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G5C
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(54) **Electrically illuminated book**

(57) An electrically illuminated book includes a single page such as a greeting card or multiple pages such as a child's picture or story book. A pictorial illustration is provided on the page in which an illustration portion could be expected realistically to emit light, and a miniature lamp 32 which may be a light emitting diode is disposed within this illustration portion. An electrical assembly is carried by the book, the assembly including an electric power source 33 connected operatively to the lamp, and a digitally operated switch 35 for selectively energizing the lamp in the illustration portion.

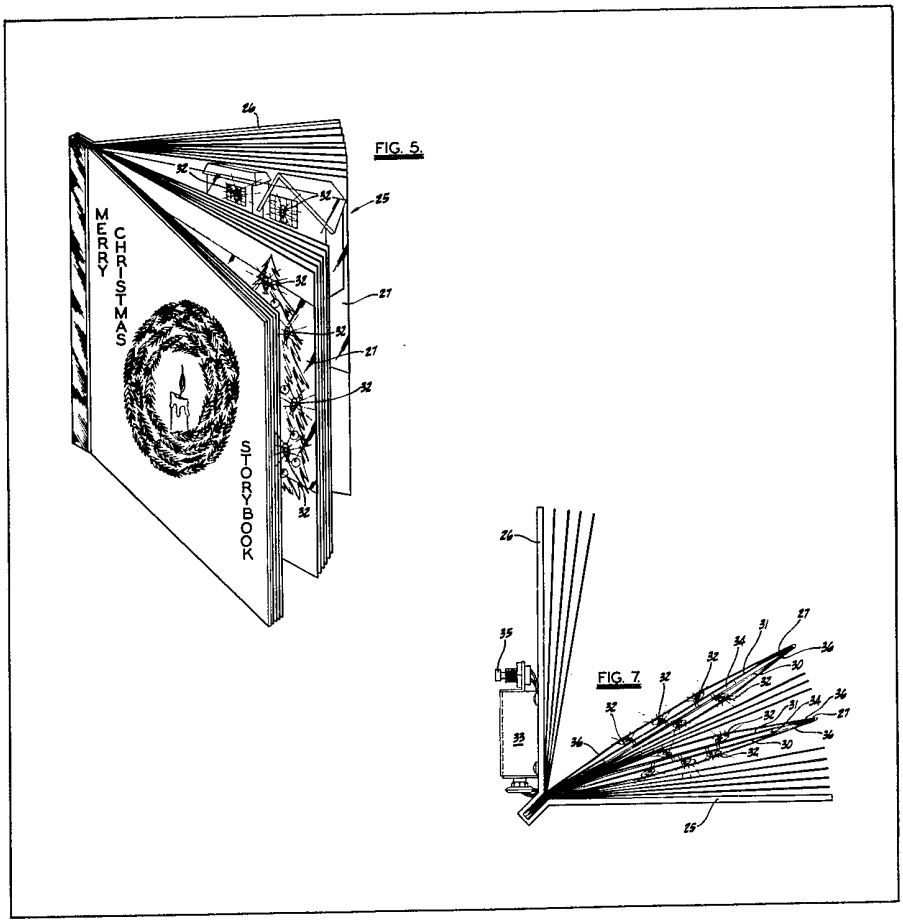

FIG. 5.

FIG. 7.

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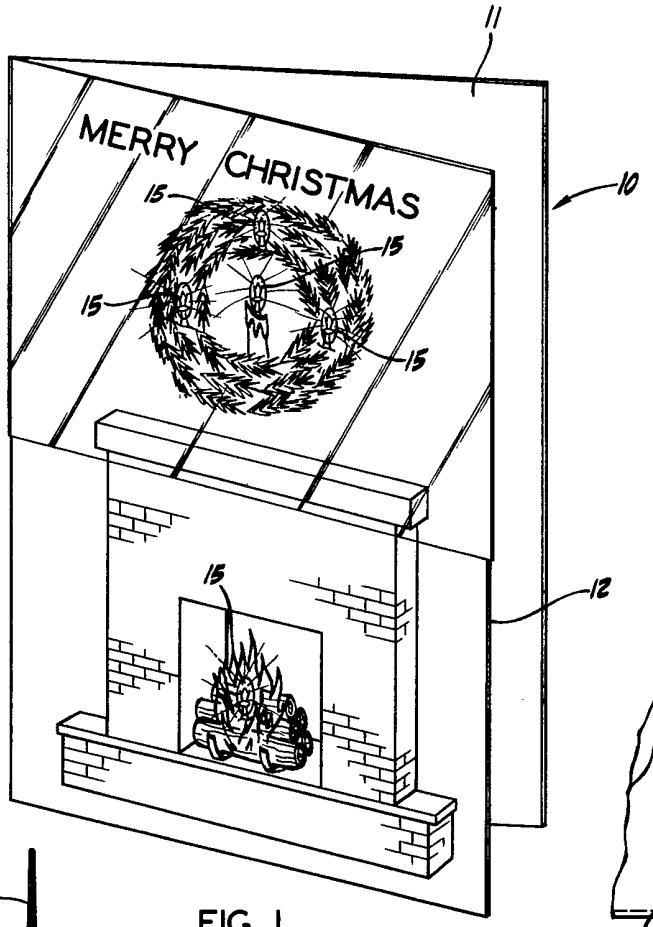

