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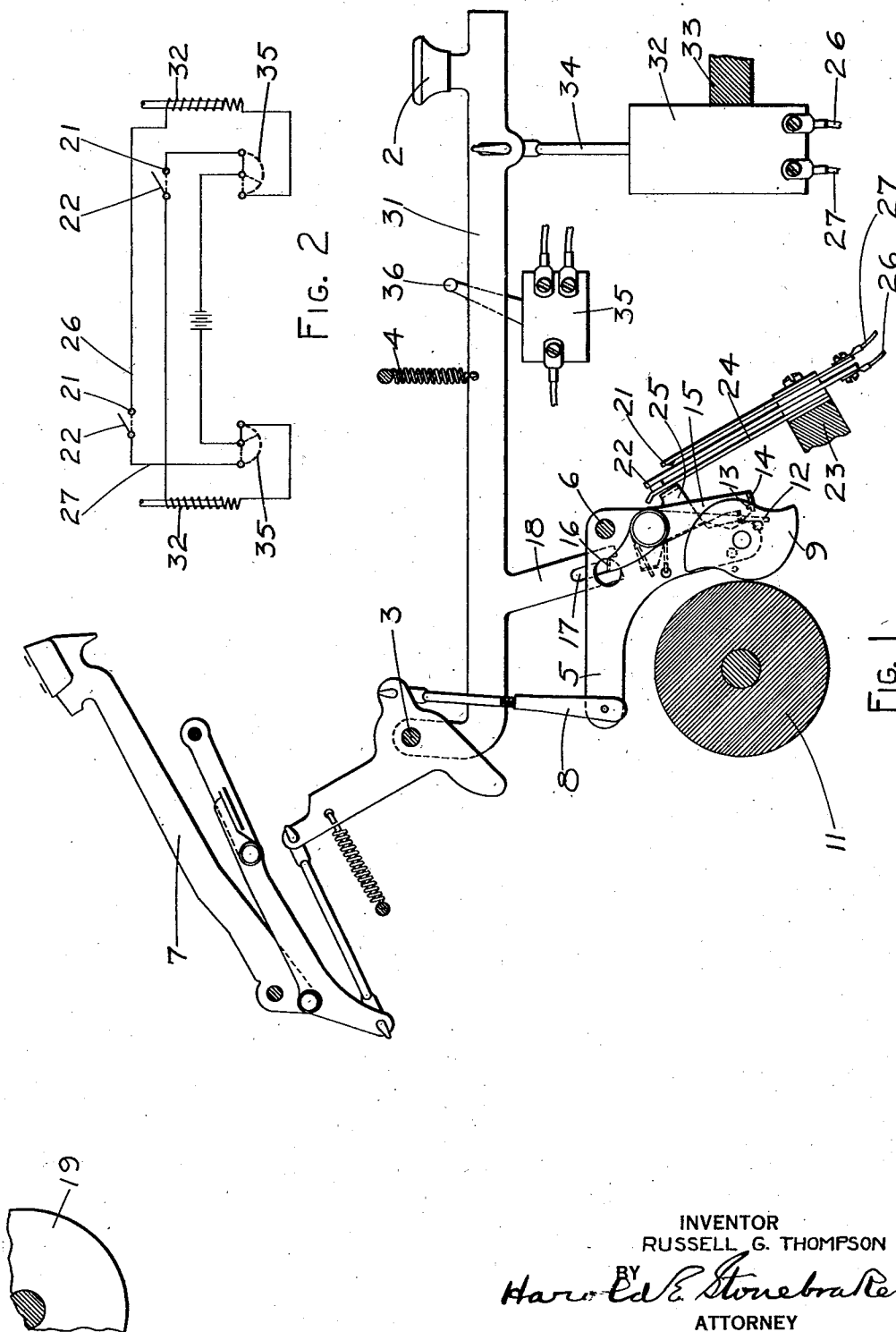
R. G. THOMPSON

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APPARATUS FOR REMOTE CONTROL

