United States Patent [19]

Jackson

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[54] **CABINET PREFABRICATION SYSTEM**

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[51] **Int. Cl.**..... **A47b 43/00**

[58] **Field of Search**..... 312/258, 259, 257 SK, 108, 312/198, 257 R; 206/65 R; 220/6; 217/15, 47; 229/23 AB

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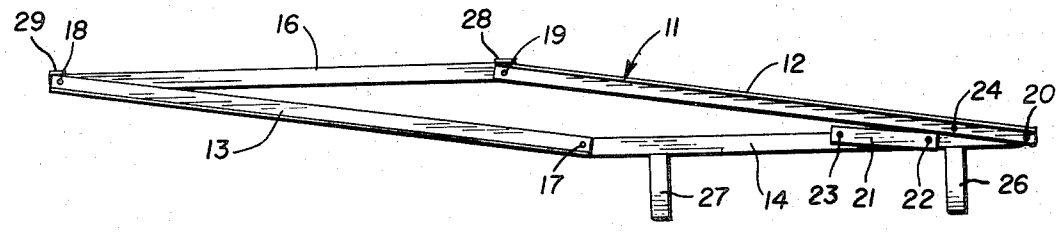
[57] **ABSTRACT**

A cabinet system providing prefabricated support frame and cabinet liner components that are assembled at the point of manufacture with adjacent elements thereof being pivotally interconnected each to each whereby such components may be handled and shipped in a compact collapsed configuration. At points of use the frame and cabinet components which are hinged and folded in opposite directions are brought to an expanded erected condition for nesting engagement one within the other with the oppositely hinged orientation thereby providing a rigidly upright structure. Facing components are applied to complete an assemblage of cabinet units of various style and length.

