

Jan. 20, 1959

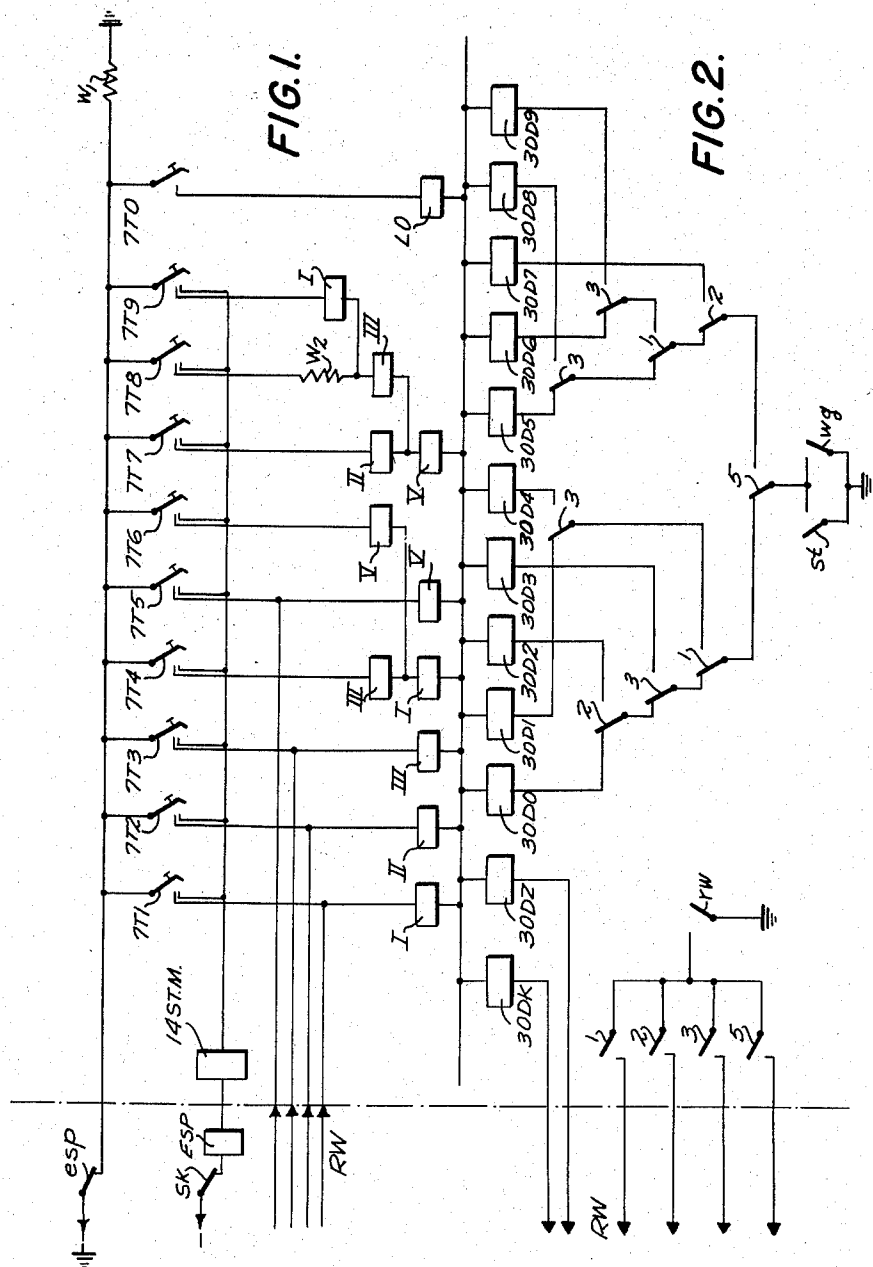
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2,869,703.

