

Sept. 10, 1957

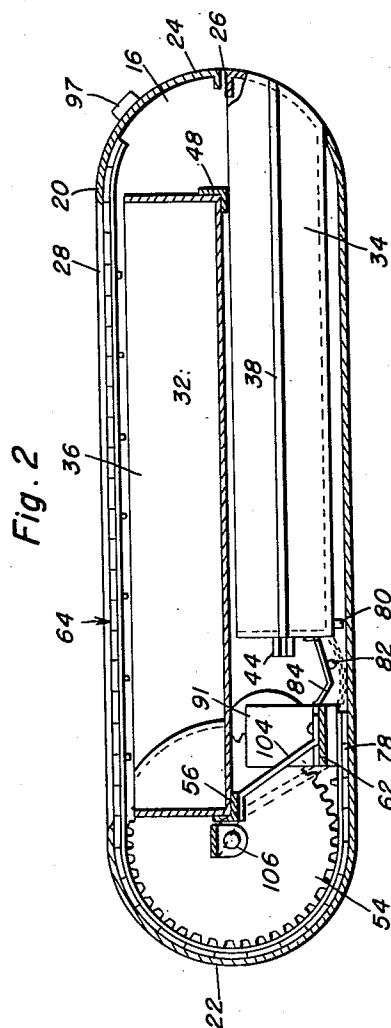
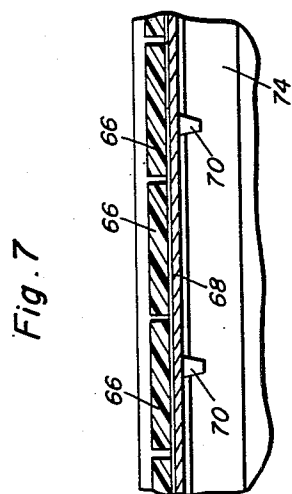
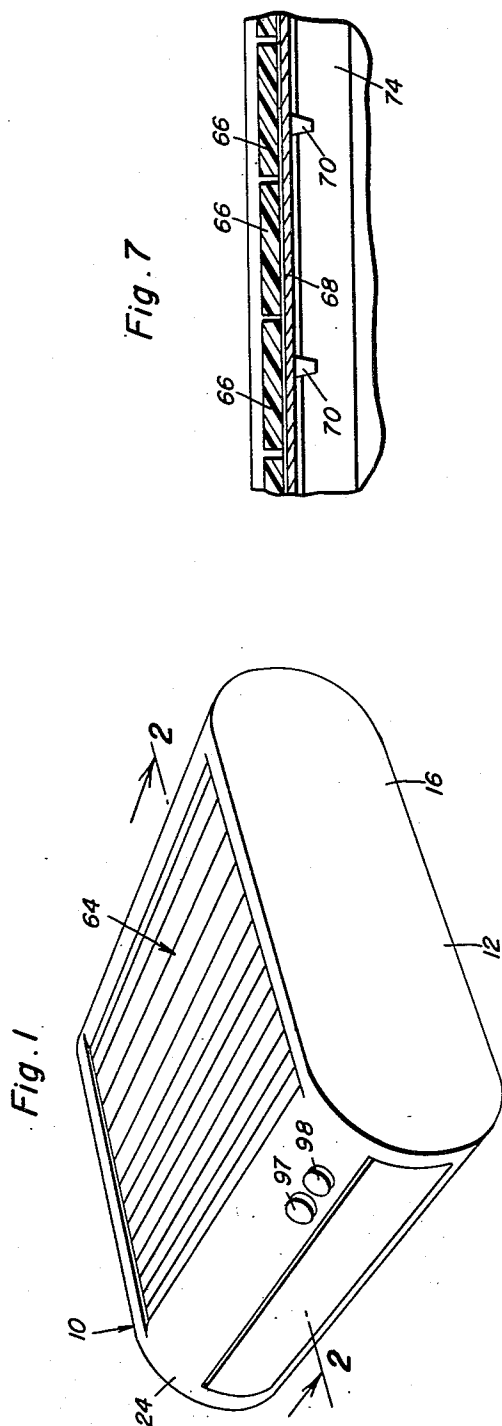
L. E. TOWNSEND

