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CONTROL APPARATUS FOR MANUAL AND POWER DRIVES OF A MACHINE

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2 Sheets-Sheet 1

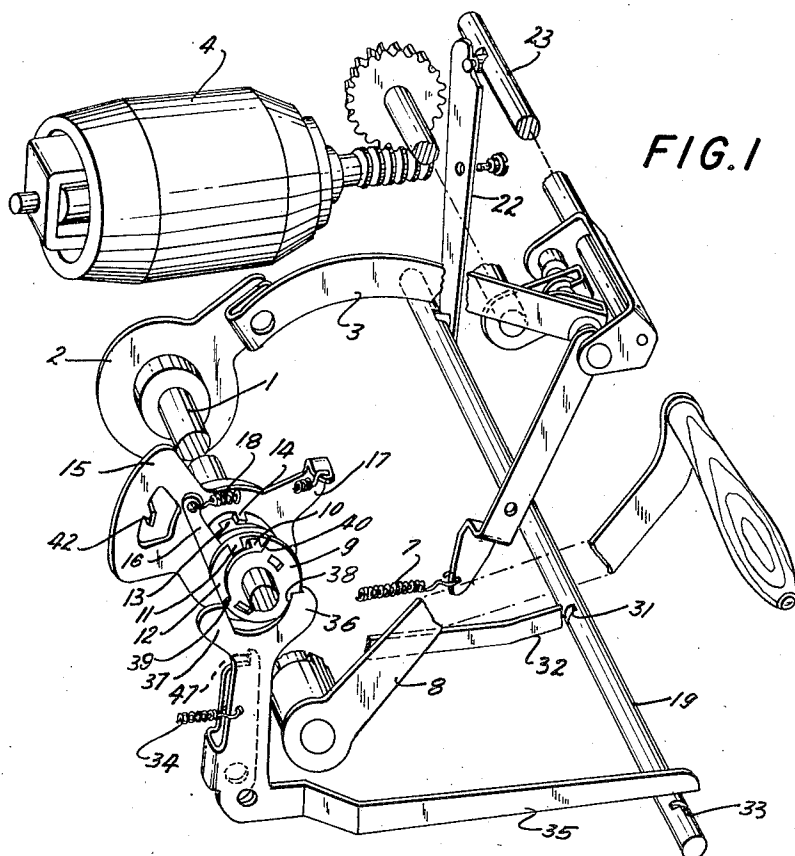


FIG. 1

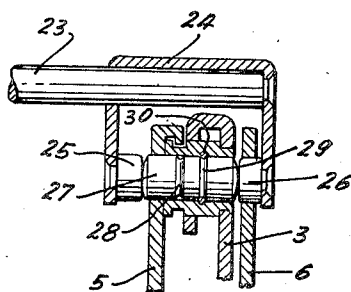


FIG. 2

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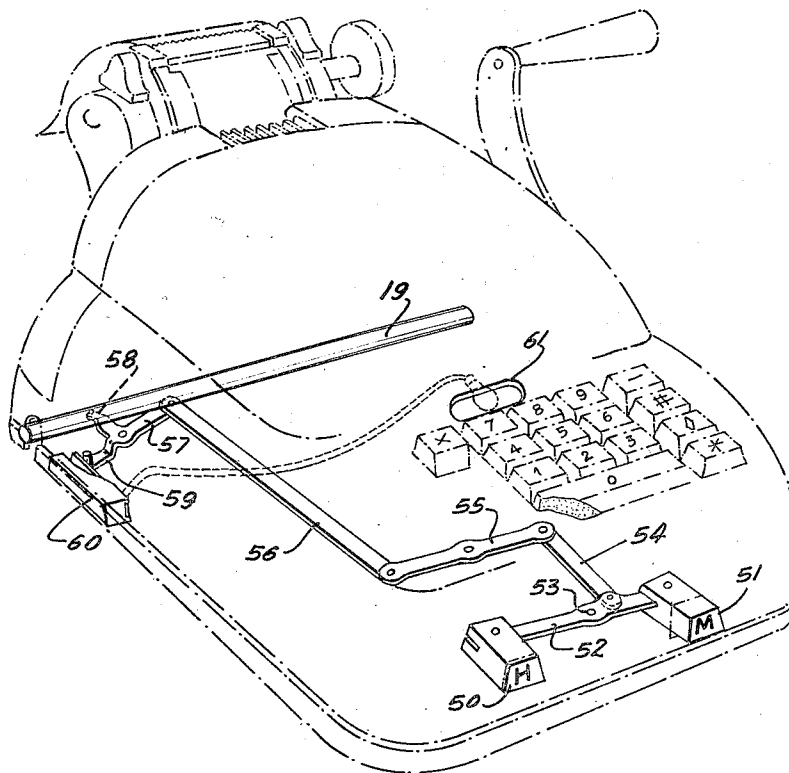
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2 Sheets-Sheet 2

