Jan. 9, 1951 D. HONIG 2,537,669

UTILITY WALL CABINET

Filed May 23, 1947 2 Sheets-Sheet 1

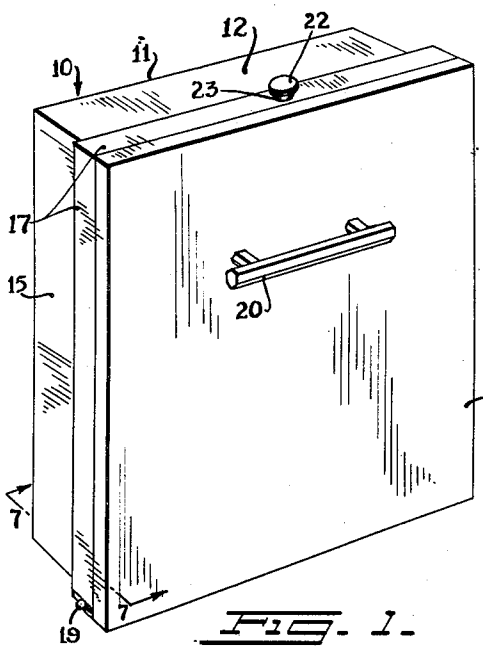


FIG. 1.

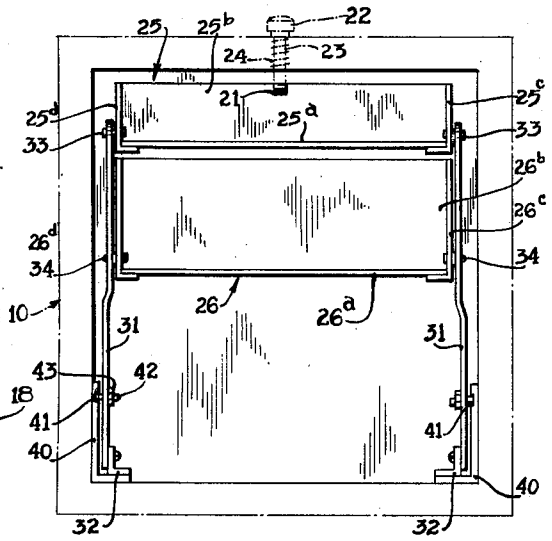


FIG. 3.

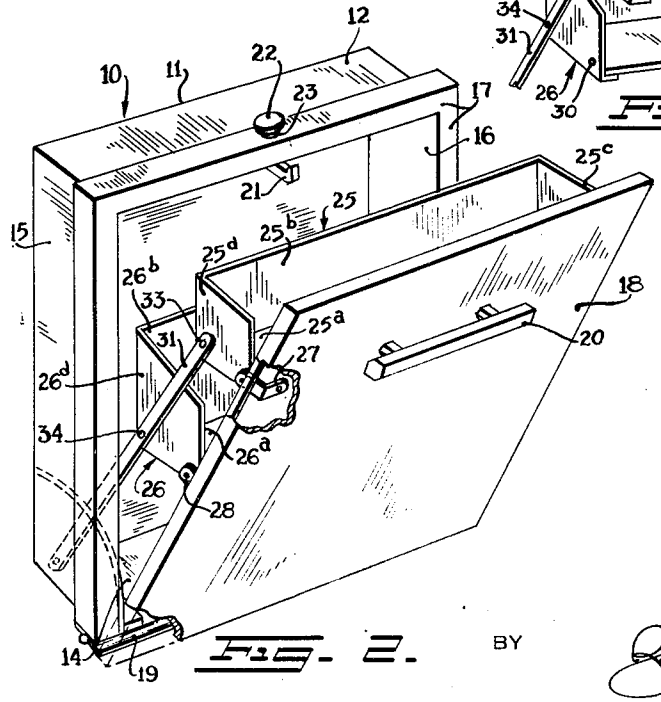


FIG. 2.

