. Holding the key depressed would hold the flipper dog 51 up in its actuated position; but, upon return or forward movement of the actuator 19, the pin 55 could merely rock the dog 51 idly about its pivot 52 against the urge of its spring 53. Subsequent releasing of the key 43 would lower the dog 51 and enable the spring 53 to move the dog back under the pin 55 and against the stop 54, in readiness for the performance of another operation.

A particular advantage of constructions embodying the present invention, is that, in the event a key is depressed when the driving member 18 is not operating, and the key is then released, the associated pawl 32 which will move into engagement with the member 18 upon depression of the key, will be moved out of engage-

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ment with the member 18 in response to the return movement of the key.

In the use of power operated typewriters, it sometimes happens that several operating keys are depressed while the driving member is not operating. In some prior constructions, when this is done and the depressed keys are released, they return to normal position, but the drive-transmitting connections remain operatively coupled to the driving member. When the driving member is started, it will either stall the motor, or will break a part, or will simultaneously start to drive all of the type bars associated with the driving connections which were enabled by depression of the keys. Simultaneous actuation of a plurality of type bars causes them to jam and lock, necessitating the servicing of the machine in a manner which cannot usually be performed by the ordinary typist or machine operator.

If the key 43, or any number of counterpart keys of a machine embodying the present invention, should be depressed when the member 18 is not operating, the associated parts would be moved in the manner previously described for bringing the noses 35 of the pawls 32 into engagement with the snatch roll 18. However, immediately upon return movement of the keys 43, the rear end parts 57 of the respectively associated triggers 36 would engage the abutment 26 to thereby rock the triggers 36 counterclockwise, and re-set the pawls 32 in restrained positions out of engagement with the member 18. Consequently, no ill effect can follow the depression and release of any number of keys 43 when the driving member 18 is not operating.

FORM SHOWN IN FIGURES 4 TO 6

The construction shown in Figure 4 includes, as conventional parts, a frame 100A on which a carriage 100B is mounted for letter spacing and return travel in the usual manner. A printing platen or cylinder 100C is supported on the carriage 100B. A type bar 101 is pivoted at 102 on a frame-mounted segment 103. The heel of the type bar 101 is connected by a link 104 to a lever 105 which is pivoted at 106 on a frame cross bar or mounting rail 107. A link 108 is connected at its front end to the lever 105, and at its rear end is formed with a hook 109 which embraces a universal bar 110 forming part of a rocker frame 111 pivoted as at 112 on a bracket carried by the frame 100A. A spring 113, connected between the front end portion of the link 108 and a spring anchor plate 114, yieldably maintains the type bar in its inactive position with its head resting on a cushion 115, as shown in full lines in Figure 4. Also shown are a key lever mounting rail or bar 116 and a key lever guide 117, both of which are carried on the main frame 100A.

Figure 4 shows only one type bar, but it will be understood that, in practice, the invention is embodied in a machine including a plurality of type bars which may be similar to the type bar 101. The pivotal axis 106, common to all the type bars 101, extends in a straight line horizontally across the machine; and the individual pivots 102 of the type bars at the ends of the segment 103 therefore are further from the pivotal axis 106 than the pivots of type bars at and near the center of the segment 103. In order that none of the links 104 will have too great an inclination, the lengths of the levers 105 preferably increase from the center towards the ends of the segment. The numeral 105 designates

a lever at the center, and the numeral 105^a designates a lever at the end of the segment. Intermediate levers, not shown, increase in length progressively from the lever 105 to the lever 105^a.

Power mechanism includes a driving element which operates continuously, and controllable driving connections which normally are inoperative or ineffective, but which may be conditioned by the operator to effect operative driving connection between the continuously moving driving member and the type bar 101. The driving member is constituted by a continuously rotating element, more particularly a toothed snatch roll or bar 118, which may be of known form, and which is adapted to be driven in the direction of the arrow *a* in Figure 4 by any suitable prime mover.

The connections for transmitting drive from the driving member 118 to the type bar 101 include an actuator 119 which extends fore-and-aft of the typewriter and above the member 118. The actuator extends through a comb guide 120 and is pivoted as at 121 to the lever 105 at a point offset relatively to the pivot 106. The actuator has a forwardly extending part 123 projecting under an abutment or guide plate 124 mounted by screws 126 on the frame 100A to extend parallel to the snatch roll 118. A spring 127, interposed between the front end of the actuator 119 and an anchor plate 128, yieldably urges the actuator to rock clockwise, and thus normally maintains the actuator in the position shown in Figure 4 with its front end part 123 bearing against the abutment or guide plate 124. Another abutment 129 is disposed below the abutment 124 so as to underlie the actuator front end part 123. The abutments 124 and 129 are formed with fore-and-aft extending slits providing a plurality of separate abutment portions which are adapted to be adjusted separately by being bent vertically.

