

Nov. 6, 1962

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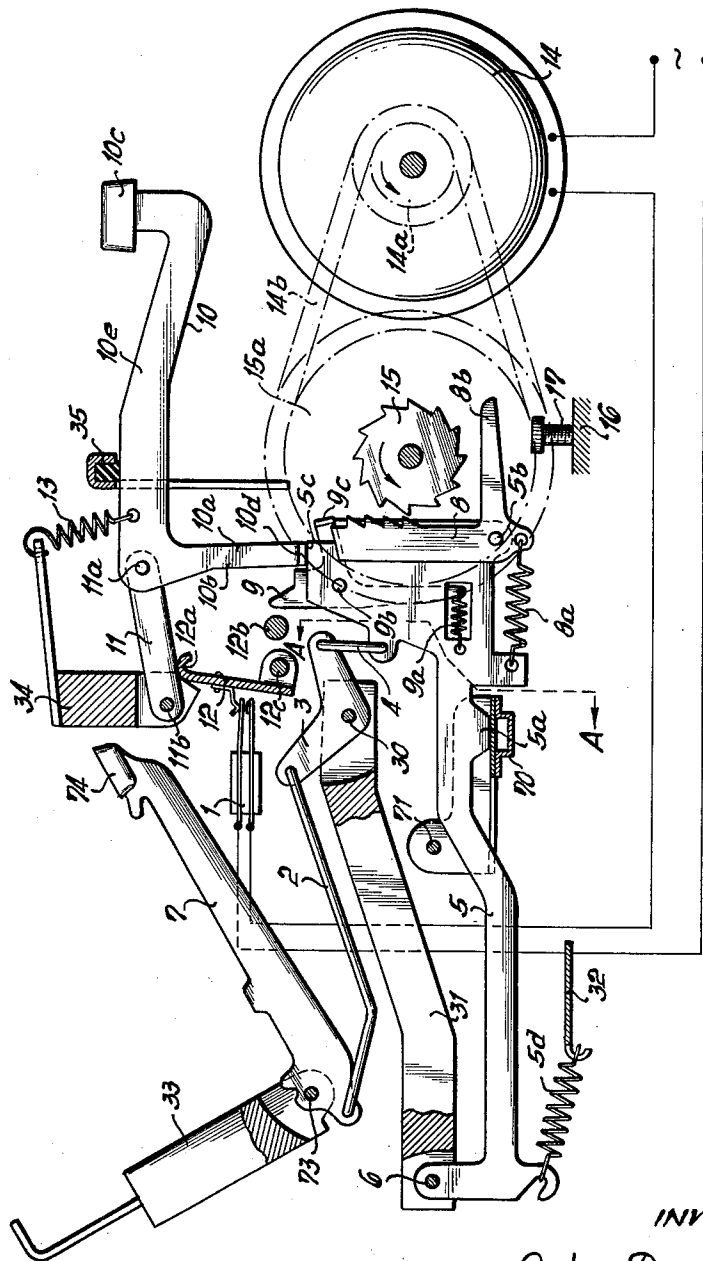
3,062,350

TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

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7 Sheets-Sheet 1

FIG. 1



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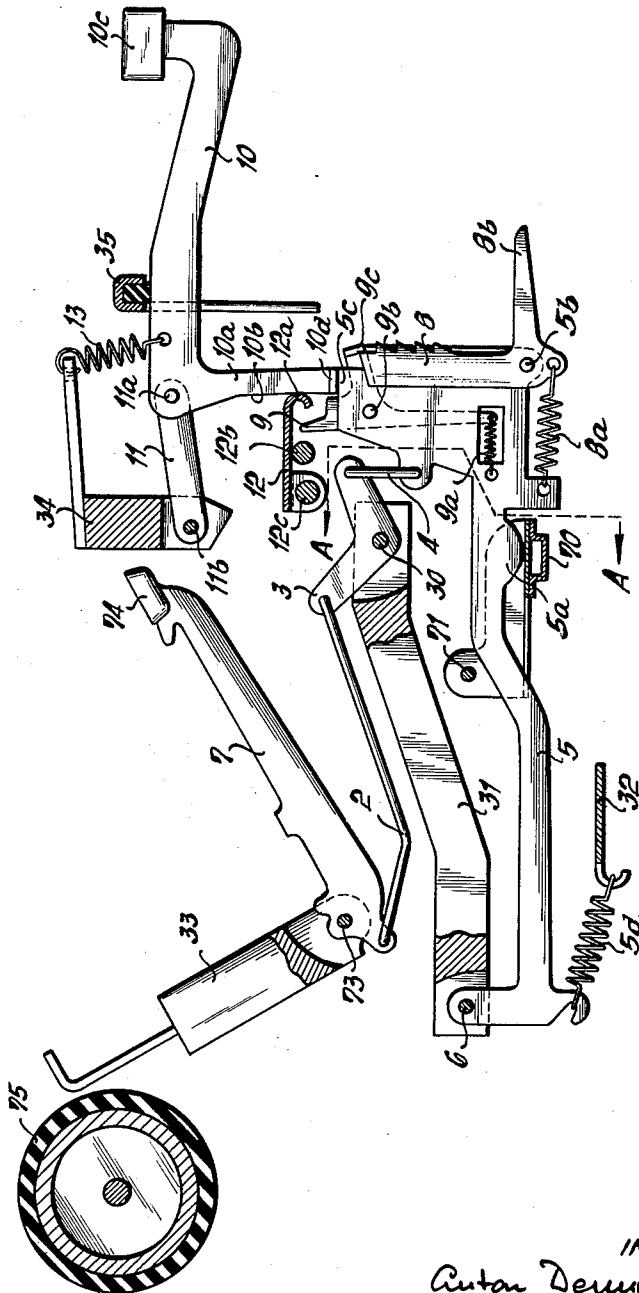
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TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