FIG. 1.

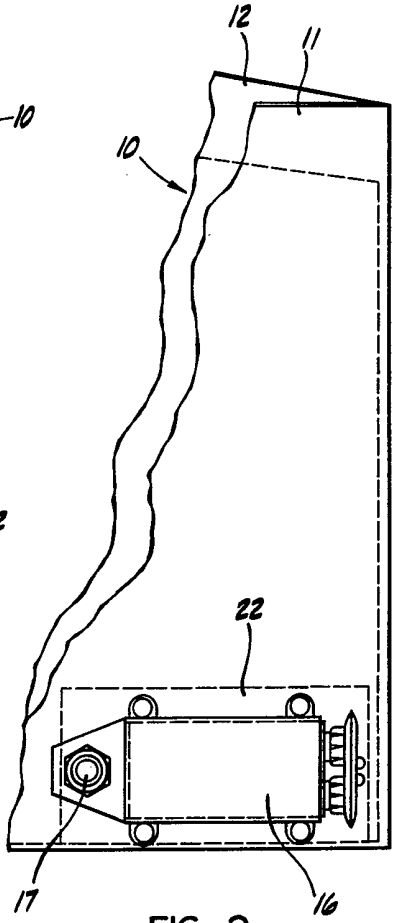

FIG. 2.

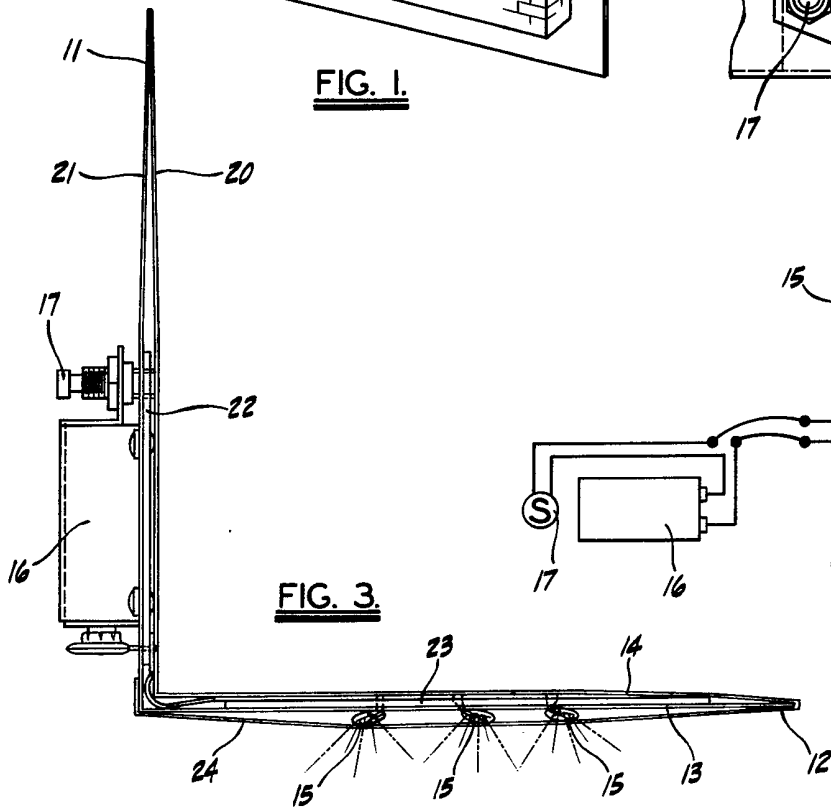

FIG. 3.