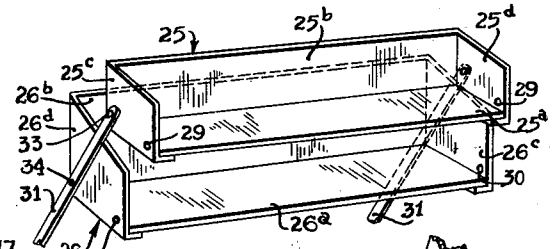


FIG. 4.

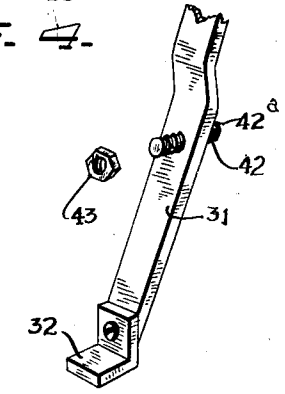


FIG. 5.

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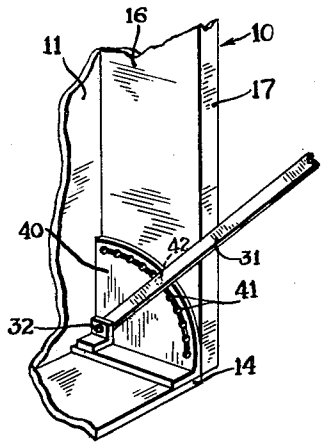


FIG. 5.

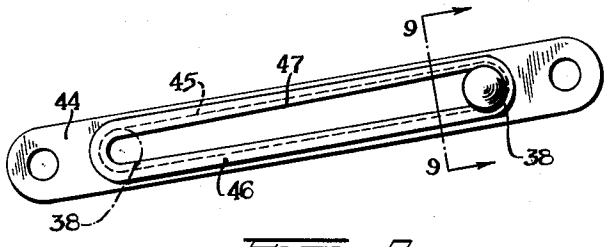


FIG. 8.

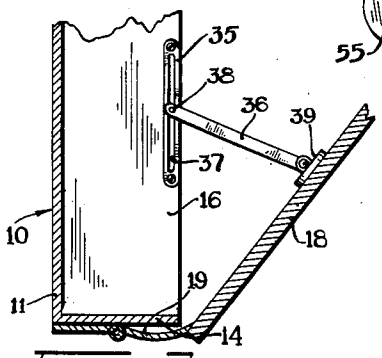


FIG. 7.

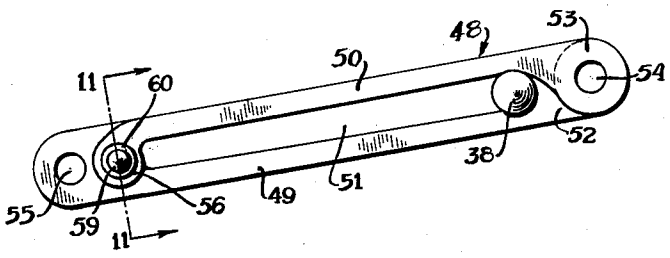


FIG. 10.

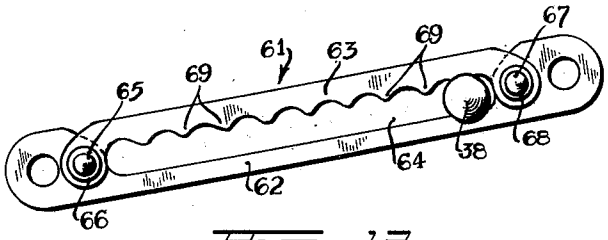


FIG. 12.

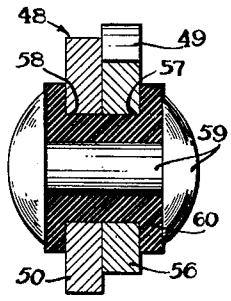


FIG. 11.

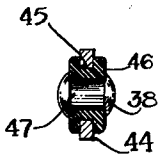


FIG. 9.

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UTILITY WALL CABINET

David Honig, Brooklyn, N. Y.

Application May 23, 1947, Serial No. 750,064

5 Claims. (Cl. 312—186)

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This invention relates to new and useful improvements in utility cabinets, such as medicine cabinets.

This is a further development of the invention claimed in my previous application filed on June 15, 1945, Serial No. 599,725, now abandoned.

