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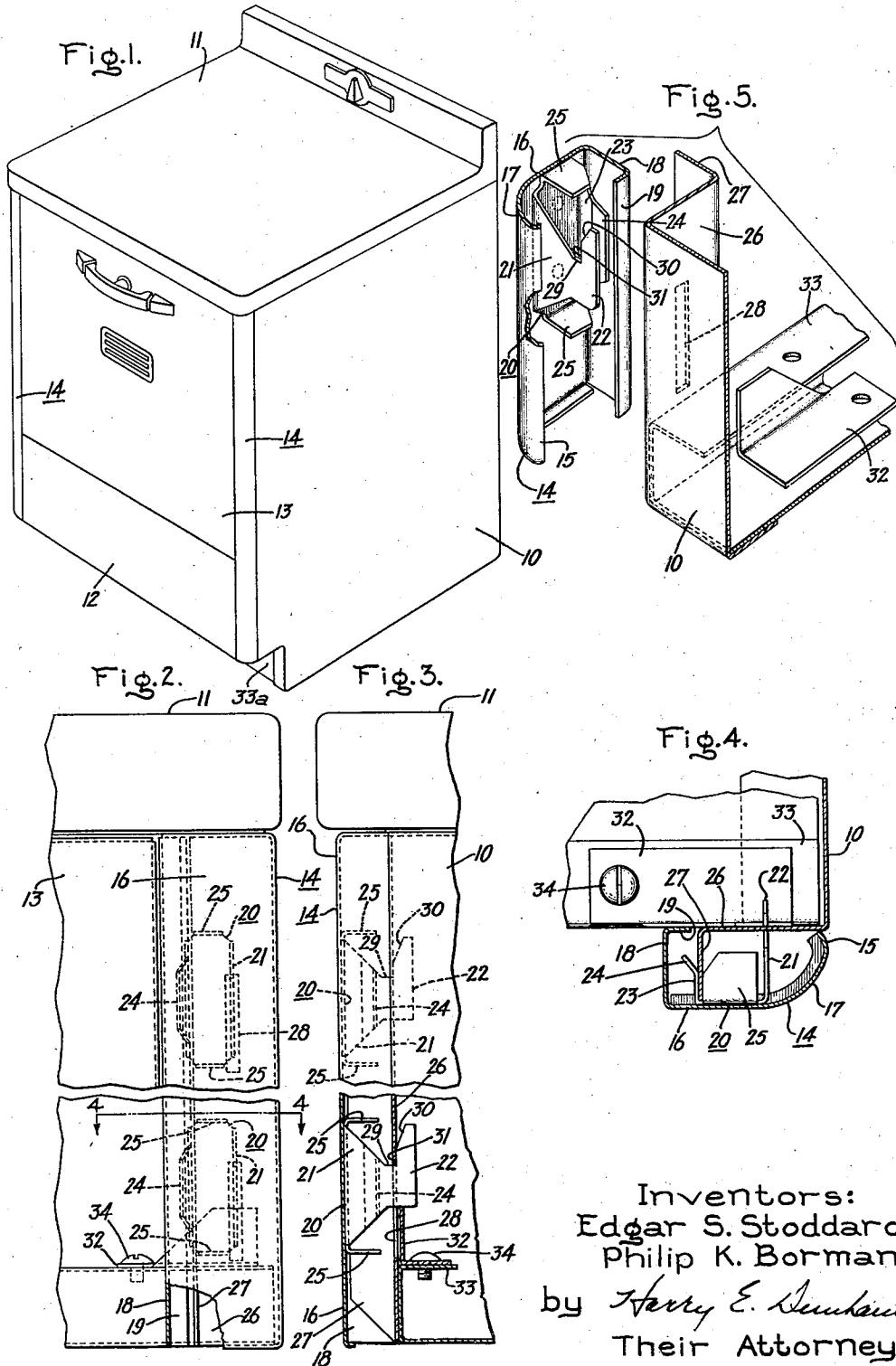
E. S. STODDARD ET AL