TYPE KEY BLOCKING MECHANISM

Filed June 7, 1954

3 Sheets-Sheet 1



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TYPE KEY BLOCKING MECHANISM

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3 Sheets-Sheet 2

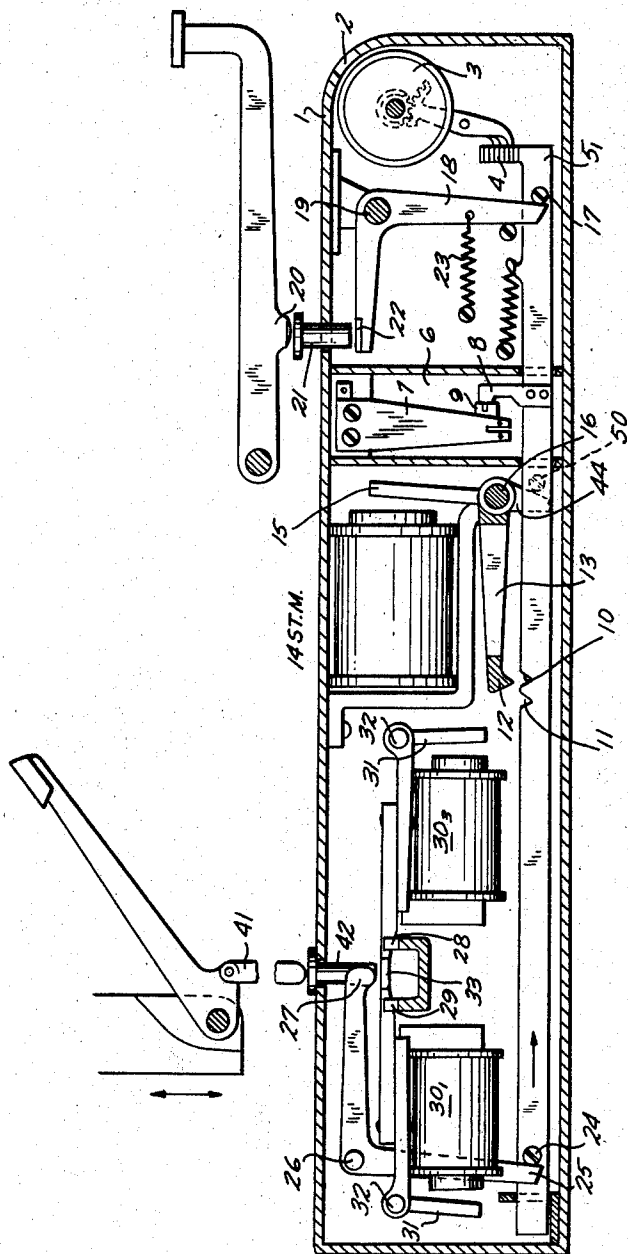


FIG. 3.

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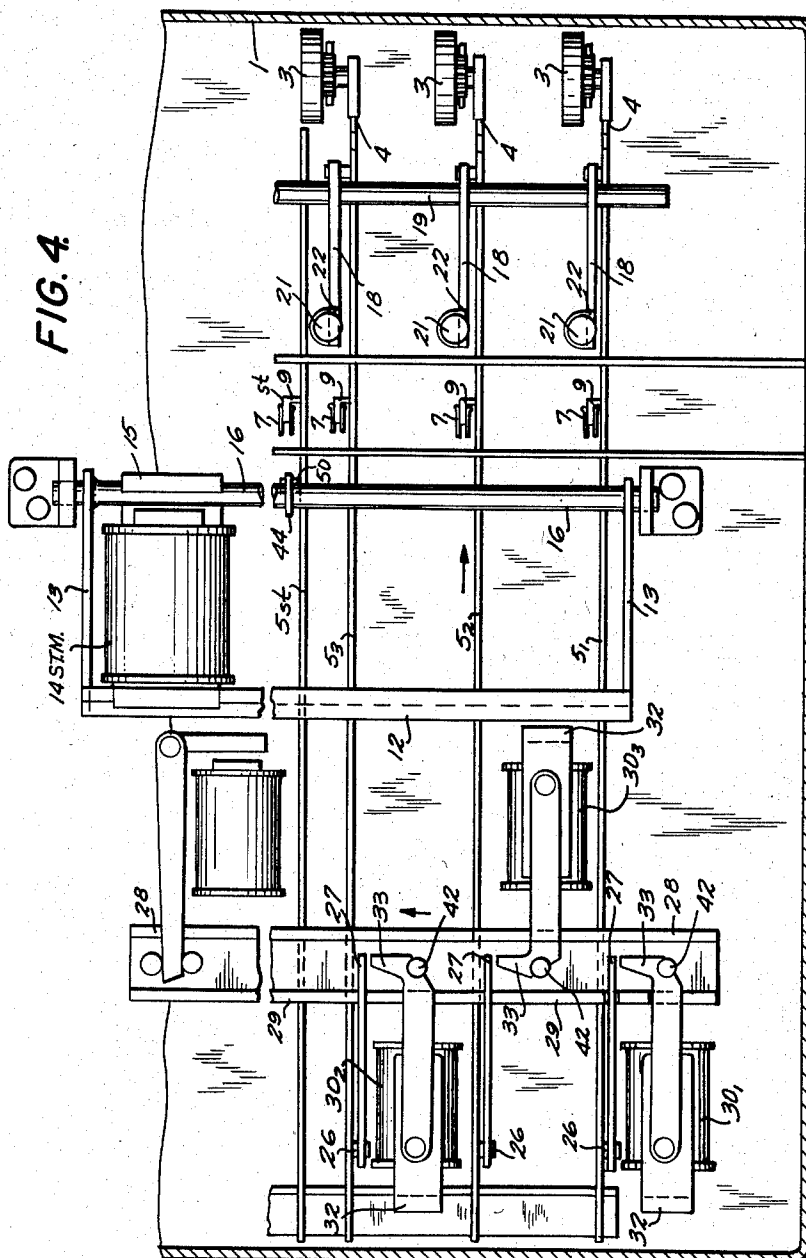
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TYPE KEY BLOCKING MECHANISM

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3 Sheets-Sheet 3.



