Dec. 29, 1936. J. A. GOETHE 2,065,689

DISPLAY DEVICE

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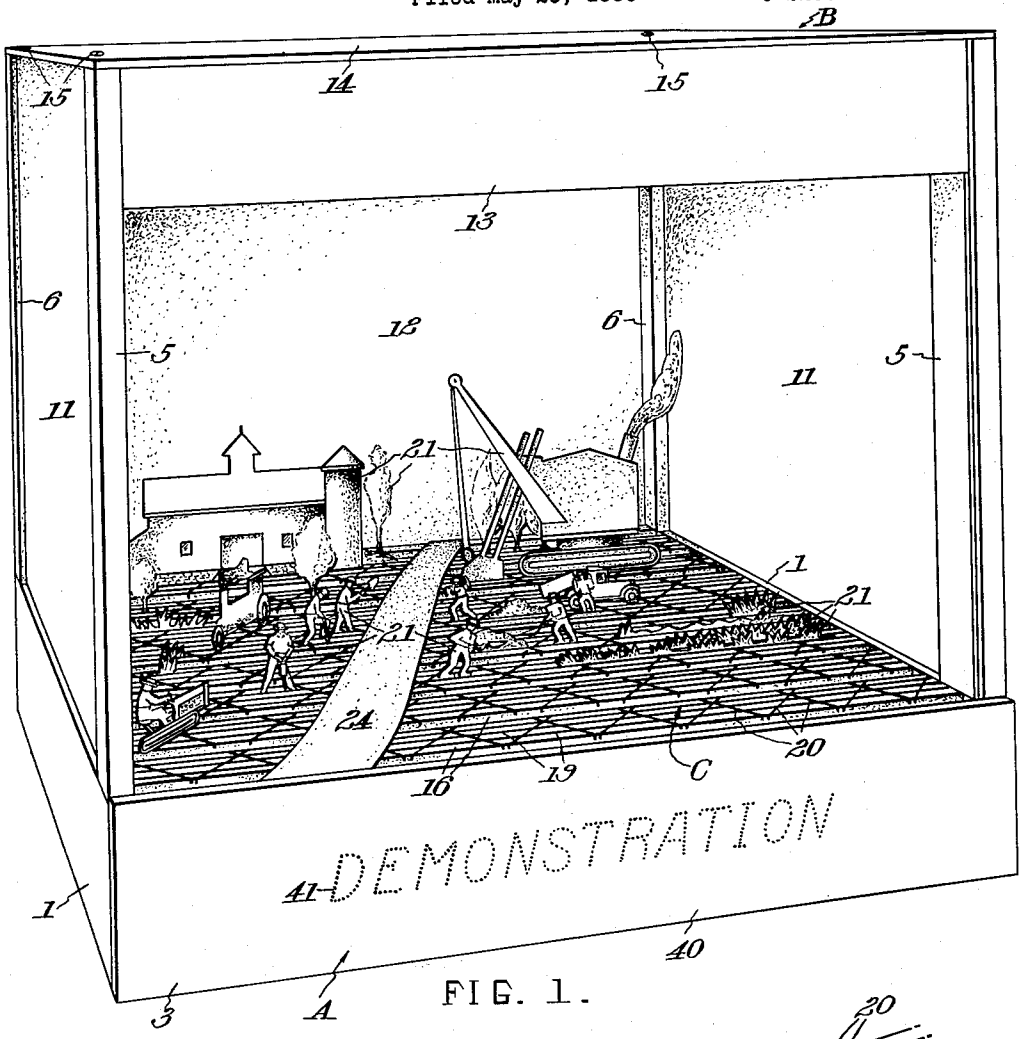


FIG. 1.

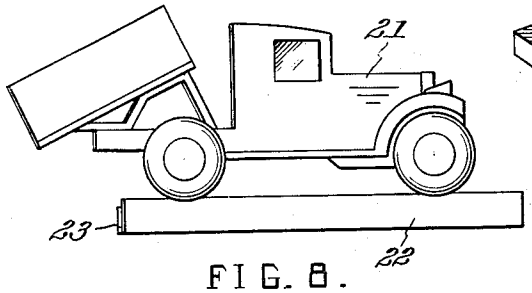


FIG. 8.