8 Claims, 5 Drawing Figures



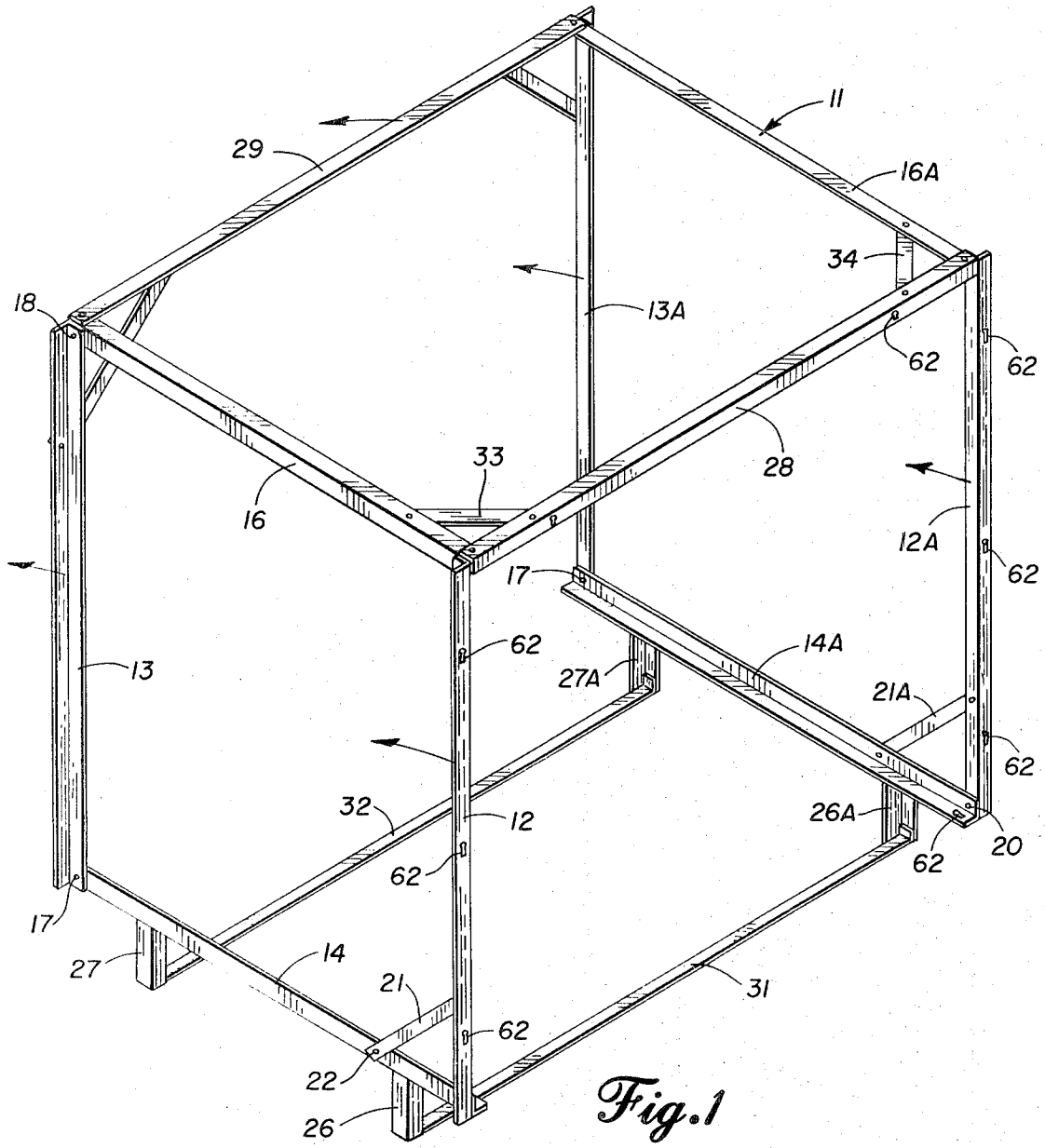

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Fig. 1

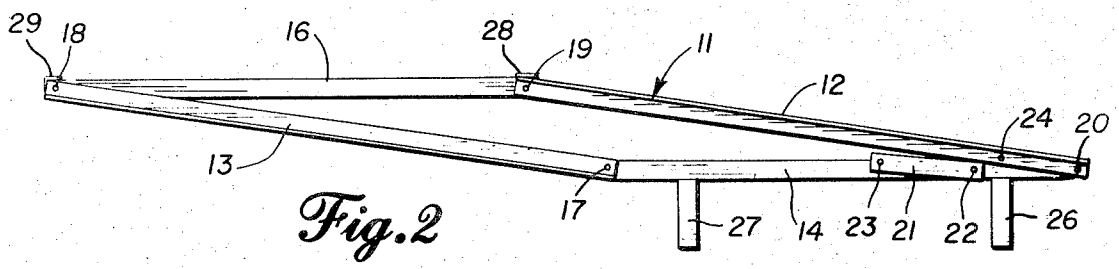
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Fig. 2

