Feb. 18, 1936. C. J. MEUNIER ET AL 2,031,543

BANK PROTECTING DEVICE

Filed Feb. 15, 1935 3 Sheets-Sheet 1

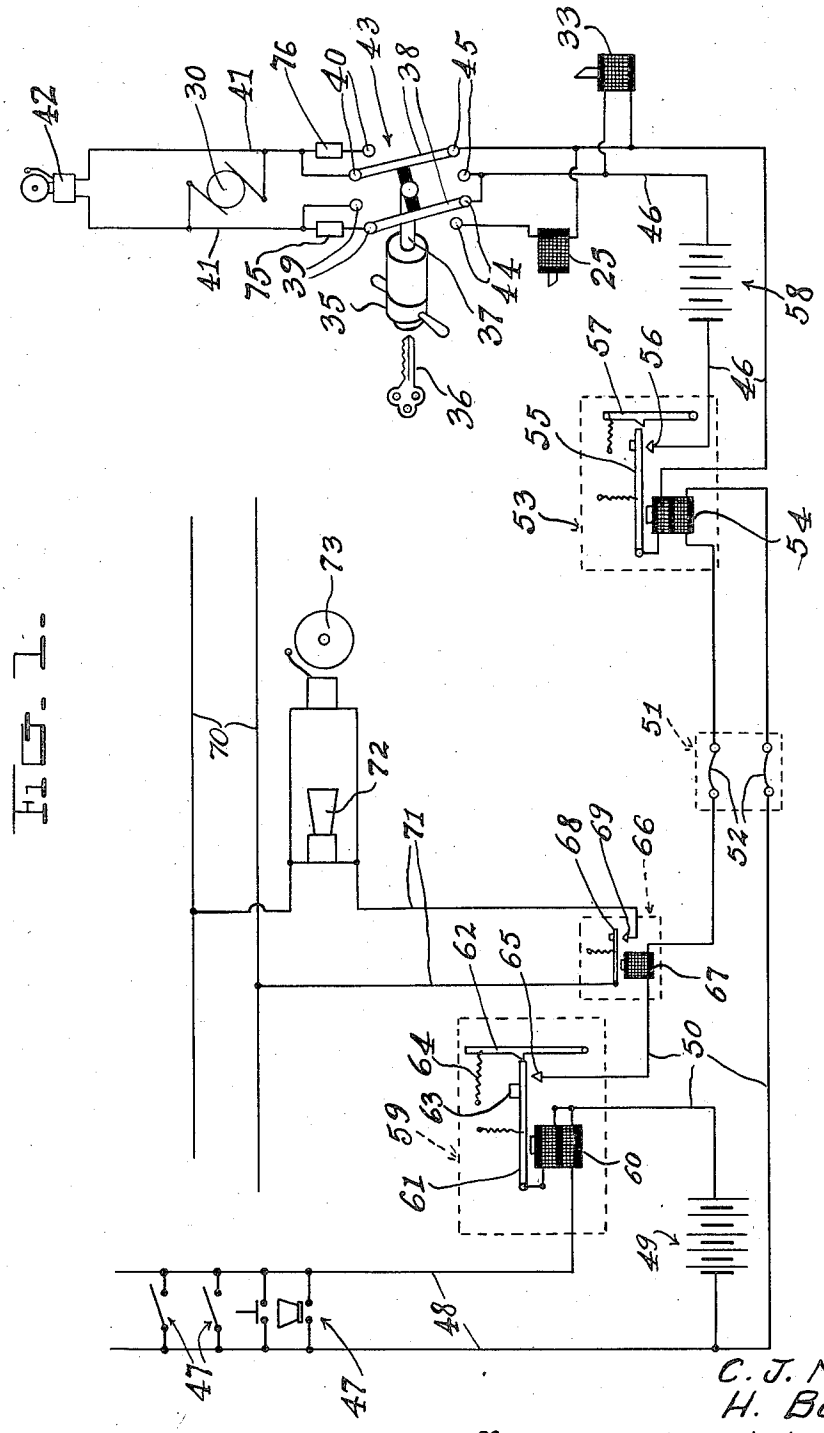


FIG. 1.