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7 Sheets-Sheet 2

FIG. 2



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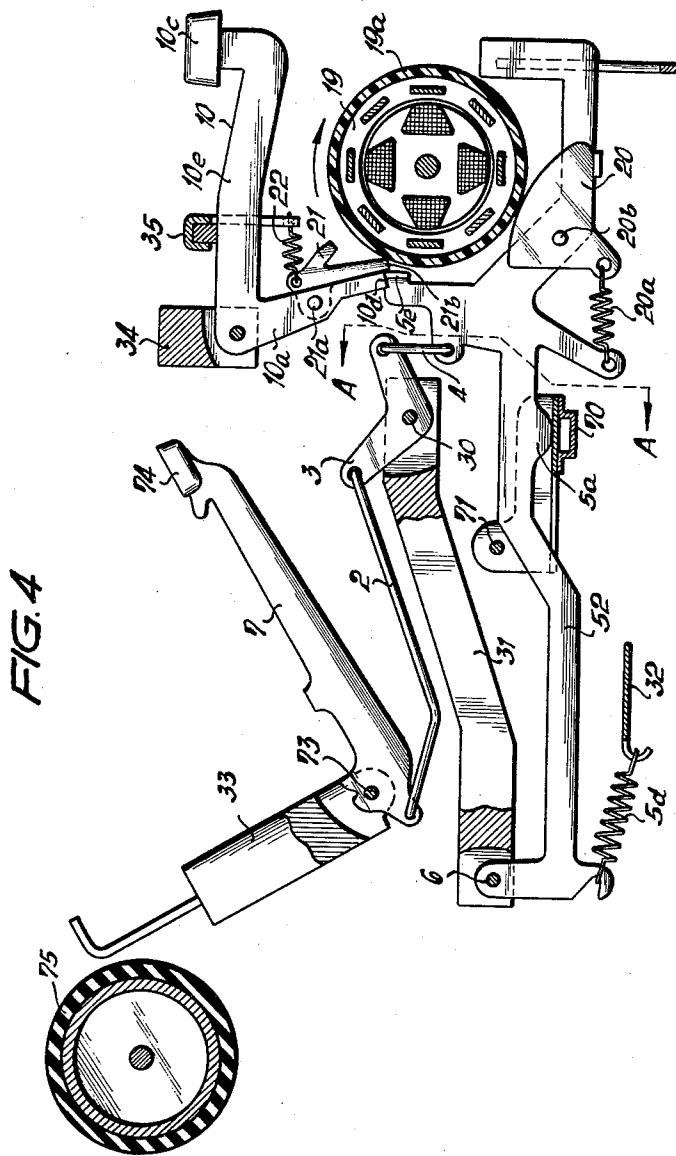
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TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

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7 Sheets-Sheet 4



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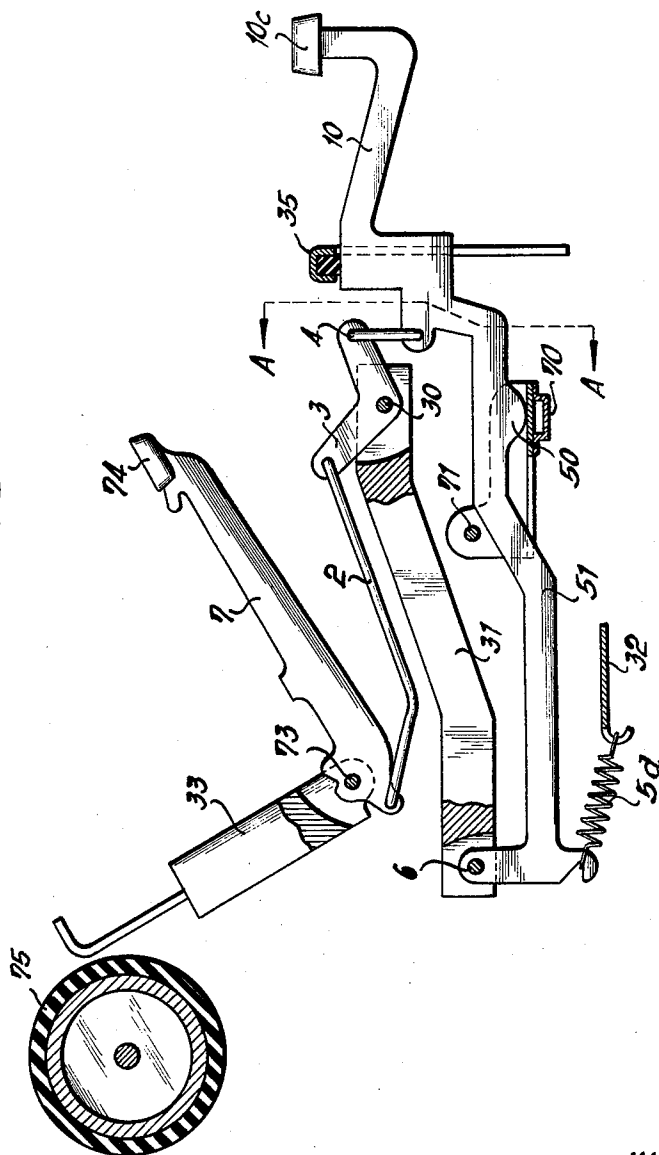
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TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

