Aug. 4, 1936. G. W. SINGLETON 2,049,875

LOCK SYSTEM

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Fig. 1.

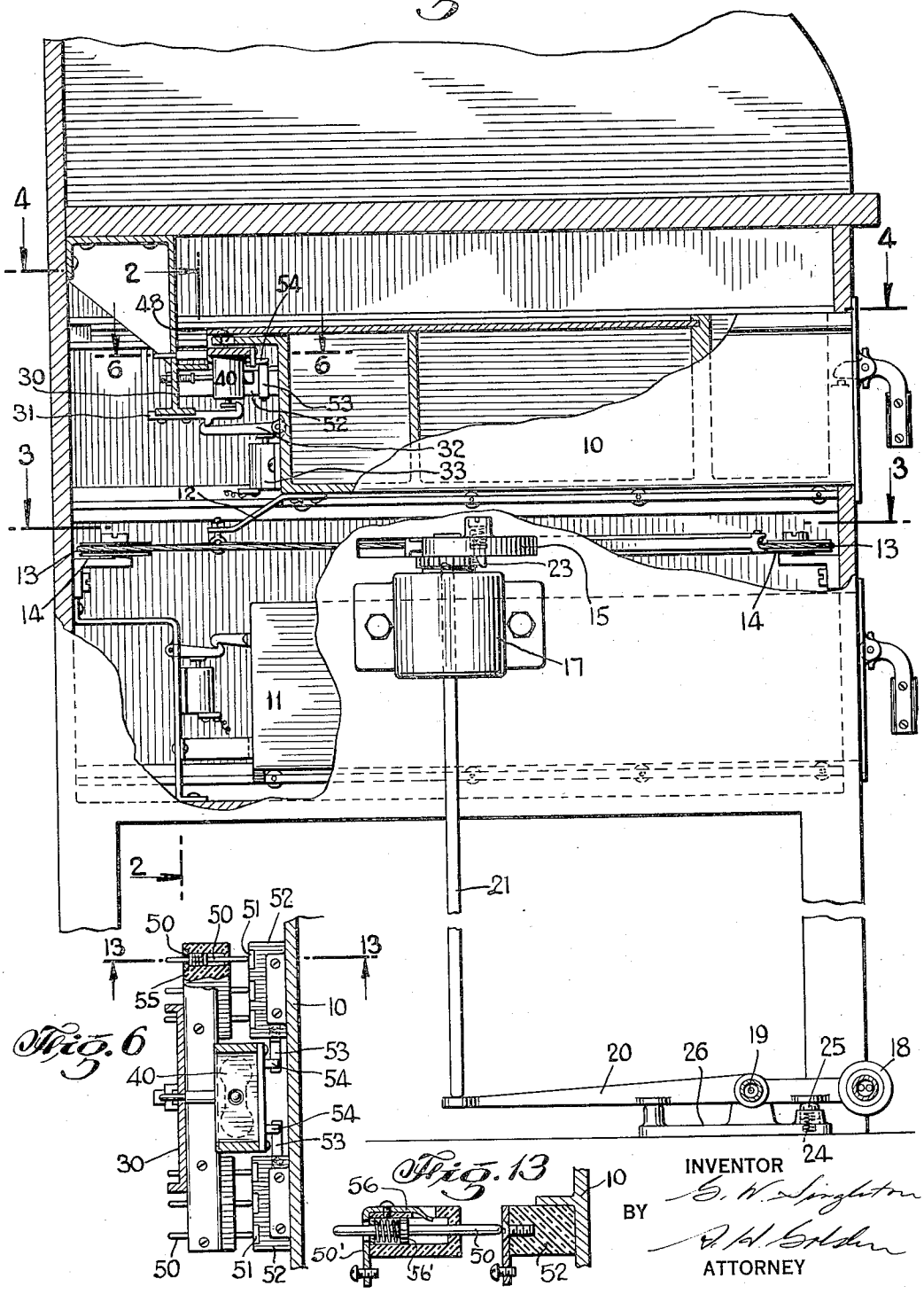


Fig. 6

Fig. 13

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Fig. 2.