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FIG. 2

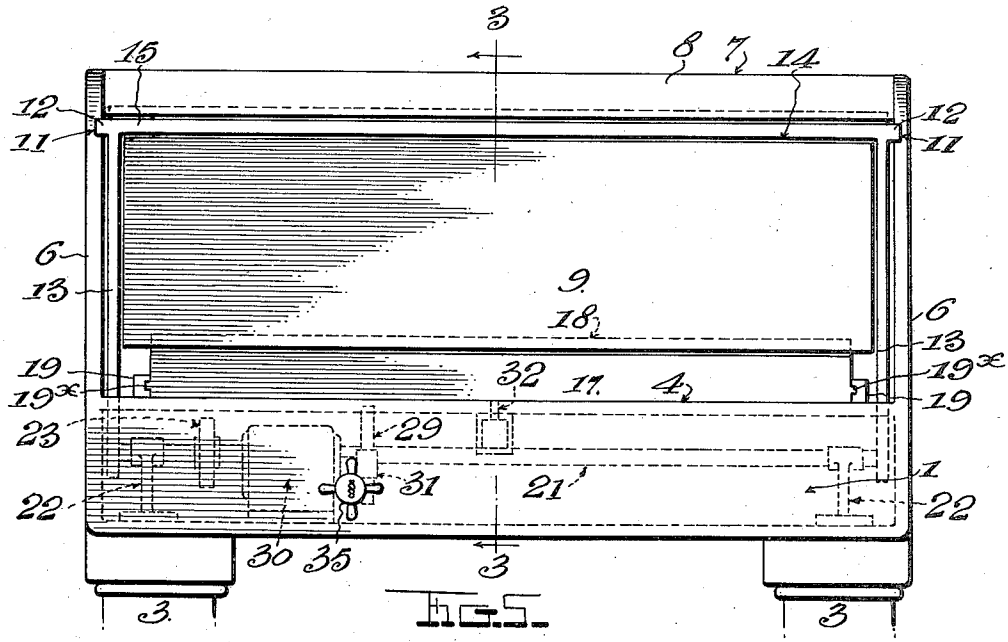
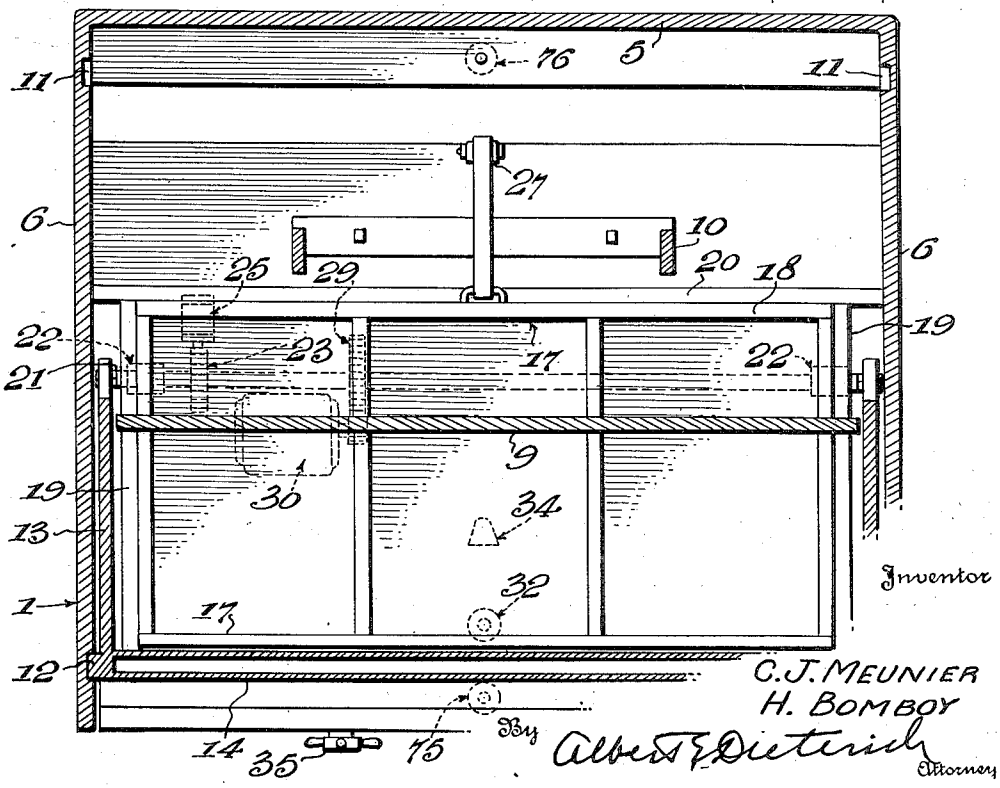