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TYPE KEY BLOCKING MECHANISM

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17 Claims. (Cl. 197—13)

The present invention relates to business and calculating machines, and more particularly to a mechanism co-operating with a typewriter mechanism for actuating printing type means. Specifically, the present invention is concerned with a blocking mechanism preventing actuation of typewriter keys while an electric relay operation started by a typewriter key takes place.

It is known to provide typewriters with a mechanism arranged in a casing supporting the typewriter and serving for controlling electromagnetic actuation of transmitting relays which are operated by the typewriter keys. On the other hand, such mechanism actuates the printing types by means of suitable electromagnetic relays.

Similar to the construction known in the teletype art, sets of shiftable combination elements have been used for transmitting which represent a character or digit by the combination of shifted and non-shifted elements. The combination position of such elements is tested by suitable members during the reception of signals for actuating a printing type corresponding to a combination of the combination elements.

According to other known constructions, depressed keys corresponding to digits and certain characters, close contacts in the mechanism which take the place of the combination elements.

However, the known constructions have the disadvantage that rapid actuation of the keys might cause simultaneous actuation of several contacts.

It is one object of the present invention to overcome the disadvantages of the known constructions, and to provide, in combination with a business and calculating machine, a mechanism permitting return of a typewriter key after actuation of a signal transmitting contact, while the operation initiated by the key is being automatically completed.

It is another object of the present invention to provide a mechanism in which the actuation of keys is prevented, while an operation initiated by one key takes place.

It is yet another object of the present invention to shift by key pressure mechanical control members which actuate signal transmitting contacts, while simultaneously electromagnetic blocking means, actuated by the contacts, lock the shifted control member so that the electric operation initiated by a contact held closed by a locked control member, takes place while the key returns to its normal position.

It is a further object of the present invention to lock by the actuated electromagnetic locking means simultaneously all other control members associated with other keys so as to prevent actuation of another key while the electric operation initiated by one key takes place.

It is also an object of the present invention to connect the control members to indicating means so that a character or digit corresponding to the associated returned key is indicated while the electric operation initiated by the respective key takes place.

With these objects in view the present invention mainly consists in an electric mechanism cooperating with a

typewriter keyboard and being connected to a printing means and the calculating mechanism of bookkeeping machine and which comprises, in combination, a control member movable between an inoperative and an operative position; an operating member movable between inoperative position and operative position and moving in the latter position the control member from inoperative to operative position; electrical circuit means including co-operating contacts movable between open and closed positions and moved from one of the positions into the other by movement of the control member from inoperative into operative position; a locking member movable between an inoperative position and an operative position holding the control member in operative position; and electromagnetic actuating means for moving the locking member from inoperative into operative position. The electromagnetic actuating means are operated by the control member upon movement thereof from inoperative into operative position.

According to a preferred embodiment of the present invention the electrical mechanism comprises, in combination, a set of control members movable between an inoperative position and an operative position; a set of keys, each key being movable between a normal position and an actuated position, and tending to return to the normal position, each key being associated with one of the control members; connecting means connecting each of the keys to the control member associated therewith only during movement of the keys to the actuating position for moving the associated control member to the operative position of the same; a circuit means including a set of contacts movable between a closed position and an open position and being actuated by the control members in the operative position of the same, the contacts being adapted to operate electrical actuating means; electromagnetic actuating means connected in the circuit means and being energized whenever one of the contacts is in the actuated position; and locking means movable between a releasing position and a locking position, the locking means being operated by the electromagnetic actuating means to move to the locking position when the blocking relay is energized. The locking means lock in the locking position the set of control members in any one of the positions of the same so that the keys return to the normal position while the control member actuated thereby is locked in the operative position, and all other control members are locked in the inoperative position for preventing actuation of another key.

Preferably a set of electrical magnetic means for actuating printing type means are connected in the circuit for receiving signals representing characters or digits from the contacts or from an outside source such as an electric calculating mechanism.

In the event that the signals are received from an outer source, means are provided for obtaining selective operation of the printing type actuating means, or of the control members for actuating indicating means, or for simultaneously operating printing type actuating means and indicating means.

In the event that the electromagnetic locking means lock the control members, an actuation of the printing type means is prevented since the movable members of the electromagnetic printing type actuating means are blocked by the locked control members and cannot actuate the printing types.

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 spe-

cific embodiments when read in connection with the accompanying drawings, in which:

Fig. 1 is a diagram showing a circuit including the key actuated contacts and the electromagnetic locking arrangement;

Fig. 2 is a diagram showing the circuit of the electromagnetic means for actuating the printing types;

Fig. 3 is a sectional view illustrating a preferred embodiment of the type key locking mechanism and the printing type actuating means; and

Fig. 4 is a plan view of a detail of the mechanism illustrated in Fig. 3.

The diagram of Fig. 1 shows 12 key-actuated contacts 7T1-T0 for the ten digits. The pivot points of these contacts are connected to ground potential which can be disconnected by the electric relay contact *esp* operated by relay ESP. On the other hand the contacts 7 are connected to ground potential through a resistance W1 when contact *esp* is opened by relay ESP upon closing of a contact 7. In the event that the relays I-V are not disconnected at the end of the actuation by an electric relay contact *esp*, the resistance W1 limits the current.

