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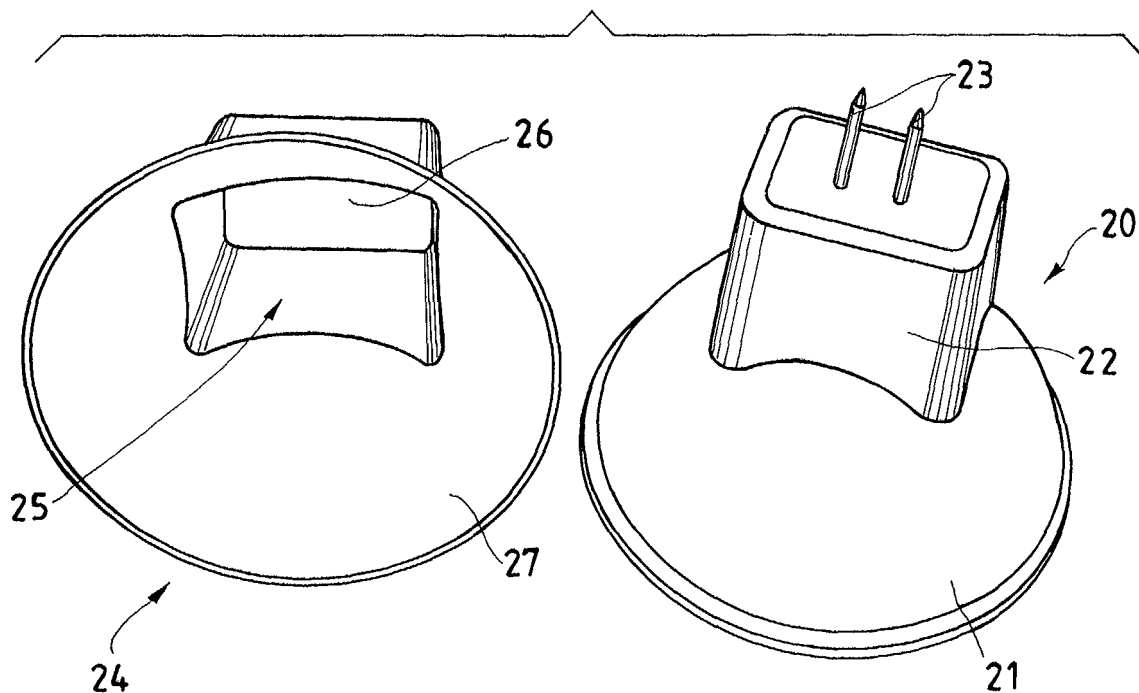
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(54) **Dichroic lamp with improved diffusion of light radiation**

(57) A dichroic lamp (20) with improved diffusion of light radiation, in which the rear surface of the lamp-shade (21) is directly in contact with a screen (24) having a dissipating capacity, obtained by the impact moulding

of a metal plate; the screen (24) allows the iridescence created behind the distribution direction of the radiation emitted from the light source of the dichroic lamp (20), to be eliminated.

Fig.2



Description

[0001] The present invention relates to a dichroic lamp with improved diffusion of light radiation.

[0002] Dichroic lamps exploit the properties of certain crystals which have two main absorption colours and are generally used in lighting appliances with indirect or diffused light, for use in low voltage halogen light sources; these sources are specifically suitable for spaces requiring accent lighting for highlighting particularly expressive and decorative objects, products or environmental effects.

[0003] A dichroic lamp currently comprises specific painting directly on the lamp-shade; alternatively, in order to obtain the same light effects, it is also possible to apply a piece of dichroic glass in front of the light source of a lamp of the traditional type.

[0004] A typical application of dichroic lamps is represented in figure 1, which illustrates a wall-lighting appliance 10 having a series of empty sections 11 for inserting respective optical groups 12, each of which supports a dichroic lamp, to which the line cords 19 are attached.

[0005] Furthermore, in the case of the figure, which represents an illustrative but non-limiting embodiment of a particular use of dichroic lamps, a container 13 of an electronic transformer is connected to the lamp section 14 by means of a pin joint 15, which allows the section itself 14 to be inclined according to the directions included within a certain pre-established angle.

[0006] Finally, the container 13 is fixed to the wall 16 by means of a support 17, connected to a supporting plate 18.

[0007] The negative aspect linked to the use of dichroic lamps in lighting appliances is particularly evident, especially in applications of this kind; this disadvantage basically lies in the formation of iridescence and reflections behind the lamp, which, in the case illustrated, cause a series of streaks (red-coloured) on the wall 16, with obvious negative consequences on the overall light diffusion and aesthetics of the whole lighting appliance.