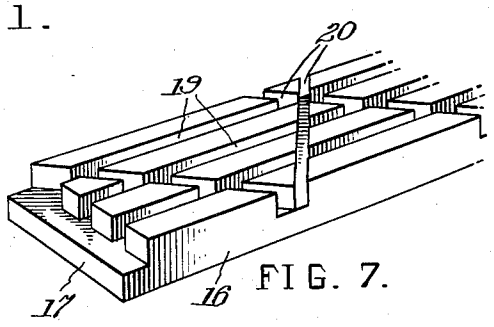


FIG. 7.

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FIG. 2.

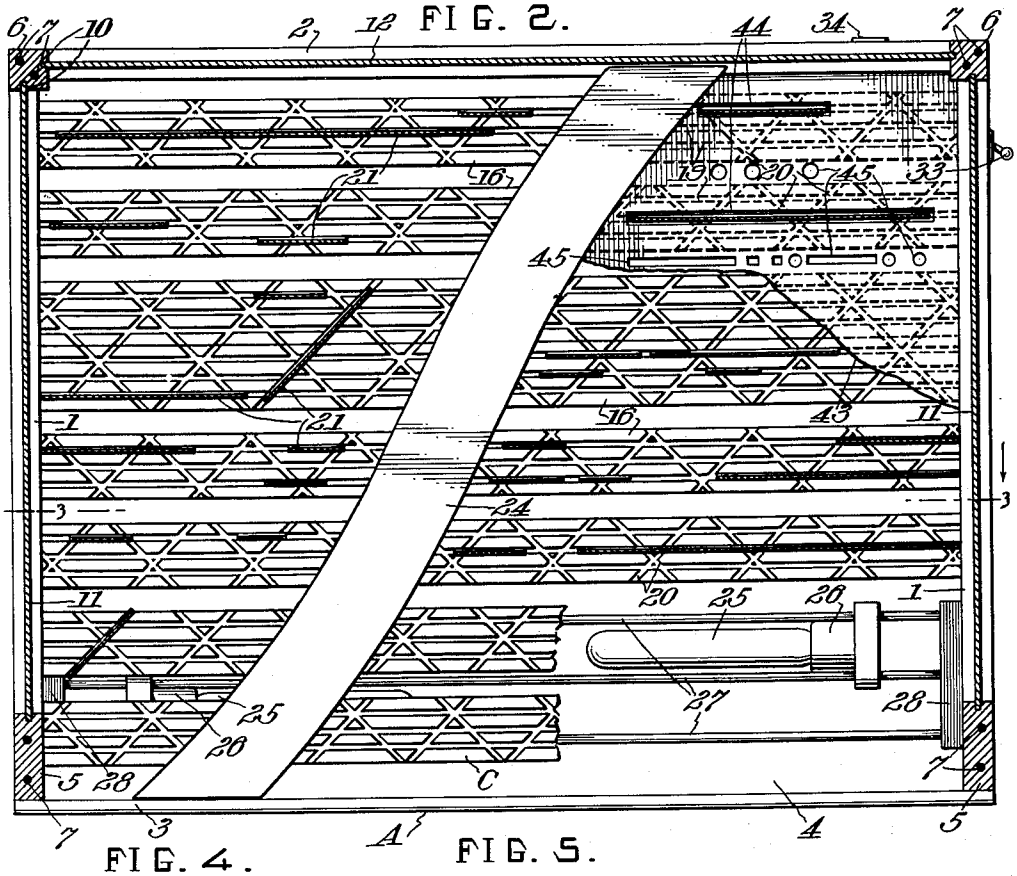


FIG. 4.