Whenever one of the key actuated contacts 7T is actuated, electromagnetic actuating means 14 ST.M is energized.

As shown in Fig. 1, each contact T is connected to relays I, II, III, and V, respectively, as well as to the electromagnetic actuating means 14 ST.M. The relays I-V correspond to normal telephone relays and may each have up to four separate windings. Different windings I are, for instance, connected to the contacts T1 and T6.

The relays I-V are energized to represent the nine digits in a certain code. The following code is applied:

Digit:	Relay
1-----	I
2-----	II
3-----	III
4-----	III+I
5-----	V
6-----	V+I
7-----	V+II
8-----	V+III
9-----	V+III+I
0-----	No relay.

The actuation of a key actuated contact T4 will energize one winding of the relay I and one winding of the relay III, the actuation of the key contact T9 will energize a winding III and a winding I in series, and a winding V parallel thereto. The key contact T0 actuates a relay system which effects the writing of zeros, or the actuation of spacing means, if this is required. The resistance W2 is connected in parallel to the relay winding I which is in the circuit of key contact 7T9 and has the same resistance as winding I, so that the same current flows through winding III when contacts 7T8 or 7T9 are closed.

The relays I-V may be also actuated from a calculating mechanism, indicated RW, when the mechanism receives signals from an outside source. The four conductors shown on the left of Fig. 1 actuate the corresponding relays I-V.

The diagram of Fig. 2 illustrates the transformation of the coded signals. The arrangement is such that all contacts indicated 1 are actuated by one of the windings of the relay I if the same is energized. The moment of actuation is determined either by the contact *st* operated by electromagnetic actuating means 14 ST.M during key actuation, or by the contact *wg* when the signals are received from the calculating machine. The contact *st* is connected to ground potential by the electromagnetic actuating means 14 ST.M when one of the key contacts 7T is actuated. This effects operation of an electromagnetic means 30D. If none of the electromagnetic means

30D, which effect printing type actuation, is energized, a zero combination is present. However, in orders higher than unit order, or until another digit is printed, the space bar must be actuated instead of the zero type, and this combination is consequently connected to the electromagnetic means 30DZ instead of to the electromagnetic means 30DO. The connection to the calculating mechanism is again indicated on the left side of the Fig. 2, the reference character RW indicating the conductors leading to the calculating mechanism.

Fig. 3 illustrates the mechanical construction of the mechanism according to the present invention. A casing 1 is provided with a window 2 through which number wheels provided with indicia showing the digits may be inspected. Control members 5 extend through the casing and are provided at the ends thereof with upwardly projecting portions 4 of different lengths. The number wheels 3 are turned by a lever which is operated by the portions 4, so that the angle of turning is determined by the lengths of the respective portions 4.

The control members 5 are associated with the keys of the typewriter and with the contacts 7T. One control member 5₁ is provided for the contact 7T1, one control member 5₂ for the contact 7T2, and so forth. The control members extend through the entire casing passing into a dust-proof contact casing 6 in which the contacts 7T are arranged. An insulated arm 8 is secured to each of the control members 5 and engages with a conical piece 9 consisting of insulating material the corresponding contact 7T. Each contact 7T consists of two contact springs which tend to close, and are held open by the piece 9 when the corresponding control member 5 is in inoperative position shown in Fig. 3.

Each key end portion 20 cooperates with a movable member 21 for shifting a lever 18 which is pivoted on the casing 1 by means of a pin 19 and is urged to turn in a clockwise direction by the spring 23 until lever 18 engages a stop. When a key 20 is actuated, the member 21 is shifted and engages the bent ear 22 of the lever 18, turning the lever 18 in counterclockwise direction so that the respective control member 5 is shifted to the right in Fig. 3 since the lever 18 engages an abutment 17 on the associated control member 5. The projecting portion 4 of a control member 5 which is shifted by key actuation to its operative position effects through a lever the turning of the associated number wheel 3.

The electromagnetic actuating means 14 ST.M is energized whenever the key 20 is depressed, and attracts the armature lever 15 whereby the arm 13 of a locking member 12 is turned and passes into one of the notches 10 and 11 which are provided in all control members 5. The spacing of the notches 10 and 11 corresponds to the distance through which control members 5 are shifted by the connecting means 21, 18 connecting the keys to the control members. Consequently, the locking member 12 will engage the notches 10 of all control members which are in inoperative position, and the notch 11 of the control member which is in operative position shifted to the right by an actuated key 20. The locking member 12 is a bar extending transverse to the longitudinal extension of the control members 5 which are spaced from each other about 20 mm.