2,805,910

JEWEL BOX

Filed Nov. 1, 1955

3 Sheets-Sheet 1



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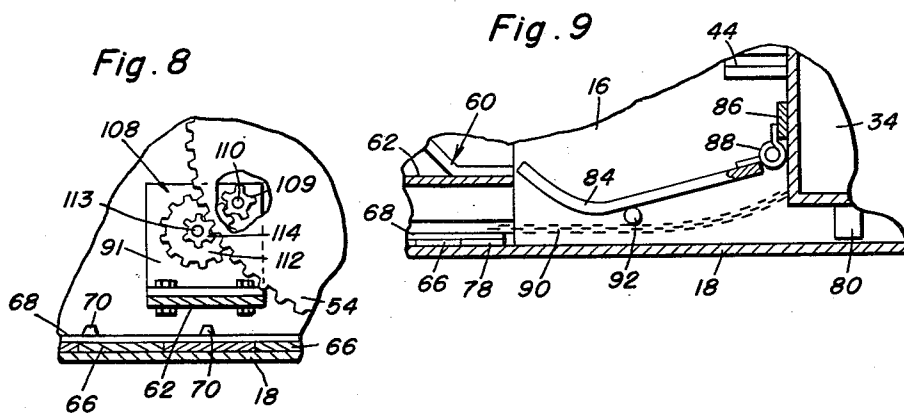
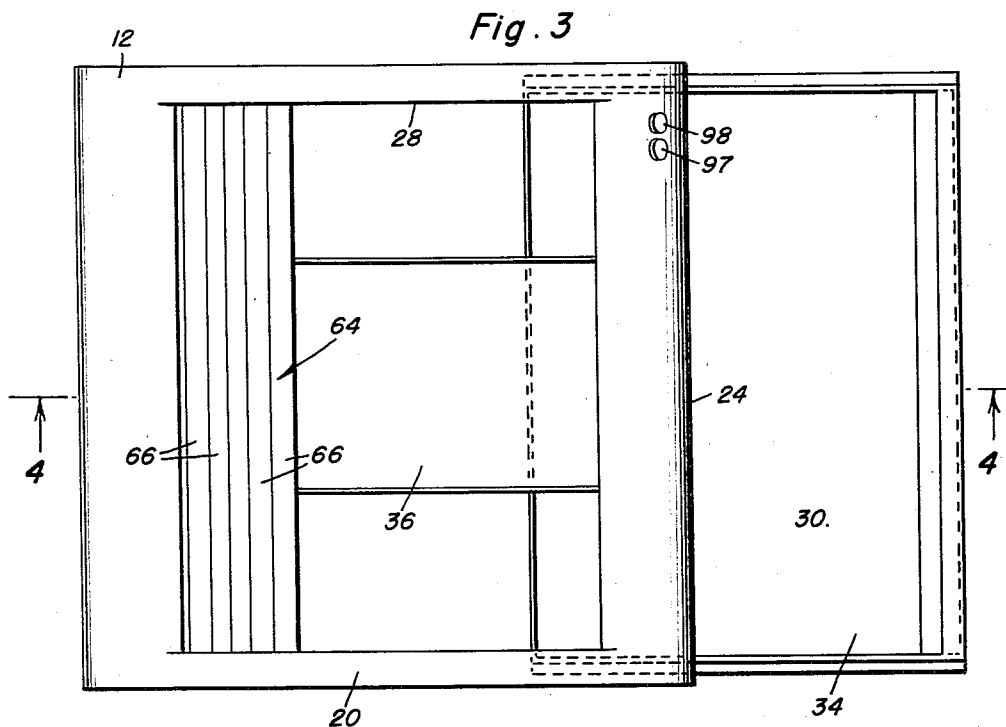
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JEWEL BOX

