March 22, 1955 J. EVANS 2,704,699

CABINET

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Fig. 1

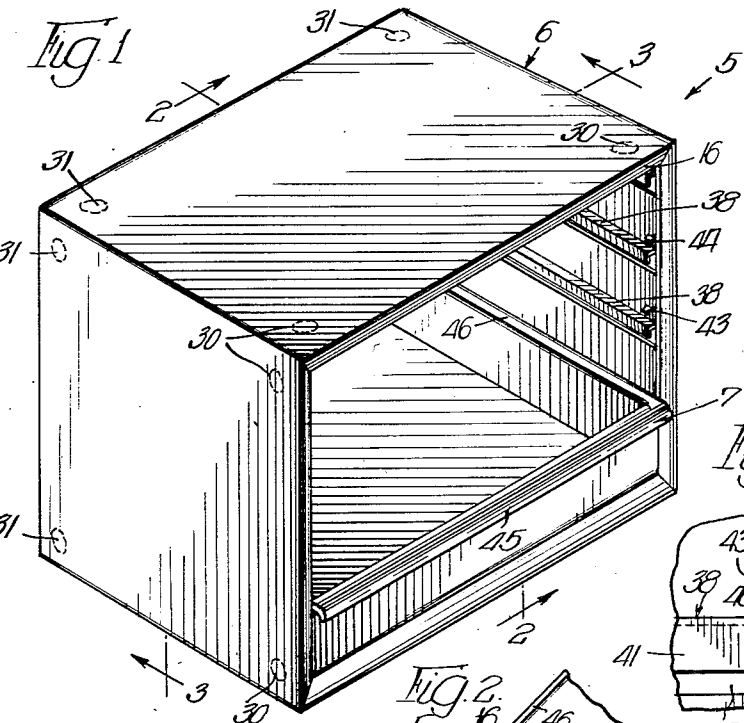


Fig. 5

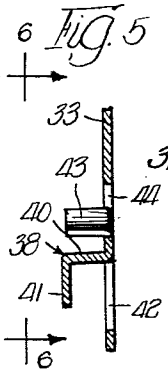


Fig. 6

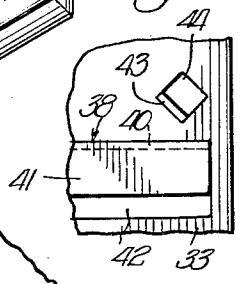


Fig. 2

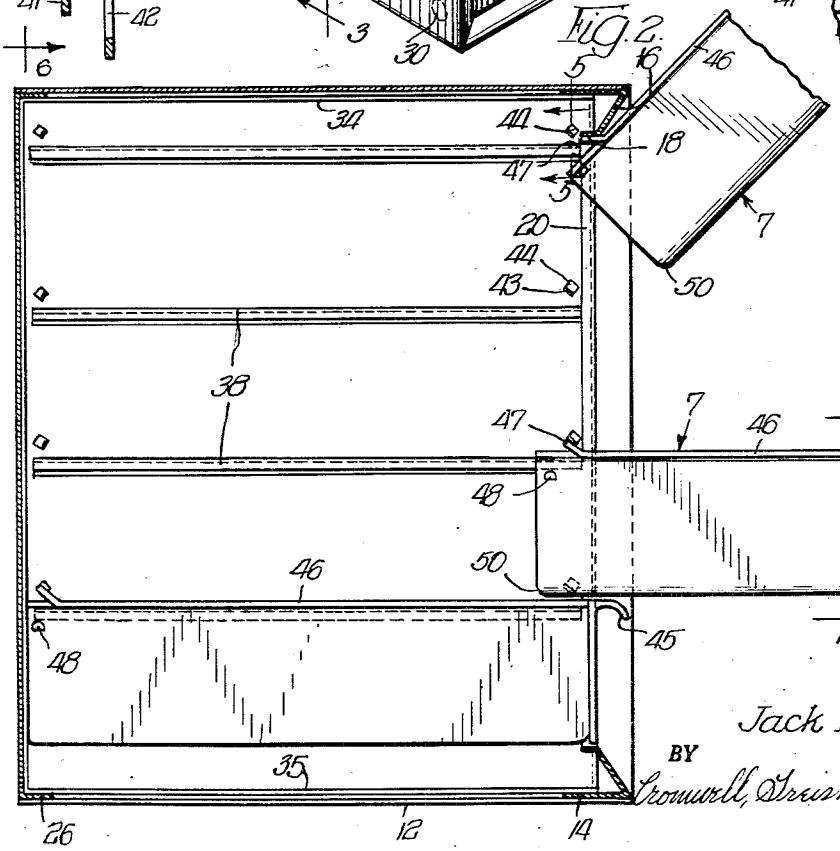
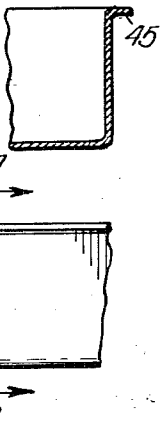