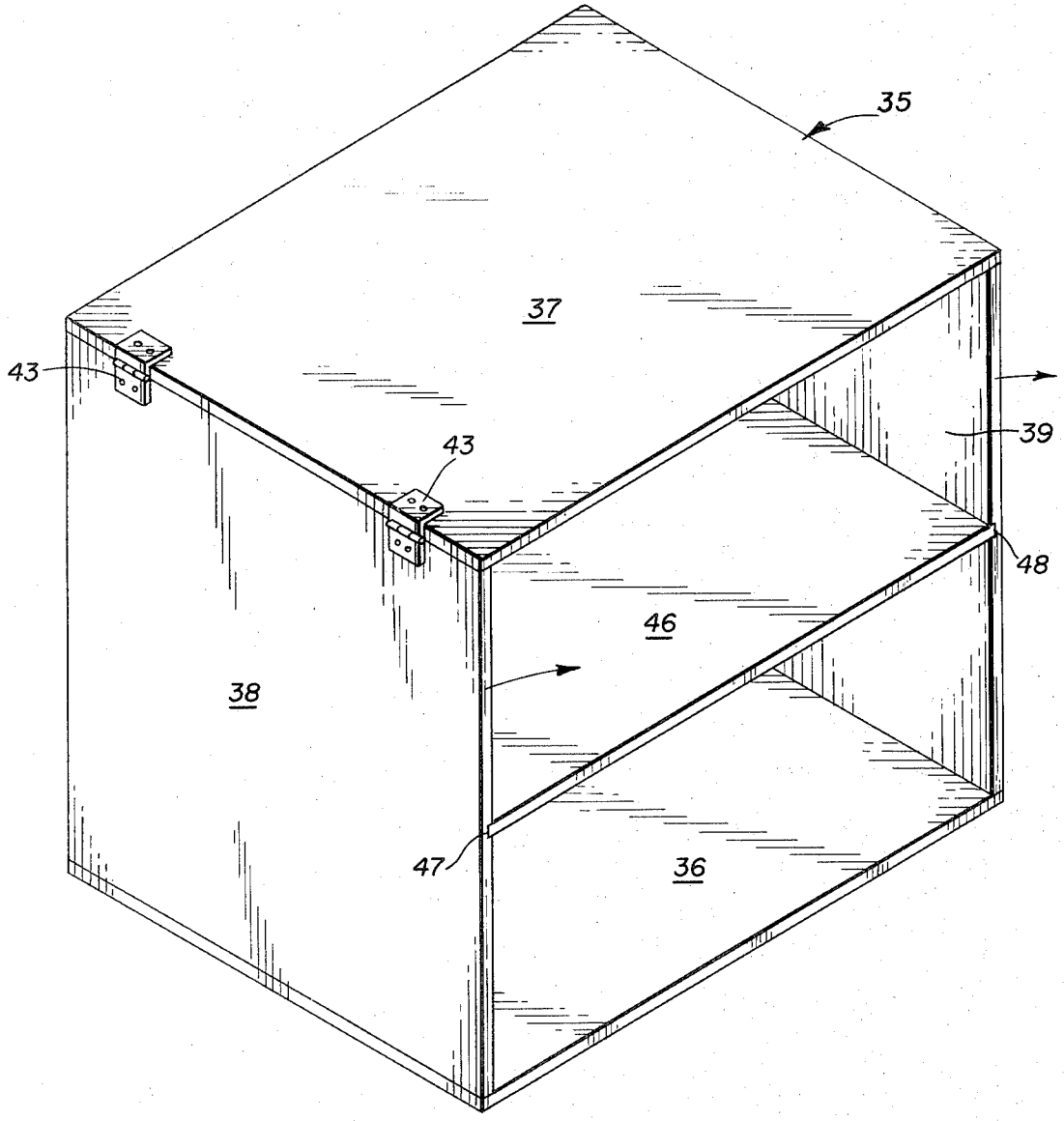

Fig. 3

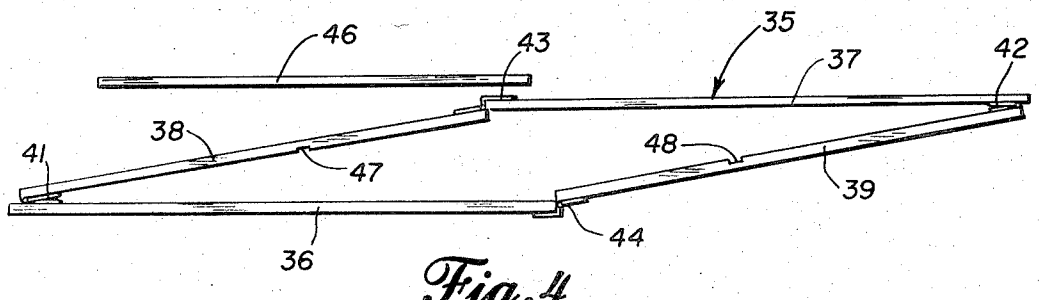

Fig. 4

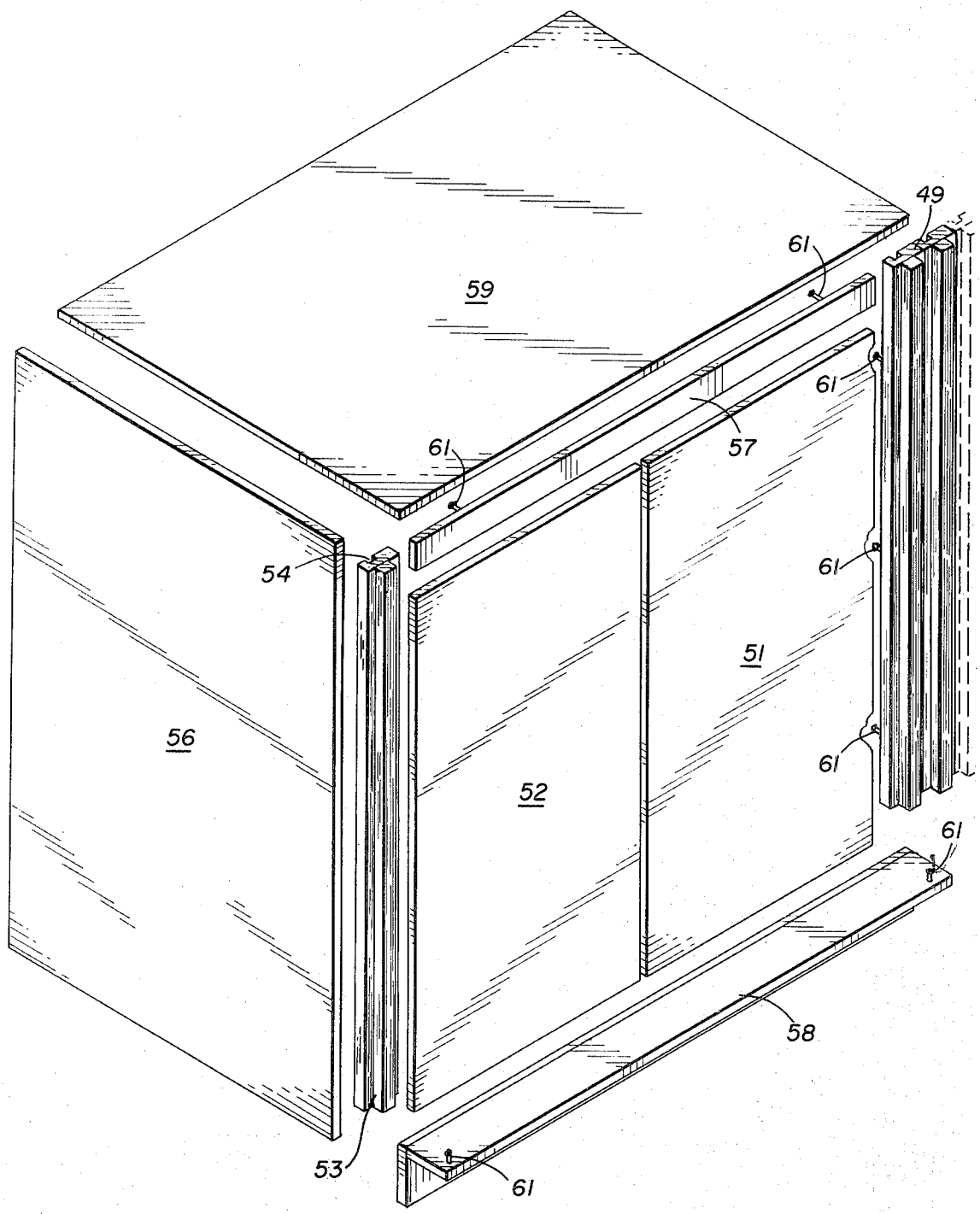

Fig. 5

CABINET PREFABRICATION SYSTEM

BACKGROUND OF THE INVENTION

At the present time a substantial market for kitchen and similar storage cabinets is being most economically satisfied through use of factory manufactured and assembled units of varied width which are shipped in fully assembled and erected relation to the point of use, where the separate units are placed side by side to complete a desired cabinet installation. In general such segment construction provides a satisfactory installation, but such cabinet systems are not fully adaptable for all customer length and style requirements. Since the cabinet units are already erected, a considerable expense is embodied in handling and shipping charges. Premium freight rates are more often applied to such shipments due to a low weight to bulk ratio and further due to relatively severe damage claims and losses. The finished doors and drawers that are preapplied for the convenience of contract erectors and purchasers are often marred or damaged. A cabinet system that avoids freight charge penalties due to bulk characteristics and damage susceptibility and that is also adaptable to provide installations of widely varying width and style should be advantageous.

SUMMARY OF THE INVENTION

This invention provides a cabinet system that can be utilized to satisfy present markets and that is also more adaptable to provide a wider range of length, width and style characteristics. The major components used in keeping with this system include frame support, cabinet liner and cabinet facing components. The separate components are preassembled at a factory work site, but the frame support and the cabinet liner components have major elements that are pivotally interconnected, as by use of hinges or pivot pins, so that such components can be shipped in a collapsed configuration. The orientation of elements and hinges for the frame support component