FIG. 5



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FIG. 5.

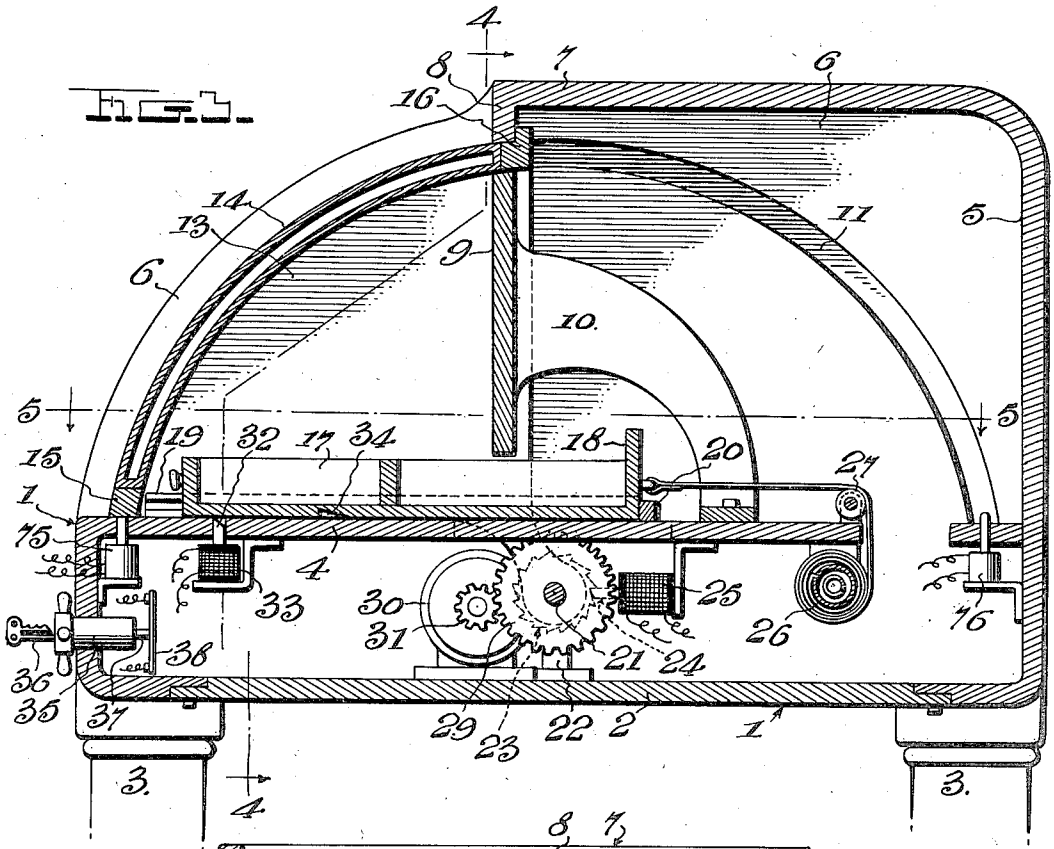


FIG. 6.