Fig. 7



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Fig. 3

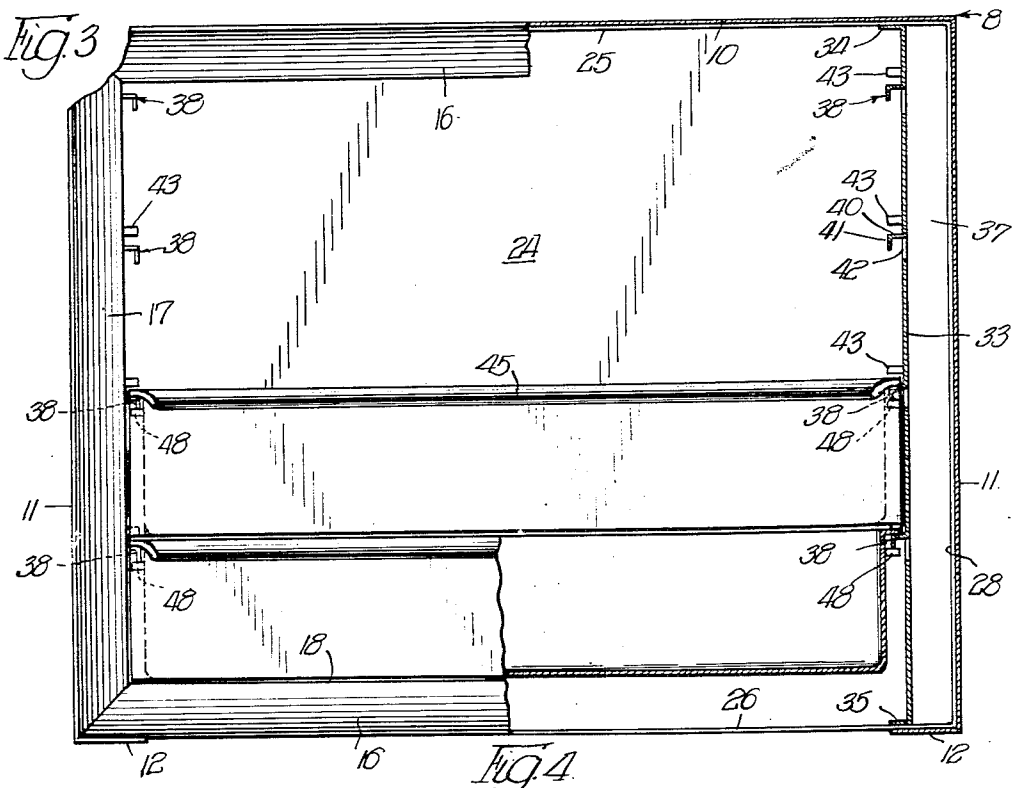
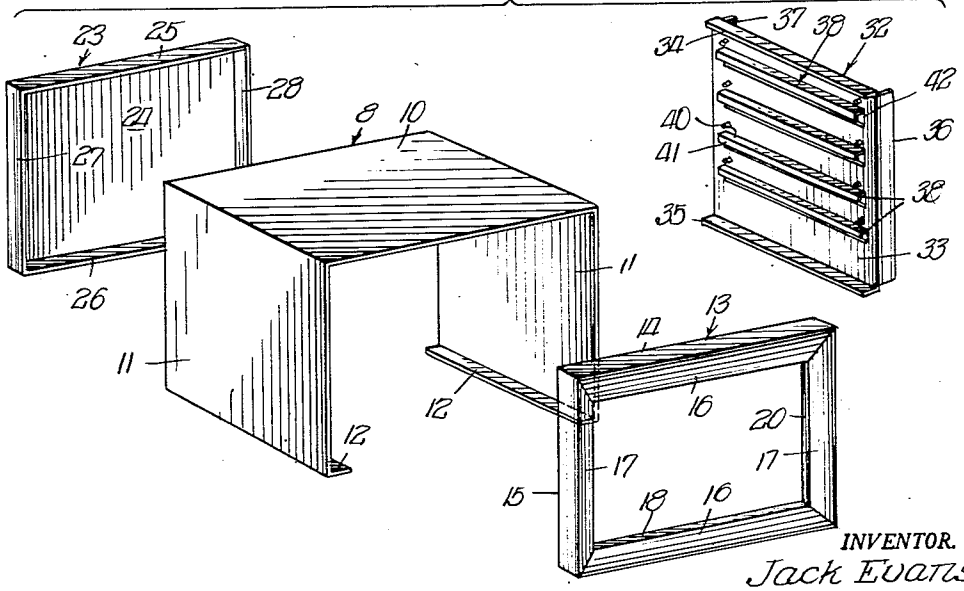


