United States Patent [19]

Orfei

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[54] **ELECTRIC HEATING DEVICE**

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[73] Assignee: **American Science & Engineering, Inc.**, Cambridge, Mass.

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[52] **U.S. Cl.** ..... **219/433**, 46/226, 219/220, 219/386, 219/405, 219/521, 219/552, 240/52 R

[51] **Int. Cl.** **H05b 1/00**

[58] **Field of Search** ..... 46/1, 14, 226; 219/200, 201, 214, 218, 220, 365, 385–387, 405, 411, 399, 415–419, 429, 430, 433, 436, 520, 521; 240/52 R

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Attorney—Charles Hieken

[57] **ABSTRACT**

An electric heating device, which may be used to heat rocks that may function as a source of stored heat or may also be used as a play oven or play stove, comprises a paper box lined on the interior with reflective foil. The box is formed with ventilation openings in its side walls and includes a removable top provided with an opening in which is seated an aluminum foil tray in which the object to be heated is placed. Positioned within the box below the tray is an electric light bulb for providing heat. The light bulb is seated in a socket carried by a wire support. The wire support is a single piece of wire formed with a pair of base legs resting on the box bottom and an inverted V portion extending upwardly from the base legs and formed with a loop above the V for accommodating the socket stud.

3 Claims, 5 Drawing Figures

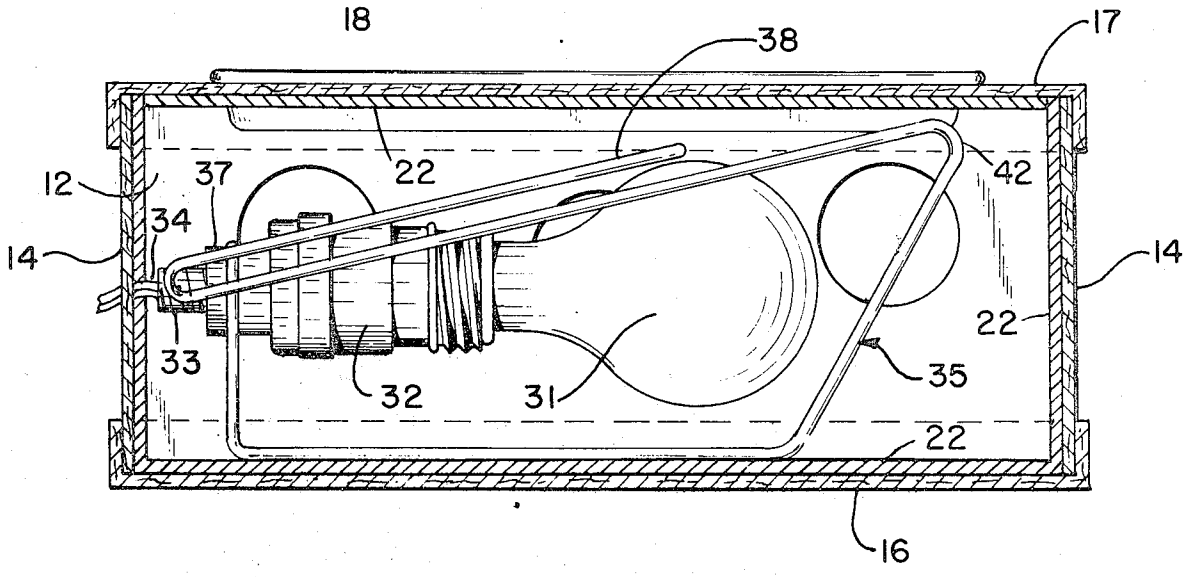
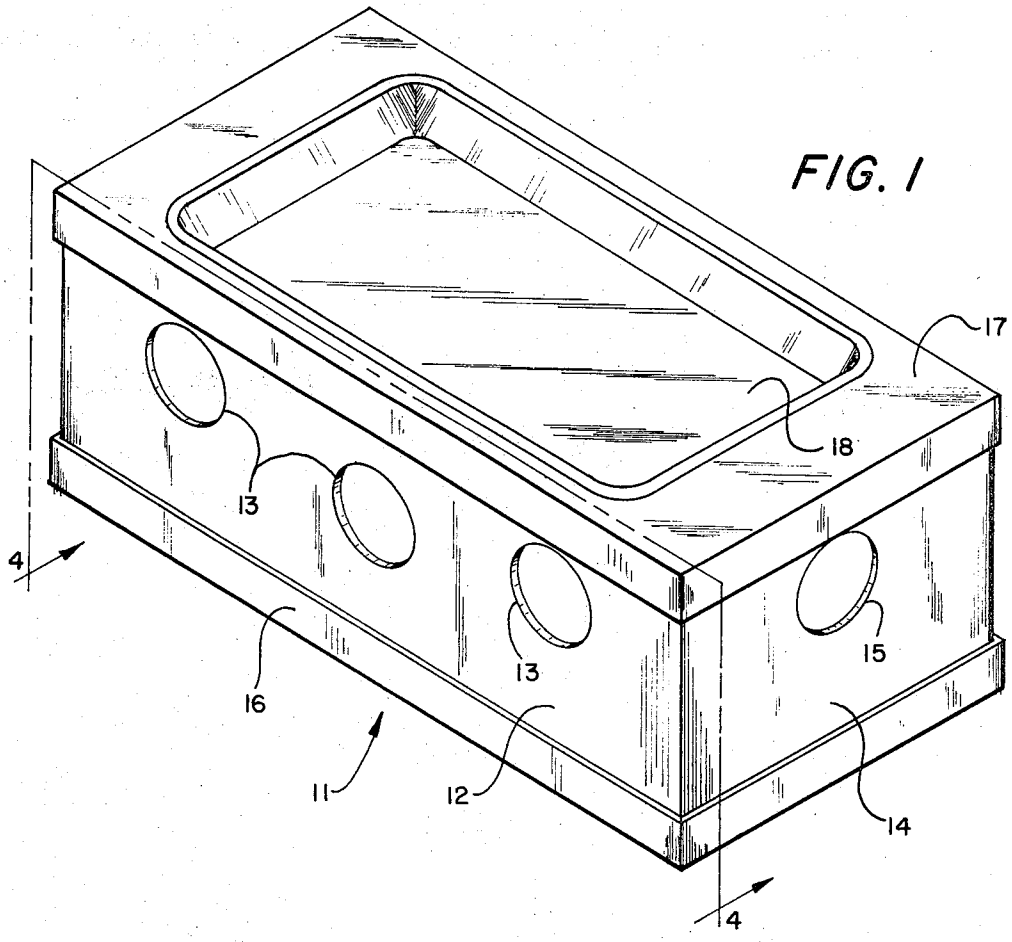


