

Nov. 26, 1935.

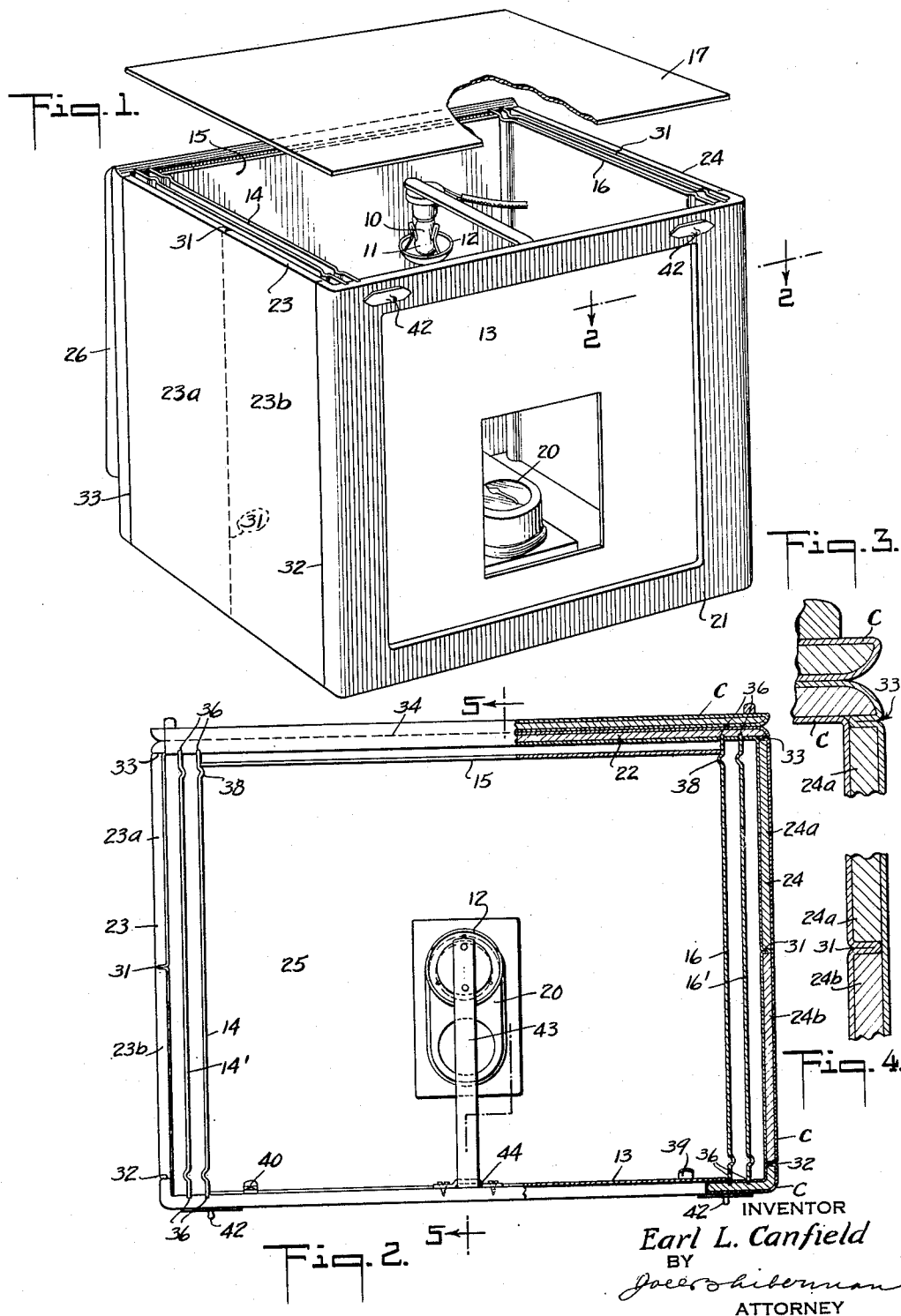
E. L. CANFIELD

2,022,402

APPARATUS FOR DEMONSTRATING REFLECTING PROPERTIES OF SURFACE FINISHES

Filed Nov. 24, 1933

2 Sheets-Sheet 1



Nov. 26, 1935.

E. L. CANFIELD

2,022,402

APPARATUS FOR DEMONSTRATING REFLECTING PROPERTIES OF SURFACE FINISHES

Filed Nov. 24, 1933

2 Sheets-Sheet 2

Fig. 5.

