April 15, 1952 H. T. LAY 2,593,317

RIGHT ANGLE MOUNTING CABINET FRONT UNIT

Filed June 13, 1949

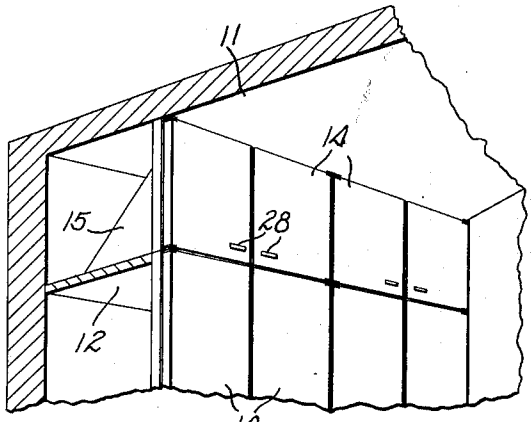


Fig. 1.

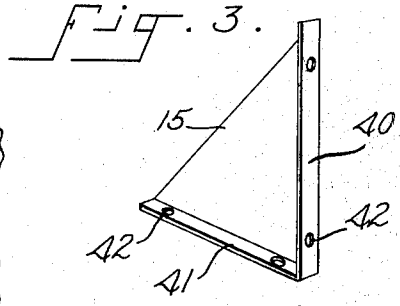


Fig. 3.

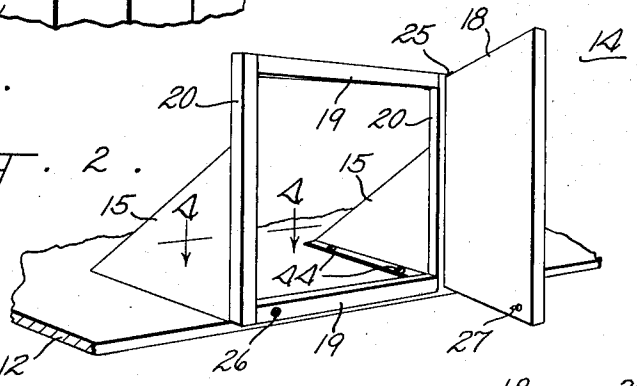


Fig. 2.

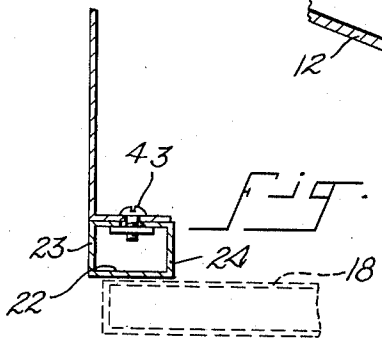


Fig. 4.

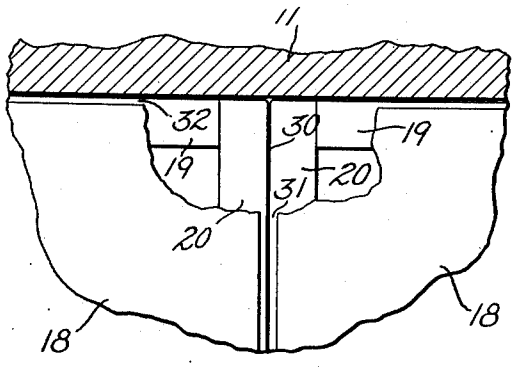


Fig. 5.

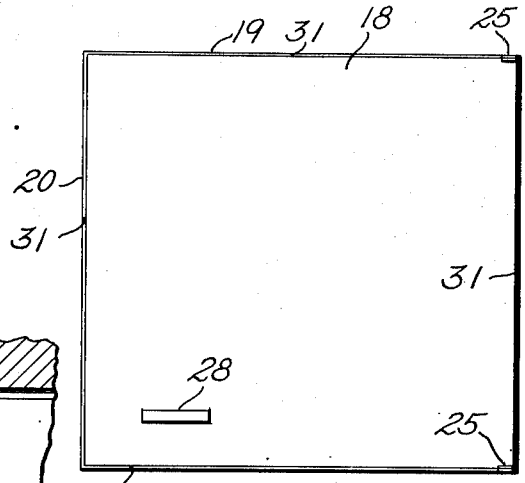


Fig. 6.