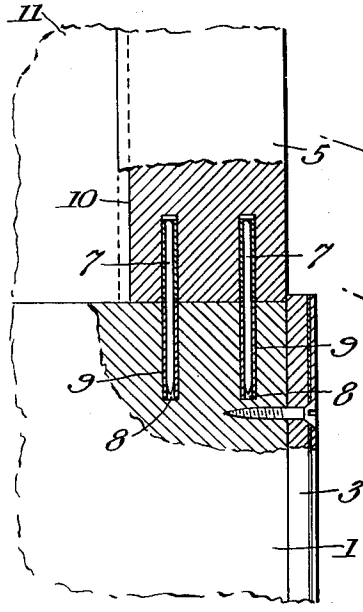


FIG. 5.

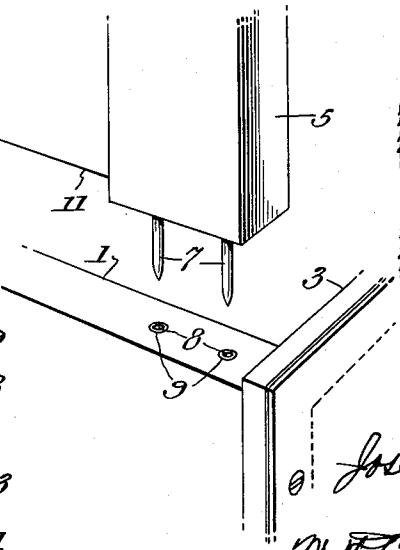
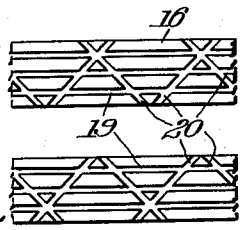


FIG. 6.



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FIG. 3.

