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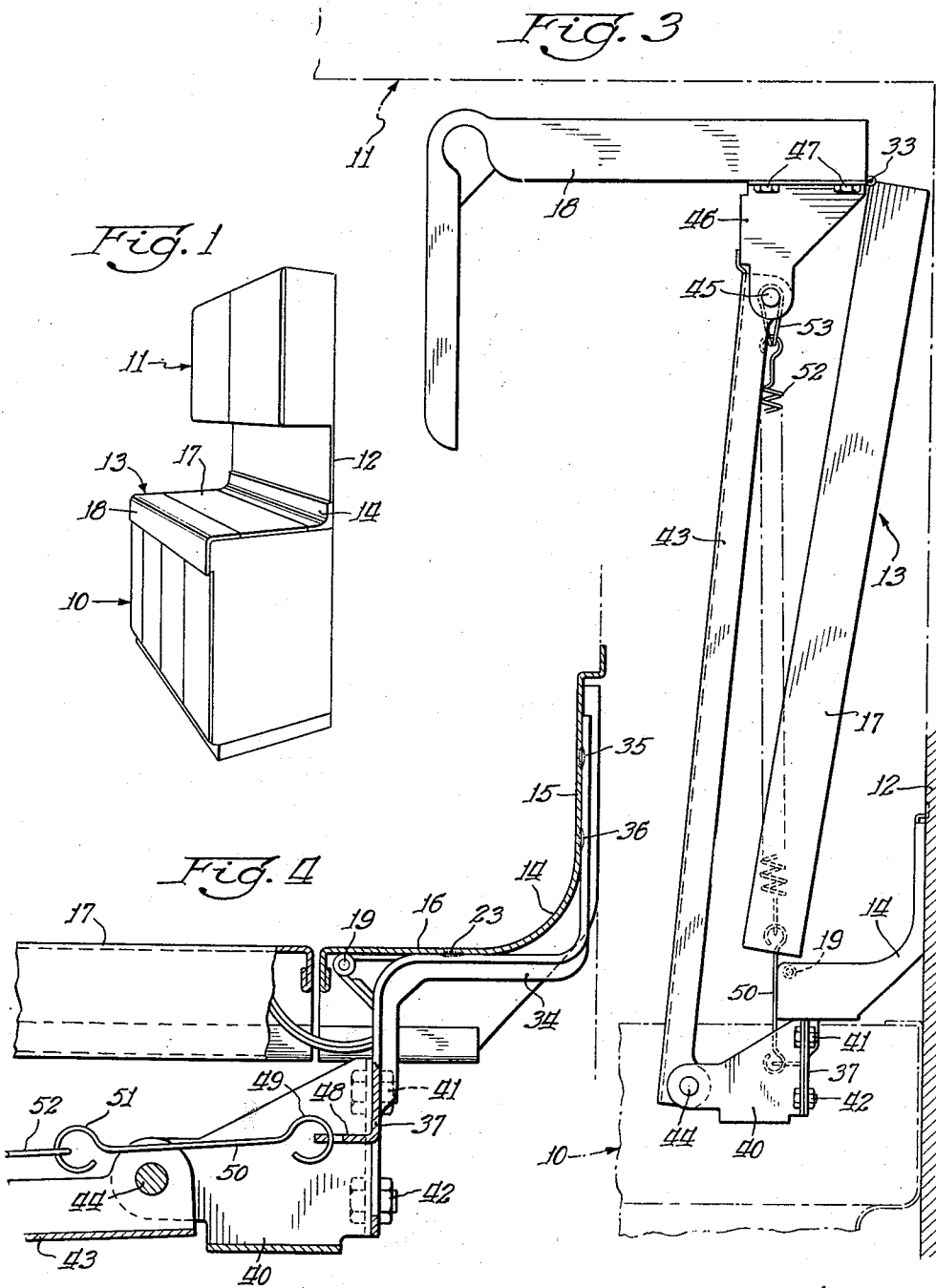
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2,547,382