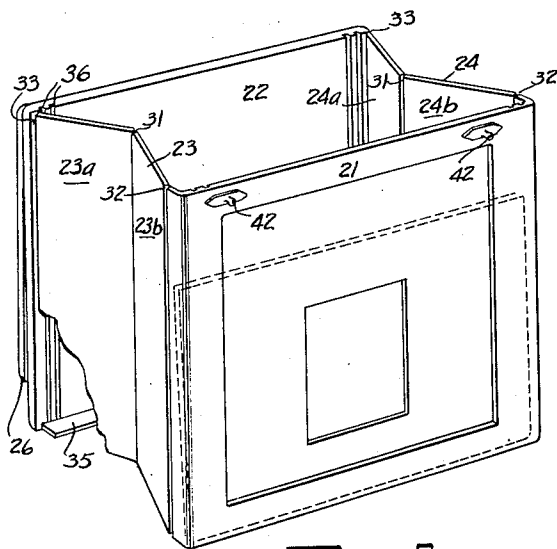
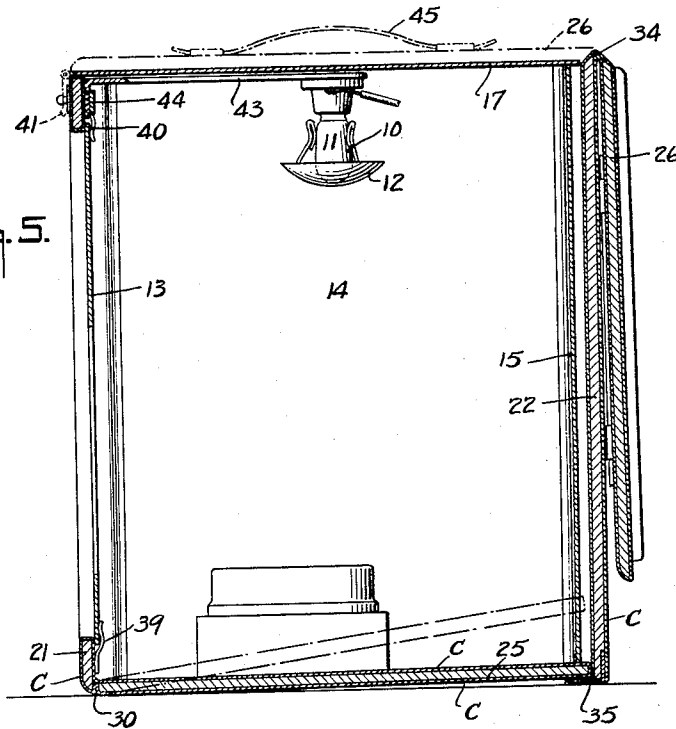


Fig. 6.

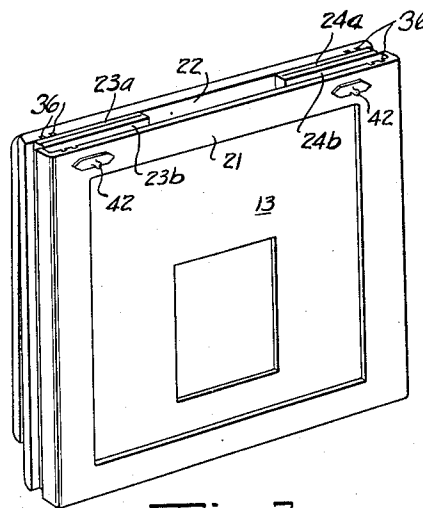


Fig. 7.

INVENTOR
Earl L. Canfield
BY
James S. Sherman
ATTORNEY

UNITED STATES PATENT OFFICE

2,022,402

APPARATUS FOR DEMONSTRATING REFLECTING PROPERTIES OF SURFACE FINISHES

Earl L. Canfield, Hillside, N. J.

Application November 24, 1933, Serial No. 699,546

4 Claims. (Cl. 35—50)

The present invention relates to apparatus for demonstrating reflecting properties of surface finishes.

The distribution of light in indirect lighting, either by pendant lighting fixtures or by wall fixtures, or by floor torchère, or other forms of shaded lighting equipment, involves the reflection of the light by some reflecting medium. Where the fixture itself does not provide the reflecting medium reliance is placed on the wall and ceiling finish of the room.

