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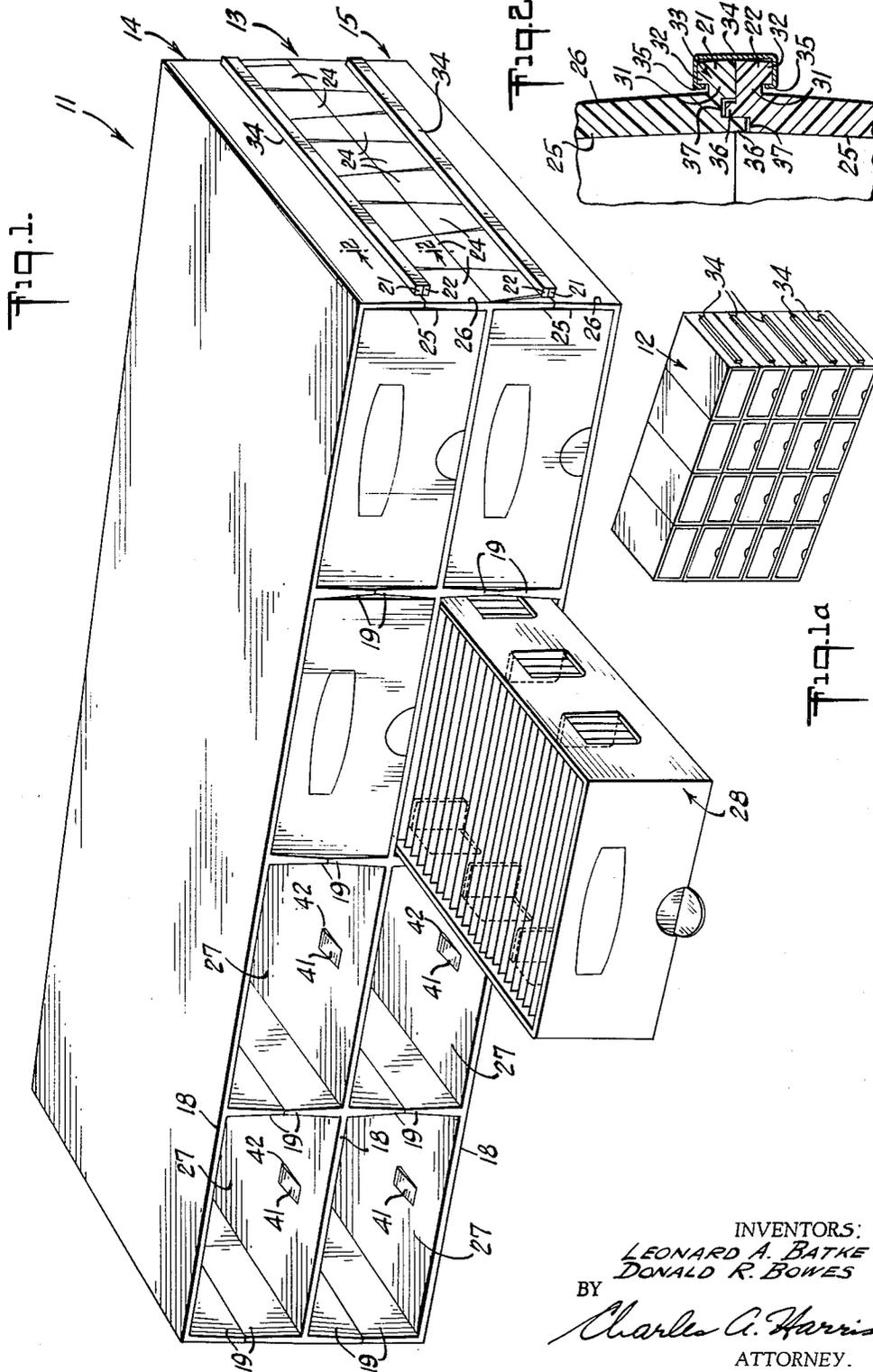
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3,203,744