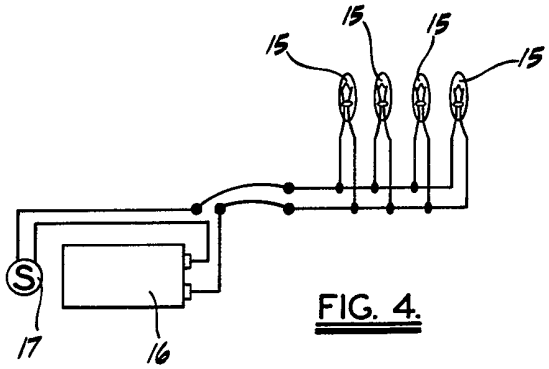

FIG. 4.

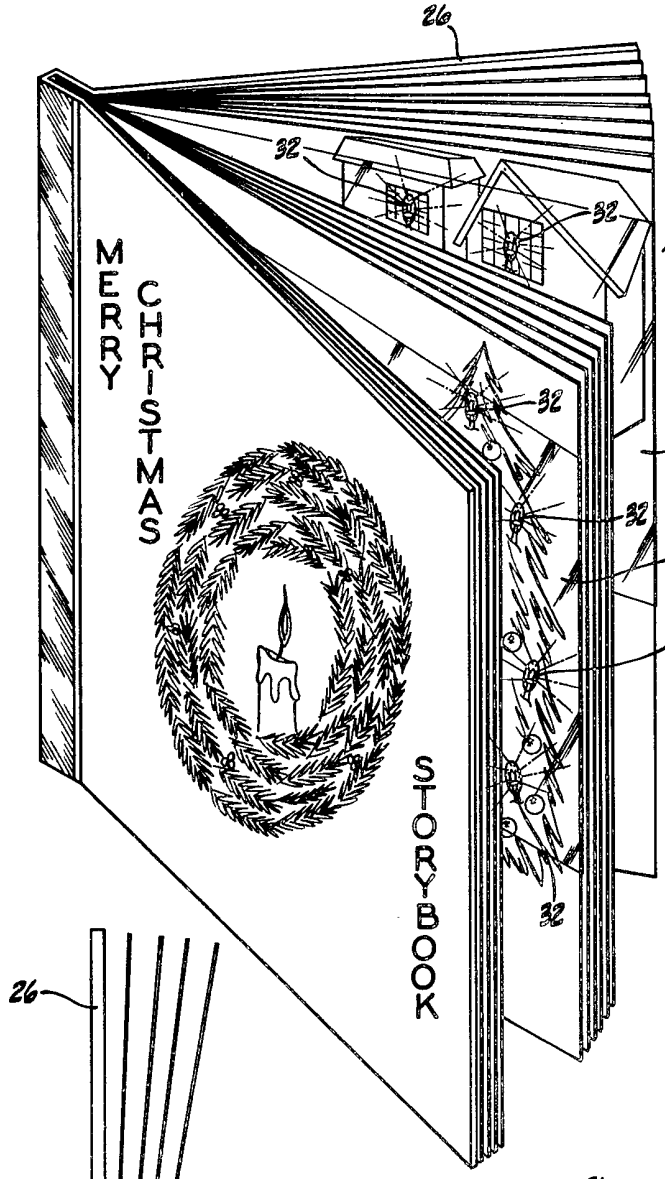

FIG. 5.

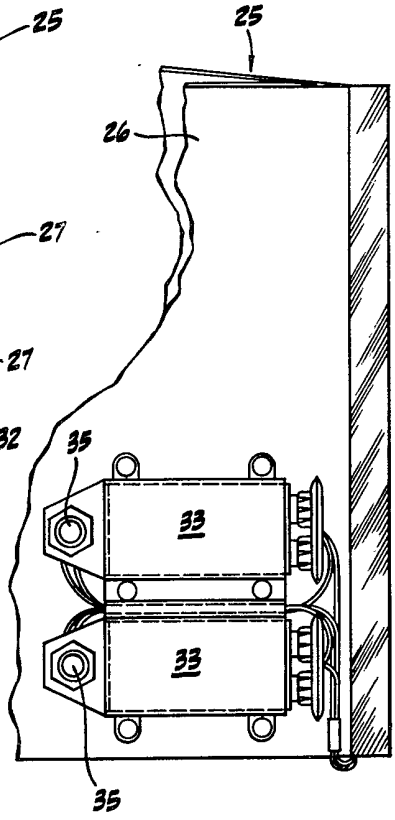

FIG. 6.

