April 12, 1949. B. J. TRILLER 2,466,869

CABINET CONSTRUCTION

Filed Feb. 26, 1942 4 Sheets-Sheet 1

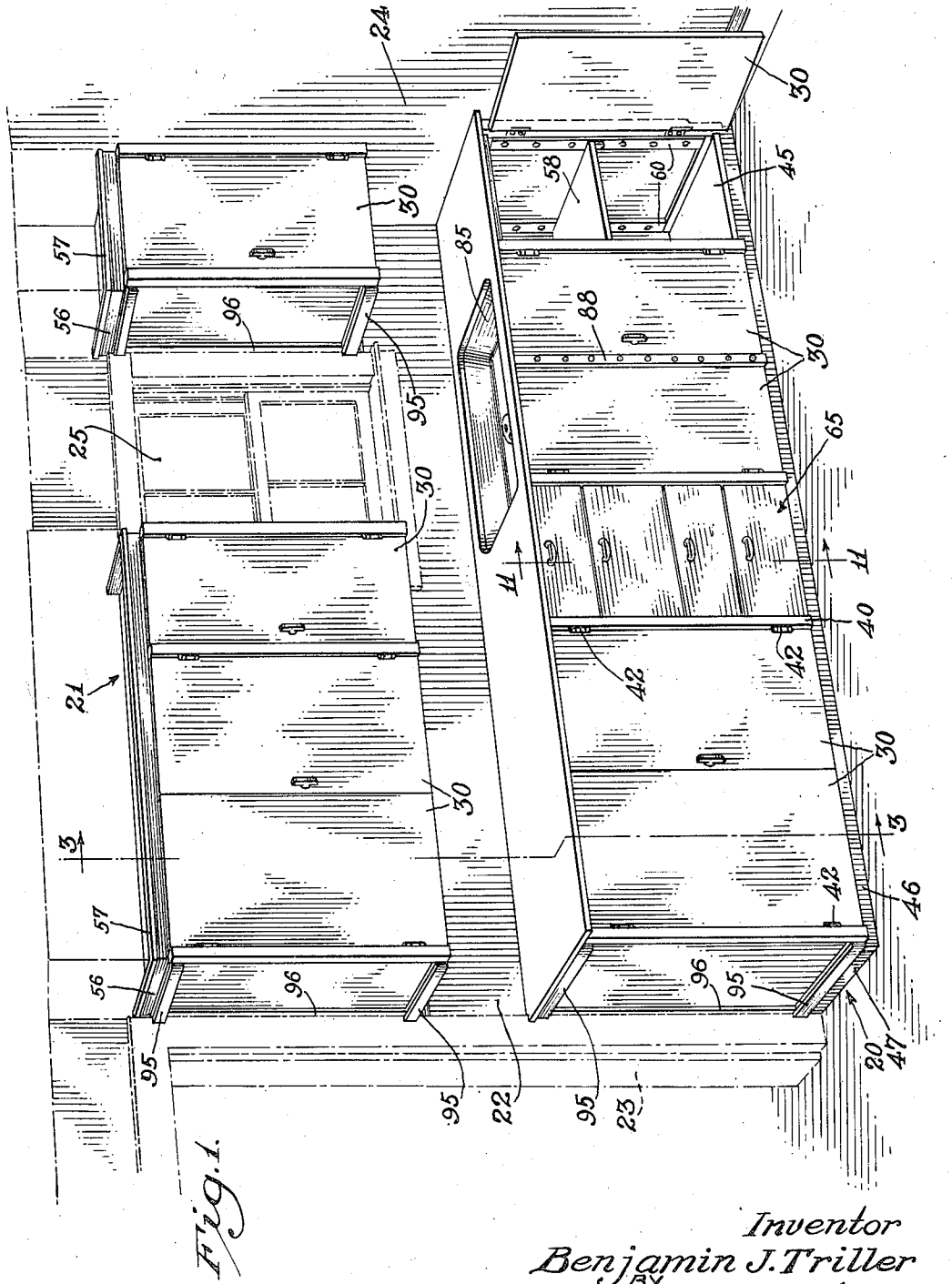


Fig. 1.