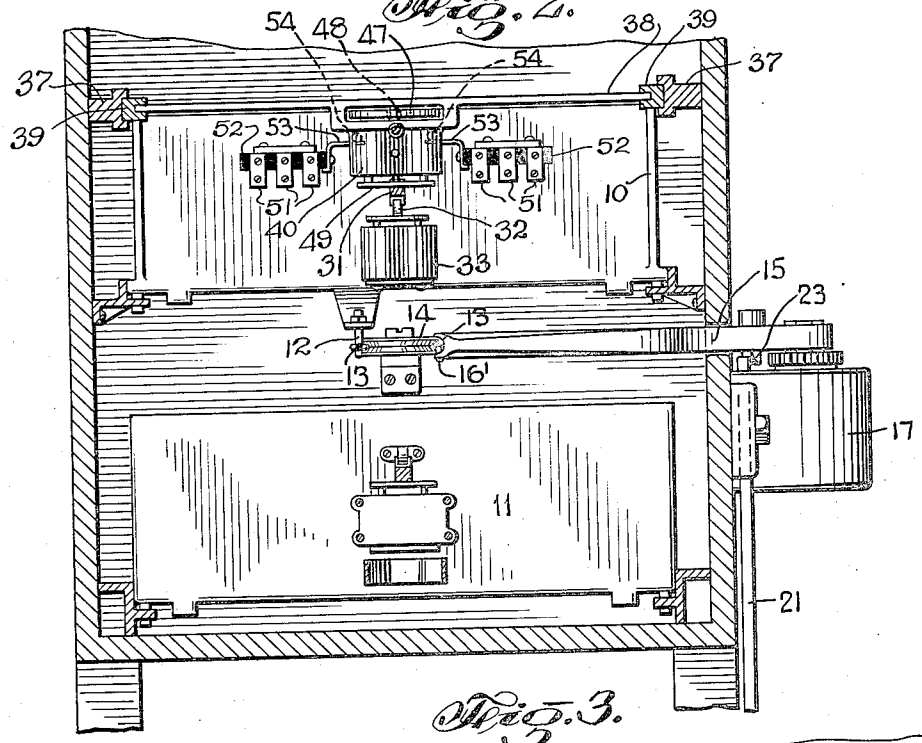
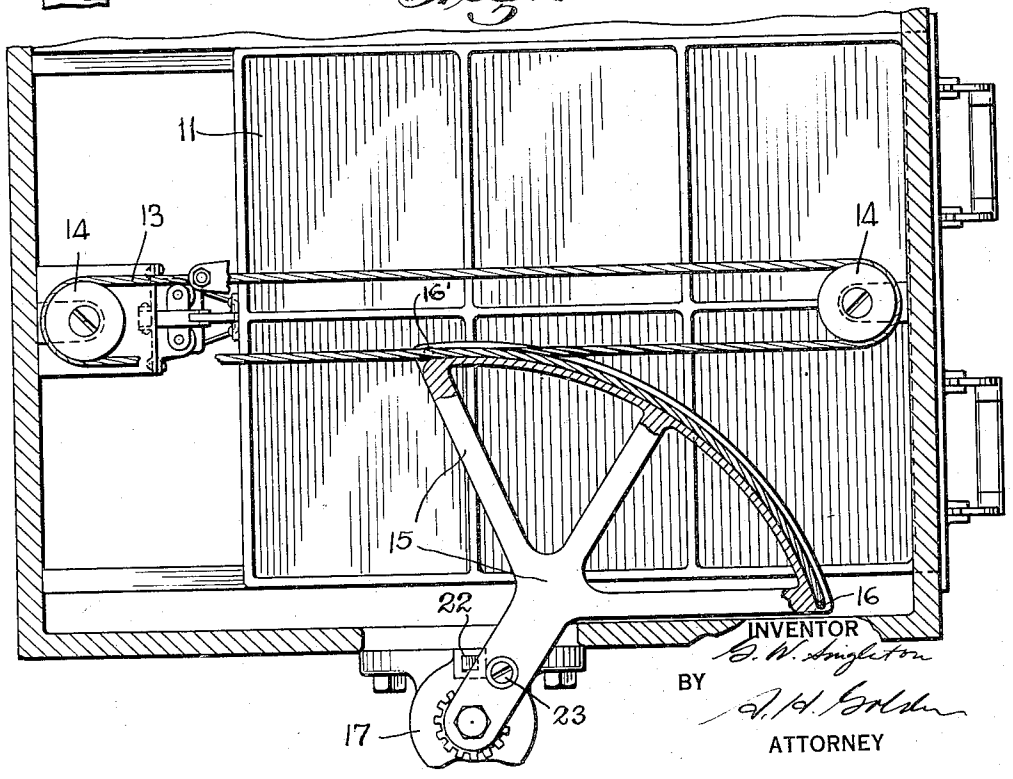


Fig. 3.



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Fig. 4.

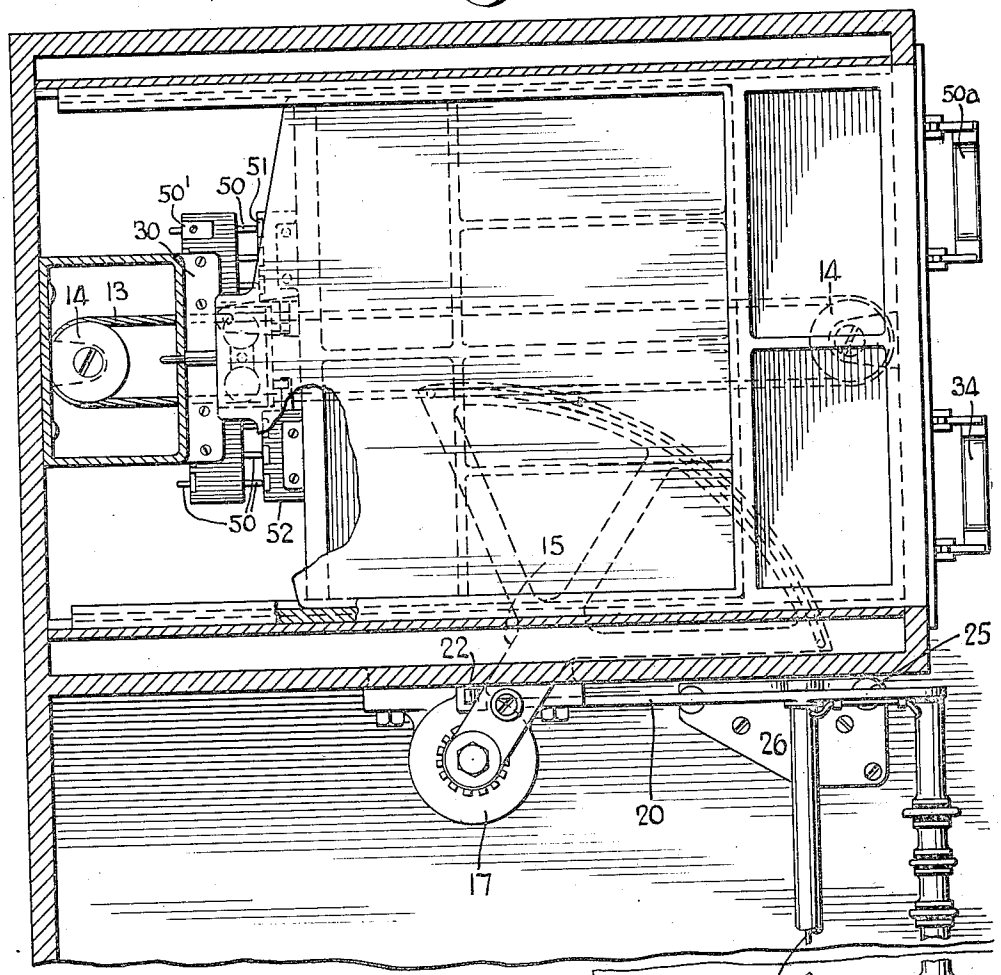


Fig. 5.

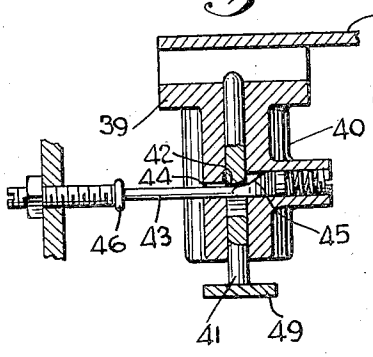
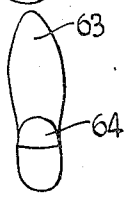


Fig. 12.



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Fig. 7.

