March 31, 1953 C. WITTENMYER 2,633,222

AUTOMATIC TYPEWRITER

Filed Nov. 16, 1950 2 SHEETS—SHEET 1

FIG.1.

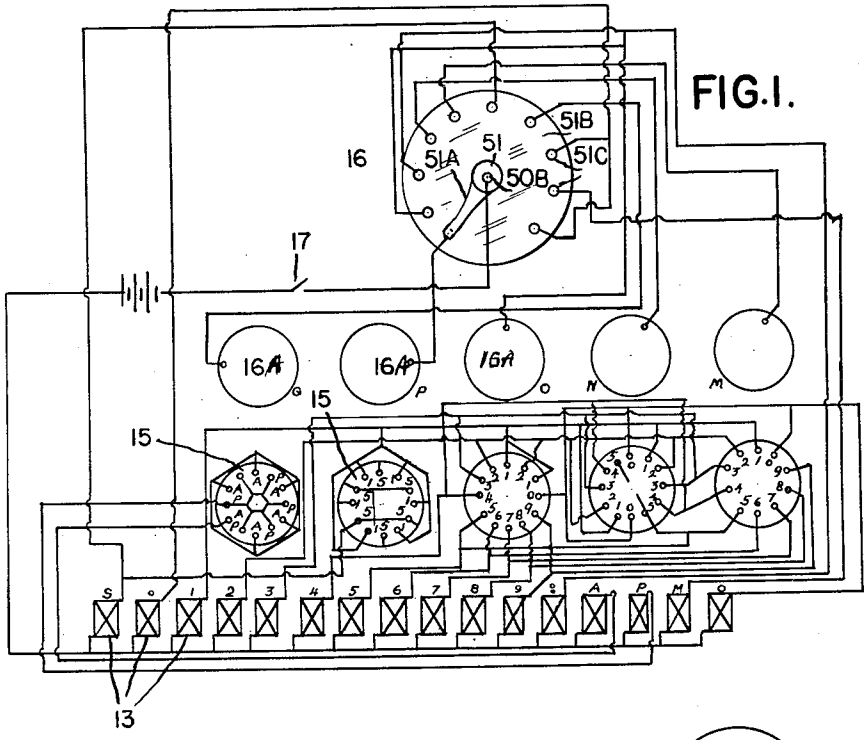
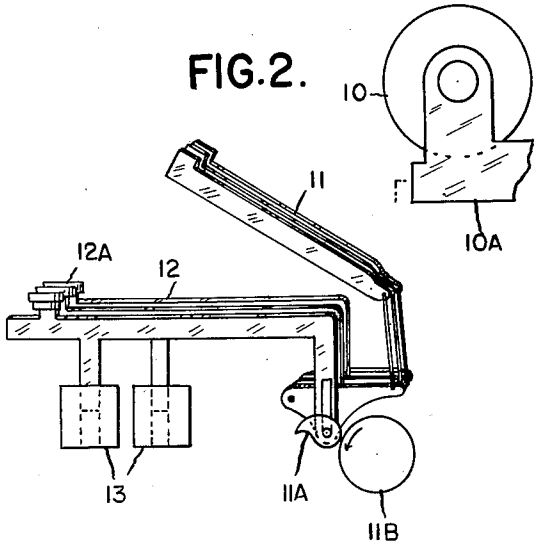


FIG.2.



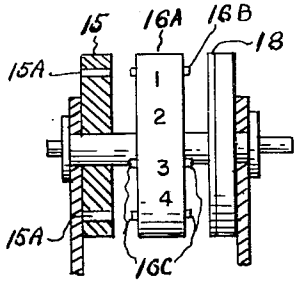


FIG.3.

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AUTOMATIC TYPEWRITER

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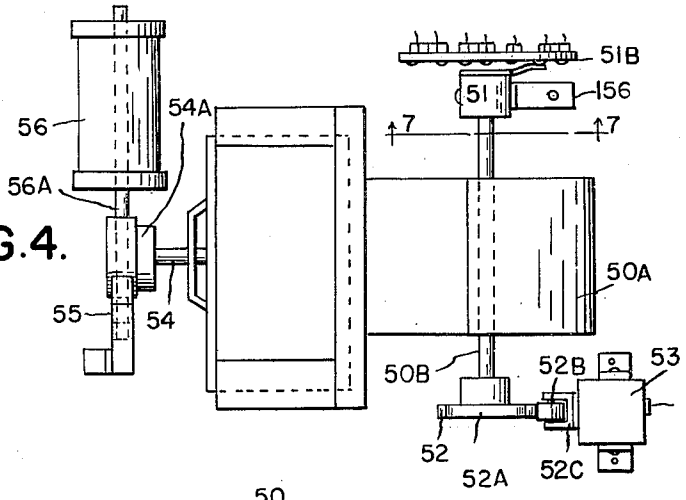


FIG.4.

