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COMBINED LIGHT SOURCE AND ARTICLE OF FURNITURE

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FIG. 1

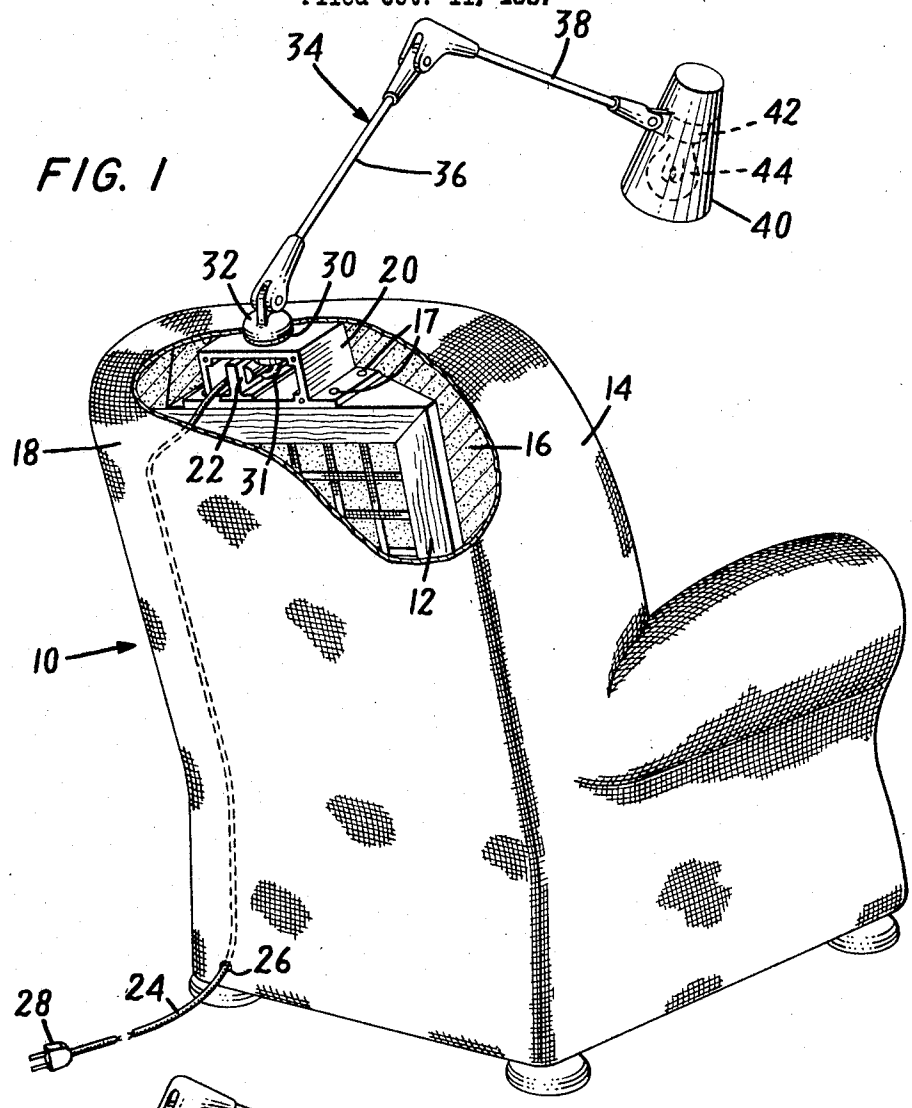
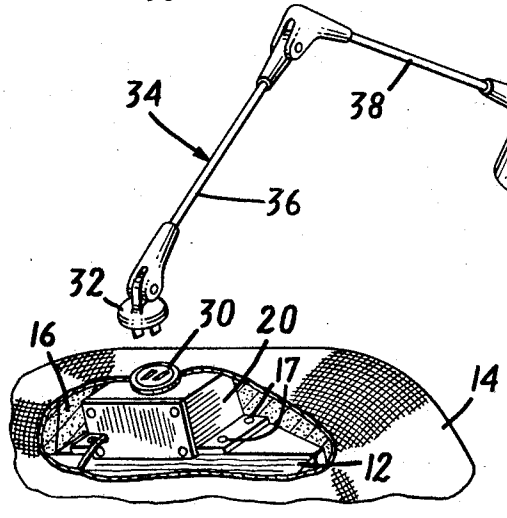


FIG. 2



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COMBINED LIGHT SOURCE AND ARTICLE OF FURNITURE

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ABSTRACT OF THE DISCLOSURE

A combined light source and article of furniture consisting of a chair or the like having mounted in the top of the back thereof a step-down transformer for transforming a conventional household 110 volt A-C power signal into a reduced A-C power signal. The household power signal is supplied to the input winding of the transformer by a power cord which extends through the chair to a plug outside the chair adapted for engagement with a conventional wall socket. The output winding of the transformer is connected to a socket similarly mounted in the chair for removable engagement with a connector carried by an articulated support arm. On its other end, the support arm carries a small concentrated and directed light source which operates on the reduced voltage supplied across the output winding of the transformer.