CABINET ASSEMBLY UNIT

Filed Dec. 12, 1962

4 Sheets-Sheet 1



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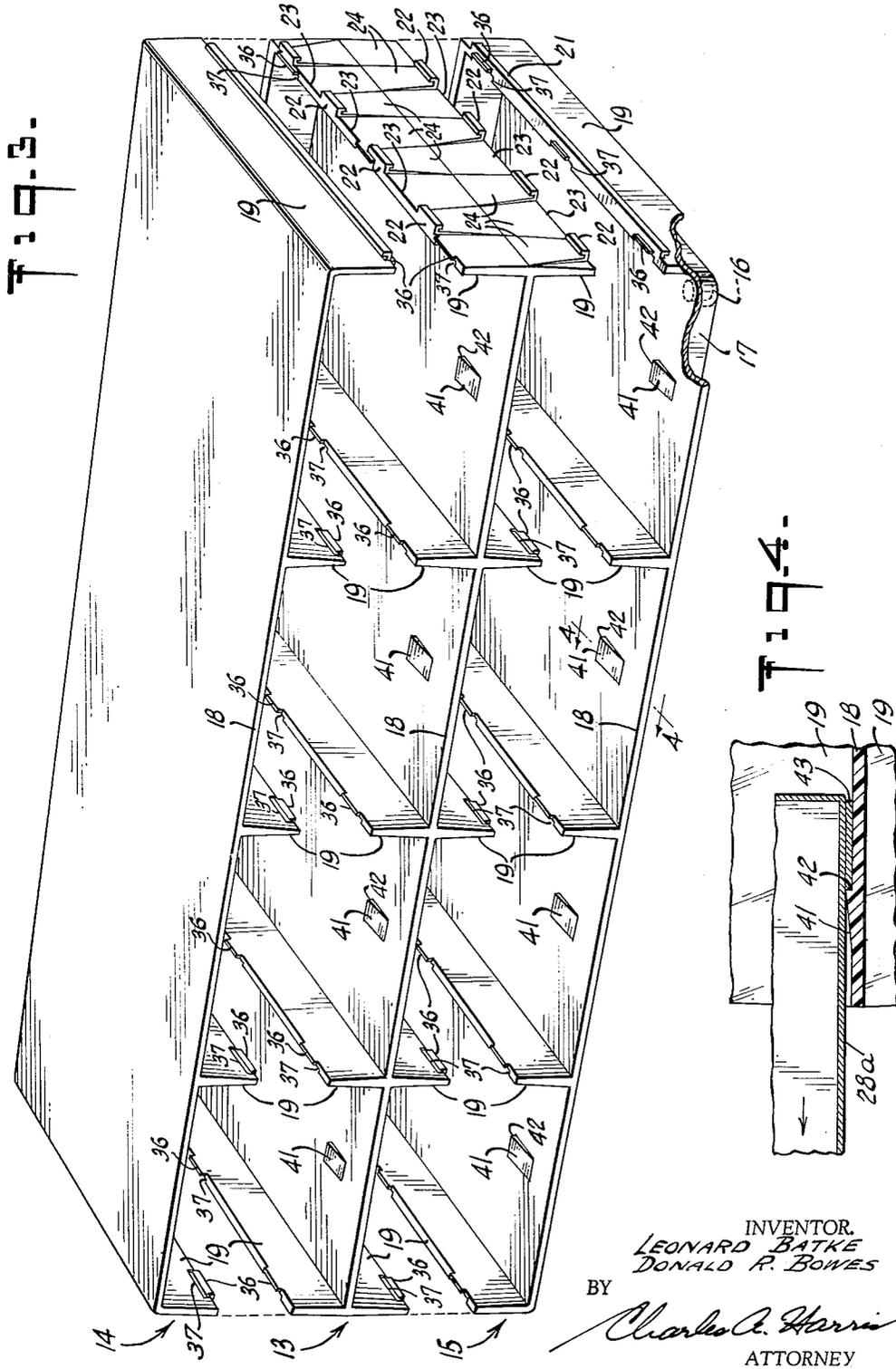
