J. F. ROBB.

ACCOUNTING MACHINE CONTROL MEANS.

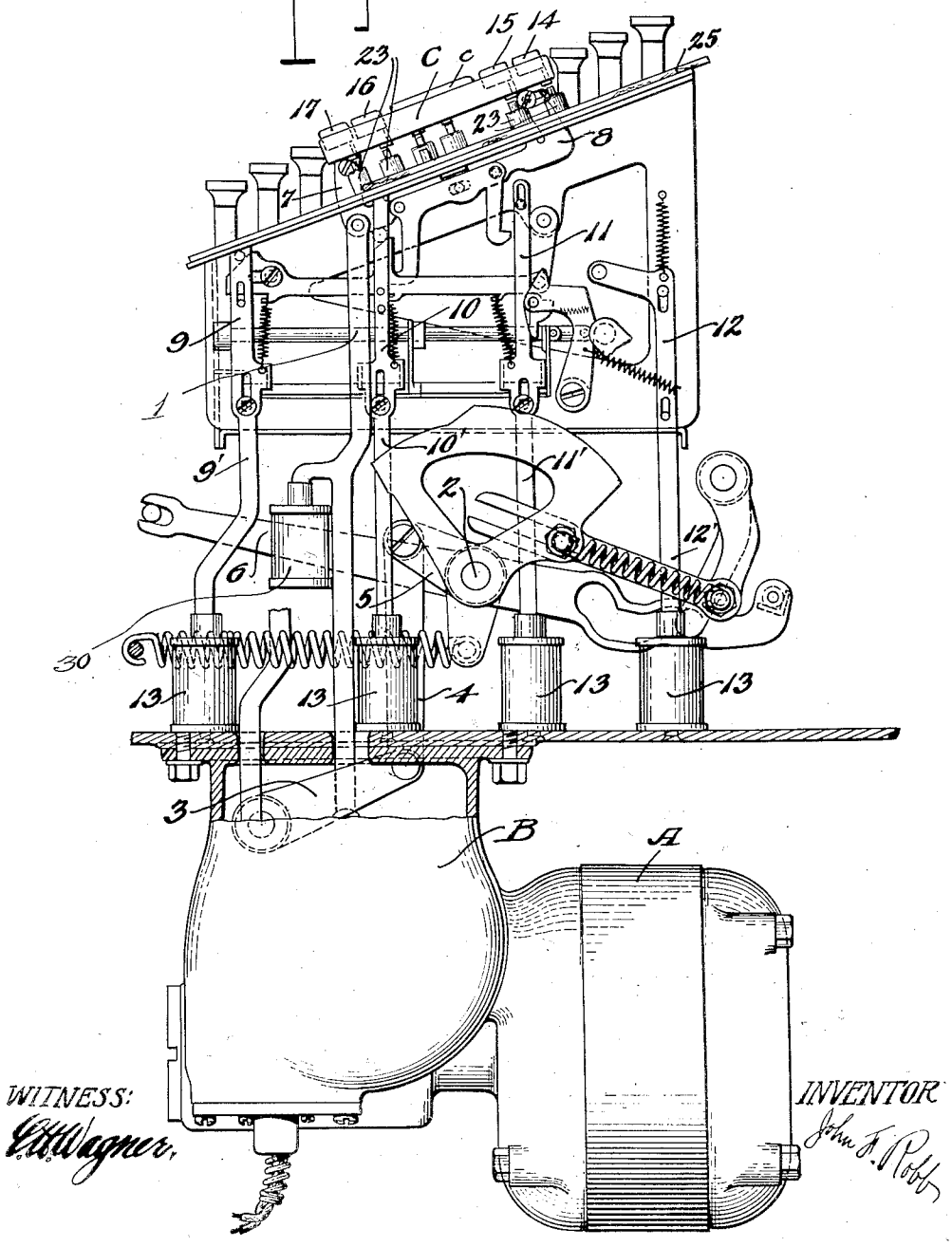
APPLICATION FILED MAR. 16, 1918.

1,357,423.

Patented Nov. 2, 1920.

3 SHEETS—SHEET 1.

Fig 1.



WITNESS:

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3 SHEETS—SHEET 2.

Fig. 2.