FIG. 3



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## CONTROL APPARATUS FOR MANUAL AND POWER DRIVES OF A MACHINE

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11 Claims. (Cl. 74—625)

The present invention relates to machines, such as calculating machines, of the type which are adapted to be optionally operated by hand or from a suitable source of power, and more particularly the present invention relates to an apparatus for alternately connecting a manual drive means and a power drive means to such a machine.

Although apparatus of the above type is known, with most of the known devices the controls are located at an inconvenient part of the machine and very often the operator does not know whether the machine is set for power or hand operation.

One of the objects of the present invention is to overcome the above drawbacks by providing an apparatus which may be very conveniently and easily set by the operator either in the power drive or manual drive position.

A further object of the present invention is to provide an apparatus of this type which will clearly indicate to the operator whether the manual drive or power drive is connected to the machine.

Another object of the present invention is to provide an illuminating means which indicates when one of the drives is connected to the machine and which, at the same time, serves to illuminate numbers of a calculating machine, for example.

With the above objects in view, the present invention mainly consists of a calculating machine which includes a machine housing having a front and rear. A power drive means is provided to drive the machine from a source of power, and a manual drive means is provided for manually operating the machine. A control means is operatively connected to the power drive means and manual drive means for alternately connecting the power drive means and the manual drive means to the machine, this control means including a control member mounted in the machine housing adjacent to the rear thereof for movement between a first position, where the power drive means is connected to the machine and the manual drive means is disconnected from the machine, and a second position, where the manual drive means is connected to the machine and the power drive means is disconnected from the machine. A moving means is operatively connected to this control member for moving the same between its first and second positions, this moving means extending to the front of the machine housing. A manually operable means is connected to the moving means for operating the same and is located at the front of the housing partly at the exterior thereof so as to be accessible to the operator.

The novel features which are considered as characteristic for the invention are set forth in particular in the appended claims. The invention itself, however, both as to its construction and its method of operation, together with additional objects and advantages thereof, will be best understood from the following description of specific embodiments when read in connection with the accompanying drawings, in which:

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Fig. 1 is a partly diagrammatic, perspective view of the apparatus of the invention without the structure for setting this apparatus in its power or manual drive positions, parts of the structure of Fig. 1 being broken away for the sake of clarity;

Fig. 2 is a fragmentary partly sectional view on an enlarged scale of that part of the apparatus of Fig. 1 at which the power drive means and manual drive means are alternately connected to the machine; and

Fig. 3 is a perspective view of the apparatus for setting the structure of Fig. 1 in its power drive and manual drive positions, Fig. 3 showing in dot-dash lines how the housing of the machine is oriented with respect to the structure of Fig. 3, as well as the structure of Fig. 1.

Under certain circumstances, it becomes desirable to manually operate a machine which is ordinarily power-driven. For example, when there is a failure in the source of power, the machine can be operated manually, and with motor-driven calculating machines, in particular, it is often desirable to perform certain operations by hand. The structure of the present invention provides a convenient means for alternately operating a machine either by hand or from a source of power.

Referring to Fig. 1, it will be seen that the calculating machine illustrated therein includes a main machine operating shaft 1 which is mounted for rotation about its own axis in suitable bearings (not shown). A driving disc 2 is fixed to the shaft 1 for rotation therewith and is pivotally connected to a link 3 which is, in turn, adapted to be connected to a crank 5 driven from the electric motor 4 through the medium of a worm fixed to the motor shaft and meshing with a wormwheel which is fixed to a shaft fixedly carrying the crank 5. The details of the connection between crank 5 and link 3 are shown in Fig. 2 and will be described below.