The notches have a triangular shape, and the locking member 12 has a corresponding wedge-shaped cross section so that the locking member 12 not only locks the control members 5, but also exactly determines the position of the control members 5. If, for instance, one of the control members 5 has not moved all the way to the operative position thereof, the wedge face of the locking member 12 will engage only one edge of the notch 11 and exert longitudinally acting pressure whereby the position of the respective control member 5 will be adjusted until both wedge faces of the locking member 12 engage the two edges of the triangular notch 11. The same operation will take place with respect to notches 10

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so that the position of the control members 5 is exactly determined by the locking member 12.

Referring now again to Fig. 1, it will be understood that the key actuation simultaneously effects energizing of the associated relays I—V and of the electromagnetic actuating means 14 ST.M. However, it is also possible to energize by contacts 7 only the relays I—V, while the electromagnetic actuating means 14 ST.M is energized by a contact which is closed by the armature 15. In this event, shifting of a control member 5 by a lever 18 effects movement of the armature 15 toward the electromagnetic actuating means 14 ST.M so that the arm 13 pivots and closes a contact through which the electromagnetic actuating means 14 ST.M is energized so that the armature 15 is fully attracted, and the locking member 12 is moved to its operative locking position.

A projection 44 is connected to the movable armature 13, 15 of the relay 14 and engages an abutment 50 on a control member 5st for actuating by means of a projection 8 the starting contact st, see Figs. 1 and 4.

The locking member 12 locks an actuated shifted control member 5 in operative position by engaging the notch 11, and all other control members in inoperative position by engaging the notches 10. Consequently, the keys 20 associated with control members locked in inoperative position, cannot be operated since the levers 18 engage the abutments 17 of the locked control members and cannot turn whereby depression of the associated keys 20 is prevented.

On the other hand, the key 20, whose depression effected shifting of the associated control member to its operative position, is free to return to its normal position, while the control member 5 actuated thereby remains locked in operative position in which the associated contact 7T is closed and energizes the respective relays I—V associated therewith.

An operation started by a depressed key takes about 70 to 150 ms. It is necessary to make the time period during which the operation takes place independent of the time of depression of the key since otherwise prolonged depression of the key would result in repeated actuations of the same printing type. Consequently, the machine must produce an end signal which releases through a contact sk, see Fig. 1, the electromagnetic actuating means 14 ST.M and the locking means connected thereto. If, on the other hand, the contact esp is provided, which not only interrupts depending on the column position, but also at the end of each operation, the contact esp can substitute for contact sk and disconnect together with electromagnetic actuating means 14 ST.M also the digit relays I—V. The start of the operation is determined by contact st, see Fig. 2, which is operated by the actuating means 14 ST.M.

The left end of each control member 5 is provided with an abutment 24 engaging coupling means such as a knee lever 25 which is mounted on the casing 1 at 26. The windings 30, which are identical with the electromagnetic means 30DK to 30D9 in Fig. 2, attract when energized, movable members 31 which are pivotally mounted in the casing at 32. The printing type actuating means 41 engages a connecting piece 42 whose lower end engages a transverse projection 33 on the associated movable member 31. The transverse width of the machine is sufficient for about twelve electromagnetic means 30, and consequently the electromagnetic means 30 are arranged in two rows. The transverse projections 33 are arranged in a row and aligned with each other. Each projection 33 is located underneath one end portion 27 of a lever 25 and one intermediate member 42 of a printing type actuating means.

The horizontal arms of the levers 31 are articulated and not only pivotable about pins 32 but also shiftable in transverse direction, so that the position of the transverse projections 33, with respect to the members 27 and 42, can be changed. A transversely extending elon-

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gated shifting member has recessed side walls 28, 29 and serves for shifting the horizontal arms of the movable members 31 in transverse direction. Each horizontal arm is located in a recess of one of the walls 28, 29 so that the levers 31 can pivot about the pivot pins 32 regardless of the position into which they are shifted by the operation of the shifting member 28, 29. In accordance with the position of the shifting member 28, 29, the transverse projection 33 of the movable member 31 will be located only underneath the type actuating means 42, 41, or only underneath the end portion 27 of the lever 25, or underneath both members 27 and 42. When the type actuating relays 30 are energized from an outside source, such as the calculating mechanism of the machine, it is possible to obtain by shifting of member 28, 29 either only shifting of the control member 5 through a coupling means 25 to its operative position for indicating the actuated relay, or to actuate the associated type actuating means 42, 41, or to perform both operations. The movable members 31 are shifted by the shifting member 28, 29 when the same is shifted by electromagnet means, as best seen in Fig. 4. This electromagnet means is actuated by contacts on the carriage of the typewriter, or by key-actuated contacts.

