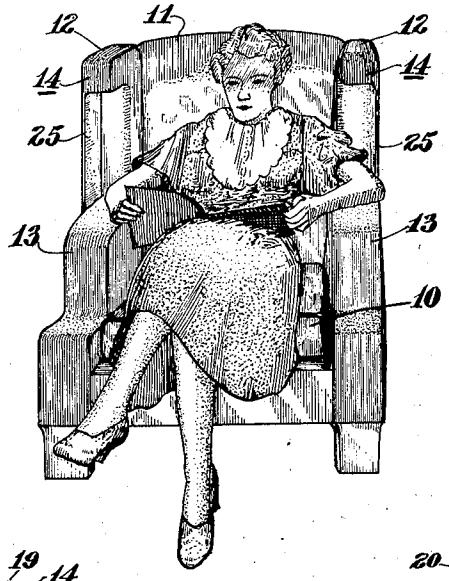
Nov. 19, 1935. G. J. DALY 2,021,836

FUNCTIONAL LIGHTING FOR FURNITURE

Filed May 24, 1934

Fig. 1.



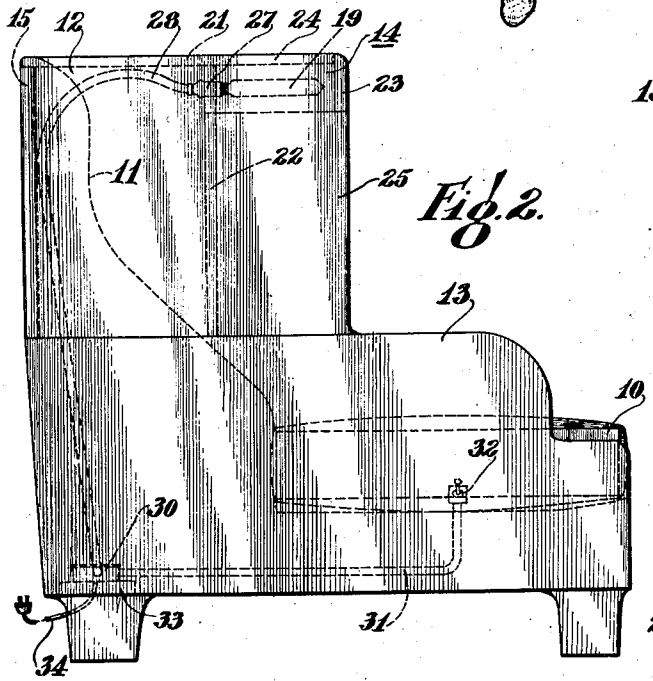


Fig. 2.

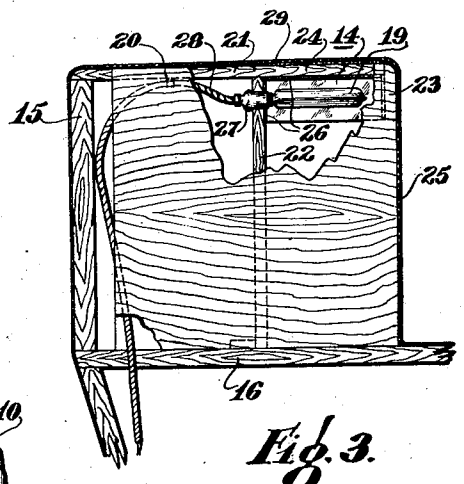


Fig. 3.

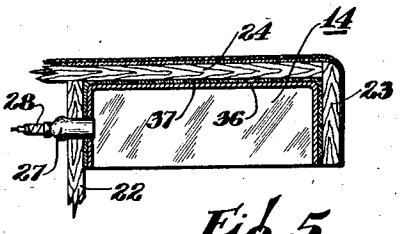


Fig. 5.

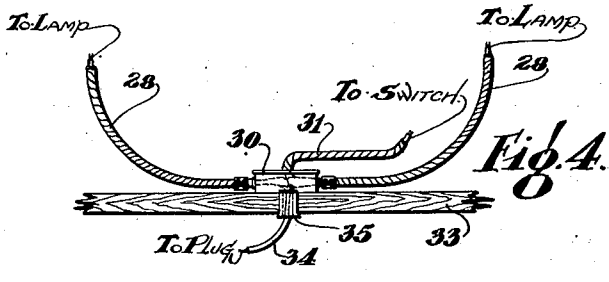


Fig. 4.

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FUNCTIONAL LIGHTING FOR FURNITURE

Grover J. Daly, Chicago, Ill.

Application May 24, 1934, Serial No. 727,235

5 Claims. (Cl. 240—4)

My invention relates to housing light sources in furniture.

An object of my invention relates to the provision of so housing and positioning light sources in furniture that adequate and proper illumination, as well as proper diffusion, is afforded without causing glare or eye strain.

Another object of my invention is the provision of a hidden light source incorporated in furniture such, for example, as a chair, whereby a person when sitting in the chair may comfortably see a visual object without straining the eyes, and whereby a second person may comfortably look at the person in the chair without having the rays of the light emanating from the light sources shine directly in the eyes of the second person.