FIG. 1


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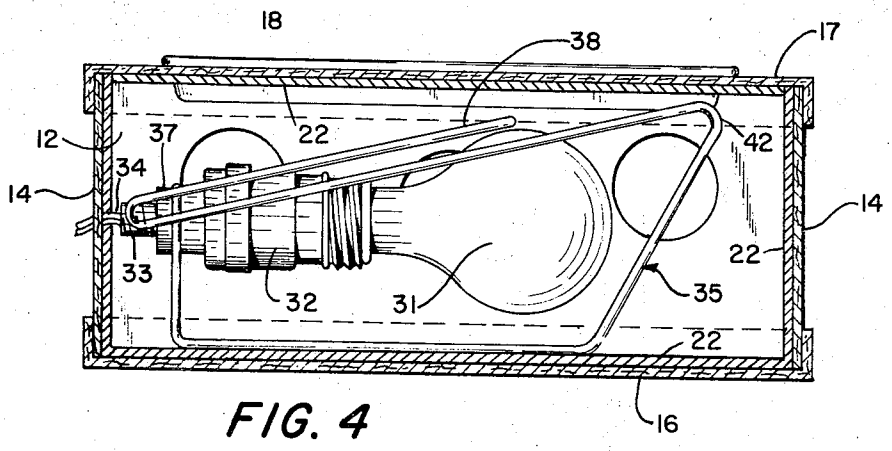
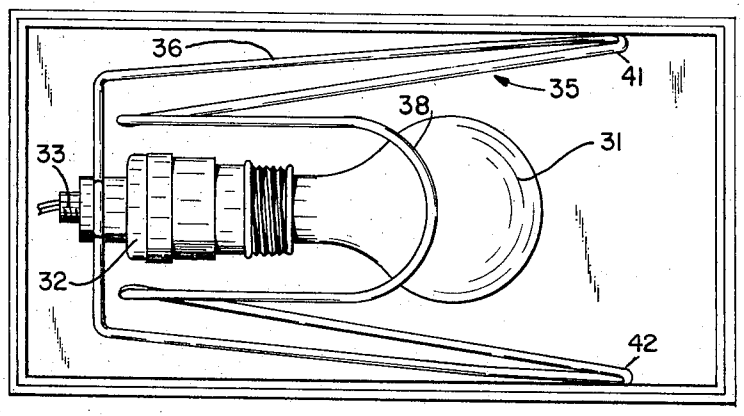