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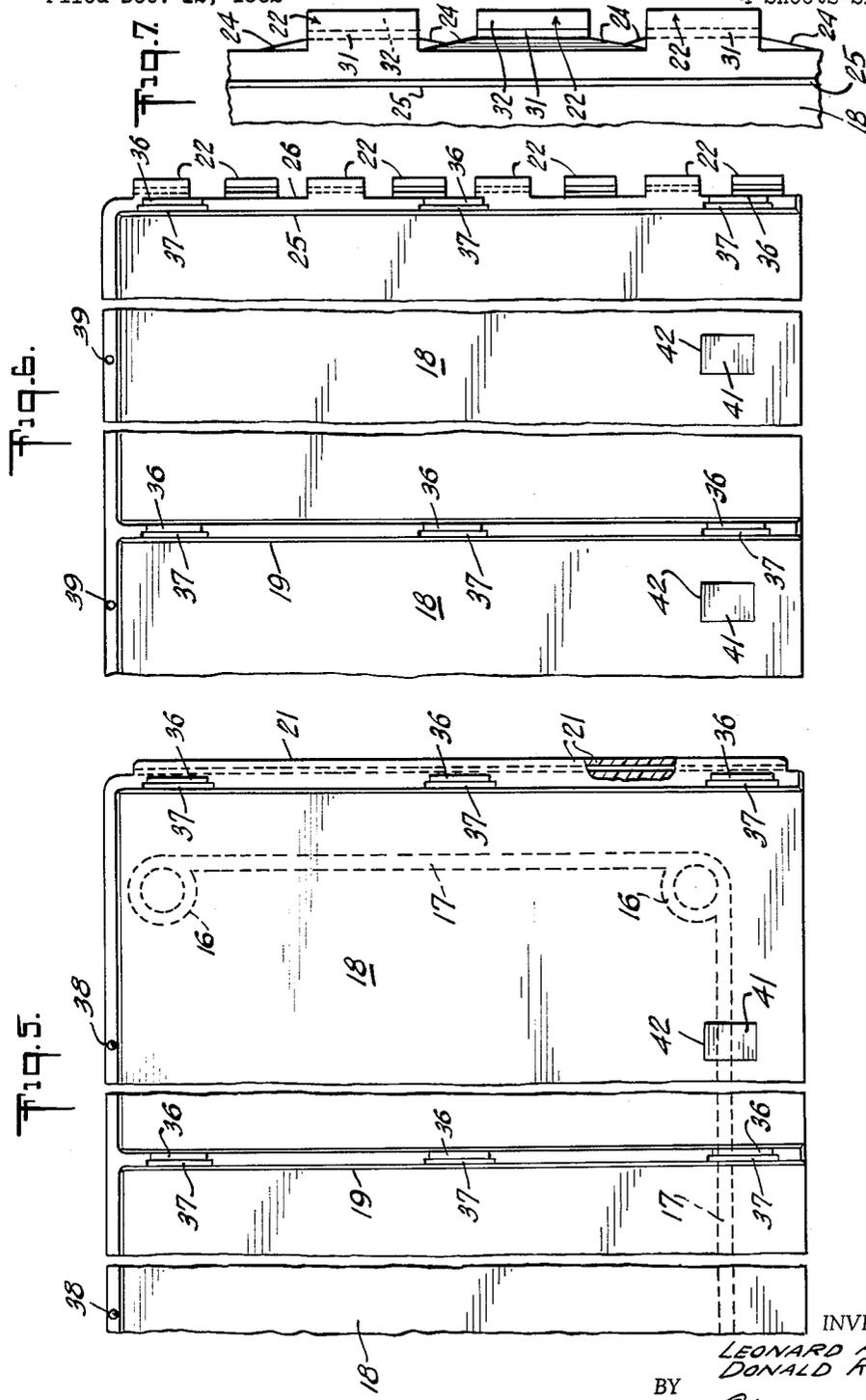
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CABINET ASSEMBLY UNIT