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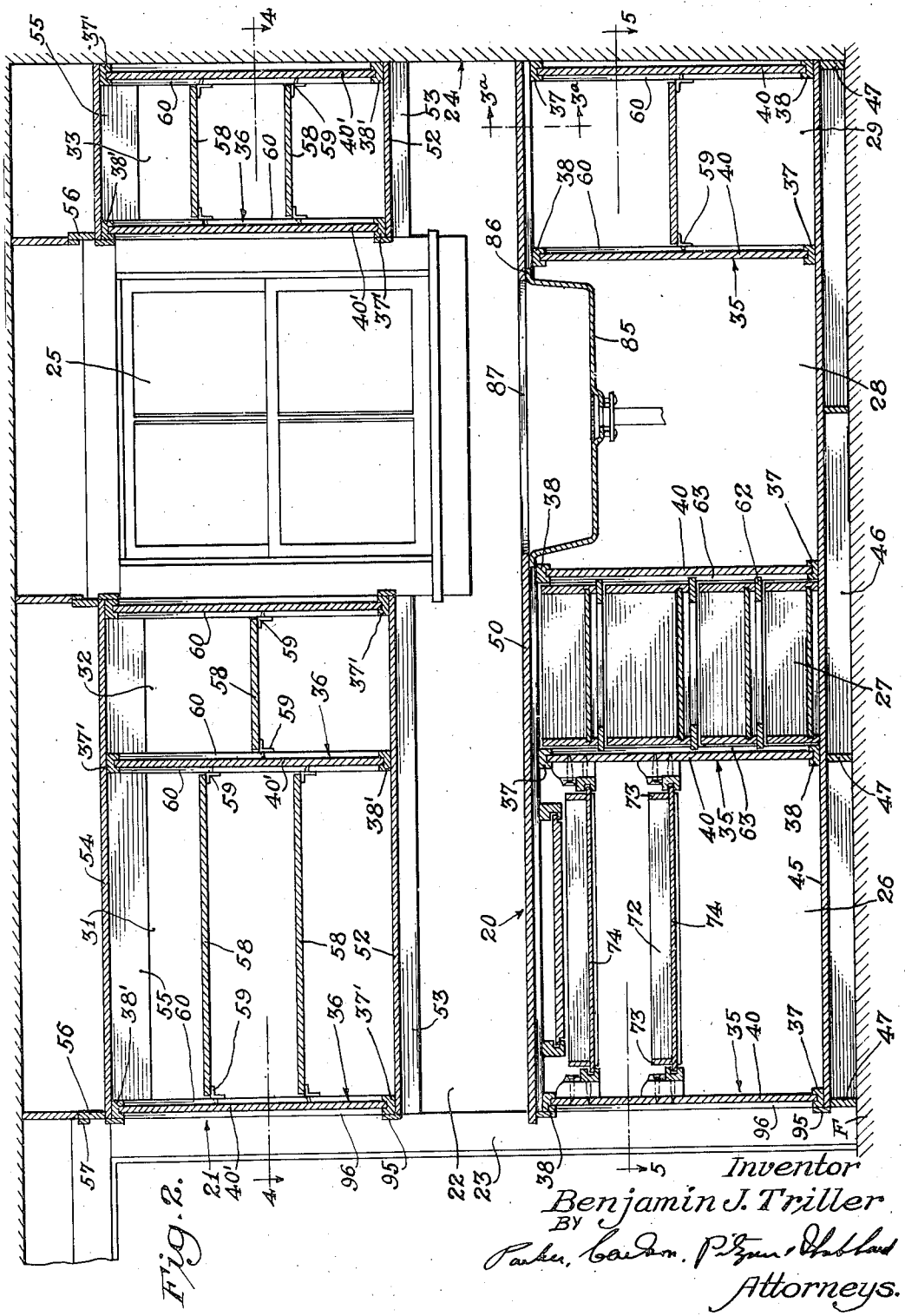


Fig. 2.

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CABINET CONSTRUCTION

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Fig. 3.

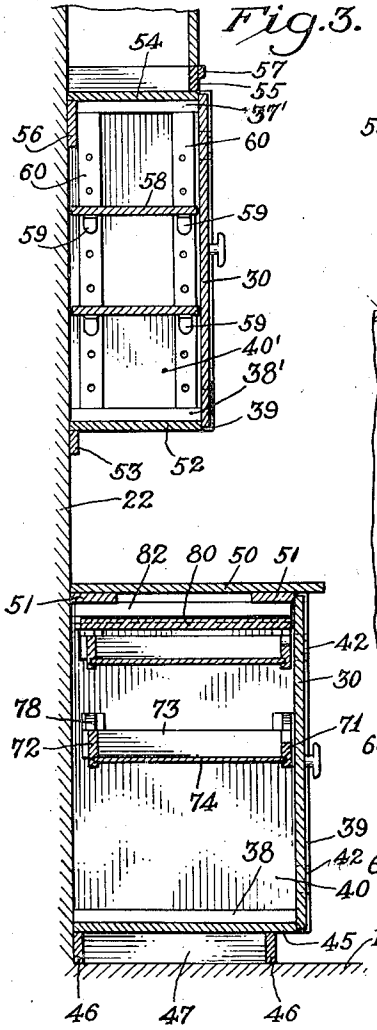


Fig. 4.

