Sept. 22, 1959 C. S. O'NEIL 2,905,519

CABINET CONSTRUCTION

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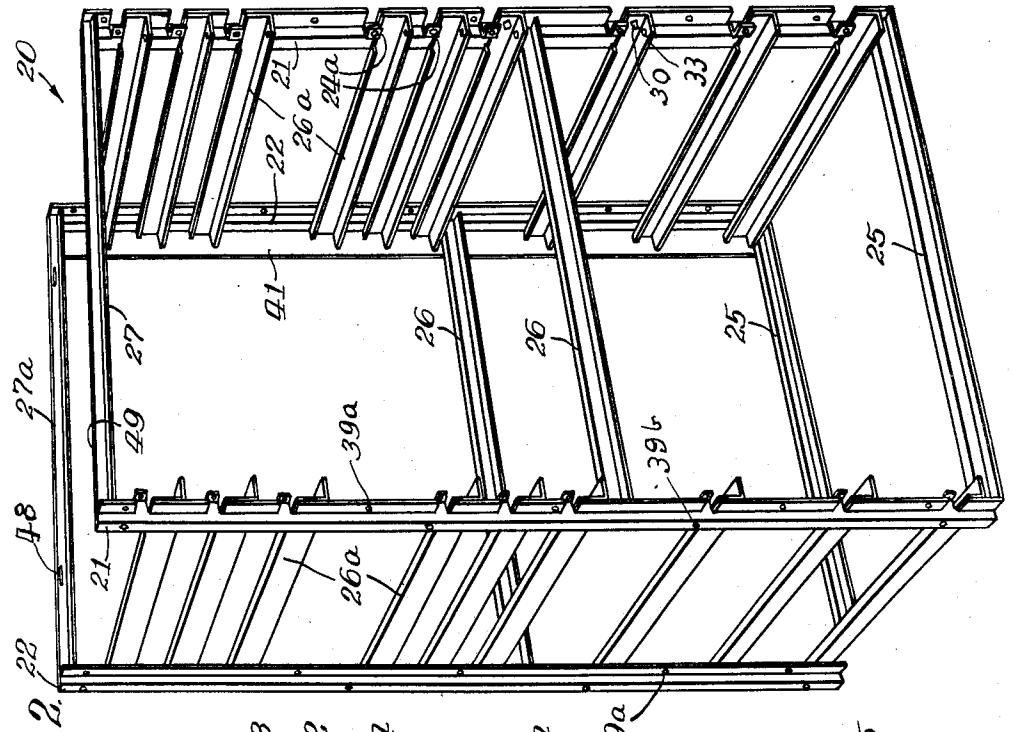


FIG. 2.

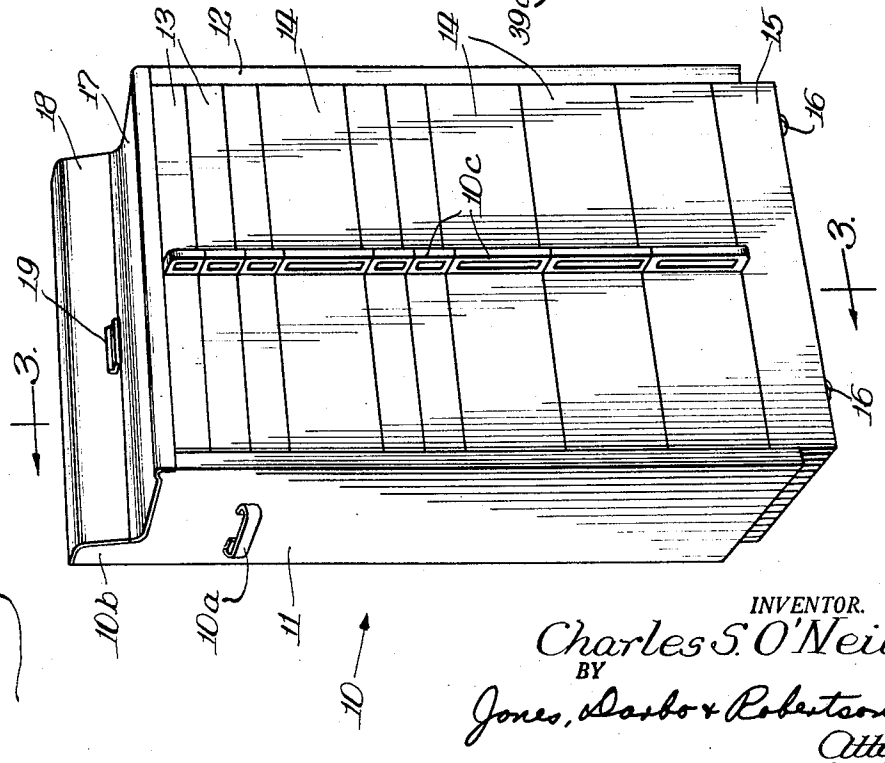


FIG. 1.