Fig. 4



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Fig. 9

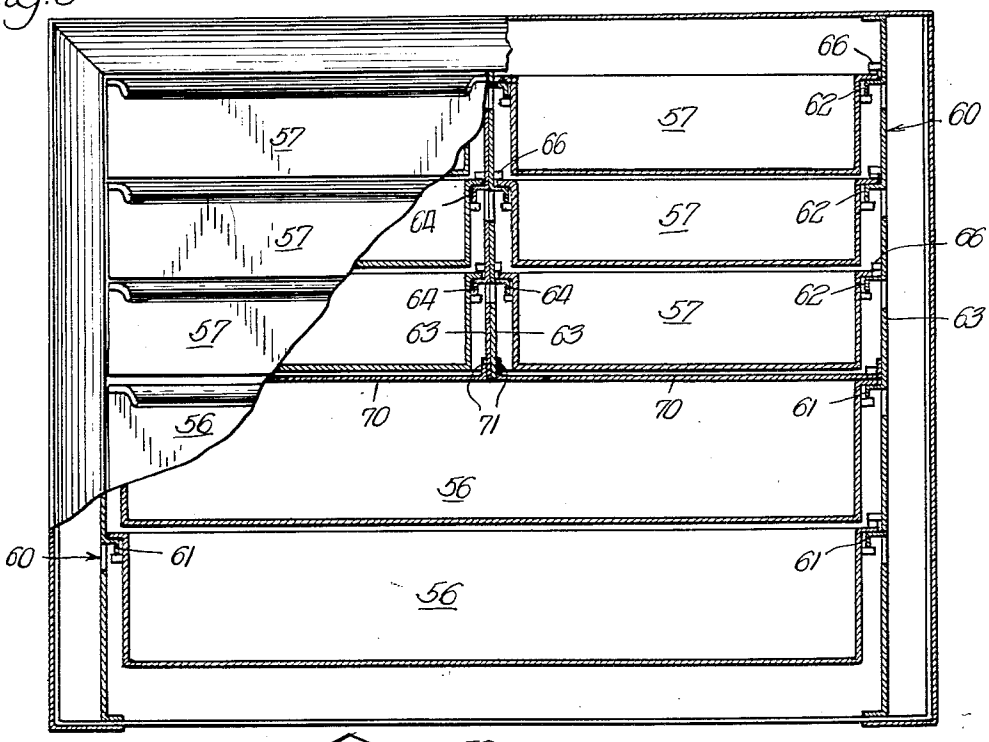


Fig. 8

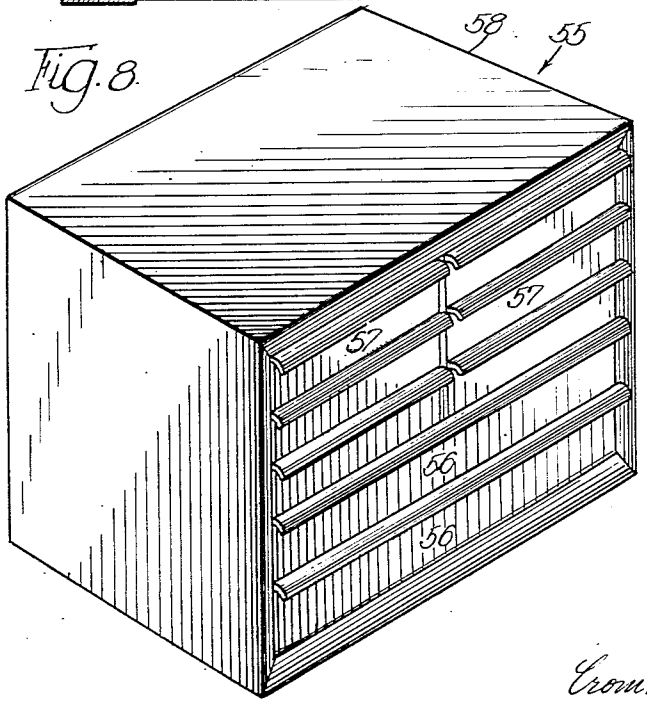
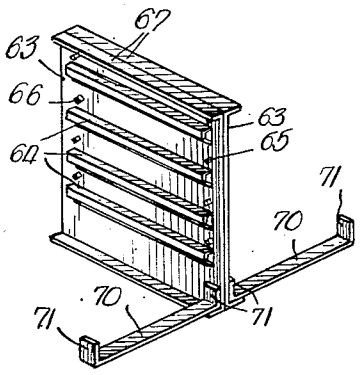


Fig. 10



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2,704,699

CABINET

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Application January 7, 1954, Serial No. 402,721

5 Claims. (Cl. 312—348)

This invention relates, generally, to innovations and improvements in drawer cabinets. The invention pertains particularly to innovations and improvements which permit the manufacture of good drawer cabinets on a quantity production basis at relatively low cost.

The object of the invention, generally stated, is the provision of drawer cabinets having a rugged construction, which operate smoothly, have an attractive appearance and which can be produced from sheet metal and/or plastic on a quantity production basis at minimum cost.

Certain other and more specific objects of the invention will, in part, be obvious and will, in part, appear hereinafter.

For a more complete understanding of the nature and scope of the invention, reference may now be had to the following detailed description thereof taken in connection with the accompanying drawings, wherein:

Fig. 1 is a front perspective view of a drawer cabinet forming one embodiment of the invention with the three upper drawers removed and the bottom drawer in place;

Fig. 2 is a vertical sectional view on enlarged scale taken on line 2—2 of Fig. 1;

Fig. 3 is a vertical sectional view also on the same enlarged scale taken on line 3—3 of Fig. 1;

Fig. 4 is an exploded perspective view showing the components of the shell or case of the cabinet shown in Fig. 1;

Fig. 5 is an enlarged detail sectional view taken on line 5—5 of Fig. 2 showing one of the drawer stops and the adjacent drawer support rail;

