March 24, 1959 C. E. MAXFIELD ET AL 2,879,124

MEDICINE CABINET CONSTRUCTION

Filed Feb. 8, 1957 4 Sheets-Sheet 1

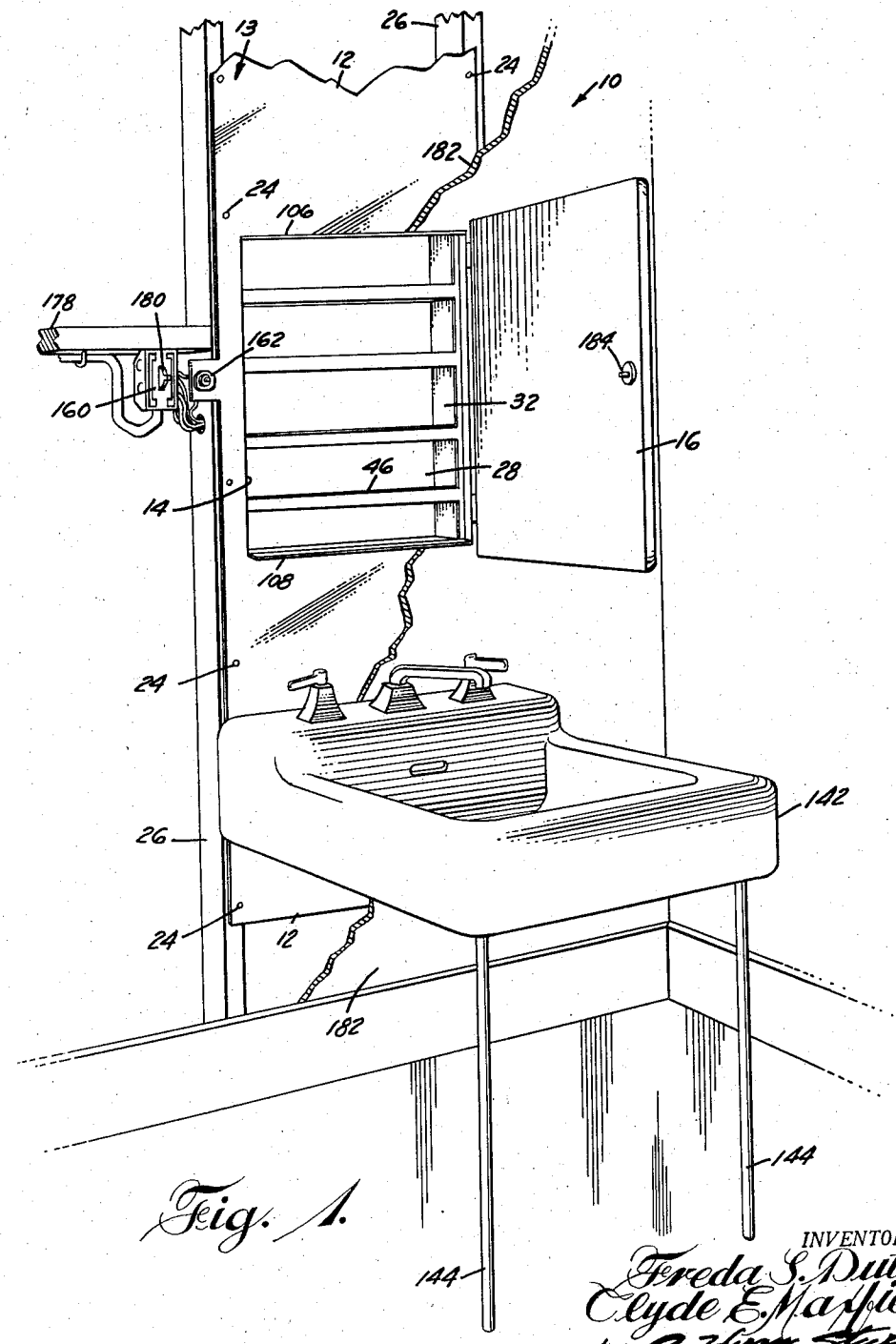


Fig. 1.