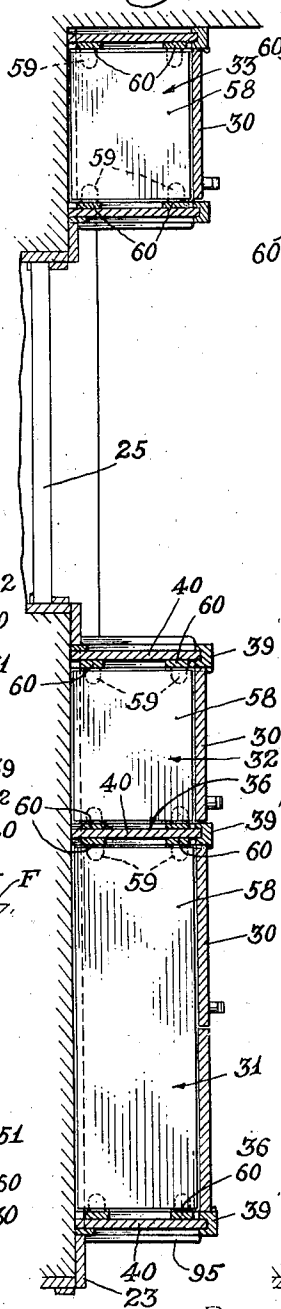


Fig. 5.

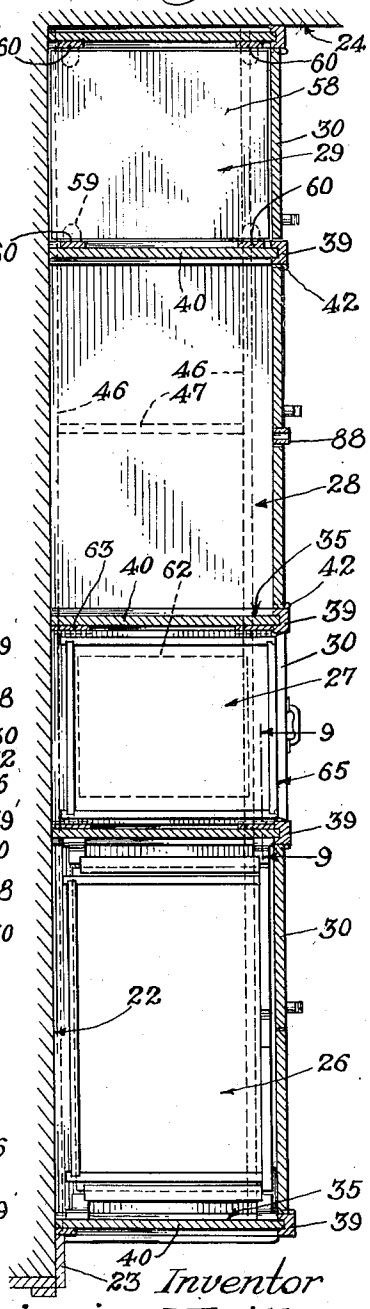
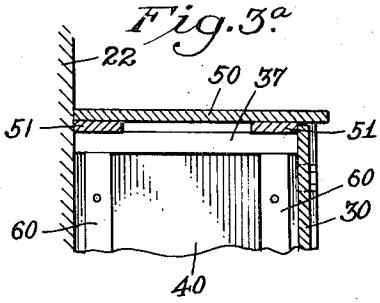


Fig. 3a.



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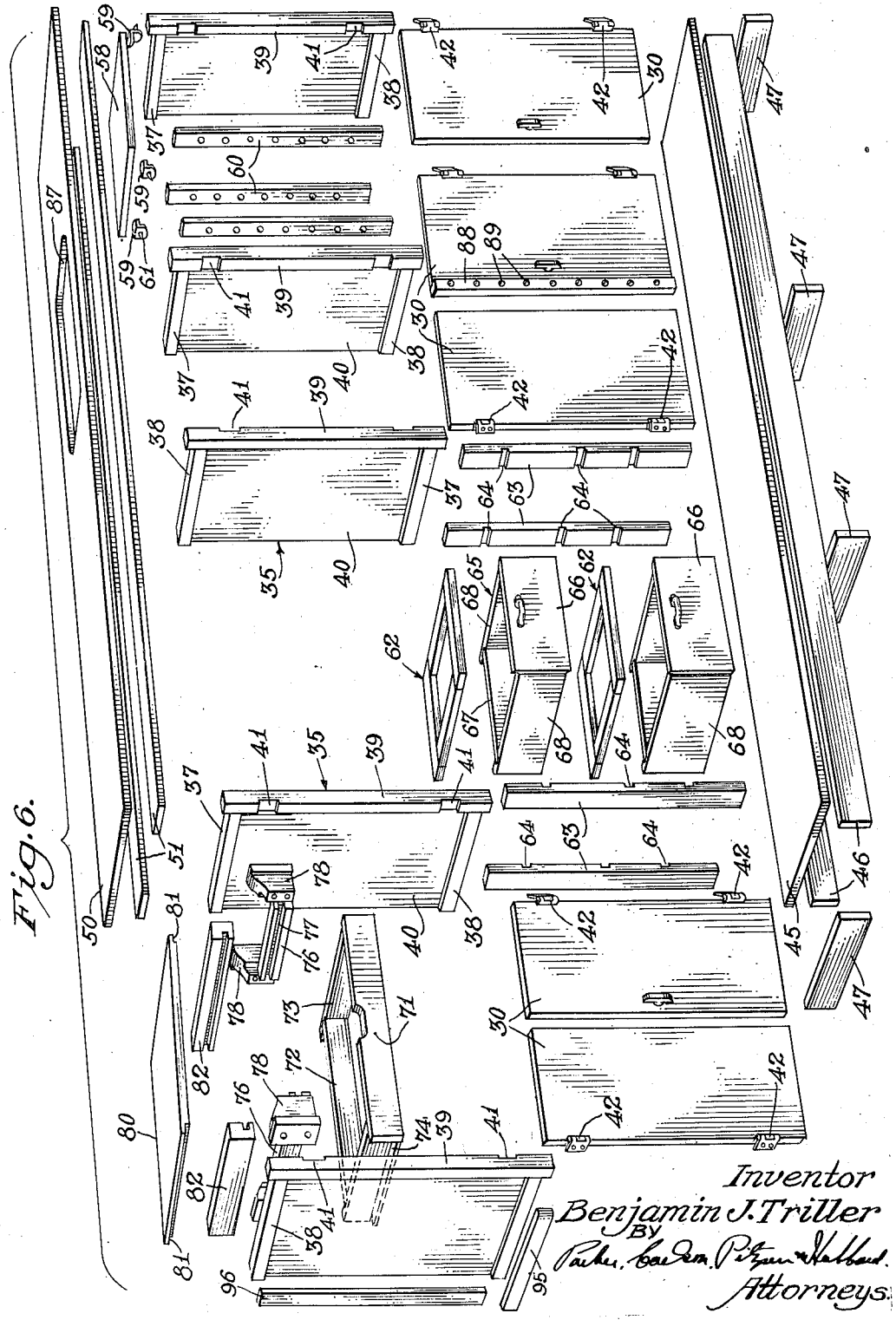