It is also possible to connect the link 3 with a lever 6 which is mounted for rotation on a pin or the like (not shown) which is fixed within the machine housing. A spring 7 is connected to the bottom end of lever 6 and urges it to turn in a clockwise direction, as viewed in Fig. 1, about a horizontal axis passing through the opening shown in Fig. 1 between the ends of lever 6, the above-mentioned pivot pin or the like extending through this opening.

For hand operation of the machine, a hand crank 8 is provided, this hand crank being loosely mounted on the shaft 1 for free rotation on the same and the hub of crank 8 having a pair of opposite extensions which are adapted to be located in the pair of openings of member 9 shown in Fig. 1. Thus, the crank 8 is removable from the member 9 or may be connected thereto by shifting the crank 8 along the shaft 1.

The member 9 is similar to a ratchet wheel and is provided with a pair of projections 10 which are parallel to the shaft 1 and which are displaced from each other by 180°. The disc 9 is loosely mounted on shaft 1 so that the latter may turn freely with respect to disc 9, and the projections 10 of disc 9, when the latter turns in a counterclockwise direction, as viewed in Fig. 1, become located against a pair of projections 11 which also are displaced from each other by 180° and which are fixed to a disc 12 parallel to disc 9 and also being freely turnable with respect to the shaft 1. On the opposite side from projections 11, the disc 12 is provided with a pair of projections 13 which, during clockwise rotation of disc 12, cooperate with a pair of projections 14 of a plate 15 which is fixed to the shaft 1. An arm 17 of plate 15 is connected by spring 18 to an arm 16 of disc 12 so that these latter arms are urged toward each other, and, therefore, the projections 13 and 14 are also urged by spring 18 into engagement with each other.

A control member in the form of a bar 19, mounted

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in suitable bearings (not shown) for shifting movement along its length within the housing, is provided to set the apparatus either in its power drive or manual drive positions. This bar 19 is pivotally connected to the bottom end of a lever 22 which is mounted between its ends for turning movement about the axis of a stationary pin or the like, shown in Fig. 1 as the smooth cylindrical portion next to the head of a screw which threadedly engages a stationary part of the machine. The top end of the lever 22 is pivotally connected to a push-pull rod 23 which is fixed to a substantially U-shaped shifting member 24.

As is most clearly shown in Fig. 2, the shifting member 24 has fixed to the inner surfaces of the free end portions of its opposite legs a pair of pins 25 and 26, respectively. These pins are coaxial with each other and are also coaxial with openings of crank 5, link 3, and lever 6, when the machine is in its rest position. A coupling pin 27 is shifted, upon shifting of member 24 and rod 23, either into a position interconnecting link 3 with crank 5 or into a position interconnecting link 3 with lever 6. In this way, either the crank 5 or the lever 6 will be connected through the link 3 with the main shaft 1 of the machine. In order to accurately locate the coupling pin 27 in its positions, this coupling pin is formed with a pair of annular grooves 28 and 29 into which a snap ring 30 is adapted to alternately snap, this snap ring 30 being located partly within an annular groove of a bushing fixed to the link 3 and slidably supporting the coupling pin 27 for shifting axial movement.

The control bar 19 is provided with a lateral cutout 31 which cooperates with the free end of a member 32 which is shifted in order to stop and start the motor 4, and the control bar 19 is also provided with a top cutout 33 located beneath an arm of a bell-crank lever 35 mounted for turning movement on a stationary pin of the machine (not shown) and being connected to a spring 34 which urges the lever 35 in a counterclockwise direction, as viewed in Fig. 1. The bell-crank lever 35 is provided at its top end with a pair of projections 36 and 37 which are adapted to cooperate with the teeth 38, 39 and 40 of the disc 9. It will be noted that the teeth 38 and 39 are directed oppositely to the tooth 40. The lever 35 is provided with an extension which is parallel to and spaced from the arm carrying projections 36 and 37 and which is provided at its top end with a projection 41 adapted to cooperate with projection 42 of the plate 15 which is fixed to the shaft 1, this projection 41 serving as a stop and engaging projection 42 at the end of the forward-turning movement of the shaft 1.