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3 Sheets-Sheet 2



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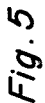
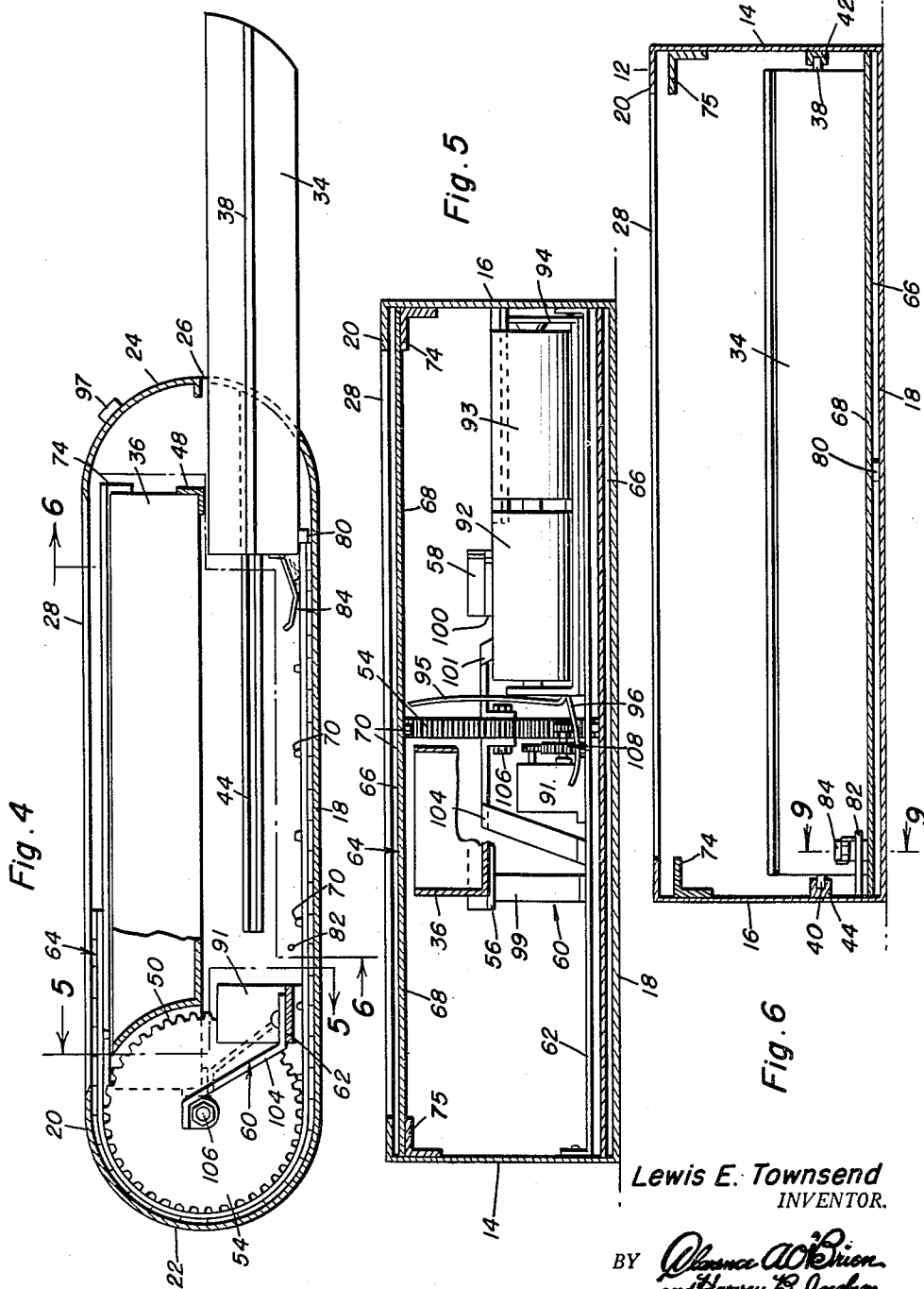
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JEWEL BOX

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3 Sheets-Sheet 3



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2,805,910

JEWEL BOX

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5 Claims. (Cl. 312-273)

The present invention relates to receptacles and particularly to that type of receptacle which is adapted to contain small articles.

An object of the invention is to provide a practical and attractive jewel box having two compartments, one compartment being in the form of a drawer which is movable through a front opening in the jewel box while the other compartment is in the form of a tray that becomes open to view for access thereto upon actuation of a closure, the closure actuation being directly responsible for sliding the drawer through the front opening of the jewel box casing.