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Fig. 3.

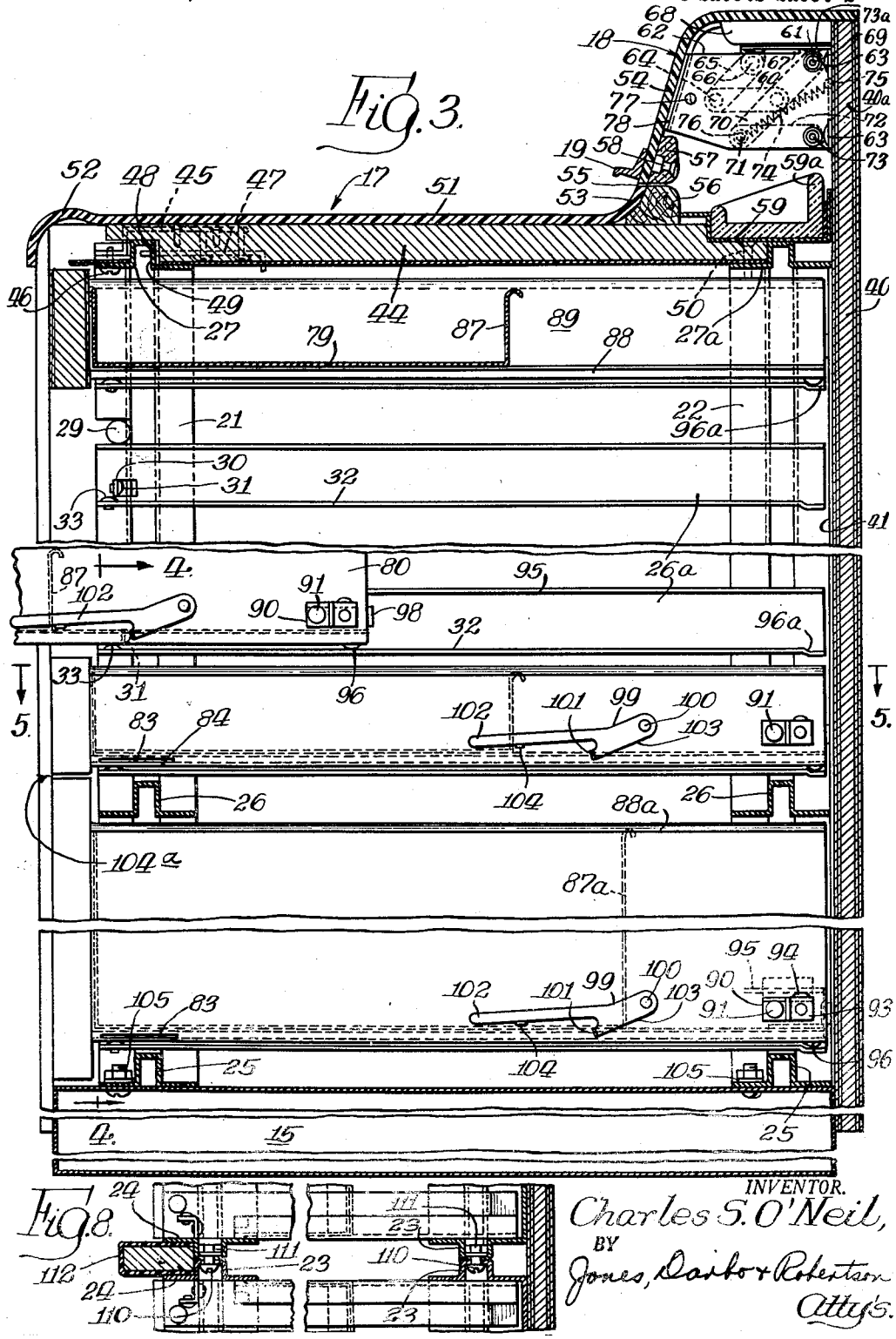


Fig. 8.