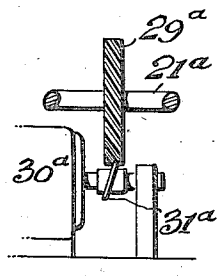
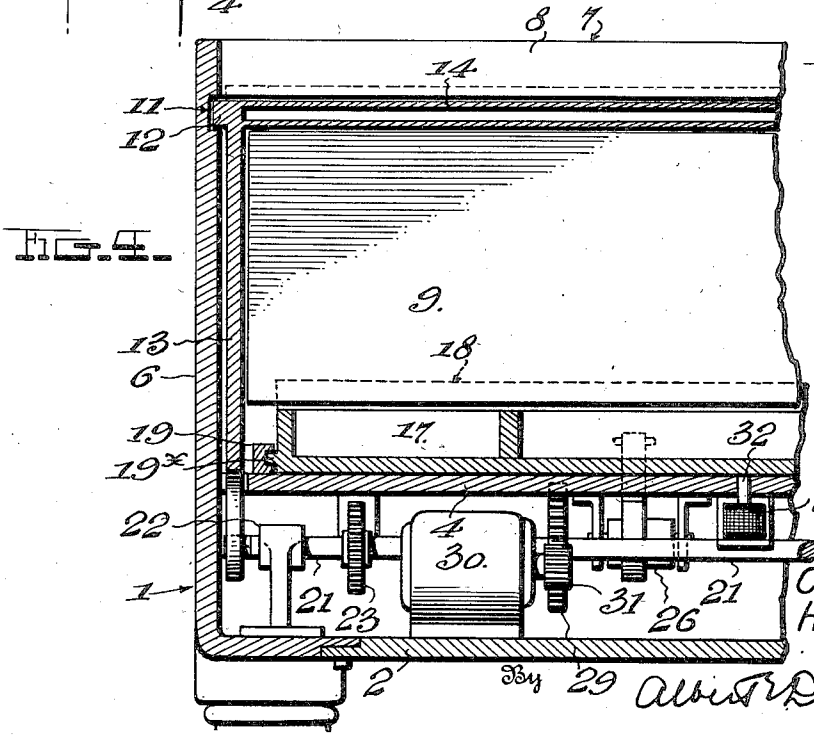


FIG. 4.



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Patented Feb. 18, 1936 2,031,543

UNITED STATES PATENT OFFICE

2,031,543

BANK PROTECTING DEVICE

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Application February 15, 1935, Serial No. 6,755

12 Claims. (Cl. 20—1.01)

Our invention has for an object to protect from robbery banks and other places where money is kept and handled, as for example, the cashiers' departments of counting houses, stores, factories, mills, etc.

Further it is an object of our invention to provide a cashier's counter with means to guard the money and valuables thereon against theft by enclosing the moneys and/or valuables so that access thereto may not be had save at the will of someone who is outside the influence of the bandits.

More specifically the present invention provides an improved cashier's counter of the general type disclosed in our application filed September 4, 1934, Serial No. 742,700, the present invention having for its primary object to simplify the construction of the counter referred to in said application and otherwise improve the same.

Other objects will in part be obvious and in part be pointed out hereinafter.

To the attainment of the aforesaid objects and ends, the invention still further resides in the novel details of construction, combination and arrangement of parts, all of which will be first fully described in the following detailed description, then be particularly pointed out in the appended claims, reference being had to the accompanying drawings, in which:—

Figure 1 is a circuit diagram of the electric circuit arrangement employed with our present invention.

Figure 2 is a front elevation of the counter in the open position.

Figure 3 is a cross section on the line 3—3 of Figure 2 showing the counter in the closed position.

Figure 4 is a detail vertical section on the line 4—4 of Figure 3.

Figure 5 is a horizontal section on the line 5—5 of Figure 3.

Figure 6 is a detail view of a modification later referred to.

In the drawings, in which like numerals of reference indicate like parts in all of the figures, 1 represents the hollow base of the counter which may be provided with a removable inspection bottom 2 and which may be mounted on standards 3 suitably anchored or embedded in the floor of the bank or other institution in which the counter is used.

4 designates the bed of the counter, 5 the back wall, 6 the side walls, 7 the top wall and 8 the front wall above the hood 14. Below the hood 14 the front wall is formed by a plate 9 suitably supported on brackets 10 mounted on the bed 4.