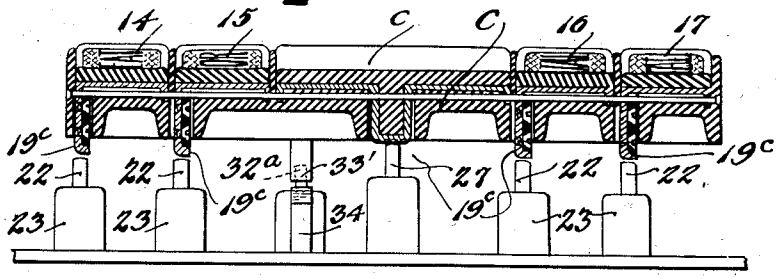
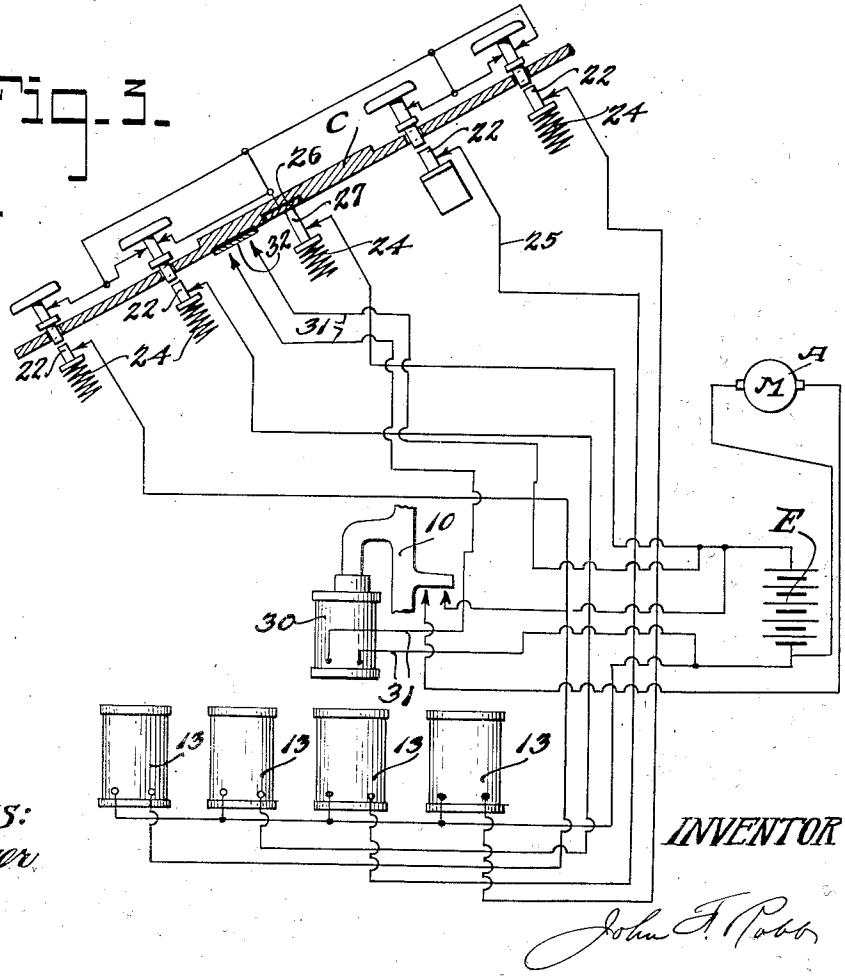


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 4.

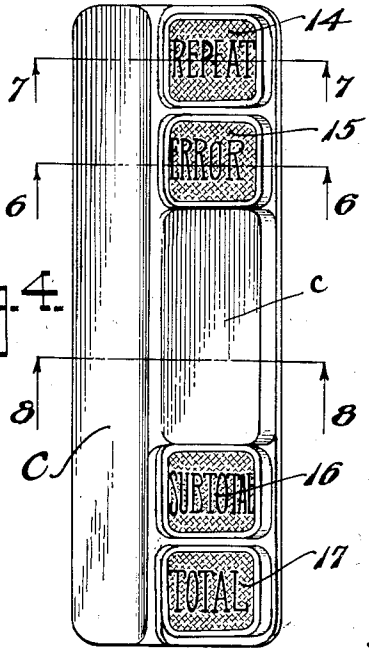


Fig. 5.

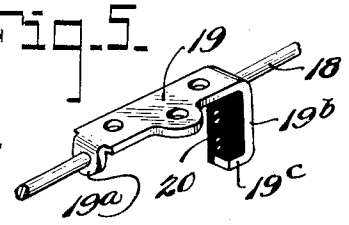


Fig. 6.