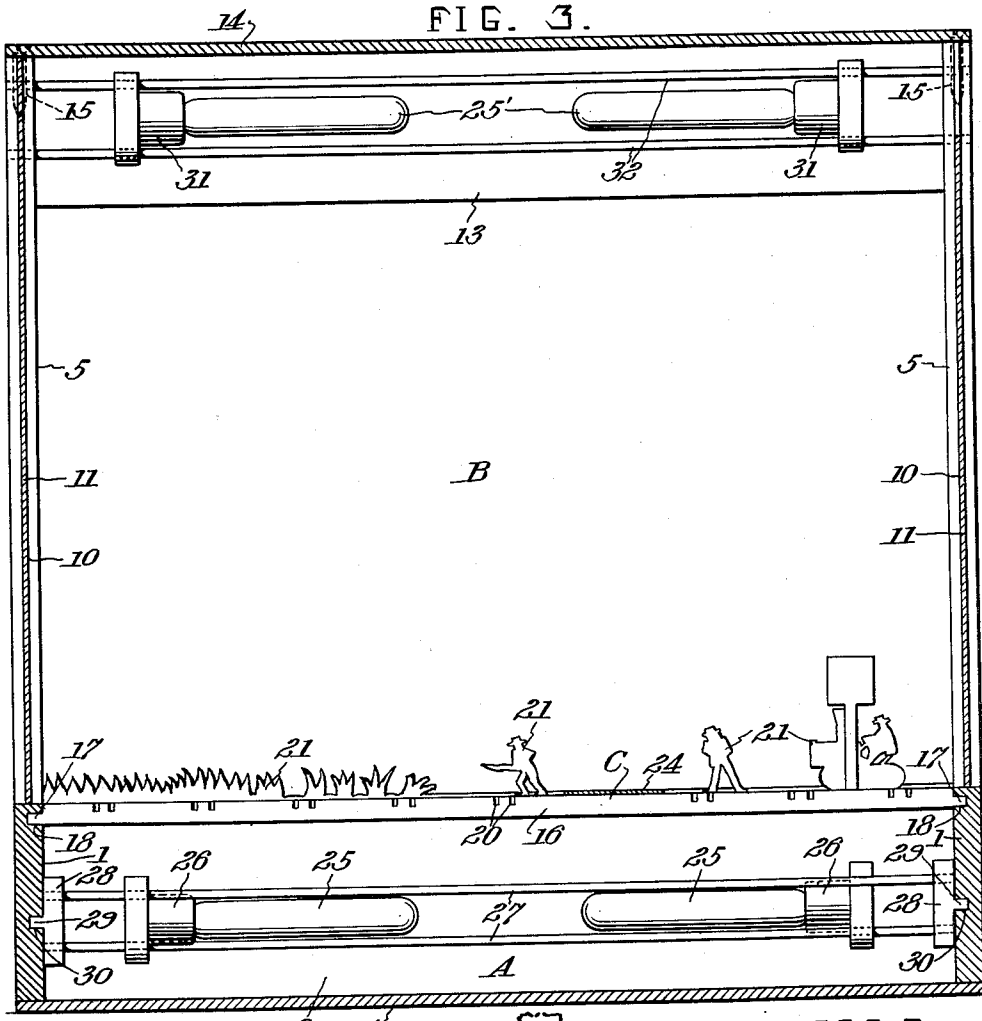


FIG. 11.

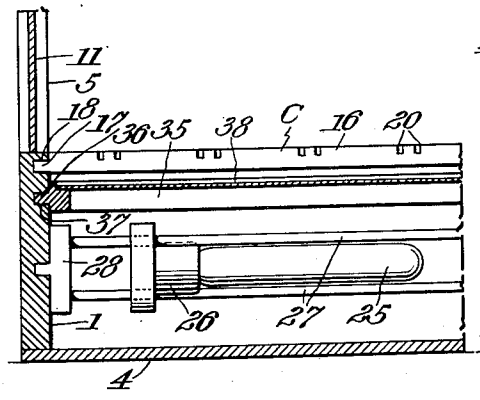


FIG. 10.

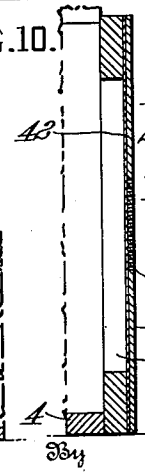
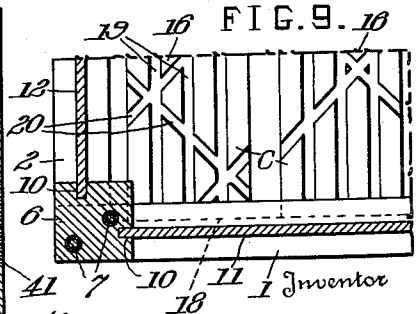


FIG. 9.



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UNITED STATES PATENT OFFICE

2,065,689

DISPLAY DEVICE

Joseph A. Goethe, Washington, D. C., assignor, by direct and mesne assignments, to William H. Finckel, Jr., Washington, D. C., trustee

Application May 25, 1936, Serial No. 81,726

15 Claims. (Cl. 40—126)

This invention relates to display devices, and it has special reference to devices of this nature which may be used for advertising and other display purposes, and for the dissemination of information of various kinds.

The device, in its preferred embodiment, comprises a stage-like structure, in the nature of a diorama, the platform of which may be used for a suitable arrangement thereon of objects and articles whereby various operations, activities, plans, and other representations of the information to be disseminated may be demonstrated in such a life-like and appealing manner as to attract and hold the attention of observers.

One of the objects of the invention is to provide a device of this character which may be of knock-down form, and having its parts so proportioned that they may be compactly nested for transportation and readily set up in condition for display with the expenditure of a minimum of time and effort.

Another object of the invention is to include in the device lighting means whereby a novel and effective illumination of the stage may be accomplished.

A further object of the invention is to provide a multi-part platform for the stage of such a nature that the parts are susceptible of a variety of arrangements to accommodate the platform to any of a number of dispositions of the articles and objects to be displayed thereon, and to vary the effect of illumination furnished by the lighting means.