In order to drive the type bar 101 to the printing position shown in dotted lines in Figure 4, the actuator 119 is operatively but indirectly connected to the driving member 118, the actuator itself never engaging the driving member. Mechanism for bringing about the operative connection of the actuator 119 to the member 118 includes an interponent pawl 132, which is pivoted as at 133 on the actuator. A spring 134, anchored to the actuator 119 and connected to the pawl 132, urges the latter to rock clockwise so as to move its nose into engagement with the snatch roll 118. Normally, the pawl is maintained out of engagement with the snatch roll by the restraining action of a control element or trigger 136 which is pivoted as at 137 on the actuator 119. In the normal position of the trigger, shown in Figure 4, its rear end 138 engages a holding surface 139 on the pawl so as to prevent the spring 134 from rocking the pawl into drive-transmitting engagement with the driving member 118. The pawl 132 is formed with an inclined cam face 140 which is located just below the holding surface 139, and which is acted upon by the trigger for rocking the pawl counter-clockwise, and thus re-setting it in normal, inoperative position.

Key controlled means is provided for bringing about operative driving connection between the member 118 and the actuator 119. This means includes a key 143 pivoted as at 144 on a rod carried by the cross bar 116. The key 143 has an upward projection 145 disposed behind an arm 146 of an operating lever 147, pivoted as

at 148 on another frame-mounted cross bar 149. The lever 147 has another arm 150 on which a limber dog or flipper 151 is pivoted at 152. A spring 153 urges the limber dog 151 to rock clockwise to yieldably retain it in its normal position of rest against a limit stop 154. The dog 151 can swing counter-clockwise from the position shown in Figure 4, but cannot move clockwise from this position. A returning spring 155, interposed between the key lever 143 and a short arm 157 on the lever 147, yieldably holds the lever 147 in its normal position with a fourth arm 158 of the lever 147 engaging the cross bar 149. In the normal position of the parts, the lower end of the limber dog 151 overlies a contact surface 159 on the actuator 119.

It will be observed that the mechanism shown in Figures 4 to 6 is similar in many respects to that shown in Figures 1, 2, and 3. The modes of operation of the two embodiments of the invention are, in general, the same so that no detailed description of the operation of the construction shown in Figures 4 to 6 is believed to be necessary. Suffice it to say that when the key 143 is depressed, the lever 147 is rocked clockwise to cause the flipper 151 to push the actuator 119 downwardly, whereupon the trigger 136 releases the pawl 132 which then engages the snatch roll 118. When the pawl 132 is cast off from engagement with the snatch roll 118, the trigger 136 is rocked to move the pawl back to its normal position, and the other parts are returned to their normal positions by the springs 113, 127, and 155.

In order to avoid congestion and possible interference of the key levers and the front levers 147, it is preferable to mount the key levers in two sets to rock about two separate pivot rods, one disposed above the other. Thus far only one set of key levers 143 has been referred to as being mounted to rock on the pivot rod 144. The extensions 145 of the key levers 143 are formed with lateral projections 165 engageable with the arms 146 on the front levers 147 at points which are relatively low, or relatively far from the pivots 148 of the levers 147.

The key levers 143^a of the second set of key levers are pivoted to rock about a rod 144^a on the frame mounted bracket 116 above the lower pivot rod 144. The key levers 143^a have upwardly extending arms 166 which are formed with lateral projections 165^a adapted to engage associated lever arms 146 at points above the level of engagement of the lateral projections 165 on the key levers 143 with their associated lever arms 146. The lateral extensions at the upper ends of some of the key levers may be disposed between the lateral extensions 165 and 165^a. One such intermediately disposed lateral extension is shown at 165^b.

The mechanisms disclosed in the accompanying drawings and description embody the invention in preferred forms; but changes may be made in the construction and relative arrangement of some of the parts without departing from the invention as defined in the claims.

I claim:

1. In power operating mechanism for a typewriter or like machine, a driving member; an actuator; an interponent mounted on said actuator for movements into and out of operative engagement with said driving member and being biased to move into engagement therewith; a trigger normally maintaining said interponent disengaged from said driving member; a key; means responsive to depression of said key for

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actuating said trigger to release said interponent and enable it to move into engagement with said driving member; and trigger re-setting means effective upon return movement of said key when said driving member is stationary for moving said trigger reversely to its releasing movement and thereby disengaging said interponent from said driving member.