Filed June 26, 1931

2 Sheets-Sheet 1



INVENTOR
RUSSELL G. THOMPSON

BY *Harold E. Stonebraker*
ATTORNEY

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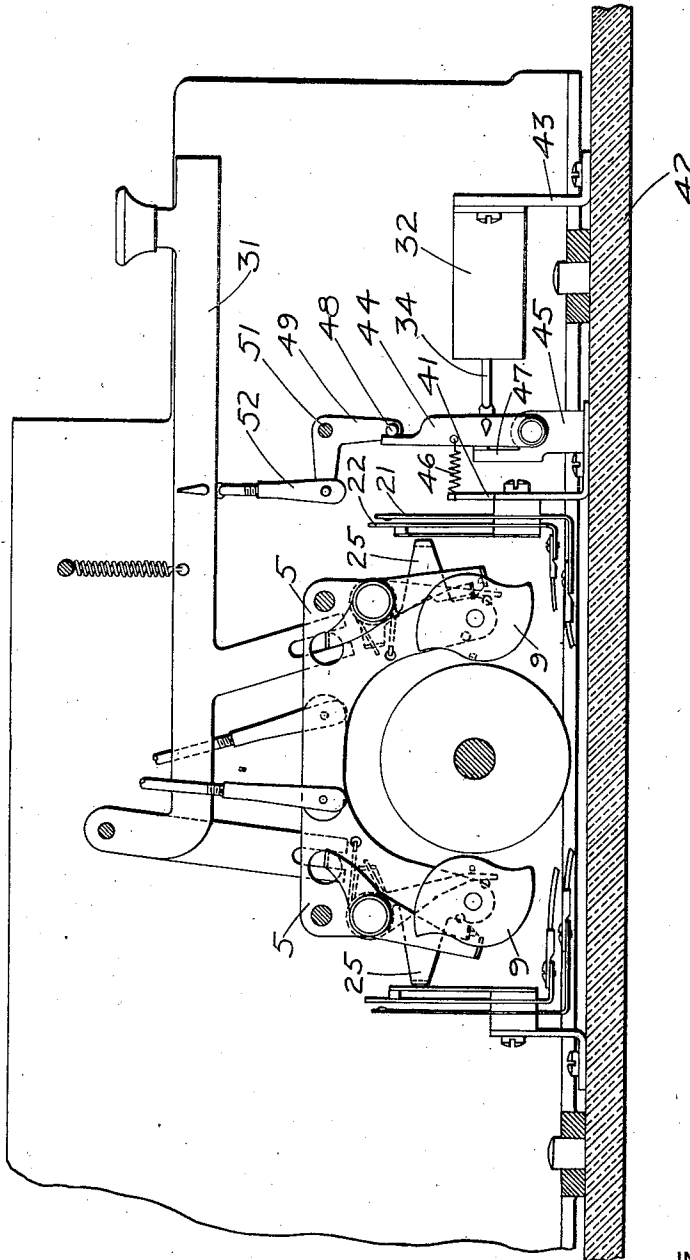


FIG. 3

INVENTOR
RUSSELL G. THOMPSON

BY *Harold E. Stonebraker*
ATTORNEY

UNITED STATES PATENT OFFICE

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APPARATUS FOR REMOTE CONTROL

Russell G. Thompson, Rochester, N. Y., assignor
to Electromatic Typewriters, Inc. Rochester,
N. Y., a corporation of New York

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4 Claims. (Cl. 197—5)

This invention relates to improvements in apparatus for selective remote control, and its principal object is the provision of simple and inexpensive means for selective remote control for the purpose of transmitting intelligence to a distant point.

Another object of the invention is the provision of means controlled by keys for closing electric switches adapted to control a signal or the operation of a typewriting machine at a remote or distant point.

Still another object of the invention is the provision of a typewriter or other recording device with means for controlling the operation of a second typewriter or other recording device at a distant or remote point to reproduce simultaneously matter written or recorded by the transmitting machine.

More specifically, the object of the invention is the provision of means operated by the key controlled power actuated means of a power driven typewriting machine for controlling the operation of an electrically controlled device at a remote or distant point.

Another object of the invention is the provision of means for assembling the transmitting and receiving electrical devices as a unit which can readily be connected with a power driven typewriting machine.

Still another object of the invention is the provision of both transmitting and receiving means in a single typewriting machine and a master switch for rendering one of said means inoperative when the other is operative.