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FIG. 5



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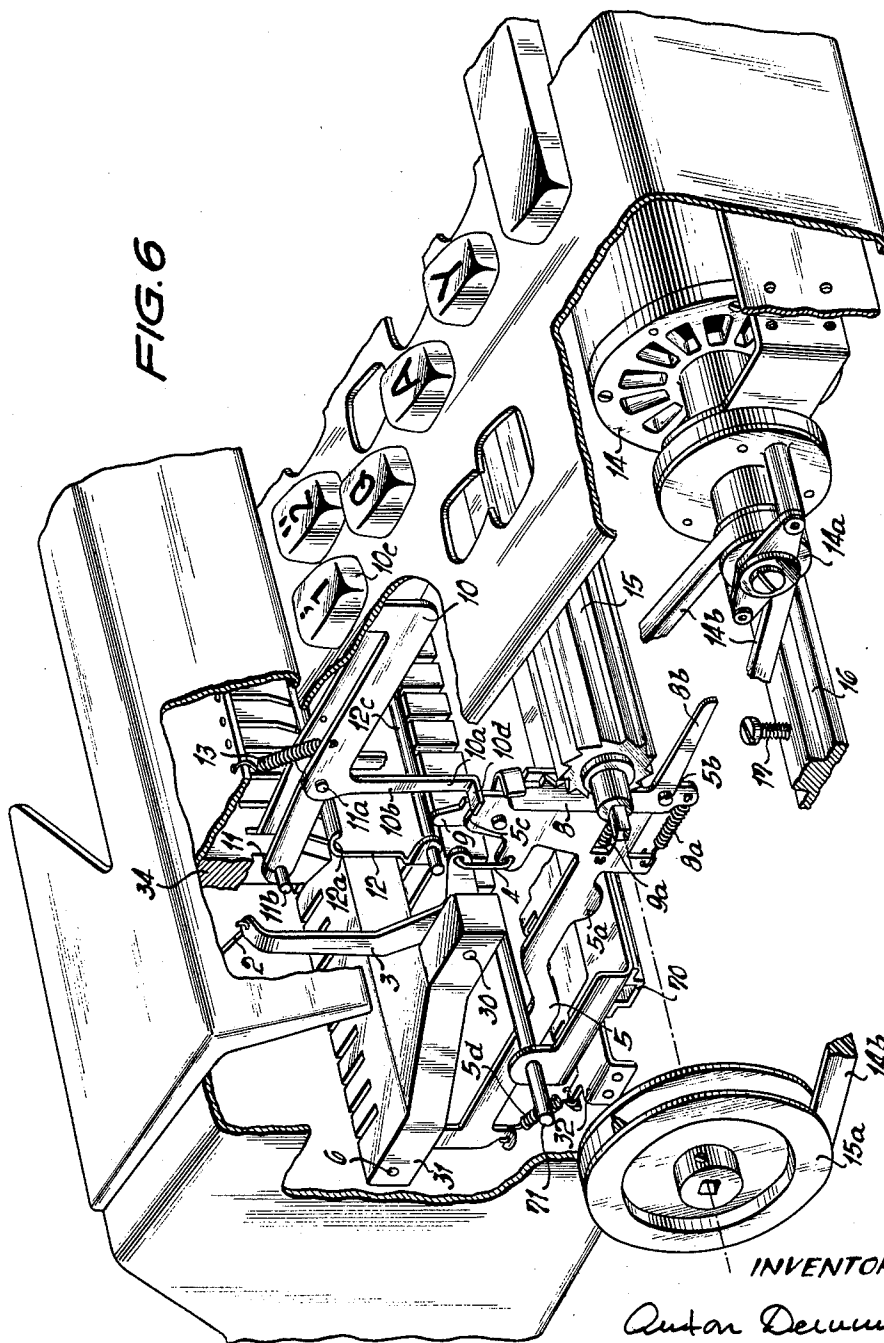
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TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

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7 Sheets-Sheet 6



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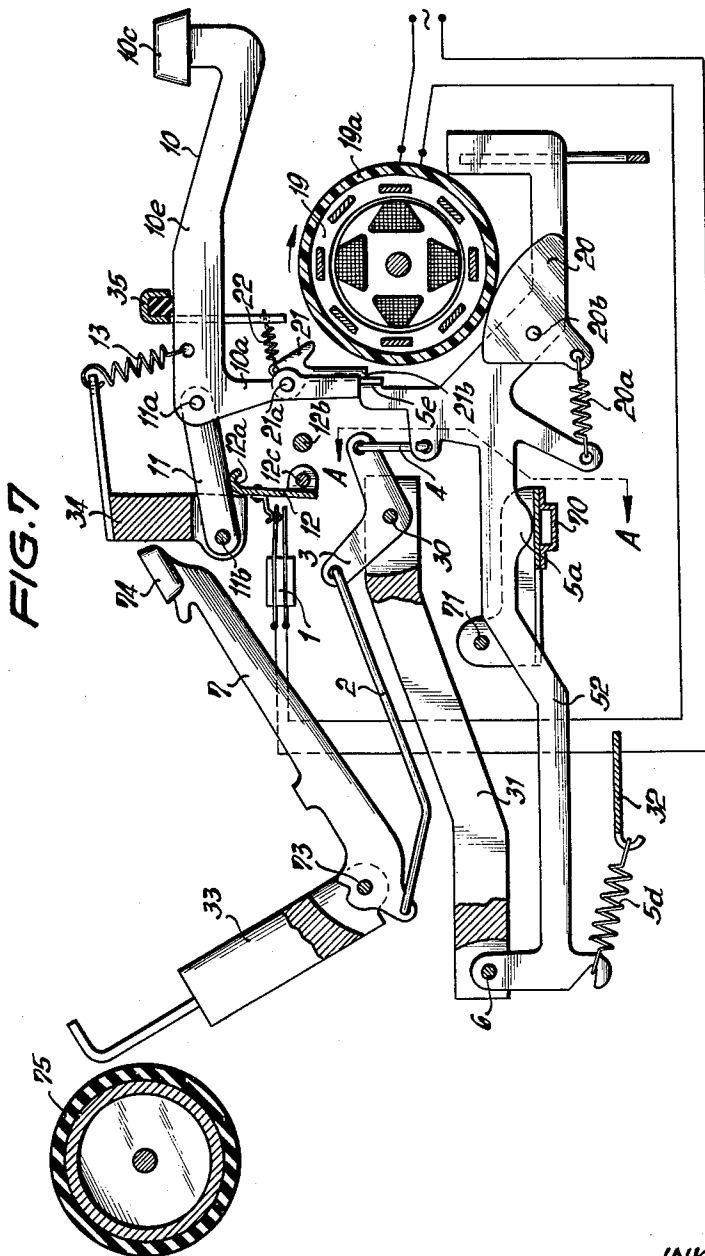
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TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

Filed Nov. 4, 1959

7 Sheets-Sheet 7



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3,062,350

TYPEWRITER FOR MANUAL OR ELECTRIC ACTUATION

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Claims priority, application Germany Nov. 6, 1953
22 Claims. (Cl. 197—17)

The present invention relates to a typewriter for manual or electric actuation, and more particularly to a typewriter including a type lever action mechanism which is constructed in such a manner as to permit its operation either directly by manually operated key means, or by power drive means which are released by the key means.

According to the present state of the art, typewriters are either designed for manual operation, or are constructed as electric typewriters in which the type lever action, and other functions of the machine are effected by power drive means under control of the keys.

The basic differences between the constructive elements of the two different typewriter constructions, require the manufacturer to design, produce, and store two complete sets of parts.

It is one object of the present invention to overcome this disadvantage, and to provide a typewriter in which a number of parts is constructed in such a manner that they may cooperate with manually actuated means, or with power drive means so that the same parts may be used for standard typewriters and for electric typewriters.

Another object of the present invention is to provide a mechanism of this kind which is capable of reliable and perfectly satisfactory operation and function regardless of whether the mechanism is finally assembled into a standard typewriter, or into an electric typewriter.