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RIGHT ANGLE MOUNTING CABINET FRONT UNIT

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Application June 13, 1949, Serial No. 98,750

1 Claim. (Cl. 189—46)

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The present invention relates to cabinet structures and, more particularly, to combined sheet metal frame and door units and to mounting means therefor.

Frequently it is desirable to enclose a relatively narrow space between existing walls by means of a door assembly. Such spaces may occur between a pair of shelves, between another cabinet and an adjacent wall, or between the top of a cabinet and the ceiling or elsewhere. For example, it is quite a common practice in the installation of kitchen cabinets to drop a false wall or soffit down from the ceiling to the top of a kitchen cabinet assembly because of the relatively high cost of manufacturing and fitting frames and doors into the space between the ceiling and the cabinet top. Storage space is usually at a premium within the average kitchen, and it is undesirable from the viewpoint of the dwelling occupants to block off any space within a kitchen and waste the same behind false walls. The door and frame units of the present invention may readily be substituted for the soffit at a minimum of expense with the desirable result that the space therebehind is made available for storage purposes.

It is a general object of the present invention, therefore, to provide a combined sheet metal frame and door unit together with a relatively simple and inexpensive mounting means therefor whereby the door and frame unit may be supported from any horizontal or vertical wall in a position extending at right angles with respect thereto.

A further object of the present invention is to provide a combined sheet metal frame and door unit together with right-angularly extending bracket means secured to the rear side of the frame for supporting the unit from a wall or shelf.

For a consideration of what is believed novel and inventive, attention is directed to the following description taken in connection with the accompanying drawing while the features of novelty will be pointed out with greater particularity in the accompanying claim.

In the drawing, Fig. 1 is a view in perspective illustrating a cabinet assembly in a corner of a room adjacent the ceiling thereof and showing combined door and frame units together with mounting means constructed in accordance with one form of the present invention; Fig. 2 is a view in perspective illustrating in greater detail one of the cabinet units shown in Fig. 1; Fig. 3 is a view in perspective illustrating one of the

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mounting brackets shown in Fig. 2; Fig. 4 is a cross-sectional view illustrating the mode of attachment of the door and frame units to the mounting bracket; Fig. 5 is an enlarged fragmentary view illustrating certain details; and Fig. 6 is a front elevation of the door and frame unit shown in Fig. 2.

Referring now to the drawings, the invention will be described with particular reference to a soffit arrangement, that is, an arrangement for enclosing the space between the top of a cabinet assembly indicated by the row of doors 10 and the ceiling 11 of a room, the top of the cabinet being indicated by the upper cabinet wall or, in this case, a shelf 12.

A plurality of combined door and frame units 14 are shown mounted above the cabinet 10, the units 14 being supported upon the top of the cabinet shelf 12 by brackets 15. Generally the ceiling 11 of the kitchen will be plastered so that it is unsatisfactory to attempt to attach the soffit door units 14 thereto, whereas it will be a relatively simple matter to mount the door units of the invention upon the shelf 12 in a manner disclosed. It will become apparent as the description proceeds, however, that the soffit door units 14 may, if desired, be supported from the ceiling 11.

Referring now more particularly to the enlarged perspective view of Fig. 2, a single soffit door unit will be described. The unit as shown consists of a rectangular sheet metal frame and a rectangular sheet metal door 18 hingedly mounted thereupon. Considering first the frame, this consists of top and bottom members 19 and side members 20, the members being made of sheet metal and having a cross section, such as shown, for example, in Fig. 4. The frame members have portions overlapping each other at the corners and which portions are spot welded together at a plurality of points each so as to render the frame rigid in the direction of the plane of the frame. Referring to the cross-sectional view of Fig. 4, each of the frame members has a flat face portion 22 with rearwardly extending flange portions 23 and 24, the rearward edges of the flange portions being turned inwardly toward each other as indicated. The outer surface of the inturned flange portions define a flat, rear surface of the frame parallel with the front surface of the frame defined by the face portions 22.