[0008] Furthermore, dichroic lamp manufacturers guarantee a certain average life at limit functioning temperatures of about 350°C; in the various applications effected so far however, these lamps are normally contained within supporting sections and shells, which contribute to considerably increasing the heat produced by the light source, resulting in an inevitable and drastic cut in the duration of the lamp to about half of the average life guaranteed under nominal conditions.

[0009] The objective of the present invention is consequently to indicate a dichroic lamp with an improved diffusion of light radiation, which overcomes the drawbacks mentioned above and, in particular, to produce an improved dichroic lamp which eliminates iridescence, reflections and other defects present in lamps of the traditional kind in numerous applications on general lighting appliances.

[0010] A further objective of the present invention is

to indicate a dichroic lamp with improved diffusion of light radiation, which allows an extremely homogeneous and relaxing light diffusion to be obtained.

[0011] An additional objective of the present invention is to produce a dichroic lamp with improved diffusion of light radiation, suitable for effectively dissipating the heat generated by the light source used and contained inside the lamp-shade.

[0012] Last but not least, an objective of the invention is to produce a dichroic lamp with improved light diffusion in a simple and economic way, without the necessity of using complex or costly technologies.

[0013] These objectives are achieved with a dichroic lamp with improved diffusion of light radiation according to claim 1, to which reference should be made for the sake of brevity.

[0014] The characteristics of the invention are more evident from the following description and enclosed drawings relating to an illustrative but non-limiting embodiment, wherein:

- figure 1 shows a perspective view of an illustrative embodiment relating to a lighting appliance of the traditional type, inside which a series of dichroic lamps produced according to the known art, are assembled;
- figure 2 shows an exploded view of a dichroic lamp with improved diffusion of light radiation to be assembled according to the present invention;
- figure 3 represents a perspective view of an assembled dichroic lamp, according to the present invention.

[0015] With particular reference to figures 2 and 3, a dichroic lamp with improved diffusion of light radiation, according to the present invention, is generically indicated with 20; the above lamp 20 comprises a lamp-shade 21, which is suitably painted for providing dichroic light effects, an extended rear portion 22, which holds electric contacts 23, suitable for being connected, by means of connecting wires, to a light source.

[0016] Inside the lamp-shade 21, usually shaped in the form of a paraboloid, there is a light source (not visible in the figures) substantially arranged in correspondence with the paraboloid focus.

[0017] In order to eliminate the iridescence effects (generally consisting of reddish-coloured streaks) which the light source creates behind the paraboloid 21 due to the reflections generated thereon, a screen 24 is used, preferably obtained by the impact moulding of a metal plate, suitably shaped, to receive inside a cavity 25 the rear portion 22 of the traditional dichroic lamp generically indicated with 20 in figure 2.

[0018] In this way, the electric contacts 23 of the lamp 20 are free, due to an opening 26 situated on the bottom of the cavity 25, so as to have free access to the electric connections to be effected with the feed source.

[0019] The housing of the dichroic lamp 20 inside the

shaped screen 24 thus allows all reflection and light diffusion defects to the rear of the direction of radiation distribution emitted by the light source of the lamp 20, to be eliminated; in this respect, it can be clearly seen in figures 2 and 3 that the screen 24 is constructed so as to have a backward reflection of all possible light rays diffused to the rear by the dichroic paint on the lamp-shade 21.

[0020] Furthermore, the stable contact established between the concave surface 27 of the screen 24 and the rear surface of the paraboloid which forms the lamp-shade 21 enables a significant heat dissipation to be obtained, thus ensuring that the functioning of the lamp 20 always occurs under temperature conditions lower than the maximum temperature guaranteed by the manufacturers of dichroic lamps 20.

[0021] As this limit temperature, over which the average life of dichroic lamps 20 drops to much lower values (up to 1/2) with respect to those guaranteed under nominal functioning conditions, is equal to about 350°C, it is obviously extremely important to try and solve these thermal problems by means of elements with a high dissipating capacity.

[0022] As of today in fact, the use of conical hoods which can be installed around the lamp-shade of dichroic lamps, in addition to not guaranteeing any heat dissipation, causes a further increase in temperature inside the section normally containing the lamp.

[0023] In practice, the screen 24 used to avoid disturbing and anti-aesthetic reflections behind the dichroic lamp 20 also has the purpose of forming an element with a high dissipating capacity of the heat generated inside the lamp-shade, as it rests against and is kept in contact with the rear portion of said lamp-shade.