Fig. 6.

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UNITED STATES PATENT OFFICE

2,466,869

CABINET CONSTRUCTION

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Application February 26, 1942, Serial No. 432,398

3 Claims. (Cl. 312—146)

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The invention relates to cabinet construction and more particularly to cabinets suitable for domestic use and commonly known as kitchen cabinets.

Such cabinets have heretofore either been custom built or assembled from prefabricated sections. The custom built cabinet may be dimensioned to fit whatever space is available but it has the disadvantage of high cost due to the labor required for cutting, fitting and assembling individual parts.

The sectional type cabinets are less expensive to build since they are adapted for quantity production and the operations requiring the greatest skill can be performed under efficient shop conditions and by means of machines not available for construction on the job. However, sectional cabinets, because of the fixed initial dimensions of the sections necessitated in quantity production, lack the flexibility necessary to meet adequately the widely varying conditions encountered in practice. Thus, they are frequently unsatisfactory from the appearance standpoint because of the necessity of using filler strips; and they are objectionable economically because a substantial amount of space as well as material is wasted by the double walls between adjoining sections.

With the foregoing in view, the primary object of the present invention is to facilitate the construction on the job of kitchen cabinets and the like through the provision of prefabricated units constituting on the one hand vertical partitioning members adapted for variable spacing in the formation of compartments of varying widths, and on the other hand, forms determining in large measure the dimensions of the cabinet.

A further object is to provide a kitchen cabinet susceptible of economical construction and embodying the improved partitioning member and form.

Other objects and advantages of the invention will become apparent from the following detailed description of the preferred embodiment illustrated in the accompanying drawings in which:

Figure 1 is a perspective view of a typical cabinet installation embodying the features of the invention.

Fig. 2 is a longitudinal vertical sectional view of the cabinet structure shown in Fig. 1.

Fig. 3 is a transverse vertical sectional view of the cabinet structure taken along the line 3—3 of Fig. 1.

Fig. 3a is a transverse vertical sectional view of

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the floor cabinet taken along the line 3a—3a of Fig. 2.

Fig. 4 is a horizontal sectional view of the upper or wall section of the cabinet taken along the line 4—4 of Fig. 2.

Fig. 5 is a horizontal sectional view of the lower or floor section cabinet taken along the line 5—5 of Fig. 2.

Fig. 6 is a perspective view of the floor cabinet with the component parts shown in separated relation to indicate the manner in which the parts are interfitted in assembly.

Referring now to Figs. 1 and 2 of the drawings, the cabinet structure selected to illustrate the invention comprises a lower or floor cabinet 20 and an upper or wall cabinet 21 arranged along one side wall 22 of a room to completely fill the space between a door frame 23 and an adjacent side wall 24. The lower cabinet is continuous while the upper cabinet is interrupted, in this instance, to provide clearance for a window 25.

For purposes of illustration, the cabinets are divided into compartments of the types most frequently required in domestic installations. Thus, as will be seen by reference to Fig. 2, the lower cabinet includes a double width door compartment 26, a drawer compartment 27, an under-sink compartment 28, and a single width door compartment 29. Each of these compartments except the drawer compartment 27 is provided with suitable closures such as hinged doors 30.

