Sept. 14, 1965 L. M. GILBERT 3,205,594

DISPLAY DEVICE

Filed Oct. 12, 1961 2 Sheets-Sheet 1

FIG_1

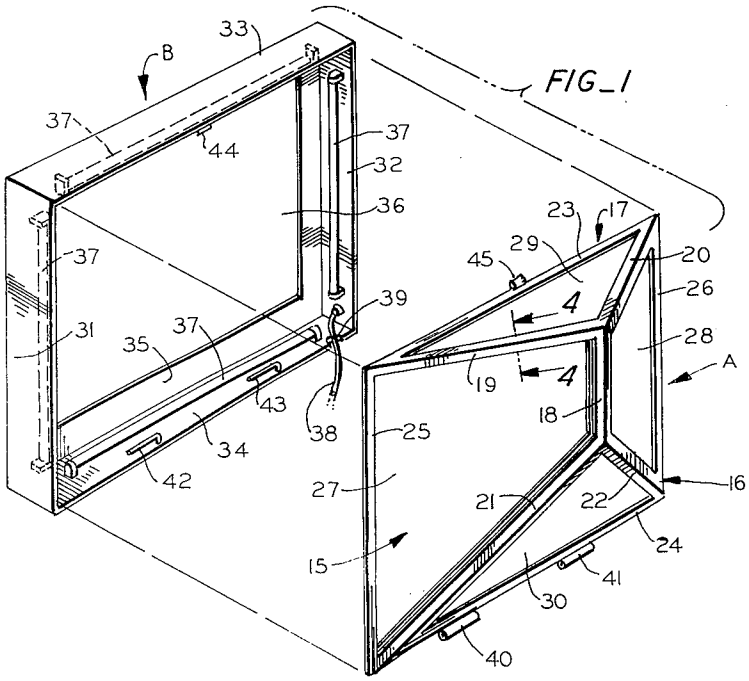


FIG_4

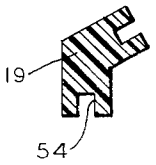


FIG_3

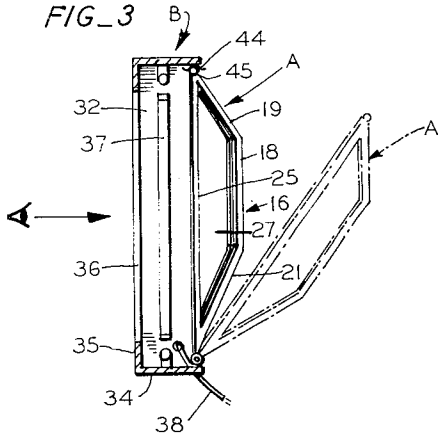


FIG_2

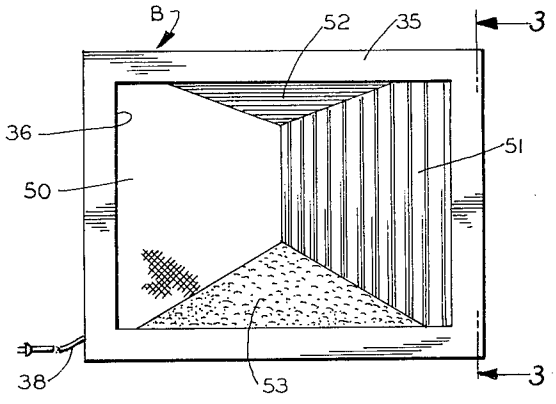
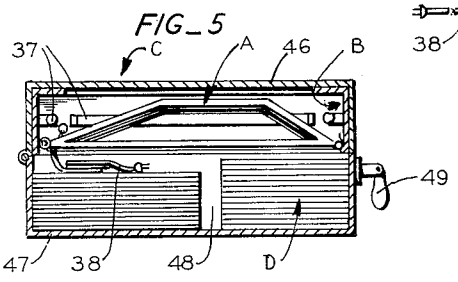


