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3,196,935

DRAW CLOSURE

Filed Jan. 4, 1963

2 Sheets-Sheet 1

Fig. 1

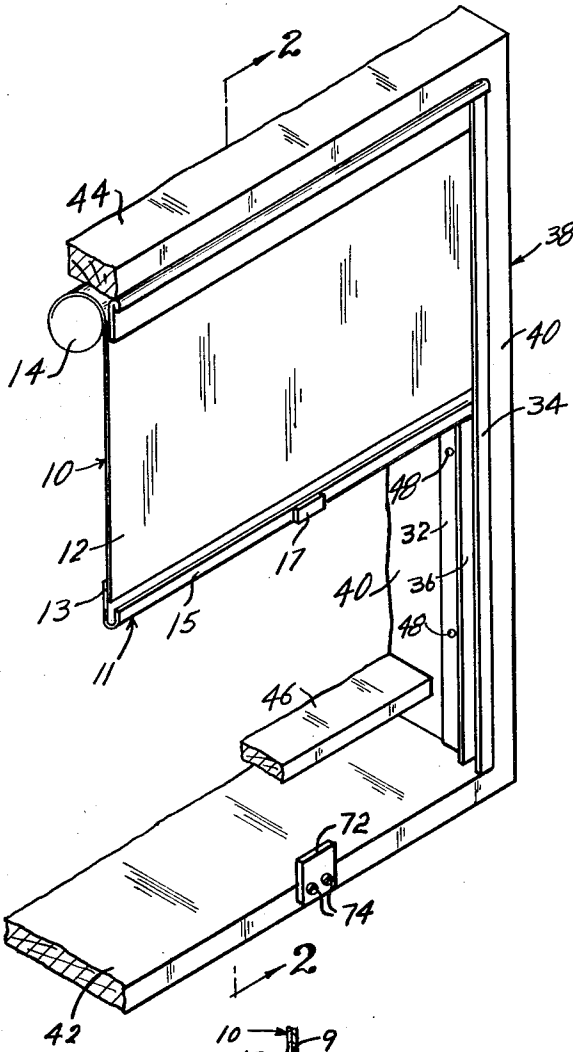


Fig. 5

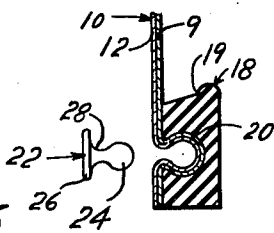


Fig. 2

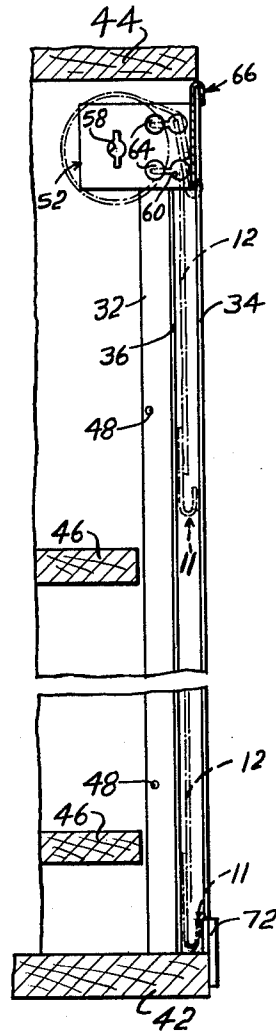
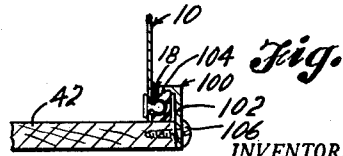