The door 18, also preferably formed of sheet metal, is of double wall construction as shown in Fig. 4. The doors may be hingedly secured onto the frames by means of hinges 25 of any suitable

type though I prefer to use hinges which will permit outward swinging of the door through an angle of approximately 180° and which hinges are characterized by having their pivotal axes substantially aligned with the front surface of the door. One such hinge which I have found satisfactory is disclosed in the Patent No. 2,385,145 granted September 18, 1945, to Stone. The hinge disclosed in that patent is particularly suitable for use with sheet metal doors and frames and is of the corner mounting type, provided with two leaves, one of which leaves is projected through a slot in the corner of the door frame and is secured against the rear surface thereof while the other leaf extends through a slot in the adjacent door corner and is secured in position thereto. The frame and door may also be provided with any convenient form of latching or catch device, one part being indicated as being mounted on the door frame at **26**, the cooperating part being mounted in the rear surface of the door and indicated at **27**. A handle such as indicated at **28** in Fig. 1 may also be mounted on the front surface of the door for facilitating opening and closing thereof.

The door and frame units of the present invention are preferably manufactured in a plurality of various stock sizes and also for both right- and left-hand opening. Since, as will be described, the doors are symmetrical on all four sides with respect to the frame, the only difference between the right- and left-hand opening door is the location of the handle **28** upon the face side thereof.

In the mounting of the door units **14**, it is desirable that the frames of adjacent units abut closely against each other in a manner as illustrated at **30** in Fig. 5 and with no space provided therebetween. In order that the adjacent door edges of adjacently mounted units will not drag against each other or interfere with each other during opening and closing movements thereof, it is important that a clearance or space **31** be provided around the edges of the door. Moreover, in an assembly as shown in Fig. 1, it is also essential that a clearance be provided between the lower edges of the doors of the units **14** and the upper edge of the cabinet units **10**, as well as between the upper edges of the doors and the ceiling **11**. The clearance between the upper edges of the doors **18** and the ceiling **11** is indicated at **32** in Fig. 5. Such clearances are assured in the case of the door and frame unit of the disclosure by making the frame with slightly greater dimensions than the door **18** and by mounting the door centrally with respect to the frame so that a slight space, for example, of approximately $\frac{1}{8}$ inch will exist between the outer edge of the door **18** and the outermost edge of the frame **17** entirely around the door as indicated at **31** in Fig. 6. It will be obvious, therefore, that, once the frame is mounted in position and even though the outer edges thereof abut snugly against adjacent cabinet parts, free opening and closing movement of the door is assured. Such a door and frame unit in and of itself is the subject matter of my separate patent application filed concurrently herewith, Serial No. 98,748.

For mounting the door and frame units in position, I provide a pair of right-angular brackets **15** for each of the units, one of such brackets being shown in detail in Fig. 3. The bracket **15** may be formed of sheet metal and is provided with a pair of right-angularly extending flanges **40** and **41**, which flanges are provided with pairs of suitably spaced holes **42**. The vertical flanges **40** of the angle brackets **15** may be secured to the vertical portions of the frame in any suitable manner, such as by screws or bolts **43**, while the horizontal flanges **41** may be secured onto the upper surface of the shelf **12** by means of screws **44** as indicated in Fig. 2.

In the event that the upper surface of the shelf **12** is not flat, suitable shims may be provided under either forward or rear portions of the brackets in order to mount the frame plumb and which is important in order that the upper edge of the door **18** will not scrape against the ceiling **11** when opened.

While I have shown a particular form of a right-angle bracket, it is to be understood that any other suitable form of right angle bracket may be substituted for the type shown.

Having described the invention in what I consider to be a preferred embodiment thereof, it is desired that it be understood that the specific details shown are merely illustrative and that the invention may be carried out by other means.

I claim:

A cabinet front unit for mounting at right angles with respect to a supporting wall, said unit consisting of a sheet metal frame and a door hingedly mounted thereon, said frame being of rectangular shape and consisting of top, bottom and opposite side members welded together at the corners of said frame, each of said members having parallel spaced apart front and rear surface defining portions, said door being of rectangular configuration overlying the front surface of said frame whereby said frame is substantially concealed from view from the front side of said door when closed, said door being of slightly lesser width and height than said frame whereby a slight clearance is provided between adjacent outer edges of said door and said frame around the four sides of said door, a pair of brackets each having a pair of flanges extending at right angles with respect to the general plane of said brackets, the planes of said flanges further extending at right angles with respect to each other, and means securing a pair of corresponding ones of said flanges to the rear surface defining portions of said frame on a pair of opposite sides of said frame, and with the other flanges of said brackets extending in a common plane and adapted to be secured to a cabinet wall.

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The following references are of record in the file of this patent:

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