More particularly, the invention is applicable to a wall cabinet of the kind just noted and of the type having a lowerable front door and provided with a plurality of horizontal shelves normally housed in the main body of the cabinet but mounted on the lowerable door so as to cause the shelves to swing down when the door is swung to or toward a position extended horizontally from the main body of the cabinet.

In such a cabinet, were the provisions above stated the only ones made, the shelves would depart from the horizontal more and more as the door is lowered more and more about its hingedly mounted bottom. However, a further provision is made, which is an operative connection between each shelf and the main body of the cabinet, whereby during lowering of the door, partially or all the way to the horizontal, the shelves tilt about their mountings on the door so as always to remain horizontal.

A particular feature of the invention is the provision of such an operative connection, and preferably one common to all the shelves present, in combination with a means partially carried by said operative connection, for holding the door at any selected one of its different inclinations from the vertical resulting from partial lowering of the door.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a perspective view of the cabinet constructed in accordance with the present invention.

Fig. 2 is a view, similar to Fig. 1, but showing the door in course of being lowered and with portions of the door being broken away.

Fig. 3 is a front elevational view of certain of the working parts in the main body of the cabinet, showing the relation of these parts to the interior of said main body, with the top, bottom and side limits of the body's interior drawn in full lines and with its exterior indicated merely in dot and dash lines.

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Fig. 4 is a detail view in perspective, showing the two shelves seen in Fig. 2 and further details thereof.

Fig. 5 is a fragmentary perspective view, looking into the interior of the cabinet and toward the lower right hand corner thereof.

Fig. 6 is a fragmentary detail view in perspective, showing parts of the aforesaid operative connection and a part of the aforesaid holding means.

Fig. 7 is a detail view showing said parts in side elevation, this view being a vertical section taken on the line 7—7 of Fig. 1.

Fig. 8 is a side elevational view of a modified form of link for inclusion in said operative connection.

Fig. 9 is a section, taken on the line 9—9 of Fig. 8.

Fig. 10 is a view similar to Fig. 8, but showing another type of construction for such link.

Fig. 11 is a section, taken on the line 11—11 of Fig. 10.

Fig. 12 is also a view similar to Fig. 8, but showing still another type of construction for such link.

The cabinet, according to the form of the invention shown in Figs. 1 to 6, includes a cabinet body 10.

The cabinet body 10 is made up of a back wall 11, a top wall 12, a bottom wall 14, and side walls 15 and 16. Extended all along the front limits of the top wall 12 and the side walls 15 and 16 is a structure 17 of inverted U shape and suitably secured in place to constitute a rigidly inbuilt front portion for the top and side walls of the body 10; which structure constitutes a considerable thickening for the front of the cabinet where subtended by said walls. The structure 17 presents a front uniplanar vertical face running around the top and both sides of the cabinet.

Against the vertical face provided by the structure 17 the inner surface of the door 18, which surface is flat, engages when the door, hinged along its bottom at 19 to the bottom wall 14, is raised to vertical position.

For raising the door, to close the cabinet tightly, the door carries a handle 20; latching means of a suitable type being provided to retain the door 18 closed. This latching means here is shown as comprising a male latch member 21 for snapping into latch engagement with a suitable keeper (not shown) at a matching upper point on the inside of the door 18. This form of fastening is well known, the member 21 being connected to

a finger piece 22 at the top center of the structure 17, by a rod or stud 23 passing vertically through the structure 17 and sleeved inside the latter by an expansile spring 24 acting normally to elevate the finger piece 22 and so raise the latch member 21. In its thus raised position, the latch member, after entering its keeper on the door 18, in response to momentary yield of the spring 24 for the purpose, incidental to full closing of the door, locks the door closed. Preparatory to releasing the door for manual lowering, it is necessary, therefore, merely to depress the finger piece 22.

Pivotally mounted on the inside of the door are a plurality of shelves. As many shelves as desired may be present, but to simplify the drawing merely two such shelves are shown, marked respectively 25 and 26. The shelf 25 has a bottom wall 25^a, a back wall 25^b, and end walls 25^c and 25^d. The shelf 26 is similarly made up of a bottom wall 26^a, a back wall 26^b, and end walls 26^c and 26^d.

