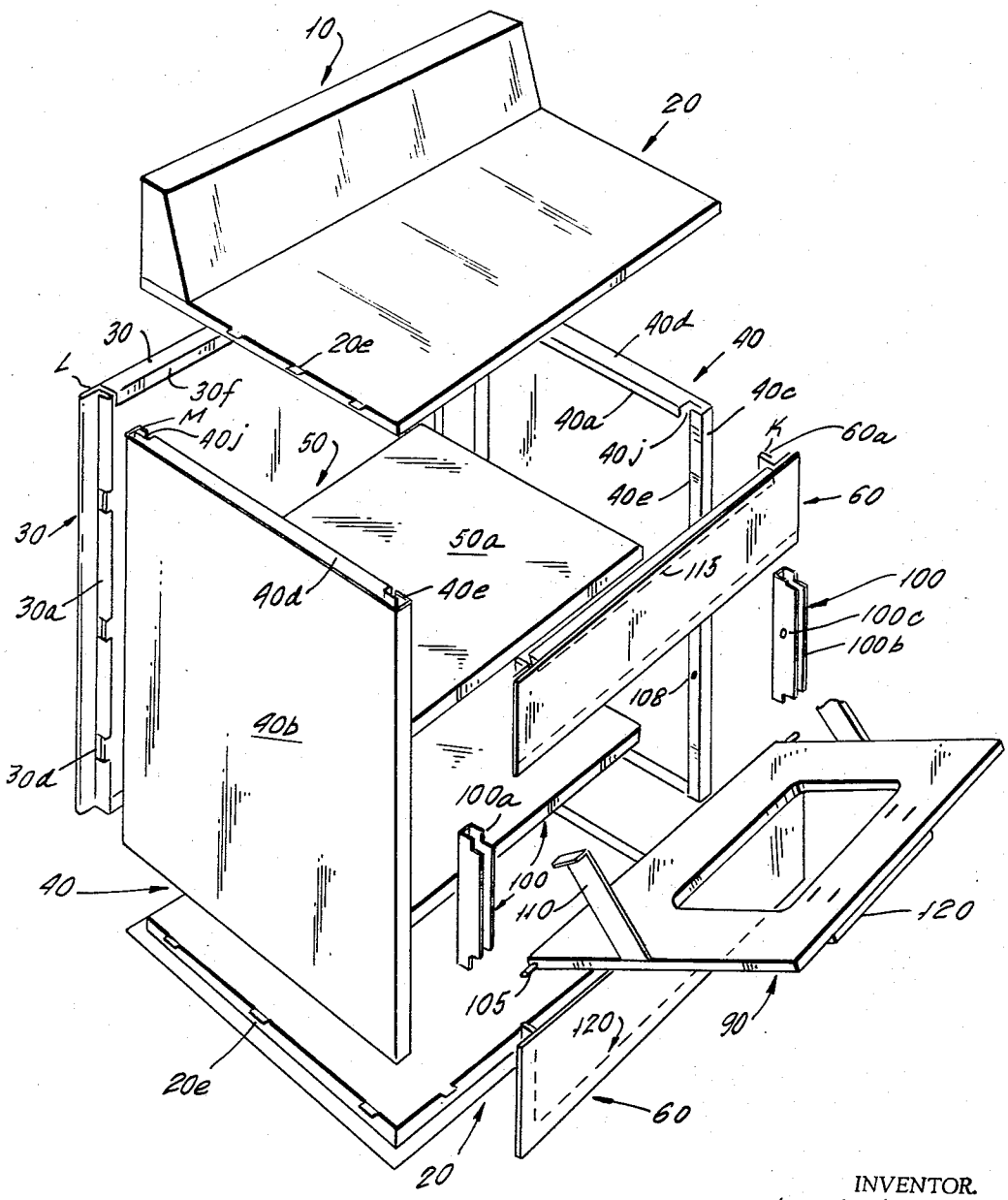
Aug. 29, 1967 J. W. EBSTEIN 3,337,983

TOY APPLIANCE CABINET

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FIG. 1.



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TOY APPLIANCE CABINET

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FIG. 2.

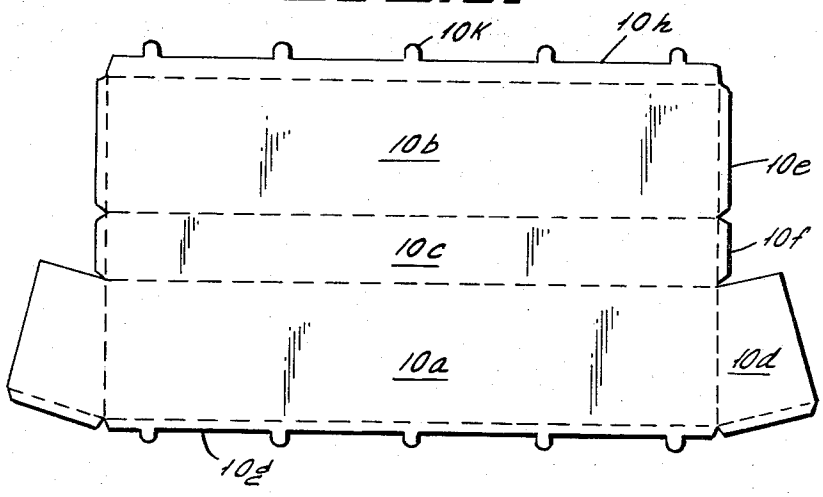


FIG. 4.