FOLDING WORK SURFACE WITH PLURAL SECTION COVER

Filed Feb. 21, 1947

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

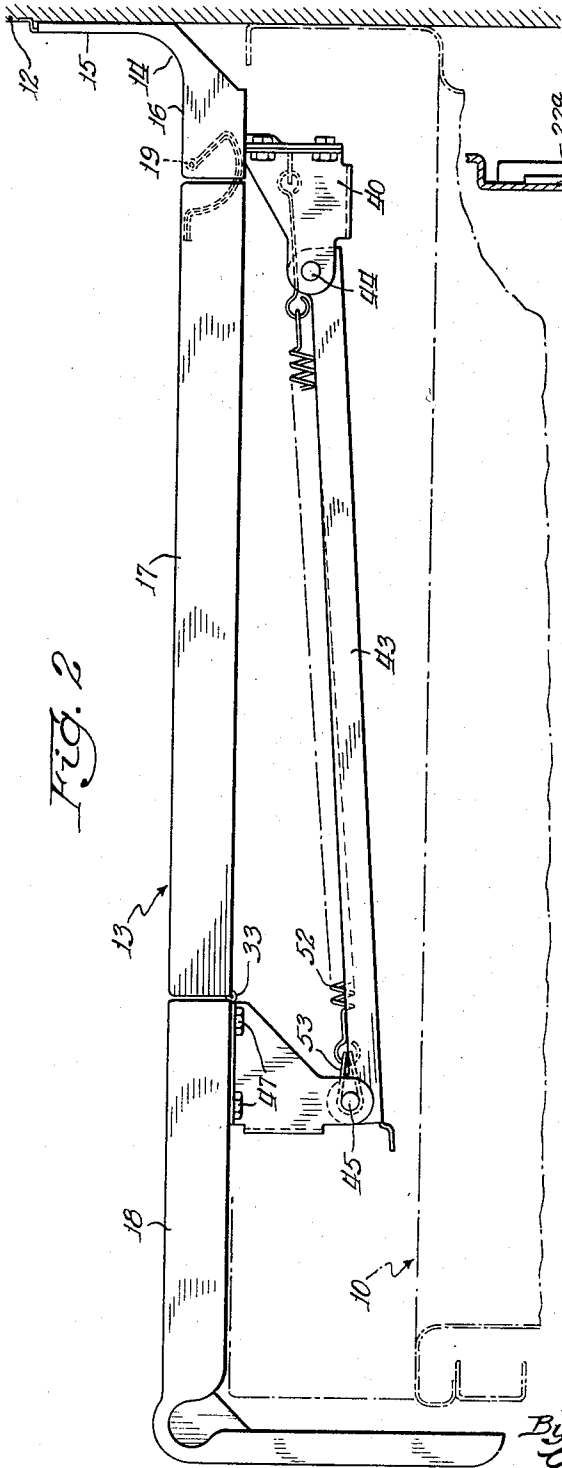


Fig. 2

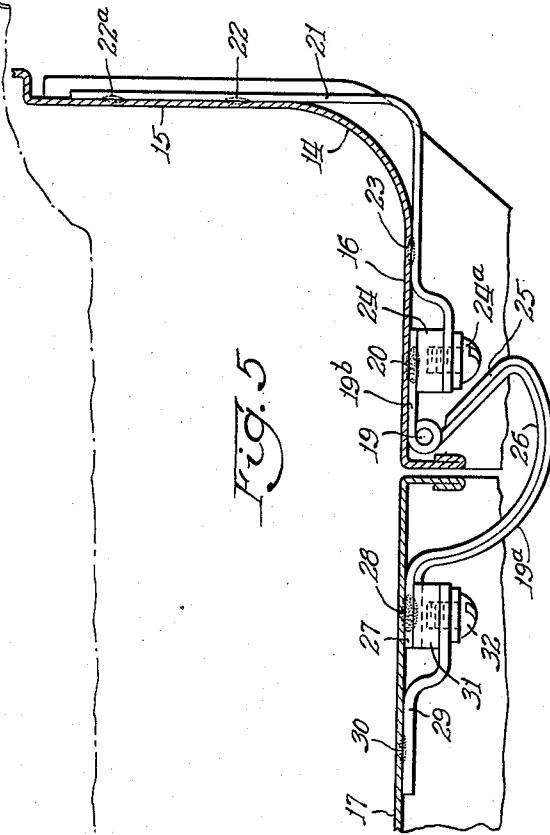


Fig. 5

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UNITED STATES PATENT OFFICE

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FOLDING WORK SURFACE WITH PLURAL SECTION COVER

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8 Claims. (Cl. 311-19)

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This invention relates to a movable cover for a cabinet and more particularly to such a cover for cabinets containing household appliances, as well as for kitchen ranges, and the like, having a displaceable top cover adapted to conceal a heating or other utility unit therein.

The object of the invention is to provide a movable top cover comprising a body section hinged at its front margin to a front section and at its rear margin to a compartment of the cabinet, said cover being provided with counterbalancing means so as to retain the cover in either its open or closed position.

Another object of the invention is to provide such a cover wherein the cover is provided with means for controlling movement of the front section so as to maintain the section in its normal position when the cover is raised or lowered and during such movements of the cover.

Another object of the invention is to provide a cover as described wherein the control means for operating the front section of the cover are concealed within the cabinet when the cover is in its closed position.

Another object of the invention is to provide a cover as described wherein the front and body sections of the cover are maintained in a horizontal plane in its closed position to thereby serve as a work space and, in its raised position, adapted to position the body section in a vertical plane while maintaining the front section in a horizontal plane to thereby effect a considerable shortening of the length of the cover whereby overhead cupboards may be mounted in position above the cabinet, the raised cover facilitating their ready accessibility by the housewife.