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Fig. 4.

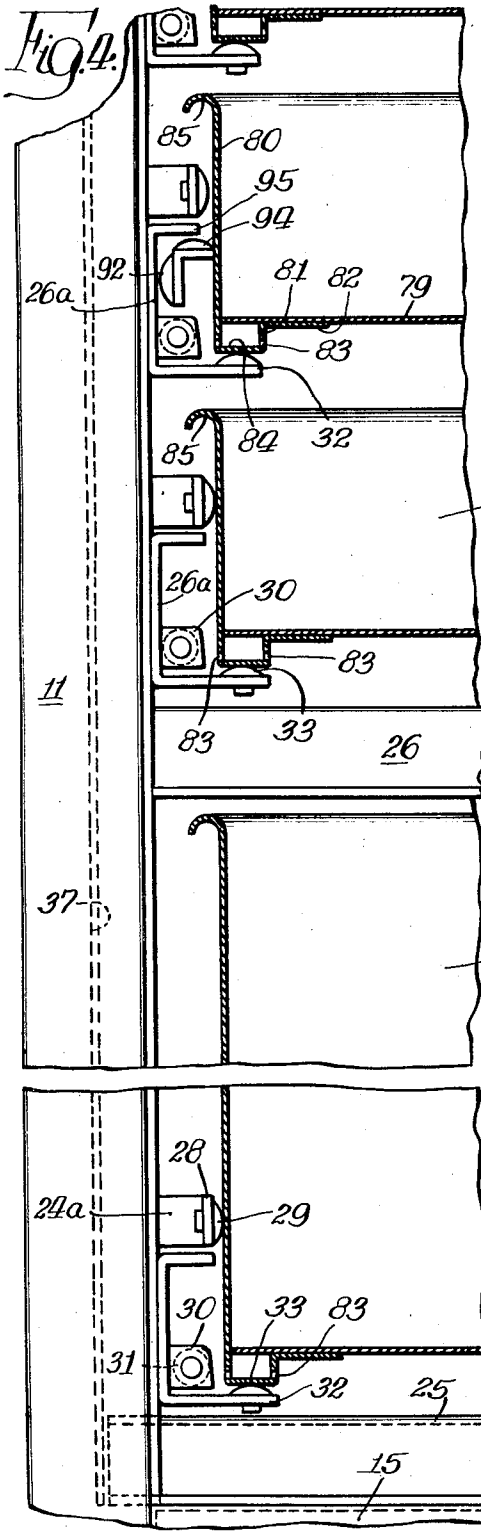
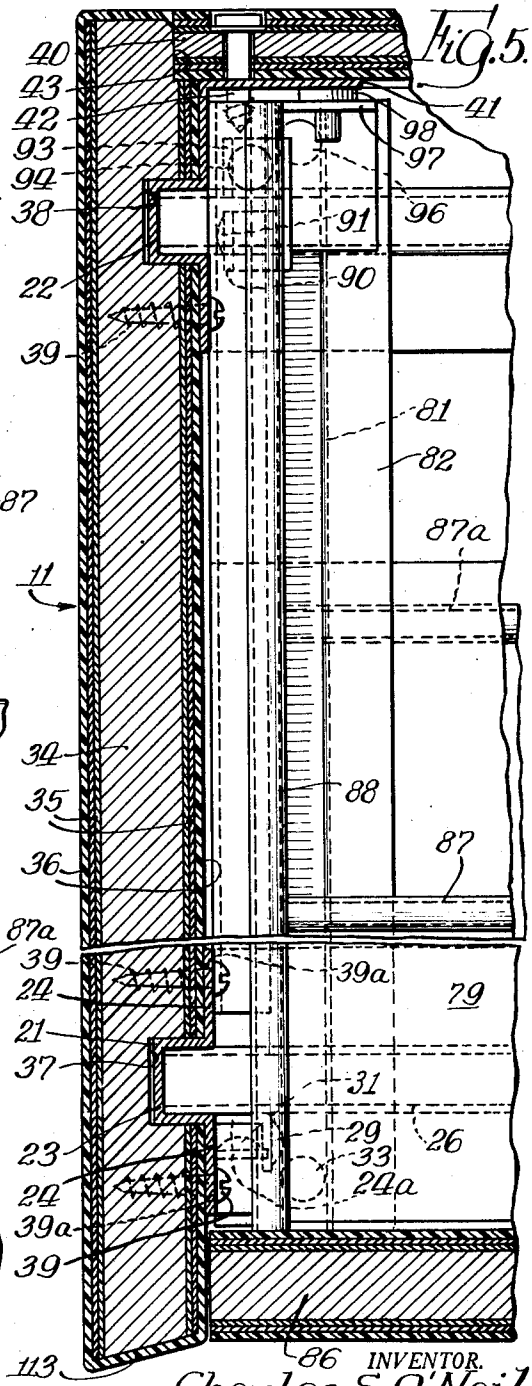