The mechanism operates as follows:

When a key 20 is depressed, the member 21 is moved downwardly and shifts the associated control member 5 from its inoperative to its operative position by pivoting the connecting lever means 17, 18. During such movement, the spring 23 is tensioned so that the lever 18 returns to its initial position when the key returns to its normal position. The control member 5 shifted by lever 18 pulls the projection 8, 9 out of the associated contacts 7, which are identical with the contacts 7Ti—7Tz and KH, so that the contacts connected to the respective windings I—V energize these relays. If, for instance, the key representing the digit 4 is actuated, and the corresponding contact 7T4 closes, the relay windings I and III, and the electromagnetic actuating means 14 ST.M are energized. The contact st is actuated by the armature 15, 13 of the electromagnetic actuating means 14 ST.M through projection 44, while at the same time locking member 12 engages the notch 11 in the shifted control member 54 and forces the same into an exactly defined operative position. In this position, the control member 54 is held, while the key 20 and the lever 18 return to their normal positions. At the same time the locking member 12 engages the notches 10 of all other control members so that the respective abutments 17 prevent turning of the other levers 18 and depression of the other keys 20.

The operation started by the depressed key continues automatically as long as the control member is held in operative position. Since the windings I and III which were energized by the closed contacts 7T4, effect closing of the switches 1, 3 shown in Fig. 2, the electromagnet means 30D4 is energized and the type actuating means 41 is actuated through the movable lever 31 and its transverse projection 33.

When the indicating means are connected, the lever of the indicating means 3 swings against the projection 4, and since the projection of the control member 54 corresponds to exactly four teeth, the digit 4 appears in front of the window 2.

After this operation has been completed, either by the typewriter, or by a timing device, or by a contact actuated from the calculating mechanism, the contact esp is opened, or the contact sk switched. Both contacts must not return to their previous position before the key 20 is released by the operator, but by the disconnection of the electromagnetic actuating means 14 ST.M, the locking at 12 is released whereby also the electromagnet means 30D4, and the relays I and III are released. When the key 20 moves to its normal position, and the operation is completed, the contact sk moves to its normal position, and the next key actuation can begin.

It is therefore apparent that the mechanism according to the present invention permits control of the transmission and receiving operations which are required in a bookkeeping machine cooperating with a typewriter mechanism in such manner that control members obtain blocking of the keys during automatic operations, determine the periods of the transmitting and receiving operations, and effect electrical selection of the type levers which are to be actuated. The control members offer possibilities for simultaneously actuating the transmission contacts, the indicating means, and for blocking of the keys, and may be operated from the receiving end as well as from the transmitting end of the machine.

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 business and calculating machines operated by a typewriter mechanism differing from the types described above.

While the invention has been illustrated and described as embodied in a blocking mechanism for blocking the keys of a typewriter keyboard while automatic operations take place in an electrical type actuating mechanism, 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 an electrical mechanism of the character described, in combination, a control member movable between an inoperative and an operative position; an operating key movable between inoperative position and operative position and tending to assume said inoperative position; connecting means connecting said key to said control member only during movement of said key from said inoperative to said operative position for moving said control member to said operative position thereof; electrical circuit means including co-operating contacts movable between open and closed positions and moved from one of said positions into the other by movement of said control member from inoperative into operative position; a locking member movable between an inoperative position and an operative position holding said control member in operative position; and electromagnetic actuating means for moving said locking member from inoperative into operative position, said electromagnetic actuating means being operated by said control member upon movement thereof from inoperative into operative position so that said locking member holds said control member in said operative position while the associated key returns to its inoperative position.

2. In an electric typewriter mechanism, in combination, a set of control members movable between an inoperative position and an operative position; a set of keys, each key being movable between a normal position and an actuated position, and tending to return to said normal position, each key being associated with one of said control members; connecting means connecting each of said keys to the control member associated therewith only during movement of said keys to said actuated position for moving the associated control member to said operative position of the same; a circuit means including a set of contacts movable between a closed position and an open position and being actuated by said control members in said operative position of the same, said contacts being adapted to operate electrical actuating means; electromag-

netic actuating means connected in said circuit means and being energized whenever one of said contacts is in said actuated position; and locking means movable between a releasing position and a locking position, said locking means being operated by said electromagnetic actuating means to move to said locking position when said electromagnetic actuating means is energized, said locking means locking in said locking position said set of control members in any one of said positions of the same so that said keys return to said normal position while the control member actuated thereby is locked in said operative position, and all other control members are locked in said inoperative position for preventing actuation of another key.

3. A mechanism as claimed in claim 2 wherein said electrical actuating means are associated with a character or digit, and including indicating means movable between an inoperative position and an indicating position, said indicating means being connected to said control members and being moved to said indicating position when the associated control member moves to said operative position thereof.

4. In an electrical mechanism of the character described, in combination, a control member movable between an inoperative and an operative position; an operating key movable between inoperative position and operative position and moving in said latter position said control member from inoperative to operative position; electrical circuit means including co-operating contacts movable between open and closed positions and moved from one of said positions into the other by movement of said control member from inoperative into operative position; a locking member movable between an inoperative position and an operative position holding said control member in operative position; electromagnetic actuating means for moving said locking member from inoperative into operative position, said electromagnetic actuating means being operated by said control member upon movement thereof from inoperative into operative position; and indicating means connected to said control member and indicating the operative position of the same.