A still further object of the invention is to provide means in simulation of an electric sign, the illumination for such means being provided by the lighting means for the stage, to thus enhance the attention-compelling characteristics of the device by furnishing, in combination with it, a means for showing, in lights, such printed matter or other indicia as may be deemed most desirable to bring to the attention of observers the informative, advertising or other object of the display arranged upon the stage.

With these and other objects in view, the invention comprises a stage having a base structure, preferably of box-like formation, a platform carried by the base structure and comprising, preferably, a plurality of substantially similar members so mounted as to be capable of relative movement to furnish such spaces between them as may be desired for purposes as will hereinafter appear, lighting means arranged subjacent to the platform and shiftable longitudinally and laterally with respect thereto for the purpose of varying the quality and effect of illumination of the stage, a knock-down superstructure assembled upon said base structure and including side walls, a back and a top, and lighting means arranged in said superstructure above the platform and adjustable to similarly vary the effect of their illumination.

The invention contemplates, further, a screen which may be interposed between the platform and its subjacent lighting means, and which may be movable with respect to both, and it comprises, also, the means in simulation of a sign in lights hereinbefore referred to.

It will be understood, moreover, that a variety of articles and objects suitable for mounting upon the platform for the purpose of exemplifying the information to be disseminated are included, within the purview of the invention, as adjuncts of the display device, all as will be explained hereinafter more fully and finally claimed.

In the accompanying drawings illustrating the invention, in the several figures of which like parts are similarly designated, Figure 1 is a perspective view of the device of the invention set up in position for display and having various objects, figures and articles arranged upon the platform of the stage in a manner designed to illustrate a road-building operation.

Fig. 2 is a horizontal section taken in a plane just above the platform of the stage and looking down upon the stage.

Fig. 3 is a section taken in the plane of line 3—3, Fig. 2, parts being broken away to illustrate underlying structure.

Fig. 4 is an enlarged fragmentary sectional elevation illustrating the means for assembling parts of the superstructure upon the base structure and

Fig. 5 is an enlarged fragmentary perspective view of these parts disassembled.

Fig. 6 shows, in fragmentary detail, two of the platform-forming members or elements in an arrangement different from that illustrated in Figs. 1 and 2.

Fig. 7 is an enlarged fragmentary perspective view of one of the platform-forming elements.

Fig. 8 is an enlarged perspective view of one of the objects which may form a member of a suitable representation assembled on the stage.

Fig. 9 is an enlarged fragmentary sectional elevation of one of the rear corners of the device.

Fig. 10 is an enlarged vertical section of a front panel for the base structure, and illustrating a modification, and

Fig. 11 is a fragmentary sectional elevation taken in a plane similar to that of Fig. 3, but illustrating a further modification.

The display device, in the preferred form, as illustrated in the drawings, include the base structure A, the superstructure B and the platform C which, as will be apparent particularly by reference to Fig. 1, provide a stage having, in effect, some of the characteristics of a diorama.

The base structure includes side walls 1, a back wall 2, a front wall 3 and a bottom 4, and the superstructure comprises front corner posts 5 and rear corner posts 6, all four of which posts may be, and are shown as, supported upon the side walls 1 of the base structure and held in appropriate relation thereto by cooperating pins 7 and sockets 8, which latter are preferably lined with metal tubes, as indicated at 9, the corner posts being channeled as indicated at 10 upon their juxtaposed edges to receive and support, in predetermined desired relation, side panels 11, a back panel 12 and an arch panel 13. A top 14 affixed by four screws 15 to the four corner posts, serves to hold the posts in appropriate adjusted position and, in combination with their pin and socket connection with the base structure, to complete the assembly of the superstructure.

The platform C comprises a plurality of substantially similar platform-forming elements 16 preferably arranged transversely of the stage and having their ends provided with tongues 17 engaging grooves 18 in the side walls 1. These grooves 18 extend from front to rear of the side walls and provide guides and supports in which the elements 16 may slide longitudinally of the stage so that they may be grouped together in edge adjacent or contacting relation or spaced apart as desired, in the manner illustrated in Figs. 1 and 2.