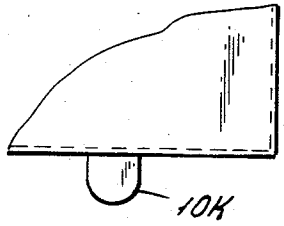


FIG. 3.

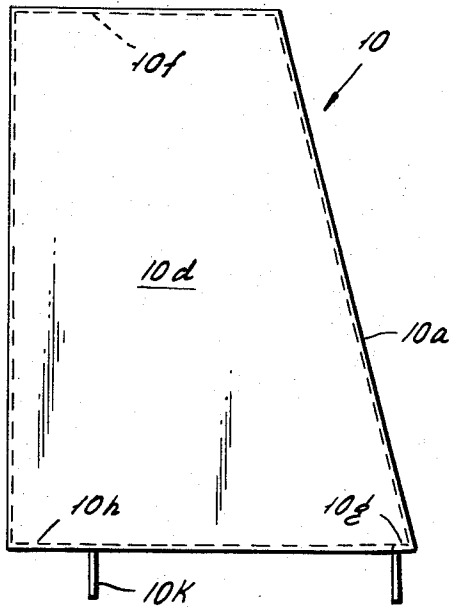
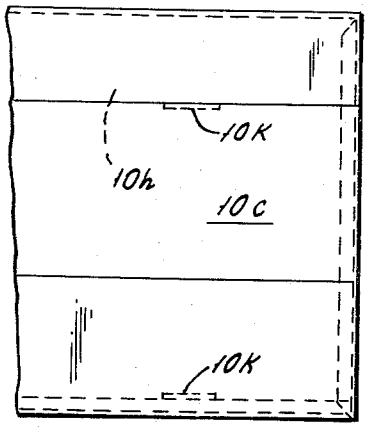


FIG. 5.



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Aug. 29, 1967 J. W. EBSTEIN 3,337,983

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FIG. 7.

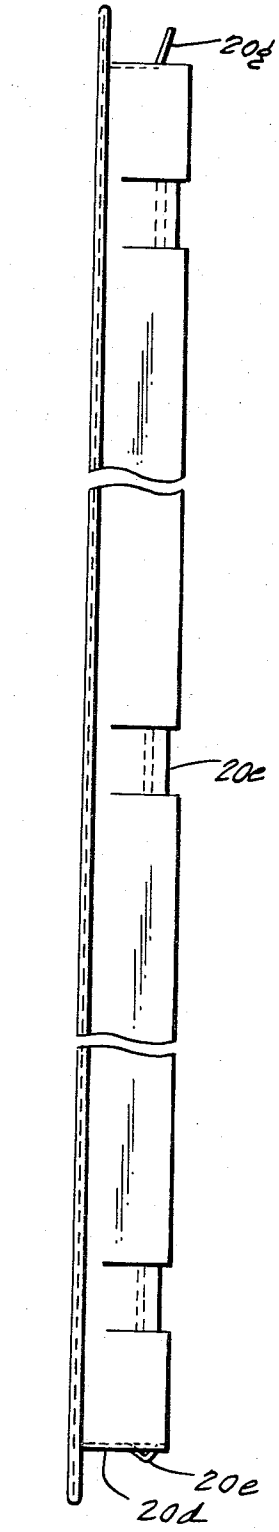


FIG. 6.