is different than such orientation of elements for the cabinet liner components. If the frame support component is hinged to fold from front to rear, the cabinet liner components will be interfitted and hinged to fold from side to side. Due to the opposed hinging arrangement the frame support and cabinet liner components can be erected at the point of use and interfitted one within the other, and the resulting combined structure will then be maintained in rigid upright position. At the job site drawers and intermediate shelf components can be applied to the erected frame and liner to provide additional utility. Similarly, facing components, such as doors, are applied at the job site. Spacer elements of varied width are provided to interconnect a plurality of cabinet units into a cabinet system that will span or fill any required work site dimension. The facing components may be of various style and colors, while the frame and liner components are of a basic color and design thereby reducing inventory and bulk storage requirements. The same features which contribute to economies in storage, shipping and on-site erection likewise make it possible to disassemble and repackage the cabinet components. Accordingly, the system is adaptable for use in connection with the provision of relatively temporary cabinets or shelving.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a perspective illustration of a cabinet support frame component in the erected configuration,

FIG. 2 is a partial side view of said support frame component in a collapsed or folded configuration,

FIG. 3 is a perspective view showing a cabinet liner component in its erected configuration,

FIG. 4 is a side elevation of slightly reduced scale showing the cabinet liner component of FIG. 3 in a collapsed or folded configuration, and

FIG. 5 is an exploded perspective view illustrating representative face and finish components for use in connection with the components shown in FIGS. 1–4.

DESCRIPTION OF THE PREFERRED EMBODIMENTS