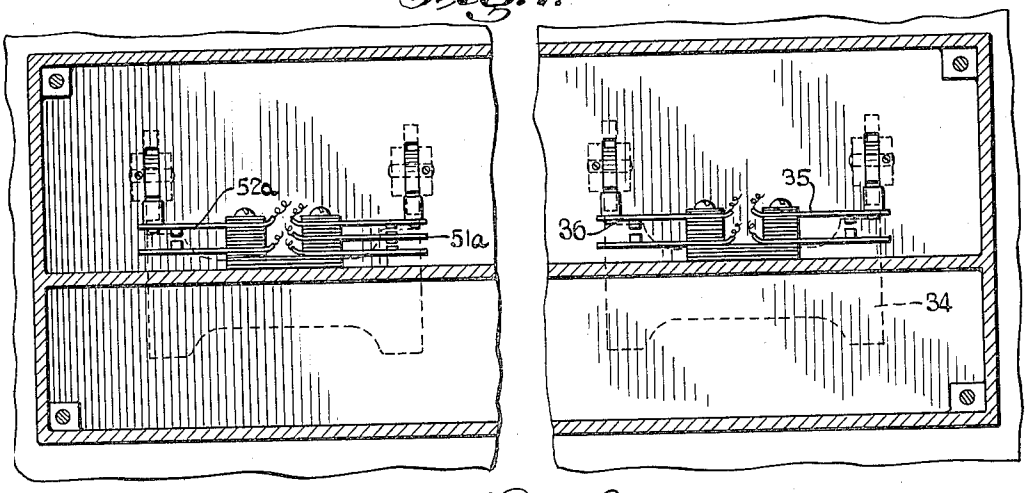


Fig. 8.

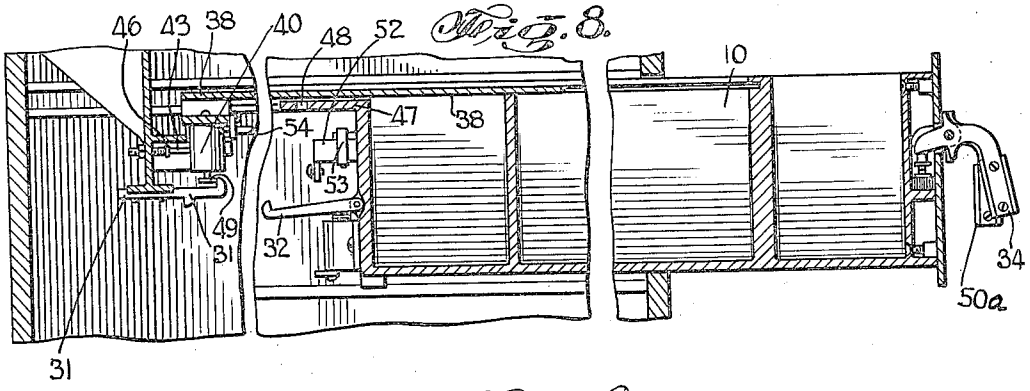
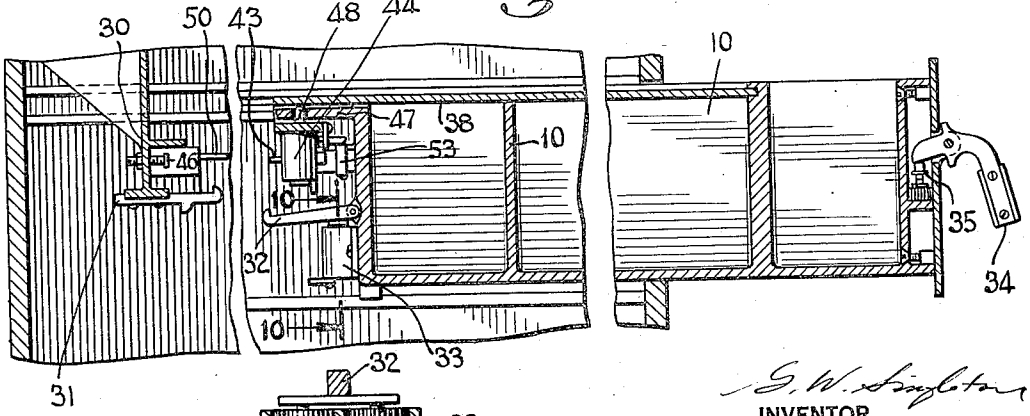


Fig. 9.



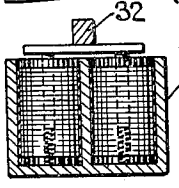


Fig. 10.

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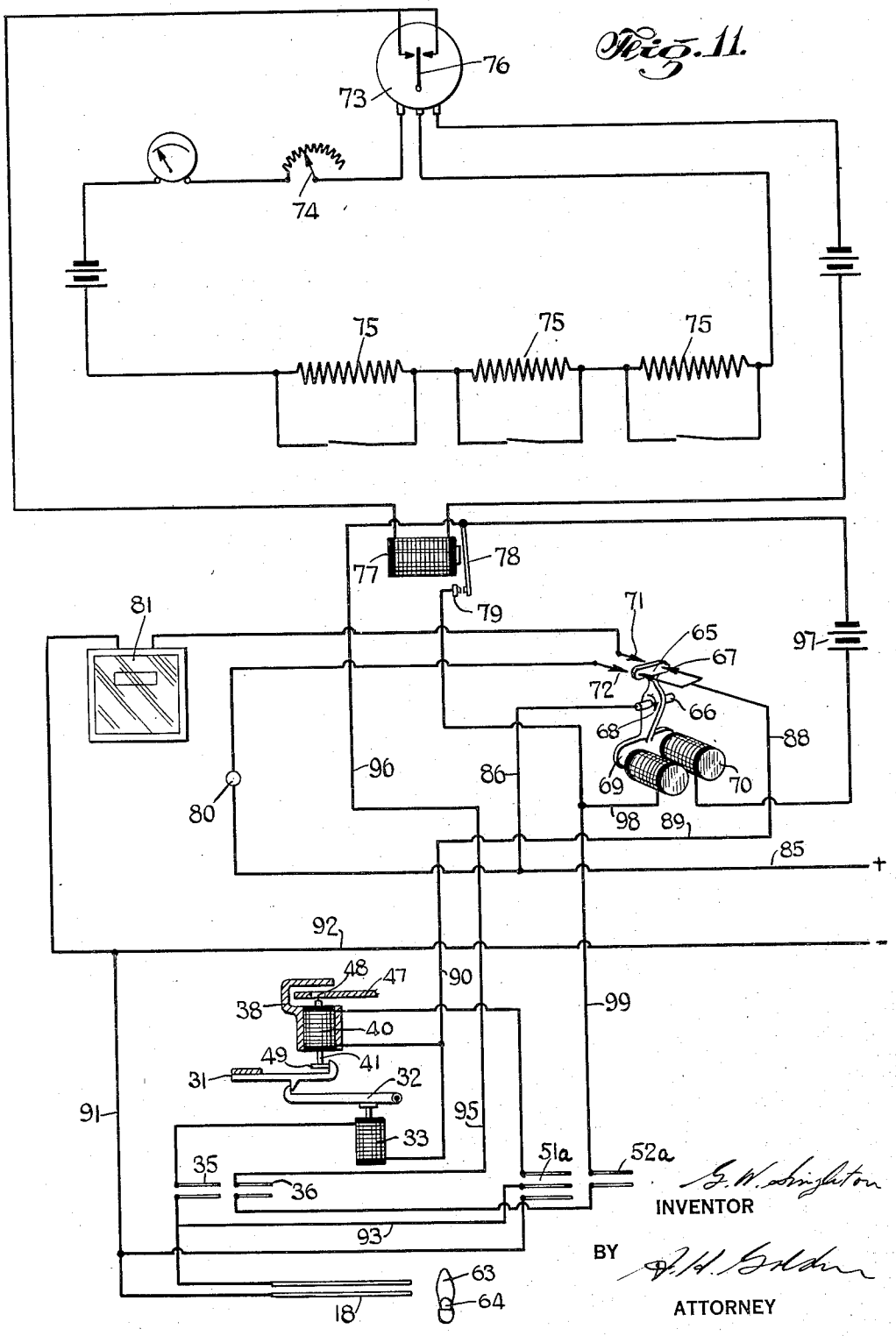
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LOCK SYSTEM