Fig. 4



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Fig. 3

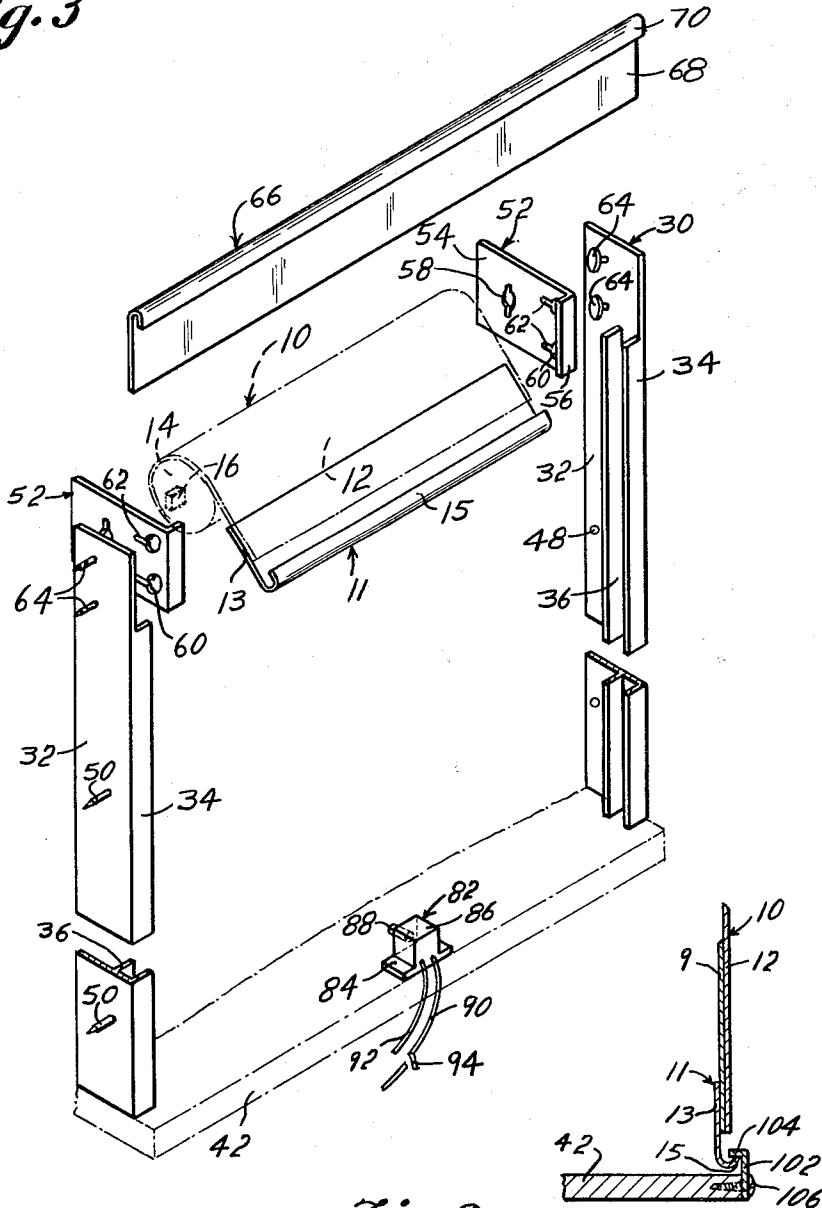


Fig. 6

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DRAW CLOSURE

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This invention relates to a draw closure which can be used for a cupboard, a storage shelf, a closet, a doorway and the like.

In a kitchen it is often desirable to have a storage cabinet for dishes and cooking utensils. But, in many instances due to the layout of the kitchen it is objectionable to have the cabinet in a particular location as outward swinging doors would interfere with a door or another cupboard. Because of this, the storage cabinet is never installed. As a result of the inconvenience of the swinging doors, I have invented a draw closure which can be installed in an open cabinet so as to be opened for access to the shelves of the cabinet and can be drawn to a closed position so as to hide from view the contents of the cabinet.

In a variation of this draw closure, the same may be used in a doorway so as to screen off a room or an area. For example, in a house there may be a small room which cannot conveniently handle a swinging door. However, a degree of privacy is desired. This privacy can be achieved by the installation of my closure in the doorway.

In much of present day construction there is used a flush-type fitting for doorways and cabinets. One of the advantages is the modern appearance of the room. Another desirable advantage is the relief from projecting doors with the result flowing therefrom of greater safety by not running into the door and its edges. Further advantages are a closure for openings which can easily be rolled into a compact unit; which can be readily unrolled into the screen; which is simple to operate; and which is relatively inexpensive to manufacture.

These and other important objects and advantages of the invention will be more clearly presented and brought out by the following drawings, detailed description of the invention and the claims.