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MEDICINE CABINET CONSTRUCTION

Filed Feb. 8, 1957 4 Sheets-Sheet 2

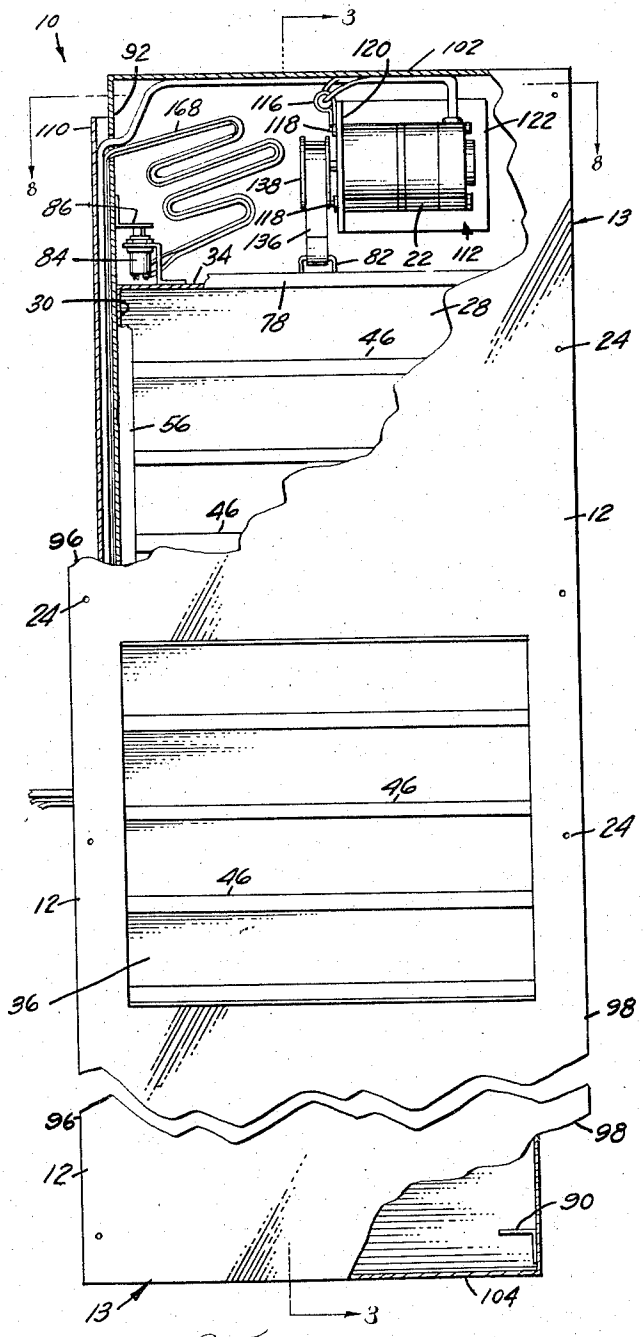
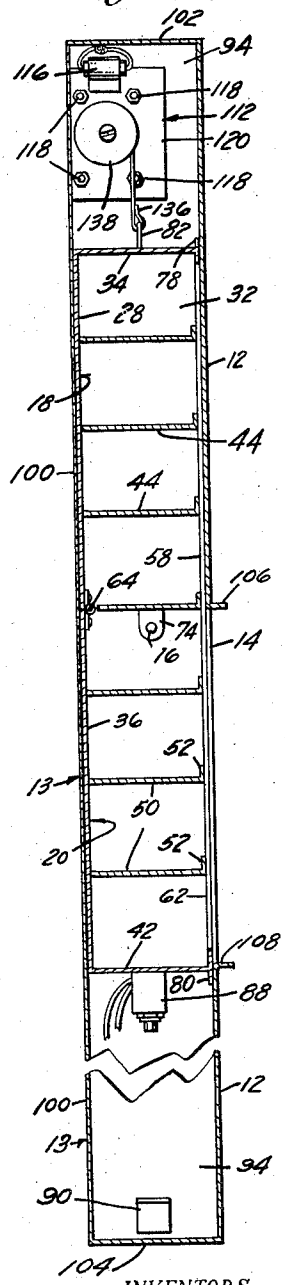


Fig. 2.

Fig. 3.