Fig. 5.



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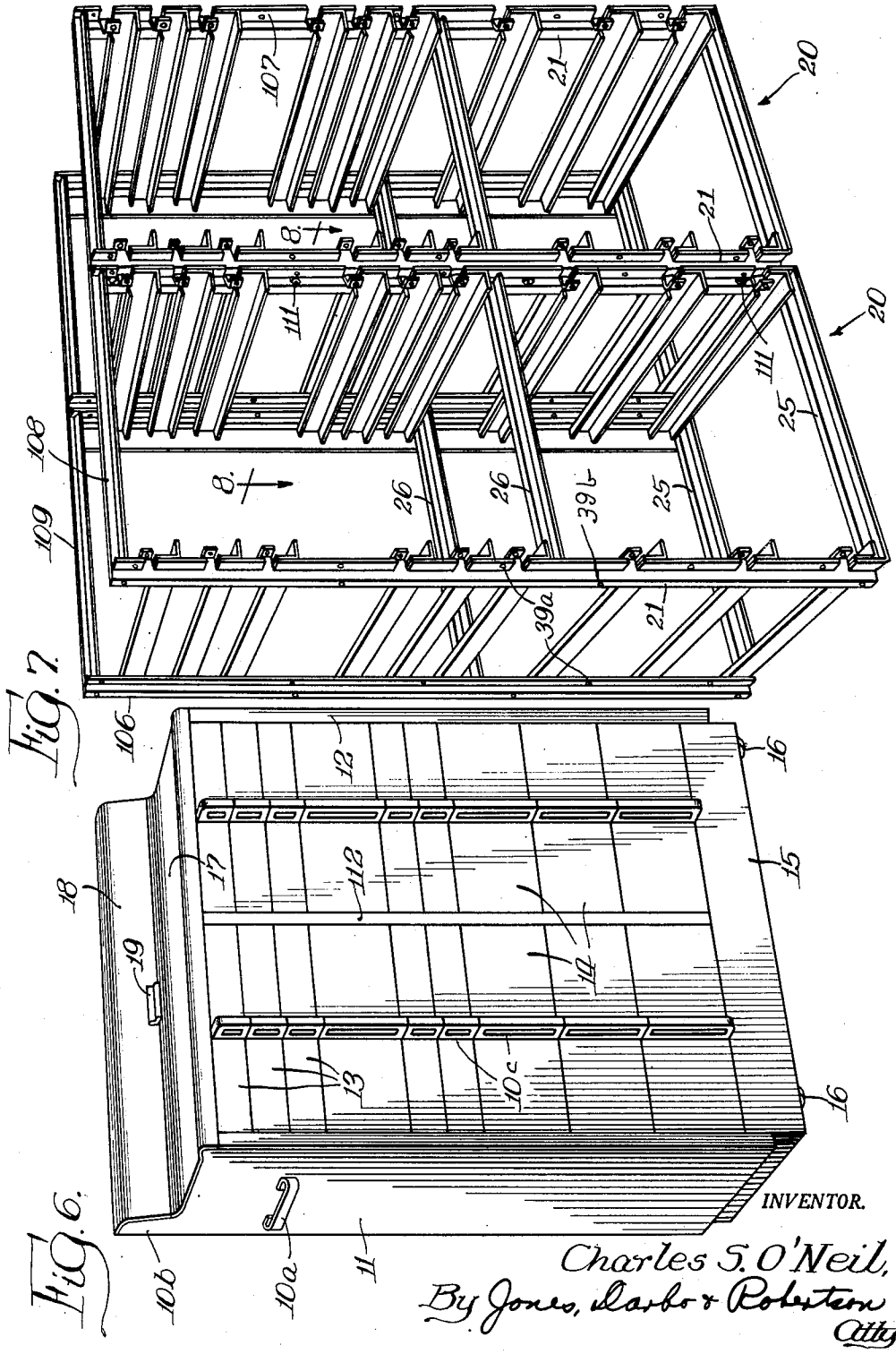


FIG. 7.