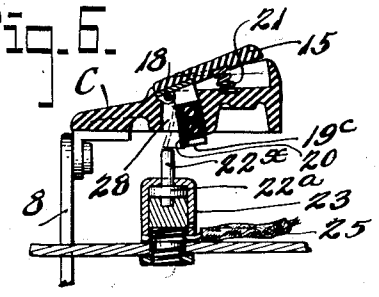


Fig. 7.

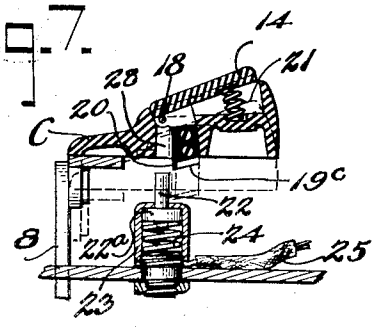


Fig. 8.

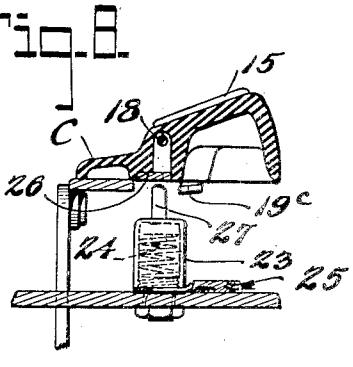
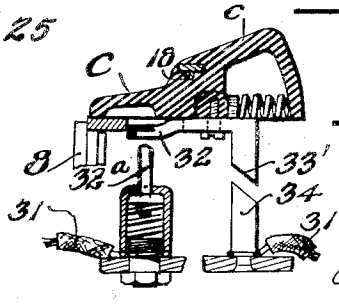


Fig. 9.



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UNITED STATES PATENT OFFICE.

JOHN F. ROBB, OF WASHINGTON, DISTRICT OF COLUMBIA.

ACCOUNTING-MACHINE-CONTROL MEANS.

1,357,423. Specification of Letters Patent. Patented Nov. 2, 1920.

Application filed March 16, 1918. Serial No. 222,885.

To all whom it may concern:

Be it known that I, JOHN F. ROBB, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Accounting-Machine-Control Means, of which the following is a specification.

The improvements of this invention have to do primarily with accounting machines, and involve certain provisions for effecting abnormal operations of such machines from the handle of the actuator by which an accounting machine is ordinarily operated. More specifically speaking, accounting machines are commonly of two types, manually operated and motor operated, the first type being operated by a handle applied to a crank part, while the second type is operated by a handle, usually known as a clutch bar, adapted to cause operation of the machine by the driving motor.

By "normal" and "abnormal" operations of the machine as referred to above, I have in mind say in the case of an adding machine the use of the machine normally to set up and add accounting items; and the use of the machine abnormally in the sense of performing total, sub-total, correction, repeating or like actions. The last mentioned actions of the machine are special actions, so to speak, as distinguished from the regular normal use of the machine.

My present invention embodies provisions directly associated with the handle member or clutch bar of motor driven type accounting machines by which the control means for effecting the abnormal operations of the machine are centralized at or upon the clutch bar handle for operation incident to the action of the latter in performing its function.

Another feature of the invention resides in a special provision whereby the clutch bar handle of motor driven type accounting machines is caused to be actuated with extreme ease by means which in effect results in operation of such part by combined manual and motor actuation.

Subsidiary to the foregoing, my invention resides, in respect to both phases of construction and operation above set forth, in the utilization of peculiar electrical connections and functioning of parts.

These and such other objects as may hereinafter appear are attained by the novel construction, combination and arrangement of parts to be hereinafter specifically described and claimed. Reference will now be had to the accompanying drawings forming a part of this specification, wherein:

Figure 1 is a side view, partly in section and partly in elevation, showing a portion of the keyboard of a conventional adding machine, conventional motor driving means for effecting actuation of such machines and illustrating my improvements therein;

Fig. 2 is a vertical longitudinal sectional view through the clutch bar handle, the cooperating contacts being shown in elevation;

Fig. 3 is a diagrammatic view showing more clearly the electrical circuit connections associated with the control parts on the clutch bar handle;

Fig. 4 is a top plan view of the clutch bar handle;

Fig. 5 is a detail view of one of the contact pieces for the control members or keys of the handle;

Fig. 6 is a sectional view on the line 6—6 of Fig. 4; and

Figs. 7 and 8 are similar sectional views on the lines 7—7 and 8—8 of Fig. 4.