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Fig. 11.



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Patented Aug. 4, 1936

2,049,875

UNITED STATES PATENT OFFICE

2,049,875

LOCK SYSTEM

George W. Singleton, Stamford, Conn., assignor to The Yale & Towne Manufacturing Company, Stamford, Conn.

Application January 9, 1930, Serial No. 419,590

34 Claims. (Cl. 70—62)

This invention relates to a system of bank protection wherein it is the especial desire to protect the currency drawers in the bank against holdup.

My invention is adapted to cooperate with the general system described in the application of William E. Goehring, Serial No. 419,652, filed January 9, 1930 and discloses a drawer control which is cooperable with the bank lock protection system described in that application.

In general, my invention contemplates the arrangement of a drawer which is adapted to contain currency or other valuables, and which may normally be operated under particular electric control. The particular electric control is adapted to render the drawer operative or inoperative for free movement when the general bank lock system disclosed in the above entitled application, and of which the drawer is a part, functions as will be disclosed hereinafter. Once the bank lock system has operated to lock the drawer, it becomes impossible to open the drawer, regardless of any ordinary control operation, until the expiration of a predetermined period of time.

Preferably, my invention is further arranged so that when a particular operation of the drawer takes place, the entire bank lock protection system becomes effective and disables all the locks in the bank against opening, and also the particular drawer, as already indicated. This additional operation of the drawer also functions in a more detailed form of the invention to lock a cover on the drawer, so that should the drawer be moved to an open position, it will be moved to that position with the cover in closed relation relatively thereto, so that access to the funds under such conditions is difficult.

More particularly, my invention provides a housing and a drawer in that housing equipped with a pair of handles and a foot-controlled lever. One of these handles and the foot-controlled lever, control switches which are in series in the circuit of an electromagnet which operates a latch to permit opening of the drawer. The housing also carries a drawer cover which is ordinarily locked to the housing but may be released from the housing and locked to the drawer by an electromagnet. Under ordinary operation, as above, the drawer may be pulled out and the cover for the drawer will remain locked to the housing. Extraordinary operation of both handles, is adapted to withdraw the drawer and at the same time lock the cover to the drawer, so that access to the money contained in the same is prevented. This additional or extraordinary operation is further adapted to upset the entire system of lock protection in the bank, this system including also the electromagnets for permitting the opening of the drawer and for controlling the cover. Thus when the system is disturbed, operation of the drawer release magnet and the cover controlling magnet is impossible until the entire system is reestablished by certain time operated means.

For a detailed description of my invention, I refer to the drawings wherein Fig. 1 is a sectional view showing a pair of drawers, a foot rail and various other means for operating the drawer control. Fig. 2 is a view along the section line 2—2 of Fig. 1, and shows a rear end view of the pair of drawers and controls for the same. Fig. 3 is a section along line 3—3 of Fig. 1, showing the drawer closing means. Fig. 4 is a partial section and plan view along the line 4—4 of Fig. 1 showing the foot rail and the general control means for the drawer. Fig. 5 is a sectional view of the electromagnet adapted to control the drawer cover. Fig. 6 is a section along the line 6—6 of Fig. 1 showing the electric contact arrangement for the drawer controls. Fig. 7 shows the contacts adapted to be actuated by the handles of the drawers. Fig. 8 shows the drawer partially removed or withdrawn with the cover left behind, so that any money there is accessible. Fig. 9 is a view similar to Fig. 8 showing the drawer removed with the locking cover in position. Fig. 10 is a showing of one of the magnets. Fig. 11 is a diagrammatic and electrical diagram of the entire system of protection. Fig. 12 is a view of a shoe sole carrying a contact plate. Fig. 13 is a section along line 13—13 of Fig. 6 showing a special contact of Fig. 6.

Referring more particularly to the drawings, and especially to Fig. 1, reference numeral 10 indicates a currency drawer, while 11 indicates a lower or reserve currency drawer. The invention will be more particularly discussed with reference to the top or main currency drawer 10.

In order to control the movement of the drawer in both an outward and inward direction, a bracket 12 is fixed to the drawer and is secured to a cable 13, which is adapted to wind over a pair of pulleys 14, (Fig. 3.) One end of this cable is secured at 16 to an end of the arcuate arm 15, while the other end of the cable is secured at the point 16' to the other end of the arm 15. This arm 15 is carried by a shaft of a regulation liquid checking door closer 17 and is adapted to actuate the drawer to a closed position whenever it is released after having been pulled to an open position. By connecting each end of the cable 13 to the closer arm 15, a complete control equiva-

lent to a solid connection, is maintained over that drawer.