Fig. 6 is a fragmentary elevational view taken on line 6—6 of Fig. 5;

Fig. 7 is a fragmentary detail sectional view taken on line 7—7 of Fig. 2;

Fig. 8 is a front perspective view of a cabinet which constitutes a second embodiment of the invention which has six small upper drawers and two large bottom drawers;

Fig. 9 is a view partly in front elevation and partly in vertical section of the cabinet shown in Fig. 8; and

Fig. 10 is a perspective view showing an interior rail-providing partition for the smaller upper drawers of the cabinet shown in Fig. 8 with bracing straps attached thereto.

In Fig. 1 a cabinet is indicated generally at 5 which consists of a cabinet case or shell 6 which houses four sliding drawers 7. The cabinet case or shell 6 may be fabricated from sheet metal on a quantity production basis and the drawers 7 molded from a suitable plastic. However, it will be understood that other materials may be used beside metal and plastic, and that the cabinet may be of an all-metal construction or it may have an all-plastic construction.

The cabinet shell or case 6 consists of an outer case member 8 (Fig. 4) having a top portion 10 and two side walls 11—11, each of which has an inwardly turned flange 12 extending along the bottom edge thereof. This member 8 may be stamped from a single piece of sheet metal. The front of the cabinet shell 6 is provided with a rectangular frame member 13 (Fig. 4) having top and bottom horizontal sides 14—14 and vertical sides 15—15. The member 13 also has inwardly beveled or inclined top and bottom flanges 16—16 and side flanges 17—17 which are suitably secured together at the corners as shown. A narrow horizontal flange 18 projects from the inner edge of each of the top and bottom inclined flanges 16, and a narrow vertical flange 20 projects from each of the side

inclined flanges 17. The member 13 may be stamped and died out of a single piece of sheet metal.