The upper or wall cabinet 21 has one section divided to form a double width compartment 31 and a single width compartment 32. The companion section forms a single width compartment 33. These compartments, it may be noted, are of the same height as the compartments of the lower cabinet, thus permitting the use of the doors 30 as closure for the compartments.

The cabinets are preferably of wood construction although it will be appreciated that other suitable material may be employed if desired. It will also be understood that the cabinet layout above described is merely illustrative and that the number of compartments and their arrangement as well as the longitudinal dimensions of the cabinet may be varied as required to suit the needs of any particular installation.

The present invention enables such variations to be met without resorting to the use of other than standard parts and with a minimum of labor and expense. This flexibility is attained by the use of a plurality of prefabricated structural units, of standardized construction serving as combination partition members and forms to determine the

general arrangement and dimensions of the cabinet compartments and which may be spaced apart to provide any desired compartmental arrangement and to enable the cabinet to be fitted accurately into any space available. Thus these structural units provide the basis for a novel type of cabinet construction in which the parts requiring accurate cutting and fitting are standardized and adapted for quantity production under efficient shop conditions. Moreover, because of the novel structural relationship between the structural units and other parts entering into the construction of a cabinet, a relatively small number of different kinds of parts suffice for the construction of cabinets of a wide variety of different types and sizes. In addition to simplifying manufacture of the parts, this greatly facilitates the handling and distribution of cabinet material.

In the construction of cabinets of the type shown in Fig. 1 of the drawings, structural units of only two different sizes are required. Thus units **35** are provided for the lower or floor cabinets, and similar units **36**, differing from the units **35** only in the front to rear dimensions or depths, are provided for the upper or wall cabinets. This difference in size obtains because wall cabinets are usually made substantially shallower than floor cabinets. Both structural units are of the same height, however, thus simplifying manufacture and permitting interchangeable use of the doors **30** for either wall or floor cabinets.

The structural units, irrespective of size, each comprises top, bottom and front members rigidly secured together to form a rectangular frame. Thus referring to Figs. 2, 5 and 6, the unit **35** in its preferred form comprises a top member **37**, a bottom member **38** and a front member **39**. As herein shown, the top and bottom members are in the form of nailing strips or shoes secured respectively to the upper and lower edges of a rectangular panel **40**. The front member **39** comprises a stile or standard and is suitably secured to the front edge of the panel **40** and to the ends of the shoes **37** and **38** to form therewith a rigid, rectangular structure. The members are all of the same width, preferably substantially wider than the thickness of the panel **40**. The top and bottom members thus provide a projecting ledge for convenient nailing. Preferably, these ledges correspond approximately to the thickness of the stock employed in other parts of the cabinet for reasons to appear presently. The front member or standard **39** is dimensioned so as to project at each end beyond the shoes **37** and **38** an amount substantially equal to the thickness of the stock constituting the top and bottom walls of the cabinet. An important consideration is that the projections are the same at each end thus enabling the structural units to be turned end for end without affecting their relationship with the other parts of the cabinet as will appear presently. The standard **39** forms a part of the front face of the cabinet and is preferably somewhat thicker than the doors so as to present an attractive raised appearance.

The panel, shoes and standard may be permanently fastened together in any suitable manner but preferably without nailing from the front of the standard. As herein shown (Figs. 2–5), the shoes and standard are formed with longitudinal grooves in one face for the reception of the edges of the panel. When thus assembled the parts may be glued or otherwise firmly secured together. This provision for securing the standard **39** to the associated parts without nailing from the front is a distinct advantage from the standpoint of appearance.

Referring to Fig. 6 of the drawings, it will be observed that the standard **39** is provided with spaced notches **41** at one side edge for the reception of hinges **42** by which the doors **30** are supported. The interchangeable character of the units enables them to be positioned for supporting either lefthand or righthand doors; in other words, the unit may be turned so that the notches face either to the right or to the left. In some instances it may be desirable to support two doors from a single standard as where the unit is interposed between two double width door compartments. In such cases the installer will cut additional notches in the side edge of the standard opposite the notches **41**, the said notches **41** serving to locate the position for the new notches so that little time and effort is required for cutting the same and accurate location is insured. In other instances it may be desirable to omit the doors as where the unit is interposed between two drawer compartments. Under these conditions the hinge notches may be filled by insertion of suitable blanks of wood or metal a supply of which will be furnished with each installation.