These platform-forming elements are provided upon their upper surfaces with longitudinally arranged channels 19 and diagonally arranged channels 20 intersecting the longitudinal channels. The channels 19 and 20 provide a means for the reception and support, in a variety of desired positions, of articles and objects such as the figures of workmen, buildings, and machines, indicated generally by the reference character 21, these articles and objects being formed, preferably, of any desired sheet material, and which may have their bases 22 reinforced as indicated at 23, (see Fig. 8), adapted to be inserted in and substantially concealed by the channels 19 and 20.

As will be obvious from an inspection of Fig. 2, the platform-forming elements 16 may be fabricated from a board of suitable size and thickness by forming a continuous tongue on each lateral edge of the board and appropriately grooving the same to provide the longitudinal channels 19 and the angularly arranged or diagonal channels 20, and then separating this board into a plurality of elements of desired width.

It is to be noted that the angular or diagonal channels 20 are arranged symmetrically with respect to the longitudinal centers of the elements 16, and when the elements are arranged as shown in Fig. 2, but are brought together with their longitudinal edges in contact, these angularly arranged channels will be continuous throughout the extent of the platform. If, however, one or more of the elements 16 are reversed end for end, a staggering arrangement of the diagonal channels will result, as clearly indicated in Fig. 6. This makes possible a further desired variation in the arrangement of the articles and objects applied to the platform in making up the display.

In the representation illustrated in Fig. 1, wherein a road-building operation is depicted, a strip 24 is laid upon the platform from front to rear of the stage in simulation of a road surface, articles representing farm buildings, trees and grass are inserted in channels in the platform elements in such arrangement as to provide the impression of a landscape, and figures of workmen, and articles representing various types of road-building machines, are similarly appropriately positioned with respect to the road-representing strip 24.

Preferably the side panels 11 and back panel 12 of the superstructure are decorated in a manner appropriate to further the effect of the representation.

It will be understood, of course, that various sets of objects and articles, and variously decorated side and back panels may be provided to adapt the display device for purposes of display of a great variety of scenes or representations, that illustrated in the drawings and just particularly described being merely suggestive.

Arranged subjacent to the platform C, and preferably confined within the base structure A are lighting means including electric lamps 25 carried in sockets 26 of conventional type. These sockets 26 are mounted, by means of their usual screw holes, upon rods 27, preferably three in number extending transversely of the stage and having their ends removably mounted in, and serving to hold in appropriate spaced relation, slide blocks 28 having tongues 29 which engage grooves 30 in the side walls 1 of the base, whereby the light assembly may be moved longitudinally of the base beneath the platform.

As will be apparent by reference to Fig. 2, the three rods 27 provide for a staggered arrangement of the lamps 25, and this arrangement makes possible adjustment of the lamps laterally of the base by appropriate movement of the sockets 26 longitudinally of the rods 27.

The arrangement of the lighting means subjacent to the platform C makes possible a novel diffused illumination of the stage, the light from the lamps 25 passing upwardly through the spaces between the elements 16 and being reflected and diffused in a great many directions by the surfaces of the elements 16, the objects and articles 21 and the panels and top of the superstructure with which it contacts. Obviously, various arrangements of the elements 16 by which their spacing is altered will result in similar variations in the illumination produced upon the stage, and this may be further varied by adjustment of the lighting means longitudinally and laterally of the base in the manner provided.

Adjacent to the top of the superstructure, and preferably concealed behind the arch panel 13 are other lighting means including the lamps 25' mounted in sockets 31 similar to the sockets 26, which sockets are carried for sliding adjustment laterally of the stage upon rods 32 similar to the rods 27, but preferably removably supported in the front corner posts 5. This lighting means provides for a variable direct illumination of the stage as contrasted with the variable, indirect, diffused illumination thereof furnished by the lighting means subjacent to the platform C.