In the drawings:

FIGURE 1 is a fragmentary perspective view looking at a specific embodiment of the invention constructed in accordance with the preferred teachings thereof and which embodiment is illustrated as a wall cabinet;

FIGURE 2, on an enlarged scale, is a vertical cross-sectional view taken on line 2—2 of FIGURE 1 and illustrates the construction of the flexible sheet and the tie-down means;

FIGURE 3 is another preferred view of the embodiment of the invention and is exploded to a degree to show the details of construction;

FIGURE 4 is a vertical cross-sectional view of another latching means for holding the curtain in an outstretched state;

FIGURE 5, on an enlarged scale, is an exploded view of means to attach part of the latching means to the flexible curtain; and

FIGURE 6 is a vertical cross-sectional view of another latching means for holding the curtain in an outstretched state.

Referring to the drawings it is seen that the invention comprises a draw closure 10 comprising a flexible screen 12 which is capable of being wound on a spring loaded rod 14. This rod may be a conventional spring-loaded curtain rod which has been in use for a number of years, and the screen may be of a laminated construction. Projecting outwardly of each end is a pin 16.

The upper part of the screen 12 is attached to the spring loaded rod 14 and attached to the lower edge of

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the screen is a tie-down means 11. The tie-down means or protective member 11 has a base portion 13 and a curved lip 15. On the front edge of the lip 15 and approximately midway between the sides is a paramagnetic metal slab 17. This slab 17 may be iron or steel or other suitable metal, and may be attached by a suitable adhesive or resin to the lip 15.

Additional elements of the draw closure are vertical guides 30. Each of these guides comprises a flat base portion 32 and two parallel spaced-apart longitudinal ribs 34 and 36. The rib 34 is positioned at the edge of the base 32 and the rib 36 is positioned near the central longitudinal line of the base 32. As is readily appreciated, the ribs 34 and 36 define a guiding channel for receiving the tie-down means 11 and the flexible screen 12.

In use is an open cupboard 38 having sides 40, a bottom 42, a top 44 and shelves 46, vertical guides 30 are fastened to the inner side of the sides 40 and adjacent to the outer edge. In the base 32 are a number of holes 48. The vertical guide 30 may be attached by nails or screws 50 passing through these holes and into the side 40.

It is seen that the ribs 34 and 36 do not run all the way up the base member 32 but terminate short of the top of the base member 32. The reason for this is that there is a roll plate 52 having a base portion 54 and a right-angle-front portion 56. In the roll plate 52 there is an opening 58 having slot-like extensions. The opening 58 is to receive the pin 16, either of a circular cross section or of a rectangular cross section. Near the front of the base 54 there are two vertically spaced-apart openings 60 having horizontal slots 62 running rearwardly from the opening 60. In the upper part of the base member 32 there are driven two nails or pins 64. It is seen that the openings 60 are positioned over the heads of the pins 64 and then the slots 62 are run along the shank of the pins. Then, the pin 64 may be driven into the base 32. In this manner the roll plate 52 is positioned on the guide member 30 and also the upper part of the guide member 30 is positioned.

A molding member 66 is positioned on the upper part of the guides 30 so as to hide from view the rod 14 and the screen 12 thereon. This molding member 66 comprises a base 68 and a curved edge 70. The base 68 is slipped in between the upper two ribs 34 and 36 and on the outside of the screen 12. The curved edge 36 is directed outwardly with this edge being supported on the upper edge of the rib 34.

On the edge of the bottom 42 is a catch 72. This catch is attached by means of screw or nails 74. The catch 72 is a magnet. It is seen that the magnet attracts the paramagnetic slab 17 and holds the flexible screen 12 in an outstretched state.

In FIGURE 3 there is illustrated another preferred embodiment of construction. In this preferred embodiment there is a protective member or tie down means 11 attached to the bottom of the screen 12. The protective member 11 has a base portion 13 and a curved lip 15.

On the bottom shelf 42 there is a solenoid 82. This solenoid 82 has a base portion 84 and a housing 86 for housing a switch and coils for the solenoid. It is seen that there is a plunger 88 and lead-in wires 90 and 92, and a switch 94 in the wire 90. By pulling down the screen 12 the protective edge 76 is hooked onto the plunger 88. The curved lip 15 hooks under the plunger 88 so as to hold the screen 12 in an outstretched state. The solenoid 82 is spring loaded and with no electric current flowing the plunger 88 is in an extended condition. With the switch 94 closed the solenoid is electrically

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actuated and the plunger 88 is retracted. This allows the screen 12 to be drawn upwardly and wound on the spring loaded rod 14. The switch 94 may be remotely positioned from the draw closure 10 or may be positioned close to the draw closure 10.