5. A mechanism as claimed in claim 4 and including a set of electromagnetic means, each electromagnetic means adapted to receive signals representing a character or digit and including a movable member movable to an actuating position when said electromagnetic means is energized; a set of lever means movable between inoperative and operative positions, each lever means connecting one of said movable members to one of said control members so that the respective control member moves to said operative position thereof when said movable member moves to said actuating position; and a printing type actuating means associated with each of said movable members and being operated when the same moves to said actuating position.

6. A mechanism as claimed in claim 4 and including a set of electromagnetic means, each electromagnetic means adapted to receive signals representing a character or digit and including a movable member movable to an actuating position in one direction, when said electromagnetic means is energized, said movable members being also movable in a direction transverse to said one direction between a first position and a second position; a set of coupling means movable between inoperative and operative positions, each coupling means being engaged by one of said movable members in said first position of the same for being moved to said operative position, each coupling means being released by said movable member in said second position of the same, each of said coupling means being connected to one of said control members for moving the same to said operative position when said movable member moves to said actuating position; a set of printing type actuating means, each printing type actuating means engaging one of said movable members in said second position of the same and being operated when the movable member associated

therewith and being in said second position moves to said actuating position; and means for moving said movable members in said transverse direction between said positions.

7. A mechanism as claimed in claim 6 wherein each of said movable members is movable in said transverse direction to a third intermediate position engaging simultaneously the coupling means associated therewith and the printing type actuating means associated therewith and operates the same and thereby the associated control member when moving to said actuating position thereof.

8. In an electric typewriter mechanism, in combination, a set of control members movable between an inoperative position and an operative position; a set of keys, each key being movable between a normal position and an actuated position, and tending to return to said normal position, each key being associated with one of said control members; connecting means connecting each of said keys to the control member associated therewith only during movement of said keys to said actuated position for moving the associated control member to said operative position of the same; a circuit means including a set of contacts movable between a closed position and an open position and being actuated by said control members in said operative position of the same, said contacts being adapted to operate electrical actuating means; a electromagnetic actuating means connected in said circuit means and being energized whenever one of said contacts is in said actuated position; and locking means movable between a releasing position and a locking position, said locking means being operated by said electromagnetic actuating means to move to said locking position when said electromagnetic actuating means is energized, said locking means engaging in said locking position thereof said control members and urging the same into one of said positions of the same so that the positions of said control members are exactly defined by said locking means, said locking means locking said set of control members in said positions of the same so that said keys return to said normal position while the control member actuated thereby is locked in said operative position, and all other control members are locked in said inoperative position for preventing actuation of another key.

9. In an electric typewriter mechanism, in combination, a set of control members movable between an inoperative position and an operative position, each of said control members being elongated and formed with two longitudinally spaced notches; a set of keys, each key being movable between a normal position and an actuated position, and tending to return to said normal position, each key being associated with one of said control members; connecting means connecting each of said keys to the control member associated therewith only during movement of said keys to said actuated position for moving the associated control member to said operative position of the same; a circuit means including a set of contacts movable between a closed position and an open position and being actuated by said control members in said operative position of the same, said contacts being adapted to operate electrical actuating means; electromagnetic actuating means connected in said circuit means and being energized whenever one of said contacts is in said actuated position; locking means movable between a releasing position and a locking position, said locking means being operated by said electromagnetic actuating means to move to said locking position when said electromagnetic actuating means is energized, said locking means including a locking bar extending transverse to the said control members and projecting in said locking position into one of said notches of the same and locking said control members in any one of said positions of the same so that said keys return to said normal position while the control member actuated thereby is locked in said operative position, and all other control members are locked

in said inoperative position for preventing actuation of another key.

10. In an electric typewriter mechanism, in combination, a set of control members movable between an inoperative position and an operative position; a set of keys, each key being movable between a normal position and an actuated position, and tending to return to said normal position, each key being associated with one of said control members; connecting means connecting each of said keys to the control member associated therewith only during movement of said keys to said actuated position for moving the associated control member to said operative position of the same; a circuit means including a set of contacts movable between a closed position and an open position and being actuated by said control members in said operative position of the same, said contacts being adapted to operate electrical actuating means; electromagnetic actuating means connected in said circuit means and being energized whenever one of said contacts is in said actuated position; locking means movable between a releasing position and a locking position, said locking means being operated by said electromagnetic actuating means to move to said locking position when said electromagnetic actuating means is energized, said locking means locking in said locking position said set of control members in any one of said positions of the same so that said keys return to said normal position while the control member actuated thereby is locked in said operative position, and all other control members are locked in said inoperative position for preventing actuation of another key; a set of electromagnetic means connected in said circuit means and adapted to receive signals from said contacts representing characters or digits, each of said electromagnetic means including a movable member movable between an inoperative and an actuating position; a set of levers, each lever engaging at one end thereof one of said movable members, and at the other end thereof one of said control members so as to be blocked when said control members are locked by said locking means; and a set of printing type actuating means, each printing type actuating means engaging one of said movable members and being operated when the same moves to said actuating position.