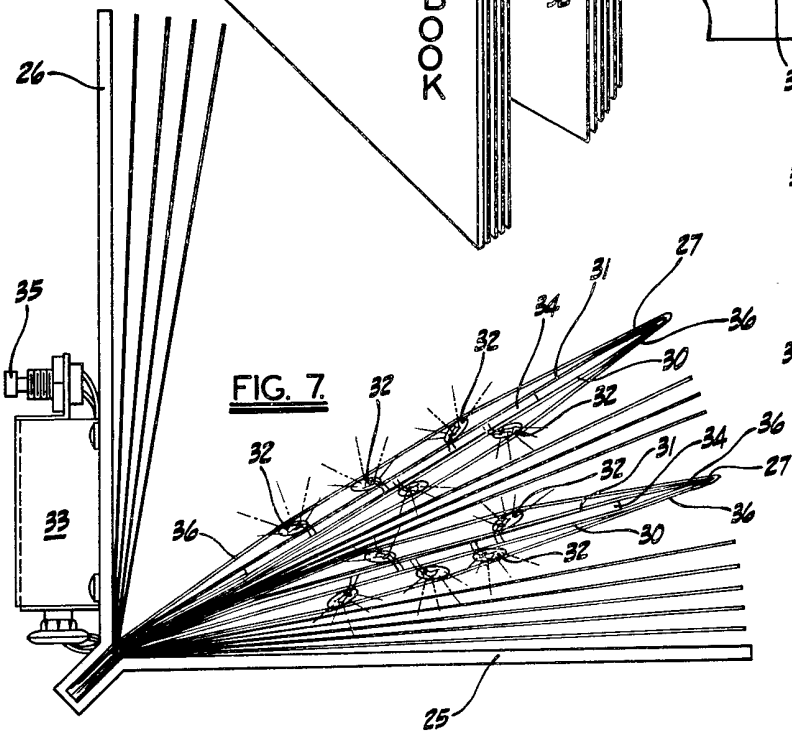

FIG. 7.

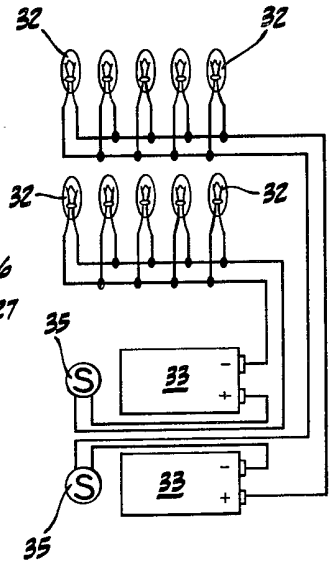

FIG. 8.