The closing of the drawer is further controlled by a foot rail 18 hinged at 19 on the bracket 26, and having an arm 20 which controls a vertical rod 21. This rod 21 has a portion 22 thereof (Fig. 3) which has a beveled face and is adapted to cooperate with a spring-pressed plunger 23 carried by the closer arm 15. The operation of these members is as follows. Before the drawer may be pulled out, it is always necessary to push the foot rail 18 in a downward direction, for reasons which will be hereafter explained. Obviously this movement actuates the rod 21 and brings the portion 22 into an upward position so that the spring-pressed bolt 23, will ride over the beveled face thereof as the drawer is opened. When the drawer is released in its outward position, it is obvious that as long as the foot rail is kept in its downward position by the operator's foot, it will be impossible for the drawer to close due to the holding action between the vertical faces of the members 22 and 23. It is, therefore, only possible to close the drawer when the foot is taken away from the foot rail and the rod 21 is returned to its downward position, by pressure of the spring 24 and the button 25, (Fig. 1).

For controlling the outward movement of the drawer 10, I utilize a fixed housing bracket 30, (Fig. 1) having a latch arm 31 with which spring pressed catch 32 of the drawer is adapted to cooperate. This catch 32 is pivoted to the drawer and is adapted to be controlled by the electromagnet 33, the catch constituting the armature of that electromagnet. It will be quite readily understood that when the drawer and its latch mechanism are in the position of Fig. 1, it will be impossible to withdraw the drawer. This electromagnet 33 is located in a circuit which is controlled by the movement of the left-hand handle 34. (See Figs. 4, 7, 8 and 9). This handle 34 is adapted to cooperate with a series of switch members 35 and 36, which may be moved to a closed position to close the circuit through the magnet 33 and permit the drawer to be pulled out as shown in Figs. 5, 8 and 9. The complete electrical operation of the entire drawer control will be explained later.

Referring more particularly to Fig. 2, the drawer 10 is shown adapted to slide in a series of brackets 37 secured to the walls of the drawer housing. This drawer is equipped with a cover 38 which is adapted to slide in bearings 39 of the drawer. Looking at Fig. 5, this cover 38 is shown to have a downward extending portion 39, which carries an electromagnet 40 equipped with a plunger 41 and a cross bar 49.

This plunger 41 is of a rather peculiar construction and has a central elongated bore 42, in which rides a horizontally spring-pressed plunger 43. The bore 42 has a camming surface with which a camming portion 45 of the plunger 43 is adapted to cooperate. A fixed screw 46 cooperates with the plunger 43 when the cover is entirely within the housing. The action of this apparatus is as follows: When the electromagnet 40 is actuated, the plunger 41 is adapted to shoot in an upward direction away from the position shown in Fig. 5. It is quite easily seen that when it shoots in this upward direction, the plunger 43 will be allowed to spring to the left as soon as the cover is partially pulled away from screw 46. The plunger 43 will then act to maintain the armature plunger 41 in its upward position due to the action of the cam surface 45. When the drawer and cover are returned to closing position the plunger 43 will impinge against the screw 46 carried by the bracket 40 and will be moved to the position shown in Fig. 5, so that the plunger 41 will once more drop by gravity.

This action is utilized to lock the drawer cover to the drawer, as will be presently explained. Referring to the drawings once more, and more particularly to Figs. 8 and 9, it will be seen that the drawer 10 has an extension 47 equipped with a bore 48, the plunger 41 being adapted to enter this bore 48 whenever it is moved in an upward position by the energization of the magnet 40. When the magnet 40 is deenergized and the plunger 43 impinges against the screw 46, a portion 49 of that plunger is adapted to be positioned behind an upper hook on the catch member 31.

The complete action of this drawer assembly is as follows. When the drawer handle 34 alone is moved, the latch member 32 is removed from the member 31 by magnet 33 so that the drawer may be moved to an outward position. The cover 38 is allowed to remain behind because the magnet 40 fixed thereto, the plunger 41 and the cross bar 49 are held securely by the arm 31. This is all shown in Fig. 8. Referring now to Fig. 9, it is seen that if the magnet 40 is energized simultaneously with the energization of the magnet 33, the plunger 41 will move to an upward position where it will enter the bore 48 of the drawer and securely lock the drawer and cover together. At the same time, the bar 49 will be raised out of engagement with the catch member 31 and when the drawer is moved to an opened position, the cover and drawer will move simultaneously. For controlling the operation of the magnet 40, I utilize a handle 50*a*, which controls a series of contacts 51*a* and 52*a*. The complete electrical operation of the system will be explained later more particularly with reference to Fig. 11.

In order to supply the electric current to the series of magnets, a series of spring-pressed plungers 50 are carried by the bracket 30. (See Figs. 2, 4 and 6). These plungers are spring-pressed in the direction of the drawer, and are adapted to transfer current to a series of contact plates 51 carried by the insulation members 52, which are firmly secured to the end of the drawer 10. The electromagnet 40 of the drawer is supplied with current through means of the wiping contact 53 carried by the insulation member 52 and the contact 54 carried by the magnet itself.

Each of the plungers 50 is adapted to receive its current in the usual way from contact bars mounted on the insulating block 55 which is carried by the bracket 30. In this way, current is always transmitted through these plungers regardless of their position. For reasons to be explained later, it is desirable that one of these plungers shall not transmit any current until the drawer 10, which carries the contact pieces 51 is moved a definite distance in an outward direction, this definite distance being sufficient to bring the catch member 32 beyond the depending hook of the fixed latch member 31. In order to accomplish this purpose, one of the contacts (see Fig. 13) is equipped with a shoulder piece 56'. The current is adapted to be received by member 50' and is transmitted to the plunger by contact 56, but only after it has been allowed to move a certain distance in an outward direction by the right-hand movement of the drawer 10. As has been said, the function of this action will be described later.

The control of the drawer 10 comprises also a

series of contacts carried by the foot rail 18 in combination with the contacts 35 and 36 actuated by the handle 34. As seen in Fig. 4, my foot rail 18 is equipped with a series of contact discs 60 of relatively large diameter. These discs are all connected in parallel. Similarly, my rail is equipped with a series of relatively small diameter discs 61, which are also connected in parallel. The discs 60 are adapted to comprise one contact of a circuit closing switch while each of the discs 61 is capable of being the contact for the other side of the circuit. It is thus seen that by putting a contact plate between a member 60 and a member 61, a circuit will be closed through certain electrical devices, to be designated later. For closing this circuit, the operator of the drawer is adapted to wear a shoe 63 equipped with a plate contact 64. When the operator places the plate 64 so as to bridge the distance between a large and a small disc, a circuit will be closed for the control of such elements as will be described presently. The purpose of having a high and a low disc is to make closing of the circuit a more or less difficult matter, since it is necessary to have a relatively narrow plate and to place the same in an angular position.