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MEDICINE CABINET CONSTRUCTION

Filed Feb. 8, 1957 4 Sheets-Sheet 3

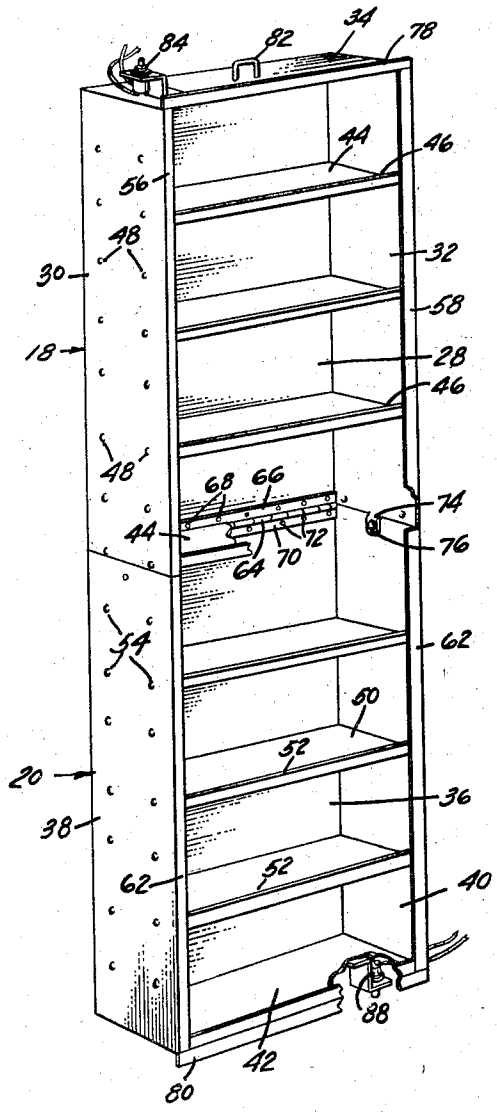


Fig. 4.

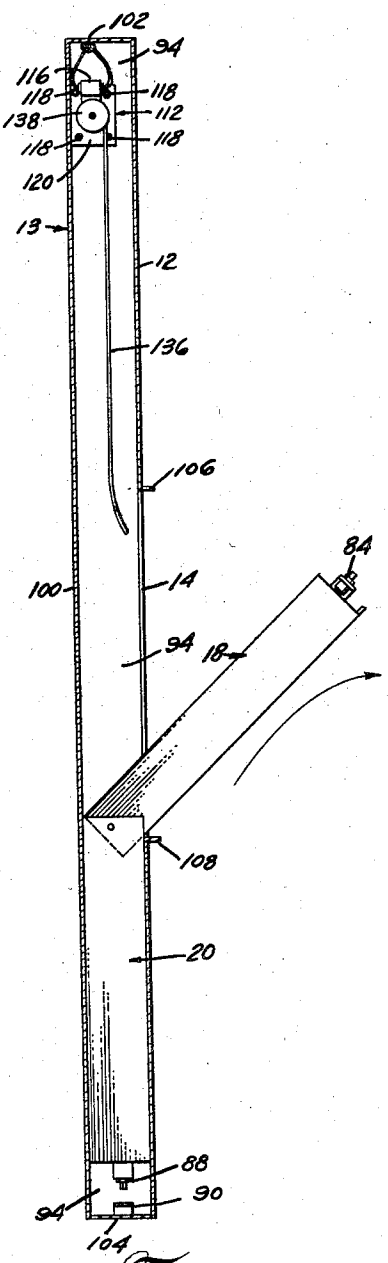


Fig. 5.

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MEDICINE CABINET CONSTRUCTION

Filed Feb. 8, 1957 4 Sheets-Sheet 4

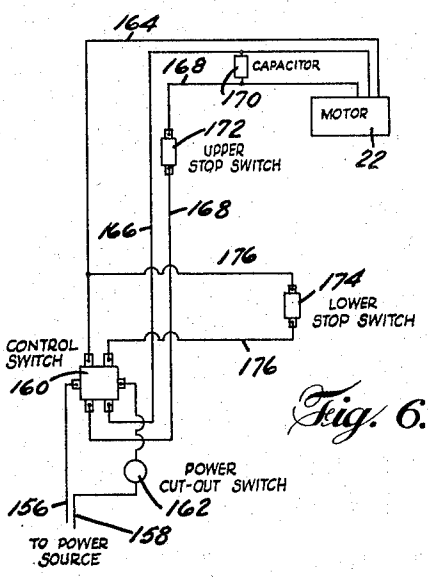


Fig. 6.