Another object of my invention is the provision of a canopied housing for a light source adapted to be incorporated integrally with the structure of furniture.

A still further object of my invention is the provision of a side shield depending below the canopied housing for directing the light emanating from the light source which is located within the canopied housing.

Another object of my invention is the provision of incorporating a light source in furniture whereby the light is directed upon the visual object and not as glare light in the eyes.

Other objects and a fuller understanding of my invention may be had by referring to the following description taken in conjunction with the accompanying drawing in which:

Figure 1 is a view of a chair embodying the features of my invention;

Figure 2 is a side elevational view of the chair in Figure 1 and illustrates in addition thereto by dotted lines the principal features of my invention;

Figure 3 is a fragmentary view of one wing and the canopied housing of a chair embodying my invention, parts being broken away to illustrate more clearly the construction of my invention;

Figure 4 is a view showing, primarily, the electrical junction box and the conductors which lead to the light sources and the switch, and

Figure 5 is a view of a modified form of my canopied housing in that the reflector for the light source is constructed of a polished metal.

With reference to the drawing, I have illustrated my invention in connection with an upholstered chair, but it is to be understood that the invention may likewise be incorporated in chairs of other styles, and in other types of furniture such as, for example, beds. In the art of incorporating light sources in furniture a great deal of difficulty is experienced in so designing the furniture that the light source is positioned correctly with respect to the user. This is because if the light source is not properly located there is produced a glare light which decreases the visual acuity, that is the sharpness of vision, and thus produces fatigue and eye strain. However, in my invention experiments show that the light source is properly located and worked out to give the correct angle so that the visual object viewed by the user of the chair is adequately and properly illuminated without producing the undesirable effect of glare light.

As illustrated, the chair into which my invention is incorporated comprises a seat 10, a back 11, wings 12 and side arms 13 and, as shown perspectively in Figure 1, the canopied housings 14 into which the light sources 19 are mounted being integrally formed with the wings 12 of the chair. With reference to Figures 2 and 3 of the drawing the construction of the chair includes a corner supporting member 15, an arm supporting member 16, a vertically positioned supporting member 22 for the front edge of the wing 12, a horizontally positioned supporting member 21 for the top of the wing 12, and an outer shield 25 which embraces that region below the canopies housing 14. The horizontally positioned supporting member 21 which is the top of the wing 12 extends forwardly beyond the vertically supporting member 22, and the forwardly extending portion is represented by the reference character 24. As illustrated, upon the end of the forwardly projecting portion of the supporting member 24 there is mounted a depending block 23 which forms the end of the canopies housing 14. The outside wall for the canopied housing 14 is afforded by the upper portion of the shield 25 and the inside wall for the canopied housing 14 is afforded by another member not shown which extends from the vertically positioned member 22 to the depending block 23.

The receptacle 27 for the electric light bulb 19 is of a standard construction and is supported in the upper end of the vertical supporting member 32. In mounting the standard light receptacle 27 there is provided an opening through which the forward and reduced end of the receptacle 27 is positioned. As illustrated best in Figures 2 and 3 the receptacle 27 is held within the opening by means of the armored flexible conductor 28 and a suitable clamp 20. The armored and flexible conductor 28 is relatively stiff and may be subjected to considerable longitudinal pres-

sure, and thus that portion of the armored conductor between the clamp 20 and the receptacle 27 is amply strong to prevent the receptacle 27 from being pushed rearwardly out of the opening in the upper end of the vertical supporting member 32 when screwing in the electric light bulb 19. The armored conductors 28, as shown best in Figures 2 and 4, are connected to an electrical junction box 30 mounted upon a cross-member 33 which interconnects the two rearward legs of the chair. The cord 34 which is adapted to plug into a conventional light socket enters the electrical junction box 30 through a porcelain tube 35 mounted in the cross-member 33. The switch 32 for operating the electric light bulbs 19 has been preferably mounted along the side of the cushion and the side arms of the chair where it may be conveniently actuated by the tips of the fingers. The switch 32 is connected by means of the armored and flexible conductor 31 to the electrical junction box 30. The electrical connections within the electrical junction box 30 are such that the two electric light bulbs 19 are connected in parallel so that when the switch 32 is actuated to its "on" position the two bulbs are illuminated. The insulation afforded by the armored and flexible conductors, in combination with the electrical junction box 30 and the porcelain tube 35 is an absolute assurance against any fire hazard caused by poorly insulated conductors or the like.

As shown in Figure 3 the inner walls of the canopied housing 14 are lined with a heat resisting material 26 such as bakelite. The bakelite lining or heat resisting material 26 may be mounted along the inner walls of the canopied housing 14 in any suitable manner such as by means of glue or other adhesive material. The outer wall surface of the canopied housing 14 is covered with a suitable heat resisting material 29 such as asbestos over which the surface upholstering material may be placed.

The shield 25 constitutes a relatively large, thin piece of wood and extends from the horizontally positioned supporting member 21 to the supporting member 16 for the side arm. The shield 25 not only constitutes a means for directing the light rays more effectively upon the visual object of the user of the chair, but also constitutes a backing for the finishing upholstering material.