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4 Sheets-Sheet 3



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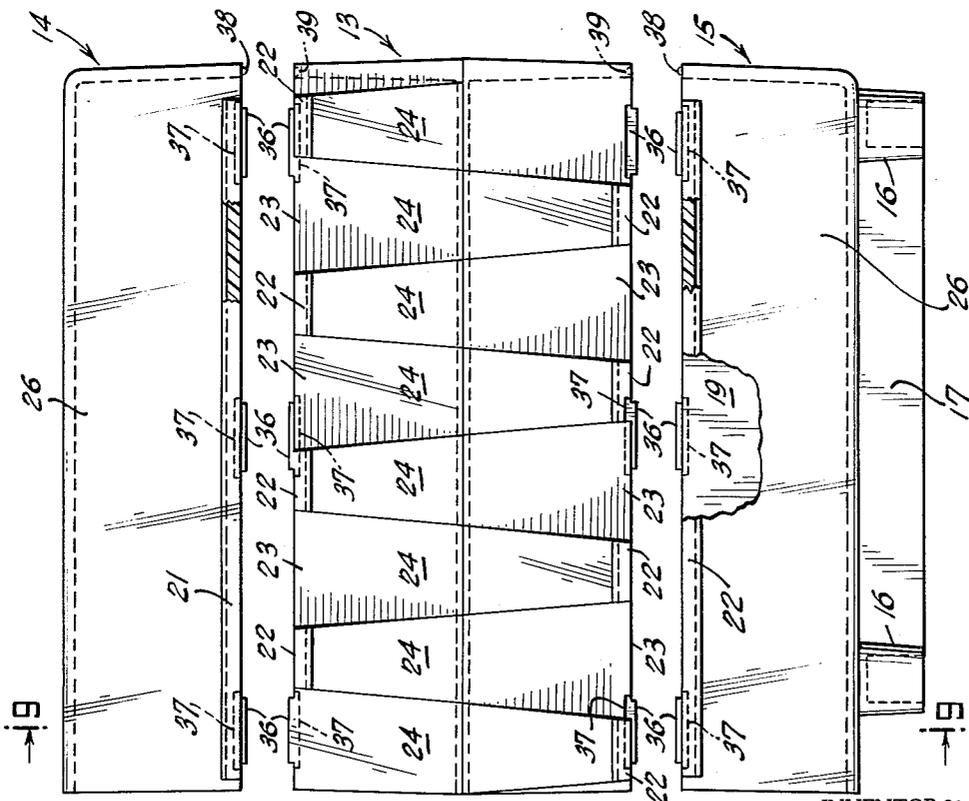
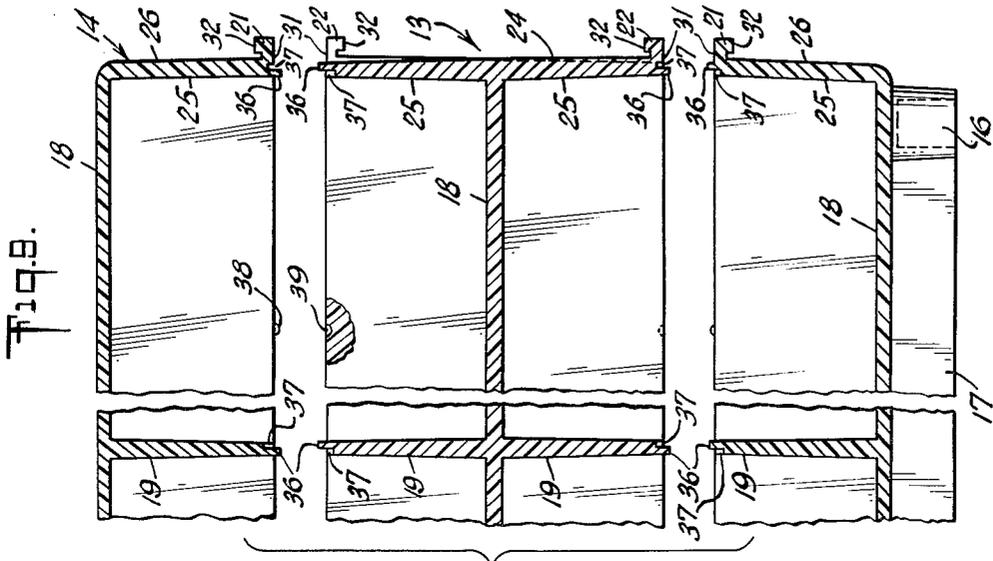
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CABINET ASSEMBLY UNIT

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4 Sheets-Sheet 4



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3,203,744

CABINET ASSEMBLY UNIT

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7 Claims. (Cl. 312-111)

The present invention relates to cabinet assembly units, more particularly to such units molded from a plastic, such as medium to high impact polystyrene or the like.

This invention contemplates individual molded cabinet assembly units which are adapted to be assembled with one another to form a cabinet for receiving a number of drawers. The size and capacity of the cabinet may be varied by varying the number of units assembled and any number of units may be employed. Thus, complete flexibility in cabinet size and capacity is provided. At the same time, there is no waste of material due to duplication of walls or other parts in assembling the units to form the cabinet.