The invention consists of the novel constructions, arrangements and devices to be hereinafter described and claimed for carrying out the above stated objects and such other objects as will appear from the following description of a certain preferred embodiment illustrated in the accompanying drawings wherein:

Fig. 1 is a perspective view of a kitchen cabinet and overhead cupboard unit embodying the cover construction and control means therefor of the present invention;

Fig. 2 is a side elevation of the cover and its control arrangement, the side wall of the cabinet being removed to more clearly disclose the invention;

Fig. 3 is a view similar to Fig. 2 but illustrating the cover in raised position and the disposition of the parts of the control arrangement therefor in such position;

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Fig. 4 is a greatly enlarged view of the right-hand portion of Fig. 2, a portion of the cover being broken away to more clearly illustrate the hinge arrangement for the cover, portions of the control arrangement being also broken away to show details thereof; and

Fig. 5 is a greatly enlarged sectional view of the hinge arrangement for connecting the cover to the cabinet.

Like characters of reference designate like parts in the several views.

Referring now to the drawings, there is shown in Fig. 1 a kitchen unit comprising a cabinet 10 having connected thereto overhanging or overhead cupboards 11 by means of a wall 12. The cabinet 10 is of the type having a displaceable cover, generally indicated at 13, providing a top for a compartment of the cabinet and adapted to be hinged to the cabinet at the rear of the compartment so that the cover may be raised to gain access to household appliances such as heating units, laundry tubs or machines, and the like. The wall 12 also forms the rear wall of the cabinet and to said wall may be fixedly secured an angle member or panel 14 in any desired manner, a vertical portion 15 of the angle member 14 being offset from the wall 12 for a purpose hereinafter described and a horizontal portion 16 of said angle member 14 extending toward the cover to provide an upper surface in alignment with the top of the cover 13.