FIG_5



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DISPLAY DEVICE

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FIG_6

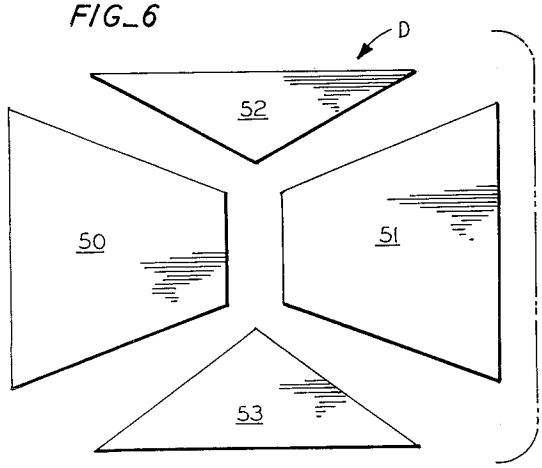


FIG_7

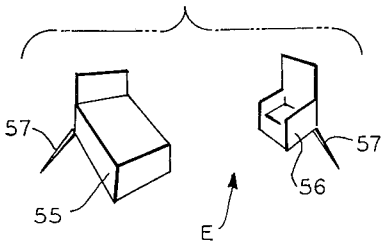


FIG_8

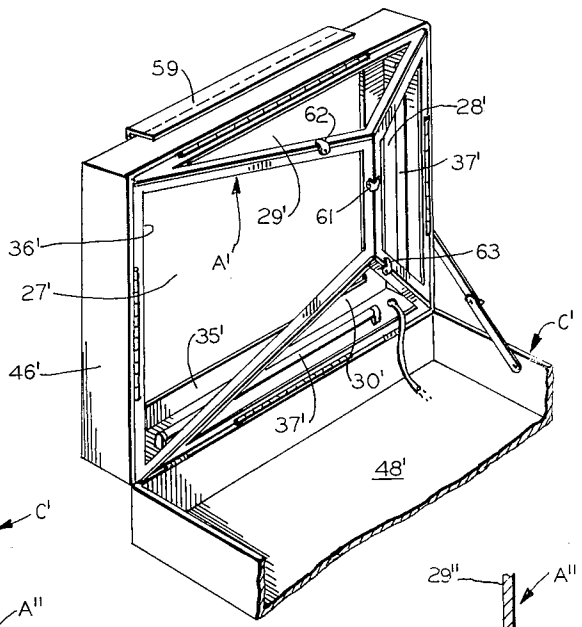


FIG_9

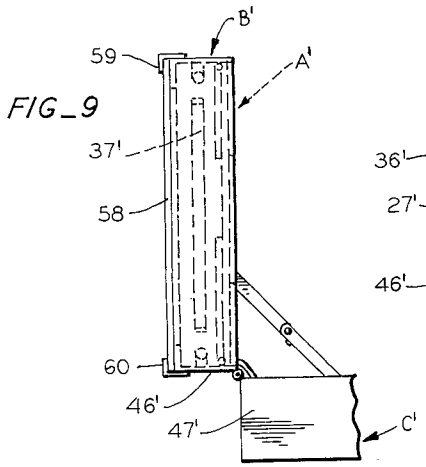
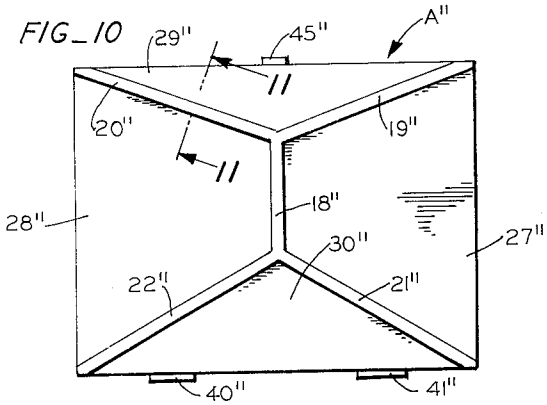


FIG_10



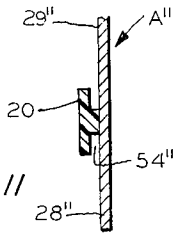


FIG_11

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3,205,594

DISPLAY DEVICE

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Filed Oct. 12, 1961, Ser. No. 144,653
6 Claims. (Cl. 35—53)

This invention relates to a device that permits perspective observation of a simulated room corner portion, and more particularly to a portable display device for demonstrating the placement and arrangement of physical components in a determinate space and for demonstrating background arrangements that afford aesthetic visual impressions. The device has particular utility in simulating in depth the corner portion of a room to permit decor ensembles to be planned therefor by visual observation, but it may be used in other environments; for example, as a child's toy or amusement device.