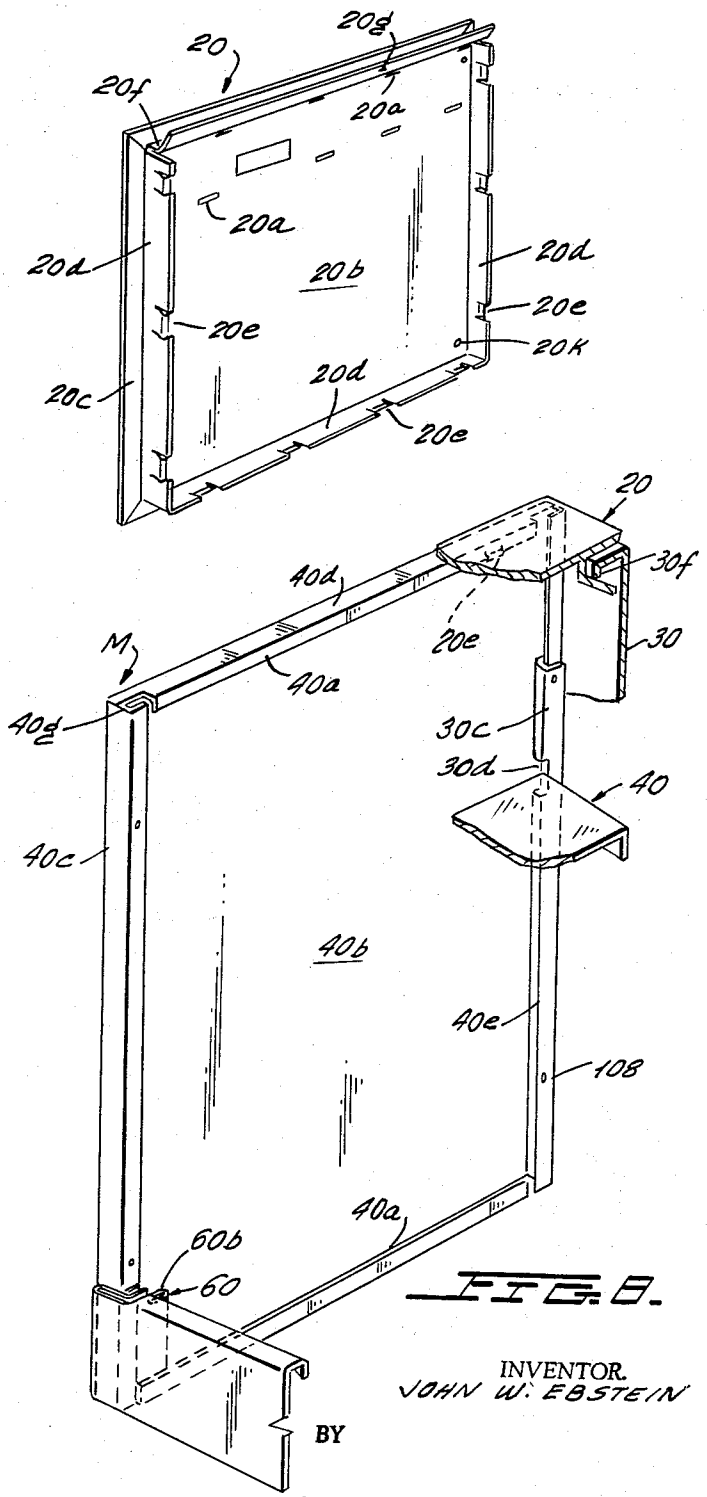


FIG. 8.

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FIG. 8a.

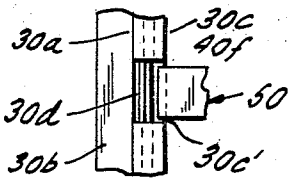


FIG. 9.

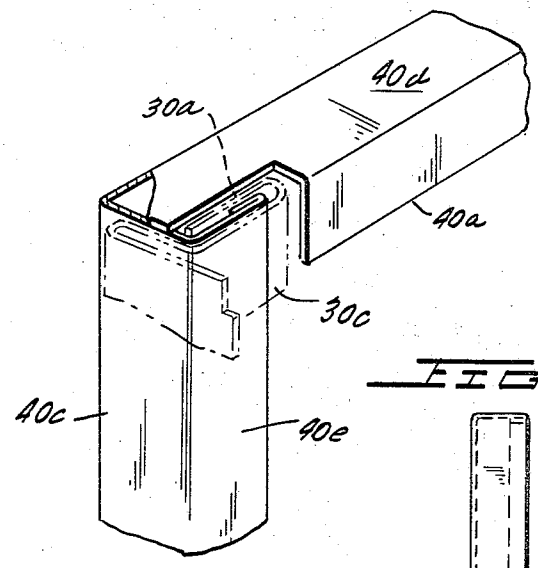


FIG. 10.

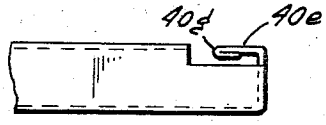


FIG. 13.

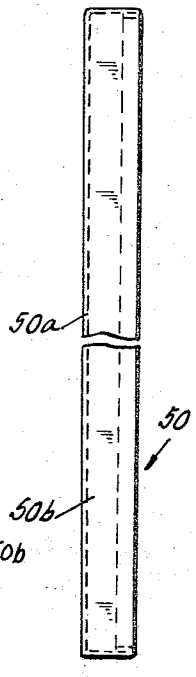


FIG. 11.

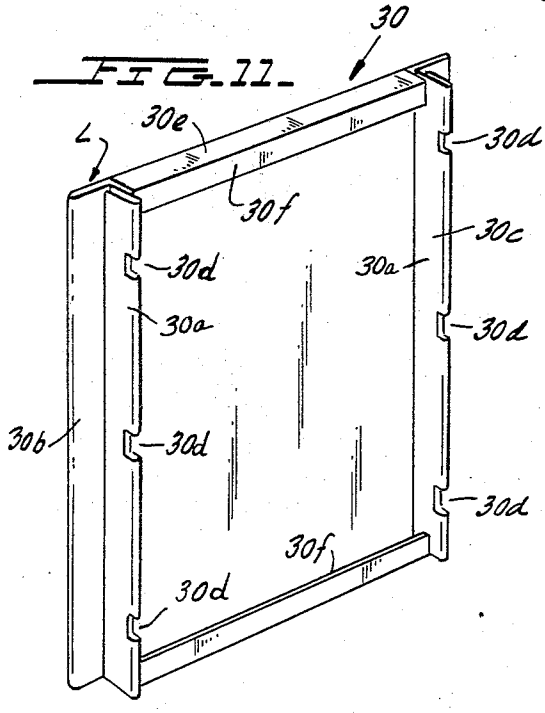
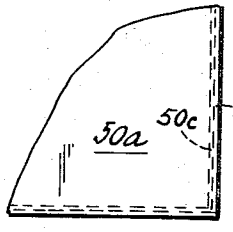


FIG. 14.



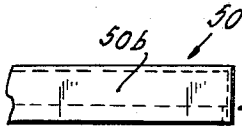
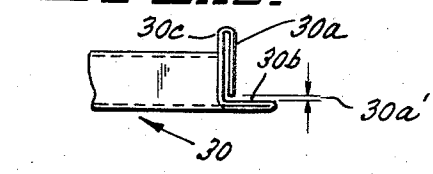


FIG. 15.

FIG. 12.



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FIG. 16.

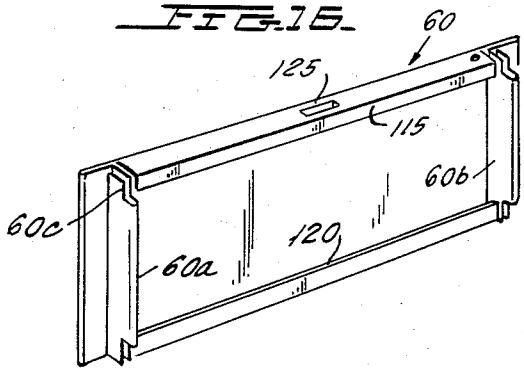


FIG. 17.