The cover 13 comprises a flat body section 17 and a front section 18 which cooperate in the closed position of the cover to provide a continuous top surface which may be utilized for work operations, to support household wares, and the like. It will be noted that the front section 18 of the cover is of angular cross section with one of the flanges thereof providing an apron extending downwardly over the front of the cabinet to present an offset portion of the cabinet which considerably adds to the attractiveness and aesthetic appearance of the cabinet and also to provide a convenient handle for lowering the cover to its closed position.

The body section 17 of the cover 13 is hinged at the rear margin thereof to the angle member 14 as clearly shown in Fig. 5. The hinge arrangement is adapted to permit the raising and lowering of the cover 13 to open and closed positions and comprises the hinge 19 having one leaf 19a thereof secured to the body section 17 of the cover and the other leaf 19b secured to the bottom of the horizontal portion 16 of the angle member 14 as by a weld 20. To insure the leaf

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196 being held securely to the angle member 14, an L-shaped bracket 21 is provided, the upper portion of which extends into the space between the wall 12 and the vertical portion 13 of the angle member 14 and is welded to the angle member 14 as at 22 and 22a. The lower, horizontally extending portion of the bracket is welded to the horizontal portion 16 of the angle member 14 at a point 23 spaced from the left end of the bracket. The left terminal portion of bracket 21 beyond the weld 23, is bent downwardly or offset in such manner that this terminal portion, while extending substantially parallel to the portion 16 of angle member 14 is spaced slightly therefrom. A bolt 24a carried by this terminal portion is threaded into a nut 24 fixed to the leaf 196 of hinge 19 as by the weld 23, the nut being disposed between the upper side of the left terminal portion of bracket 21 and the lower side of portion 16 of angle member 14 to secure the bracket therebetween.

The leaf 19a of the hinge 19, as shown in Fig. 5, comprises a rearwardly extending portion 25 adjacent the pivot point of the hinge and forming an acute angle with the hinge leaf 19b, the portion 25 connecting with an arcuate portion 26 underlying and spaced from the downwardly extending adjacent end flanges of the body section 17 of the cover and the angle member 14 and formed at its extremity to provide a flat portion 27 engaging the bottom of the body section 17 of the cover and secured thereto as by a weld 28. A support member 29 is welded at one end to the bottom of the body section 17 of the cover as at 30 and is centrally offset so that the other end will underlie the end portion of the hinge leaf 19a, a nut 31 being disposed between the support member 29 and the hinge leaf 19a and secured to the leaf by the weld 28 and to the support member 29 by a bolt 32 as shown. It will be understood that the above described hinge arrangement is provided at each side of the body section 17 of the cover at the rear margins thereof and the adjacent margin of the angle member 14. It will be apparent that the hinge 19 is thus concealed below the cover 13 in its normal closed position and will permit the cover to be raised due to the rearward inclination of the portion 25 of the hinge leaf 19a without the adjacent downwardly extending flanges of the cover and angle member 14 presenting any interference to the raising of the cover to its vertical open position as shown in Fig. 3.

According to conventional practice and for the convenience of the housewife, the cupboards 11 are usually disposed over a cabinet, such as the cabinet 10, and it is desirable that these cupboards be located above the cabinet within easy reach of the housewife desiring to employ them for storage, or other purposes. As it is desirable that the cabinet should have a relatively large capacity, covers which are formed as an integral panel to close the compartment in the cabinet would be objectionable inasmuch as, when such cover is raised to its elevated position, it would interfere with the use of the cupboards 11 by blocking the doors of the cupboards thus making the cupboards inaccessible, or the cupboards must be positioned a sufficient distance above the cabinet to allow clearance of the displaceable cover in its raised position which oftentimes places the cupboards out of reach of the housewife desiring to utilize them for storage or the like.