The lamps 25 and 25' may be wired for independent control so that any of them may be used separately or in combination, as desired, but it has been found preferable to connect all the lamps in a single circuit and to control them by a switch

33 (Fig. 2). The wiring by which these connections are made has been omitted from the drawings, but it is thought that an appropriate arrangement of it will be obvious to those skilled in the art, and that it may be made in such a manner as to admit of electric current being supplied to the lamps through the switch 33 from any customary outlet by plugging into a receptacle 34 (see Fig. 2).

If desired, means may be interposed between the platform C and its subjacent lighting means for producing colored or otherwise modified lighting effects. Such a means is illustrated in Fig. 11 as including a frame 35 having tongued side elements as indicated at 36, the tongues of these elements cooperating with grooves 37 in the side walls 1 of the base structure so that it may slide with respect to the platform, and this frame may carry a screen 38 which may be of translucent character and colored, perforated or ornamented in such manner as to produce the effect of illumination desired.

The adjustable slide mounting for the frame 35 makes possible its use with the subjacent lighting means no matter where the latter may be positioned with respect to the platform, and it makes possible, further, adjustment of the screen in such position that it will not affect the illumination produced by the subjacent lighting means.

If desired, the front wall 3 of the base structure may, as illustrated in Figs. 1 and 10, comprise a frame 39 having a panel 40 punched or perforated as indicated at 41 to provide any desired indicia, symbols or reading matter made particularly attractive and interest-compelling by virtue of illumination furnished by the lamps 25, thus, in effect, causing the legend, indicia, or the like to appear as if formed of lights.

Furthermore, a translucent color screen 42, or other device designed to produce a modification of the illumination of the legend or indicia, may be provided as a backing for the panel 40.

A masking templet 43 (Fig. 2) may be provided having slots 44 coinciding with channels in the platform members 16 and arranged to receive and locate the figures, articles and objects 21, and the templet will preferably have openings 45 for transmission of light through spaces between the platform members. This templet may cover the whole platform.

The openings 45 in the templet may be of desired shape and size to furnish the desired effect of illumination for the figures, articles and objects.

A number of templets and cooperating figures, articles and objects may be provided, and each templet may have the slots 44 for reception of the figures, articles and objects, and the illuminating openings 45 therefor, so arranged that the desired location of the figures for the particular display to be made may be properly predetermined. Thus the matter of arrangement of the figures is not necessarily left to the selection of the person setting up the display, and a number of displays of the same character, as thus predetermined, may be assured uniformity.

The masking templet may be decorated to represent any desired kind of surface, such as turf, earth, stone, concrete, tile and the like, or desired combinations, to suit the display to be exhibited.

The side panels 11, back panel 12 and arch panel 13 of the superstructure may be of warped, corrugated, or other non-planar form to provide for further variation in the decorative effect of the stage, and to further modify the illumination thereof.

It will be understood, as hereinbefore mentioned, that the base structure may serve as a packing receptacle for the corner posts and panels of the superstructure, for the lighting means carried by the superstructure, and for all of the articles and objects making up the stage setting, and that when these parts are nested within the base structure, the top 14 of the superstructure may be secured by the four screws 15 upon the upper edges of the walls of the base structure to form a closure, thereby maintaining the various parts within the base structure in a compact, readily portable arrangement.

It is to be noted that when the four screws 15 are removed, all of the parts of the superstructure may readily be disassembled and, as has been pointed out, the assembly of the parts of the superstructure is completed and maintained intact by these four screws. It will be apparent, therefore, that the assembly and disassembly of the stage for display purposes is rendered extremely easy and may be accomplished expeditiously.

The parts of the device may be made of wood, metal or any other suitable material, and it may be of any size and shape appropriate to the uses to which it is to be put.

In addition to its utility as a display device for advertising and the like, the invention has features which adapt it for use as a toy, as a stage for a puppet or other theatre wherein animated objects or figures may be exhibited, as a device for producing scenes to be photographed, and for numerous other display purposes, the lighting effects capable of being produced by the illuminating means being of decided value in connection with such uses.

Various changes and modifications are considered to be within the spirit of the invention and the scope of the following claims.