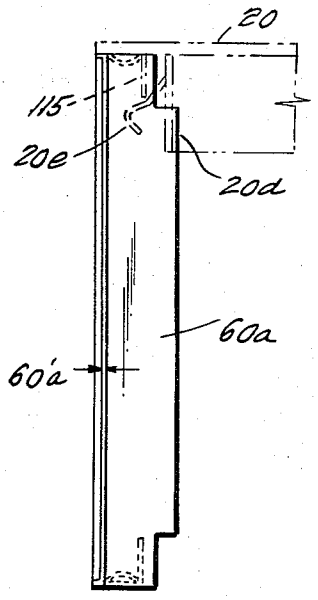


FIG. 18.

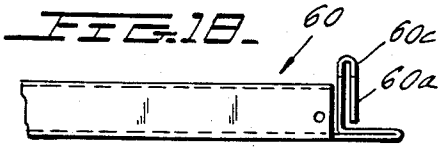


FIG. 19.

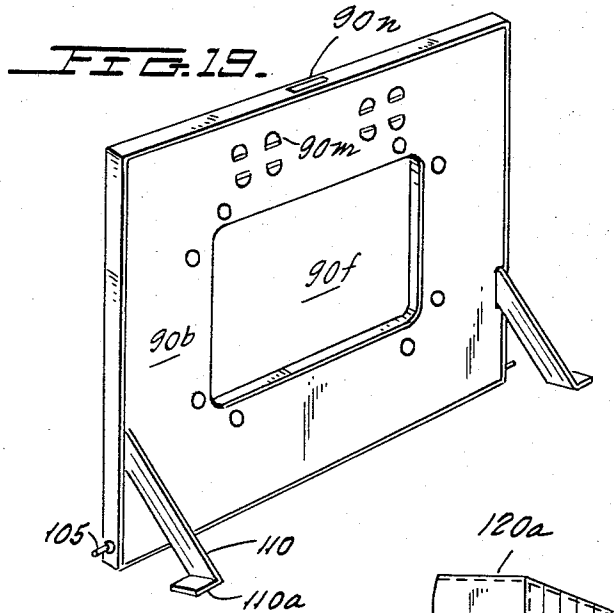


FIG. 23.

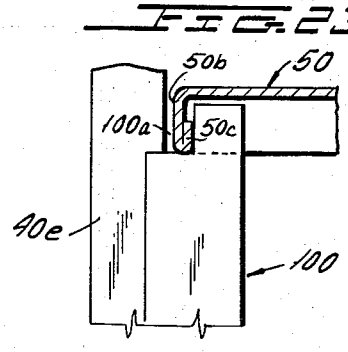


FIG. 22.

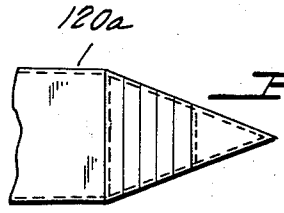
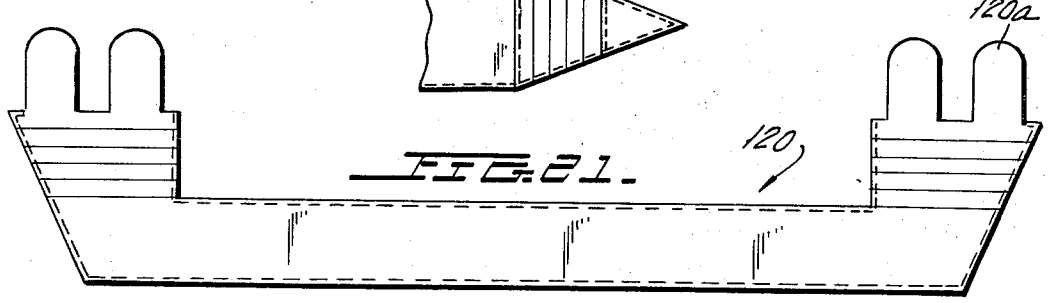


FIG. 21.



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FIG. 20.