The rear of the cabinet shelf 6 is formed by an end member 23 (Fig. 4) comprising an end wall 24 having projecting therefrom top and bottom horizontal flanges 25 and 26 and vertical side flanges 27 and 28. This end member 23 may be stamped from a single piece of metal by use of the same die as is used to form the front member 13 after removing the parts which serve to form and bend the inclined flanges 16 and 17.

The front frame member 13 is inserted into the front of the shell member 8 as shown in Figs. 1 and 2 and is secured therein in a suitable manner such as by spot-welding as indicated at 30—30 in Fig. 1. Likewise, the rear end member 23 is slipped into the rear end of the shell member 8 and similarly secured thereto as indicated at 31—31.

In addition to the members 13 and 23, the cabinet case or shell 6 includes a pair of side inserts 32—32, one of which is shown in Fig. 4. The inserts 32 constitute important elements of the combination and they contribute to and make possible the production of the cabinet 5 on a quantity production basis at a low unit cost. Each insert 32 comprises a vertical wall portion 33 from which project on one side upper and lower horizontal flanges 34 and 35 and from which project toward the opposite side vertical flanges 36 and 37. Four rails 38 for the drawers 7 are stamped or died out of the side wall 33 on one side thereof. Each of these rails 38 has a horizontal portion 40 (Fig. 5) and a vertical flange portion 41. Openings 42 are left in the side wall 33 where the material is stamped out to form the rails 38.

At the opposite ends of each of the rails 38 and slightly thereabove, drawer stops 43 (Figs. 5 and 6) are struck out from the side wall 33 leaving an opening 44 in each instance. It will be observed from Fig. 6 that the stops 43 adjacent one vertical edge of the insert 32 are upwardly and inwardly inclined at an angle of about 45° while the stops 43 adjacent the opposite vertical edge are similarly upwardly and inwardly inclined.

When the cabinet shell or case 6 is assembled, the vertical flanges 36 and 37 on each insert 32 serve to space the insert the proper distance from the adjacent side wall 11 as shown, for example, in Fig. 3. The top horizontal flanges 34 of the inserts 32 fit up against the top flanges 14 and 25 respectively of the front and rear case members 13 and 23 and the bottom horizontal flanges 35 of the inserts 32 rest on the bottom flanges 14 and 26 respectively of the front and rear members 13 and 23, as shown in Figs. 2 and 3. The flanges 34 and 35 may be secured in place by spot-welding or some other suitable procedure. By having the stops 43 provided at opposite ends of the rails 38, each of the inserts 32 may serve either on the left-hand side or the right-hand side of the cabinet case or shelf 6. In other words, the insert 32 shown in Fig. 4 which is oriented for use in the right-hand side of the cabinet shell 6, could by rotating it 180° around a vertical axis be used as the left-hand insert for the cabinet case or shell 6. Therefore, all of the inserts 32 may be identical and can be stamped out of sheet metal using only a single set of dies.

When the elements or members of the cabinet shell or case 6 are assembled, they fit accurately together and result in a rigid and strong cabinet shell or case. The front opening of the cabinet 6 presents a neat and attractive appearance with the front vertical edges of each of the inserts 32 fitting behind the inwardly turned vertical flanges 20—20 on the front frame member 13 as shown in Figs. 1 and 2, for example.

The cabinet 5 takes four drawers 7 which may be molded in one piece from a suitable plastic. Each of the drawers 7 has a handle 45 and lateral flanges 46 projecting along the tops of the opposite sides. The flanges 46 serve as runners which slide on the rails 38. The dimensions are such that the flanges 46 fit over the tops of the rails 38 as shown in Fig. 3. The flanges or runners 46 do not extend all the way to the rear end of the drawers 7 but terminate short thereof and the end portion of each flange 46 is disconnected from the top edge of the drawer side wall and tilted up at about 45° as indicated at 47 (Fig. 2) for cooperation with the adjacent drawer stops 43.

Each of the drawers **7** is also provided on opposite sides with laterally projecting lugs **48** (Figs. 2 and 3), the upper surface of each of which is rounded or semi-cylindrical and with the uppermost portion thereof spaced below the bottom side of the adjacent runner flange **46** a distance slightly greater than the vertical height of the flanges **41** on the rails **38** so as to fit and slide thereunder.