According to this invention, a molded cabinet assembly unit is provided which comprises a horizontal wall and a plurality of vertical wall sections integral with the horizontal wall and extending substantially perpendicularly away from the horizontal wall and substantially parallel to one another. The vertical wall sections define a plurality of drawer spaces between them and are unconnected in the individual unit except for the horizontal wall with which they are integral.

It is preferred according to this invention that when the units are assembled with one another to form a cabinet, each of the vertical wall sections is adapted to meet a corresponding vertical wall section extending in the opposite direction from the horizontal wall of another unit so that adjacent wall sections form drawer spaces between them of substantially rectangular cross-section. Connecting means are provided at the extremities of the outermost vertical wall sections, i.e., those sections which are presented at the sides of the unit, for cooperating with similar connecting means on an adjacent unit for joining the units.

It also is preferred that there be two types of assembly units, intermediate units and top and bottom units. In the intermediate units the vertical wall sections are arranged in pairs extending upwardly and downwardly, respectively, from opposite sides of the horizontal wall. This allows maximum flexibility in assembling a number of units. It also is highly advantageous from a molding point of view as will be explained more fully hereinafter. In the top and bottom units the vertical wall sections extend in only one direction and from one side of the horizontal wall and the other side of the horizontal wall becomes the top or bottom of the cabinet.

According to the preferred embodiment of this invention the vertical wall sections are tapered in cross section away from the horizontal wall so that the units may be molded and separated from the mold, or mold parts, by drawing the parts perpendicularly away from the horizontal wall, or vice versa. It is an important advantage of this invention that the vertical walls may be tapered for this purpose and yet still provide drawer spaces between them which are rectangular from corner to corner and from front to back thereby making possible a snug fit with a rectangular drawer of the proper dimension.

Other and further advantages of the invention will be apparent from the following description and claims taken together with the drawings wherein:

FIG. 1 is a view in perspective of a cabinet formed from cabinet assembly units according to a preferred embodiment of this invention;

FIG. 1a is a reduced view in perspective of a cabinet

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similar to that of FIG. 1, but comprising several more layers of drawers;

FIG. 2 is an enlarged sectional view taken along the line 2-2 of FIG. 1;

FIG. 3 is an exploded view in perspective of the cabinet assembly units of the cabinet of FIG. 1 placed one above the other prior to joining them to form the cabinet;

FIG. 4 is an enlarged sectional view taken along the line 4-4 of FIG. 3 and showing a portion of a drawer in position for engaging one of the drawer detents;

FIG. 5 is an enlarged fragmental top plan view of the bottom cabinet assembly unit of the cabinet of FIG. 1;

FIG. 6 is an enlarged fragmental top plan view of the intermediate cabinet assembly unit of the cabinet of FIG. 1;

FIG. 7 is a more greatly enlarged top plan view of the connecting flanges of the intermediate unit of FIG. 6;

FIG. 8 is a side elevational view of the cabinet assembly units of the preceding figures (at the enlargement of FIG. 6) arranged one above the other prior to assembly;

FIG. 9 is a partial front sectional view taken along the line 9-9 of FIG. 8.

Referring to the drawings, there is shown a cabinet constructed from cabinet assembly units according to a preferred embodiment of this invention. In FIG. 1 there is shown a cabinet 11 having two horizontal rows of four drawer spaces each, whereas in FIG. 1a the cabinet 12 shown comprises five horizontal rows of four drawer spaces. The cabinet assembly units used to assemble the cabinets of FIG. 1 and FIG. 1a are identical. The cabinet of FIG. 1 comprises one intermediate cabinet assembly unit 13 and top and bottom cabinet assembly units 14 and 15, whereas the cabinet of FIG. 1a comprises four intermediate cabinet assembly units 13 as well as the top and bottom units 14 and 15. Thus, the only difference between the cabinets of FIG. 1 and FIG. 1a is in the number of intermediate cabinet assembly units 13 employed. For this reason, this invention will be described in connection with the simplest form of this embodiment, i.e., that shown in FIG. 1 where one intermediate cabinet assembly unit 13 is employed to provide only two rows of drawer spaces.