2. In power operating mechanism for a type-writer or like machine, a driving member; an actuator; an interponent mounted on said actuator for movements into and out of operative engagement with said driving member and being biased to move into engagement therewith; a trigger pivotally mounted on said actuator and normally maintaining said interponent disengaged from said driving member; a re-setting cam face on said interponent; a key; and means responsive to depression of said key for rocking said trigger in one direction about its pivot for releasing said interponent to enable it to move into engagement with said driving member, and responsive to return movement of said key when said driving member is at rest for rocking said trigger reversely to move a part of said trigger against said re-setting cam face and thus move said interponent from engagement with said driving member.

3. In power operating mechanism for a type-writer or like machine, a driving member; an actuator; an interponent pivotally mounted on said actuator for movement into and out of operative engagement with said driving member and being biased toward operative engagement position therewith; a re-setting cam face on said interponent; a trigger normally holding said interponent disengaged from said driving member; a key; and means responsive to depression of said key for actuating said trigger to release said interponent and enable it to move into engagement with said driving member, and responsive to return movement of said key when said driving member is at rest for moving said trigger reversely to move a part of said trigger against said re-setting cam face and thus move said interponent from engagement with said driving member.

4. In power operating mechanism for a type-writer or like machine, a rotatable toothed driving member, an actuator; means mounting the actuator to move and operatively connecting it to a part to be actuated; an interponent pawl movably mounted on said actuator; a spring urging said pawl toward engagement with said driving member; a trigger on said actuator normally maintaining said pawl disengaged from said driving member; key controlled means for actuating said trigger in one direction to release said pawl and enable it to be moved into engagement with said driving member, whereby said pawl and said actuator will be moved together until their travel as a unit moves said pawl out of engagement with said driving member; and a device engageable by said trigger after disengagement of said pawl from said driving member for moving said trigger in the reverse direction for re-setting said pawl in its normal position.

5. In power operating mechanism for a type-writer or like machine, a rotatable toothed driving member; an actuator; means mounting the actuator to move and operatively connecting it to a part to be actuated; an interponent pawl movably mounted on said actuator; a re-setting cam on said pawl; a spring urging said pawl toward engagement with said driving member; a trigger on said actuator normally maintaining said pawl

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disengaged from said driving member; key-controlled means for actuating said trigger in one direction to release said pawl and enable it to be moved into engagement with said driving member, whereby said pawl and said actuator will be moved together until their travel as a unit moves said pawl out of engagement with said driving member; and a device engageable by said trigger after disengagement of said pawl from said driving member for moving said trigger in the reverse direction to cause a part of said trigger to press against said re-setting cam and thus return said pawl to its normal position.

6. In power operating mechanism for a type-writer or like machine, a rotatable toothed driving member; a part to be actuated; means pivotally mounting said part at one side of said member to rock about an axis parallel to the axis of rotation of said member; an actuator extending over and fore-and-aft of said member; means pivotally mounting said actuator on said part at a point offset from the pivotal mounting of said part; a guide at the opposite side of said driving member; a spring urging said actuator to rock about its pivot to yieldably hold a portion of said actuator at said opposite side of said driving member in contact with said guide; a pawl pivotally mounted on said actuator; a spring urging said pawl to rock into engagement with said driving member; a trigger pivotally mounted on said actuator; an abutment at said opposite side of said driving member; and key controlled means for rocking said actuator to move said trigger against said abutment to rock said trigger and thus release said pawl and enable the latter to be moved by its associated spring into engagement with said driving member.

7. In power operating mechanism for a type-writer or like machine, a rotatable toothed driving member; a part to be actuated; means pivotally mounting said part at one side of said member to rock about an axis parallel to the axis of rotation of said member; an actuator extending over and fore-and-aft of said member; means pivotally mounting said actuator on said part at a point offset from the pivotal mounting of said part; a guide at the opposite side of said driving member; a spring urging said actuator to rock about its pivot to yieldably hold a portion of said actuator at said opposite side of said driving member in contact with said guide; a pawl pivotally mounted on said actuator; a spring urging said pawl to rock into engagement with said driving member; a trigger pivotally mounted on said actuator; an abutment at said opposite side of said driving member; a key-controlled operating lever mounted at said opposite side of said driving member; a limber dog pivoted on said lever; and a part on said actuator positioned to be engaged by said dog when said lever is rocked for thereby rocking said actuator to move said trigger against said abutment to rock said trigger and thus release said pawl and enable the latter to be moved by its associated spring into engagement with said driving member.