Having in mind the form of the structural unit **35**, the general construction of the floor section of the cabinet and the method by which the component parts are assembled will be readily seen by reference to Figs. 2–6 of the drawings. Preferably, the cabinet is provided with a wooden base including a bottom plate **45** supported on a sub-base having its front wall offset inwardly at the front of the cabinet to provide toe room. The sub-base as herein shown comprises a pair of longitudinal members **46** in the form of relatively narrow wood strips extending lengthwise of the cabinet. Cross members **47** of the same width as the members **46** are provided at the ends of the sub-base and at one or more intermediate points as required. The various strips constituting the sub-base are set edgewise on the floor F and are nailed or otherwise suitably secured thereto. The bottom member **45** is then nailed to the sub-base. The lumber utilized for this part of the cabinet is supplied in appropriate widths and it is only necessary for the installer to cut the various pieces to the proper length, no accurate fitting being required.

Upon completion of the cabinet base, the structural units **35** are set in place and affixed to the base in any suitable manner as by means of nails driven through the ledges presented by the shoes **37 or 38**, whichever may be resting on the said bottom plate. The individual units are turned, of course, so that the hinge notches **41** face in the proper direction. Thus the units form the sole partitions between adjacent compartments and end walls for the compartments at opposite ends of the cabinet. The number and spacing of the units is dependent upon the compartmental arrangement of the cabinet and the dimensions of the compartments measured lengthwise of the cabinet. Compartment dimensions in turn are determined by the overall length of the cabinet and may be varied within any reasonable limits as will be pointed out in more detail hereinafter. Accurate location of the units with respect to the base is assured by the projecting ends of the front standards which are adapted to abut against the front edge of the bottom plate.

The top portion of the cabinet may now be applied and correct positioning is automatically assured by the upwardly projecting ends of the

standards 39. In the particular cabinet illustrated, the cabinet top 50 is secured to a sub-top consisting of a series of elongated strips or top rails 51 nailed or otherwise rigidly attached to the shoes at the upper ends of the structural units. One rail 51 is disposed at the back of the cabinet with its rear edge abutting the wall 22 while the other rail is disposed at the front of the cabinet with its front edge in abutment with the projections of the respective standards 39, which thus serve to locate the front edge of the latter rail in the same vertical plane as the front edge of the bottom plate 45. The rails 51, in addition to providing support for the top 50, interconnect the various units to form a rigid cabinet framework without necessitating the use of a front frame as heretofore required in cabinets of the general class under consideration. The top 50 may be of wood or any other suitable material and may be constructed as either a single piece or in sections as desired.

With the attachment of the top, the cabinet framework is complete and the doors 30 may be hung. As mentioned heretofore, the width of any compartment, that is, the dimension measured lengthwise of the cabinet, may be varied within wide limits in accordance with requirements imposed by the overall length of the cabinet. Thus in the case of double compartments, this dimension may vary from twice the width of the largest door available to approximately the width of one of said doors. A single compartment may be of any width up to the width of the largest door available.

For reasons of economy in manufacture and distribution, it is desirable to utilize doors of one or, at most, a very small number of standard widths.

Accordingly, these doors may be of the slab or flush type adapted to be cut down in width as required by a simple saw cut. In this way a door of any intermediate width less the maximum can be obtained by simply sawing off a strip from one side edge of the standard door. It will be appreciated, of course, that other type of doors may be used if desired.

Referring particularly to Figs. 1 and 3, it will be noted that the doors 30 are dimensioned lengthwise so as to extend over the forward edge of the bottom plate 45 and also over the corresponding edge of the top rail 51. Thus, the doors, when closed, effectually cover these elements of the cabinet and thereby add to the attractive appearance of the cabinet. Further the forward edges of the plate 45 and rail 51 cooperate to form stops effective to prevent the doors from swinging inwardly of the front plane of the cabinet.

The wall cabinet 21 is generally similar in construction to the floor cabinet 20 above discussed and the method of assembling the parts is substantially the same. Referring to Figs. 2 and 3, the cabinet comprises a bottom plate 52 supported at its rear edge by an elongated member 53 nailed or otherwise rigidly attached to the wall 22. The units 36, as previously explained, are simliar to the partitioning units 35 and include shoes 37' and 38', and front standards 39' rigidly secured to the edges of a rectangular panel 40' as previously explained. The units are nailed or otherwise rigidly secured to the bottom plate 52 in the desired spaced relation. Top member 54 is nailed to the shoes at the upper edges of the units and to a wall strip 55 which, in cooperation with the strip 53, serves to hold the cabinet firmly in place upon the wall. The doors 30 are hung up on the respective standards 39' by hinges 42 in the manner previously described. When installed in rooms with drop ceilings, a cornice 56 may be inserted between the top of the cabinet and the ceiling surface to effectually close off the space above the cabinet. Conventional molding 57 may be applied to the cornice adjacent the ceiling if desired.