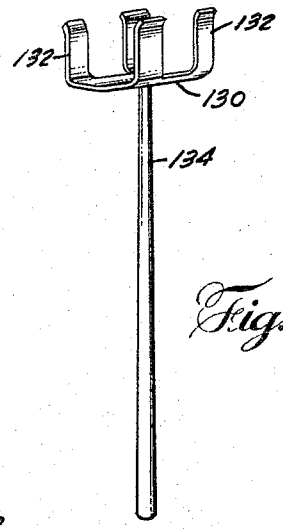


Fig. 9.

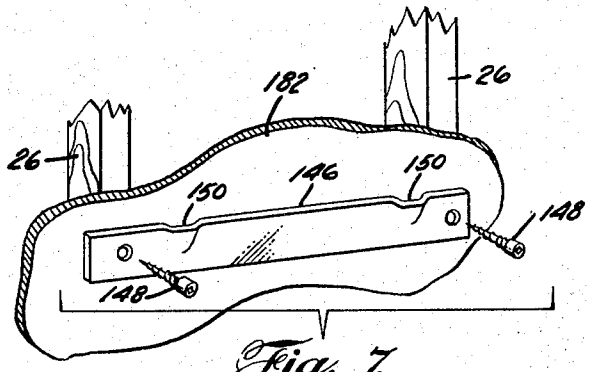


Fig. 7.

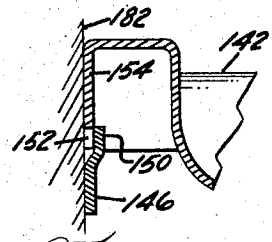


Fig. 10.

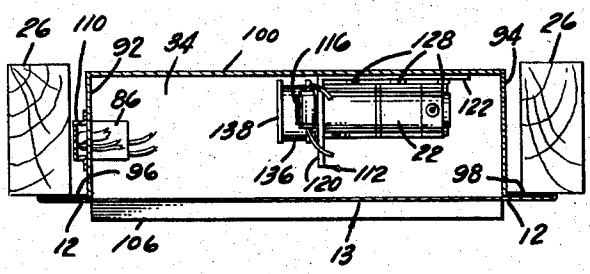


Fig. 8.

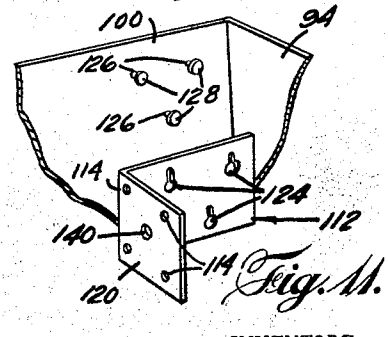


Fig. 11.

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2,879,124

MEDICINE CABINET CONSTRUCTION

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Application February 8, 1957, Serial No. 638,967

5 Claims. (Cl. 312—242)

This invention relates to wall or temporary storage cabinets, such as used in bath rooms, kitchens, and the like for medicines, toilet accessories and other articles, and in particular a cabinet including an outside frame or casing with an opening covered by a hinged door in the front and having a vertically slidable shelf unit therein positioned between studding of a building wall, and a motor for actuating the shelf unit wherein by pressing a button on the frame or wall the shelves are raised and lowered until a shelf containing articles desired for use is in registering relation with the opening so that such articles are readily accessible and may be removed and replaced.

The purpose of this invention is to increase the storage area in cabinets in bath rooms and the like and to mount the cabinets whereby all articles therein are readily accessible.

Conventional cabinets used in bath rooms and walls of other rooms in buildings are relatively small, and, consequently, numerous bottles of medicine and other toilet articles are stored in closets in bedrooms and other inaccessible places and when use of such articles is required, particularly in an emergency, they are difficult to locate.

With this thought in mind this invention contemplates a storage cabinet including a relatively large number of shelves positioned in a traveling unit between studding of a wall with a door hinged in an opening in a frame installed in the wall and with the unit in which the shelves are positioned elevated and lowered by a motor controlled by a button actuated switch on the door frame.

The object of this invention is, therefore, to increase the area of a wall cabinet without increasing the size of the visible frame of the cabinet.

Another object of the invention is to provide a wall cabinet having a movable shelf unit therein in which all of the shelves of the unit are adapted to be positioned in registering relation with a door in a frame forming a front of the cabinet.