Considering the device in connection with its utility as a decorator aid, it should first be appreciated that the untrained person has difficulty visualizing a decor ensemble for a room—that is, color and color combinations, material textures and combinations thereof, furniture placement, etc. Consequently, it is usual for decorators and sales persons to provide cloth and color samples that may be grouped together to permit some idea to be obtained of a decor ensemble that is being suggested. Sampling systems of such type though used extensively are in no sense satisfactory for they do not permit the viewer a perspective observation of an ensemble as it actually will exist, and he must still translate his impressions by mental visualization into a complete decor ensemble.

Accordingly, an object of the present invention is to provide a device that permits perspective observation of a simulated room corner portion so that realistic room arrangements can be viewed. Another object of the present invention is the provision of a display device which simulates in depth the corner portion of a room and will permit decor ensembles for such room to be planned by visual observation. Still another object is that of providing a device which permits decor ensembles to be readily changed from one to another, both as to background color and texture and as to the placement and arrangement of furniture and other articles in the room. A further object is to provide a device of the character described that is portable and easily carried from one location to another; and that enables various decor ensembles to be carried conveniently in kit form so that a considerable variety of suggested decor ensembles are available for quick combination and interchange wherever the device is used. Additional objects and advantages of the invention will become apparent as the specification develops.

Illustrative embodiments of the invention are shown in the accompanying drawings, in which:

FIGURE 1 is an exploded persepctive view of the frame and support structure components in one form of the device;

FIGURE 2 is a front plan view of the components illustrated in FIGURE 1 in their assembled condition;

FIGURE 3 is a vertical sectional view taken along the plane 3—3 of FIGURE 2;

FIGURE 4 is a vertical sectional view taken along the plane 4—4 of FIGURE 1;

FIGURE 5 is a longitudinal sectional view of a portable device embodying the components illustrated in FIGURES 1 through 3;

FIGURE 6 is a front view in elevation of a group of typical display panels which are used with the device to provide a decor ensemble;

FIGURE 7 is a perspective view of articles that may be variously placed in illustrating a decor ensemble;

FIGURE 8 is a broken perspective view showing a modified device embodying the invention;

FIGURE 9 is a broken side view in elevation of the structure shown in FIGURE 8;

FIGURE 10 is a front plan view in elevation of a modified support structure component which may be used with either of the structural embodiments generally shown in FIGURES 5 and 8; and

FIGURE 11 is a transverse sectional view taken along the plane 11—11 of FIGURE 10.

The structural embodiment of the invention illustrated in FIGURES 1 through 7 comprises in general a support structure A, a frame B, a container C, a group of panels designated in their entirety with the letter D, and a plurality of articles E. The support structure A has a viewing side **15** and a rear side **16**, and comprises a framework **17**, preferably formed from a transparent material such as Plexiglas, and is made up of individual elements oriented to simulate the lines of mergence of the ceiling, floor, and adjacent two walls of the corner portion of a room. For identification, these elements are denoted with the numerals **18** through **22**, inclusive; and it will be apparent that the element **18** represents the vertical line of mergence of two room walls at a corner defined thereby, the elements **19** and **20** represent the respective lines of mergence of such two room walls with the ceiling, and the elements **21** and **22** respectively represent the lines of mergence of the same two room walls with the floor.

The elements **19** and **20** are connected to the element **18**, as are the two elements **21** and **22**; and each of the "ceiling-representing" and "floor-representing" elements are connected to the framework **17** which has a generally rectangular configuration and includes a pair of vertically spaced and substantially parallel members **23** and **24** and a pair of horizontally spaced, substantially parallel members **25** and **26**. Thus, the support structure A defines a plurality of individual segments respectively simulating elements of a room corner portion; and more particularly, the elements **18**, **19**, **21** and **25** define one wall, the elements **18**, **20**, **22** and **26** define another room wall, the elements **19**, **20**, **22** and **26** define another room wall, the elements **19**, **20**, and **23** define the room ceiling, and the elements **21**, **22**, and **24** form the floor of the room. For convenience, the wall segments (each of which has a trapezoidal configuration) are respectively designated with the numerals **27** and **28**, and the ceiling and floor segments (each of which has a triangular configuration) are respectively designated with the numerals **29** and **30**.