The sides 6 of the counter are provided with arcuate guideways or grooves 11 for the guide-tracks 12 on the side plates 13 of the hood 14. The hood 14 is preferably of the double wall construction and is provided with a bottom edge bar 15 and a back stop bar 16.

17 is a money drawer divided into suitable compartments, if desired, and lying on the bed 4 of the counter. The drawer 17 has a back wall 18 which, when the drawer is in the outer position, engages the plate 9 as a stop.

Suitable guideways 19 are provided on the bed 4 in which cleats 19x on the sides of the drawer 17 slide.

A stop 20 on the bed 4 limits the inward or rearward movement of the drawer 17.

The hood which in its entirety comprises the side plates 13 and the arcuate double wall 14, is carried on a shaft 21 mounted in suitable bearings 22 beneath the bed 4 and driven by a motor 30 through the medium of a pinion 31 and gear 29, as will later more fully appear.

Carried on the shaft 21 is a suitable ratchet disk 23 with which a spring pressed magnet-pawl 24 engages, the pawl and ratchet holding the shaft 21 as a back check device, a device which enables the shaft 21 to turn in one direction freely and holds it against being turned in the opposite direction until the pawl 24 is released by the magnet 25, as will later more fully appear.

26 is a spring windup drum, to which one end of a cable (flexible steel preferably) is secured, the cable passing over an idler 27 having its other end secured to the rear wall 18 of the drawer 17.

In order to hold the drawer 17 in its pulled out or forward position we provide the drawer with a suitable latch recess 34 with which a spring pressed latch 32 is adapted to engage when the drawer is in the outermost position. The latch 32 is designed to be released, however, by the action of the magnet when the same is energized.

35 designates a lock-switch for effecting the operating circuit, the lock 35 being rendered operative by means of a key 36 when the same is inserted in the lock. The lock employed is similar to those used on the door handles of automobile doors whereby the handle may be freed from the lock or secured to the lock mechanism accordingly as the key is in place or not. As the lock construction is of a well known type detailed description thereof is thought to be unnecessary.

The pole changing switch, which is operated through the medium of the lock **35**, includes a shaft **37** that carries the pole changers **38**, the latter cooperating with the contact groups **39**—**44** and **40**—**45**. A wire **46** runs from the armature **55** to the left hand contact **44** and the right hand contact **45** of the switch **43**, while the other wire **46** from the battery **58** runs to the right hand contact **44** and the left hand contact **45** of the switch **43**. One of the wires **41** from the motor **30** is connected to both contacts **40**; the other wire **41** from the motor connects to both contacts **39** of the switch **43**.

When the key **36** is inserted in the lock **35** the shaft **37** may be turned to reverse the connection of the switch **43** and thereby effect a reversal of the motor **30**. Normally when the key **36** is out of the lock **35** the parts are positioned as shown in diagram Figure 1, so that the motor **30** is ready at all times to move the hood **14** to the closed position.

42 designates an alarm signal connected across the motor terminals so as to operate whenever the motor operates and give warning of the fact that the motor is in operation.

Referring now especially to Figure 1, it will be seen that we provide a main relay **59** having a magnet **60**, one winding of which is connected in circuit **48** which contains the source of electrical energy (preferably a storage battery) **49** and which contains the circuit closers **47**. The circuit closers **47** are distributed at different points in and about the bank or other building which is to be protected in order that they may be operated by any number of persons at different places. The circuit closers **47** may be of any type, some push buttons, some switches, and others may be actuated by sound waves. Thus, it will be seen that when a circuit closer **47** is operated, the magnet **60** of the relay **59** will be energized to draw its armature **61** down into engagement with a fixed contact **65**. This permits the latch **62** to be drawn over by the spring **64** to hold the armature **61** down mechanically. A stop **63** limits the upward movement of the armature **61**.

50 is the operating circuit. This circuit includes the battery **49**, a second winding of magnet **60**, armature **61**, fixed contact **65**, and the magnet **67** of a second relay **66**. The circuit **50** is provided with master fuses **52** in a box **51** for opening the circuit in the event of a dangerous over-load on the wires.