To permit the cupboards 11 to be located within

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easy reaching distance of the housewife while permitting the use of the household appliance such as a heating unit within the cabinet when the cover is in its raised position, the body section 17 and front section 18 of the cover 13 are connected together by means of a hinge 33 secured to these sections at the lower sides thereof to permit these two sections when folded to be disposed at a greater angle than 90° as shown in Fig. 3 thereby effecting a substantial reduction in the width of the cover in its raised position whereby the cover may be positioned adjacent the rear wall 12 of the cabinet and underlying the cupboards 11 to thereby allow the free use of the heating unit, or other household appliance, within the cabinet while permitting ready access to the cupboards 11.

My invention contemplates improved control means for controlling the movement of the cover 13 and in particular the front section 18 thereof in all positions it may assume relative to the cover body section 17 during movement of the cover to and from its closed and open position. The control arrangement utilized for this purpose is shown in Figs. 3 and 4 and comprises a support member or bracket 34 which may have an upper vertical portion thereof extending between the wall 12 and the angle member 14 and securely fastened to the angle member 14 by means of welds 35 and 36, said bracket 34 having a horizontal mid-portion underlying the angle member 14 and a lower vertical portion 37 extending downwardly therefrom, laterally spaced from the hinge 19, and adapted to have mounted thereon a bracket 40 having laterally extending wing portions secured to the bracket 34 by means of bolt and nut assemblies 41 and 42. The bracket 40 has pivotally connected thereto by means of a pin 43 one end of a lever or arm 43. The other end of the lever 43 is pivotally connected by a pin 45 to a bracket 46 secured to the front section 18 of the cover 13 by means of bolts 47 as shown in Fig. 2. Considering the lever arrangement described, it will be apparent that the lever 43, due to its pivotal connection to the stationary bracket 34, will pivot about the pin 43 during raising and lowering of the cover 13 and, because of the space between the hinge pivot 19 and the hinge pin 44, will act to cause the opposite end of the lever to pivot about the pin 45 with respect to the bracket 46 and front section 18 to maintain the cover section 18 in a horizontal position during raising and lowering of the cover 13 thus effectively controlling the section 18 of the cover to maintain the same in its normal horizontal position throughout the entire range of movement of the cover 13 while also preventing free movement of the panel section 18 relative to the body section 17 of the cover with possible injury to the body section 17 and other portions of the cabinet within the range of rotation of the panel 18 about the hinge 33.

To maintain the cover in its raised position without danger of the same dropping downwardly to its closed position and also to insure the cover being maintained in its closed position, the bracket 34, as shown in Fig. 4, is formed with a laterally extending portion 48 having an opening therein for receiving the loop end 49 of a tie member 50, the other end of said tie member having a loop 51 adapted to engage one end of a tension spring 52. The opposite end of the spring 52 is adapted to be received within openings in the adjacent ends of a U-shaped member 53 encircling the pivot pin 45 connecting the

lever 43 to the bracket 46. It will be apparent that a counterbalancing arrangement is thus provided by the arrangement and proper relative spacing of the pivotal connections of the tie member 50 and the laterally extending portion 48 of the bracket 40, the adjacent end of the lever 43 and bracket 40, and the common pivot point 45 of the spring 52 and lever 43, will cause the spring to obtain its maximum tension when the cover is in a midposition between the top of the cabinet and the wall 12 of the cabinet and to exert sufficient retractive force at one side of said midposition to cause the section 18 and thereby the section 17 to be drawn toward the top of the cabinet 10 to the closed position of the cover. At the other side of said midposition, the spring 52 will act to elevate the cover 13 to the position shown in Fig. 3 and to prevent the unwanted displacement of the cover 13 in its raised position.

From the foregoing, it will be apparent that I have provided a movable cover for a cabinet comprising a flat body section and a front section having control means for maintaining the front section in its normal position during movement to and in the closed and open positions of the cover and also for retaining the cover in its closed or open position. While I have shown and described my improved cover and control means therefor embodied in a kitchen cabinet, it will be obvious that the invention may be incorporated in various other types of cabinets and, therefore, the scope of the invention is to be construed only as defined by the appended claims.