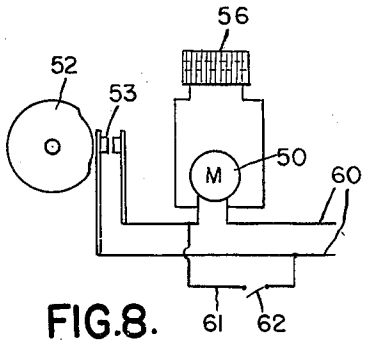


FIG.8.

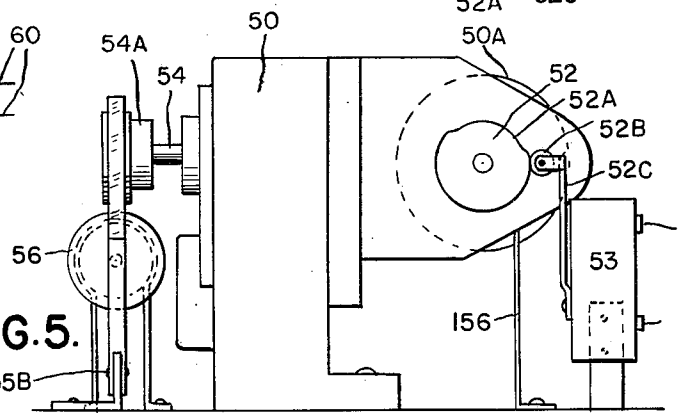


FIG.5.

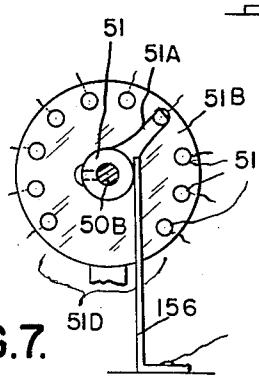


FIG.7.

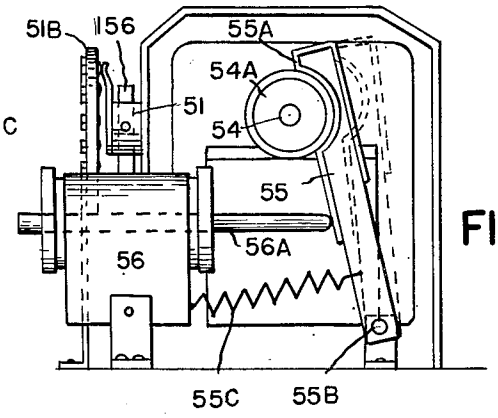


FIG.6.

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Patented Mar. 31, 1953 2,633,222

UNITED STATES PATENT OFFICE

2,633,222

AUTOMATIC TYPEWRITER

Carlos Wittenmyer, Lebanon, Ohio

Application November 16, 1950, Serial No. 195,951

2 Claims. (Cl. 197—19)

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The present invention relates to automatic typewriters and more specifically to means for causing the automatic typing of a previously set up sequence of characters.

In my previous U. S. Letters Patent No. 2,493,709, issued January 3, 1950, on Automatic Typewriter, there is described and claimed a typewriter in which some or all of the keys are arranged to be actuated by solenoids. It is further arranged so that potential circuits through certain of such solenoids are set up by the number wheels of a time clock or other timing or dating device or the number wheels of a calculating machine. Further, when such potential circuits are set up, they are completed in sequence by means of a sequence switch means actuated itself by the carriage of the machine.

The present invention relates to an improved means for the completion of such sequence of potential circuits.

Among the objects of the invention is a circuit completing means which is actuatable independently of the typewriter itself.

Another object is a multiple sequence switch, adapted to complete such potential circuits, which is actuated by its individual motor.