The frame B in the structure shown has a generally rectangular configuration defined by side members **31** and **32** and by top and bottom members **33** and **34**. These members are respectively secured to those adjacent thereto, and may be integral therewith. The frame B also provides a face **35** extending thereacross having an enlarged, generally rectangular opening **36** which is used to view the support structure A there-through, and more especially a decor ensemble carried thereby. The face **35** is secured to the various elements **31** through **34**, and may be formed integrally therewith. Mounted within the frame B behind the perimetric edge portions of the face **35** so as to be generally concealed thereby are one or more lights **37** which are preferably daylight fluorescent bulbs. Suitable conductors (not shown) electrically connect each of the lights **37** with a plug-equipped lead line **38** that may be connected to a suitable convenience outlet for energizing the lights **37**. If desired, the frame member **34** may have a recess **39** formed therein to permit the lead line **38** to enter the interior of the frame without disturbing the support structure A.

The support structure A is adapted to be removably mounted within the frame B, and also to be hingedly related thereto for swinging movement between a viewing position and an outward position. Both of these functions are accomplished in the present device by equipping the support structure element **24** with a pair of spaced apart hinges **40** and **41** of tubular construction which are respectively adapted to slidably and rotatably receive therein a pair of pins **42** and **43** carried by the frame member **34**. It will be apparent that the pins **42** and **43** may be respectively inserted into the tubular hinges **40** and **41** by aligning the same therewith, and then displacing the support structure A along the length of the pins to telescope the same into the hinges. Thereafter, the support structure A may be swung between a viewing position shown by full lines in FIGURE 3, and an outward position which is shown by broken lines in the same figure. It should also be noted that the support structure A is reversibly mountable within the frame B—one of the positions (as shown in FIGURE 3) being for viewing, and the other (which is shown in FIGURE 5) being for storage and transport. Latch means may be employed to secure the support structure A in its viewing position within the frame B, and such latch means may be of any suitable form as, for example, the spring clip elements **44** and **45** respectively provided by the frame B and support structure A.

The frame B is removably mountable within the top section **46** of the container C, which is portable and may be in the form of a suitcase. The container is provided with a bottom section **47** hingedly secured to the top section **46**, and the two container sections define a compartment **48** in which the frame B and support structure A are received for storage and transport. The container is equipped with a handle **49** of conventional type, and the sections thereof may be secured in their closed position by conventional latch structure (not shown). The hinges pivotally relating the sections **46** and **47** may be of usual design.

The frame B, as shown most clearly in FIGURE 5, is snugly received within the contained section **46** and may be withdrawn therefrom and replaced therein with a sliding movement when the container is open. Preferably, the support structure A is inverted from the viewing position thereof illustrated in FIGURE 3 into the storage position of FIGURE 5 when stored within the container, so as to free most of the compartment **48** for storage of panels D and articles E. If desired, friction springs or latch structure, etc. may be employed to retain the frame B and support structure A within the upper portion of the compartment **48**, when the container is closed.

Four panels D are illustrated in FIGURE 6, and for convenience they are respectively designated with the numerals **50** through **53**, inclusive. The panels **50** and **51** have a trapezoidal configuration, and form the side walls of a simulated room; while the panels **52** and **53** have a triangular configuration and respectively form the ceiling and floor of such room. The panels are appropriately provided with decor representations, that is, the side wall panels **50** and **51** may be painted, provided with wallpaper or other wall textures, may have draperies therealong, etc. Similarly, the ceiling panel **52** will be colored, textured or otherwise ornamented; and the floor panel **53** will be equipped with suitable floor covering, such as carpet, tile, parquet, etc.

The panels D are removably secured to the support structure A by means of cooperative mounting structure, so that such panels may be readily interchanged individually or as a group with other panels to permit any decor ensemble to be readily changed. In the particular device considered, such cooperative mounting structure includes channels **54** provided by the various elements **19** through **22** of the support structure, and edge portions of the panels which are slidably receivable within such channels. Thus, the ceiling panel **52** is slidable into the channels **54** provided by the elements **19** and **20** that form the lines of mergence of the ceiling and side walls of the simulated room. The panel **53** is slidable into the channels provided by the floor-defining elements **21** and **22**, and the panels **50** and **51** are receivable within the channels provided by the paired elements **19–21** and **20–22**.