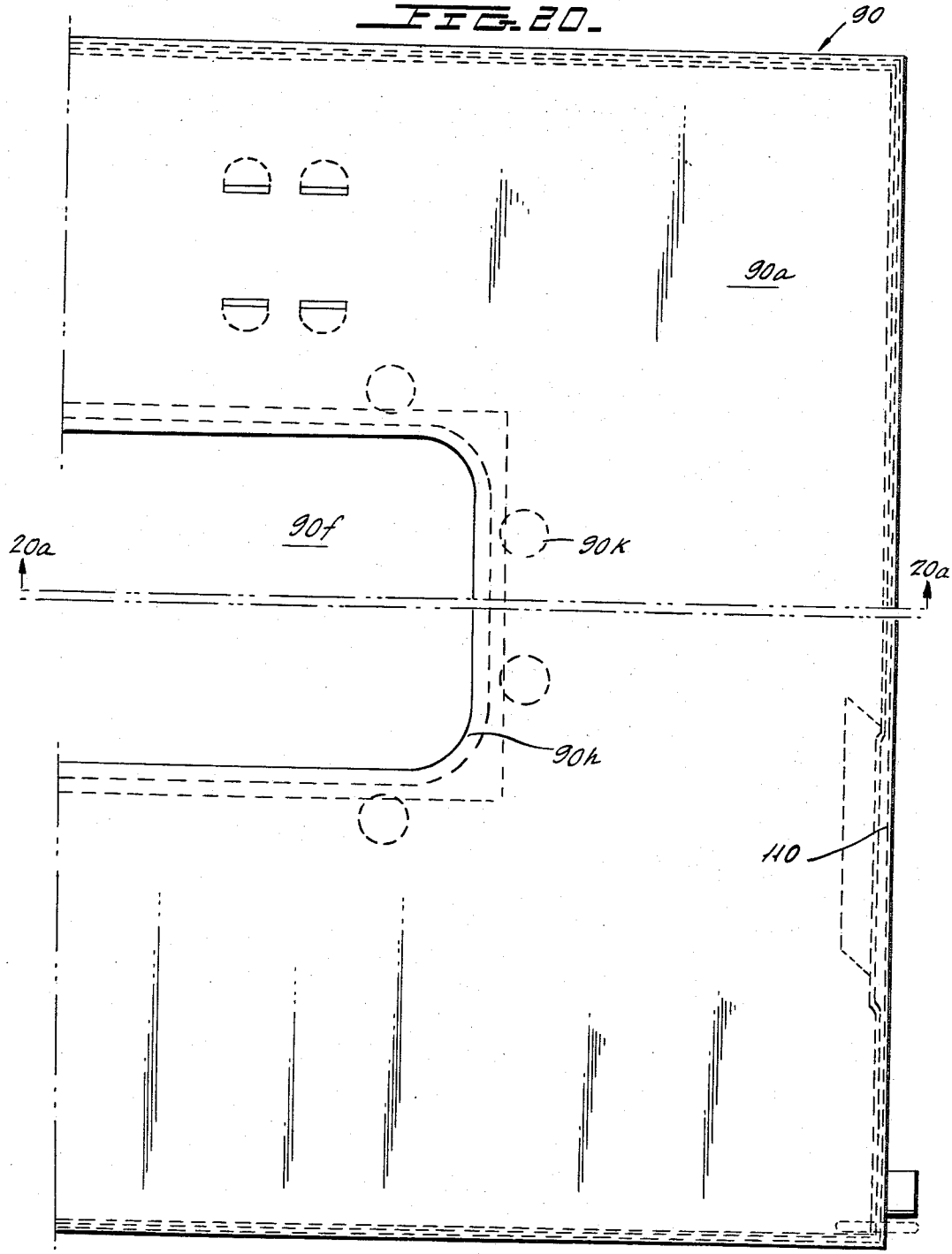
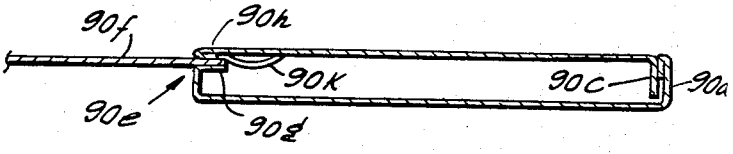


FIG. 20a



United States Patent Office 3,337,983 Patented Aug. 29, 1967

3,337,983

TOY APPLIANCE CABINET

John W. Ebstein, Roslyn Heights, N.Y., assignor to Gabriel Industries Inc., New York, N.Y., a corporation of New York

Filed Feb. 19, 1965, Ser. No. 434,005
5 Claims. (Cl. 46—15)

ABSTRACT OF THE DISCLOSURE

An enclosed toy appliance cabinet comprised of substantially flat panels on all sides and flat shelves within; the cabinet being held together by interlocking tabs and channels, many of which channels are U-shaped.

This invention relates to toys and more particularly to toy kitchen appliances, many of the parts of which simulate actual appliances and which appliances, when assembled, give the appearance of genuine appliances, such as stove ranges, sink cabinets, refrigerators and cabinet combinations.

An object of the invention is to construct a realistic kitchen appliance having a minimum of differing parts commensurate with realism, while at the same time constructing the various parts in an economical and simple manner of sheet metal, wherein assembly is rapid and can be performed by unskilled labor.

Another object of the invention is to provide a toy appliance which is sturdy both in appearance and in actuality and which is so constructed that a child may readily clean all parts of it in imitation of a house cleaning chore.

A further object of the invention is to provide a toy appliance having both play utility and utility for toy storage.

Other objects and features of the invention will be apparent from the description to follow.

Briefly, the invention comprises a toy appliance and cabinet constructed from a plurality of sheet metal components which are readily manufactured on standard equipment, such components being provided with a novel interlocking feature, so that the various panels, shelves, top and bottom elements, and the door, can be assembled with ease to effect a rigid and locked cabinet structure.

A still further object of the invention is to provide a plurality of sheet metal components having specially shaped interlocking edges which will afford a strong structure.

A detailed description of the invention now follows in conjunction with the appended drawings in which:

FIGURE 1 is a perspective view showing the components of a toy appliance (here shown by way of example as a range) in spaced positional relationship to each other.

FIGURE 2 is a plan view of a sheet metal blank from which the dash panel of the appliance is formed.

FIGURE 3 is an end view of the formed dash panel.

FIGURE 4 is an elevation of a corner of the dash panel.

FIGURE 5 is a plan of an end of the dash panel.

FIGURE 6 is a perspective of a component, of which two are used as the top and bottom panels for the cabinet structure of the invention, illustrating an interior view of such component.

FIGURE 7 is an end elevation of the top or bottom panel.

FIGURE 8 is a perspective of a side panel for the cabinet structure, of which two are used, illustrating an interior view.

FIGURE 8*a* shows a shelf support detail in elevation.