8. In a power operating mechanism for a type-writer or like machine; a rotatable driving member; a movably mounted actuator; an interponent mounted movably on said actuator; a spring urging said interponent to move into drive-transmitting engagement with said driving member; a trigger mounted movably on said actuator and normally occupying a position in which it maintains said interponent out of drive-transmitting engagement with said driving member; an abut-

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ment; and key-controlled means for imparting to said actuator sufficient initial movement to move said trigger into engagement with said abutment to thereby move said trigger on said actuator and release said interponent to enable the latter to be moved by said spring into drive-transmitting engagement with said driving member.

9. In a power operating mechanism for a typewriter or like machine; a rotatable driving member; a movably mounted actuator; an interponent mounted movably on said actuator; a spring urging said interponent to move into drive-transmitting engagement with said driving member; a trigger mounted movably on said actuator and normally occupying a position in which it maintains said interponent out of drive-transmitting engagement with said driving member; an abutment; and key-controlled means for moving said actuator to move said interponent toward but not into engagement with said driving member and simultaneously to move said trigger into engagement with said abutment to thereby actuate said trigger to release said interponent and enable the latter to be moved by said spring into drive-transmitting engagement with said driving member.

10. In a power operating mechanism for a typewriter or like machine; a rotatable driving member; a movably mounted actuator; an interponent mounted movably on said actuator; a spring urging said interponent to move into drive-transmitting engagement with said driving member; a trigger mounted movably on said actuator and normally occupying a position in which it maintains said interponent out of drive-transmitting engagement with said driving member; an abutment; key-controlled means for moving said actuator to move said interponent toward but not into engagement with said driving member and simultaneously to move said trigger into engagement with said abutment to thereby actuate said trigger to release said interponent and enable the latter to be moved by said spring into drive-transmitting engagement with said driving member, whereby said actuator is driven through said interponent until the latter is thrown out of engagement with said driving member; and a second abutment then engageable by said trigger for returning the latter to its initial position on said actuator.

11. In a power operating mechanism for a typewriter or like machine, a driving member which moves continuously when the machine is in use; an actuator; and key-controlled means for normally maintaining said actuator operatively disconnected from said driving member and being operable for effecting temporary driving connection of said actuator to said driving member, said means including two spaced abutments and a control element having a part movable between said abutments, one side of said part being engageable with one of said abutments for effecting operative connection of said actuator to said driving member, and the other side of said part being engageable with the other of said abutments for restoring said element to its normal position.

12. In a power operating mechanism for a typewriter or like machine; a rotatable driving member; a movably mounted actuator; an interponent mounted movably on said actuator; a spring urging said interponent to move into drive-transmitting engagement with said driving member; a trigger mounted movably on said actuator and normally occupying a position in which it maintains said interponent out of drive-

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transmitting engagement with said driving member; abutment means having two abutment parts; key-controlled means for moving said actuator to move said interponent toward but not into engagement with said driving member and simultaneously to move said trigger into engagement with one of said abutment parts to thereby actuate said trigger to release said interponent and enable the latter to be moved by said spring into drive-transmitting engagement with said driving member, whereby said actuator is driven through said interponent until the latter is thrown out of engagement with said driving member, the other of said abutment parts being then engageable by said trigger for returning the latter to its initial position on said actuator; and means mounting one of said abutment parts for bodily adjustment to vary the relative positions of said two abutment parts and thus vary the timing of the trigger releasing operation.

13. In power operating mechanism for a typewriter or like machine, a rotatable toothed driving member; a part to be actuated; means pivotally mounting said part at one side of said member to rock about an axis parallel to the axis of rotation of said member; an actuator extending over and fore-and-aft of said member; means pivotally mounting said actuator on said part at a point offset from the pivotal mounting of said part; a guide at the opposite side of said driving member; a spring urging said actuator to rock about its pivot to yieldably hold a portion of said actuator at said opposite side of said driving member in contact with said guide; a pawl pivotally mounted on said actuator; a spring urging said pawl to rock into engagement with said driving member; a trigger pivotally mounted on said actuator; a flat surface abutment engageable by said trigger upon rocking of said actuator and being mounted at said opposite side of said member for adjustment about an axis parallel to the axis of rotation of said driving member; and key controlled means for rocking said actuator to move said trigger against said abutment to rock said trigger and thus release said pawl and enable the latter to be moved by its associated spring into engagement with said driving member.

14. In a power operating mechanism for a typewriter or like machine, a driving member which moves continuously when the machine is in use; an actuator; and key-controlled means for normally maintaining said actuator operatively disconnected from said driving member and being operable for effecting temporary driving connection of said actuator to said driving member, said means including two spaced abutments and a control element having a part movable between said abutments, one side of said part being engageable with one of said abutments for effecting operative connection of said actuator to said driving member, and the other side of said part being engageable with the other of said abutments for restoring said element to its normal position, said part of said control element being formed generally as an open circle with a peripheral split to render the opposite, abutment-engaging sides of said part deformable for adjustments.