FIGURE 2 shows a plurality of panels D appropriately mounted on the support structure A, and it will be apparent that each of the panels is decorated or covered so that they provide as a group a simulated decor ensemble for a room. More particularly, the floor panel **53** is covered with a swatch of carpeting or simulated carpeting of suitable color, design and/or texture, the panel **51** is designed to illustrate a wall covered with draperies, and the side wall panel **50** and ceiling panel **52** are colored or otherwise configurated to define with the other panels a complete decor ensemble for a room.

A great many panels D may be carried within the container C, as shown in FIGURE 5, so that many suggested decor ensembles are available for convenient showing. Additionally, each selected decor may be completed by positioning one or more utilitarian or decorative articles within the simulated room, such as the furniture replicas E shown in FIGURE 7. These articles are equipped with means for removably locating the same within the room, and each may be provided with a pin or nail **57** to pierce the floor panel **53** for the purpose of removably but positively locating the article thereon. It will be apparent that a number of articles may be stored within the compartment **48** along with the panels D. It should be noted that the four panels D are not always necessary to show a complete decor ensemble for a room, and, for example, the floor panel **53** might be omitted and the frame B simply placed upon a suitable floor covering which would then take the place of the panel **53** when the simulated room is observed from the viewing side **15** of the support structure A. In such event, and if desired, the support structure A (or the support structure and frame B) may be tilted to orient the segment **30** in coplanar relationship with such floor covering; or if one of the wall panels is omitted, the device may be tilted to establish a coplanar relationship of the segment **27** (or segment **28**) with the surface that is being substituted for such omitted wall panel.

The modified structure illustrated in FIGURES 8 and 9 is generally similar to the embodiment heretofore described except that the construction of the support structure and frame has been varied slightly. Since the two embodiments are similar, the primed form of the same reference numerals is used wherever practicable to identify corresponding parts and the container in its entirety is denoted C'. It has top and bottom sections **46'** and **47'** hingedly related along one of their corresponding longitudinal edge portions, and the container defines therein a compartment **48'**. The top section **46'** has a large rectangular opening **36'** in the face **35'** thereof, and the opening **36'** is adapted to be selectively opened and closed by a removable cover **58** that is slidably received within a pair of guides or channels **59** and **60** secured to the top section **46'** by any suitable means. It is evident that the cover **58** may be displaced longitudinally along the length of the guides **59** and **60** to selectively cover and uncover the opening **36'**.

The top section **46'** of the container serves the function of the frame B described in connection with the embodiment illustrated in FIGURES 1 through 5, and, therefore, is equipped with one or more lights **37'** that illuminate the interior of the support structure A' which is hingedly secured to the frame-serving top section **46'** of the container. The support structure A' rather than being of unitary construction is segmented and, specifically, comprises four segments **27'**, **28'**, **29'** and **30'** each of which is pivotally secured to the top section **46'** by conventional hinge means. Consequently, each of the

segments is pivotal with respect to the top section 46' of the container and also with respect to each other.

More pointedly, the segments 27' and 28' have a trapezoidal configuration; respectively correspond to the side walls of a simulated room; and are hingedly secured to the top section 46' along opposite transverse edge portions thereof. The segments 29' and 30' are of triangular configuration; respectively correspond to the ceiling and floor of the simulated room; and are hingedly connected to the top section 46' along opposite longitudinal edges thereof.

As a result of this construction, the segments are selectively movable between an extended viewing position which is shown in FIGURE 8 and a collapsed storage position as shown in FIGURE 9. In their storage position, the segments swing into the container section 46' which is desirable since it permits a substantial number of panels D and articles E to be stored within the bottom section 47' of the container. The segments 27' through 30' may be secured to each other when in their viewing position by any conventional latch structure, as for example, the straps 61, 62 and 63 shown in FIGURE 8; and the various elements of the support structure A' are provided with channels, such as the channels 54 shown in FIGURE 4, to detachably secure panels D in position thereon.

A further modification of the device is shown in FIGURES 10 and 11, and though similar to the structural embodiments heretofore described, differs therefrom in that the support structure A'' has a generally planar configuration rather than being of pentahedral form as is the case with the support structure A and structure A' in its viewing position. The support structure A'' is divided into four segments 27'', 28'', 29'' and 30''—the first two being of trapezoidal configuration and corresponding to side walls of a simulated room and the latter two being of triangular configuration and respectively corresponding to the ceiling and floor of such room. The perimeters of these segments are defined in part by the elements 18'' through 22'' and, as shown in FIGURE 11, these elements form channels 54'' which serve to slidably receive therein edge portions of the panels D to removably secure the same to the support structure.