The relay **66** is provided for the purpose of closing a power circuit **70**—**71** which contains one or more sirens **72** and gongs **73** which may be located on the outside of the building being protected and/or at the office of the chief of police of the city or the office of the captain of the precinct in which the protected building is located. The signals **72**—**73** are preferably operated from the outside power lines **70** which supply the electricity for lighting and other purposes. So far as described, it will be that when a circuit closer **47** is operated, relay **59** closes and locks, and at the same time relay **66** becomes energized to close the circuit **70**—**71** and operate the distant signals.

By reference to Figure 1 it will be noticed that the circuit wires **71** connect respectively to the armature **68** and fixed contact **69** of the relay **66**.

53 designates another relay whose magnet **54** is of the double wound type, one winding of which is contained in the circuit **50** while the other winding is contained in the circuit **46** which circuit includes the armature **55** and fixed contact **56**.

The drawer releasing magnet **33** is connected across the circuit **46** to be operated every time that circuit is energized while the magnet **25** is connected between the contact **44** and the positive wires of the circuit **46** so as to be operated only when the switch **43** is in the reverse position.

The armature **55** of the relay **53** may be locked down by a pawl **57**.

Operation

Assume the counter to be in the open position with the hood **14** thrown back. In this position magnets **33** and **25** will be de-energized and the spring-pressed pawls will be projected forwardly. Also assume the drawer **17** to be pulled out until the pawl **32** enters the notch **34**, the parts are now in the normal position. Should a holdup occur or bandits enter the bank one of the circuit closers **47** will be closed, thereby causing current to flow through the circuit **48**, which energizes relay magnets **60** and **67**. As relay **59** is closed the circuit **50** will also be closed to energize magnet **54** and close circuit **46**. Relay **66** closes circuit **70**—**71** and effects the sounding of the distant alarms **72**—**73**. Energization of circuit **50** closes relay **53** and brings circuit **46** into operation thereby energizing the motor **30** and simultaneously the magnet **33** releases the drawer **17** which is pulled back to its inner position (see Figure 3) by means of the spring windup drum **26**, thereby clearing the front of the bed **4** so that the hood **14** can come down tight thereon. Energizing the motor **30** with the circuit in the position shown in Figure 1 causes the hood **14** to be moved forwardly to the closed position.

Before the counter can be opened it is necessary to insert the key **36** into the lock **35** and reverse the pole changing switch **43**. Upon reversing the pole changing switch **43** the motor is again energized to turn in a reverse direction and move the hood **14** inwardly.

In order to stop the operation of the motor when the hood has reached its fully closed position a circuit opening switch **75** is placed in the motor circuit in series with the left hand contact **39** and in order to open the motor circuit when the hood has been moved to the open position a second circuit opening switch **76** is placed in series with the right hand contact **40** as indicated in the diagram, Figure 1. These switches **75** and **76** are normally held closed but when engaged by the hood **14** they open the circuit. For instance, when the hood is in the closed or locked position it will have engaged the button of the switch **75**, pushed it in and opened the circuit at that place, whereas when the door reaches the fully opened position the door will engage the button of the switch **76** and open the circuit at that point.

While we have shown the sides **6** as extending to the extreme front edge of the counter the sides **6** may terminate at the wall **8** if desired and the portion in front of the wall **8** need not be used.

In Figure 6 is shown a modification of the drive between the motor **30***a* and the shaft **21***a*. In this figure **31***a* designates a worm and **29***a* a worm gear. The parts in this figure that are similar to parts in Figure 3 bear the same reference numerals plus the index letter *a*; so a further detailed description thereof is believed to be unnecessary.

From the foregoing description, taken in connection with the accompanying drawings, it is thought the complete construction, operation and advantages of our invention will be readily apparent to those skilled in the art.

What we claim is:

1. In apparatus of the character described, a counter having a bed, a chambered body located above the bed, the bed projecting forwardly of the chambered body, a hood rotatably mounted and located over the bed and constructed to be moved into said hollow body or over the projecting portion of the bed correspondingly as the hood is moved in one direction or another, an electric motor, a shaft on which said hood is mounted for pivotal movement, gearing between said motor and shaft, a back check device including a releasable element for holding said hood against movement in the direction of the chambered body, controlled means to release said check device, and electrical means to operate said motor and said controlled means for the purpose described.