Fig. 9 is a detail view more clearly showing the circuit closer controlling the movement assisting means for the handle.

My invention is shown as applied to a motor driven type of adding or accounting machine known as the "International" adding machine. This machine not including the motor driving features, being fully disclosed in United States patent of White No. 1,192,721, issued July 25, 1916, will not therefore be described in detail. It suffices to state also that the motor driving features shown in association with the improvements hereof may be conventional, including the usual motor A with which may be connected any suitable source of electric current, said motor being carried by a casing B in which are mounted the control mechanism including circuit opening and closing contrivances, and a clutch, not shown, adapted to be operated by the vertical actuating bar 1, whereby to connect the motor A operatively with the main shaft 2 of the accounting machine. The connections are incompletely shown as including an arm 3, a link 4, and an arm 5 carried by the shaft 2. The converging levers 6, seen in Fig. 1 and other parts associated with the shaft 2 are such as used in the type of adding machine referred

to above and their action, being well known, is not set forth in detail.

The vertical actuating bar 1 is operable, as is customary in motor driven type accounting machines, by a clutch bar handle C supported upon angle levers 7 and 8 as shown and freely depressible to cause clutching of the motor A with the shaft 2 in the manner previously suggested whereby the shaft 2 will be actuated to cause an operation of the mechanism of the accounting machine in the well known manner. The clutch bar handle C shown herein is of special construction forming a feature of the invention and will shortly be set forth.

As a part of the keyboard mechanism of the machine I utilize a total slide 9, a sub-total slide 10, a correction or error slide 11, and a repeat slide 12, these slides corresponding with the total, sub-total, correction or error and repeat keys of the adding machine of the Letters Patent before identified. The said slides, furthermore, function substantially the same as do the corresponding keys mentioned, in order to control the various abnormal or special operations of the accounting machine, indicated by the names which I have applied to these slides. Since the manner in which the slides are operable to effect the stated abnormal operations is set forth in the said Letters Patent, it may be presumed to be conventional and known to those versed in the art and therefore requires no further description.

The several slides 9, 10, 11 and 12 are formed with extensions 9′, 10′, 11′ and 12′, respectively, at their lower ends, these extensions being so formed at the lower extremities as to provide the core pieces of solenoids 13, one of which is provided for each slide. The several solenoids are mounted on the base of the adding machine and are suitably included in the electric circuit shown best diagrammatically in Fig. 3.

Referring particularly to Figs. 2 to 8 inclusive, the manner in which I have centralized at and upon the clutch bar handle C. the various special or abnormal action keys or control members will be apparent. In the relative arrangement of these last mentioned parts I have had in mind that the depression of the clutch bar handle C is ordinarily effected by a lateral rearward movement of the right hand of the operator of the machine; that it is advantageous to reduce to the extreme minimum all movements of the hand of the operator for effecting both normal and abnormal operations of the accounting machine; that if the usual lateral movement of the operator's hand for depression of the clutch bar handle may be employed to also operate the special keys or control members of the accounting machine, increased efficiency of the operator must result; and that a centralizing of said special keys or control members upon the clutch bar handle is the most convenient and ready construction whereby to obtain the increased efficiency of action stated.

With the above in view, therefore, while my clutch bar handle C is mounted practically after a manner somewhat common in the art, that is loosely supported for ready and easy depression, said handle has been specially constructed so that it not only constitutes a clutch bar but a base carrying an assemblage of special or abnormal action control keys or members. These members as illustrated comprise repeat, error, sub-total and total keys or finger pieces, respectively numbered 14, 15, 16 and 17, see Fig. 3. The keys or finger pieces 14, 16 and 17 being of like construction one only need be described in detail; the key 15 functions in a somewhat different manner.

A pintle rod 18 extends nearly the length of the handle C and the several keys or control members are pivoted thereto. Each member is preferably made of an insulation substance, as is the handle C, and carries a pivot plate 19 formed with ears 19^a and 19^b through which the rod 18 passes. The ear 19^b is downwardly elongated and bent to form a terminal contact 19^c. An insulation block 20 is secured to the ear 19^b as shown. A spring 21 normally holds the key at the upper limit of its movement (see Figs. 6 and 7). Beneath each key member 14, 16 and 17, is a yieldable contact 22 which is a piston-like part, the lower head 22^a of which is mounted in a casing 23 and upheld by a spring 24 from which leads off an electric circuit wire 25, the securing means of the casing forming a sort of binding post. The parts beneath the key member 15 are like those just described except the contact 22^x is rigid or non-yielding, for reasons to be made clear hereinafter.