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FIG. 4

FIG. 5



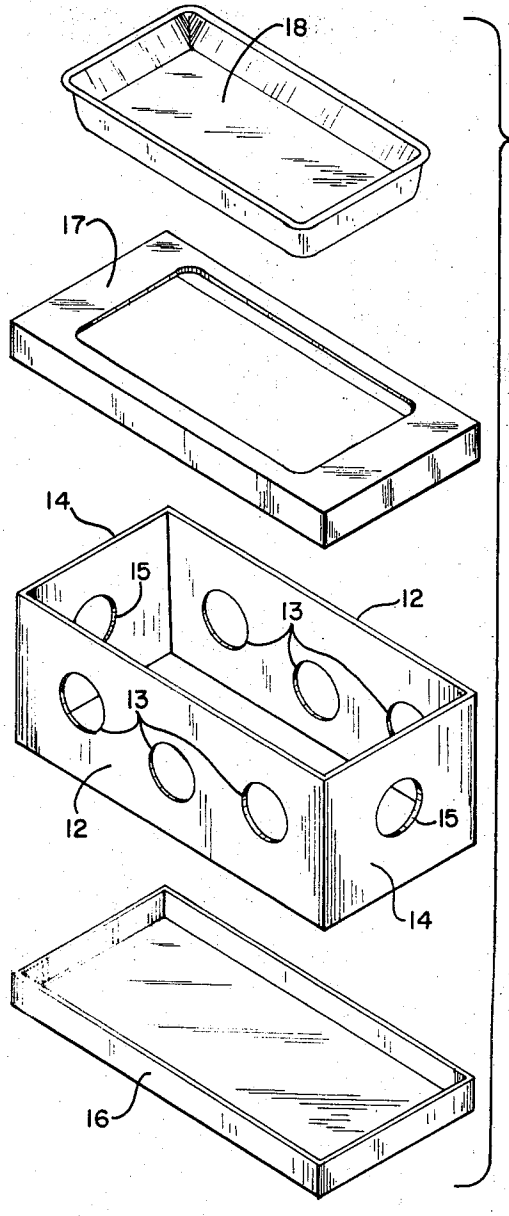
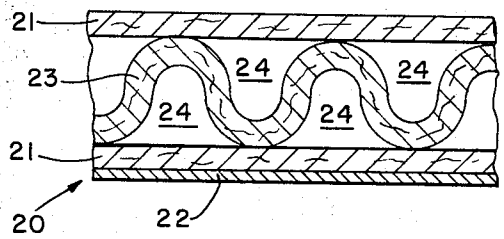


FIG. 2

FIG. 3



ELECTRIC HEATING DEVICE

BACKGROUND OF THE INVENTION

The present invention relates in general to heating and more particularly concerns a novel oven that is especially useful for heating rocks and other items with relative safety while being relatively easy and inexpensive to fabricate and relatively low in cost.

It is an important object of this invention to provide a low-cost oven that is relatively safe to use by school children to heat rocks, for example.

It is another object of the invention to achieve the preceding object with an oven that is relatively easy and inexpensive to fabricate and use.

It is a further object of the invention to achieve one or more of the proceding objects whie keeping the heating element normally safely enclosed.

It is a further object of the invention to provide an improved light bulb oven in accordance with one or more of the preceding objects.