FIG. 6.

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United States Patent Office 2,905,519 Patented Sept. 22, 1959

2,905,519

CABINET CONSTRUCTION

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Application December 31, 1956, Serial No. 631,897

4 Claims. (Cl. 312—350)

This invention relates to cabinet construction more particularly of the type of cabinet suitable for use in professional fields. The invention is here illustrated as embodied in cabinets specially adapted for the dental practitioner, exterior designs of which are disclosed and claimed in co-pending applications by James E. Floria, Serial No. D-42,572, now Patent No. Des. 182,111, and Serial No. D-42,573 now abandoned, each for "Dental Cabinet," and Serial No. D-42,574 now Patent No. Des. 180,398 for "Drawer Handle," all filed August 10, 1956.

The present invention aims to provide improved and simplified cabinet construction, of the class referred to, that includes a unitary integral steel interior frame upon which wood or other non-metallic exterior parts may be hung, interlocking formations being provided on the steel frame and on the non-metallic exterior parts, and the frame also supplying runways or tracks for the drawers of the cabinet, each cabinet being advantageously rendered mobile by casters or the like so as to be readily located in position by the practitioner for ready accessibility and convenience.

A further object of the invention is to provide integral tabs bendable from the interior frame for carrying anti-friction contact means, such as nylon buttons, that cooperate with the drawer part both to locate the drawer in position and to serve as guides when the drawer is pulled out and retracted, while at the same time contributing to marked reduction of friction and smooth and silent operation of the drawers.

Another object of the invention is the provision of a drawer runner construction that cooperates with the forward nylon button on the horizontal drawer track to vary or adjust the elevation of the drawer with respect to its particular track at the front of the drawer, so as to regulate the spacings between the drawers, both for efficiency of operation and enhancement of appearance.

Another object is the production of a cabinet provided with adjacent tiers of drawers by the securing of a plurality of integral steel frames together, each of prefabricated construction.

These and other objects and advantages will be apparent from the following description, taken together with the accompanying drawings, showing illustrative embodiments of the invention, and in which drawings—

Figure 1 is a perspective view of a dental cabinet or the like embodying the present invention;

Figure 2 is a somewhat enlarged perspective view of the interior integral frame for the cabinet of Fig. 1;

Figure 3 is a further enlarged vertical sectional view taken on the line 3—3 of Fig. 1, parts being broken away to save space, a drawer being omitted and another drawer partially withdrawn;

Figure 4 is a still further enlarged fragmentary vertical sectional view taken on the line 4—4 of Fig. 3;

Figure 5 is a fragmentary plan section, on the scale of Fig. 4, taken on the line 5—5 of Fig. 3;

Figure 6 is a perspective view of another form of dental cabinet embodying the invention;

Figure 7 is an enlarged perspective view of the pair of integral unitary frames employed in the construction of the cabinet of Fig. 6; and

Fig. 8 is a fragmentary plan section taken on the line 8—8 of Fig. 7.

Referring in detail to the illustrative construction shown in the drawings, the cabinet **10** is of the so-called dental type having the side or end panels **11** and **12**, preferably of non-metallic material, drawers **13** of a given depth and advantageously drawers **14** of another depth, with a base **15**, by which may be mounted rollers or casters **16** by means of which the cabinet may be easily moved from one location to another, handles **10***a* being usable for this purpose. A top or working surface **17** has an upwardly extending split continuation **18** that serves as a cover for a medicine compartment and is provided with a handle **19**. It will be noted that, in accordance with said design patent applications, sides **11** and **12** are continued integrally upwardly as at **10***b* to provide end members for the medicine compartment, these extensions **10***b* also providing mountings for hinges as later described, for the medicine compartment cover **18**. The drawers are provided with the handles **10***c*, the design of which is in accordance with the patent application thereon also referred to above.