Formed in the under side of the handle C above each contact 22 and 22^x is a recess 28 adapted to receive the opposite contact under certain conditions when the handle C is depressed. As seen in Fig. 2, the handle C has a middle contact 26 normally engaging a yielding contact 27, and in conductive engagement with the pintle 18 which forms a conducting element of an electrical circuit including the motor A, the solenoids 13, the plates 19, contacts 19^c, and contacts 22 and 22^x. This circuit is diagrammatically shown in Fig. 3, and includes the source of current E conventionally relied upon.

The extent of movement or depression of the handle C is quite a little greater than that necessary to bring the contacts 19^c and 22 or 22^x together. In fact the functioning of the handle C to connect the motor A and the shaft 2 for driving of the latter, does not take place until the handle practically reaches the lower limit of its move-

ment, (see dotted lines of Fig. 7,) whereas the parts 19c and 22 or 22x establish closed circuit connections during initial movement of said bar, if previously actuated for such purpose.

With the foregoing in mind, if the operator is adding on the accounting machine by normal setting up and accumulation of regular items, the ordinary mode of operation is employed, namely depression of proper amount keys, and the lateral throw of the hand to hit and depress the handle C. In such action the hand should engage the middle portion of the handle C, which at such portion is inclined and free of key elements, as seen at *c*, Fig. 4. If a totaling (an abnormal) action is desired, the hand action will vary slightly to the extent that the hand will engage the key member 17 for depressing the handle C. This causes initial depressing of the key member working pivotally on the pintle rod 18, before moving the handle C. The contact 19c of the member 17 is thus instantly moved above its coacting contact 22 and thereafter the parts 17 and C move down together, whereupon the contact 19c engages the part 17 and closes the circuit through the solenoid 13 which operates the total control slide 9. The total-taking devices are thus pre-set after the known manner, and the handle C continuing downward in its movement afterward clutches the motor A to the shaft 2 and operation of the accounting machine to take a total and clear the accumulator results.

On such movement of the handle C the other contacts 22 and 22x are inactive because they enter the recesses 28, and there is no liability of the adjacent contacts 19c functioning because their insulation blocks 20 intervene between them and the contacts 22 or 22x as the case may be.

The operation of the sub-total and repeat key members 16 and 14, respectively, is substantially like that above described, since these parts to cause functioning of the special parts controlled thereby must be preset, and the pre-setting action must be accompanied by an operation of the main shaft 2.

The utility of the correction or error key member 15, however, involves pre-setting, but not an accompanying operation of the main shaft 2. That is to say, the correcting of a key-board simply means restoration of an inadvertently depressed amount key or keys so that the action that would be predetermined thereby is prevented, allowing a resetting of the amount keys, actuation of which is really required. For this reason the motion of the hand that is to control action of the error key member 15, see Fig. 5, is caused to depress said key member so that its contact 19c is over the adjacent contact 22x, and is caused to engage the latter by the very slightest depression of the handle or clutch bar C. Being non-yielding the part 22x prevents that degree of movement of the handle C necessary to cause it to perform its clutch operating function.

It will thus be seen that by my invention an operator of an accounting machine is able to eliminate entirely at least one special movement of his hand for causing abnormal operations of the machine in the sense of such operations as herein set forth. Furthermore, he is enabled to employ what is a necessary, and therefore a quite natural and easy, hand movement by which to control the abnormal functioning, all with the result of saving of effort and increase of efficiency. The fact that in the motor driven type of accounting machines there are always present suitable provisions for the supply of electric current for the motor makes the adaptation of this invention to such machines especially easy, involving primarily the extension of circuit wire connections to include the operating electrical devices of the invention.

It is contemplated that the springs 24 coacting with the contacts 22 and 22x shall be very light, but they necessarily must present some resistance to the pressure required to actuate the handle C, which is additionally acted upon by an uplifting or restoring spring not shown. With a view to rendering the handle C yieldable to a very light touch, there is provided for the drag bar 1 an actuating solenoid 30 included in a circuit comprising wires 31 (see Fig. 3) leading to the source of electric current E. Normally this circuit is open owing to the provision on the under side of the part C of a special switch including the stationary contact 32 and the sliding contact 33 spring-pressed to engage contact 31. The contact 31 is normally spaced from a yielding contact 32a which is similar to contacts 22 above described.