In FIG. 1 the support frame for a representative cabinet unit is illustrated. The total support frame **11** is inclusive of front and rear standards **12** and **13**, respectively, joined to base and top rails **14** and **16**. In the preferred embodiment illustrated all of the pieces **12** through **16** are formed of angle section material. The upright standards **12** and **13** are joined to the rails **14** and **16** by pivot or hinge pins **17, 18, 19** and **20**. A cross brace or braces **21** may additionally be provided for interconnecting and holding the respective elements in the erected configuration. One end of each such cross brace may be welded or otherwise fixed to one of the elements to be interconnected as shown, or, as illustrated, such cross brace may be joined by pins **22** or by other fasteners placed through the openings **23** and **24** in the cross brace **21** or in the upright standard **12** as illustrated. Each end frame fabricated from the described components may additionally be provided with support legs **26** and **27** so that the bottom rails **14** will be positioned above a floor that supports the cabinet unit. Each cabinet unit will have a plurality of end frames as shown in FIG. **1** with opposed end frames having elements similar to those described. Numbers inclusive of a letter designation are used to indicate parts of similar construction and usage. The opposed end frames are themselves interconnected by longitudinal elements. At the top runners **28** and **29** of angle section connect the end frames, while flat straps **31** and **32** are used to interconnect corresponding support legs. Desirably the flat straps **31** and **32** and the top runners **28** and **29** will be applied to hold the end frames in spaced position at the point of manufacture. With the illustrated construction and even with the top support corner braced through use of cross pieces **33** and **34**, the entire assembly can still be moved to a collapsed or shipping configuration as suggested by the FIG. **2** illustration.