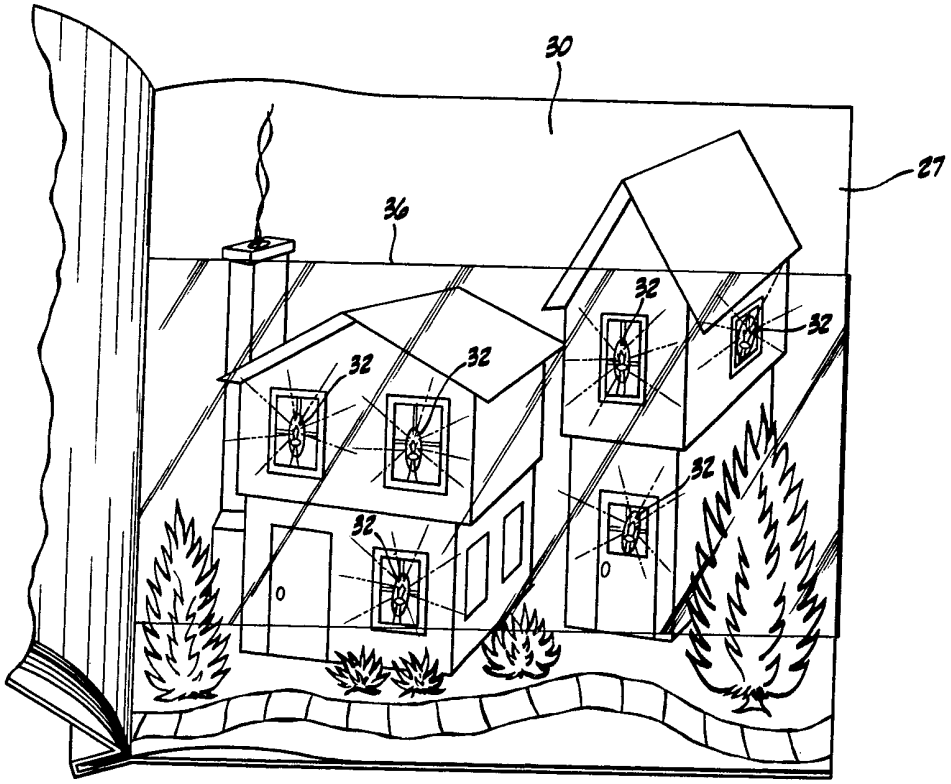

FIG. 9.

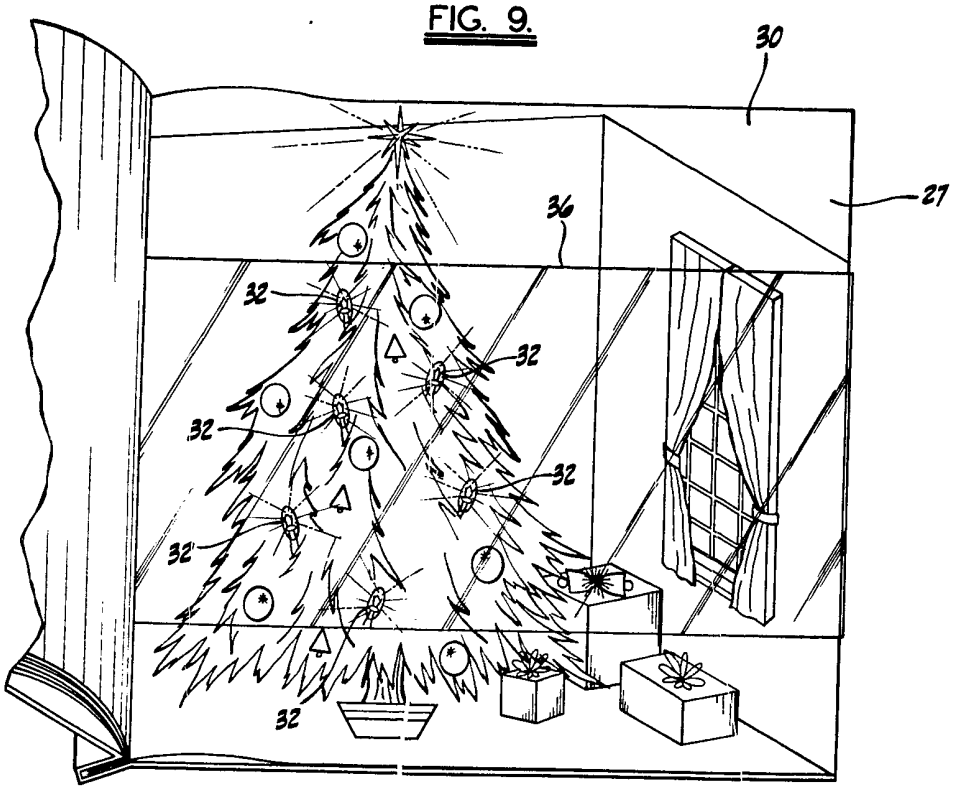

FIG. 10.

SPECIFICATION

Electrically illuminated book

This invention relates generally to an electrically illuminated book, and more particularly to a book having a single page such as a greeting card or a book having multiple pages such as a children's picture and/or story book.

In a prior known illuminated book, as disclosed in U.S. Patent No. 3,622,771, a lamp is carried by the rear cover of the book and is exposed through aligned openings provided in the superimposed pages. With this structural arrangement, a single lamp is used and is fixed in place without any flexibility in locating the lamp in different positions on different pages. There is no disclosure that such a lamp constitutes any part of a pictorial illustration provided on any of such pages.