[0024] Finally, the screen 24 can be suitably sized for various types of dichroic lamps 20 still in production and is preferably adopted for the housing of dichroic lamps 20 having a diameter equal to 50 and 35 mm.

[0025] The characteristics of the dichroic lamp with improved diffusion of light radiation, object of the present invention, as also the advantages are clearly evident from the description provided.

[0026] Finally, numerous variations can obviously be applied to the embodiments of the invention illustrated herein, without excluding any of the novelty principles which characterize the inventive idea illustrated, and it is also possible, in the embodiment of the invention, to select the materials and dimensions according to technical demands.

Claims

1. A dichroic lamp (20) with improved diffusion of light radiation, of the type comprising a lamp-shade (21), suitable for obtaining dichroic light effects and inside which at least one light source is installed, connected to a series of electric contacts (23), which

extend from a rear portion (22) of said lamp (20), said electric contacts (23) being suitable for the electric connection of the light source with a feed line, said dichroic lamp (20) being **characterized in that** at least one portion of the surface of said lamp-shade (21), positioned to the rear of the dichroic lamp (20) with respect to the distribution direction of said light radiation emitted from said source, is covered by at least one screen (24) suitable for eliminating the iridescence generated by said dichroic lamp (20) in the opposite direction to the distribution.

2. The dichroic lamp (20) with improved diffusion of light radiation according to claim 1, **characterized in that** said screen (24) has a shaped conformation, so that a concave portion (27) thereof rests against and is kept in contact with said lamp-shade (21) of the dichroic lamp, said screen (24) also having on said concave portion (27) a passthrough cavity (25), inside which said rear portion (22) of the dichroic lamp (20) is housed.
3. The dichroic lamp (20) with improved diffusion of light radiation according to claim 1, **characterized in that** said passthrough cavity (25) has at least one opening (26) inside which said rear portion (22) of the dichroic lamp (20) is housed.
4. The dichroic lamp (20) with improved diffusion of light radiation according to claim 1, **characterized in that** said screen (24) is obtained by the impact moulding of a metal plate.
5. The dichroic lamp (20) with improved diffusion of light radiation according to claim 1, **characterized in that** said screen (24) is entirely in contact with said lamp (20), so as to act as an element with a high dissipating capacity of the heat generated inside said lamp-shade (21).
6. The dichroic lamp (20) with improved diffusion of light radiation according to claim 1, **characterized in that** said screen (24) is suitably shaped for being housed on dichroic lamps (20) having a diameter equal to 50 mm or equal to 35 mm.