BACKGROUND OF THE INVENTION

This invention relates to articles of furniture and, more particularly, to articles of furniture such as chairs and the like which are provided with adjustable light sources.

It is known to provide a light source in combination with a chair to facilitate reading or working by a person sitting in the chair. For example, Patent No. 2,744,997 to Sefsik et al. discloses a reading lamp having a flexible support cable mounted in the upper end of a pipe built into the back of a chair. The lamp, which is of conventional size, is supplied with house current through a power cord which extends through both the pipe and the cable to the lamp. While the arrangement disclosed in the above-mentioned patent and similar prior art arrangements provide illumination for the area in and around the chair to thereby facilitate reading or working by a person sitting in the chair, these arrangements have not met with substantial commercial success. The primary reason for this lack of commercial acceptance is the fact that, in general, a room having one or several chairs provided with such lamps does not present a pleasing appearance to one entering the room. In addition, these arrangements do not provide for an easy and quick removal of the lamps from the chairs so that the lamps, rather than the chairs and the overall decor of the room, attract the most attention whether or not they are in use.

SUMMARY OF THE INVENTION

Accordingly, it is an object of the present invention to provide a combined light source and article of furniture which overcomes the above-mentioned disadvantages of the prior art.

It is another object of the present invention to provide a combined light source and article of furniture wherein the light source can be easily and quickly removed from one chair and moved to another chair or concealed in a drawer when not in use.

These and other objects of the invention are accomplished by mounting a step-down transformer in an article of furniture such as a chair, connecting a source of conventional household A-C power to the input side of the transformer and connecting the output side of the transformer to a small source of concentrated light operating on a reduced voltage and carried by a support arm which is removably mounted on the chair.

Preferably, the transformer is mounted in the top of the back of the chair and is housed by a casing which includes an eletcrical socket coupled to the output winding of the transformer for removably receiving a plug carried by the support arm. In addition, the support arm is preferably articulated so that the light source can be easily adjusted to provide the desired illumination. With this arrangement provided in several chairs in the room, it can be seen that the requirement for numerous lamps is eliminated and that a single light carrying arm can be moved from one chair to another or concealed in a drawer when not in use so that the overall decor of the room and the design of the individual chairs retain their prominence.

BRIEF DESCRIPTION OF THE DRAWING

In the drawing:

FIGURE 1 is a perspective view, partly broken away, of a combined light source and article of furniture arranged according to the present invention; and

FIGURE 2 is a fragmentary perspective view, partly broken away, of the FIGURE 1 embodiment showing the light source detached from the article of furniture.

DESCRIPTION OF THE PREFERRED EMBODIMENT

In an illustrative embodiment of a combined light source and article of furniture arranged according to the present invention, as shown in FIGURES 1 and 2, the article of furniture comprises a chair **10** of any known and conventional type. The chair **10** includes a frame **12** formed of wood, a covering **14** of suitable material, such as leather or fabric and a stuffing **16** of suitable material such as foam rubber, cotton or the like. Secured to the frame **12** by a plurality of bolts **17** and disposed in the top of the back **18** of the chair **10** is a casing **20**. Alternatively, the casing **20** may be mounted in one of the arms of the chair **10**, as will be apparent hereinafter.

Mounted in the casing **20** is a step-down transformer **22** which may be of any known and conventional type and, accordingly, supplies an output voltage signal across its output winding which is reduced with respect to the voltage signal supplied to the input winding of the transformer. As is known, the reduction in the output voltage is dependent upon the step-down ratio of the transformer. For example, if the transformer has a step-down ratio of eighteen to one and a 110 volt A-C power signal is impressed across the primary winding of the transformer, an output voltage signal of approximately six volts will appear across the output winding of the transformer.

The input winding of the transformer **22** is connected to one end of a power cord **24** which extends downwardly over a substantial portion of its length within the chair and thence through an opening **26** formed in the chair **10** and beyond the chair where it is terminated at its other end by a plug **28**. The plug **28**, which may be either of the conventional two or three prong type, is adapted for insertion into the usual household outlet (not shown) provided in the room in which the chair is situated.

Mounted in a recess formed in the top wall of the casing **20** is an electrical socket **30** which is coupled through a power cable **31** to the output winding of the transformer **22**. The socket **30** is adapted to receive and make electrical contact with a plug **32** carried on one end of an articulater support arm **34**. For the purpose of this description, the size of the support arm has been exaggerated, as should be apparent. The arm **34**, which preferably of lightweight construction, includes a first hollow cylindrical rod **36** which is frictionally pivotable about the

plug **32**, a second hollow cylindrical rod **38** which is frictionally pivotable about the first rod **36** and a shade **40** which is frictionally pivotable about the second rod **38**. Because of the frictional engagement between the components of the support arm **34**, it can be seen that the arm **34** may be vertically adjusted along its length to any desired position. For even greater flexibility of movement, the electrical socket **30** mounted in the casing **20** may also be made pivotable so that the articulated arm **43** could be adjusted to extend over either shoulder of the person sitting in the chair **10** at his option.