To these and other ends, the invention consists in the construction and arrangement of parts that will appear from the following description when read in conjunction with the accompanying drawings, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a transverse vertical section of a typewriting machine illustrating one possible embodiment of the invention;

Fig. 2 is a diagram of the electric circuits, and

Fig. 3 is a fragmentary sectional view showing how the transmitting and receiving devices may be assembled as a unit for cooperation with a power driven typewriting machine.

Like reference numerals refer to the same part in all the figures of the drawings. The invention is illustrated applied to a power driven typewriting machine of well known type; however, it will be understood that it may be readily applied to other key operated or key controlled de-

vices. Said machine comprises a key lever 31 having a key 2 by which it may be manually operated. It is pivoted on the common pivot rod 3 and resiliently maintained in normal elevated position by means of a spring 4. Although only one key lever 31 and associated devices are illustrated in the drawings for convenience of illustration, it will be understood that the usual or any desired number of key levers may be employed.

A bell crank 5 is mounted on a common pivot rod 6. One arm of the bell crank 5 is operatively connected with the usual type bar 7 by means of the link 8, and a cam 9 is revolvably mounted on its other arm adjacent the surface of a power driven roller 11. A spring-pressed arm 12 tends to turn the cam 9 into engagement with the power driven roller to be driven thereby, but the cam is normally retained against such turning movement by a lug 13 on the cam which engages a stop 14 on a key controlled lever 15 pivoted on the bell crank 5. The lever 15 has an offset lug or projection 16 at its upper end which engages in a slot 17 in the end of an arm 18 projecting from the key lever. The bell crank 5 and cam 9 constitute in effect a power unit cooperating with the power driven roller.

When the key is depressed, it swings the lever 15 and moves its stop 14 out of the path of the lug 13 and releases the cam for movement by the arm 12 into engagement with the power driven roller to be rotated thereby. Rotation of the cam swings the bell crank 5 which, through the link 8, swings the type bar 7 into engagement with the platen 19 in a well known manner. The parts thus far described are or may be of any well known construction.

Means controlled by the keys 2 are provided for alternately making and breaking an electric circuit which may be employed for controlling a receiving device, such as a signal, or a recorder at some distant or remote point, which recorder may be of any desired type or another typewriting machine which may be similar to the transmitting machine. In the illustrated embodiment, a switch is provided comprising a pair of resilient contact arms 21 and 22 insulated from each other and from a bar 23 extending across the machine and on which they are mounted. It will be understood that a plurality of switches are provided, one for each of the bell cranks 5. The arm 22 is insulated from and is provided with means which engage a resilient arm 24 also mounted on the bar 23. The arms 21, 22 and 24 incline upwardly and rearwardly from the bar 23 and the free end of the arm 24 is ar-

ranged in the path of a projection or arm 25 on the bell crank lever 5. The arms 21 and 22 have the conductors 26 and 27 connected therewith and comprising an electric circuit leading to a receiving device. By this arrangement, the contact arms 21 and 22 are normally out of engagement and the circuit is open or broken. When, however, a key lever is depressed, the bell crank 5 is actuated to operate the type bar to print, and moves toward the arm 24 which it engages, and moves it and with it the arm 22 into engagement or contact with the arm 21 to close the circuit. The arm 21 may be provided with a contact point, as usual, if desired. It will be noted that the bell cranks 5 are operative to control the contacts, whether or not they be operatively connected with type bars. When the bell crank returns to normal position, the arms 22 and 24 return to normal position by reason of their resiliency, and the arm 22 moves out of engagement with the arm 21 and breaks the circuit. When operated by power means, such as the roller 11 and the cooperating cam, the make and break follow each other in rapid succession, thus eliminating "sparking" at the contacts.

In the drawings is shown an embodiment of a single machine which is convertible from a transmitting machine to a receiving machine; however, it will be understood that separate machines may be employed for transmitting and receiving. Said machine comprises means for actuating the key levers 31 by the circuit controlled by the contact arms 21 and 22 of a transmitting machine. Said means comprises a solenoid 32 mounted on a bar or fixed support 33 and operatively connected with the key lever 31 by means of a link 34, the conductors 26 and 27 being connected with the terminals of the solenoid. Convenient to the key board is a master switch 35 controlled by the hand piece 36. When the hand piece is in one position, the circuits are closed through the solenoids and broken through the switches 21, 22, and the machine is operative as a receiver. When the hand piece is moved to another position, the circuits through the solenoids are broken and the circuits through the contacts 21 and 22 are closed so that the machine is inoperative as a receiver but is operative as a transmitter.