Still other objects will readily occur to those skilled in the art upon reference to the following description and the accompanying drawings in which

Fig. 1 is a diagrammatic view illustrating how the circuit completing means is connected to the number wheels of a dating, timing or calculating machine.

Fig. 2 is a diagrammatic view of several keys of an electrically operated typewriter with their type bars and actuating means.

Fig. 3 is a view showing a number wheel of a calculating machine including means for selecting a circuit therethrough.

Fig. 4 is a plan view of the switch unit.

Fig. 5 is a side elevation of the same as if from the bottom of Fig. 4.

Fig. 6 is an end elevation of the same as from the left of Fig. 5.

Fig. 7 is a section on line 7—7 of Fig. 4.

Fig. 8 is a wiring diagram of the unit.

In Fig. 2 there is illustrated a portion of the mechanism of an electric typewriter showing the platen at 10 on a suitable carriage 10A. Several typebars are shown at 11, and these are actuated by causing the cams 11A to contact a rotating roller 11B. The cams 11A are moved into contact with the roller 11B by the key bars 12 which may themselves be actuated manually from keys 12A or by solenoids 13, each of the key bars being provided with its individual solenoid.

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In Fig. 1 there is diagrammatically illustrated a number of the solenoids 13 of the automatic typewriter, a row of number wheels 15 of a suitable time indicator or clock, or of a calculating machine, the sequence switching means indicated as a whole at 16, and circuits therefor. As this figure indicates, the sequence switching means comprises a disc 51B, carrying a plurality of contact buttons 51C arranged circularly, and a contact finger 51A mounted upon a sleeve 51 carried by but insulated from a shaft 50B. When the shaft is rotated, the finger 51A will, of course, pass over and contact the buttons 51C in sequence.

The potential circuits will be set up by the relative rotation of wheels 16A and discs 15, each wheel 16A carrying a single line contact and each adjacent disc 15 carrying a plurality of contacts, the number corresponding to the number of corresponding characters on the wheel. Each of the plurality of contacts will be connected with the solenoid of the typewriter key corresponding thereto. When, through this relative rotation, the several potential circuits have been arranged or set up, the wheels 16A and discs 15 will be moved into contact and a switch such as is indicated at 17 will be closed. This immediately energizes finger 51A and as soon as it touches the first button 51C, energizes the corresponding solenoid 13 to actuate the first key in the sequence. In the meantime the shaft 50B has been started to rotate, so that all of the buttons 51C are energized in sequence and the several characters are printed by the type bars 11.

The means for rotating the shaft 50B is illustrated in Figs. 4 to 8 and is shown to be a suitable electric motor 50 provided with a gear reduction assembly 50A, the slow speed power take off shaft of which is shown at 50B as extending through the assembly 50A and projecting from both sides thereof. On one end of shaft 50B and insulated therefrom is a conducting sleeve 51 carrying a radially extending spring finger 51A, while opposite the shaft end and concentric therewith is an insulating disc 51B carrying near its edge a plurality of contacts 51C at short intervals, the disc and contacts being so supported and arranged that the spring finger 51A will pass over and touch each of the contacts 51C as the shaft 50B is rotated. The series of contacts 51C will be evenly spaced but insufficient in number to complete a circle, there being a gap 51D at the end of the series.

On the other end of the shaft 50B is mounted a cam 52 which is for the greater portion of its circumference circular but is provided with a short lower portion 52A which is arranged to be opposite the gap 51D between contacts 51C.

Adapted to coact with cam 52 is a roller 52B carried on an arm 52C forming part of and adapted to actuate a switch 53, and to close the switch when the roller 52B is on the high portion of the cam and to open the switch when the low portion reaches the roller 52B.

At the motor end of the assembly 50—50A, the motor shaft 54 projects sufficiently to provide a mounting for a small disc or wheel 54A adapted to cooperate with a brake 55, preferably provided with a suitable brake surface material 55A, pivoted at 55B and biased to braking position by means of a light spring 55C.

Mounted adjacent the brake 55 is a solenoid 56 provided with a suitable core 56A in alignment with the brake 55 in its swinging movement about pivot 55B. The core 56A will be bimetallic with a nonmagnetic extension projecting toward the brake 55, its magnetic portion at the other end being sufficiently short so that when the solenoid is not energized, the core will be in the position shown in full lines in Fig. 6. Energization of the solenoid will then cause the core to move toward the brake 55 and move the latter to the dotted line position and thereby free the disc 54A.