The bottom rear edge or corner of each of the drawers **7** is rounded as indicated at **50** (Fig. 2) so as to facilitate the removal of the drawers from the cabinet and re-insertion of the drawers therein. The manner in which the drawers **7** operate in the cabinet case or shell **6** is illustrated in Fig. 2. In that figure the bottom drawer **7** is shown in the fully inserted position so that the front wall of this drawer is approximately flush with the vertical lines of intersection between the inwardly turned narrow vertical flanges **20** of the front frame member **13** and the beveled or inclined flange portions **17**. The drawer handles **45** are so dimensioned that the outer edges thereof lie even with or slightly behind the front corners of the cabinet case or shell **6**. It will also be seen that, when fully inserted, the lugs **48** on the drawers **7** just fit underneath the rear ends of the adjacent rails **38** while the upper edge of each upwardly inclined hook portion **47** just fits against the adjacent stop **43**.

While each of the drawers **7** can be smoothly pushed in and out of the cabinet, they cannot be accidentally removed by pulling too hard. Thus, again referring to Fig. 2, the second from the bottommost drawer is shown pulled out to the fullest extent possible without tilting the drawer upwardly. It will be seen that the upwardly turned hook portions **47** on the forward ends of each of the lateral runner flanges **46** engage with the adjacent stops **43** so as to prevent further outward movement of the drawer **7**.

The lugs **48** serve to prevent the drawers **7** from tilting downwardly after they have been pulled out a distance where the center of gravity of the drawer and contents is sufficiently shifted outside of the cabinet so that the withdrawn portions of the drawer tend to tilt or pivot downwards. As the drawers are pulled out to where they tend so to tilt, the rounded upper surfaces of each of the lugs **48** engage and ride smoothly underneath the bottom edge of the adjacent vertical flange **41** of the cooperating rail **38** so as to provide for the smooth and level operation of the drawers throughout their travel.

After one of the drawers **7** has been pulled out horizontally as far as possible, the drawer may be removed by pivoting it upward at a suitable angle as shown in Fig. 2 in connection with the uppermost drawer. It will be seen that when the drawers are tilted up at this angle the hook portions **47** can slide out between the bottom edges of the stops **43** and the tops of the rails. The inwardly inclined angle of the flange **18** at the top of the insert **13** is such as to permit the top drawer to be tilted up at a sufficient angle for removal. It will be appreciated that the drawers may be re-inserted by inserting them at the same tilted angle and then lowering them to the horizontal position as they are inserted.

In Figs. 8–10 a cabinet is indicated generally at **55** which has two full-width lower drawers **56** and six small-sized upper drawers **57**. The cabinet **55** has a case or shell **8**, the construction of which may be identical with the construction of the case or shell **6** of the cabinet **5** except for obvious changes in respect to the number and spacing of the projecting rails on the side wall inserts **60**. Each of these inserts **60** is of the same general construction as one of the inserts **32** but will have two lower rails **61—61** and three upper runners **62**. The second and third runners from the top will be spaced so as to accommodate the smaller-sized drawers **57**.

The cabinet **58** also has two additional insert members for the upper portion of the cabinet which are designated at **63** (Fig. 10). Each of these members has three rails **64** struck out from the side thereof and also has stops **65** struck out from the side wall material and which correspond to the upwardly and inwardly inclined stops **66** adjacent the opposite ends of the rails **62** on the inserts **60**. The members **63** may be suitably secured together back-to-back and each is provided with a horizontal top flange **67** which may be secured into the top of the case or shell **58**.

In order to brace the bottom front corners of the inserts **63**, strap members **70** are provided having upwardly turned ends **71**. The inner ends **71** are secured to the bottom front corners of the insert members **63** and the outer ends **71** of the straps **70** are secured to the side wall portion of the adjacent insert **60** as shown in Fig. 9.

The drawers **56** and **57** may have the same construction as the drawers **7** used in cabinet **5** and will operate in the same manner.

A number of obvious changes may be made in the cabinets described above. For example, one or more of the drawers may be provided with dividers. The smaller drawers of cabinet **55** may be located at the bottom instead of at the top, or some of the small drawers can be at the top and some at the bottom with the full-sized drawers in between. The smaller drawers do not have to have the same width but can have different widths by suitably displacing the inserts to one side or the other.