In accordance with my invention the electric light bulbs 19 are positioned a considerable distance in advance of the back of the chair, and as a result there is no interference of the light rays intercepting the head of the reader when sitting in the chair. After considerable experimentation it was determined that the light sources when mounted in advance of the back of the chair made the natural inclination of the user to sit in a natural posture and read in comfort with substantially no eye strain. When the lights were placed too far back, as would be the case without my canopied housing, the head of the user interferes with the direction of the light and the user unconsciously slips into a posture that causes eye strain. In this connection the applicant stresses the point that the light sources as mounted in the present invention constitute as necessary a part of the chair as the seat itself. In other words, the light sources are purely functional and are not designed for decorative purposes which is usually the case when the lights are mounted too close to the back of the chair whereby the rays of light pass over the user's shoulders and cause eye strain. For the average person a line passed across from the lower edge of the canopied housing 14 would intercept the eyes of the user. Therefore, experiments show that there is substantially no glare caused because the light sources are substantially on a level and sometimes below the eyes of the user.

In Figure 5 I show a modified form of my canopied housing 14 in that the internal walls of the housing are lined with a polished metal reflector 36 instead of the bakelite lining 26. Between the polished metal reflector 36 and the inner walls of the canopied housing 14 is positioned an asbestos packing 37 to minimize the amount of heat transferred over to the wooden structure of the canopied housing 14. By utilizing the polished metal reflector 36 the efficiency of the lighting source is somewhat increased. However, the intensity of the light source may be varied to suit the user by changing the wattage of the electric light bulbs. In my invention besides the features which give the proper illumination at the correct angle the light sources are not apparent when the lights are turned off because of the hidden effect of the canopied housing 14. Also, by reason of the canopied housing 14 a second person may comfortably look at the person in the chair without having the rays of the light emanating from the light source shine directly in the eyes of the second person. This is because the light which emanates from the light sources is directed downwardly in front of the person sitting in the chair and upon the visual object viewed by the person sitting in the chair.

Although I have described my invention with a certain degree of particularity, it is understood that the present disclosure has been made only by way of example and that numerous changes in the details of construction and the combination and arrangement of parts may be resorted to without departing from the spirit and the scope of the invention as hereinafter claimed.

I claim:

1. A chair having a hidden light source incorporated therein, whereby a person when sitting in the chair may comfortably see a visual object without straining the eyes and whereby a second person may comfortably look at the person in the chair without having the rays of the light emanating from the light source shine directly in the eyes of the second person comprising, in combination, a seat and a back for the chair, a canopied housing for the light source, said canopied housing having an enclosed top and sides, and a bottom through which the light may pass, and means for supporting the canopied housing above the seat and sufficiently in advance of the back of the chair to accommodate for the depth of a person sitting in the chair, so that substantially all of the light rays emanating through the bottom of the canopied housing are directed downwardly in front of the person sitting in the chair.

2. In a chair having a seat and a back, the combination with a light source, of a supporting member adapted to extend upwardly from the seat and in advance of the back, a second member mounted on the supporting member and arranged to project forwardly therefrom, a canopied housing for the light source, said housing having an enclosed top and sides and being mounted beneath the forwardly projected portion of the second member, the housing having a bottom through which light may pass, so that substantially all of the light rays emanating from the housing are directed downwardly in front of

a person sitting in the chair and upon a visual object viewed by the person.

3. In a chair having a seat, a back, side arms, and wings, the combination with a light source, of a supporting member adapted to extend upwardly from the side arms and in advance of the back to constitute the forward portion of the wing, a second member mounted on the supporting member and arranged to project forwardly therefrom, a canopied housing for the light source, said housing having an enclosed top and sides and being mounted beneath the forwardly projected portion of the second member, the housing having a bottom through which light may pass, so that substantially all of the light rays emanating from the housing are directed downwardly in front of a person sitting in the chair, and an outside shield for the light, said shield extending downwardly from the outside of the canopied housing and being substantially coplanar with the outside of the wing.

4. A chair having a light source incorporated therein, whereby a person when sitting in the chair may comfortably see a visual object without straining the eyes, and whereby a second person may comfortably look at the person in the chair without having the rays of the light emanating from the light source shine directly in the eyes of the second person comprising, in combination, a seat and a back for the chair, a canopied housing for the light source, said canopied housing having a bottom through which the light may pass and having a cover portion for directing the light through the said bottom, and means for supporting the canopied housing above the seat and sufficiently in advance of the back of the chair to accommodate a person sitting in the chair, so that substantially all of the light rays emanating through the bottom of the canopied housing are directed downwardly in front of the person sitting in the chair.

5. In a chair having a seat and a back, the combination with a light source, of a supporting member connected to the back and arranged to project forwardly from the said back, a canopied housing for the light source, said housing having a bottom through which the light may pass and having a cover portion for directing the light through the said bottom, and means for supporting the said canopied housing by the said supporting member above the seat and in advance of the back of the chair to accommodate a person sitting in the chair, so that substantially all of the light rays emanating through the bottom of the canopied housing are directed downwardly in front of the person sitting in the chair.

GROVER J. DALY.