The various shelves may differ, so far as the width of either or both of the bottom and back walls of any shelf is concerned; so that, with the maximum of the dimensions just referred to within the storage capacity of the cabinet when the door 18 is closed, the shelves may have differing floor areas and differing adaptability to carry bottles or the like of different heights on their floor walls.

Thus, and by way of example, the shelves 25 and 26 are here shown, most clearly in Fig. 4, as being of different floor widths and of different back wall heights.

On the rear of the door 18, in horizontal alignment at opposite sides thereof are secured pairs of L-brackets, each pair for pivotally mounting one of the shelves at a selected level on the door. One of the pair of brackets for the shelf 25 is seen at 27 in Fig. 2, and in the same view one of the brackets for the shelf 26 is seen at 28.

Each of the rearwardly extending limbs of these brackets is apertured, such apertures in each pair of brackets being in horizontal alignment with a pair of horizontally aligned apertures 29 and 30 in the two end walls of the appropriate shelf. The last-mentioned apertures are seen in Fig. 4. A suitable stud, doubly headed or otherwise shaped to prevent accidental displacement thereof axially, hingedly couples each of the brackets opposite a shelf end wall and that shelf. These studs, in the case of the shelf 25, pass through the apertures 29, and in the case of the shelf 26, pass through the apertures 30.

In cooperation with such pivotal mountings of the shelves, like links 31 are in the cabinet, one at each side thereof. The lower end of each link 31 is pivoted to an L-bracket 32 fixed in the bottom wall 14 of the cabinet body 10, said links are in the locations shown in Figs. 3 and 5, and at properly spaced points along these links they are pivoted to the end walls of the shelves; as shown in Figs. 2 and 4, in connection with the shelves 25 and 26, at the points 33 and 34 respectively.

With the pivotal points 33 and 34 on the links 31, and those on said links for other shelves than the two shelves shown if more than two shelves are present, properly spaced and properly related to pivotal points on the end walls of said shelves, the result is that when the door 18 is closed the shelves are horizontal, and yet in any lowered position of the door, the shelves have been accordingly pivoted, so as always, regardless of the degree of downward tilt of the door, and even when the door is swung down to horizontal position, to have all the shelves horizontal.

Combined with the features already described is a means, as shown in Fig. 5, for acting to hold the door 18 at any one of a number of inclined positions away from the vertical.

Secured to the inner side of each side wall of the cabinet, at the bottom of said side wall, is a plate 40 so shaped as to correspond in outline to a 90° segment of a circle. The center of such circle is horizontally aligned with the center of pivotal mounting of the lower end of the adjacent link 31. Spaced along a circular line of extension paralleling the circular edge of the plate 40 are a plurality of depressions 41. Each link 31 has a pin 42 fixed thereon, at the proper height on the link to have a sweep along the line of depressions 41 as the door 18 is raised or lowered over its full amplitude of swing. Each pin is offset from its link 31 to have a rounded end 42^a of the pin face the adjacent plate 40; the other end of the pin being threaded for application of a nut 43 to secure the pin in position on its link. The links 31 are made of some resilient material, as spring metal; and from the bottom of a link 31 to a point suitably above its pin 42, the link may be sprung outwardly somewhat, toward the adjacent side wall of the cabinet.

Thus the rounded end of each pin 42 is yieldingly forced toward snapping, at its rounded end 42^a, into some one or other of the depressions 41 each time the door 18 is lowered to any selected inclined position, thus to hold the door there until, by the next up or down swing of the door, the latter is moved to further lowering or further raising. In effect, therefore, there is also provided a friction-drag means for facilitating slow, easy door lowering.

Referring now in particular to Fig. 7, an additional latching means is shown whereby in place of the connecting means heretofore described, a link 35 with a long slot 37 is secured to the side wall of the cabinet.