The support structure A'' may be used in connection with either of the containers C or C' and may be pivotally secured thereto by appropriate hinge elements such as the tubular hinges 40'' and 41'' which are adapted to telescopically receive the hinge pins 42 and 43 shown in FIGURE 1. Thus, the support structure is pivotal between a viewing position in which it is substantially parallel to the plane of the face 35 of the frame B and a position outwardly therefrom in which the panels D are readily interchanged. Latch means 45'' may be used to secure the support structure in the viewing position thereof.

Since the device is quite portable and affords accessible storage space for a substantial number of panels D, it is readily usable as a home demonstrator although it certainly may be used permanently at one location. In any of its forms, the device enables perspective observation of a simulated room, and, therefore, a realistic visual impression can be obtained of any suggested decor ensemble. Additionally, any such ensemble may be altered significantly by changing one or more of the panels D or may be changed in its entirely by replacing all of the panels with another group thereof.

The panels D may be painted, covered, or otherwise decorated to provide various aesthetic impressions and the ready interchange and substitution of panels affords an infinite variety of decor combinations that can be observed in depth to give a realistic visual impression. Variant arrangements may be employed to achieve the substitution of one panel for another. For example, a plurality of wall panels 50 could be arranged as an elongated strip, preferably flexible and coiled upon a spool, and the strip could be moved across the support structure segment 28 to successively position each panel 50 in juxtaposition therewith. Similar strip arrangements could be used in connection with each of the panels 51, 52 and 53; and each decor ensemble could be altered or replaced by moving one or more of the strips to change the panels therealong. An arrangement of this type would lend itself to an automatic operation in which the various strips and spools could be connected to a drive assembly that would be manually or sequentially actuated to successively change the decor ensembles being viewed. Also, the panels could be grouped on rotatable discs which would be manually or automatically rotated to successively position the various panels in alignment with the corresponding support structure segments.

The transparency of the support structures; or at least the various elements 19, 20, etc., thereof; contributes to the aesthetic representation of a room decor ensemble in that the colors, textures, etc. respectively corresponding to the various room walls (ceiling, floor and side walls) appear in contiguous relation as is the case in an actual room.

While in the foregoing specification, specific embodiments of the invention have been described in detail for purposes of making a complete disclosure thereof, it will be apparent to those skilled in the art that various changes may be made in such details without departing from the spirit and principles of the invention.

I claim:

1. A portable demonstration and display device for simulating in depth the corner portion of a room to permit a decor ensemble for such room to be planned by visual observation of one or more trial ensembles, comprising a handle-equipped container having a pair of hingedly connected top and bottom sections selectively movable between open and closed positions and defining a compartment therewithin, a frame removably mounted within said top section and defining an opening through which such ensemble is viewed, a three-dimensional support structure secured to said frame and having a viewing side and providing a plurality of segments respectively corresponding to the planes of the two vertical walls and the floor and ceiling walls of such room, the planes of said segments which correspond to such vertical walls converging inwardly and rearwardly to meet at a generally central location a spaced distance rearwardly from said viewing side to define such corner portion and the planes of said segments which corresponds to such floor and ceiling walls also converging inwardly and rearwardly, a plurality of panels respectively corresponding to at least certain of said ceiling, floor and vertical walls and together defining a decor ensemble, said support structure and panels being provided with cooperative mounting means for removal and selectively securing each of said panels to said support structure in the appropriate floor-, ceiling-, and wall-simulating positions thereon to permit any particular decor ensemble to be altered by interchanging one or more of said panels with one or more like panels having different decor characteristics, each of said segments and panels corresponding to the aforesaid two vertical walls having a trapezoidal configuration and each of said segments and panels corresponding to the aforesaid floor and ceiling walls having a triangular configuration, whereby light directed through said viewing side toward an observer is reflected from all such panels at angles of less than 90°, said frame and support structure being bodily removable from said container top section for viewing such ensembles and being replaced in said top section for storage and transport, said compartment being adapted to carry a substantial number of said panels to provide convenient access thereto.