The above described apparatus operates as follows:

In the illustrated position of the parts shown in Figs. 1 and 2, the control bar 19 has been shifted to the right so that members 23 and 24 are shifted to the left, as viewed in Figs. 1 and 2, through the lever 22, and, therefore, as shown in Fig. 2, the pin 26 of shifting member 24 has become located in the top opening of lever 6 and has shifted the coupling pin 27 through the top opening of crank 5, pin 25 having thus been moved out of the opening of crank 5 and the snap ring 30 being located in the annular groove 29 of the coupling pin 27. Thus, the pin 26 locks the lever 6 in its rest position and the spring 7 cannot influence the operations. Also, the link 3 is connected by the coupling pin 27 to the motor crank 5, and since pin 25 has moved away from crank 5, the latter is freed to actuate the link 3 and thereby transmit motion from the motor 4 to the shaft 1.

In the position of the parts illustrated in Fig. 1, the lower arm of bell-crank lever 35 is located to one side of cutout 33 in engagement with the outer surface of control arm 19, and the projection 36 of lever 35 engages tooth 38 of disc 9 so that this disc cannot be turned in either direction by the crank 8. On the other hand, the cutout 31 of control bar 19 is located opposite the free end of member 32 so that the latter can have its

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free end shifted into the cutout 31 to start the motor, a suitable operating key being located at the exterior of the machine and being connected to member 32 for shifting the latter in this manner. The motor 4 now drives the shaft 1 so as to turn the latter forwardly in a counterclockwise direction, as viewed in Fig. 1, and thus the plate 15 fixed to the shaft 1 turns together with the shaft 1 and the projections 14 of plate 15 engage projections 13 to turn the disc 12 together with the shaft 1. It is apparent from Fig. 1 that during this turning movement of disc 12 the projections 11 thereof will simply move away from projections 10 of disc 9 and will, therefore, have no tendency to turn the disc 9 or the crank 8. The location of the free end of member 32 in the cutout 31 of control bar 19 locks this control bar against movement during turning of shaft 1.

Thus, the motor 4 may turn the shaft 1 back and forth without influencing disc 9 and crank 8 and without any effect on lever 6. At the end of an operation of the machine, the member 32 may be moved out of the cutout 31 to stop the motor, and if it is desired to set the machine for hand operation, the control bar 19 may be shifted to the left, as viewed in Figs. 1 and 3, so that the shifting member 24 is shifted together with rod 23 to the right and, therefore, the pin 25 becomes connected to the crank 5 while pin 26 is separated from lever 6 and coupling pin 27 is shifted out of the opening of crank 5 and into the opening of lever 6 so that in this position the link 3 and lever 6 are interconnected by the pin 27. The snap ring 30 thus becomes located in the annular groove 28 of pin 27. Since the pin 26 is now separated from lever 6, this lever is free to turn. The shifting of control bar 19 to the left moves the cutout 31 laterally away from member 32 so that the outer surface of control bar 19 prevents movement of member 32 to start the operation of motor 4. Also, the lower arm of bell-crank lever 35 is now located directly over the cutout 33 of control bar 19 and is free to move into this cutout 33.

Assuming that the projections of the hub of hand crank 8 are located in the openings of disc 9, and that the hand crank 8 is rotated in a counterclockwise direction, as viewed in Fig. 1, then this disc 9 will turn so as to separate tooth 38 from projection 36 of lever 35 and so as to turn the lever 35 in a clockwise direction, as viewed in Fig. 1, against the action of spring 34, so that the lower arm of lever 35 moves into the cutout 33 and thus temporarily locks the control bar 19 against movement. At the end of this forward turning movement of the disc 9, the projections 36 and 37 of lever 35 become located opposite the teeth 39 and 40 of disc 9 so that the disc 9 cannot be turned back to its original position by the crank 8, and lever 35 has moved out of cutout 33. During this movement of the disc 9, its projections 10, through their engagement with projections 11, have turned the disc 12 which through the spring 18 and plate 15 turns the shaft 1, this turning of plate 15 together with shaft 1 under the influence of spring 18 being limited by the engagement between projections 14 of plate 15 with projections 13 of disc 12. The turning movement of shaft 1 is transmitted through the disc 2, the link 3, and the coupling pin 27 to the lever 6 so as to tension the spring 7. At the end of this operation, the projection 42 of plate 15 engages the stop 41 of lever 35 and turns this lever 35 slightly in a clockwise direction against the action of spring 34, the lower arm of lever 35 having moved out of cutout 33 when the projections 36 and 37 become located opposite the teeth 39 and 40 of disc 9. This turning of lever 35 separates projection 36 from tooth 39 of disc 9, and the spring 7 now pulls the shaft 1 back to its original position.