Since certain further changes may be made in the embodiments of the invention disclosed and additional embodiments of the invention may be made without departing from the spirit and scope of the invention, all matter disclosed above or shown in the accompanying drawings is intended to be interpreted as illustrative and not in a limiting sense.

What is claimed as new is:

1. A drawer cabinet comprising, in combination, a cabinet case and a plurality of superposed sliding drawers, said cabinet case comprising an outer shell member having a top and two opposite side walls with inwardly turned flanges on the bottom edges thereof, a front rectangular member having four lateral side flanges by which it is secured in the front of said outer shell member and having a rectangular opening therein for said drawers, a rear member having four lateral side flanges by which it is secured in the rear of said outer shell member, and a pair of like side wall inserts each of which is secured within said outer shell member and juxtaposed on the inside of one of said shell side walls, each of said side wall inserts comprising a wall portion, vertical flanges projecting outwardly at right angles from the opposite vertical edges of said side wall portion and engaging the adjacent outer shell side wall so as to space said wall portion therefrom, horizontal flanges projecting inwardly from the top and bottom of said wall portion and secured to the top and bottom of said outer shell member, a plurality of vertically spaced rails having horizontal portions and depending flanges, said rails being struck out from the side wall portion so as to leave elongated openings therein, and inwardly projecting drawer stops located above and adjacent the opposite ends of said rail members and inwardly and upwardly inclined at the same angles with respect to the vertical center line of said side wall portion and being struck out therefrom, each of said drawers comprising a tray portion, a handle on the front wall thereof, runners projecting laterally from the top edges of the tray side walls which are slidable on said rails, each of said runners terminating short of the rear end of the drawer in an upwardly inclined hook portion which engages the drawer stop on the front end of the adjacent rail when said drawer is pulled out, and lugs projecting laterally from each side wall of said drawers adjacent the rear end thereof and spaced beneath said runners so that the tops of the lugs slide underneath said vertically depending flanges on said rails.

2. The cabinet called for in claim 1 wherein said front rectangular member has inwardly inclined flanges on the four sides with the top inclined flange providing sufficient clearance to permit the top drawer to be tilted sufficiently when pulled out so that it may be removed from said cabinet case.

3. The cabinet called for in claim 1 wherein there is at least one full width sliding drawer and at least two side-by-side narrower drawers, and an internal vertical insert supported within said cabinet case between said narrower drawers and having drawer support rails projecting from opposite sides thereof for cooperation with rails on said side wall insert members for supporting said narrower drawers.

4. A drawer cabinet comprising, in combination, a cabinet case and a plurality of superposed sliding drawers, said cabinet case comprising an outer shell having at least a top and two side walls, and two side wall inserts each of which is secured within said outer shell and juxtaposed on the inside of one of said shell side walls in parallel relationship to the other insert, each of said side wall in-

serts comprising a vertical wall portion, a plurality of interiorly projecting vertically spaced horizontal tray support rails on each side wall insert which are struck out from said vertical wall portion thereof so as to leave slot-shaped openings therein each of which is closed at its opposite ends, and upwardly inclined drawer stops adjacent the front end of said rails and spaced thereabove and being struck out of the vertical side wall portion of said side wall inserts, and each of said drawers comprising a tray portion, support runners projecting laterally from opposite sides of each tray portion which are slidable on the adjacent tray support rails, each of said runners having an upwardly inclined hook portion on the rear end thereof which engages the upwardly inclined drawer stop on the front end of the adjacent support rail when said drawer is pulled out, and lugs projecting laterally from the side walls of said tray portions adjacent the rear ends thereof and spaced beneath said runners so that the tops of the lugs slide underneath said adjacent support rails, each of said drawers being removable by pulling it outwardly until said hook portions engage said drawer stops cooperative therewith and then tilting the drawer upwardly whereby said laterally projecting lugs clear the front ends

of the adjacent support rails and each of said hook portions may slip through the space between the adjacent drawer stop and support rail.

5. The cabinet called for in claim 4 wherein there is at least one full width sliding drawer and at least two side-by-side narrower drawers, and an internal vertical insert supported within said cabinet case between said narrower drawers and having drawer support rails projecting from opposite sides thereof for cooperation with rails on said side wall insert members for supporting said narrower drawers.

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