While the knowledge that some wall finishes absorb more light than others is more or less general, there has heretofore been no satisfactory way for one to demonstrate the relative advantages of various wall finishes from the point of view of light control. These wall finishes have been selected largely on account of color or texture, but laboratory tests may readily be made to show that light reflecting properties cannot be properly judged from the color, texture, and appearance of the finish.

It has heretofore been practically impossible for the general public to acquire any knowledge on this subject and hence whenever a selection of ceiling and wall finishes is made for a room the matter of light control has been generally ignored.

According to the present invention one is enabled to readily determine, in a device simulating a room, the relative reflecting properties of ceiling and wall finishes.

According to the present invention one is able to measure the light received at a definite point in a simulation of a room having walls and ceiling formed by panels bearing the wall and ceiling finishes which it is desired to test. These panels may be readily changed without changing the light source dimensions or position of the measuring instrument so that the only variables encountered by the light are embodied in these wall and ceiling finishes. By changing from one set of conditions to another the relative value of the various wall finishes is easily demonstrated.

The demonstration of these phenomena may be carried out in a comparatively large apparatus, but inasmuch as such apparatus would not be easily portable, the present invention contemplates a design of apparatus adaptable for this purpose. It is small enough to be conveniently portable and it is designed to be collapsible so as to occupy but small space when not in use.

Other and further objects will appear as the description proceeds.

The accompanying drawings show, for pur-

poses of illustrating the present invention, one of the many embodiments in which the invention may take form, it being understood that the drawings are illustrative of the invention rather than limiting the same. In these drawings:

Fig. 1 is a perspective view through a complete outfit showing the parts assembled for use;

Fig. 2 is a top plan view of the structure of Fig. 1, portions being in section on the broken line 2—2;

Figs. 3 and 4 are enlarged fragmentary sectional views showing details appearing also in Fig. 2;

Fig. 5 is a vertical sectional view taken on the line 5—5 of Fig. 2;

Fig. 6 is a perspective view illustrating the structure of Fig. 1 partly collapsed; and

Fig. 7 is a similar view illustrating the structure completely collapsed.

In the drawings a miniature luminair is indicated at 10. It may be in the form of a small lamp bulb 11 and reflector 12.

The enclosure simulating a room is formed by four vertical wall panels 13, 14, 15, and 16, a cover panel 17, and a bottom 25.

The light measuring instrument is indicated at 20. This instrument is preferably in the form of a battery-less photo-electric cell connected to a direct reading indicator whereby light intensities may be directly read. Such an instrument is shown in my application for patent Serial No. 689,705, filed September 16, 1933. This instrument receives light from the luminair by reflection from the ceiling-simulating panel 17 and the wall-simulating panels 13, 14, 15, and 16. The intensity of illumination in foot candles may be directly indicated and shows the results produced by the particular wall and ceiling finish employed. Should the ceiling finish or the wall finish be changed, a different reading would appear on the instrument, so that one could judge the relative value of these finishes. One of these panels, such for example as the panel 13, is provided with a window or opening, as shown, so that the meter can be observed from outside with substantially all extraneous light cut off by the panels.

In its simplest form the present invention may be embodied in a structure having any suitable means for supporting the luminair, the instrument, and the wall and ceiling panels. In the drawings a collapsible box is shown for this purpose.

The box has a front wall-forming member 21, a rear wall-forming member 22, end wall-form-

ing members 23 and 24, a bottom forming member 25, and a cover 26. The side wall members 23 and 24 are each made in two parts, 23a, 23b and 24a, 24b, respectively. These wall-forming parts are preferably made of thin wood, such as multiple ply veneer. They are covered on both sides by cloth covering such as indicated by the letter C. This covering is preferably black. This acts not only to cover and reinforce the wood but provides hinges to secure the various parts together. The bottom wall 25 is secured to the lower part of the front wall by a cloth hinge indicated at 30, Fig. 5. The side walls 23a, 23b, 24a, 24b are connected together and to the ends of the front and rear walls by hinges formed of cloth, indicated at 31, 32, and 33. The cover is secured by a cloth hinge indicated at 34, Fig. 5. When the box is in expanded position, the right hand edge of the bottom 25 rests on an angle 35 carried by the lower edge of the rear box wall 22. It passes down by the inner faces of the walls 23 and 24 so as to keep them straightened out in the position indicated in Figs. 1 and 2. The cover 26 hangs down behind the rear wall, as indicated in the drawings.