As shown best in Fig. 7, each link 35 is secured to the side wall of the cabinet; each link having a long slot 37. The arm 36 associated with a link 35 has a pin 38 shaped to move along the slot of said link, but to be retained, as by being headed over, against accidental loss from the slot. The end of an arm 36 remote from the pin is pivoted on a bracket 39 secured to the inside of the door 18. The parts are so proportioned and arranged, relative to their points of pivoting, that a pin 38 reaches one end of its slot 37 when door 18 is fully closed, and such pin abuts the opposite end of its slot 37 when the door is lowered to the horizontal, thereby to prevent further lowering of the door.

Referring to Figs. 8 and 9, a link such as here shown marked 44, may be used in lieu of the link 35, at either or both sides of the cabinet. Along this link is a slot 45, and set in place in the slot is an endless, medium soft rubber liner 46. As shown best in Fig. 11, said liner is U-shaped in cross section throughout its entire length, that is, along its two long straight stretches to be fitted against the sides of the slot 45 and along its two shorter curvilinear end stretches to be fitted against the rounded ends of the slot.

Thus, a rubber faced slot proper 47 is provided in the link; and the liner is so shaped, by gradually thickening more and more the portions of the liner which lie opposite the long sides of the slot 45 in the plane of the link, as the lower end of the link is approached, that the slot proper

tapers gradually to less and less width as the lower end of the link is approached.

The pin 38 is shown in Fig. 8 at the lower end of the rubber faced slot proper 47. On opening the door, even slightly, a frictional resistance is encountered, and as the door is more and more lowered for further opening, there will be a greater and greater frictional drag against movement of the pin during its travel toward the position reached at full lowering of the door or maximum opening.

An efficient door retarding means, for use auxiliary to or in substitution for the parts 40—43, is thus provided for insuring against too rapid or abrupt dropping of the door on depression of the finger piece 22.

Referring to Figs. 10 and 11, the result last referred to may be obtained by use of a link 48 as here shown. In this form of link, the same is made up of a main piece 49 and a secondary piece 50. Between them these parts establish the slot, marked 51.

Each piece 49 and 50 at its outer end is laterally enlarged, at 52 and 53, respectively, for having cut therethrough matching apertures as shown, such pair of apertures designated 54.

The apertures 54 constitute means whereby the outer end of the link 48 may be connected to the side wall, and also a means whereby the link piece 50 is connected to the link piece 49 at one end of the link 48, with aperture 55 providing attaching means on the other end of the link 48.

The link piece 50 is shorter than the link piece 49, and the link piece 50, at its one end outward from the aperture 55 by way of which the link 48 is attached to the cabinet, is laterally enlarged at 56. This enlargement is apertured at 57; and the link part 49 has a like aperture at 58; these apertures being so placed that, when arranged in matching relation as shown in Fig. 10, the slot 51 tapers to reduce in width more and more from the outer toward the inner end of the slot.

By way of the apertures 57 and 58 and a rivet 59 the two link parts are coupled, with the rivet shank passing through a rubber bushing 60.

Thus, as the cabinet door is lowered more and more, the pin 38, in moving to the left in Fig. 10, always travels toward a narrower and narrower part of the slot 51. Elastic compression of the bushing 60, where it surrounds the rivet shank, permits such travel, but under frictional drag, and a drag increasing more and more as the pin approaches closer and closer to the inner end of the slot 51.

Referring finally to Fig. 12, an arrangement of analogous purpose is provided, and one which in some respects is similar to that of Fig. 10; except that, with the link 61 here comprising also a main link part 62 and a secondary link part 63, and with such link parts providing between them a slot 64 which may or may not taper toward the inner end of the link, said slot has a toothed side.

While the link part 63 at its inner end is laterally yieldingly mounted on the link part 62, by a rivet 65 in combination with a rubber bushing 66, as is the inner end of the link part 49 in Fig. 10, the outer end of said link piece 63 is at its outer end similarly mounted on the link part 62, as indicated at 67 and 68. In this view, also, the pin 38 is shown at the outer end of the slot.

Thus, at each step of partial lowering of the cabinet door, the pin 38 must force itself past one of teeth 69 at a side of the slot 64, by elastically distorting one or the other of the bushings 60 and 66.

A feature also is that the teeth 69 at the outer end of the slot 64 are longer and further apart than at the inner end of the slot.