For a description of the electrical system, including the apparatus already described and other mechanism, I refer to Fig. 11. For generally controlling the operation of the magnets 33 and 40 of the drawer control and cover control, I utilize a contact plate 65 which is secured to a shaft 66 and is adapted to contact normally with a pair of contacts 67. This shaft 66 is adapted to be continuously in frictional contact with an overrunning friction clutch operable by a time movement or other time controlled mechanism. This clutch tends to rotate shaft 66 in a clockwise direction, shown by the arrow 68 to maintain the contact 65 always against the contacts 67. The shaft 66 is also adapted to carry an armature 69, which is adapted to be operated by an alarm relay or electromagnet 70, to rotate the shaft in a counter-clockwise direction, so as to bring the contact 65 in a position where it will bridge the contacts 71 and 72. It will be readily understood that when this action takes place, contact will be broken at the points 65 and 67, for a purpose which will be hereafter explained.

For further controlling the magnet 70 so as to break the circuit at 65 and 67, I utilize a balanced relay 73 which is kept in a balanced position by a variable resistance 74, and resistances 75. This balanced condition may be destroyed at any time by the short circuiting of one of the resistances 75, which may be located anywhere throughout the bank where the particular drawers constituting the system are situated. It will be understood that when the resistances 75 are short circuited or varied in any way that the pointer 76 of the balanced relay 73 will move in either a right-hand or left-hand direction and close a circuit through the secondary relay 77. This secondary relay, when actuated, will move armature 78 in position to contact with the contact 79 and close a circuit through the magnet 70, so as to rotate the shaft 66 in a counter-clockwise direction. This counter-clockwise rotation will cause contact 65 to bridge the contacts 71 and 72, and will close a circuit through an alarm 80 and an annunciator 81. It may also perform certain other functions, such as notifying the police station, ringing a gong on the outside of the bank, or any other function desirable.

It should be understood that when the magnet 70 has moved the shaft 66 in a counter-clockwise direction, the constantly operating time clutch will act on shaft 66 to move the same in a clockwise direction, so as to bring the contact 65 up against contact 67 after a definite period of time, and once more reestablish the circuits controlled by those two contacts.

It should be further understood that the balanced relay, the magnet 70 and the shaft 66 with its time-controlled means, are all situated in a cabinet which is protected from attack by one of the resistances 75. This cabinet is located in some portion of the bank, and should anyone attack it, a resistance 75 will be short-circuited so that the balanced relay will actuate the circuit through the secondary relay 77, which will actuate the alarm circuit relay 70 and break the circuit through contacts 65 and 67, as has been explained already. The entire operation of my drawer control, in combination with the electrical system involving the balanced relay and the time-controlled contacts, is as follows:

If it is desired to open the drawer 10, it is necessary to close the circuit through the electromagnet 33, so as to move its armature and latch 32 in a downward direction, away from the latching member 31. This is done by moving the left-hand handle 34 in an upward direction as if to withdraw the drawer. This closes the circuit through the switch member 35, and at the same time the operator uses the shoe carrying the contact 64 to bridge the contact across the foot rail 18. The circuit established is as follows: From the plus side of the line through the contact line member 85, wire 86, through the contacts 65 and 67, wire 88, wire 89, wire 90, through the magnet 33, the switch members 35, the rail 18, wire 91, wire 92, back to the negative side of the line. This operation will, therefore, withdraw the latch member 32 and permit the drawer to be opened.

The operation of my system is so designed that when the right-hand handle of the drawer is actuated to an upward position, it will not only close the drawer by locking the cover onto the same, but it will also close the circuit through the alarm relay magnet 70 which will open the circuit at 65, 67 so that it will be impossible to further control the drawer or its cover. In order to have the entire system operative, it is always necessary to have the contact established at 65, 67.

Operation of the right-hand handle 50*a* always takes place simultaneously with the operation of the handle 34 and will affect the circuit as follows: From the plus side of the circuit to wire 85, wire 86, contacts 65 and 67, wire 88, wire 89, wire 90, through the magnet 40 and back to the upper contact of contacts 51*a* through the lower-most contact, through the contact wire 91, wire 92, and back to the negative side of the line. The action of this circuit has been to raise the plunger 40 in an upward direction so as to lock the drawer cover to the drawer itself. The operation of the right handle makes it unnecessary to use the rail 18 to open the drawer as when the left handle alone is used. The short-circuiting of the rail 18 to make operation of the same unnecessary to pull out the drawer, is accomplished by the middle contact of the series 51*a*, which operates through the wire 93, the left-hand handle contact 35, the magnet 33, the wire 90, and through the contacts 65 and 67, as has been explained, to withdraw the latch mem-

ber 32. Thus, it will be understood that insofar as we have gone, operation of both the left- and the right-hand handle will actuate both magnets 33 and 40, to permit the drawer to be opened with the cover locked thereto.

A further function of the closing of these two handles is to close the circuit through the magnet 70, so that the further operation of either the cover or the drawer will be impossible. In effect this is equal to upsetting the balanced circuit since it destroys the contact at points 65, 67 and renders the entire drawer control inoperative. This operation is accomplished by closing the two switch members 36 and 52*a* by operation of both the handles. This closes the circuit through the wires 95—96, the source of current 97, the magnet 70, wire 98, and wire 99, and through the switch members 52*a* and 36.

In the operation of this latter part of the circuit, it is important that the member 52*a* shall not close the circuit through the magnet 70, so as to break the contacts 65 and 67, until each of the magnets 33 and 40, has been actuated to perform its respective function. It will be quite readily understood that unless those magnets are allowed to perform their functions, the circuit will be prematurely destroyed through the contacts 65 and 67 so that it will be impossible to withdraw the drawer into an outward position with the cover locked thereto. It is important, therefore, that the circuit through those magnets be established until the drawer is pulled outwardly the amount required to withdraw the latch member 32 from the fixed latch 31. For accomplishing this purpose, I utilize the arrangement which I have previously described in Fig. 13. It is there seen that the contact rod 50 will not make contact until the drawer is pulled outwardly a certain definite amount. When this is done, contact will be made from the member 56 to the rod shoulder, to establish the circuit controlled by the switch members 36 and 52*a* through the magnet 70. It will, of course, be understood that once this circuit through the magnet 70 is made, and the contacts 65 and 67 are out of operative relationship, the time lock means will begin operation on shaft 66 to once more establish the circuit of the controlling magnets 33 and 40.