A further object of the invention is to provide a jewel box as described above wherein the closure is motor-operated in both directions, that is, to open or close the top opening in the jewel box, the actuation of the drawer being correspondingly obtained inasmuch as there is a mechanical coupling between the drawer and the closure.

A further object of the invention is to provide a latch for the drawer so that the drawer will not inadvertently become opened, this latch being released automatically in response to movement of the closure in such direction as to slide the drawer outwardly through the front opening of the jewel box casing, and closed automatically in response to returning the drawer within the casing.

A further object of this invention is to provide a compact jewel box with a top opening lending access to an upper tray, the top opening having a closure that is made of a number of slats flexibly joined together, whereby when the closure is rolled back from the opening it is capable of being guided around an arc so as to be returned in the jewel box casing for the purpose of actuating a drawer in the casing.

Another object of the invention is to provide means which are operatively connected to the closure for actuating that closure, the actuating means being preferably electrically operative and controllable from a switch that is carried by the casing.

These together with other objects and advantages which will become subsequently apparent reside in the details of construction and operation as more fully hereinafter described and claimed, reference being had to the accompanying drawings forming a part hereof, wherein like numerals refer to like parts throughout, and in which:

Figure 1 is a perspective view of the jewel box embodying the principles of the invention;

Figure 2 is a longitudinal sectional view taken substantially on the line 2-2 of Figure 1 and in the direction of the arrows;

Figure 3 is a top view of the jewel box in Figure 1 with the drawer extended and the closure in the partially open position;

Figure 4 is a longitudinal sectional view taken generally on the plane of line 4-4 of Figure 3 and in the direction of the arrows;

Figure 5 is an irregular sectional view taken substan-

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tially on the line 5-5 of Figure 4 and in the direction of the arrows;

Figure 6 is an irregular section taken substantially on the line 6-6 of Figure 4 and in the direction of the arrows;

Figure 7 is an enlarged fragmentary sectional view showing the construction of the closure for the top opening in the jewel box casing;

Figure 8 is an enlarged fragmentary sectional view showing the reduction gearing and motor drive for the closure of the jewel box; and,

Figure 9 is an enlarged fragmentary sectional view taken substantially on the line 9-9 of Figure 6 and in the direction of the arrows.

The jewel box 10 which exemplifies one embodiment of the invention consists of a casing 12 having sides 14 and 16, a bottom 18, a top 20, a rear wall 22, and a front 24. A front opening 26 is formed in the front 24, and there is a top opening 28 formed in the top 20 of the casing 12. Although the front 24 and the back 20 of the casing 12 are shown as being semi-cylindrical, this is but a matter of selected design to have the jewel box present a modern appearance. The jewel box may have other configurations depending upon the desires of the manufacturer in assembling and constructing the casing 12.

There are two compartments 30 and 32, respectively, in the jewel box, the compartment 30 being formed by a drawer 34 while the compartment 32 is defined by the tray 36. Runners 38 and 40 on the sides of drawer 32 are disposed in the guides 42 and 44, respectively, the latter being fixed to the inner surfaces of the sides 14 and 16 of casing 12. The front of the drawer is smoothly curved in order to form a section of the curved front 24.

Tray 36 is of such size as to be removable through the top opening 28 of the casing. When disposed in the casing it seats at its front edge on a transverse support 48 secured to the opposite walls 14 and 16 of the casing. This transverse support is of suitable construction, for example, a small angular member.

The rear part of the tray 36 has a well 50 in it in order to accommodate a part of a drive gear 54. The portions of the tray on each side of the well 50 rest upon supports 56 and 58 which are carried by a motor and gearing mounting assembly 60, the latter including a transverse plate 62 which is fixed to the opposite side walls 14 and 16 of the casing 12. Accordingly, the tray 36 may be lifted from and replaced in the casing 12 through the top opening 28.