In accordance with the present invention, the visible parts of the cabinet shown in Fig. 1 are all supported on an integral unitary metallic interior frame **20**, shown in Fig. 2, and this frame has four corner posts or uprights, two of these **21** at the front of the cabinet and two **22** at the rear, each formed of sheet metal and of flanged channel-form cross-section. Each of the corner uprights **21**, as best seen in Fig. 5, comprises the central laterally projecting channel-form formation **23** and the side flanges **24** bent therefrom into a common plane at each side of the channel formation **23**. The corner uprights **22** are similar but in addition have an angular continuation **41** for a purpose later described. The corner uprights **21** and **22** are held together crosswise of the frame by similar channel forming members **25** at the bottom of the frame, intermediate channel forming members **26**, and top channel forming members **27**, **27***a*. From front to rear the uprights **21** and **22** are connected together by the drawer runways **26***a* spaced in horizontal pairs at suitable intervals vertically of the height of the frame to slidingly support the drawers as later described. All the frame parts referred to may be secured together by suitable spot welding.

Struck out from the forward flanges **24** of the uprights **21** are lugs **24***a* bent to provide an inwardly offset part **28** in which is secured an anti-friction button **29**, such as desirably of nylon or the like. Struck out from the side wall of each drawer runway **26***a* is another lug **30** that carries a rearwardly facing rubber button **31**, and, in its horizontal track part **32**, the drawer runway carries at its outer end an upwardly facing nylon button **33**.

As best seen in Fig. 5, each side, such as the side **11**, is desirably made up of a wooden core **34** between laminated plies **35** of non-metallic material including desirably an exterior plastic ply **36**. The side **11**, in accordance with the present invention, has pre-formed therein a pair of vertical grooves **37** and **38** spaced from front to rear of the side, one adjacent each of the front edge and rear edge thereof. These grooves are conveniently formed by routing after the panel is made up but before attachment to frame **20**. The grooves may run through to the upper and lower edges of the side since they are concealed in any case as will here appear. The panel is hung on the frame shown in Fig. 2 by having the channel projections **23** of the channeled uprights **21** and

22 entered snugly into the grooves 37 and 38 respectively of the side 11. Screws 39, passing through screw apertures 39*a* in the channel flanges 24, enter the side 11 to fix the relative position of the side vertically with respect to the frame. It will be understood that the side 12 is similarly attached to the frame.

A laminated-ply back panel 40 (Figs. 3 and 5) is provided that is secured to the angular continuations 41 of the back uprights 22 of the frame, screws 42 passing through the back panel and a suitable perforation in the flange continuation. The sides 11 and 12 are rabetted at their rear inner corners as at 43 to receive the back panel flush with the side. The back panel 40 extends upwardly above the main part of the side as at 40*a*, as seen in Fig. 3, to provide a rear wall for the medicine compartment, just as the side extensions 10*b* provide end walls for this compartment.

As best seen in Fig. 3, a sub-top 44 is provided that is locked by clip 45 secured to the top by attachment screw 46 that engages the flange of transverse member 27, and latch 47 that enters a slot 48 in the rear face of upwardly extending channel projection 49 of the transverse member 27. At the rear, the screw 50 engages the flange of the transverse member 27*a*.

An exterior top and working surface 51 is raised at its forward margin 52 to prevent instruments and the like from rolling off of the surface and at its rear margin is curved upwardly as at 53 to merge into the surface line 54 of the medicine compartment cover 18. The surfaces 53 and 54 may be initially under heat and pressure formed as an integral piece, and then severed at the line 55 to separate them, the break 55 being margined on its lower side by the wood block 56 and on its upper side by the wood block 57, the latter carrying the securement means 58 for the handle 19. The blocks 56 and 57 may also be initially made integral, the separation 55 being provided by a saw cut which passes through both the initially integral block 56—57 and the initially integral surfaces 53—54, this method being the subject-matter of a separate patent application filed March 22, 1957 by Claude G. Kanzelberger, Serial No. 648,479.

The top 44 is downwardly recessed along its rear margin, and metallically lined as at 59 to receive the medicine bottle tray 59*a* that may be of glass or other easily cleanable material.