2,295,304

CABINET STRUCTURE

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2 Sheets-Sheet 1



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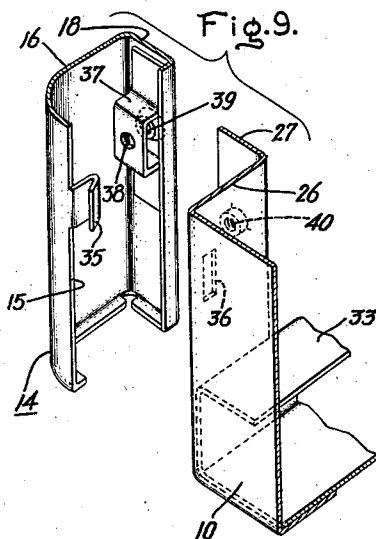
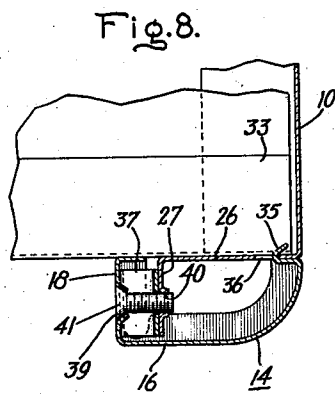
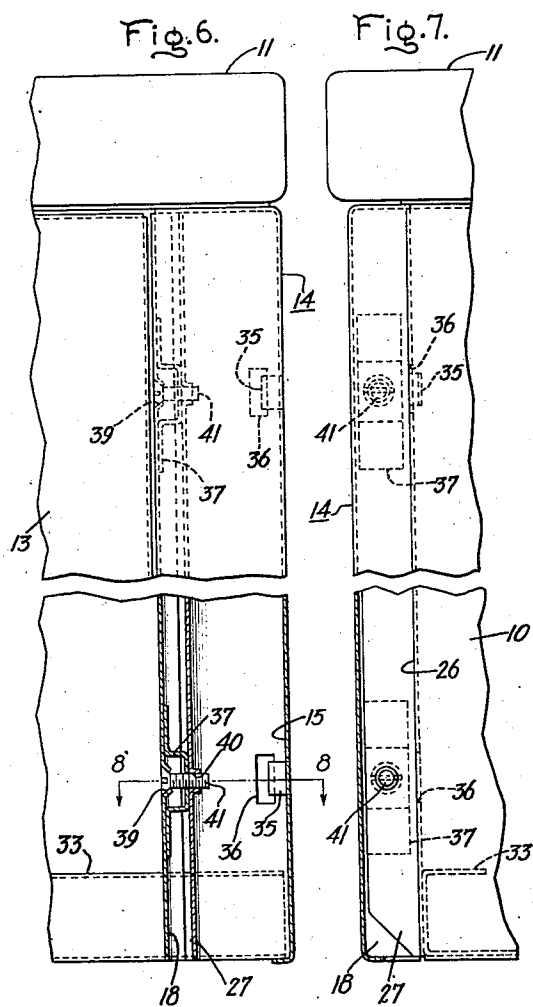
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CABINET STRUCTURE

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2 Sheets-Sheet 2



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## UNITED STATES PATENT OFFICE

2,295,304

## CABINET STRUCTURE

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3 Claims. (Cl. 312-141)

This invention relates to a cabinet structure and more particularly to a cabinet structure for a domestic appliance such as a dishwashing apparatus and has for its object the provision of a cabinet structure the appearance of which may be readily and simply altered.

In the manufacture of household appliances such as washing apparatus, ranges or the like, it is desirable to produce different cabinet styles for different models. These cabinet styles are considerably affected by the shape and design of the corners of the cabinet. Since most cabinets or the integral parts thereof are formed by a pressing or drawing operation, the corner design could only be altered by changing the drawing tools. This entails a considerable tooling expense, particularly in the number of tools that must be provided for forming cabinets with different shaped corners.

It is the object of this invention to provide a separate corner construction for cabinets of domestic appliances so that the style and shape of the cabinet corner may be simply and inexpensively altered.

It is a further object of this invention to provide a corner structure for a cabinet in the form of a separable corner mullion the shape of which may be altered as desired.

It is a further object of this invention to provide simple and inexpensive means for removably attaching a corner mullion construction on a cabinet structure.

It is a further object of this invention to provide simple and inexpensive means for firmly and rigidly supporting a corner mullion in its proper position on a cabinet structure so as to give the appearance of an integrally formed corner.

It is the specific object of this invention to provide a cabinet structure for a dishwasher with interchangeable corner mullions which are provided with simple and inexpensive means for mounting the mullion on the cabinet so that its edge portions cooperate with the adjacent surfaces of the cabinet so as to stimulate an integrally formed corner construction.

For a more complete understanding of this invention reference should be had to the accompanying drawings in which Fig. 1 is a perspective of a cabinet structure to which my improved corner mullion construction has been applied; Fig. 2 is an enlarged front elevation with parts broken away and parts in section showing details of construction of the corner mullion and one form of mounting means therefor; Fig. 3 is a side elevation of the construction shown in Fig. 2

with parts broken away and parts in section; Fig. 4 is an enlarged sectional view taken on the line 4-4 of Fig. 2 and looking in direction of arrows, the alternative clamping means shown in Fig. 2 being omitted; Fig. 5 is an exploded view of the assembly shown in Fig. 4, including the alternative clamping means shown in dotted lines in Figs. 2 and 3; Fig. 6 is a front elevation similar to Fig. 2 of a modified form of mounting structure for the corner mullion arrangement with parts broken away and parts in section; Fig. 7 is a side elevation of the construction shown in Fig. 6 with parts broken away and parts in section; Fig. 8 is an enlarged sectional view taken on the line 8-8 of Fig. 6 and looking in direction of arrows; and Fig. 9 is an exploded view of the assembly shown in Fig. 8 showing additional details of this modified form of mounting arrangement.