Another important object of the invention is to provide a wall cabinet having a movable shelf unit therein in which the shelf unit is designed to be positioned between studding of a wall.

It is yet another object of the invention to provide a power actuated shelf unit for a wall cabinet in which means is provided for stopping the shelf unit as it approaches the upper and lower limits of its travel.

A further object of the invention is to provide a wall cabinet having a traveling shelf unit positioned between studding of a wall in which a safety switch is provided to prevent operation of the shelf unit when a door of the cabinet is open.

A still further object of the invention is to provide a traveling shelf unit for a wall cabinet in which the unit is actuated by an electric motor in which the shelf unit is formed of hinged sections, and the motor mounted on a removable bracket so that the parts may be collapsed for storage and shipping.

And a still further object is to provide a wall cabinet having a motor actuated vertically movable shelf unit to increase the storage area of the cabinet in which the cabinet is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies an elongated vertically disposed shelf unit designed to be installed between studding of a building wall, a motor for raising and lowering the shelf unit, a frame embedded in the surface of a wall and positioned to span studding thereof, a door on the frame, and an electric switch for controlling the motor whereby each of the shelves may be brought into registry with the door of the frame to facilitate removing articles from the shelf and replacing articles on the shelf.

Other features and advantages of the invention will appear from the following description taken in connection with the drawings wherein:

Figure 1 is a perspective view showing a wall cabinet positioned between studding in a wall behind a wash basin with shelves of a traveling unit mounted between the studding and showing a switch for controlling a motor for operating the shelf unit, parts of a wall in which the cabinet is installed being broken away.

Figure 2 is a front elevational view of the cabinet also with parts broken away, showing a motor for actuating the shelf unit.

Figure 3 is a vertical section through the wall cabinet taken on line 3—3 of Figure 2, showing the motor for actuating the shelf unit.

Figure 4 is a perspective view showing the shelf unit of the cabinet with part of one of the shelves broken away showing the hinge connecting the sections of the unit and with part of the lower shelf broken away showing the lower stop switch.

Figure 5 is a vertical section through a wall showing the shelf unit positioned between studding thereof and illustrating the method of folding the sections of the shelf unit so that the entire shelf unit may be inserted and removed through the door of the cabinet.

Figure 6 is a diagrammatic view showing a typical wiring diagram for connecting the motor and control switches.

Figure 7 is a view showing a support bar positioned against a wall for holding the inner edge of a sink.

Figure 8 is a sectional plan through the upper end of the cabinet showing the motor, and also showing studding at the sides of the cabinet.

Figure 9 is a view showing an extension handle for removing and replacing the motor.

Figure 10 is a section through the rear portion of the sink showing one of the tongues for securing the sink to the support bar shown in Figure 7.

Figure 11 is a view showing the removable mounting of one of the motor supporting brackets.

While one embodiment of the invention is illustrated in the above-referred-to drawings, it is to be understood that they are merely for the purpose of illustration and that various changes in construction may be resorted to in the course of manufacture in order that the invention may be utilized to the best advantage according to circumstances which may arise, without in any way departing from the spirit and intention of the device, which is to be limited only in accordance with the appended claims. And while there is stated the primary field of utility of the invention, it remains obvious that it may be employed in any other capacity wherein it may be found applicable.

In the accompanying drawings, and in the following specification, the same reference characters are used to designate the same parts and elements throughout and

in which the numeral 10 refers to the invention in its entirety, numeral 12 indicating a panel forming front wall of a box-like casing or a frame 13 and having an opening 14 therein, numeral 16 a door hinged to the panel 12 and positioned to close the opening therein, numeral 18 an upper section of the shelf unit, numeral 20 a lower section of the shelf unit, and numeral 22 a motor mounted on the upper portion of the rear wall 100 in which the shelf unit is positioned.

The panel 12 is secured, such as with nails 24 to studding 26, whereby the door 16 opens into the frame 13 positioned between the studding and the shelf units 18 and 20 are mounted to travel vertically therein.

The upper section 18 of the shelf unit is formed with a rear wall 28, side walls 30 and 32, and an upper panel 34, and the lower section 20 is provided with a similar rear wall 36, side walls 38 and 40, and a bottom 42. Shelves 44 having flanges 46 on outer edges thereof are supported on spaced indentations 48 in the side walls of the upper section, and similar shelves 50 with flanges 52 on outer edges thereof are supported on spaced indentations 54 in the side walls of the lower section. The side walls 30 and 32 of the upper section are provided with inwardly extended flanges 56 and 58 and similar flanges 60 and 62 are provided on the side walls 38 and 40 of the lower section.