As will be understood, the degree of taper of the slots in Figs. 8 and 10 is exaggerated, the better to illustrate this feature of the invention.

A modified form of the connecting means described and shown in Fig. 7, is the use of any of the links 44, 48 or 61 in lieu of the arm 36, said link to be attached at one end to the door by means of the bracket 39, and a stationary pin riveted to the side wall of the cabinet which slidably engages the slot of the link in any desired position.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

Having thus described my invention, what I claim as new, and desire to secure by United States Letters Patent is:

1. In a wall cabinet, the combination with a cabinet body of a lowerable door hinged at its bottom to the bottom of the cabinet body, a plurality of shelves one located at a higher level than another in the cabinet body when said door is closed, said shelves being individually pivotally mounted on the door, means pivotally connecting the shelves with the interior of the cabinet body and arranged to cooperate with the pivotal mountings of the shelves on the door to hold the shelves always horizontal as they are lowered with the door when the door is lowered to any inclination from the vertical, means for latching the door in lowered position at any one of a plurality of inclinations from the vertical, said connecting means including a link pivotally connected to the cabinet body and to the door, and said latching means including a projection offset from such link.

2. In a wall cabinet, the combination with a cabinet body of a lowerable door hinged at its bottom to the bottom of the cabinet body, a plurality of shelves one located at a higher level than another in the cabinet body when said door is closed, said shelves being individually pivotally mounted on the door, means pivotally connecting the shelves with the interior of the cabinet body and arranged to cooperate with the pivotal mountings of the shelves on the door to hold the shelves always horizontal as they are lowered with the door when the door is lowered to any inclination from the vertical, means for latching the door in lowered position at any one of a plurality of inclinations from the vertical, said connecting means including a link pivotally connected to the cabinet body and to the door, and said latching means including a projection offset from such link, said latching means further including an arcuate line of spaced keepers for said projection, said keepers being in fixed locations in the cabinet body.

3. In a wall cabinet, the combination with a cabinet body of a lowerable door hinged at its bottom to the bottom of the cabinet body, a plurality of shelves one located at a higher level than another in the cabinet body when said door is closed, said shelves being individually pivotally mounted on the door, means pivotally connecting the shelves with the interior of the cabi-

net body and arranged to cooperate with the pivotal mountings of the shelves on the door to hold the shelves always horizontal as they are lowered with the door when the door is lowered to any inclination from the vertical, means for latching the door in lowered position at any one of a plurality of inclinations from the vertical, said connecting means including a link pivotally connected to the cabinet body and to the door, and said latching means including a projection offset from such link, said latching means further including an arcuate line of spaced keepers for said projection, said keepers being in fixed locations in the cabinet body, said link being resilient to act yieldingly to urge said projection into any keeper opposite to which the projection is brought in a lowered position of the door.

4. In a wall cabinet, the combination with a cabinet body of a lowerable door hinged at its bottom to the bottom of the cabinet body, a link fixedly mounted within the cabinet body and formed with a vertical slot, an arm pivotally attached at one end on the inside face of said door, a pin mounted on the free end of said arm and slidably engaging said slot to move vertically along said slot as said door is lowered to an open position, and means along said slot engaged by said pin for frictionally opposing lowering of the door to its open position, said means increasing in effectiveness as the door is more and more lowered.

5. A wall cabinet, comprising a cabinet body having an open front, a door closing the open front of said body and pivotally mounted along its bottom edge on the bottom of said body to be

lowerable to an open position, shelves pivotally mounted on the inner face of said door to be located one above the other when said door closes the open front of said body, vertical links pivotally mounted at their lower ends within said cabinet body, said links having their free ends extended upwards along the sides of said shelves and pivotally attached thereto to cooperate with the pivotal mounting of said shelves on said door to retain said shelves horizontal as the door is lowered to an open position, plates mounted with said body along a side of said links and formed with arcuate lines of spaced depressions arranged concentric with the pivotally mounted lower ends of said links, and pins mounted on said links to snap into and out of said depressions as said door is lowered to an open position for releasably holding said door at any one of a plurality of inclinations from the vertical between fully closed and fully open positions.

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