A closure 64 is slidable beneath the top opening 28 and in registry with it in order to open or close the opening. The construction of the closure is preferably a number of slats 66 (Figure 7) arranged parallel to each other and fixed to a flexible web or backing 68. The slats may be of plastic or wood or metal or any other suitable material, while the web 68 is cloth, plastic or rubber so that it is capable of being guided around the gear 54 in its travel within the casing 12. Spaced cleats 70 extend from the surface of the web 68 and are engageable with the teeth of gear 54, the latter driving the closure. The closure is guided on a pair of rails 74 and 75 that are secured to the opposite side walls 14 and 16 of the casing 12 near the top opening 28. When in position to close the opening 28 (Figure 2) the closure 64 has a portion entrained around the gear 54 with some of the cleats in engagement with the teeth of the gear. The slats 66 of the closure adjacent to the gear and beneath it rest upon the inner surface of the back 22 and the bottom of the casing. As gear 54 is rotated the closure 64 is slid so that the bottom end

thereof moves forwardly toward the front opening 26 of casing 12, while the opposite end of the closure 64 is withdrawn from the opening 28. As the end 78 of the closure 64 moves along the inner surface of the bottom of casing 12, it contacts a stop 80 that is connected to the drawer 34. As closure 64 continues to move in the same direction, end 78 thereof pressing against stop 80 pushes drawer 34 through the front opening 26 of casing 12 in order to open the drawer.

Means normally retaining the drawer 34 in a latched condition are attached to the drawer 34. They consist of a latch keeper 82 which projects from one wall 16 of the casing 12. Latch 84 comprises an arm having a curved outer end and whose inner end has a hinge 86 which connects it to the back wall of drawer 34. Spring 88 constantly biases the curved outer end of the latch downwardly and against the latch keeper 82. This retains the drawer 34 releasably latched in the casing 12. However, when the end 78 of the closure 64 moves against the stop 80 the initial force hingedly rotates the latch keeper 84 so that the curved part thereof rides over the latch keeper 82 against the bias of the spring 88. Accordingly, this releases the drawer latch means and permits the drawer to be projected outwardly of the casing as shown in Figure 4.

When the gear 54 is rotated in the opposite direction in order to move the closure 64 to a position for overlying tray 36 and closing opening 28, end 78 thereof is pulled inwardly with respect to the front opening 26 of casing 12. Accordingly, this end 78 is withdrawn from stop 80 of drawer 34. After being withdrawn a short distance the small chain 90, cable or other flexible element that is attached to the end 78 of closure 64 and the back of drawer 34, is drawn taut and pulls the drawer 34 to a retracted position within casing 12. The curved part of the latch keeper 84 rides on the inner surface of the bottom 18 of casing 12 until the outer end thereof contacts the latch keeper 82. At that time it overrides the latch keeper and becomes engaged with the top part thereof by resting thereon with the spring 88 biasing the latch 84 against the latch keeper 82. At the time that the opening 28 is closed by the closure 64 the drawer 34 is fully retracted in the casing 12.

Although it is possible to operate closure 64 manually as described herein, this closure may be actuated by other means and devices. For example, there may be a reversible motor 91 that is powered by dry cells 92 and 93. The dry cells 92 and 93 are releasably secured in a conductive frame 94 from appropriate terminals of which wires 95 and 96 extend through the switches schematically represented by buttons 97 and 98 that are carried by one wall of the casing 12. The frame 94 is secured to the assembly 60 as is motor 91. Forming a part of assembly 60 are supports 99 and 100 to which supports 56 and 58 are attached. Brackets 101 and 104 are mounted on the plate 62 and constitute a part of the assembly 60. These brackets have a spindle 106 carried by them on which the gear 54 is mounted for rotation. A reduction gear train 108 is interposed between the shaft of the reversible motor 91 and the main drive gear 54. The reduction gearing comprises a pinion 109 fixed to the shaft 110 of motor 91, the pinion being enmeshed with a gear 112 on shaft 113. Another pinion 114 is fixed to the same shaft 113 as gear 112, and pinion 114 is enmeshed with the main drive gear 54.

In use, the proper switching is caused by depressing the button 97 or 98, this closing the circuit of the reversible motor 91 so that the gear 54 is rotated through the gear train 108. Upon rotation of gear 54 the closure 64 is actuated in order to expose the tray 36 through the opening 28. At the same time the drawer 34 is opened by the previously described coaction between the end 78 of the closure 64 and the stop 80 of the drawer 34. In order to close the drawer 34 and also to

close the opening 28, the other button 98 is depressed in order to energize the motor 91 so that it will be actuated in the opposite direction. This rotates gear 54 in the opposite direction in order to retract the drawer 34 at the same time latching it and also at the same time moving closure 64 to such position that the opening 28 is closed.