Referring to the drawings and particularly to Fig. 1, it will be observed that this invention has been shown by way of example as applied to the cabinet structure for a dishwasher. It is to be understood, however, that it is not intended to limit this invention to such a cabinet structure since it can be applied to cabinets for other domestic appliances such as ranges and the like.

The cabinet illustrated includes side walls 10, a top wall 11 and a front wall 12 which is provided with an opening adapted to be closed by a door 13. It will be understood that the door 13 is hinged by suitable means (not shown) so that it can be moved from a vertically closed position to a horizontally open position.

In accordance with this invention there is provided at each of the front corners of the cabinet detachable corner mullion constructions 14 which comprise sheet metal strips suitably formed to give the desired corner shape. In the illustrated embodiments of this invention these corner mullions are somewhat curved so as to produce a round contour at the corners. It is of course understood that these members could be of any other desired shape so as to change the style of the cabinet structure. In fact, it is contemplated in accordance with this invention to have a plurality of differently shaped corner mullions available for readily and simply changing the corner designs of the dishwasher cabinet.

Referring now to Figs. 4 and 5, it will be observed that the corner mullion 14 illustrated has a turned-in side edge 15 and a front surface 16, connected by a smooth curve 17. Extending perpendicularly from the front edge is the flange 18 which terminates in the turned-in surface 19.

The flange 18 in the mullion illustrated serves as a jamb for the door 13. It is of course understood that the corner mullion is formed by a separate pressing, shaping, or drawing operation but it is obvious that the small pieces of metal stock required for these mullions can be more easily worked with and formed at less cost than would be the case if an equivalent corner structure were integrally formed in the cabinet.

In employing such corner mullions on a cabinet it is essential to provide means for firmly mounting and supporting the mullion in position so that it will not come loose during use of the cabinet. It is also essential that the mullion be properly supported relative to the walls of the cabinet so that it blends with these walls and gives the appearance of an integrally formed corner. In order to obtain such a mounting there is provided in accordance with this invention simple and low cost supporting structures.

In the embodiment illustrated in Figs. 2-5 the supporting structure comprises a plurality of clips 20 which are spot welded at spaced intervals along the inside surface of the mullion. Preferably three of these clips will be provided in each mullion. These clips are provided on one side with a bracket portion 21 which has a key-shaped head 22. Provided on the opposite side of the clip is a second projection 23 having a laterally flared outer end 24, as clearly shown in Fig. 4. Provided at each end of the clip are end projections 25 which are generally rectangular in shape except the edge of the projections adjacent the flared end 24 of the projection 23 are chamfered, as shown in Fig. 4.

In order to complete the mounting means for the corner mullion the side wall 10 of the cabinet is bent so as to define the inwardly extending flange 26 and a laterally projecting abutment 27. Provided in the flange 26 are a plurality of slots 28 into which the key-shaped head 22 of the clip is adapted to extend. After the head portion 22 of each of these clips 20 has been inserted through their respective slots 28, the entire corner mullion is raised vertically so that the top edge of the slot 28 engages with the edge 29 of the bracket portion 21. It will be observed that the upper portion of the key-shaped head is chamfered at 30 so that upon moving the mullion vertically upward as previously described, the mullion will be drawn inwardly until the inside edge 31 of the head lies against the inside surface of the flange 26, as shown in Fig. 3. After the mullion has thus been raised into position, a clamping plate 32 is placed under the head portion of the lowermost clip 20 and is secured in position on a lower cabinet bracket 33 by means of a screw 34 so as to firmly support the mullion in its mounted position on the flange 26 of the side wall.

As previously stated, it is of course important from the point of view of appearance and design that such a separate corner mullion construction simulate the appearance of a continuous surface, as is obtained with an integrally formed corner construction. In accordance with this invention means are provided for properly orienting the mullion both from front to back and from right to left so that the edge portion 15 of the mullion will cooperate with the adjacent side wall and so that the front surface 16 of the mullion will lie flush with the outer surfaces of the door 13 and the front wall 12. This orientation is obtained by the positioning of the projection 27 within and relative to the projections 23

and 25 on the clips 20. When the mullion is mounted on the cabinet the lateral projection 27 of the cabinet side wall extends into the slot defined between the projections 23 and the end projections 25 of the clip. The flared edge 24 of the projection 23 and the chamfered edges of the projections 25 facilitate the insertion of the lateral projection 27 into the slot. Once the projection is inserted in the opening, the length of the lateral projection 27 determines the positioning of the mullion from front to back, as viewed in Fig. 4, and the relative position of the clip in the mullion determines the positioning of the mullion from right to left, as viewed in this same figure.