The medicine compartment cover 18 is hinged to the upward extension 40*a* of the rear panel 40 by hinges desirably of the so-called "lazy-tongs" type comprising a bell-crank lever 60 that is articulated at 61 with the bracket 62 secured as at 63 to the rear panel part 40*a*. The other end of the bell crank lever 60 is articulated as at 64 with a link 65 that is articulated as at 66 with a plate 67 secured to a filler piece 68 in the upper wall of the cover 18. Another link 70 is articulated at one end as at 71 with the link 72 that is articulated at 73 with the bracket 62. At its other end the link 70 is articulated as at 73*a* with plate 67. The tension coil spring 74 anchored as at one end 75 to the bracket 62 and at its other end 76 to the pivot point 71 tends to yieldingly hold the cover 18 either in closed position or in open position, the ype of hinge described moving the cover 18 away from and toward the back panel extension 40*a* without binding, and the bracket 62 being carried by the rear panel extension 40*a* and the side extension 10*b*, screws 77 passing through the bracket to the extension 10*b*, thus eliminating any hinge part in the central region of the cabinet. The bracket 62 desirably carries an abutment flange 78 that contacts the cover 18 when the latter is in closed position.

The drawers for the cabinet, some relatively shallow as indicated at 13 and others relatively deep as indicated at 14, as already referred to, are shown more in detail in Figs. 3, 4 and 5. The body of the drawer is desirably of sheet metal having a bottom member 79 and side members 80, the latter being extended below the bottom member 79 and formed into a drawer runner 81 with attaching flange 82 that is secured as by welding to the under side of the drawer bottom member 79. The runners 81 are advantageously channel-shape or box-like in cross-section and the side walls thereof are, in accordance with the present invention, oppositely slit as at 83 to provide a bendable or distortable portion 84 of the drawer runner, provided by the closed slots 83, adjacent the front of the drawer, for a purpose presently more particularly described. For stiffening purposes the upper edge of the drawer side 80 is shown rounded over as at 85. The drawer front 86 of laminated-ply non-metallic construction, to which the handle parts 10*c* are individually attached, completes the finish of the drawer in front.

It will be understood that the drawer sides are of different depth to suit the different size drawers 13 and 14 respectively. At the rear of the drawer the rear wall (87 for the shallow drawers and 87*a* for the deeper drawers) defines the useable space of the drawer and rearwardly of this the drawer runners and sides are continued rearwardly as at 88 and 88*a* respectively and the sides at their rear ends have angle brackets welded thereto one of which 90 carries a nylon button 91 that slides against the drawer runway 26*a* as at 92 (Fig. 4) and the other lug 93 has an upwardly facing nylon button 94 that rides against the under surface of the inturned upper flange 95 of the drawer runway or track 26*a*. On their rear ends the drawer runners carry downwardly facing nylon buttons 96 that ride on the drawer runway track parts 32 the track parts 32 being desirably slightly depressed at their rear ends as at 96*a* to receive the buttons 96 and cause a slight resistance to outward movement of the drawer, and on their rear ends have brackets 97 welded thereto that carry rubber bumpers 98 which abut the flanges 41 of the rear uprights 22 when the drawer is fully closed. To normally limit outward movement of the drawer but permit its removal when desired the drawers carry on their sides release levers 99 that are pivoted at 100 on the drawer side and that have outwardly laterally offset detent lugs 101 that (see Fig. 3) abut the rubber button 31 on the lug 30 carried by the drawer runway 26. Forwardly extending release fingers 102 on the levers 99 permit the latter to be raised on their pivot 100 so that this detent lug 101 will clear the bumper 31 to permit the drawer to be removed. When the fingers 102 are not raised manually, they return by the force of gravity to the lowermost position and when the drawer is inserted the lever 99 is cammed upwardly by its surface 103 to ride over the lug 30 and then to drop behind the latter. The release handles 102 contact lugs 104 on the drawer sides to limit downward movement of the release handles.

Further in accordance with the present invention, and as already alluded to hereinbefore, the predetermined distortable section 84 on the lower wall of the runner 83, which rides on the nylon button 33, may be bent, as by inserting a screw driver or pliers in the slot 83, either downwardly or upwardly, as may be indicated so as to increase or decrease the spacing as at 104*a* (Fig. 3) between two vertically related drawers. Thus, by this effective expedient, the vertical spacing between the drawers may be readily and easily adjusted both for the sake of appearance and enhanced efficiency.

The base 15 of the cabinet riding on the casters 16 has the integral frame 20 superimposed thereon and bolted thereto as at 105, the bolts passing into the flanges of the channel forming cross members 25.