The spring 18, during this return movement of shaft 1, causes the disc 12 to turn in a clockwise direction, as viewed in Fig. 1, so that the projections 11 engage projections 10 of disc 9 to turn the latter and the crank 8 back to their original positions, in which the projection 36

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of lever 35 again engages the tooth 38 of disc 9, the lower arm of lever 35 having moved out of the cutout 33 when projection 36 is in engagement with tooth 38. Unillustrated means are provided to assure the return of crank 5, link 3, and lever 6 to a rest position where the openings on these members are aligned with each other and with the pins 25 and 26 of the shifting member 24.

Fig. 3 of the drawings illustrates the structure for shifting the control bar 19 and also shows how the housing of the machine is oriented with the structure of the invention. As is apparent from Fig. 3, the front of the machine housing is provided with a front wall having a pair of openings aligned with a pair of push buttons 50 and 51 which are connected to opposite end portions of a lever 52 which is pivotally mounted intermediate its ends for movement about a vertical axis 53, a stationary pin or the like (not shown) being provided in the housing and extending along the axis 53 to pivotally support the lever 52. The push button 50 is provided at its front face with a letter H to indicate that this is the button which is pressed to set the apparatus in the position to be operated by hand, while the push button 51 is provided with the letter M to indicate that the button 51 is to be pressed to set the apparatus in position to be operated by the motor. The parts are shown in Fig. 3 in the position set for hand operation of the machine, and in this position the button 50 has its front face flush with the front face of the machine housing, while the button 51 extends forwardly beyond the machine housing. When the apparatus is set to be power-driven, the button 51 has its front face flush with the front surface of the housing and the button 50 extends forwardly beyond the housing.

The lever 52 is linked, to one side of its pivot axis 53, with a link 54 which is in turn pivotally connected to one end of a second lever 55 which is pivotally mounted intermediate its ends on a vertically extending stationary pivot pin, or the like (not shown). The other end of lever 55 is pivotally connected to a link 56 which is in turn pivotally connected to an arm 57 of a three-arm lever which is also turnably mounted on a stationary pin (not shown). The rearwardly extending arm 58 of this three-arm lever is pivotally connected to the control bar 19 so that the latter is shifted in one direction or the other when the operator pushes one of the buttons 50 and 51.

An electrical switch 60 is located within the machine housing and is located next to the free end of the third arm 59 of the three-arm lever so that this arm 59 operates the switch 60 which is connected into the circuit of a lamp located behind the opening 61 in a top wall portion of the machine housing. Thus, it is possible to tell not only by the position of the keys 50 and 51, but also by the lamp located behind opening 61, which of the drives is connected to the machine. The switch 60 is closed when the machine is set to be driven by the motor, so that when the lamp is illuminated, the operator immediately knows that the apparatus is set to be power-driven, and when the lamp is extinguished, the operator knows that the apparatus is set to be hand-driven, and this is in addition to the position of push buttons 50 and 51, which also let the operator know the setting of the machine. Instead of arranging a lamp behind a special opening 61, the lamp may be located above or below a window through which numbers of the apparatus are visible, so that these numbers may be illuminated by such a lamp. Also, in a manner similar to telephone installations, it is possible to provide an electro-magnetically operated indicator for use with the machine.