Another object of the present invention is to provide standard parts which can be used in a standard typewriter, and in an electric typewriter, while the typewriters incorporating such parts are of the conventional size associated with the respective kind of typewriter.

A further object of the present invention is to provide a key lever construction which permits the arrangement of a power drive roll underneath the keyboard.

A still further object of the present invention is to provide key means which, by operation of a control means, can be set to perform two different motions under manual control.

It is a related object of the present invention to operate two different operating means of a typewriter by the two different motions of the key means.

It is yet an object of the present invention to effect manual operation of a type lever action by one motion of the preset key means, and to obtain actuation of the type lever action from a power drive means when the key means are set to perform the other motion.

It is also an object of the present invention to provide a simple and efficient mechanism for effecting turning motion of actuated key levers, and for obtaining rectilinear motion of actuated key levers in accordance with the position of a shiftable control means.

With these and other objects in view, one embodiment of the present invention mainly comprises a type lever action, coupling means movable to a coupling position for coupling the type lever action to power drive means, manually operated key means, and means for either connecting the key means directly to the type lever action, or for effecting shifting of the coupling means by the key means to the coupling position. In this manner, the type lever action is by manual force operated when the direct connection between the key means and the type lever action is established, and is operated by the power

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drive means when the key means actuates the coupling means.

In the preferred embodiment of the present invention, the power drive means is a roll provided with teeth or with a friction surface for operating the type lever action through the coupling means. The power roll is located underneath the key levers, which are preferably angular and have a downwardly extending portion and a horizontal portion, so that the keyboard is somewhat raised as compared with a conventional typewriter, providing space for the power roll underneath the horizontal key lever portions, and forwardly of the downwardly extending lever portions.

In the preferred embodiment of the present invention, each key lever is turnably connected to a link which is turnably mounted in the supporting means of the machine. A control means is turnable between a blocking position blocking the link means so that the key lever turns about a pivot on the link means. The control means is turnable to another position permitting movement of the link means with the key lever, and in this other position, the control means guide the key lever for rectilinear movement when the same is actuated. Consequently in accordance with the position of the control means, the key lever performs a turning movement, or a rectilinear movement, and such two different movements are used for direct actuation of the type lever action, and for actuation of the coupling means, respectively.

In the arrangement of the present invention, other functions of the typewriter are also derived from the actuated type lever action so that it makes no difference whether the type lever action is operated by manual force, or by the power drive. Preferably, the type lever action includes a pivoted lever which engages and operates a transverse bar common to all type lever actions, and effecting shifting of the ribbon, step-wise movement of the carriage, and other related operations in a well known manner. In one embodiment of the present invention the power drive means form part of the machine, so that the machine can be shifted between manual operation in the manner of a standard typewriter, and power operation in the manner of an electric typewriter. In another embodiment of the invention, the power drive means are omitted, so that the machine corresponds to a standard manually operated typewriter, although the machine incorporates elements which, by addition of power drive means, serve to transform the machine into an electric typewriter. In another embodiment of the present invention, the power drive means form a permanent part of the machine, and no means are provided for setting the elements to a position in which the type lever action is operated by manual force.

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 drawings, in which:

FIG. 1 is a fragmentary side view, partly in section, illustrating one embodiment of the present invention in an operational condition in which the type lever action is actuated from power drive means;

FIG. 2 is a fragmentary side view, partly in section illustrating the embodiment of FIG. 1 in an operational condition in which the type lever action is actuated by manual force;

FIG. 3 is a fragmentary side view, partly in section, providing no means for actuation by manual force and including a raised keyboard according to the present inven-

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tion providing space for power drive means in the forward part of the machine;

FIG. 4 is a side view, partly in section, of a further embodiment of the present invention in which the power roll is a tubular rotor of an electric motor arranged underneath the keyboard in the forward part of the machine;

FIG. 5 is a side view, partly in section, of a typewriter employing the type lever action of the other embodiments in a manual typewriter;

FIG. 6 is a fragmentary perspective view illustrating the embodiment of FIG. 1; and

FIG. 7 is a side view, partly in section, of a modification of the embodiment of FIG. 1 in which the rotor of an electric motor is substituted for the drive roll.

Referring to the drawings, and more particularly to FIGS. 1, 2 and 6, the embodiment illustrated in FIGS. 1 and 6 can be operated as an electric typewriter with power drive means, or can be operated by manual force. In the condition of this embodiment illustrated in FIG. 2, the detachable power drive means have been removed and omitted, so that the machine can be operated only by manual force.

A type lever 7 is connected by a connecting link 2 with an angular lever 3 which is mounted on a stationary frame part 31 of the machine. Another wire link 4 connects lever 3 with an adapter member 5 which is pivotally mounted by a pin 6 on the frame part 31. A spring 5d is connected to a frame part 32 and to a hook-shaped portion of adapter member 5 and urges the adapter member 5 to turn in counterclockwise direction as viewed in FIG. 1.

The parts of the type lever action including the adapter member 5 on the left of the line A—A in all figures of the application are common to all embodiments of the present invention, and correspond to a standard type lever action as used in conventional manually operated typewriters. However, the righthand end of the adapter member 5 is constructed in accordance with the present invention so that the standard type lever action may be selectively actuated by manual force, or by power drive means.

Since the shape, size, construction, support, function, and paths of movement of all parts of the type lever action on the left side of line A—A correspond to a standard type lever action as used in conventional typewriters, a conventional manually operated typewriter is obtained by replacing the adapter lever 5 shown in FIGS. 1 to 4, by a keyboard 51, as shown in FIG. 5 which includes a key lever portion with a key 10c. In this manner, a standard type lever action can be used in accordance with the present invention for electric typewriters as shown in FIG. 4, or for manually operated typewriters as shown in FIG. 5 resulting in great economy in manufacture, storage, and service.

In all embodiments of the present invention, the adapter member 5 or the key lever 51, respectively, has a projection 5a engaging a pivotally mounted bar 70 extending across all levers 5, and 51, respectively. When lever 5, or 51, is pivoted about pin 6, as will be explained hereinafter, the transverse bar 70 is pivoted about pivot point 71 and effects shifting of the ribbon, a step of the carriage, and similar functions of the typewriter in a conventional manner which is not an object of the present invention.