FIGURE 9 is a perspective of the corner of a side panel of FIGURE 8, enlarged, and showing the interlocking relationship of another panel therewith.

FIGURE 10 is an end view in plan of a corner of a side panel.

FIGURE 11 is a perspective of the rear panel of the structure, illustrating the interior side.

FIGURE 12 shows a corner end view of the rear panel.

FIGURE 13 is a side end view of one of the shelves, two of which are used.

FIGURE 14 is a corner view in plan of one of the shelves.

FIGURE 15 is a corner view in elevation of one of the shelves.

FIGURE 16 is a perspective of the interior side of one of the front panels, two of which are used.

FIGURE 17 is an end elevation of a front panel showing the relationship therewith of the top panel of the structure.

FIGURE 18 is a plan view of a corner of a front panel showing the relationship of a shelf supporting post fastened thereto.

FIGURE 19 is a perspective of the door for the cabinet structure, illustrating the rear side thereof.

FIGURE 20 is an elevation of one side of the door front, broken centrally to show the cross sections of the components at that portion.

FIGURE 20*a* is a cross-sectional view along lines **20***a*—**20***a* of FIGURE 20.

FIGURE 21 is a plan view of a handle which may be used for the door; and

FIGURE 22 is an end view of the handle.

FIGURE 23 is a detail in elevation showing the end view of a shelf support post and a shelf edge disposed for support thereby.

Referring now to FIGURE 1, the invention shown in spaced perspective will be seen to comprise simulated elements such as splash panel **10**, top and bottom panels **20**, a back panel **30**, side panels **40**, upper and lower shelf panels **50**, upper and lower front panels **60**, and a hinged door **90**.

The side panels are of identical construction and are interchangeable, and the shelves likewise are of identical construction and are interchangeable. Also, the top and bottom panels are identical and interchangeable and the upper and lower front panels are identical and interchangeable. By providing such identity of components and interchangeability it will be apparent that a minimum of tooling costs is required for production of the toy.

The mode of assembly of the various vertical panels is by means of interlocking joints such as J, K, L and M, as generally designated on FIGURE 1, but which will be explained in detail hereinbelow.

FIGURE 1 also shows U-shaped posts **100** bent of sheet metal which will be understood to be assembled internally of the cabinet structure, fastening to front flanges of the side panels for support of the front edges of the shelves, as later described. The door **90** is provided with hinge pins **105** which will be understood to enter holes respectively **108** formed in the edge structure of the side panels, and the door is further provided with side bracket pieces, such as **110**, for maintaining the door in a predetermined open position.

Referring now to FIGURES 2, 3, 4 and 5, the details of the dash panel are shown and it will be seen from FIGURE 2 that this component is made from a single blank of sheet metal comprising a sloping front panel **10***a* and a sloping rear panel **10***b*, a top panel **10***c*, wing panels **10***d*, edge flaps **10***e* and **10***f* at the sides and edge flaps **10***g* and **10***h* at the front and rear, the latter flaps being provided with securing tabs such as **10***k* in spaced array. A box-like structure can thus be formed by bending the several panels and flaps on the dashed lines of FIGURE 2. The tabs are for securing the dash panel to the top panel **20** by passing the tabs through respective slots.

such as **20***a*, as shown in FIGURE 6 and for being bent on the inner side of the top panel in a well-known manner.

FIGURE 6 shows in perspective the top or bottom panel **20**, two such panels being required for the overall assembly. This panel is made from a single blank (not shown) having a main panel **20***b*, the edges of which are folded marginally to overlay the perimeter of the main panel, so as to form marginal reenforcements **20***c*. Bent normally from the marginal reenforcements **20***c* at three side edges of the construction are flanges **20***d*. Such flanges are for purposes of connection to the side panels **40** and have outwardly bent clips **20***e* stamped from the flange material. The rear edge of the panels **20** are provided with a bent flange **20***f* which terminates in a further bent flange **20***g*, the edge of bent flange **20***g* being resiliently engageable with the respective inner flange **30***f* of the rear panel **30** when the panels **20** are assembled in upper and lower positions.

The clips **20***e* are engageable with the upper edges of the flanges **40***a* (FIGURE 8) at the upper and lower edges of the side panels for connection of the upper and lower panels to the side panels, and engageable in the same way with respective edges **115** and **120** (FIGURES 1, 16, 17) of the front panels **60**. If desired, one of the panels **20** can be provided with holes such as **20***k* (FIGURE 6) for attachment of foot pieces or casters. Such panel would, of course, be used as the bottom panel.

The construction of the side panels **40** is shown in FIGURES 8 and 9 wherein FIGURE 8 is a perspective illustrating the general relationship of the main panel **40***b* having respective side and top flanges **40***c* and **40***d* bent normal thereto at each edge and vertical securing flanges **40***e* bent normal from respective support flanges **40***c* and parallel to and spaced from the main panel **40***b*. The horizontal flanges **40***a* are bent from the edges of respective top and bottom edge flanges so as to be parallel to and spaced from main panel **40***b*. Each flange **40***e* is provided with a pair of spaced holes **108** (FIGURE 8), into which the door pins **105** (FIGURE 1) for hinging the door protrude. The purpose of providing a pair of such holes **108** for each of the flanges **40***e* is to simplify assembly so that a side panel may be mounted without regard to which of the ends bearing flange **40***a* is the upper or lower end. The flanges **40***d* are corner-notched at **40***g* (FIGURES 1, 8, 9), so as to provide for entry of the side flanges **30***a* of the rear panel **30** and of the side flanges **60***a* (FIGURES 8 and 16) of the upper and lower front panels for interlocking coaction with the side panels, thus effecting the interlocking construction at edges J, K, and L, M, as indicated in FIGURE 1. It will be understood that the other corner edges of the cabinet structure are similarly interlocked. The interlocking relationship will be appreciated upon comparison of FIGURES 8, 9, 10 and 12, and particularly of FIGURES 8 and 9, wherein flanges **40***e* are shown as being gripped in the U-shaped locking channel structures effected by flanges **30***a*–**30***c*, **60***a*–**60***b*. The gaps **30***a*′ (FIGURE 12) and **60***a*′ (FIGURE 17) permit telescopic sliding entry of the edges of flanges **40***e* into the locking channels, such gaps being between the edges of a flange of each channel and their respective main panel.