SUMMARY OF THE INVENTION

According to the invention, there is means defining a box formed with openings in the side for accommodating a light bulb within a foil-lined interior. The top is formed with an opening for accommodating an aluminum tray. Preferably the box is made of material having a corrugated paper core bonded to an outer covering and a reflective foil lining. Preferably the lamp is supported in a support structure made of wire formed with a loop through which a threaded lamp socket base may reside.

Numerous other features, objects and advantages of the invention will become apparent from the following specification when read in connection with the accompanying drawing in which:

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective view of a box oven according to the invention;

FIG. 2 is an exploded view of the box oven of FIG. 1 without the light bulb heating source;

FIG. 3 is a magnified sectional view through the preferred box material;

FIG. 4 is a view through section 4—4 of FIG. 1 showing the heating lamp in position;

FIG. 5 is a plan view of the oven with the lamp in position and the top removed.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

With reference now to the drawing and more particularly FIG. 1 thereof, there is shown a perspective view of a box oven according to the invention. The same reference symbols identify corresponding elements throughout the drawing. The oven 11 includes a four-sided body that may fold for storage having a pair of sides such as 12 formed with openings such as 13 and a pair of ends such as 14 formed with an opening 15. The oven 11 includes a bottom 16 and a lid 17. Lid 17 is formed with an opening for snugly accommodating foil tray 18. An exploded view of the box oven without the light bulb heating source is shown in FIG. 2.

Referring to FIG. 3, there is shown a magnified sectional view through the material from which the box is made according to the invention. This material includes an outer covering 20, typically of corrugated

board having a corrugated paper core 23 sandwiched between a pair of flat paper layers 21 with the corrugations of core 23 defining with layers 21 a plurality of air spaces 24, and an inner lining 22 of reflective aluminum foil.

Referring to FIG. 4, there is shown an elevation sectional view through section 4—4 of FIG. 1 illustrating a suitable means for supporting the heating bulb 31 in a conventional bulb socket 32 having a threaded stud or bushing 33 through which lamp cord 34 exits. The rest of lamp cord 34 is not shown and may typically pass through an opening, such as 15, and be plugged into a conventional a-c outlet to supply energy to bulb 31. The support comprises heavy wire bent as shown in FIGS. 4–5 with the ends of wire 35 welded together as shown at 36. The rear portion comprises an inverted V formed with a loop above the vertex through which the stud 33 may be inserted and secured by nut or flanged bushing 37. The wire support includes an upper U-shaped portion 38 connected to the rear ends of upper left and right legs that extend to left and right upper points 41 and 42, respectively. Another feature of the lamp support frame 35 is that the heat source may be used independently as a heat source mounted as shown, or stood on end with bulb 31 upright.

The invention may be used to heat rocks that may function as a source of stored heat. The invention may also be used as a play oven or play stove. The use of the opening helps provide sufficient ventilation to keep the oven from getting dangerously hot. The use of reflective foil and insulating material helps keep the heat inside and directed upward through the foil tray 18 where heat is desired. In an exemplary embodiment of the invention, the oven is about the size of a child's shoe box and uses a 25 watt bulb.

There has been described novel apparatus and techniques for providing an inexpensive relatively safe electric-bulb oven. It is evident that those skilled in the art may now make numerous uses and modifications of and departures from the specific embodiments described herein without departing from the inventive concepts. Consequently, the invention is to be construed as embracing each and every novel feature and novel combination of features present in or possessed by the apparatus and techniques herein disclosed and limited solely by the spirit and scope of the appended claims:

What is claimed is:

1. A box oven comprising,
means defining four sides,
at least some of said sides being formed with openings,
means defining a top and a bottom,
said top being formed with an opening for accommodating a foil tray,
a foil tray in said opening,
the inside of said box being lined with reflective foil,
an electric light bulb inside said box for providing heat,
a wire support for carrying a socket in which said light bulb is seated,
said socket having a threaded mounting stud,
said wire support being a single piece of stiff wire formed with a pair of base legs for resting upon said bottom and an inverted V extending upward from said base legs and formed with a loop above the V

for accommodating the threaded stud of said socket.

2. A box oven in accordance with claim 1 wherein said box is formed of corrugated board and a reflective foil lining bonded together.

3. A box oven in accordance with claim 1 and further

comprising,

said socket having its threaded mounted stud passing through said loop and secured thereto by a flanged bushing.

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