If desired, the arm 58 of the three-arm lever can be connected to the lever 22 of Fig. 1 through a suitable linkage or the like, so that with such an arrangement the control bar 19 may be eliminated entirely. Of course, it is not necessary for the ends of the control bar 19 to extend beyond the sides of the machine housing, and it is evident that the push button arrangement may be used

with power and hand driven arrangements other than the specific construction shown in Figs. 1 and 2. It should also be noted that the front end faces of push buttons 50 and 51 are quite large so as to afford a relatively large area to be engaged by the operator.

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 calculating machines differing from the types described above.

While the invention has been illustrated and described as embodied in control means for power or hand driven calculating machines, it is not intended to be limited to the details shown, since various modifications and structural changes may be made without departing in any way from the spirit of the present invention.

Without further analysis, the foregoing will so fully reveal the gist of the present invention, that others can by applying current knowledge readily adapt it for various applications without omitting features that, from the standpoint of prior art, fairly constitute essential characteristics of the generic or specific aspects of this invention and, therefore, such adaptations should and are intended to be comprehended within the meaning and range of equivalence of the following claims.

What is claimed as new and desired to be secured by Letters Patent is:

1. In a calculating machine, in combination, a machine housing having a front and rear; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including an elongated control member mounted in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; a first lever turnably mounted in said housing and having one end portion pivotally connected to said control member; a second lever pivotally mounted in said housing adjacent to the front end thereof; linkage means interconnecting said first and second levers so as to transmit turning movement of said second lever to said first lever to thereby move said control member between said first and second positions thereof; and push button means fixed to said second lever and extending at least partly beyond said housing at said front thereof so as to be accessible to the operator.

2. In a calculating machine, in combination, a machine housing having a front and rear; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including an elongated control bar mounted for shifting movement along its length in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; a plurality of elongated lever members pivotally mounted between their ends in said housing and being distributed between said control bar and said front of said housing, the rearmost one of said levers being pivotally connected to said control bar; a plurality of links respectively interconnecting said levers so that turning of the forwardmost one of said levers will be transmitted to said rearmost lever and to said control bar

for shifting the latter between said first and second positions thereof; and push button means fixed to said forwardmost lever for manually turning the same and extending in part to the exterior of said housing so as to be accessible to the operator.

3. A calculating machine comprising, in combination, a machine housing having a front and a rear and having at said front thereof a wall portion formed with a pair of openings; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including an elongated control bar mounted for shifting movement along its length in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; a plurality of elongated lever members pivotally mounted between their ends in said housing and being distributed between said control bar and said front of said housing, the rearmost one of said levers being pivotally connected to said control bar; a plurality of links respectively interconnecting said levers so that turning of the forwardmost one of said levers will be transmitted to said rearmost lever and to said control bar for shifting the latter between said first and second positions thereof; and a pair of push buttons respectively fixed to opposite end portions of said forwardmost lever, being respectively aligned with said openings, and extending at least partly therethrough so that when one of said buttons is pushed by the operator inwardly toward said housing to locate said control bar in one of said positions thereof, the other of said push buttons will extend through it opening outwardly with respect to said housing, and vice versa.

4. A calculating machine comprising, in combination, a machine housing having a front and a rear and having at said front thereof a wall portion formed with a pair of openings; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including an elongated control bar mounted for shifting movement along its length in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; a plurality of elongated lever members pivotally mounted between their ends in said housing and being distributed between said control bar and said front of said housing, the rearmost one of said levers being pivotally connected to said control bar; a plurality of links respectively interconnecting said levers so that turning of the forwardmost one of said levers will be transmitted to said rearmost lever and to said control bar for shifting the latter between said first and second positions thereof; and a pair of push buttons respectively fixed to opposite end portions of said forwardmost lever, being respectively aligned with said openings, and extending at least partly therethrough so that when one of said buttons is pushed by the operator inwardly toward said housing to locate said control bar in one of said positions thereof, the other of said push buttons will extend through its opening outwardly with respect to said housing, and vice versa, said push buttons having indicia for indicating the posi-

tion of said control bar and said push buttons having a relatively large surface to be engaged by the operator.