The described support frame component, accordingly, has end support elements joined together in spaced apart relation for conjoint movement to erected or collapsed configurations. The hinges or pivots **17–20** are cooperatively arranged so that the frame structure **11** can be collapsed or folded in a front to rear orientation. The frame structure when erected provides base rails **14** and **14A** with one leg of the angle material utilized inwardly disposed to provide a support ledge for holding a cabinet liner component in position spaced above the supporting floor.

A typical cabinet liner component **35** is shown in FIGS. **3** and **4.** The cabinet liner has a bottom **36,** a top **37** and spaced apart sides **38** and **39.** The bottom **36** is interconnected by a simple hinge **41** to the left side element **38,** while the top **37** is connected by a similar hinge **42** to the right side panel **39.** Offset hinges **43** interconnect the left panel **38** and top **37,** while offset hinges **44** interconnect right panel **39** and bottom **36.** With this arrangement when any intermediate shelves **46** are slidingly removed from the support notches **47** and **48** provided in the side panels, the cabinet liner component **35** may be moved to a collapsed configuration as shown in FIG. **4.**

For any desired cabinet unit the support frame **11** and the cabinet liner **35** will be cooperatively sized so that the liner may be inserted within the frame support to be held therein. The cabinet liner will be supported on the inwardly disposed legs of the base rails **14–14A** with the top **37** being positioned for sliding engagement past the front runner **28.** The side panels **38** and **39** will be positioned closely against the inner limits of the upright supports **12–13.** When the liner component **35** is thus positioned within the support **11,** the close interengagement of the respective elements and the opposite orientation of the respective hinges and pivots will tend to hold the assembly in rigid erect configuration. The components of the support **11** will not be able to move rearwardly to the folded position due to the interference of the side panels **38** and **39.** At the same time the folded side-to-side collapse of the liner will be similarly prevented by the then fixed positions for the upright rails **12** and **13** and top runners **28** and **29.**

The cabinet liner component **35** can provide a plurality of mortised notches **47** and **48** for the reception of a plurality of shelves similar to the shelf **46,** or the cabinet liner can be adapted to recpirocally receive one or a plurality of drawers on provided drawer slide or shelf support elements.

When the desired support frame **11** and cabinet liner components **35** are moved to an assembled relationship, a cabinet unit is provided. Similar cabinet units can be fabricated of different widths and for separate purposes. Representatively, for kitchen purposes a sink support cabinet and a plurality of drawer cabinet units or door access cabinet units can be provided as a single sale package to serve customer requirements. Through provision of a plurality of support and liner components, a similar plurality of cabinet units can be quickly assembled and positioned at a point of use. Since each cabinet unit is essentially a complete self-supporting structure, a total desired length of counter type cabinets can be fabricated out of a plurality of separate cabinet units. At the job site a counter top will usually be applied to the positioned cabinet units to be supported thereby. No particular attachment between cabinet units and counter top is required, but such attachment could easily be provided with the counter top being joined either to the top elements **28** and **29** or to the tops **37** of the separate cabinet units.

For many installations it will be desirable to provide trim and finish components. Such finish components could be inclusive of the drawer elements heretofore suggested. In general for kitchen and similar uses it is desirable that end panels, drawers and doors be provided for improving the utility and the overall appearance of the cabinet units. Representative finish components are shown in FIG. **5.**

Separate cabinet units disposed in side-by-side relationship may be interfitted and joined each to each through use of jointer stile pieces **49.** Such jointer stile pieces can provide support for doors, such as the door **51,** while an end stile **53** supports door **42.** Stile **53** can be provided with sections or grooves **54** adapted to receive cover end panels **56.** The additional provision of top rails **57** and a bottom toe recess piece **58** can complete a front cover or facing for each of the separate cabinet units. The jointer stiles **49** will be connected to the upright standards **12** and **12A** of adjacent cabinet units. It is intended that different width jointer stile components will be made available. A narrow jointer stile **49** can be used where seaprate cabinet units are to be used in closely abutted relation. Jointer stiles of increased width, as suggested by the outline representation, can be provided where the total desired length of counter does not correspond to any combination of separate cabinet widths. In these instances the separate cabinet units will be spaced apart a regulated or indiscriminate distance with the space between such separate counter units being closed by a jointer stile of increased width.