In a modified embodiment of the invention shown in Figs. 6 and 7, two of the prefabricated frames such as 20 are secured together as at 106 and 107 (Fig. 7) and each having the upper cross members 108 and 109. As best seen in Fig. 8 the frames are secured together as by bolts 110 and nuts 111 that are received respectively

in abutting channel-like projections 23 of the abutting frames 106 and 107 spaced at intervals vertically thereof, the perforations 39*b* in these parts being availed of for this purpose. moreover as seen in Fig. 8 the flanges 24 of abutting connected channel elements 23 jointly provide a channel for snugly receiving the front finishing strip 112 of the double tier cabinet shown in Fig. 6.

The front edges of the sides 11 and 12 are desirably chamfered inwardly as at 113 toward the drawers for enhancement of appearance as shown in said design patent applications.

While the invention is primarily adapted for the use of non-metallic sides, it is within the contemplation hereof that metallic sides might be adapted hereto within the spirit and scope hereof.

The invention is not intended to be limited to details of construction shown for purposes of exemplification and moreover it may not be essential, in all embodiments of the invention, to use all features thereof conjointly since various combinations and sub-combinations may at times be advantageously employed. Such changes including modification or additions, may be made as fall within the scope of the appended claims without departing from the invention.

What is here claimed is:

1. In a cabinet construction of the class described, an interior pre-formed frame, said frame comprising drawer runways, an upwardly facting anti-friction button carried by each of said runways adjacent the forward end thereof, a drawer received on said runways, said drawer having channel form runners riding on said buttons, each of the runners at its forward end having a pair of closed slots in its sides adjacent the bottom portion thereof defining a displaceable section of said bottom portion bendable upwardly or downwardly to determine the elevation of the drawer at the front of the cabinet whereby to provide adjustability for vertical spacing between drawers, and separate integral side members applied to said frame on the sides thereof respectively.

2. In a cabinet construction of the class described, having a frame and a drawer runway carried by the frame, said runway having an upwardly facing button adjacent its forward end, of a drawer received on said runway and having a channel form runner riding on said button, said runner at its forward end having a pair of closed slots in its sides adjacent the bottom portion thereof defininging a displaceable section of said bottom portion bendable upwardly or downwardly to determine the elevation of the drawer at the front of the cabinet when said displaceable section rests on said button.

3. In a cabinet construction having an interior preformed metal frame and panel sides hung on said frame, that improvement therein wherein the said frame includes a channel-form upright member having a vertically extending laterally outwardly projecting interiorly channeled portion and a pair of co-planar flanges extending rearwardly and forwardly respectively from the channeled portion, vertically spaced apart drawer runways extending from front to rear of said upright member and welded to said flanges, portions of said forwardly extending flange between said drawer runways being struck inwardly toward said runways and then bent forwardly, whereby to be arranged to carry an anti-friction element slidingly engaging a drawer on the runway, a side panel having a vertically extending groove in its inner face receiving said channeled portion of the upright member, and perforations in said flanges receiving screws entering said panel between said runways.

4. In a cabinet construction embodying a pair of interior contiguous preformed metal frames and panel sides hung on said frames, that improvement therein, wherein each said frame includes a channel-form upright member having a vertically extending laterally outwardly projecting interiorly channeled portion having a rearwardly and forwardly extending wall, walls angular to said rearwardly and forwardly extending wall, and a pair of coplanar flanges extending rearwardly and forwardly respectively from the said angular walls, vertically spaced apart drawer runways extending from front to rear of said upright members and secured to said flanges respectively, portions of said forwardly extending flange between said drawer runways being struck inwardly toward said runways and then bent forwardly, whereby to be arranged to carry an anti-friction element slidingly engaging a drawer on the runway, perforations in said rearwardly and forwardly extending walls, two of said upright members of the frames having their upright members channeled portions contiguous and said rearwardly and forwardly extending walls of the respective channeld portions abutted, registering perforations in said rearwardly and forwardly extending walls of contiguous channeled portions, fasteners extending through said registering perforations, and a filler member of non-metallic material snugly received between the two forwardly extending flanges of said two abutted upright members.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 2,905,519 September 22, 1959

Charles S. O'Neil

It is hereby certified that error appears in the printed specification of the above numbered patent requiring correction and that the said Letters Patent should read as corrected below.

Column 5, line 28, for "facting" read -- facing --; line 47, for "definining" read -- defining --; column 6, line 31, for "channeld" read -- channeled --.

Signed and sealed this 29th day of March 1960.

(SEAL)
Attest:

KARL H. AXLINE
Attesting Officer

ROBERT C. WATSON
Commissioner of Patents