I have so far described my invention from the viewpoint of its mechanical and electrical operation. I will now attempt to describe my invention functionally, as it will operate with reference to the human element.

Under normal conditions, the bank teller is equipped with the special contact shoe and is able to operate his drawer by means of the left handle 34 and the foot rail 18, the external circuit through the latch operating magnet 33 being completed through the contacts 65, 67.

If an attack be made on the bank, the balanced relay is disturbed, the secondary relay is closed, the attack relay 70 opens the circuit 65, 67 and the teller can no longer open the drawer. The time controlled means begin operation at once, however, and automatically reestablish contacts 65, 67 to render the drawers operable after a definite period.

The relays 70 may of course be operated by other circuits independently actuable by push buttons located at strategic points in the bank.

It should be further understood that the balanced relay, the attack relay, and the time controlled means are all in cabinets, access to which is prevented by locks which are rendered inoperable as soon as the attack relay 70 is actuated. This arrangement does not form part of this invention, however.

If the teller himself be held up, he will naturally actuate both drawer handles when he is ordered to get the money. In doing this, he will open the drawer, but he will lock the cover thereto, and will at the same time destroy the circuit through all the locks, drawers, etc. located elsewhere in the bank. If the drawer be allowed to close at this point, it is well to note that the cover will be automatically released therefrom, but it will not be possible to pull the drawer out once more, since magnet 33 will be inoperable. As usual, the time means will at once start the closing of the electrical circuit at 65, 67 to reestablish the system.

It is interesting to note also that to set off the alarm and lock the drawer cover, the teller need not step on the rail 18, whereas, under the usual scheme of operation he must do so.

While I have described one form of my invention, it should be understood that modifications of the same will readily occur to those skilled in the art.

I claim:

1. A drawer assembly including a drawer housing, a drawer, and a drawer cover, and means cooperable with said cover and housing to maintain said cover within the housing as the drawer is withdrawn.

2. A drawer assembly including a drawer housing, a drawer, and a drawer cover movable relatively to said housing, means for locking said cover to said housing, and means for locking said cover to the drawer.

3. A drawer assembly including a drawer housing, a drawer, and a drawer cover movably mounted relatively to said housing, means cooperable with said cover and housing to maintain said cover within the housing as the drawer is withdrawn, and means for locking said cover to said drawer.

4. A drawer assembly including a drawer housing, a drawer, and a drawer cover, said cover being movable relatively to said housing and said drawer, and means cooperable with said cover and drawer to maintain said cover locked to said drawer, as the drawer is withdrawn.

5. A drawer assembly including a drawer housing, a drawer, and a drawer cover, means cooperable with said cover and housing to maintain said cover within the housing as the drawer is withdrawn, and means for locking said cover to said drawer while releasing said cover from said housing.

6. A drawer assembly including a drawer housing, a drawer, and a drawer cover, means for locking said cover to said housing to permit relative movement between the drawer and its cover, and means for locking the cover to the drawer for permitting relative movement of the drawer and cover relatively to said housing.

7. A drawer assembly including a drawer housing, a drawer, and a drawer cover, means cooperable with said cover and housing to maintain said cover within the housing as the drawer is withdrawn, said means being operable to lock said cover to said drawer while releasing said cover from said housing.

8. A drawer assembly including a drawer housing, a drawer, and a drawer cover, means fixed to said cover and cooperable with said housing to maintain said cover within the housing as the drawer is withdrawn, said means being operable

to lock said cover to said drawer while releasing said cover from said housing.

9. A drawer assembly including a drawer housing, a drawer, and a drawer cover, latch means on said housing, latch means on said drawer, a movable latch carried by the cover and cooperable in one position with the housing latch, and in the other position with the drawer latch, and means for moving said latch into position to lock said cover to said housing to maintain the cover within the housing as the drawer is withdrawn, said latch being also movable to lock said cover to said drawer to permit the drawer and cover to be withdrawn simultaneously.

10. A drawer assembly including a drawer housing, a drawer, and a drawer cover, means fixed to said cover and adapted to lock said cover to said housing, said means being movable to lock said cover to said drawer while releasing said cover from the housing.

11. A drawer assembly including a drawer housing, a drawer, and a drawer cover, means cooperable with said cover and housing to maintain said cover within the housing as the drawer is withdrawn, and means cooperable with said cover and drawer for locking the cover to said drawer, a handle carried by said drawer, and means operable by said handle for controlling the cover locking means.

12. A drawer assembly including a drawer housing, a drawer, and a drawer cover, electrically operated means carried by said cover and cooperable with said housing to maintain said cover within the housing as the drawer is withdrawn, said means being movable into cooperation with said drawer while moving out of cooperation with said housing.

13. A drawer assembly including a drawer housing, a drawer, and a drawer cover, said drawer being normally movable outwardly relatively to said cover and housing, and means carried by said cover for locking said cover to said drawer for permitting removal of said cover and drawer simultaneously from said housing.

14. A drawer assembly including a drawer housing, a drawer, and a drawer cover, said cover being normally maintained within the housing as the drawer is withdrawn, and electrically operated means for locking said cover to said drawer while releasing the same from the housing, so as to permit the drawer to be withdrawn from the housing with the cover in locked position.

15. A drawer assembly, including a drawer housing, a drawer, and a drawer cover, an electromagnet having an armature adapted to lock said cover to said housing to permit the drawer to be removed without its cover, said armature being movable into position for locking the cover to the drawer while releasing said cover from said housing.

16. A drawer assembly, including a drawer housing, a drawer, and a drawer cover, an electromagnetic latch carried by said cover, said latch being cooperable with said housing to lock said cover to said housing to maintain the cover within the housing when the drawer is withdrawn, said electro-magnetic latch being movable to lock the cover to said drawer while releasing said cover from said housing.

17. A drawer assembly including a drawer housing and a drawer, a latch member carried by the housing and a cooperating latch member carried by said drawer, an electric circuit having means for controlling said latch members, and a switch operable by a drawer handle for controlling said circuit.

18. A drawer assembly including a drawer housing and a drawer, handles mounted on said drawer, an electric circuit for controlling the operation of said drawer, and a switch for said circuit operable by one of said handles.