While the top and bottom cabinet assembly units of this embodiment may be identical so that they may be merely inverted with respect to one another to form the top and bottom of a particular cabinet, in the cabinet of FIG. 1, a bottom cabinet assembly unit 15 is employed which differs from the top unit 14 only in that it includes four cylindrical feet 16, connected by a rim 17, for supporting and mounting the cabinet. This top unit 14 may be formed from the same mold as the bottom unit 15 by using mold parts which fill in the openings in the mold for forming the feet and the rim of the bottom unit.

The intermediate cabinet assembly unit 13 and the top and bottom units 14 and 15 each comprises a horizontal wall 18 and vertical wall sections 19 integral with the horizontal wall and extending substantially perpendicularly away from the horizontal wall. In the case of the intermediate unit 13, the vertical wall sections 19 are arranged in five pairs extending upwardly and downwardly, respectively, from opposite sides of the horizontal wall 18, whereas in the case of the top and bottom units 14 and 15, the vertical wall sections 19 extend only in one direction, i.e., either upwardly or downwardly from the horizontal wall 18.

The upwardly and downwardly extending vertical wall sections in all of the units are unconnected with one another prior to assembly of the units to form a cabinet, except for the horizontal wall 18 with which they are integral. Each vertical wall section 19 is adapted to meet

a corresponding vertical wall section extending in the opposite direction from the horizontal wall of a unit arranged either above or below it. The vertical wall sections 19 are substantially parallel to one another and, at their juncture with the horizontal wall with which they are integral, the vertical wall sections are parallel with one another from the front to the rear of the unit so that when the intermediate unit is assembled with the top and bottom units as shown in FIG. 1, drawer spaces are formed which are substantially rectangular in shape.

Connecting means are provided for joining the units to form the cabinet. These connecting means are in the form of horizontal flanges located along the edges of the extremities of the outermost vertical wall sections of each of the units. These outermost vertical wall sections also act as the side walls of the units. In the case of the top and bottom units 14 and 15, horizontal flanges 21 for this purpose are located along the top edge of the side wall of the bottom unit and along the bottom edge of the side walls of the top unit and are continuous from the front to the back of the unit. In the case of the intermediate cabinet unit 13, the horizontal flanges are in the form of rows of short flange sections 22 disposed along the top edge of the upwardly extending vertical side wall sections and along the bottom edge of the downwardly extending vertical side wall sections. The flange sections 22 of the intermediate unit 13 are separated from one another along each edge by spaces 23 greater than the lengths of the flange sections 22, themselves. The flange sections 22 along the top edge of the side wall of the intermediate unit 13 are staggered with respect to the flange sections 22 along the bottom edge of the side walls of the intermediate unit, so that the top flange sections 22 each are arranged directly above a space 23 between two of the bottom flange sections. The outside surfaces of the vertical side, or outermost, walls of said unit are divided into alternate surface areas 24 each of which extends from a flange section 22 at one edge of the side wall to a space 23 between flange sections at the other edge of the side wall. The alternate surface areas are inclined or tapered inwardly away from the flange sections from which they extend toward the opposite edge of the wall.

All of the vertical wall sections 19 of both the intermediate and the top and bottom cabinet assembly units, with the exception of the outermost vertical wall sections making up the side walls of the cabinet, are tapered in cross section away from the horizontal wall 18 from which they extend. The inner surfaces 25 of the outermost vertical wall sections of both the intermediate and the top and bottom units are inclined in cross-section outwardly away from the next adjacent vertical wall section; whereas the outer surface areas 24 of the outer side walls of the intermediate unit 13 are inclined as described hereinbefore, and the outer surfaces 26 of the top and bottom units 14 and 15 are roughly parallel with their inner surfaces. It will be seen that the tapered cross section of all of the inner vertical wall sections of the units and the inclined inner surfaces 25 of the outermost sections making up the side walls of the units taken together with the inclined surface sections 24 making up the outer surfaces of the side walls of the intermediate unit; make it possible for these units to be injection molded from a suitable plastic, such as medium impact polystyrene, high impact polystyrene, polypropylene, linear polyethylene, or the like, and separated easily from the parts of the mold. At the same time, the inclined surfaces of the units, which are so necessary for molding purposes, are shaped and located in such a way that when the units are assembled with respect to one another to form a cabinet, drawer spaces 27 are provided which are rectangular from corner to corner and from front to back of the unit and therefore are adapted snugly to receive rectangular drawers as described hereinbefore. Even though the inner surfaces of the vertical wall sections are inclined, the distances across the tops of the drawer spaces 27 between adjacent