The upper and lower sections of the shelf unit are hinged together by a hinge 64 having a hinge plate 66 mounted by screws 68 on the lower edge of the rear wall 28 and a complementary hinge plate 70 which is secured to the upper edge of the rear wall 36 of the lower section with screws 72. The lower edges of the side walls of the upper section are also provided with ears 74 that snap over lugs 76 on the upper edges of the side walls of the lower section to hold the sides rigid and prevent binding.

The outer edge of the upper panel 34 of the upper section is provided with an upwardly extended flange 78, and the same edge of the bottom 42 of the lower section is provided with a flange 80. A handle 82 is also provided on the upper surface of the upper panel 34, and a stop or limit switch 84, which is mounted adjacent one end of the upper panel 34, is positioned to engage a clip angle 86 on the inner surface of the box-like frame. A similar stop or limit switch 88 is mounted on the lower surface of the bottom 42 of the lower section of the shelf unit and the switch 88 is positioned to contact a clip angle 90 also mounted in the frame.

The frame or casing 13, including the front panel 12, is formed with side walls 92 and 94 having flanges 96 and 98 on outer edges thereof, a rear wall 100, a top 102, and a base 104, and the shelf unit, including the upper section 18 and the lower section 20, is slidably mounted in the box-like frame or casing. The panel or front wall 12 of the casing is provided with a flange 106 that is positioned above the door opening 14 and also a flange 108 that is positioned below the opening, and the end wall 92 is provided with a wire carrying channel 110 secured, such as by welding, to the outer surface of the end wall 92.

The motor 22, which is reversible, is positioned in the upper end of the casing and is mounted on an L-shaped bracket 112. The motor is secured to an end plate 120 by bolts 118 which extend through bolt openings 114 and, as shown in Figure 11, the end plate 120 extends from a base plate 122, which is provided with key hole slots 124 that are positioned to receive studs 126 having enlarged heads 128. The studs 126 are secured on the back wall 100 of the frame 13.

The motor and bracket may be readily removed or replaced in position by use of a simple tool illustrated in Figure 9. The tool consists of a cradle 130 having upwardly extended fingers 132 which is secured to an elongated handle 134.

As shown in Figures 2, 3, 5 and 8, a bracket 116 may be used to mount a capacitor 170 on the end plate 120 and near the motor 22.

The motor is provided with a shaft and a belt or cable 136, which is connected to the handle 82, is trained over a pulley or drum 138 on one end of the motor shaft. The end plate 120 of the motor mounting bracket is provided with an opening 140 through which the motor shaft extends.

The improved wall cabinet having the traveling shelves is illustrated as being positioned to the rear of a wash basin 142, the extended edge of which is supported on legs 144, and the rear portion of which is supported on a bar 146 that is secured to studding with screws 148 and that is provided with sockets 150 in which tongues 152 extended from a flange 154 at the rear of the wash basin are positioned.

Power is supplied to the cabinet through leads 156 and 158, which are connected to a source of current supply, and the lead 156 is connected to one side of a control switch 160 whereas the lead 158, in which a cut-off switch 162 is positioned, is connected to the opposite side. A wire 164 extends from the switch 160 to one terminal of the motor, and two other terminals of the motor are connected to the control switch with wires 166 and 168. A capacitor 170 is connected across the wires 166 and 168, and the wire 168 is provided with a stop switch 172. A second or lower stop switch 174 is connected by a wire 176 to the wire 164 and the opposite terminal of the stop switch 174 is connected to a terminal of the control switch 160.

The control switch 160 may be positioned on the cabinet or in the wall at one side of the cabinet or frame, and, as shown in Figure 1, the switch, which is provided with three positions, up, down and neutral, is suspended from a brace 178 in a wall and the contacts are actuated by a toggle 180 which extends through plaster or other surfacing material 182 that covers the cabinet. The power cut-off switch 162 is mounted in combination with the switch 160 and the switch 162 is actuated by a lug 184 mounted on the inside of the door 16 and in registry therewith whereby the power cut-off switch is actuated only when the door is in a closed position.