The foregoing is considered as illustrative only of the principles of the invention. Further, since numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described, and accordingly all suitable modifications and equivalents may be resorted to, falling within the scope of the invention as claimed.

What is claimed as new is as follows:

1. A jewel box comprising a casing having a front opening and a top opening, a drawer slidably mounted in said casing and movable through said front opening, a closure for said top opening, means mounting said closure in said casing for movement to open and close said top opening, a latch operatively connected to said drawer to releasably hold the drawer within said casing, and said closure when it moves to open said top opening contacting said drawer to release said latch and move said drawer through said front opening.

2. In a jewel box which includes a casing having a top opening and a front opening, a tray, structural means supporting said tray within said casing beneath said top opening, a drawer located in said casing, means mounting said drawer for sliding movement so that it moves to said front opening of said casing, a closure for said top opening, means supporting said closure for movement beneath said top opening, said closure being flexible and having an end which is adapted to contact a portion of said drawer, means operatively connected with said closure for actuating said closure and moving said end of said closure against said drawer in order to move said drawer through said front opening, a latch operatively connected with said drawer in order to retain said drawer in the casing, said latch being releasable automatically in response to movement of said drawer outwardly of said casing by said end of said closure, and means mechanically connecting said closure to said drawer so that when said closure is returned to a position in order to close said top opening in said casing, said drawer is withdrawn into said casing through the front opening thereof.

3. As a new article of manufacture a jewel box comprising a casing which has a first and a second opening therein, said openings being spaced from each other, a drawer in said casing and movable through one of said openings, a closure for the other of said openings, a gear mounted for rotation in said casing, said closure being flexible and drivingly mounted on said gear, and means for rotating said gear in opposite directions in order to move said closure to such position as to cover and open one of said openings, and means operatively connecting said closure with said drawer in order to simultaneously actuate said drawer, the last mentioned means including a stop connected to said drawer against which one end of said closure abuts when said closure is moved in one direction, a flexible connector securing said one end of said closure to said drawer, and a latch operatively connected to said drawer, said latch being operable in response to movement of said drawer by said end of said closure.

4. In a receptacle which has a casing, said casing being provided with an opening, a flexible closure, guides secured to said casing and retaining said flexible closure in registry with said opening, means drivingly connected to said closure for actuating said closure, said means including a gear on which said closure is supported, means for controlling the actuation of the foregoing means, a

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drawer, guides carried by said casing on which said drawer is mounted, a latch operatively connected to said drawer, and means for releasing said latch and simultaneously moving said drawer in response to movement of said closure in said casing.

5. In a jewel box including a casing having a front opening and a top opening, a drawer slidably mounted in said casing and movable forwardly out of said front opening into open position and rearwardly into said casing into closed position, a closure for said top opening slidably mounted in said casing and movable in opposite directions into and from closing position with respect to said top opening, means in said casing operatively connected to said closure to move the same in opposite directions, said closure engaging and sliding said drawer into open position in response to movement of the closure from closing position with respect to said top opening, releasable latch means for holding said drawer against movement into open position including a latch member on the drawer upwardly movable into latching position by engagement of said closure

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therewith prior to engagement of the closure with said drawer and downwardly movable into latching position upon disengagement of said closure therefrom when said closure is moved into closing position, and a flexible connection between said closure and drawer for closing movement of said drawer in response to closing of the closure after said closure disengages said latch means.

References Cited in the file of this patent

UNITED STATES PATENTS

308,142	Cutler	Nov. 18, 1884
1,355,488	McKenney	Oct. 12, 1920
1,618,933	Knaster	Feb. 22, 1927
1,712,842	Richardson	May 14, 1929
2,049,969	Meunier et al.	Aug. 4, 1936

FOREIGN PATENTS

611,855	Great Britain	Nov. 4, 1948
836,562	Germany	Apr. 15, 1952