Current is led to the sleeve 51 by means of a flexible arm brush 156 mounted on the motor supporting base and connected to a suitable current source as described below.

In arranging the circuit for the motor 50, it should be noted that the finger 51A should make only a single revolution and then stop before reaching the first button 51C in the sequence.

Such a circuit or wiring diagram is shown in Fig. 8. In this diagram, the current supply lines are shown at 60 with one line connected to the one side of switch 53. From this it goes to one side of the motor 50, the other side of which is connected to the return line. A starting circuit is shown at 61 with a suitable switch 62.

When the switch 62 is closed, the motor 50 will begin to turn and since the cam 52 is carried by the takeoff shaft from the gear assembly 50A, the switch 53 is immediately closed and the motor continues to run after switch 62 is opened until the roller 52B again reaches the low part of the cam.

Further, the solenoid 56 is in parallel with the motor so that the brake 55 is released when the motor is energized and is allowed to act when the circuit to the motor and solenoid is broken.

In Fig. 3 there is shown a suitable arrangement for completing a potential circuit through a wheel 16A and its corresponding disc 15. In this figure the disc 15, made of suitable insulating material, will be mounted parallel to a wheel 16A and will be provided with through conductors 15A, there being as many of these as there are characters on wheel 16A. The wheel 16A will also be provided with a through conductor 16B and preferably a plurality of non-conducting spacing or balancing pegs 16C. Opposite the side face of wheel 16A away from disc 15 will be a second disc 18 of conducting material, suitably insulated and connected to a source of current.

The three elements, 15, 16A and 18 will be so mounted that discs 15 and 18 may be moved to contact the conductor 16B and pegs 16C. When this is done the current flow will of course be from the disc 18, through conductor 16B to that contact on disc 15 with which the conductor 16B happens to be in register and thereby set up the potential circuit corresponding to such contact.

The operation of the device seems quite obvious. When the operator wishes to cause the automatic typing of, for example, the date as indicated by a suitable automatic calendar or clock, or to cause the typing of a number set up on a calculating machine adapted for the purpose, the wheels 15, 16A and 18 are moved into contact and the switch 62 closed (Fig. 8). When this is done, the motor 50 starts and continues for a single revolution of the shaft 50B passing over and completing the circuits through each solenoid through which a potential circuit has been set up. These solenoids will then cause the typing in sequence of each of the characters.

It is of course obvious that as many contacts 51C as desired may be provided, the number depending on the number of characters desired to be printed.

I claim:

1. In combination with an electric typewriter, a register including rotatable indicia displaying wheels carrying electric circuit selecting means, and means for actuating in sequence the typewriter keys corresponding to selected circuits, said latter means consisting of a plurality of solenoids, each arranged to actuate when energized one of the keys of said typewriter, means including said circuit selecting means for potentially completing electrical circuits through selected ones of said solenoids, a plurality of stationary contacts included in said circuits, said contacts being mounted in a circular arrangement, a rotatable shaft mounted with its axis normal to said circle of stationary contacts and carrying a live contact adapted to coact with said stationary contacts to complete said potential circuits, means for rotating said shaft whereby to effect such completion in sequence, and means for limiting such rotation to a single revolution.

2. In combination with an electric typewriter, a register including rotatable indicia displaying wheels carrying electric circuit selecting means, and means for actuating in sequence the typewriter keys corresponding to selected circuits, said latter means consisting of a plurality of solenoids, each arranged to actuate when energized one of the keys of said typewriter, means including said circuit selecting means for potentially completing electrical circuits through selected ones of said solenoids, a plurality of stationary contacts included in said circuits, said contacts being mounted in a circular arrangement, a rotatable shaft mounted with its axis normal to said circle of stationary contacts and carrying a live contact adapted to coact with said stationary contacts to complete said potential circuits, means for rotating said shaft whereby to effect such completion in sequence, braking means for said shaft, means for releasing said braking means at the beginning of a revolution, and means for applying said braking means after the movable contact has passed over the last stationary contact.

CARLOS WITTENMYER.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,275,657	Bullock	Aug. 13, 1918
2,252,825	Witherell	Aug. 19, 1941

FOREIGN PATENTS

Number	Country	Date
353,428	Great Britain	of 1931