19. A drawer assembly including a drawer housing and a drawer, handles mounted on said drawer, said handles being movable relatively to said drawer, electrical circuits for controlling the operation of said drawer, and switches for said circuits operable by said handles.

20. A drawer assembly including a drawer housing and a drawer, a latch carried by said drawer and adapted to interlock said drawer with said housing, an electric circuit having means for releasing said latch from said housing to permit removal of the drawer, and a switch for said circuit operable by a handle of said lock.

21. A drawer assembly including a drawer housing and a drawer, drawer locking means, an electrical circuit for controlling said locking means, a pair of handles for said drawer, a switch for said circuit controlled by one of said handles and adapted to condition the circuit to permit operation of the drawer, an attack circuit having means adapted to condition said first electrical circuit to prevent operation of the drawer and a switch for said attack circuit operable by the other of said handles.

22. A drawer assembly including a drawer housing and a drawer, drawer locking means, an electrical circuit for controlling said locking means, and a second electrical circuit for controlling said first circuit, a switch for said first circuit operable by a handle of said drawer, and a switch for said second circuit also operable by a handle of said drawer.

23. A drawer assembly including a drawer, a drawer housing, and a drawer cover, latch means carried by said housing, said drawer, and said drawer cover, said drawer cover latch being cooperable with said housing latch to hold the drawer cover within the housing as the drawer is withdrawn under normal operation, and electromagnet for said cover latch adapted to actuate the same to a position out of contact with the housing latch and into locking engagement with the drawer latch, a circuit for said electro-magnet having a switch operable by a handle of the drawer, a second switch for said circuit located externally of the drawer housing, said second switch being movable into closed position by a time controlled mechanism, said switch being movable into open position by an attack circuit relay, and a switch for said attack circuit also operable by a drawer handle.

24. A drawer assembly including a drawer, a drawer housing, and a drawer cover, latch means carried by said housing, said drawer, and said drawer cover, said drawer cover latch being cooperable with said housing latch to hold the drawer cover within the housing as the drawer is withdrawn under normal operation, an electromagnet for said cover latch adapted to actuate the same to a position out of contact with the housing latch and into locking engagement with the drawer latch, a circuit for said electromagnet having a switch operable by a handle of the drawer, a second switch for said circuit located externally of the drawer housing, said switch being movable into open position by an attack circuit relay, said latch operating electro-magnet being operable to inter lock the drawer and cover

when the drawer handle switch is actuated, and a switch for said attack circuit also operable by said handle.

25. A drawer assembly including a drawer, a drawer housing, and a drawer cover, means adapted to interlock said cover and drawer, said means being maintained inaccessible within said housing, an electro-magnetic circuit for operating said means, a switch for said electro-magnetic circuit operable by a drawer handle, a second switch in said electro-magnetic circuit, an attack circuit relay for operating said second switch, time controlled mechanism for controlling the operation of said second switch, and a switch for said attack circuit also operable by said drawer handle, said handle operation being arranged to close the electro-magnetic circuit for locking said cover to said drawer, and subsequently close the attack circuit to break said electro-magnetic circuit.

26. A drawer assembly including a drawer, a drawer housing and a drawer cover, a fixed latch member carried by said housing, a latch carried by said drawer and cooperable with the fixed latch to hold the drawer closed, an electro-magnet carried by the drawer and adapted to operate the drawer latch to permit opening of the drawer, a circuit for said drawer magnet and a switch for said circuit adapted to be closed by a handle of said drawer, a latch carried by the drawer cover adapted to cooperate normally with the housing latch, an electro-magnet for said latch adapted to actuate the same to a position out of contact with the housing latch and into locking engagement with the drawer, a circuit for said magnet controlled by a second handle of the drawer, a second switch for each of said electro-magnetic circuits, an attack circuit relay for opening said second switch, and a switch for said attack alarm circuit also operable by said second handle.

27. A drawer assembly including a drawer housing and a drawer, means for locking said drawer within said housing, and an electric circuit having means for controlling said locking means, switch means for controlling said circuit, and a foot rail constituting the operating portion of said switch means.

28. In a drawer assembly, a drawer housing and a drawer, locking means for preventing the opening of said drawer, means independent of said locking means for holding said drawer in open position, and a foot rail independently connected to each of said means to control the operation of the same.

29. In a drawer assembly, a drawer housing and a drawer, locking means for preventing the opening of said drawer, said means being electrically operated, means cooperating with said drawer to pull the same to closed position, and means adapted to hold said drawer in open position, a foot operated rail, said rail having means adapted to control the electrically operated locking means, said rail also having means connected thereto for controlling said holding means.

30. In a drawer assembly, a drawer housing, and a drawer mounted therein for outward and inward movement, a spring pressed closing arm in said housing, said arm being of arcuate shape, a cable secured to said drawer and secured to one end of said arcuate shaped arm, and a second cable secured to said drawer and to the other end of said arm.

31. A drawer assembly, including a drawer, a drawer housing and a drawer cover, cooperating latch means carried by said housing, said drawer, and said drawer cover, said drawer cover latch being normally cooperable with the housing latch, means for moving said latch cover into interlocking engagement with said drawer to permit removal of the drawer and cover simultaneously, and means carried by the housing and cooperable with the drawer cover latch to release the same from engagement with the drawer latch and into engagement with the housing latch, when the drawer is moved into closed position.

32. A drawer assembly including a drawer housing, a drawer, and a drawer cover, a latch carried by said cover and cooperable with a latch carried by said drawer to interlock therewith, an electro-magnet for interlocking said cover and drawer latches, and a spring plunger also operable to maintain said latches connected, said plunger being adapted to become operative when said electro-magnet becomes inoperative.

33. A drawer assembly including a drawer housing, a drawer, and a drawer cover, an interlocking means for locking said cover to said drawer, an electro-magnet and a spring device each operable to maintain said interlocking means operable, means for rendering said spring means inoperable when said cover is substantially within the housing, said spring means being rendered operative upon partial withdrawal of said cover and drawer.

34. A drawer assembly including a drawer housing, a drawer, and a drawer cover, an interlocking means for locking said cover to said drawer, an electro-magnet and a spring device each operable to maintain said interlocking means operable, means for rendering said spring means inoperable when said cover is substantially within the housing, said spring means being rendered operative upon partial withdrawal of said cover and drawer, said electro-magnetic means being rendered inoperable after said partial withdrawal.

GEORGE W. SINGLETON.