Operation

The wall or medicine cabinet of this invention is installed, as a unit, between studding of a building wall with the opening and door positioned at a convenient elevation, and upon opening the door articles may readily be removed and replaced from or upon the shelves, and should articles be desired that are not positioned on exposed shelves the toggle 180 is actuated to cause the shelf unit to travel upwardly or downwardly until a shelf upon which an article that is desired is in registering relation with the door opening. Articles are returned to the shelves in the same manner, and should it be desired to place articles that may be dangerous for children to use in inaccessible positions in the cabinet, such articles may be placed upon an upper shelf or in another relatively inaccessible location in the cabinet.

As described, the motor is actuated by the control switch 160. However, as a safety feature, the power passes to the motor only when the door 16 is closed whereby the lug 184 on the door contacts the power cut-off switch. This prevents injuries to the operator by the moving shelves.

As shown in Figure 5, the shelf unit is designed so that the complete unit may be removed and replaced through the door opening. By this means the shelves may be removed for cleaning, painting, or the like.

From the foregoing specification, it will become apparent that the invention disclosed will adequately accomplish the functions for which it has been designed and in an economical manner, and that its simplicity, accuracy, and ease of operation are such as to provide a relatively inexpensive device, considering what it will

accomplish, and that it will find an important place in the art to which it appertains when once placed on the market.

It is through that persons skilled in the art to which the invention relates will be able to obtain a clear understanding of the invention after considering the description in connection with the drawings. Therefore, a more lengthy description is regarded as unnecessary.

Changes in shape, size, and rearrangement of details and parts, such as come within the purview of the invention claimed may be resorted to in actual practice, if desired.

Having now described the invention that which is claimed to be new and desired to be procured by Letters Patent, is:

1. A wall cabinet comprising an elongated box-like casing for use in a building wall and between studding thereof, said casing having an opening in one side, a door hinged to the casing and positioned to provide a closure for the opening therein, a shelf unit including hinged sections mounted to slide vertically in the casing, the shelf unit being removable through the opening in the side of the casing, means for raising and lowering the shelf unit to bring groups of shelves therein into registering relation with the opening of the casing, and means for limiting upward and downward movements of the shelf unit.

2. A wall cabinet comprising an elongated box-like casing for use in a wall and between the studding thereof, said casing having an opening in one side, a door hinged to the casing and positioned to cover said opening therein, a plurality of shelf units slidably mounted in the casing, means for hinging the shelf units together to permit removal of the shelf units from the casing, a motor in the casing and operatively connected to the shelf units for raising and lowering the shelf units, and means for controlling the motor.

3. In a wall cabinet, the combination which comprises an elongated rectangular-shaped vertically disposed casing, said casing having an opening in the front, a door hinged to the casing and positioned to cover the opening, said casing being formed to be installed between studding of a building wall, hinged upper and lower sections of shelves slidably mounted in the casing, a motor positioned in the upper end of the casing, means operatively connecting the motor to the shelves whereby the shelves are raised and lowered by the motor, and

a control switch positioned at the side of the casing for supplying current to the motor.

4. In a wall cabinet, the combination which comprises an elongated rectangular-shaped vertically disposed casing, said casing having an opening in the front, said casing being designed to be installed between studding of a building wall, a door hinged to the casing and positioned to cover the opening therein, a lower shelf unit slidably mounted in the casing, an upper shelf unit also slidably mounted in the casing, a hinge connecting the upper shelf unit to the lower shelf unit, a motor removably mounted in the upper part of the casing, a motor control switch positioned at one side of the casing and connecting wires from a source of current supply to the motor, and upper and lower limit switches carried by the upper and lower shelf units to limit upward and downward movements of the shelf units.

5. In a wall cabinet, the combination which comprises an elongated rectangular-shaped vertically disposed casing having an opening in one side, said casing being designed to be positioned between studding of a building wall, a door hinged to the casing and positioned to cover the opening therein, a shelf unit including hinged upper and lower sections mounted to slide vertically in the casing, said shelf unit being removable from the casing through the opening therein, a motor mounted in the casing and operatively connected to the shelf unit for raising and lowering said shelf unit limit switches positioned on upper and lower ends of the shelf unit, stops in the casing positioned to be engaged by the limit switches for limiting upward and downward travel of the shelf unit, and control switches positioned at the sides of the casing for supplying current to the motor to raise and lower the shelf unit.

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