I claim:

1. A cover comprising a plural section, articulated assembly arranged to provide a combined work surface and lid in one position but displaceable to a second position wherein the sections are pivoted with respect to each other to reduce the extension of said assembly in one dimension, said assembly including a rear supporting member, a main table section hinged to said supporting member, a front section hinged to the table section, and a link connecting said supporting member and said front section so that as the assembly is displaced the front section is caused to pivot with respect to the table section as the table section pivots with respect to the supporting member.

2. A cover comprising a plural section, articulated assembly arranged to provide a combined work surface and lid in one position but displaceable to a second position wherein the sections are pivoted with respect to each other to reduce the extension of said assembly in one dimension, said assembly including a rear supporting member, a main table section hinged to said supporting member, a front section hinged to the table section, a link connecting said supporting member and said front section so that as the assembly is displaced the front section is caused to pivot with respect to the table section as the table section pivots with respect to the supporting member, and resilient means associated with said assembly for urging said assembly into said first or said second position in accordance with the proximity of said assembly to one or the other of said positions.

3. A cover comprising a supporting section, a flat body section, and a front section, said body section being hinged at its rear margin to the supporting section and at its front margin to said front section, and means controlling movement of said front section relative to said body section during movement of said cover to cause

said front section to pivot with respect to said body section as said cover is moved.

4. A cover comprising a supporting section, a flat body section, and a front section, said body section being hinged at its rear margin to the supporting section and hinged at its front margin to the front section, and means controlling movement of said front section relative to said body section during movement of said cover to maintain said front section in a plane substantially parallel to the plane it occupied when said movement was initiated.

5. A cover comprising a supporting section, a flat body section, and a front section, said body section being hinged at its rear margin to the supporting section and hinged at its front margin to the front section, and a link attached at one end to said front section and at its other end to said supporting section controlling movement of said front section relative to said body section during the movement of said cover to maintain said front section in a plane substantially parallel to the plane it occupied when said movement was initiated.

6. A cover comprising a supporting section, a flat body section, and a front section, said body section being hinged at its rear margin to the supporting section and hinged at its front margin to the front section, and a link attached at one end to said front section and at its other end to said supporting section to maintain a constant spacing between the front section and the supporting section, the body section being hinged to the supporting section at a point displaced from the normal juncture of said body section and said supporting section so that as the body section is pivoted with respect to the supporting section, the spacing therebetween varies.

7. A cover comprising a plural section, articulated assembly arranged to provide a combined work surface and lid in one position but displaceable to a second position wherein the sections are pivoted with respect to each other to reduce the extension of said assembly in one dimension, said assembly including a rear supporting member adapted to be secured to a wall or other vertical support, a main table portion hinged to the supporting member, a front section hinged to the table section and a link connecting said supporting member and said front section so that as the assembly is displaced the front section is caused to pivot with respect to the table section as the table section pivots with respect to the supporting member, said link being attached to said front section at a point substantially removed from the pivot axis thereof with respect to the table section.

8. A cover comprising a plural section, articulated assembly arranged to provide a combined work surface and lid in one position but displaceable to a second position wherein the sections are pivoted with respect to each other to reduce the extension of said assembly in one dimension, said assembly including a rear supporting member adapted to be secured to a wall or other vertical support, a main table portion hinged to the supporting member, a front section hinged to the table section, a tension spring associated with said assembly for urging said assembly into said first or second position in accordance with the proximity of the assembly to one or the other position, said spring being attached to the front section at a point immediately adjacent the point of attachment of said link arm and attached to said supporting section at a point immediately adjacent the point of attachment thereto of the

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link, and a link connecting said supporting member and said front section so that as the assembly is displaced the front section is caused to pivot with respect to the table section as the table section pivots with respect to the supporting member, said link being attached to said front section at a point substantially removed from the pivot axis thereof with respect to the table section.

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