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Fig.1

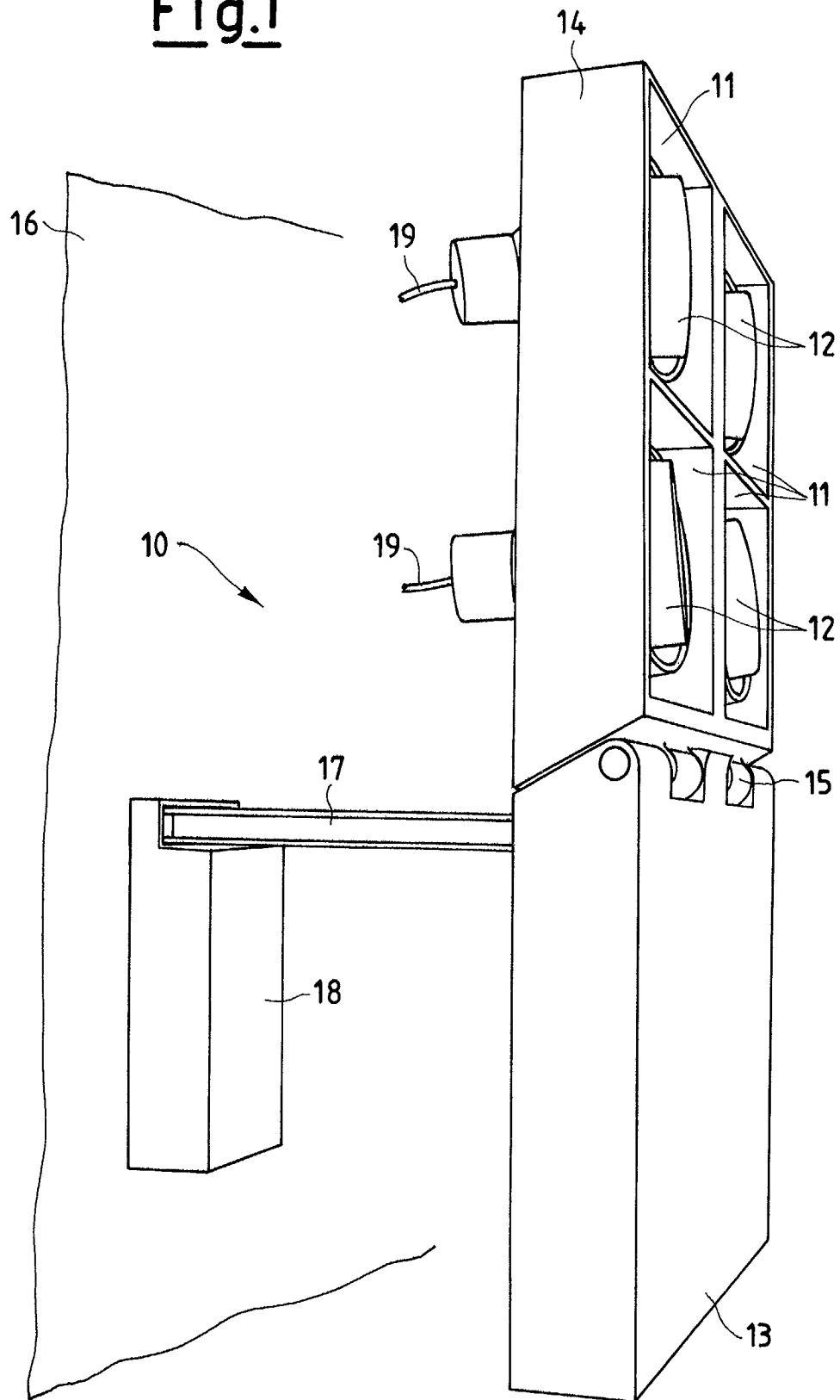


Fig.2

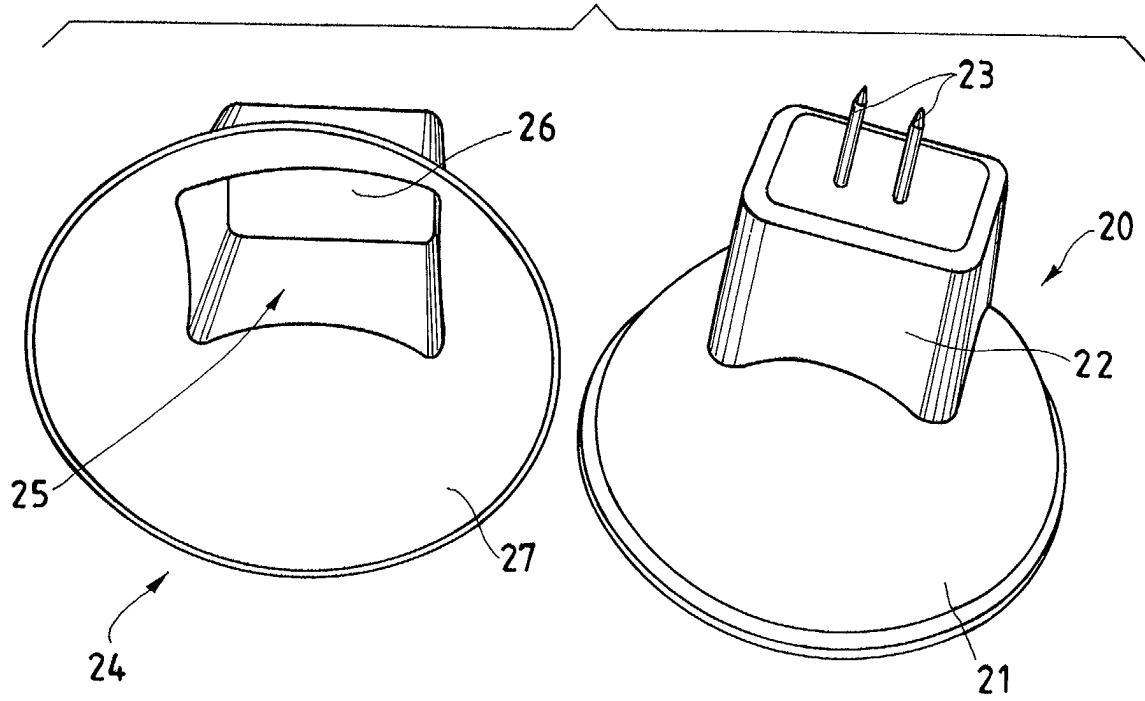


Fig.3