2. In a display device for simulating in depth a corner portion of a room to permit a decor ensemble for such room to be planned by visual observation of one or more trial ensembles, a three-dimensional support structure having a viewing side and providing a plurality of seg-

ments respectively corresponding to the planes of the two vertical walls and the floor and ceiling walls of such room, the planes of said segments which correspond to such vertical walls convering inwardly and rearwardly to meet at a generally central location a spaced distance rearwardly from said viewing side to define such corner portion and the planes of said segments which correspond to such floor and ceiling walls also converging inwardly and rearwardly, a plurality of panels respectively corresponding to at least a certain of said ceiling, floor and vertical walls and together defining at least a part of a decor ensemble, said support structure and panels being provided with cooperative mounting means for selectively securing each of said panels to and removing the same from said support structure in the appropriate floor-, ceiling-, and wall-simulating positions thereon to permit any particular decor ensemble to be altered by interchanging one or more of said panels with one or more like panels having different decor characteristics, each of said segments corresponding to the aforesaid two vertical walls having a trapezoidal configuration and each of said segments corresponding to the aforesaid floor and ceiling walls having a triangular configuration, whereby light directed through said viewing side toward an observer is reflected from all such panels at angles of less than 90°, a frame defining said viewing side, said support structure being hingedly secured to said frame for swinging movements between the viewing position and an outward position for interchanging said panels, and latch means for releasably securing said frame and support structure in the viewing position of the latter.

3. The display device of claim 2 in which said support structure is a relatively rigid component defining a pentahedral configuration.

4. The display device of claim 2 in which said support structure comprises a plurality of individual segments rerepectively corresponding to the ceiling, floor and two vertical walls of such room, each of said segments being hingedly secured to said frame for swinging movements that include a viewing position in which said support structure defines a pentahedral configuration extending rearwardly from said viewing side and a release position for interchanging said panels.

5. In a display device for simulating in depth a corner portion of a room to permit a decor ensemble for such room to be planned by visual observation of one or more trial ensembles, a three-dimensional support structure having a viewing side and providing a plurality of segments respectively corresponding to the planes of the two vertical walls and the floor and ceiling walls of such room, the planes of said segments which correspond to such vertical walls converging inwardly and rearwardly to meet at a generally central location a spaced distance rearwardly from said viewing side to define such corner portion and the planes of said segments which correspond to such floor and ceiling walls also converging inwardly and rearwardly, a plurality of panels respectively corresponding to at least certain of said ceiling, floor and vertical walls and together defining at least a part of a decor ensemble, said support structure and panels being provided with cooperative mounting means for selectively securing each of said panels to and removing the same from said support structure in the appropriate floor-, ceiling-, and wall-simulating positions thereon to permit any particular decor ensemble to be altered by interchanging one or more of said panels with one or more like panels having different decor characteristics, each of said segments corresponding to the aforesaid two vertical walls having a trapezoidal configuration and each of said segments corresponding to the aforesaid floor and ceiling walls having a triangular configuration, whereby light directed through said viewing side toward an observer is reflected from all such panels at angles of less than 90°, said cooperative mounting means comprising a plurality of elements respectively carried by said support structure and each of said panels, said elements respectively comprising a plurality of paired channels provided by said support structure and a pair of edge portions provided by each panel for slidable receipt within the associated pair of channels.

6. In a display device for simulating in depth a corner portion of a room to permit a decor ensemble for such room to be planned by visual observation of one or more trial ensembles, a three-dimensional support structure having a viewing side and providing a plurality of segments respectively corresponding to the planes of the two vertical walls and the floor and ceiling walls of such room, the planes of said segments which correspond to such vertical walls converging inwardly and rearwardly to meet at a generally central location a spaced distance rearwardly from said viewing side to define such corner portion and the planes of said segments which correspond to such floor and ceiling walls also converging inwardly and rearwardly, a plurality of panels respectively corresponding to at least certain of said ceiling, floor and vertical walls and together defining at least a part of a decor ensemble, mounting means for selectively securing said panels to and removing the same from said support structure in the appropriate floor-, ceiling-, and wall-simulating positions thereon to permit any particular decor ensemble to be altered by interchanging one or more of said panels with one or more like panels having different decor characteristics, each of said segments corresponding to the aforesaid two vertical walls having a trapezoidal configuration and each of said segments corresponding to the aforesaid floor and ceiling walls having a triangular configuration, the disposition and orientation of said panels resulting in light directed outwardly through said viewing side toward an observer being reflected from all such panels at angles of less than 90° relative to the respective planes thereof.

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JEROME SCHNALL, *Primary Examiner.*