Mounted in the frictionally pivotable shade **40** and electrically coupled to the plug **32** by a pair of conductors (not shown) extending through both the second cylindrical rod **38** and the first cylindrical rod **36** is an electrical socket **42**. The electrical socket **42** is constructed to receive a small concentrated and directed light source **44** which operates on a reduced voltage. A typical light source suitable for use in the present invention is the commercial Tensor light which operates on a reduced voltage, such as, for example 6 volts. As above-mentioned, for light source operating on a reduced voltage such as 6 volts, the transformer **22** mounted in the casing **20** has a step-down ratio of approximately eighteen to one.

In operation, the plug **28** terminating the power cord **24** is inserted into an appropriate wall socket (not shown) provided in the room in which the chair **10** is placed. The household A–C power voltage is thereby coupled to the input winding of the transformer **22** through the cord **24**. The articulated arm **34** is then secured to the chair by inserting the plug **32** of the arm into the electrical socket **30** mounted in the casing **20**. The reduced voltage appearing across the output winding of the transformer **22** is coupled to the electrical socket **42** carrying the light source **44** through the power cable **31**, the socket **30**, the plug **32** of the arm **34** and the conductors (not shown) extending inside the arm and coupled on opposite ends to the plug **32** and the socket **42**. Accordingly, the light source **44** will be energized and will illuminate a specific area in and around the chair. The area of illumination and, acordingly, the displacement between the person sitting in the chair and the light source **44** can be suitably adjusted by pivoting the shade **40** or by pivoting either or both the cylindrical rods **36** and **38**.

From the above, it can be seen that with the above described arrangement provided in a number of chairs in a room, the necessity for numerous room lamps is eliminated and that the single removable light carrying arm **34** can be transported from one chair to another or disposed in a drawer when not in use. In addition, there will be no detraction from the overall appearance of the room or from the individual articles of furniture in the room in that, on a general inspection, one entering the room would not perceive the slight modification to the articles of furniture required by the present invention.

Although the invention has been described herein with reference to a specific embodiment, it should be understood that the invention is susceptible of considerable variation and modification. For example, a conventional switch may also be mounted on the casing **20** for controlling the electrical connection between the outlet of the transformer **22** and the socket **30**. In this manner, energization of the small light source **44** could be controlled by the person sitting in the chair **10** at any time after insertion of the plug **32** of the articulated support arm **34** into the socket **30**. In addition, as above-mentioned, the transformer **22** need not be mounted in the top of the back **18** of the chair but may be mounted in the arm of the chair. Also, a desk or table could be provided with the above-described arrangement without substantial modification. Accordingly, all such variations and modifications within the skill of the art are included within the scope of this invention as defined by the following claims.

What is claimed is:

1. A combined light source and article of furniture comprising a transformer mounted entirely within the article of furniture, means for connecting the input winding of the transformer to a source of power voltage, receptacle means positioned in the article of furniture and coupled to the output winding of the transformer, a support arm carrying connector means on one end thereof for removable engagement with the receptacle means and a small source of directed light mounted on the other end of the support arm and connected to the connector means for illuminating a specified area in and around the area of the article of furniture.

2. A combined light source and article of furniture according to claim **1** wherein the article of furniture comprises a chair and wherein the transformer comprises a step-down transformer mounted in the top of the back of the chair.

3. A combined light source and article of furniture according to claim **2** wherein there is further provided a casing mounted on the top of the back of the chair for housing the transformer and wherein the receptacle means comprises an electrical socket mounted in the casing adjacent the outer surface of the chair and connected to the output winding of the transformer, and wherein the connector means comprises an electrical plug.

4. A combined light source and article of furniture according to claim **2** wherein the small source of directed light comprises a source of concentrated and directed light operating at a voltage which is reduced with respect to the voltage supplied to the input winding of the transformer.

5. A combined light source and article of furniture according to claim **1** wherein the receptacle means comprises a female member having electrical contacts therein and the connector means comprises a male member having electrical contacts associated therewith and wherein the support arm comprises an articulated arm extending over and above the article of furniture and further including means connecting the small source of directed light to the male member.

6. A combined light source and article of furniture according to claim **1** wherein the means connecting the input winding of the transformer to a source of power voltage comprises a power cable extending over a substantial portion of its entire length within the article of furniture and terminating outside the article of furniture in a connector.

7. A combined light source and article of furniture comprising receptacle means positioned in the article of furniture adjacent an outer surface thereof, means adapted to supply a power voltage signal, transformer means operatively connected between the power voltage supply means and the receptacle means for supplying a selectively reduced power voltage signal to the receptacle means, a support arm carrying connector means on one end thereof for removable engagement with the receptacle means and a small source of directed light mounted on the other end of the support arm and connected to the connector means for illuminating a specific area in and around the article of furniture.

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