The notch **40***g* shown in FIGURE 9 is considerably exaggerated as compared with the more practical spacing illustrated in FIGURE 10. Thus, the upper end of flange **30***a* shown in phantom in FIGURE 9 as being located in the notch **40***g* would not have the loose spacing as depicted for purposes of illustration in FIGURE 9. A more realistic view of the upper end of channel **30***a* is shown in the end view of rear panel **30**, FIGURE 12. Flange **30***c* which extends normally from respective margin reenforcing flange **30***b* will be seen to be provided with spaced notches **30***d*, also cut through respective flanges **30***a*. The notches support (FIGURE 8*a*) the rear edges of the shelves **50** on the notch edges **30***c*′ formed in flanges **30***c*.

The top and bottom edges of the rear panel **30** are provided with flanges **30***e* from which are bent respective flanges **30***f* parallel to the main plane of the panel. The flanges **30***f* coact with the bottom panel **20** in that the flanges **20***g* (FIGURE 6) engage over the edge of respective flange **30***f* of FIGURE 11, in the manner shown in FIGURE 8.

It will be noted that the back panel **30** has complete symmetry of notching so that it may be assembled right side up or upside down (FIGURE 11).

The shelves **50** are of extremely simple construction as shown in FIGURES 13, 14, 15 and 23 in that the main panel **50***a* has perpendicular peripheral flanges **50***b* with turned-in edge flanges **50***c*. The construction will be readily apparent to those skilled in the art and the mode of securing the upper and lower shelves within the cabinet structure is by means of inserting the rear edges adjacent their corners within the notches **30***d* of the back panel as hereinabove described. Accordingly, the upper shelf would be supported at its rear in the upper notches **30***d*, while the lower shelf would be supported in what is shown as the centrally located notches **30***d* of FIGURE 11. The lowermost notches **30***d* are then not used. Thus, the rear panel may be assembled in position either right side up or upside down.

The front edge at each side of the upper shelf **50** is supported in a notch **100***a* (FIGURE 23) formed by attachment of the notched channel shaped posts **100** (FIGURE 1) to the side flanges at the front of the side panels. Thus, leg **100***b* is slid inside flange **40***e*, at each side of the cabinet structure and is held in place by hinge pins **105** passing through holes **100***c* into holes **108**.

The front edge of each side of the lower shelf is supported in notches **60***c* cut in flanges **60***a* and **60***b* of the lower front panel, FIGURE 16. The shelves **50** are of a width to substantially extend from side panel to side panel transversely, and from front to rear panels in cabinet depth, taking into account the space required by the vertical flanges of such panels. Notches **60***c* are provided at both ends of flanges, **60***a* and **60***b*, so that the front panels can be placed without regard to their top or bottom.

The front panels **60** are maintained in place by interlocking with the flanges **40***e* (FIGURE 8 shows lower front panel) at the front edges of the side panels **40** in a manner similar to that illustrated in FIGURE 9 for the interlocking of the rear panel with the side panels, by gripping of the flange **40***e* at respective sides. Thus, the front panels are locked by frictional grip of the respective flanges **40***e* between flanges **60***a* and **60***b*.

FIGURE 19 shows an inside perspective view of the door **90** which in conjunction with FIGURES 20 and 20*a* will be seen to comprise an outside panel **90***a* and an inside panel **90***b*. The panels have perpendicular edge flanges of such dimension that the flanges **90**C of the inside panel can be telescoped with tight fit inside the outside panel flanges **90***d* to be securely held therein. The central area of the door is cut out through both panels to form a window **90***e* and a plastic or glass plate **90***f* is inserted in this window, to be gripped by internal marginal flange **90***g* of the outer panel and a doubled thickness margin **90***h* of the inner panel. Spacedly disposed about the periphery of the door are dimples **90***k* which serve to locate the pane and prevent it from sliding.

The door is secured by means of pivot pins **105** in holes **108** of flanges **40***f* (FIGURE 1) for pivotal action, as heretofore described. Secured to the sides of the door are brackets **110** stamped of sheet metal and suitably fastened between the edge flanges of the inner and outer panels of the door. The brackets have bent ends **110***a* to abut the edges of flanges **40***e* (FIGURES 1 and 8), to hold the door at any convenient predetermined open position. Slots **90***m* are provided to take tabs **120***a* of a handle **120** (FIGURES 21 and 22) which may be formed of sheet metal and a latch member **90***n* (FIGURE 19) may be provided to latch into a slot such as slot **125** in

a horizontal flange of the adjacent front panel, FIGURE 16. Such slots are provided for the upper and lower flanges, so that the front panels may be mounted interchangeably top for bottom.