In all embodiments of the invention, pivotal movement of lever 5 or 51 will effect downward movement of link 4, rocking of angular lever 3, and rapid turning of type lever 7 about pivot point 73 on the frame part 33 so that the type 74 engages the platen 75.

Referring now to the construction illustrated in FIGS. 1 and 2, a coupling means is provided on the free end of adapter member 5 for coupling the type lever action to power drive means. A coupling lever 8 is turnably mounted on the adapter member 5 by means of a pin 5b, and is urged by the spring 8a to turn in clockwise direction toward the power roll 15 which is provided with teeth about the periphery thereof. The opposite portion of

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coupling lever 8 has corresponding teeth of saw-tooth shape capable of effecting a coupling engagement with power roll 15 when the same rotates in counterclockwise direction as indicated by an arrow. An adjustable stop 17 is provided with threads and mounted on the frame part 16 for terminating turning movement of coupling lever 8 by engagement with the arm 8b in a coupling position in which the teeth of the coupling lever 8 are engaged by the teeth of the power roll 15. In the normal inoperative position of the coupling means movement of the coupling lever 8 towards its coupling position is prevented by the locking lever 9 which is turnably supported on the adapter member 5 on a pin 9b, and is urged by a spring 9a, which is secured to the adapter member 5, to turn in clockwise direction. The transverse projection 9c of locking lever 9 engages the upper end of coupling lever 8, and prevents turning of the same in clockwise direction under the action of spring 8a. It is evident that turning of the locking lever 9 in counterclockwise direction against the action of spring 9a will release coupling lever 8 so that the same will be urged by spring 8a to turn in clockwise direction into a coupled position in which the teeth of the power roll engage the teeth of the coupling lever and effect a downward movement of the coupling lever, and thereby of the righthand end of the adapter member 5, which will thus turn about pivot 6.

The power roll 15 extends along a row of adapter members 5 and coupling levers 8 associated with different type lever actions, but for the sake of clarity only one set of elements associated with a single type lever action and a single key means 10 is illustrated.

A pulley 15a is mounted at the end of the power roll 15, and is driven by a cone belt 14b from another pulley 14a which is driven by a drive motor 14.

Each type lever action is associated with a key means 10 which includes a substantially horizontal keyboard portion 10e carrying the finger-engaging piece 10c, a downwardly extending portion 10a provided with a smooth guide face 10b, and a transverse projection 10d which is located above the upper edge 5c of the adapter member 5 so that the same is located lower than the keyboard portion 10e. Since adapter member 5 tends to turn in counterclockwise direction under the action of spring 5d, the edge portion 5c normally engages the abutment 10d.

Each key means is mounted on a link 11 with which it is connected by pivot means 11a. The other end of each link is turnably mounted on a frame part 34 by means of a pin 11b. A spring 13 connects frame part 34 with key lever portion 10e and urges key means 10 into a position abutting the frame part 35. A control member 12 has at its free end an abutment 12a, and is turnably mounted on a stationary pin 12c. A stationary stop pin 12b limits turning movement of control member 12 in clockwise direction, while movement in the opposite direction is limited by an abutment on frame portion 34. In the blocking position illustrated in FIG. 1, the abutment 12a engages link 11 spaced from pivot point 11b, so that link 11 cannot turn about pivot 11b. Control member 12 can be turned into the position illustrated in FIG. 2 in which the abutment 12a slidably engages the guide face 10b of the downwardly extending portion 10a of the key means 10.

The angular shape of the key member including the raised horizontal portion 10e of the key lever, is an important aspect of the present invention since it permits the arrangement of the power roll 15 underneath the keyboard of the machine, and forwardly of the type lever action, so that the space available in a standard machine frame is used for the power drive means. A comparison of FIG. 1 with FIG. 5 will show that a typewriter which is operated by manual force has a lower keyboard. On the other hand, in the conventional constructions of electrical typewriters, the power roll is arranged underneath the type lever actions, requiring a complete redesign of the machine as compared with a standard typewriter.

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When it is desired to operate the machine illustrated in FIG. 1 by manual operation, the control or selector member 12, which extends across all links 11, is set to the position shown in FIG. 1. In this position, link 11 cannot turn when the key means 10 is actuated, and consequently the key lever will turn about pin 11a in clockwise direction. Projection 10d will move toward locking lever 9 and will effect turning movement of the same in counterclockwise direction so that the abutment 9c releases coupling lever 8 which will turn in clockwise direction under the action of spring 8a until its teeth are engaged by the teeth of power roll 15. Power roll 15 rapidly turns adapter lever 5 in clockwise direction so that type lever 7 is turned through the linkage 2, 3, 4.

During the downward movement of the righthand end of adapter member 5, the arm 8b of coupling lever 8 engages the adjustable stop 17, so that coupling lever 8 is turned back in counterclockwise direction into the initial position shown in FIG. 1 in which the coupling lever 8 is arrested by the locking lever 9 whose transverse projection 9c snaps over the end of the coupling lever 8. In this position, the teeth of the power roll 15 cannot engage the teeth of coupling lever 8, and when adapter member 5 returns under the action of spring 5d to its normal position, coupling lever 8 and locking lever 9 are already in the initial position shown in FIG. 1.

FIG. 2 illustrates the construction of FIG. 1 with the power drive means omitted. In the construction of FIG. 1 the power drive means are mounted in the frame of the machine in such a manner that they can be omitted during assembly, or even detached from the combined manual and electric typewriter shown in FIG. 1. If the power drive means 14, 15 are not assembled, a manual typewriter as shown in FIG. 2 results. The construction of FIG. 2 is operated in exactly the same manner as the construction of FIG. 1 in the position of the control member 12 shown in FIG. 2. Since in the arrangement of FIGS. 1 and 2 the adapter member 5 is retained and used for either mode of operation, it may also be termed an actuating member for the respective type lever action.

Assuming that control or selector member 12 in the construction of FIG. 1 is turned to the position shown in FIG. 2, its abutment 12a slidably engages the downwardly extending portion 10a of the key means 10, and releases link 11.

Consequently, when key means 10 is operated, portion 10a of the angular key lever 10a, 10e will move in substantially rectilinear direction along abutment 12a. During such movement, link 11 turns relative to the key lever about pin 11a.