The present invention provides a book comprising at least one page having a pictorial illustration in which a portion of the matter illustrated could be expected realistically to emit light, a miniature electric lamp disposed within the illumination portion of the page, and an electrical means carried by the book and including an electric power source connected operatively to the lamp and a manually operable switch operatively connected between the power source and the lamp for selectively energizing the lamp.

In the electrically illuminated book of the present invention, the miniature lamps can be placed in those illustration portions of which the matter illustrated can be expected realistically to emit light, for any type of pictorial illustration provided on the page without restriction to the number of lamps or the particular location of such lamps.

In addition to the uniqueness and attractiveness of the electrically illuminated book of the invention, it provides another dimension in the area of education for those with hearing-speech problems, perceptual, motor-learning disabilities, autistic problems, as well as those who are retarded or emotionally disturbed. The surprise and fascination of not only light, but if desired multi-colored lights, can be ingeniously used in the illuminated book, not only to obtain the attention of the student, but to hold it as well. One of the problems in the area of such education is to capture and hold the student's attention for any length of time.

In a preferred aspect of the invention, the page or one of the pages of the electrically illuminated book comprises adjacent superimposed sheets, one sheet providing the front side of the page and another sheet providing the reverse side of the page. The electrical circuit preferably comprises a printed circuit card disposed and retained between the front and reverse sheets of the page, the printed circuit card operatively connecting the power source to the lamp. Of course, conventional electrical wiring may be used. The electric power source and digitally actuated switch are mounted on a cover attached to the page.

In one embodiment of the invention, for providing a protective shield, a transparent film over the page overlies the lamp.

In another embodiment of the invention, the front and reverse sides of the page are each provided with pictorial illustrations in which a portion of the matter illustrated could be expected realistically to emit light, and miniature lamps are disposed within the illustration portions on both the front and reverse sides. When miniature lamps are placed on both the front and reverse sheets of the page, a transparent film over the page preferably overlies the lamps on the front and reverse sheets for providing protective shields for all lamps.

Drawings

Figure 1 is a perspective view of the electrically illuminated book according to the invention in the form of a greeting card;

Figure 2 is a fragmentary rear view of the book shown in Figure 1, illustrating the mounting of the power source and switch;

Figure 3 is a top plan view of the book of Figure 1;

Figure 4 is a circuit diagram of the electrical assembly utilized in the book of Figure 1;

Figure 5 is a perspective view of another illuminated book according to the invention, being a children's picture and/or story book;

Figure 6 is a fragmentary, rear view of the book of Figure 5, illustrating the mounting of the power source and switch;

Figure 7 is a top plan view of the book of Figure 5;

Figure 8 is a circuit diagram of the electrical circuit utilized in the book of Figure 5;

Figure 9 is a front view of a page of the book of Figure 5 showing one type of illustration; and

Figure 10 is a front view of a page of the book of Figure 5 showing another type of illustration.

Referring now by characters of reference to the drawings, and first to the electrically illuminated book 10 illustrated in Figures 1-4, and representative of a greeting card, it will be understood that the book 10 includes a back cover 11 and a front page 12. The page 12 includes a front sheet 13 and a reverse sheet 14 located in adjacent superimposed relation. Provided on the page 12, and particularly on the front sheet 13, is a pictorial illustration as for example, a wreath and a fireplace in Figure 1. The pictorial illustration has a portion such as a candle in the wreath and a log in the fireplace that could be expected realistically to emit light. A miniature lamp 15 which may be a light emitting diode is disposed within these illustration portions.

An electrical means is carried by the book, the electrical means including an electrical power source 16 such as a DC battery and a digitally actuated switch 17. As is best shown in Figures 2 and 3, the rear cover 11 includes adjacent superimposed sheets 20 and 21 having a substantially rigid planar member 22 therebetween. The power source 16 and switch 17 are mounted on the back cover 11, and more particularly are mounted on the rear cover sheet 21 to the intervening substantially rigid member 22.

An electrical circuit means provided by a printed circuit card 23 is disposed between the front and reverse sheets 13-14 of the page 12, the printed

circuit card operatively connecting the power source 16 to the lamps 15. Of course, conventional electrical wiring may be used.

To provide a protective shield for the lamps 15, a transparent film 24 is attached to the page 12 and overlies the lamps 15 on the front sheet 13.