In FIG. **5** a top piece **59** is shown that can be positioned above the cabinet units to hide the frame support and cabinet liner components thereof when separate cabinet units are used, as for shop purposes. In kitchen installations a counter top (not shown) will usually be used with the counter top extending the full length of combined cabinet units. In order to facilitate job site erection and completion of the cabinet units, button head type fasteners **61** may be preapplied to the jointer stiles **49,** end stiles **53,** rails **57** and bottom toe recess pieces **58.** With these fasteners **61** positioned to correspond with the position of key hole sockets **62** punched in correspondingly disposed angle frame pieces, the facing and trim components can be readily attached to the adjacent frame pieces.

A particular additional benefit of the described cabinet system is embodied in the fact that the frame support and cabinet liner components can be of standard design and construction no matter what desired exterior appearance is required. Facing components of different style and trim, or different door design configurations or finishes may be provided to satisfy the requirements of different design and decorator situations. Many different facing and trim styles can accordingly be provided on a relatively economical basis. The entire style and appearance of a kitchen used in a house or mobile home could, in fact, be easily changed to meet the requirements or desires of a particular owner. The inherent capability for changing the style of cabinets to meet contemporary decorator choices or even for changing the texture, style or color of wood or other facings is a particular advantage of the present system. Where concerned fabricators are interested in satisfying a wide range of customer preferences, the present system is highly beneficial.

The features contributing to realized savings in shipping costs due to the reduced bulk of the as-shipped units also contribute to corresponding savings where distributor inventories and handling are concerned. A reduced number of standardized cabinet components can be maintained in stock with the total bulk size of the required cabinet components also being reduced by reason of the collapsing features. Since the facing components are themselves of a rather compact nature for

storage in a relatively small space, a wide range of cabinet style requirements can be satisfied by distributors who provide a stock of different facing components for use with the standardized cabinet units.

I claim:

1. A cabinet system providing individual cabinet units comprising frame components inclusive of upright and horizontal elements of rigid structural materials, pivot means for joining said frame elements together for movement to erected and collapsed positions, and a cabinet liner component inclusive of upright and horizontal members of rigid structural material, means for joining said liner members together for movement to erected and collapsed positions, said frame and liner components being of cooperative size for nesting engagement one within the other when the combined cabinet unit is in the erected configuration, and wherein the axes of pivot means for the frame components are disposed at an angular position with respect to lines of joinder for said liner components whereby movement of an assembled cabinet unit inclusive of frame and liner components to the collapsed configuration is opposed when the units are in the erected assembled configuration.

2. Structure as set forth in claim **1** and further comprising pivot means for joining said liner members together.

3. Structure as set forth in claim **2** wherein the axes of pivot means for said frame and liner components are disposed at right angles one with respect to the other.

4. Structure as set forth in claim **1** wherein the liner components are nested within the frame components when the cabinet unit is in the erected assembled configuration.

5. Structure as set forth in claim **2** and further comprising facing components for disposition at the front of assembled cabinet units and for further holding separate cabinet units in upright side-by-side relation.

6. Structure as set forth in claim **5** wherein said facing component spans an interval or space between side-by-side cabinet units.

7. Structure as set forth in claim **6** and further comprising closure elements joined to said facing components for closing off the space enclosed within said liner component.

8. The cabinet system as set forth in claim **7** wherein a plurality of cabinet units are provided in side-by-side relationship with at least one of said cabinet units providing storage drawers reciprocally received and supported by a liner component.

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