Downward movement of the key lever as described above will effect turning movement of actuating member 5 in clockwise direction and actuation of the type lever action. Locking lever 9 and coupling lever 8 remain in the normal inoperative position illustrated in FIGS. 1 and 2 and have no effect in the arrangement of FIG. 2. In the manual typewriter illustrated in FIG. 2 in which the drive means are omitted, coupling lever 8 and locking lever 9 are retained because they are elements of the mass produced adapter means 5. It will be appreciated that the typewriter of FIG. 2 can be converted at any time into an electric typewriter by addition of the power drive means 14, 15 in the manner shown in FIG. 1. Thus a manual typewriter may be sold to a customer, and later on converted into an electric typewriter.

In the embodiment of FIG. 1, the electric connection of motor 14 is only required when control member 12 is turned into the position illustrated in FIG. 1. A switch 1 is provided in the circuit of motor 14, and is closed by control member 12 in the position illustrated in FIG. 1. When control member 12 in FIG. 1 is turned to the position abutting on stop 12b (shown in FIG. 2) the switch is opened since the motor 14 is not required during operation of the typewriter by manual force.

The embodiment of FIG. 3 illustrates the construction

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of the present invention as embodied in an electric typewriter, which cannot be operated by manual force. Consequently, the control member 12 and the link 11 are omitted, and each key means 10 is mounted for turning movement on frame part 34 on a pin 11b. This embodiment of the invention is operated in exactly the same manner as described with reference to FIG. 1 when the power drive means are effective. When a key lever is actuated, the locking lever 9 is turned and releases coupling lever 8 which moves to a coupling position engaged by toothed power roll 15, whereby the type lever action is actuated.

The same type lever action, the same adapter or actuating member 5, and the same operating member 70 for the additional typewriter functions are used in the embodiments of FIGS. 1, 2 and 3, so that a very economical manufacture of different machine types is possible. Furthermore, the frame 16 shown in FIG. 3, and omitted in FIGS. 1 and 2 for the sake of clarity has standard dimensions and permits the provision, or omission, of the power drive means 14 and 15 due to the raised keyboard resulting from the angular shape of the key levers.

FIG. 4 illustrates another embodiment of the present invention in which the standard type lever action is used for an electric typewriter. Key means 10 are again provided with key levers having a downwardly extending portion 10a and substantially horizontal raised portion 10e so that the row of key levers defines a space for arranging the power roll underneath the keyboard permitting in accordance with the present invention the use of a type lever action which can be built into many different machine types.

In the embodiments of FIG. 4 and FIG. 7, the power roll is a tubular member 19a which is fixedly connected to an outwardly located tubular rotor while the stator of motor 19 is located within the surrounding tubular rotor and tubular power roll 19a. Due to this construction of motor 19, a substantial amount of space is saved, which is otherwise required by the drive motor 14 as shown in FIG. 3. The embodiment of FIG. 7 corresponds otherwise to the embodiment of FIG. 1 so that the typewriter can be selectively set to manual and power operation. As compared with the embodiment of FIG. 1, the modification of FIG. 7 saves space since all parts of the power drive are located under the keyboard.

In the embodiment of FIG. 4, adapter member 52 is again mounted on a pin 6 and urged by a spring 5d to turn in counterclockwise direction. The portion on the left side of line A—A in FIG. 4 is identical with the corresponding portion of adapter member 5 shown in FIGS. 1 to 3, and operates member 70 in the same manner.

The portion of adapter member 52 on the right side of line A—A in FIG. 4 is different and includes a transverse projection 5e cooperating with the abutment edge 10d of the downwardly extending key lever portion 10a, and being urged against the same by spring 5d. An eccentric friction member 20 is mounted on a pin 20b on an arm of adapter member 52, and is urged by spring 20a to turn in clockwise direction.

A blocking lever 21 is turnably mounted on portion 10a by means of a pin 21a. Blocking lever 21 is urged by a spring 22 on frame part 35 to turn in clockwise direction into the position shown in FIG. 4 in which its end laterally abuts projection 5e.

The mechanism of FIG. 4 operates in the following manner:

When a key 10c is depressed, the key lever turns about pin 11b, and the abutment edge 10d releases the upper edge of the transverse projection 5e, so that adapter member 52 turns in counterclockwise direction while the transverse projection 5e moves into the slot formed between the end of portion 10a and blocking lever 21. Such turning movement is very short and is terminated when the eccentric member 20 engages the friction sur-

face of the power roll 19a which rotates in the direction of the arrow. Power roll 19a turns eccentric 20 in counterclockwise direction so that pin 20b is moved away from the power roll due to the shape of the eccentric 20, resulting in turning of the adapter member 52 in clockwise direction as viewed in FIG. 4 so that type lever 7 is actuated through linkage 2, 3, 4. The eccentric 20 releases the surface of power roll 19a when the adapter lever 52 has turned through a corresponding angle, whereupon spring 20a restores eccentric 20 to its initial position. Consequently, adapter member 52 is free to return to its initial position after the typing operation has been completed.

In the event that key means 10 has returned to its initial position in the meantime, projection 5e will abut on abutment 10d, as shown in FIG. 4, and the normal position of all elements will be obtained immediately.

In the event that key means 10 has not yet returned to its initial position, which may be due to a slow release of the finger-engaging piece 10c by the operator, the transverse projection 5e will abut the edge 21b of the blocking lever 21 which is located above projection 5e if the key means 10 is depressed.

When key means 10 is again released, portion 19a will turn in counterclockwise direction together with blocking lever 21, so that edge 21b will move off the upper edge of projection 5e so that adapter member 52 turns a little further until projection 5e abuts edge 19d which is located slightly higher than edge 21b. Blocking lever 21 is now again in the position shown in FIG. 4 laterally abutting projection 5e under the action of spring 22. As explained above, the embodiment of FIG. 5 uses the standard type lever action of the present invention for a manual typewriter, and requires only a different adapter lever 51 which is combined with the key lever resulting in a keyboard which is lower than in the constructions illustrated in FIGS. 1 to 4 in which the space below the raised keyboard is used for the power drive means required in electric typewriters.

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 typewriters differing from the types described above.