The mode of assembly of the cabinet construction for the toy appliance will be obvious from the description of the components hereinabove. Thus, the splash panel **10** is formed and applied to the top panel **20** by means of the tabs **10***k*. The rear panel **30** is telescoped endwise with respect to the side panels **40**, the latter being held parallel to each other as shown in FIGURE 1, so that the locking channels grip respective flanges **40***e* of the side panels at each rear corner thereof. This is readily accomplished by virtue of the notches **40***g*, the U-shaped channels effected by flanges **30***a* and **30***c* effecting a tight grip on flanges **40***e*. A strong connection of these several panels at their corners is thus assured.

The front panels may then be slid into position with tight interlocking relationship of each U-shaped channel effected by flanges **60***a* and **60***b* gripping respective flanges **40***e* at the respective front edges of the side panels. Posts **100** are then positioned with flanges **100***b* inside flanges **40***e* and holes **100***c* aligned with holes **108**. The shelves may then be inserted, posts **100** being held frictionally sufficient for initial support of the upper shelf.

The door **90** with handle attached may be fitted into position at this time with pins **105** in the holes **100***c* and **108**, assuming the pins are of a spring bias type which can be pressed inwardly and then snap into the holes. Otherwise, the door may be initially placed in position by placing posts **100** in position on the side panels and inserting pins **105** in holes **100**c and **108** when the side panels are brought into parallelism. The brackets **110** may be slightly sprung, so that the ears **110***a* are inside the front flanges of the side panels to engage thereagainst. Finally, the top and bottom panels are pressed into place, so that the clips **20***e* grip the respective edges of flanges **40***a* and the angularly inclined flanges engage the edges of flanges **30***f*. The structure is now complete. The same principles of construction may be applied to any toy appliance including stoves, ranges, refrigerators, doll houses, chests, furniture, simulated toy buildings, sink cabinets and cabinets.

Although there has been described a preferred embodiment of this novel invention, many variations and modifications will now be apparent to those skilled in the art. Therefore, this invention is to be limited, not by the specific disclosure herein, but only by the appending claims.

The embodiments of the invention in which an exclusive privilege or property is claimed are defined as follows:

1. A toy enclosure comprising side panels, a rear panel and at least one front panel; said side panels having vertical edges formed with flanges separated from and parallel to respective side panels to form U-shaped channels therewith, said rear panel and said front panel having U-shaped channels disposed adjacent respective vertical edges thereof and comprising spaced flanges perpendicular to respective panels and having one flange of each of said channels with an edge spaced from respective panels to permit said channels to be telescoped over respective flanges of said side panels whereby said last mentioned flanges are gripped in respective channels to form a toy enclosure, a top panel having flanges normal thereto and spaced from the edges thereof, clips extending from said top panel flanges, the upper horizontal edges of said side panels being formed with flanges parallel to respective side panels and having edges engageable by said clips to secure said top panel on the upper edges of said side panels.

2. A toy enclosure as set forth in claim **1**, including another panel identical with said top panel, the lower edges of said side panels being identical with the upper edges thereof whereby said other panel may be applied as a bottom panel to the lower edges of said side panels.

3. A toy enclosure comprising side panels, a rear panel and at least one front panel; said side panels having vertical edges formed with flanges separated from and parallel to respective side panels to form U-shaped channels therewith, said rear panel and said front panel having U-shaped channels disposed adjacent respective vertical edges thereof and comprising spaced flanges perpendicular to respective panels and having one flange of each of said channels with an edge spaced from respective panels to permit said channels to be telescoped over respective flanges of said side panels whereby said last mentioned flanges are gripped in respective channels to form a toy enclosure, the U-shaped channels of said rear panel being provided with spaced notches having edges disposed interiorly of said top enclosure, shelf support posts comprising U-shaped channels having outer flanges disposed in the U-shaped channels of the front vertical edges of said side panels, and a shelf within said toy enclosure having a rear edge supported by interior edges of the notches and a front edge supported by said shelf support posts.

4. A toy enclosure as set forth in claim **3**, including a door panel, said shelf support posts having apertures, said U-shaped channels at the front of said side panels having interior flanges provided with apertures aligned with the apertures of respective shelf support posts, and said door panel having a transversely extending pin at each side extending through the aligned apertures on respective sides of said door panel.

5. A toy enclosure comprising side panels, a rear panel and at least one front panel; said side panels having vertical edges formed with flanges separated from and parallel to respective side panels to form U-shaped channels therewith, said rear panel and said front panel having U-shaped channels disposed adjacent respective vertical edges thereof and comprising spaced flanges perpendicular to respective panels and having one flange of each of said channels with an edge spaced from respective panels to permit said channels to be telescoped over respective flanges of said side panels whereby said last mentioned flanges are gripped in respective channels to form a toy enclosure, a second front panel spaced from said one front panel and identical thereto and disposed in secured arrangement with the vertical edge flanges of said side panels, said side panels being identical and the U-shaped flanges of said front panels being provided with upper and lower notches, and the rear panel being provided with notches in the U-shaped channel thereof, whereby a shelf may be supported at its rear edge within the notches of said rear panel and at its front edge within the notches of the U-shaped channels of one of said front panels.

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UNITED STATES PATENT OFFICE

CERTIFICATE OF CORRECTION

Patent No. 3,337,983 August 29, 1967

John W. Ebstein

It is certified that error appears in the above identified patent and that said Letters Patent are hereby corrected as shown below:

In the heading to the printed specification, line 5, "New York" should read -- Delaware --.

Signed and sealed this 17th day of March 1970.

(SEAL)
Attest:

Edward M. Fletcher, Jr.
Attesting Officer

WILLIAM E. SCHUYLER, JR.
Commissioner of Patents