The pull of the solenoid 30 is downward relatively to the drag bar 1 to exert a corresponding force in such direction in relation to the handle or clutch bar C. Preferably the force of the electro-magnet is insufficient of itself to move the part C down, being primarily intended to be sufficient, however, to almost counteract the resisting force of the springs 24 and the restoring means for the handle C, which latter must overbalance that of the solenoid 30 in order that the restoring action may take place.

The function of the parts just set forth will be understood when it is noted that the touch of the operator's hand upon any one of the key members 14, 16 and 17 of the handle C will initially actuate such key member as described, close the operating circuit for the control slide of such key mem-

ber on the subsequent slight initial downward movement of the part C. Thereupon after the slightest additional downward movement of the handle C the contacts 32 and 32ª come together, closing the circuit of the wires 31 and solenoid 30, thereby energizing said solenoid 30 and causing it to exert its downward pull on the handle which practically but not wholly neutralizes the resistance of the spring contact 22 and the handle restoring means. As the handle C about reaches its lower limit of movement a cam 34 engages a projection 33′ on the contact 32, slides said contact 32 laterally to disengage it from the contact 32ª, and thus breaks the circuit of the solenoid 30 deënergizing the latter. This action permits a quick return of the handle C to its normal uppermost position uninfluenced by the downward pull of the solenoid 30 and when said handle resumes its normal position the solenoid 30 is ineffective owing to the spaced relation of the contacts 32 and 34.

My invention comprehends the use of the principle of action of the solenoid 30 as a supplement to the features of the invention first described, or the parts 30 to 34 inclusive may be entirely dispensed with as they are not necessary for the efficient embodiment of the construction of the handle clutch bar C affording the centralized key member control.

Again, the principle of action of the solenoid 30 may be utilized alone as an electrical appliance for actuating a clutch bar handle requiring the mere closing of an electric circuit to relieve the hand of an operator of the work entailed in fully depressing a clutch bar such as usually employed on motor driven accounting machines.

The term "abnormal" as used herein contemplates, furthermore, an operation of an accounting machine and some machine or mechanism representing an independent operating unit which might be associated or worked with the accounting machine, under which conditions the normal operation would be that of the accounting machine alone and the abnormal action the working of the accounting mechanism with the associated unit mechanism. Such a machine is disclosed in U. S. Patent of Sorum and Brockman, No. 1,257,143 issued February 19, 1918.

It is also to be understood that while I prefer the arrangement of the key members on the handle C such that they act as circuit closers on slight depression of the handle, it is quite within the purview of my invention that they may close their controlled circuits by their initial movement relatively to the handle. Under these conditions the pre-selection actuations incident to abnormal operations of the machine take place prior to depression of the handle C. This change involves mere proportioning of the parts 19ᵇ to engage the parts 22 and 22ˣ as soon as the particular member is rocked by depression.

Having thus described my invention, what I claim as new is:

1. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a key member mounted upon said handle and operable to predetermine an abnormal action of the accounting machine.

2. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a key member mounted upon said handle and operable to predetermine and effect an abnormal action of the accounting machine, as an incident to an initial movement of the key member alone and a subsequent movement of said key member with the handle.

3. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, a key member associated with said handle, and electrical means controlled by said key member for compelling an abnormal operation of said accounting machine and supplied with current from said source of electric current.

4. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members mounted upon the handle, and electrical means controlled by said key members for effecting different abnormal operations of said accounting machine and supplied with current from said source of electric current.

5. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members mounted upon said handle to move with and independently of the handle, and electrical operating devices for controlling abnormal actions of the accounting machine adapted to be selected by a movement of the key members independently of the handle, and to be operated by movement of the key members with the handle.

6. The combination, with an accounting

machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members mounted upon said handle to move with and independently of the handle, and electrical operating devices for controlling abnormal actions of the accounting machine adapted to be selected by a movement of the key members independently of the handle, and to be operated by movement of the key members with the handle, the key members being provided with means whereby on selection of an associated electrical device by one key member and movement of the handle to operate said device, the other key members are prevented from effective action.

7. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members movably mounted on said handle and adapted to control special actions of the accounting machine such as total taking and correction operations, and means controllable by said handle to operate the accounting machine from the driving motor and controllable by said key members to selectively effect the said special actions of the machine.

8. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members movably mounted on said handle and adapted to control special actions of the accounting machine such as total taking and correction operations, and actuating means controllable by said handle for effecting a normal regular action of the accounting machine, and controllable by said key members to selectively compel special or abnormal actions of the accounting machine.

9. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members movably mounted on said handle and adapted to control special actions of the accounting machine such as total taking and correction operations, and means controllable by said handle during inactivity of the key members for effecting normal operations of the accounting machine, and controllable upon operation of one of the key members to effect abnormal operation of the machine.

10. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, key members movably mounted on said handle and adapted to control special actions of the accounting machine such as total taking and correction operations, means controllable by said handle during inactivity of the key members for effecting normal operations of the accounting machine and controllable upon operation of one of the key members to effect abnormal operation of the machine, and electrical means including circuit closing contacts disposed in the path of movement of said handle and coöperating contacts controlled by the key members for predetermining special or abnormal actions of the accounting machine as an incident to operation of said handle.

11. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members movably mounted on said handle and adapted to control special actions of the accounting machine such as total taking and correction operations, means controllable by said handle during inactivity of the key members for effecting normal operations of the accounting machine and controllable upon operation of one of the key members to effect abnormal operation of the machine, electrical means including circuit closing contacts disposed in the path of movement of said handle and coöperating contacts controlled by the key members for predetermining special or abnormal actions of the accounting machine as an incident to operation of said handle, and insulation means associated with the contacts controlled by the key members whereby when one key member is selectively actuated and moved with the handle the contacts of the other key members are insulated from the coöperating contacts with which they are associated.

12. A clutch bar handle unit for motor driven type accounting machines comprising a handle and a series of special action key members mounted thereon and adapted to predetermine abnormal operations of an accounting machine controlled by said handle, combined with an accounting machine operations of which are controlled by said key members.

13. A clutch bar handle unit for motor driven type accounting machines comprising a handle and a series of special action key members mounted thereon and adapted

to predetermine abnormal operations of an accounting machine controlled by said handle, and means so supporting each key member on the handle as to permit free initial movement of the key member independent of the handle, and a subsequent propulsion of the handle through pressure on said key member, combined with an accounting machine operations of which are controlled by said key members.

14. A clutch bar handle unit for motor driven type accounting machines comprising a handle and a series of special action key members mounted thereon and adapted to predetermine abnormal operations of an accounting machine controlled by said handle, means so supporting each key member on the handle as to permit free initial movement of the key member independent of the handle and a subsequent propulsion of the handle through pressure on said key member, combined with electrical means including circuit closing contacts on said key members, and coacting contacts supported independently of the handle and yieldable after selection by the said initial movement of a key member upon the subsequent propulsion of the handle, combined with an accounting machine operations of which are controlled by said key members.

15. A clutch bar handle unit for motor driven type accounting machines comprising a handle and a series of special action key members mounted thereon and adapted to predetermine abnormal operations of an accounting machine controlled by said handle, means so supporting each key member on the handle as to permit free initial movement of the key member independent of the handle and a subsequent propulsion of the handle through pressure on said key member, combined with electrical means including circuit closing contacts on said key members, and coacting contacts supported independently of the handle and yieldable after selection by the said initial movement of a key member upon the subsequent propulsion of the handle, the handle being so formed as not to operatively engage the said coacting contacts when the handle is operated without initial selective actuation of a key member, combined with an accounting machine operations of which are controlled by said key members.

16. A clutch bar handle unit for accounting machines including a handle bar and a key member mounted thereon for controlling an abnormal operation of the accounting machine, combined with electrical means for predetermining the accounting action including a contact carried by said key member and movable thereby to predetermine said abnormal action, and a contact coacting with that first mentioned to engage the same and prevent sufficient operative movement of the handle to connect the motor driving means with the accounting machine, said key member being operable independently of the handle to permit coöperation of said contacts, combined with an accounting machine operations of which are controlled by said key members.

17. A clutch bar handle unit for accounting machines of the motor driven type including an elongated bar having an integral hand contacting portion, and a series of key members disposed adjacent to said hand contacting portion for predetermining special operations of the accounting machine, combined with an accounting machine operations of which are controlled by said key members.

18. The combination, with an accounting machine of the motor driven type having a clutch bar handle manually operable to connect the accounting machine for actuation by said motor driving means, of operating means for said handle adapted to be set into action by initial movement thereof to assist said manual movement.