While the invention has been illustrated and described as embodied in typewriters which have the same standard type lever action for manual or electric actuation, 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 as new and desired to be secured by Letters Patent is:

1. In a typewriter, in combination, a type lever action including an adapter member; an operating member operated by said adapter member and adapted to initiate shifting operations such as ribbon transport and carriage shifting; coupling means mounted on said adapter member movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including angular key levers, each key lever having a downwardly extending portion, a substantially horizontal portion, and a finger-engaging piece so that said key lever is adapted to define with other key levers a space for receiving the power drive means; and means for selectively establishing an operative connection between said

downwardly extending portion of said key means and said adapter member of said type lever action for operating the same by said key means, and between said downwardly extending portion of said key means and said coupling means for moving the same to said coupling position so that said type lever action may be operated from the power drive means.

2. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means; and means for selectively mounting said key means for movement in two different directions upon actuation, said key means being operatively connected to said type lever action and to said coupling means for operating said type lever action during movement of said key means in one of said directions, and for shifting said coupling means to said coupling position during movement of said key means in the other direction so that said type lever action may be operated from the power drive means.

3. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever and a finger-engaging piece; supporting means; and means for selectively mounting said key lever on said supporting means for turning movement and for substantially rectilinear movement, said key lever being operatively connected to said type lever action and to said coupling means for respectively operating said type lever action when said key lever is mounted for one of said movements thereof, and for shifting said coupling means to said coupling position when said key lever is mounted for the other of said movements thereof so that said type lever action may be operated from the power drive means.

4. In a typewriter, in combination, a type lever action, including an adapter lever means; coupling means mounted on said adapter lever means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever and a finger-engaging piece; supporting means; and means for selectively mounting said key lever on said supporting means for turning movement and for substantially rectilinear movement, said key lever being operatively connected to said adapter lever means of said type lever action and to said coupling means for respectively operating said type lever action when said key lever is mounted for one of said movements thereof, and for shifting said coupling means to said coupling position when said key lever is mounted for the other of said movements thereof so that said type lever action may be operated from the power drive means.

5. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever and a finger-engaging piece; supporting means; and means for selectively mounting said key lever on said supporting means for turning movement and for substantially rectilinear movement, said key lever being operatively connected to said type lever action and to said coupling means for respectively operating said type lever action during rectilinear movements thereof, and for shifting said coupling means to said coupling position during turning movement thereof so that said type lever action may be operated from the power drive means.

6. In a typewriter, in combination, a type lever action, including an adapter lever means; coupling means including a spring-loaded coupling member turnably mounted on said adapter lever means and tending to assume a coupling position for coupling said type lever action to

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power drive means, and a spring-loaded locking member turnably mounted on said adapter lever means and tending to maintain a locking position locking said coupling member in an inoperative position; manually operated key means including a key lever and a finger-engaging piece; supporting means; and means for selectively mounting said key lever on said supporting means for turning movement and for substantially rectilinear movement, said key lever being operatively connected to said adapter lever means of said type lever action and to said locking member of said coupling means for respectively operating said type lever action when said key lever is mounted for one of said movements thereof, and for shifting said locking member of said coupling means out of said locking position so that said coupling member moves to said coupling position when said key lever is mounted for the other of said movements thereof so that said type lever action may be operated from the power drive means.

7. In a typewriter, in combination, a type lever action, including an adapter lever means; coupling means including a spring-loaded coupling member turnably mounted on said adapter lever means and tending to assume a coupling position for coupling said type lever action to power drive means, and a spring-loaded locking member turnably mounted on said adapter lever means and tending to maintain a locking position locking said coupling member in an inoperative position; manually operated key means including a key lever and a finger-engaging piece; supporting means; and means for selectively mounting said key lever on said supporting means for turning movement and for substantially rectilinear movement, said key lever being operatively connected to said adapter lever means of said type lever action and to said locking member of said coupling means for respectively operating said type lever action during rectilinear movements thereof, and for shifting said locking member of said coupling means out of said locking position so that said coupling member moves to said coupling position during turning movement thereof so that said type lever action may be operated from the power drive means.

8. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever and a finger-engaging piece; supporting means; a link means movably mounted on said supporting means and including a pivot means connected to said key lever for turning movement; and a control means mounted on said supporting means for movement between a blocking position engaging said link means for blocking movement of same so that said key lever turns about said pivot means when said key means is actuated, and another position releasing said link means so that said link means moves relative to said supporting means when said key means is actuated, said key lever being operatively connected to said type lever action and to said coupling means for respectively operating said type lever action when said key lever moves with said link means, and for shifting said coupling means to said coupling position when said key lever turns about said pivot means so that said type lever action may be operated from the power drive means.

9. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever and a finger-engaging piece; supporting means; a link means movably mounted on said supporting means and including a pivot means connected to said key lever for turning movement; and a control means mounted on said supporting means for movement between a blocking position engaging said link means for blocking movement of same so that said key lever turns about said pivot means when said key means is actuated, and a guiding position releasing said link

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means and slidably engaging said key lever for guiding the same for rectilinear movement so that said link means moves relative to said supporting means when said key means is actuated, said key lever being operatively connected to said type lever action and to said coupling means for respectively operating said type lever action when said key lever moves in a rectilinear movement along said control means while said link means moves relative to said supporting means, and for shifting said coupling means to said coupling position when said key lever turns about said pivot means so that said type lever action may be operated from the power drive means.

10. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever and a finger-engaging piece; supporting means; a link means turnably mounted on said supporting means and including a pivot means connected to said key lever for turning movement; and a control means mounted on said supporting means for movement between a blocking position engaging said link means for blocking turning movement of same so that said key lever turns about said pivot means when said key means is actuated, and a guiding position releasing said link means and slidably engaging said key lever for guiding the same for rectilinear movement so that said link means turns relative to said supporting means when said key means is actuated, said key lever being operatively connected to said type lever action and to said coupling means for respectively operating said type lever action when said key lever moves in a rectilinear movement along said control means while said link means turns relative to said supporting means, and for shifting said coupling means to said coupling position when said key lever turns about said pivot means so that said type lever action may be operated from the power drive means.

11. An arrangement as set forth in claim 9 wherein said control means includes a control lever member turnably mounted on said supporting means and having a free end portion engaging said link means in said blocking position; wherein said key lever has a downwardly extending portion at the upper end of which said pivot means is located; and wherein said free end of said control lever member slidably engages said downwardly extending portion in said guiding position of said control means.

12. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position adapted to couple said type lever action to power drive means; manually operated key means including a key lever having a downwardly extending portion and a substantially horizontal portion terminating in a finger-engaging piece, said portions of said key lever being adapted to define with corresponding portions of other key levers a space for the power drive means; supporting means; and means for selectively mounting said key lever on said supporting means for turning movement and for substantially rectilinear movement, said key lever being operatively connected to said type lever action and to said coupling means for respectively operating said type lever action when said key lever is mounted for one of said movements thereof, and for shifting said coupling means to said coupling position when said key lever is mounted for the other of said movements thereof so that said type lever action may be operated from the power drive means.

13. In a typewriter, in combination, manually operated key means including key lever means having a downwardly extending portion and a substantially horizontal portion; rotary power drive means removably mounted underneath said horizontal portion and forwardly of said downwardly extending portion of said key lever means, said power drive means including an electric motor having an outer rotor in the form of a tubular power roll; a type

lever action including an adapter member; coupling means mounted on said adapter member movable between an inoperative position and a coupling position for coupling said type lever action to said power roll; and means for selectively establishing an operative connection between said key lever means and said adapter member of said type lever action for operating the same by said key means, and between said key lever means and said coupling means for moving the same to said coupling position so that said type lever action is operated by said power drive means.

14. In a typewriter, in combination, manually operated key means including key lever means having a downwardly extending portion and a substantially horizontal portion; rotary power drive means removably mounted underneath said horizontal portion and forwardly of said downwardly extending portion of said key lever means; a type lever action including an actuating member; coupling means mounted on said actuating member movable between an inoperative position and a coupling position for coupling said type lever action to said power drive means; and means for selectively mounting said key lever means for turning movement and for substantially rectilinear movement, said downwardly extending portion of said key lever means being operatively connected to said type lever action and to said coupling means for respectively operating said coupling means or said type lever action when said key lever means turns, or moves in rectilinear direction, respectively so that said type lever action is selectively operated by manual force or from said power drive means.

15. An arrangement as set forth in claim 14 wherein said mounting means includes a turnable control means having a first blocking position for blocking rectilinear movement of said key lever and for supporting said key lever means for turning movement, and a guiding position blocking turning movement of said key lever means and guiding the same for rectilinear movement; and wherein said power drive means includes a power roller and electric motor means; and including switch means connected into the circuit of said motor means and being controlled by said control means to energize said motor means in one of said positions of said control means.

16. In a typewriter, in combination, manually operated key means including a key lever means; supporting means, link means turnably mounted on said supporting means and including a pivot means turnably connecting said link means with said key lever means; and a control means mounted on said supporting means for movement between a first position engaging said link means and blocking turning movement of the same so that said key lever means turns about said pivot means upon actuation of said key means, and a second position releasing said link means and engaging said key lever means for guiding the same to perform a rectilinear movement; and two operating means operatively connected to said key lever means to be respectively actuated during turning movement and during rectilinear movement of said key lever means, respectively.

17. In a typewriter, in combination, a plurality of type lever actions; coupling means movable between an inoperative position and a coupling position adapted to couple each type lever action to power drive means; a plurality of manually operated key levers including a keyboard portion having at one end a finger-engaging piece, and another portion downwardly extending from the other end of said keyboard portion so that said keyboard portions and other portions of said key levers define a space below said keyboard portions for receiving the power drive means; and means for selectively establishing an operative connection between said other portions of said key levers and said type lever actions, respectively, for operating the latter, and between said other portions of said key levers and said coupling means for moving

the latter to said coupling position so that said type lever actions may be operated from the power drive means.

18. In a typewriter, in combination, manually operated key means including a plurality of key levers, each key lever including a keyboard portion having at one end a finger-engaging piece, and another portion downwardly extending from the other end of said keyboard portion so that said keyboard portions and other portions of said key levers define a space below said keyboard portions; rotary power drive means, and means for detachably mounting said rotary power drive means in said space underneath said keyboard portions of said key levers; a plurality of type lever actions; a plurality of actuating members for operating said type lever actions, respectively; a coupling means mounted on each actuating member movable between an inoperative position and a coupling position for coupling said actuating member to said power drive means; and means for selectively establishing an operative connection between said other portions of said key levers and said adapter members, respectively, for operating the type lever actions by said key levers, and between said other portions of said key levers and said coupling means, respectively, for moving the latter to said coupling position so that said type lever actions are operated by said power drive means.

19. A typewriter as set forth in claim 18 wherein said rotary power drive means includes an electric motor having an outer rotor and a tubular power roll surrounding said rotor.

20. In a typewriter, in combination, manually operated means including key lever means and finger-engaging means; means for mounting said key lever means for movement in two different directions with said finger-engaging means moving in the same direction; selector means movable between a first position for causing said key lever means to move in one of said directions and a second position for causing said key lever means to move in the other direction; and two operating means operatively connected to said key lever means to be respectively actuated during movement of said key lever means in said two directions so that one operating means is actuated when said selector means is in said first position and the other operating means is actuated when said selector means is in said other position while said finger-engaging means is moved in the same direction by an operator.

21. In a typewriter, in combination, a type lever action; coupling means movable between an inoperative position and a coupling position for coupling said type lever action to power drive means; manually operated key means; mounting means for mounting said key means for movement in two different directions; selector means movable between a first position for causing said key means to move in one of said directions, and a second position for causing said key means to move in the other direction, said key means being operatively connected to said type lever action and to said coupling means for directly operating said type lever action during movement of said key means in said one direction, and for shifting said coupling means to said coupling position during movement of said key means in the said other direction so that said type lever action is operated by manual force when said selector means is in said first position, and so that said type lever action may be operated from said power drive means when said selector means is in said second position.

22. In a typewriter, in combination, a frame; a type lever action; an adapter means detachably mounted on said frame operatively connected to said type lever action for actuating the same, and including a coupling means movable between an inoperative position and a coupling position for coupling said adapter member to power drive means; manually operated key means; mounting means for mounting said key means for movement in two different directions; selector means movable between a first

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position for causing said key means to move in one of said directions, and a second position for causing said key means to move in the other direction, said key means being operatively connected to said adapter member and to said coupling means for directly operating said type lever action through said adapter member during movement of said key means in said one direction, and for shifting said coupling means to said coupling position during movement of said key means in the said other direction so that said type lever action is operated by manual force when said selector means is in said first position, and so that said type lever action may be operated from said power drive means when said selector means is in said second position, said key means, said mounting means, and said selector means being adapted to be re-

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moved, and said adapter means being adapted to be exchanged for other key means operatively connected to said type lever action and effecting a direct manual operation of the same.

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