vertical wall sections are substantially the same as the distances across the bottoms of said spaces and these distances are the same from the front to the rear of the unit since the vertical wall sections 19 are parallel to one another where they join the horizontal walls 18. This means that the drawer spaces 27 are rectangular from corner to corner and from front to back of the unit. The insertion of a rectangular drawer 28 in one of the drawer spaces is illustrated in FIG. 1. Since the drawer 28 fits snugly into the space provided, it is held in position without dropping even if only partially inserted in the drawer space 27.

The horizontal flanges 21 of the top and bottom units 14 and 15 and the horizontal flange sections 22 of the intermediate unit 13 are L-shaped in cross section, as shown most clearly in FIGS. 2 and 9, and have a horizontal leg 31 and a vertical leg 32. The horizontal leg 31 extends outwardly from the edge of the unit and the vertical leg 32 is spaced slightly from the outside surface of the vertical wall section with which it is integral and extends backwardly from the horizontal leg and away from the edge of the unit. When adjacent flanges 21 and flange sections 22, are superimposed one upon the other, as shown in FIG. 2, the superimposed flanges 21 and 22 form a new flange, or ridge 33, which is T-shaped in cross section. Elongated clips 34 are provided for fitting over the T-shaped ridge 33 for holding the flanges 21 and 22 together when the units are superimposed to form a cabinet. The clips 34 are C-shaped in cross section and are adapted to be slid longitudinally over the super-imposed flanges 21 and 22. The C-shaped cross section of the clips 34 fits snugly over the super-imposed vertical legs 32 of the flanges forming the T-shaped ridge 33, described above, as shown most clearly in FIG. 2. The inner edges of the clips are turned over to form small vertical flanges 35 which prevent the clips from being displaced sideways from the connecting flanges 21 and 22. Thus, the clips 34 can only be inserted over or removed from the units by sliding them forwardly or backwardly over the flanges.

Tongue and groove connections are provided along the top edges of the various vertical wall sections 19 for positioning them with respect to corresponding vertical wall sections of adjacent units in assembling the units to form a cabinet. Sets of spaced vertical tongues 36 extending downwardly from the downwardly extending vertical wall sections and extending upwardly from the upwardly extending vertical wall sections, are provided for this purpose. A corresponding recess 37 is provided in the edge of each vertical wall section adjacent each of the tongues 36 and the tongues and recesses are staggered horizontally with respect to one another, as shown in FIGS. 2 and 9, so that when adjacent units are superimposed, the tongues 36 of one unit fit into the recesses 37 of the other, thereby positioning all of the vertical wall sections 19 with respect to one another. Corresponding knobs 38 and slots 39 are provided in the top and bottom edges of the back walls of the units for ease in positioning the back walls with respect to one another in assembling the units. As shown most clearly in FIGS. 8 and 9, the knobs 38 are presented by the back walls of the top and bottom units 14 and 15 and the slots 39 are provided in the back wall of the intermediate unit 13.

In use, the desired number of cabinet assembly units are superimposed one upon the other by inserting the tongues 36 and knobs 38 of one into the recesses 37 and grooves 39, respectively, of another to position the vertical wall sections 19 and the rear walls of the respective units, and the connecting flanges 21 and 22 of the units are fastened together by sliding the C-shaped clips 34 over the flanges to prevent vertical displacement of the units with respect to one another. As soon as this has been done, the cabinet is ready to receive the drawers 28 containing the articles to be stored therein or dispensed therefrom. Wedge shaped detents 41 protruding up-

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wardly from the top surfaces of the horizontal walls 18 of the intermediate and bottom units 13 and 15 of the cabinet are provided adjacent the front end of each of the drawer spaces. As shown most clearly in FIGS. 3 and 4, the wedges 41 are turned so that their inclined surfaces face the front of the cabinet and an upstanding wall 42 at the rear of each wedge faces the rear of the cabinet. Thus, a drawer 28a having a shallow depending shoulder 43 adjacent its rear end may be inserted easily in the drawer space since the depending shoulder 43 will pass over the inclined surface of the wedge. However, when the drawer 28a is pulled forward in the drawer space, the depending shoulder 43 on the drawer catches on the upstanding wall 42 at the rear of the wedge so that the drawer cannot be removed accidentally from the cabinet. If necessary, the drawer 28a can be removed by pressing upwardly on the bottom of the drawer to separate the shoulder 43 from the upstanding wall 42. This technique of preventing accidental displacement of the drawer from the cabinet is advantageous when the drawer is formed from folded boxboard and the downwardly extending shoulder 42 at the rear of the drawer is presented by one edge of a boxboard flap forming part of the bottom of the drawer.