What I claim is:—

1. In a display device, a supporting structure, members carried by said structure and adjustable thereon for spaced arrangement to thereby form an apertured platform, and lighting means subjacent to said platform for illuminating the same by virtue of its apertured formation.

2. In a display device, a supporting structure, a plurality of platform-forming members carried by said structure and movable relatively thereto and to each other to provide spaces between them, and lighting means subjacent to said members for illuminating the platform through said spaces.

3. In a display device, a platform and means for supporting the same. said platform comprising members provided upon their upper faces with means to support articles to be displayed, said members adjustable upon said supporting means to provide spaces between the members, and lighting means subjacent to said platform for illuminating the same and said articles through said spaces.

4. In a display device, a supporting structure, means carried by said structure and including relatively movable members providing a platform, and lighting means above and subjacent to said platform for illuminating the same, said members capable of relatively spaced arrangement to pass light from said subjacent lighting means.

5. In a display device, means providing a supporting structure, a platform carried by said structure and comprising a plurality of relatively movable members capable of spaced arrange-

ment, and lighting means subjacent to said platform for illuminating the same by virtue of the spaced arrangement of said members, said lighting means being movable with respect to the underside of said platform to vary the quality and effect of the illumination of same.

6. In a display device, a stage including a base structure, means providing an apertured platform carried by said base structure and comprising a plurality of separate elements movable relatively to each other and to said base structure to vary the apertured formation of the platform, and lighting means subjacent to said platform and arranged to illuminate the stage by virtue of the apertured formation of said platform.

7. In a supply device, a base structure, and a superstructure of knock-down formation, said base structure and superstructure when assembled forming a stage, said superstructure including a top, and having its other parts of such form and dimensions as to fit within said base structure when disassembled, and said top providing a closure for said base structure.

8. In a display device, a stage comprising a base structure, and a superstructure, means carried by said base structure to provide a platform, a plurality of articles representing objects to be displayed on said platform, said superstructure being of knock-down formation, said base structure being of such form and dimensions as to contain all the parts of said superstructure when disassembled, together with said articles, whereby a self-contained portable device is provided.

9. In a display device, a base structure having walls between which are supported platform-forming elements in an arrangement of relative adjustment, and a light supporting structure subjacent to said platform-forming elements and including means adjustable relatively to said base structure and means with respect to which said light is adjustable.

10. In a display device, a platform for the display of objects, said platform including a plurality of relatively movable elements having surfaces formed with means to support said objects in desired arrangement, said means including channels in relative angular arrangement.

11. In a display device, a platform for the display of objects, said platform including a plurality of relatively movable elements having surfaces formed with means to support said objects in desired arrangement, said means including channels extending longitudinally of said elements and channels angularly arranged with respect thereto, said angularly arranged channels being so disposed as to be continuous with regard to such elements of the platform as may be in edge-contacting relation.

12. In a display device, a platform for the display of objects, said platform including a plurality of relatively movable elements having surfaces formed with means to support said objects in desired arrangement, said means including channels extending longitudinally of said elements and channels angularly arranged with respect thereto, said angularly arranged channels being so disposed as to be continuous with regard to such elements of the platform as may be in edge-contacting relation and being so arranged with respect to the longitudinal centers of said elements that if an element is reversed end for end the said angularly arranged channels will be discontinuous.

13. In a display device, a base structure having two appropriately spaced parallel walls, light means arranged between said walls and including slides, cooperating supporting means on said walls and slides whereby the latter may be adjusted longitudinally of said walls, and means extending between said slides and supporting a lamp socket for adjustment laterally with respect to said walls.

14. In a display device, means providing a platform to receive articles to be displayed in appropriate arrangement, and a templet applied to said platform and providing means for predetermined location of said articles.

15. In a display device, means adapted for spaced arrangement for forming an apertured platform to receive articles to be displayed in appropriate arrangement, lighting means subjacent to said platform, and a templet applied to said platform and providing means for predetermined location of said articles, said templet having openings registering with the spaces of said platform and permitting transmission of light from said lighting means to illuminate said articles.

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