19. The combination, with an accounting machine of the motor driven type having a clutch bar handle manually operable to connect the accounting machine for actuation by said motor driving means, of means for normally holding the handle in a predetermined inactive position, and a power device adapted to be energized by initial movement of the handle for causing working movement thereof.

20. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by said motor driving means, of means for normally holding the handle in a predetermined inactive position, a power device adapted to be energized by initial movement of the handle for causing working movement thereof, and means for deënergizing said power device substantially at the completion of the working movement of the handle.

21. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by said motor driving means, of spring means normally tending to hold said handle in a normal inactive position, electrical means including a solenoid connected with said handle, means to energize said solenoid by initial manual movement of the handle and tending to actuate the handle during its working movement, means to deënergize said solenoid on completion of the working movement thereof, and a source of electric current for said solenoid and for the motor driving means of the accounting machine.

22. The combination, with an accounting machine of the motor driven type having a

clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a key member mounted upon said handle and operable to predetermine an abnormal action of the accounting machine, and a power device operable incident to preliminary movement of the handle and tending when rendered operative to effect working movement of the handle.

23. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members mounted upon the handle, electrical means controlled by said key members for effecting different abnormal operations of said accounting machine and supplied with current from said source of electric current, and a power device operable incident to preliminary movement of the handle and tending when rendered operative to effect working movement of the handle.

24. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members movably mounted on said handle and adapted to control special actions of the accounting machine such as total taking and correction operations, means controllable by said handle for effecting a normal regular action of the accounting machine and means controllable by said key members to selectively compel special or abnormal actions of the accounting machine, and a power device operable incident to preliminary movement of the handle and tending when rendered operative to effect working movement of the handle.

25. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, a key member, and electrical means controlled by said key member for compelling an abnormal operation of said accounting machine and supplied with current from said source of electric current.

26. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members mounted upon the handle, and electrical means controlled by said key members for effecting different abnormal operations of said accounting machine.

27. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by its motor driving means, of a source of electric current for operating the motor driving means, key members mounted upon said handle to move with and independently of the handle, and electrical operating devices for controlling abnormal actions of the accounting machine adapted to be selected by a movement of the key members independently of the handle.

28. The combination, with an accounting machine of the motor driven type having a clutch bar handle operable to connect the accounting machine for actuation by said motor driving means, of means for normally holding the handle in a predetermined inactive position, a power device for causing working movement of the handle, and means for deënergizing said power device substantially at the completion of the working movement thereof.

29. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operation of the machine by the driving means, an electric circuit including the handle, means included in said circuit to compel an abnormal action of the accounting machine, and a circuit closer for said circuit operable coincidently with the handle.

30. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operation of the machine by the driving means, an electric circuit including the handle, means included in said circuit to compel an abnormal action of the accounting machine, and a circuit closer for said circuit mounted upon the handle.

31. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operation of the machine by the driving means, an electric circuit including the handle, means included in said circuit adapted to exert a pull upon the handle and a circuit closer at the handle operable to energize said pulling means.

32. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the driving means, an electric circuit including the handle, key members associated with the handle to cause different abnormal operations of the accounting machine and coacting with the handle to close said circuit.

33. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the

driving means, an electric circuit including the handle, a key member for causing abnormal operation of the accounting machine and movable relatively to the handle to pre-select such operation, and coöperative with the handle to close said circuit to compel abnormal operation.

34. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the driving means, and key members initially operable to compel abnormal operations of the accounting machine, and subsequently operable to actuate the handle aforesaid.

35. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the driving means, devices preliminarily operable to set the accounting machine for abnormal operations, and key members operable to set said devices and to operate said handle.

36. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the driving means, devices preliminarily operable to set the accounting machine for abnormal operations, and separate key members initially operable to set said devices and subsequently operable to cause actuation of the handle.

37. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the driving means, and means to pre-set the accounting machine for abnormal operations relatively movable upon said handle and including electrical actuating devices, and a source of electric current common to the motor driving means and said actuating devices.

38. The combination, with an accounting machine, of motor driving means therefor, a clutch bar handle to connect and cause normal operations of the machine by the driving means, devices preliminarily operable to set the accounting machine for abnormal operations, and separate key members initially operable in one direction to set said devices and subsequently operable in the same direction as that of the normal movement of the handle to cause actuation of the handle.

In testimony whereof I affix my signature.

JOHN F. ROBB.