Wall cabinets like the floor cabinets may be constructed to provide any desired compartmental arrangement. In practice these compartments as well as some of the compartments of the floor cabinet are commonly provided with one or more shelves 58. The shelves may be made of wood or other suitable material and are mounted on conventional angle brackets 59. The brackets are carried by shelf supporting strips 60 dimensioned for insertion between the projecting ledges of the shoes 37 and 38. The strips 60 may be relatively narrow and preferably two are installed for each end of a shelf. Suitably spaced perforations are provided in manufacture for receiving studs 61 projecting rearwardly from the brackets 59. As the strips are usable interchangeably for wall or floor cabinets, only one size is required, thus simplifying manufacture and distribution. The use of these supporting strips also makes it unnecessary to drill holes in the panels dividing the compartments with a resultant saving in time and labor. Moreover, the appearance of exposed cabinet ends is improved by the absence of such holes.

Floor type cabinets for kitchen installations ordinarily require one or more compartments equipped with drawers. The cabinet illustrated is provided with one such compartment, namely, the compartment 27. The invention provides a novel drawer unit particularly suitable for use with the cabinet construction above described which is simple to manufacture, convenient to ship or store, and extremely easy to install.

Referring to Figs. 2, 5, and 6, the drawer unit in its preferred form includes a plurality of generally rectangular drawer supporting and guiding frames 62 supported at opposite sides in vertically spaced relation by four upright members 63 dimensioned to fit between the shoes 37 and 38 of the units 35. These uprights are dadoed as indicated at 64 (Fig. 6) to receive the edges of the frames 62 which may be nailed thereto if desired as a step in the assembly of the cabinet. The supporting frames as herein shown are constructed from four relatively narrow wooden strips arranged in rectangular formation and secured together as by mortise and tenon joints to form an open center frame.

The assembled supporting frames and uprights are installed in the cabinet by simply inserting the uprights between the shoes 37 and 38 of the units 35 defining the walls of the compartment. This can be done most conveniently after one unit 35 has been nailed in place, the companion unit being shifted to one side to provide the necessary clearance. The latter unit is then moved over against the adjacent uprights and nailed in place, thus clamping the drawer supporting frames securely in place. The uprights may be nailed to the panels 40 if desired although this is not essential as the units 35 being rigidly anchored in place, act to hold the parts of the drawer unit in assembled relation without further fastening.

Preferably the uprights 63 are made of stock having a thickness equal to the width projecting

ledges of the shoes **37** and **38** and the standard **39**. Thus these members present a guiding surface for the drawers **65** which is flush with the side edges of the standards. The drawers shown are of standard construction having the usual front and back members **66** and **67**, sides **68** and bottom **69**.

In practice, the drawer supporting framework as well as the drawers themselves are supplied in knock-down form. Since a definite number of parts of standard size are required for each drawer section of a cabinet, drawer units may be conveniently handled in package form which greatly facilitates storing and shipping of the units.

The invention also provides a sliding tray structure by which drawer facilities may be supplied in compartments fitted with doors. The tray and supports therefor, shown in Figs. 2, 3 and 6, are particularly suitable for use in cabinets of the type above described as the features of construction permit the tray to be cut to any desired length on the job without involving any precise fitting operations. This is also advantageous in manufacture and distribution as only a relatively small number of standardized parts need be manufactured and carried in stock. Moreover, the tray structure may be stored and shipped in knock-down form which greatly facilitates handling of the same.

Referring now to Figs. 2 and 3 of the drawings, the tray structure in its preferred form comprises a front member **71** and a back member **72** connected by end members **73** to form a rectangular frame. A bottom member **74** is supported in suitable grooves in the front and back members and is arranged to project beyond the member **73** at each end of the tray, the end members being substantially narrower than the front and rear members to provide clearance for the bottom. As will be seen by reference to Fig. 6, the front member **71** of the tray structure is made substantially longer than the back member so as to project beyond the end member **73** and thus act as a stop for limiting inward movement of the tray. The front member and end members are preferably fastened together by angle braces while the end members are dadoed to the rear member as shown in Fig. 6.

The projecting end portions of the bottom member **74** are utilized to support the tray structure for in and out sliding movement in cooperation with supporting members mounted on the end walls of the compartment. As herein shown, the members comprise elongated wood blocks **76** formed with longitudinal grooves **77** adapted to slidably receive the projecting ends of the bottom member. The blocks are supported in a horizontal position at opposite ends of the compartment by wooden brackets **78** adapted to be attached to the panels **40** of the structural units **35** as by wood screw **79**. The brackets are rabbeted to receive and accurately locate the supporting members in suitable spaced relation with respect to the standards **39** and doors **30** mounted thereon so that the tray may be pulled out without interference from the doors when in open position. The two brackets and the block **76** are preferably assembled and permanently secured together as a unit in the shop. As will be seen by reference to Fig. 2, the grooved portion of the member **76** extends outwardly beyond the bracket **78** so that the bottom member **74** of the tray is freely slidable therein. Moreover, the front member **71** of the tray is positioned to engage the ends of the members **76** which thus serve as stops to limit inward movement of the tray.