To collapse the box the bottom wall is swung upwardly, as indicated in dot and dash lines in Fig. 5, to bring it up behind the front panel 13. The side walls are then folded inwardly, as will be clear from Fig. 6, and then the entire structure collapsed to the position shown in Fig. 7. It will be noted that the hinge lines 32 are spaced back far enough behind the rear face of the front wall 21 to accommodate the bottom wall 25. The front and rear walls of the box are provided with a plurality of grooves near the ends as indicated at 36, these grooves being adapted to receive end wall simulating panels 14, 14' and 16, 16'. These panels may be provided with beads as indicated at 38 to assist in holding the rear wall simulating panel 15 in place. The front wall simulating panel 13 may be readily held in place by clips indicated at 39 and 40, Fig. 5. The cover 26 is provided with hinge catch members 41 adapted to snap on to pins 42 carried by the front box wall 21. The luminair 10 is here shown as being supported on an angle bracket 43 adapted to be slipped in behind a strap 44 carried by the front box wall 21.

The form of collapsible box just described facilitates the making of the demonstration, for it can be easily expanded to full size and may receive a number of room and ceiling panels 14 and 16. These panels may be provided with different forms of wall finishes on opposite faces so that with four panels a demonstration of eight wall finishes may be made. The front wall panel may be left in place if desired.

A different rear wall panel may be readily substituted as one can be picked out and the other one readily put in place. A ceiling panel 17 may be rested on top of the other panel so as to cut off extraneous light and direct the light downwardly, as customary in indirect lighting. To show the effect of different ceiling finishes without change of wall finish, the substitution of different panels may be very quickly made. When the box is extended to its full size, and the various panels in place, the cover may be closed down onto the top of the box and hooked in place so that the box can be carried by the strap, indicated at 45.

From the foregoing it will be apparent that there has been provided a simple arrangement capable of easy use in demonstrating the relative reflecting properties of various forms of wall and

ceiling finish. A salesman can more intelligently advise a customer as to the type of finish which would give the best light control.

It is, of course, obvious that other forms of lighting equipment can be used instead of the miniature indirect lighting luminair illustrated in the drawings. If direct lighting is desired, the reflector may be removed. If an enclosed unit is desired, a small opal globe may be placed about the light source. If lighting from a floor torchère is contemplated, the light source may be in the form of a small model of a floor lamp carried by the floor of the box.

Where the problem involves demonstrating the effect of wall finishes where the light source is colored, a miniature colored light source may be substituted for the more common transparent or translucent bulb.

It is obvious that the invention may be embodied in many forms and constructions within the scope of the claims, and I wish it to be understood that the particular form shown is but one of the many forms. Various modifications and changes being possible, I do not limit myself in any way with respect thereto, except as necessitated by the prior art and the claims.

What is claimed is:

1. A collapsible box for paint demonstration outfits, comprising a front wall member, a bottom wall member hinged to the lower edge of the front wall member and movable to lie flat against the rear face of the front wall member, a rear wall member having at the bottom thereof a rigid, forwardly extending support to receive the free edge of the bottom wall member, and two-part end wall forming members, the parts of each end wall forming member being hinged together and to the adjacent front and rear wall members so as to be foldable inwardly whereby they may be brought behind the upwardly folded bottom wall member, and the rear wall member be brought close behind the end wall forming members, the wall forming members when unfolded extending past the ends of the bottom wall member when in lowered position to prevent unfolding.

2. A collapsible box for paint demonstration outfits as claimed in claim 1, wherein the front and rear walls are provided with grooves to receive panels inside the end forming walls.

3. A collapsible box as claimed in claim 1, having a cover member hinged to the upper edge of one of the first two mentioned wall members so as to hang downward therefrom behind the rear wall, and foldable over on top of the box walls when the box is unfolded.

4. A collapsible box for paint demonstration outfits, having rigid front and rear wall forming members, rigid top and bottom forming members, hinge means connecting the top member to the upper edge of one of the wall forming members, hinge means for connecting the bottom member to the lower edge of the other wall forming member, the lower edge of the wall member to which the top member is secured having a ledge to support the free edge of the bottom member, and two part end wall forming members, the parts of each of the end wall forming members being hinged together along their adjacent edges, their opposite edges being secured to the side edges of the front and rear wall forming members, whereby the box may be collapsed to bring the various members into parallel relation one behind the other.