5. A calculating machine comprising, in combination, a machine housing having a front and a rear and having at said front thereof a wall portion formed with a pair of openings; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including an elongated control bar mounted for shifting movement along its length in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; a plurality of elongated lever members pivotally mounted between their ends in said housing and being distributed between said control bar and said front of said housing, the rearmost one of said levers being pivotally connected to said control bar; a plurality of links respectively interconnecting said levers so that turning of the forwardmost one of said levers will be transmitted to said rearmost lever and to said control bar for shifting the latter between said first and second positions thereof; and a pair of push buttons respectively fixed to opposite end portions of said forwardmost lever, being respectively aligned with said openings, one of said push buttons having a front end face flush with the outer surface of said housing and the other of said buttons extending outwardly beyond said housing when said control bar is in one of said positions thereof, and the other of said push buttons having a front end face flush with the outer surface of said housing and said one of said push buttons extending outwardly beyond said housing when said control bar is in the other of said positions thereof.

6. In a calculating machine, in combination, a machine housing having a front and rear; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including a control member mounted in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; linkage means connected to said control member for moving the same between said first and second positions and extending to said front of said housing; manually operable means connected to said linkage means for operating the same and being located at said front of said housing partly at the exterior thereof, so as to be accessible to the operator; and electrical switch means operatively connected to said linkage means to be operated thereby for illuminating a lamp when said control member is in said first position thereof so as to indicate to the operator that said power drive means is connected to the machine.

7. In a calculating machine, in combination, a machine housing having a front and rear and having a top wall portion located between said front and rear and formed with an opening passing therethrough; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including a control

member mounted in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; linkage means connected to said control member for moving the same between said first and second positions and extending to said front of said housing; manually operable means connected to said linkage means for operating the same and being located at said front of said housing partly at the exterior thereof, so as to be accessible to the operator; and electrical switch means operatively connected to said linkage means to be operated thereby for illuminating a lamp, located adjacent to said opening in said top wall portion of said housing, when said control member is in said first position thereof so as to indicate to the operator that said power drive means is connected to the machine.

8. In a calculating machine, in combination, a machine housing having a front and rear and having a top wall portion located between said front and rear and formed with an opening passing therethrough and through which numbers of the machine are visible; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including a control member mounted in said housing adjacent to the rear thereof for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; linkage means connected to said control member for moving the same between said first and second positions and extending to said front of said housing; manually operable means connected to said linkage means for operating the same and being located at said front of said housing partly at the exterior thereof, so as to be accessible to the operator; and electrical switch means operatively connected to said linkage means to be operated thereby for illuminating a lamp, located adjacent to said opening in said top wall portion of said housing, when said control member is in said first position thereof so as to indicate to the operator that said power drive means is connected to the machine, whereby said numbers of the machine are also illuminated by the lamp when said power drive means is connected to the machine.

9. In a calculating machine, in combination, a calculating machine housing having a front and a rear; operating keys, for operating the calculating machine, located adjacent said front of said housing; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operating connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including a control member mounted in said housing for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; moving means connected to said control member for moving the same between said first and second positions and extending to said front of said housing; and key means connected to said moving means for operating the same and located at said front of said housing partly at the exterior thereof adjacent said operating keys.

10. In a calculating machine, in combination, a calculating machine housing having a front and a rear; operating keys, for operating the calculating machine, located adjacent said front of said housing; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including a control member mounted in said housing for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; linkage means connected to said control member for moving the same between said first and second positions and extending to the front of said housing; and key means connected to said linkage means for operating the same and located at said front of said housing partly at the exterior thereof adjacent said operating keys.

11. In a calculating machine, in combination, a calculating machine housing having a front and a rear; operating keys, for operating the calculating machine, located adjacent said front of said housing; power drive means for driving the machine from a source of power; manual drive means for manually operating the machine; control means operatively connected to said power drive means and manual drive means for alternately connecting said power drive means and said manual drive means to the machine, said control means including a control member mounted in said housing for movement between a first position, where said power drive means is connected to the machine and said manual drive means is disconnected from the machine, and a second position, where said manual drive means is connected to the machine and said power drive means is disconnected from the machine; linkage means connected to said control member for moving the same between said first and second positions and extending to the front of said housing; key means connected to said linkage means for operating the same and located at said front of said housing partly at the exterior thereof adjacent said operating keys; and indicia means on said key means for indicating to the operator whether said control member is in said first or second position thereof.

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