It will be observed that in this form of this invention very simple and effective means are provided for easily and positively applying a separable corner construction to the cabinet. It is of course obvious that the improved means for maintaining and supporting the mullion in its operative position and for orienting the mullion with respect to the adjacent walls are not limited to the particular shape of mullion disclosed in the drawings. The same construction could be used for mullions of various shapes.

In Figs. 6 through 9 there is shown a modified form of this invention, particularly with reference to the means for supporting the corner mullion in its operative position. In this arrangement mounting means have been provided so that it is unnecessary to shift the mullion vertically in order to complete its mounting on the corner construction. In these figures elements which are the same as elements illustrated in Figs. 2-5 are identified by the same numeral.

Referring to Figs. 6 through 9 it will be observed that a plurality of U-shaped clips 35 is integrally formed on the mullion 14 at vertically spaced intervals along the edge 15 thereof. These clips are adapted to be inserted in slots 36 provided in the flange 26 near the front edge thereof, as shown in Fig. 9. Welded to the inside surface of the portion 18 of the mullion are a plurality of vertically spaced substantially U-shaped clips 37. Each clip is provided with an opening 38 (Fig. 9) which lies over an opening 39 provided in the jamb portion 18 of the mullion. In this modified form of this invention, the aligning of the mullion with the side wall of the cabinet is effected by the positioning of the slots 36 relative to the U-shaped clips 35.

In order to support the mullion in its mounted position on the flange, a plurality of vertically spaced threaded openings 40 is provided in the lateral projection 27 of the side wall. Machine screws 41 are inserted through the aligned openings 38 and 39 in the U-shaped clip and jamb portion of the mullion respectively and are threaded into these openings 40. It will be observed that in some respects this modified form of construction is simpler than the form shown in Figs. 2 through 5 in that it does not require vertical movement of the mullion in order to mount it in its operative position.

From the foregoing description it will be observed that there is provided in accordance with this invention new and improved means for firmly and positively securing a separable corner mullion construction on a cabinet, thereby permitting flexibility in the design of such corner structures as well as reducing the cost of manufacture of such cabinets.

While two modifications of this invention have been described in detail, it is obvious that many other modifications may be made and it is in-

tended in the accompanying claims to cover all such modifications as are within the true spirit and scope of this invention.

What we claim as new and desire to secure by Letters Patent of the United States, is:

1. In a cabinet having a front wall and side walls adjacent thereto, a flange integrally formed along the front edge of each side wall and having a lateral projection lying parallel to said side walls and projecting beyond the front edge thereof, a corner mullion structure having a portion adapted to lie flush with each of the walls forming the corner to which the mullion is applied, said flange having a plurality of slots formed therein at vertically spaced intervals, a plurality of clips secured to said mullion at vertically spaced intervals corresponding to the spacing of said slots, a projection on each of said clips having a head portion adapted to be inserted through said slots to mount said mullion on said flange, a plurality of additional projections on said clip defining a slot for receiving said lateral projection on said flange so as to position said mullion with respect to the adjacent walls of said cabinet so that the respective portions thereof lie flush with said walls, means in said head portion permitting vertical movement of said mullion for an amount sufficient to prevent said head portion from being moved through said slot and thereby secure said mullion to said flange, and means engaging said lowermost clip in said mullion for holding said mullion in its vertically raised position.

2. In a cabinet having a front wall and side walls adjacent thereto, a flange integrally formed along the front edge of said side walls and having a lateral projection lying parallel to

said side walls and projecting beyond the front edge thereof, a corner mullion structure having a portion adapted to cooperate with each of the walls forming the corner to which the mullion is to be applied to simulate the appearance of an integral corner construction, said flange having a plurality of slots formed therein at vertically spaced intervals, a plurality of U-shaped clips integrally formed along one edge of said mullion and adapted to be inserted in said slots to mount said mullion on said flange, and means for securing said mullion in said mounted position to said projection so that said portions thereof will be properly oriented relative to said adjacent walls.

3. A cabinet structure comprising a wall having a side edge, an inwardly extending flange integrally formed with said wall at said side edge, a projection integrally formed on said flange and extending parallel to said wall beyond the front edge thereof, a corner mullion adapted to cover said flange and said projection and having a portion adapted to cooperate with said wall at said side edge thereof to give the appearance of a continuous surface, said flange having a plurality of vertically spaced slots therein, a plurality of hooking members on said corner mullion adapted to extend into said slots so as to mount said mullion on said flange, a plurality of vertically spaced aligning members extending inwardly from said mullion so as to lie in juxtaposition with said projection, and means for drawing together said aligning members and said projection to align said mullion horizontally relative to said wall.

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