In FIGURES 4 and 5 there is illustrated another latching means 18. This means comprises a long block 19 of flexible plastic. This block has a longitudinal recess 20. A locking means 22 is adapted to cofit with the recess 20. This locking means has an enlarged base 24 and a flat exterior portion 26. Between the enlarged portion 24 and the flat portion 26 the locking means has a narrow waist. It is seen that the screen 12 is positioned in the slot 20 and the locking means 22 is pushed in so that the enlarged portion 24 cofits with the recess 20. As is readily appreciated this locks the screen 12 in position. The upper part of the block 18 is tapered so as to slope downwardly at 19. On the forward edge of the lower shelf 42 there is a catch 100 having a main body portion 102 and an inwardly directed finger 104. The catch 100 may be attached by a screw or pin 106 to 42. As is seen in FIGURE 4 the slope 19 fits underneath the finger 104 so as to be locked in the outstretched position.

In FIGURE 6 there is illustrated another means for tying down the draw closure 10. The lip 15 is positioned underneath the finger 104.

The tie-down means 11 and the block 18 are of a flexible material which may be bent and curved. This property is desirable as a person may touch 11 and 18 with his hand or the toe of his shoe or with a rod. So as to move the metal 17 away from the magnet 72; and, the block 18 away from the finger 104; and, the lip is away from the finger 104. In this way a person may release the draw closure 10 even though his hands may be occupied.

In FIGURES 5 and 6 there is illustrated a cross-section of the draw closure 10. It is seen that 12 may be contact wall paper and that there is a base 9. The base 9 may be a thin sheet of foam polyurethan, $\frac{1}{32}$ of an inch thick, or a thin cork sheet, $\frac{1}{32}$ of an inch thick. The contact wallpaper can be removed from its backing sheet and applied over the base 9. Then, at a later date the first contact wallpaper can be removed from the base 9 and a second contact wallpaper applied to the base 9.

The roll plate 52 can be used to wind the spring in the spring loaded roller 14. The plate 52 can be removed from the pins 64 and used for winding the spring. This eliminates the use of a pair of pliers or a special key.

Although the closure has been described for a utilitarian purpose, it is to be realized that the closure may be used for its decorative effect. More particularly, the closure may have a decorative design which can blend with the furniture of the room. And, because of the inexpensive nature of the closure, the same may be replaced from time to time to vary the decorations of a room.

The materials of construction of the various components of this draw closure may be of plastic and metal.

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For example, the screen 12 may be of sheet plastic such as polyethylene or may be a woven closure of cotton, nylon, orlon and contact wallpaper. The elements 30 and 52 may be of plastic or aluminum. Suitable plastic materials are acetal resin (polyoxymethylene), cellulose acetate, polyethylene, nylon, polycarbonate and polyvinylchloride, to name a few. The members 30 and 52 and 65 may be extruded or the separate pieces bonded together by an adhesive.

Having presented my invention, what I claim is:

1. A draw closure comprising a pair of spaced, parallel members of generally F-shaped cross sectional shape defining the sides of a rectangular opening, each member comprising a base portion and a pair of spaced apart ribs, said ribs extending from the bottom of said opening to a level spaced from the top of said base portion, said ribs extending toward each other across said opening and defining a pair of guiding channels, a pair of headed pins extending from each base portion toward the other base portion, said pair of headed pins being in vertical array above said level and spaced from said ribs, a roll support plate having a base portion with a pair of bayonet slots therein engaging said headed pins and a roller pin receiving slot, a front portion on said base portion at right angles thereto and lying in the plane of and above a said rib remote from said headed pins, a spring urged roller having axially extending pins in said roller pin receiving slots, a flexible sheet secured at one end to said roller and extending between said pairs of ribs, and means for holding said sheet in extended position across said opening.

2. The closure of claim 1, said last-mentioned means including flexible means attached to the opposite end of said sheet with the ends thereof occupying substantially the entire width of said guiding channels, catch means opposite said roller, said flexible means including means engageable by said catch means for preventing retraction of said sheet by said spring-tensioned roller, whereby said sheet may be held in position across said opening by engagement of said catch means and may be released from said catch means for retraction by flexing of said flexing means so as to disengage said flexible means from said catch means while the ends of said flexible means are retained in said guiding channels.

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