15. In a power operating mechanism for a typewriter or like machine, a driving member which moves continuously when the machine is in use; an actuator; and key-controlled means for normally maintaining said actuator operatively disconnected from said driving member

and being operable for effecting temporary driving connection of said actuator to said driving member, said means including two spaced abutments and a control element having a part movable between said abutments, one side of said part being engageable with one of said abutments for effecting operative connection of said actuator to said driving member, and the other side of said part being engageable with the other of said abutments for restoring said element to its normal position, said part of said control element being bifurcated to render the opposite abutment-engaging sides of said part deformable for adjustments.

16. In a power operating mechanism for a typewriter or like machine, a rotatable toothed driving member; a part to be actuated; means mounting said actuator to move and operatively connecting it to the part to be actuated; an interponent pawl movably mounted on said actuator and being responsive to initial movement of said actuator towards said driving member for engaging said driving member to be operated thereby; and means for effecting such initial movement of said actuator comprising a key-operated lever, a limber dog pivoted on said lever and having an arcuate contact face, and a headed pin on said actuator normally out of contact with said arcuate contact face but being engageable thereby upon key-operation of said lever.

17. In power operating mechanism for a typewriter or like machine, a toothed driving member rotatable about an axis extending from side-to-side of the machine; a part to be actuated; means mounting said part to rock about an axis parallel to and in front of the axis of rotation of said member; and actuator extending over and fore-and-aft of said member; means pivotally mounting said actuator on said part at a point in front of the axis of rotation of said driving member; a guide behind said driving member; a spring urging said actuator to move forwardly and to rock about its pivot to yieldably hold a portion of said actuator, behind said driving member, in contact with said guide; a pawl pivotally mounted on said actuator to rock about an axis behind said driving member axis of rotation; a spring urging said pawl to rock into engagement with said driving member; a trigger pivotally mounted on said actuator behind said pawl; an abutment behind said pawl engageable by said trigger upon rocking of said actuator; and key-controlled means in front of said driving member for rocking said actuator to move said trigger against said abutment to rock said trigger and thus release said pawl and enable the latter to be moved by its associated spring into engagement with said driving member.

18. In power operating mechanism for a typewriter or like machine, a driving member; an actuator; and interponent mounted on said actuator for movements into and out of operative engagement with said driving member and being biased to move into engagement therewith; a trigger normally maintaining said interponent disengaged from said driving member; a flat surface abutment normally disengaged from said trigger; a key; means responsive to depression of said key for effecting relative movement between the actuator and the abutment for causing the

trigger to be actuated by engagement with the abutment to release the interponent and enable it to move into driving engagement with said driving member; and means mounting said abutment for rocking adjustment to vary the timing of releasing of said interponent by said trigger.

19. In a power operating mechanism for a typewriter or like machine; a rotatable driving member; a movably mounted actuator; an interponent mounted movably on said actuator; a spring urging said interponent to move into drive-transmitting engagement with said driving member; a trigger mounted movably on said actuator and normally occupying a position in which it maintains said interponent out of drive-transmitting engagement with said driving member; an abutment; a key; and means responsive to depression of said key for imparting to said actuator sufficient initial movement to move said trigger into engagement with said abutment to thereby move said trigger on said actuator and release said interponent to enable the latter to be moved by said spring into drive-transmitting engagement with said driving member, said key responsive means including a lever rockable upon key depression, and a limber dog pivoted on said lever and being operatively connectible with said actuator upon rocking of said lever by said key.

20. In a power operating mechanism for a typewriter or like machine; a rotatable driving member; a movably mounted actuator; an interponent mounted movably on said actuator; a spring urging said interponent to move into drive-transmitting engagement with said driving member; a trigger mounted movably on said actuator and normally occupying a position in which it maintains said interponent out of drive-transmitting engagement with said driving member; abutment means having two abutment parts; key-controlled means including a limber dog for moving said actuator to move said interponent toward but not into engagement with said driving member and simultaneously to move said trigger into engagement with one of said abutment parts to thereby actuate said trigger to release said interponent and enable the latter to be moved by said spring into drive-transmitting engagement with said driving member, whereby said actuator is driven through said interponent until the latter is thrown out of engagement with said driving member, the other of said abutment parts being then engageable by said trigger for returning the latter to its initial position on said actuator; and means mounting one of said abutment parts for bodily adjustment to vary the relative positions of said two abutment parts and thus vary the timing of the trigger releasing operation.

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