Having now described the invention in specific detail and exemplified the manner in which it may be carried into practice, it will be readily apparent to those skilled in the art that innumerable variations, applications, modifications, and extensions of the basic principles involved may be made without departing from its spirit or scope.

The invention claimed is:

1. A molded cabinet assembly unit which comprises a horizontal wall, a plurality of vertical wall sections integral with said horizontal wall and extending substantially perpendicularly away from said horizontal wall and substantially parallel to one another, said vertical wall sections defining a plurality of drawer spaces between them and being unconnected except for said horizontal wall, and outwardly extending horizontal flanges located along the edges of the extremities of the outermost of said vertical wall sections, the horizontal flanges of one unit being adapted to be superimposed and joined with the horizontal flanges of another unit to form a cabinet structure adapted to receive drawers, said drawers being slidably supported in said cabinet by one of said horizontal walls and in sliding contact with the vertical wall sections of their respective drawer spaces.

2. A molded cabinet assembly unit according to claim 1, wherein the said horizontal flanges of one unit are superimposed with the horizontal flanges of the other unit and the said superimposed flanges are joined by sliding an elongated clip having a C-shaped cross-section over the superimposed flanges.

3. A molded cabinet assembly unit according to claim 1, wherein the said vertical wall sections are arranged in pairs extending upwardly and downwardly, respectively, from opposite sides of said horizontal wall.

4. A molded cabinet assembly unit according to claim 1, wherein each of said vertical wall sections is adapted to meet a corresponding vertical wall section extending in the opposite direction from the horizontal wall of a similar molded cabinet assembly unit to form drawer spaces between them of substantially rectangular cross-section.

5. A molded cabinet assembly unit according to claim 1, wherein said vertical wall sections are tapered in cross-section away from said horizontal wall.

6. A molded cabinet assembly unit according to claim

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5, wherein the said vertical wall sections are arranged in pairs extending upwardly and downwardly, respectively, from opposite sides of said horizontal wall and said horizontal flanges comprise rows of short flange sections disposed along the top of the upwardly extending outermost vertical wall sections and along the bottom of the downwardly extending outermost vertical wall sections, said flange sections being separated from one another by spaces greater than the lengths of said flange sections, the flange sections on said upwardly extending vertical wall sections being staggered with respect to the flange sections on said downwardly extending vertical wall sections, the outside surfaces of the outermost vertical walls of said unit being divided into alternate surface areas each extending from a flange section at one edge of the wall to a space between flange sections at the other edge of the wall and said alternate surface areas being inclined inwardly away from the flange sections from which they extend.

7. An injection molded plastic cabinet assembly unit which comprises a horizontal wall, a plurality of vertical wall sections integral with said horizontal wall and extending substantially perpendicularly away from said horizontal wall and substantially parallel to one another, said vertical wall sections defining a plurality of drawer spaces between them and being unconnected except for said horizontal wall and tapered in cross section away from said horizontal wall, adjacent vertical wall sections at their junctures with said horizontal wall being parallel with one another from the front to the rear of the unit, each of said vertical wall sections being adapted to meet a corresponding vertical wall section extending in the opposite direction from the horizontal wall of a similar molded cabinet assembly unit, said vertical walls meeting one another adjacent their extremities, and connecting means on the outer vertical wall sections of both units adapted to cooperate with one another to join the units and form a cabinet structure, the distances across the tops of the drawer spaces between adjacent vertical wall sections being substantially the same as the distances across the bottoms of said spaces between said sections and said distances being substantially the same from the front to the rear of the unit, whereby said spaces are rectangular from corner to corner and from front to back and are adapted snugly to receive rectangular drawers of the proper dimension.

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FRANK B. SHERRY, *Primary Examiner.*