To energize the lamps 15, the viewer closes the switch 17. The light from the lamps 15, which may be multicolored and which are in illustration portions expected to realistically emit light, attract and hold the attention of the user.

The illuminated book referred to by 25 is of the children's story and/or picture book type. This book 25 includes a back cover 26 and a plurality of pages 27. Each of the pages 27 includes adjacent superimposed sheets 30 and 31, sheet 31 providing the front side of the page 27 and the other sheet 31 providing the reverse side of the page 27. Each of the front and reverse sheets 30-31 of pages 27 is provided with a pictorial illustration of the type that is perhaps best shown in Figures 9 and 10 in which a portion could be expected realistically to emit light, i.e., house windows in Figure 9 and Christmas tree lights in Figure 10. A plurality of miniature lamps 32 are disposed within these illustrated portions on the front and reverse sheets 30-31. These lamps can be multicolored as desired.

An electrical means is carried by the book 25 for selectively energizing the lamps 32 to attract and retain the attention of the viewer. This electrical means includes an electrical power source 33 such as a DC battery mounted on the rear cover 26 of the book 25. An electric circuit means provided by a printed circuit card 34 is disposed between the front and reverse sheets 30-31 of each of the pages 27, the printed circuit card 34 operatively connecting the power source 33 to the lamps 32. Of course, conventional electrical wiring may be used. A digitially actuated switch 35 is mounted with the power source 33 to the rear cover 26 of the book 25, for selectively energizing the lamps 32 in the illustrated portions.

A transparent film 36 is attached to each of the pages 27 and overlies the lamp 32 on the front and reverse sheets 30-31 for providing a protective shield.

Although separate power sources 33 are provided for the lamps 32 associated with each of the pages 27 in the embodiment shown, it will be understood that upon appropriate adjustments to the electrical circuit, such lamps 32 can be energized from a single power source or from any number of desired power sources, and upon appropriate location and connection of switches 35, any number of lamps 32 on the pages 27 can be selectively energized.

Again, as described previously, the user of this electrically illuminated book can selectively energize the lamps 32 on any of the pages 27 by closing the appropriate switch 35, thereby lighting the lamps 32 within the illustrated portions that could be realistically expected to emit light in the pictorial illustrations, and capturing the attention of the viewer, which is usually a child.

CLAIMS

1. A book comprising at least one page having a pictorial illustration in which a portion of the matter illustrated could be expected realistically to emit light, a miniature electric lamp disposed within the illustration portion of the page, and an electrical means carried by the book and including an electric power source connected operatively to the lamp and a manually operable switch operatively connected between the power source and the lamp for selectively energizing the lamp.

2. A book as defined in claim 1, in which the page or one of the pages comprises adjacent superimposed sheets, one sheet providing the front side of the page and another sheet providing the reverse side of the page, wherein the pictorial illustration and lighted illustration portion within which the electric lamp is disposed is provided on at least one of the sheets, and the electrical means includes an electrical circuit located between the front and reverse sheets of the page for operatively connecting the power source to the electric lamp.

3. A book as defined in claim 2, in which the electrical circuit comprises a printed circuit card disposed and retained between the sheets of the page.

4. A book as defined in any preceding claim, in which a transparent film over the page overlies the electric lamp for providing a protective shield for the lamp.

5. A book as defined in claim 1, in which the page or one of the pages comprises adjacent superimposed sheets, one sheet providing the front side of the page and another sheet providing the reverse side of the page, wherein the front and reverse sides of the page are each provided with pictorial illustrations in which a portion of the matter illustrated in each illustration could be expected realistically to emit light, the respective illustration portions of the front and reverse sides of the page being misaligned, a plurality of miniature electric lamps is disposed within the said misaligned illustration portion of the front and reverse sides of the page, and the electrical means carried by the book comprises a electric circuit located between the front and reverse sides of the page for connecting the power source to the lamps, the manually operable switch selectively energizing the electric lamps in the misaligned illustration portions.

6. A book as defined in claim 5, in which the electric circuit comprises a printed circuit card disposed and retained between the sheets of the page.

7. A book as defined in claim 5 or claim 6, in which a transparent film over each side of the page overlies the electric lamps providing a protective shield for the lamps.

8. A book according to any preceding claim, wherein the or each lamp is a light emitting diode.

9. An electrically illuminated book constructed substantially as illustrated herein with reference to the drawings.

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