2. In apparatus of the character described, a counter having a bed, a chambered body located above the bed, the bed projecting forwardly of the chambered body, a hood rotatably mounted and located over the bed and constructed to be moved into said hollow body or over the projecting portion of the bed correspondingly as the hood is moved in one directin or another, an electric motor, a shaft on which said hood is mounted for pivotal movement, a worm and worm gear connection between said motor and said shaft and electrical means to operate said motor for the purposes described.

3. In apparatus of the character described, a counter having a closure, means to move said closure to its closed and open positions, a drawer mounted on the counter to slide back and forth into and out of the path in which said closure moves, means normally holding said drawer projected into the path of said closure, means to remove said drawer from the path of said closure, and controlling means operative to effect the release of said drawer and its removal from the path of said closure and to operate the closure to the closed position.

4. In apparatus of the character described, a counter having a closure, means to move said closure to its closed and open positions, a slide mounted on the counter to slide back and forth into and out of the path in which said closure moves, means normally holding said slide projected into the path of said closure, means to remove said slide from the path of said closure, and controlling means operative to effect the release of said slide and its removal from the path of said closure and to operate the closure to the closed position.

5. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, and means to release said holding means and energize said motor to effect a closure of the counter.

6. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, said holding means comprising a releasable pawl engaging said drawer and a releasing magnet for said pawl and said releasing means comprising an electric circuit including said magnet and said motor and circuit controlling means.

7. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, said holding means comprising a releasable pawl engaging said drawer, and a releasing magnet for said pawl, said releasing means comprising an electric circuit including said magnet and said motor and circuit controlling means, and means to de-energize said circuit when the closure shall have reached its completely closed position.

8. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, said holding means comprising a releasable pawl engaging said drawer and a releasing magnet for said pawl, said releasing means comprising an electric circuit including said magnet and said motor and circuit controlling means, a motor-reversing locked switch in said circuit, a key to unlock said switch, and means to de-energize said circuit when the closure shall have reached its completely closed and its completely opened positions.

9. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcu-

ate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, means to hold said closure against movement toward the open position after it has started to close and means to release said closure holding means when the motor circuit shall have been reversed to open the counter.

10. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, said holding means comprising a releasable pawl engaging said drawer and a releasing magnet for said pawl, said releasing means comprising an electric circuit including said magnet and said motor and circuit controlling means, means to hold said closure against movement toward the open position after it has started to close, and means to release said closure holding means when the motor circuit shall have been reversed to open the counter.

11. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, said holding means comprising a releasable pawl engaging said drawer, a releasing magnet for said pawl, said releasing means comprising an electric circuit including said magnet and said motor and circuit controlling means, means to de-energize said circuit when the closure shall have reached its completely closed position, means to hold said closure against movement toward the open position after it has started to close and means to release said closure holding means when the motor circuit shall have been reversed to open the counter.

12. In apparatus of the class described, a counter comprising a base having a bed, a chambered body located over the rear portion of the bed, a closure member formed to move in an arcuate path to provide a closure for said counter, a shaft on which said closure member is mounted and by which it is moved from an open to a closed position and vice versa, a motor connected to said shaft, a money drawer slidably mounted on said bed to be projected into the path of said closure, means holding said drawer so projected, means continuously acting to move said drawer back out of the path of said closure when said holding means is released, means to release said holding means and energize said motor to effect a closure of the counter, said holding means comprising a releasable pawl engaging said drawer, a releasing magnet for said pawl, said releasing means comprising an electric circuit including said magnet and said motor and circuit controlling means, a motor-reversing locked switch in said circuit, a key to unlock said switch, means to de-energize said circuit when the closure shall have reached its completely closed and its completely opened positions, means to hold said closure against movement toward the open position after it has started to close, and means to release said closure holding means when the motor circuit shall have been reversed to open the counter.

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