11. In an electric typewriter mechanism, in combination, a set of control members movable between an inoperative position and an operative position; a set of keys, each key being movable between a normal position and an actuated position, and tending to return to said normal position, each key being associated with one of said control members; a set of pivotally mounted connecting levers, each connecting lever engaging at one end thereof one of said control members, and having the other end thereof located opposite one of said keys so that said keys tend to move said control members to said operative position during movement from said normal position to said actuated position thereof; a circuit means including a set of contacts movable between a closed position and an open position and being actuated by said control members in said operative position of the same, said contacts being adapted to operate electrical actuating means; electromagnetic actuating means connected in said circuit means and being energized whenever one of said contacts is in said actuated position; locking means movable between a releasing position and a locking position, said locking means being operated by said electromagnetic actuating means to move to said locking position when said electromagnetic actuating means is energized, said locking means locking in said locking position said set of control members in any one of said positions of the same so that said keys return to said normal position while the control member actuated thereby is locked in said operative position, and all other control members are locked in said inoperative position for preventing actuation of another key; a set of electromagnetic means connected in said circuit means and adapted to receive sig-

nals from said contacts representing characters or digits, each of said electromagnetic means including a movable member movable between an inoperative and an actuating position; a set of lever, each lever engaging at one end thereof one of said movable members, and at the other end thereof one of said control members so as to be blocked when said control members are locked by said locking means; and a set of printing type actuating means, each printing type actuating means engaging one of said movable members and being operated when the same moves to said actuating position.

12. In a mechanism of the character described, in combination, a set of control mechanisms, each control mechanism including a control member movable between an inoperative position and an operative position, an operating member movable between an inoperative position and an operative position and tending to assume said inoperative position; connecting means connecting said operating member to said control member only during movement of said operating member from said inoperative to said operative position for moving said control member from said inoperative position to said operative position, and electric circuit means including cooperating contacts movable between open and closed positions and moved from one of said positions into the other by movement of said control member from inoperative into operative position; locking means movable between an inoperative position and an operative position for holding each of said control members in that position in which it is at the time of operation of said locking means, said locking means urging said control members into one of said positions of the same so that said positions are exactly defined by said locking means; and electromagnetic actuating means for moving said locking means from inoperative into operative position, said electromagnetic actuating means being operated upon movement of any one of said control members from inoperative into operative position thereof so that said locking member locks said control members in exactly defined positions while an actuated operating member returns to its inoperative position.

13. In an electrical mechanism of the character described, in combination, a control member movable between an inoperative and an operative position; an operating member movable between inoperative position and operative position and tending to assume said inoperative position; connecting means connecting said operating member to said control member only during movement of said operating member from said inoperative to said operative position for moving said control member to said operative position thereof; electrical circuit means including co-operating contacts movable between open and closed positions and moved from one of said positions into the other by movement of said control member from inoperative into operative position; a locking member movable between an inoperative position and an operative position holding said control member in operative position; and electromagnetic actuating means for moving said locking member from inoperative into operative position, said electromagnetic actuating means being connected in said circuit means and being operated when at least one of said contacts is actuated by said control member upon movement thereof from inoperative into operative position so that said locking member holds said control member in said operative position while the associated operating member returns to its inoperative position.

14. In an electrical mechanism of the character described, in combination, a control member movable between an inoperative and an operative position; an operating member movable between inoperative position and operative position and moving in said latter position said control member from inoperative to operative position; electrical circuit means including co-operating contacts movable between open and closed positions and moved from one of said positions into the other by movement of said control member from inoperative into operative position; a locking member movable between an inoperative position and an operative position holding said control member in operative position; electromagnetic actuating means for moving said locking member from inoperative into operative position, said electromagnetic actuating means being connected in said circuit means and being operated when at least one of said contacts is actuated by said control member upon movement thereof from inoperative position into operative position; and indicating means connected to said control member and indicating the operative position of the same.

15. In an electrical mechanism of the character described, in combination, a control member movable between an inoperative and an operative position; electromagnetic means adapted to receive from an outside source energizing signals representing characters or digits; at least one movable operating member operated by said electromagnetic means between inoperative position and operative position, said movable operating member moving to said operative position when said electromagnetic means is energized, and shifting during movement to said operative position said control member from inoperative to operative position; electrical circuit means including co-operating contacts movable between open and closed positions and moved from one of said positions into the other by movement of said control member from inoperative into operative position; a locking member movable between an inoperative position and an operative position holding said control member in operative position; electromagnetic actuating means for moving said locking member from inoperative into operative position, said electromagnetic actuating means being connected in said circuit means and being operated when at least one of said contacts is actuated by said control member upon movement thereof from inoperative into operative position; and indicating means connected to said control member and indicating the operative position of the same.

16. A mechanism as claimed in claim 15 and including type actuating means operated by said movable member of said electromagnetic means for actuating a printing type representing a character or digit while the associated control member moves to said operative position thereof.

17. A mechanism as set forth in claim 15 and including a dust-proof casing housing said electromagnetic means, said contacts, and said electromagnetic actuating means.

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