In Fig. 2 is shown a diagram illustrating how two machines such as that shown in Fig. 1 can be connected to operate alternately as transmitting and receiving machines, and in Fig. 3 is shown how the transmitting and receiving devices can be assembled as a unit and combined with a typewriting machine of the well known type. In this embodiment, the contact arms 21 and 22 are mounted on brackets 41 projecting upwardly from an insulating plate 42 adopted to be arranged beneath the machine. As well known, the power units comprising the bell cranks 5 are mounted on common pivot rods substantially parallel with each other and extending across the machine and carry cams 9 arranged on opposite sides of the power driven roller. The arms 25 on the bell cranks 5 project in alined rows in opposite directions from the roller, and to cooperate with said arms the contact arms 21 and 22 are also arranged in alined rows in the paths of movement of the arms 25 when the latter are actuated by the power driven roller. The solenoids 32 are also mounted on the insulating plate 42 by means of brackets 43 projecting therefrom, and are arranged in rows extending across and beneath the key board or the key levers 31. The links 34 operatively connect the solenoids with arms 44

pivotally mounted on brackets 45 secured to the insulating plate 42. Springs 46 connect the arms 44 with a part fixed to the plate 42 and resiliently retain them in normal position in engagement with stops 47 on the brackets 45. The arms 44 normally project upwardly from their brackets 45 and are arranged at their upper ends to engage laterally projecting studs 48 on bell crank levers 49 pivoted on a common pivot rod 51 secured in the frame of the machine. The bell crank levers 49 are operatively connected with the key levers 31 by means of the links 52. This arrangement is such that the typewriting machine can be lifted from the plate 42 since no parts are secured to both the plate and the machine. The stud 48 passes out of engagement with the arm 44 and the power units lift from between the contact arms. By such arrangement, the transmitting and receiving devices may be assembled as a unit on the plate 42 and readily attached to or detached from a machine with which it is intended to be used.

Although for convenience of illustration the invention is shown and described in combination with a power driven typewriting machine, it will be understood that it is not limited to such use and that this application is intended to cover such changes or modifications as come within the spirit of the invention or scope of the following claims.

I claim:

1. A combined apparatus for receiving and transmitting intelligence comprising a plurality of circuits for controlling a remote receiving device, transmitting switches, printing instrumentalities, power units for operating said printing instrumentalities, keys for selectively controlling the operation of said power units, means on the power units for operating the transmitting switches when the power units are actuated to operate the printing instrumentalities, an electric actuator associated with each of said keys, circuits for said actuators adapted to be controlled selectively by a remote device to operate the keys to control the operation of said printing instrumentalities, and a master switch for opening the first mentioned circuits when the second circuits are closed or opening the second circuits when the first mentioned circuits are closed.

2. The combination with a plurality of electric circuits controlling the operation of a remote receiving device, a plurality of normally open spring switches controlling said circuits, a power driven roller, a plurality of rotating cams adapted to be actuated by said power driven roller, means for selectively controlling the operation of said cams by said roller, and means actuated by the cams acting to impart a quick closing and opening movement to said switches whereby a complete operation of each switch is effected during each operation of the cam, each switch opening automatically when released by the cam controlled means and opening independently of control by the last named means.

3. An apparatus for transmitting intelligence comprising a plurality of circuits for controlling a remote receiving device, spring transmitting switches controlling said circuits, printing instrumentalities, power units for operating said printing instrumentalities, keys for selectively controlling the operation of said power units, and means on the power units for imparting a quick and complete operating movement to the transmitting switches when the power units are actuated to operate the printing instrumentalities, said

switches being automatically released by the power units independently of the keys.

5 4. An apparatus for transmitting intelligence comprising a plurality of circuits for controlling a remote receiving device, spring transmitting switches, printing instrumentalities, a power driven roller, a plurality of rotatable cams adapted to be actuated by said power driven roller for operating said printing instrumentalities, keys

for selectively controlling the operation of said cams, and means actuated by the cams for causing a quick and complete operation of a transmitting switch during each cycle of operation of a cam as its printing instrumentality is actuated, the transmitting switch being automatically released by the cam actuated means independently of the keys. 5

RUSSELL G. THOMPSON.