Installation of the tray structure is very simple. Initially, the prefabricated supports are attached to the panels at the ends of the compartment in which the tray is to be installed. The bottom member **74** of the tray is then cut to a length which allows it to slide freely in the grooves **77** of the blocks **76**. Front member **71** is cut to the same length as the bottom member and these parts are assembled with their ends flush. Rear member **72** is reduced to the required dimensions by cutting off a section at one end corresponding in length to the section cut off from the bottom. End members **73** are next secured to the member **72** and finally assembled with the front and bottom members. Accurate location of the parts is insured by setting the angle brackets **75** so that their outer ends are flush with the ends of the front member.

In the particular cabinet shown, the compartment in which the trays are installed is also equipped with a slide or cutting board **80** adapted to be pushed into the cabinet to allow the doors to close. Support for the slide is provided in this instance by means of laterally projecting tongues formed thereon and adapted to engage in longitudinal grooves in hangers **82** attached to the underside of the top rails **51** of the cabinet as shown in Fig. 6.

The cabinet structure is adapted to accommodate a conventional sink **85** without modification or special fitting on the job. Due to the length of the sink, a double width compartment is usually provided for its accommodation. The compartment **28** (Figs. 1, 2 and 6) is of this type and is closed by two doors **30**. As shown in Fig. 2, the sink **85** is supported on the top rails **51** by the usual lateral flanges **86**. The cabinet top **50** is cut out as indicated at **87** for the reception of the sink.

In order to provide the necessary ventilation to keep the sink compartment **28** in a sanitary condition, there is provided a ventilating strip **88** (Figs. 5 and 6) adapted to be secured in any suitable manner to the edge portion of one of the doors closing the compartment. In its preferred form, the ventilating strip comprises an elongated wooden bar of slightly greater thickness than the door stock and adapted to be nailed or otherwise rigidly secured to the edge of one of the doors **30**. Apertures **89** drilled through the strip from front to rear provide the required ventilation. It will be understood, of course, that one or both of the doors may be reduced in width in the usual manner to properly center the ventilating strip.

It will be apparent from the foregoing that the invention provides a cabinet structure of novel and advantageous form which provides a high degree of flexibility adapting the cabinet for installation under the widely varying conditions met in actual practice. The novel cabinet structure utilizes prefabricated structural units and other standardized parts which materially reduce the amount of time and labor required for such installation. Moreover, by reason of the novel construction and relationship of these standardized parts, the number of different kinds of parts required for all types and sizes of cabinets are reduced to a minimum thus greatly facilitating manufacture and distribution of the parts with a resultant substantial saving in costs. In general the cabinet provided by the invention has the attractive appearance and other advantages

heretofore attained only in custom built cabinets and at the same time is as simple to install and even less expensive than the sectional type cabinets.

I claim as my invention:

1. A cabinet structure comprising, in combination, a bottom plate, a plurality of structural units mounted upon said bottom plate in upright positions transversely of the plate and each comprising top, bottom and front members rigidly secured together in rectangular formation, said bottom members being secured to the bottom plate at longitudinally spaced points with the front members extended beyond the bottom members and abutting the forward edge of the bottom plate, a top rail connecting the upper ends of said units and having a forward edge terminating in the plane of the forward edge of the bottom plate, said front members extending over said top rail and abutting the forward edge thereof, and closure means for the front of the cabinet including a door hinged upon the front member of one of said units and abutting against the forward edges of the bottom plate and said top rail.

2. In a cabinet structure comprising the combination of a bottom plate, a plurality of cabinet wall elements mounted upon said bottom plate in upright positions transversely of the plate and each comprising a vertical front standard, horizontal top and bottom members disposed in perpendicular relation to said standard and each spaced a predetermined distance inwardly from the adjacent end of the standard, and a panel member interposed between said top and bottom members, the front standard, the top and bottom members and the panel being connected to form a rigid structure with said front standard and said top and bottom members projecting laterally beyond opposite sides of said panel member, and said bottom members constituting nailing strips secured to the bottom plate at longitudinally spaced points with the front standards extending over and abutting the forward edge of said bottom plate; and a tie member connecting the top members of said wall elements and having its forward edge terminating in the plane of the forward edge of said bottom plate, said front standards extending over and abutting the forward edge of said tie member.

3. In a cabinet structure comprising the combination of a bottom plate, a plurality of cabinet wall elements mounted upon said bottom plate in upright positions transversely of the plate and each comprising a vertical front standard, horizontal top and bottom members disposed in perpendicular relation to said front standard and each spaced a predetermined distance inwardly from the adjacent end of the standard, and a panel member interposed between said top and bottom members, the front standard, the top and bottom members and the panel being connected to form a rigid structure with said front standard and said top and bottom members projecting laterally beyond opposite sides of said panel member, and said bottom members constituting nailing strips secured to the bottom plate at longitudinally spaced points with the front standards extending over and abutting the forward edge of said bottom plate; a pair of tie members connecting the top members of said wall elements adjacent the front and rear thereof, said front standards extending over and abutting the forward edge of one of said tie members to locate the same in the cabinet assembly, and a top plate for the cabinet mounted on said tie members.

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