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REFLECTOR

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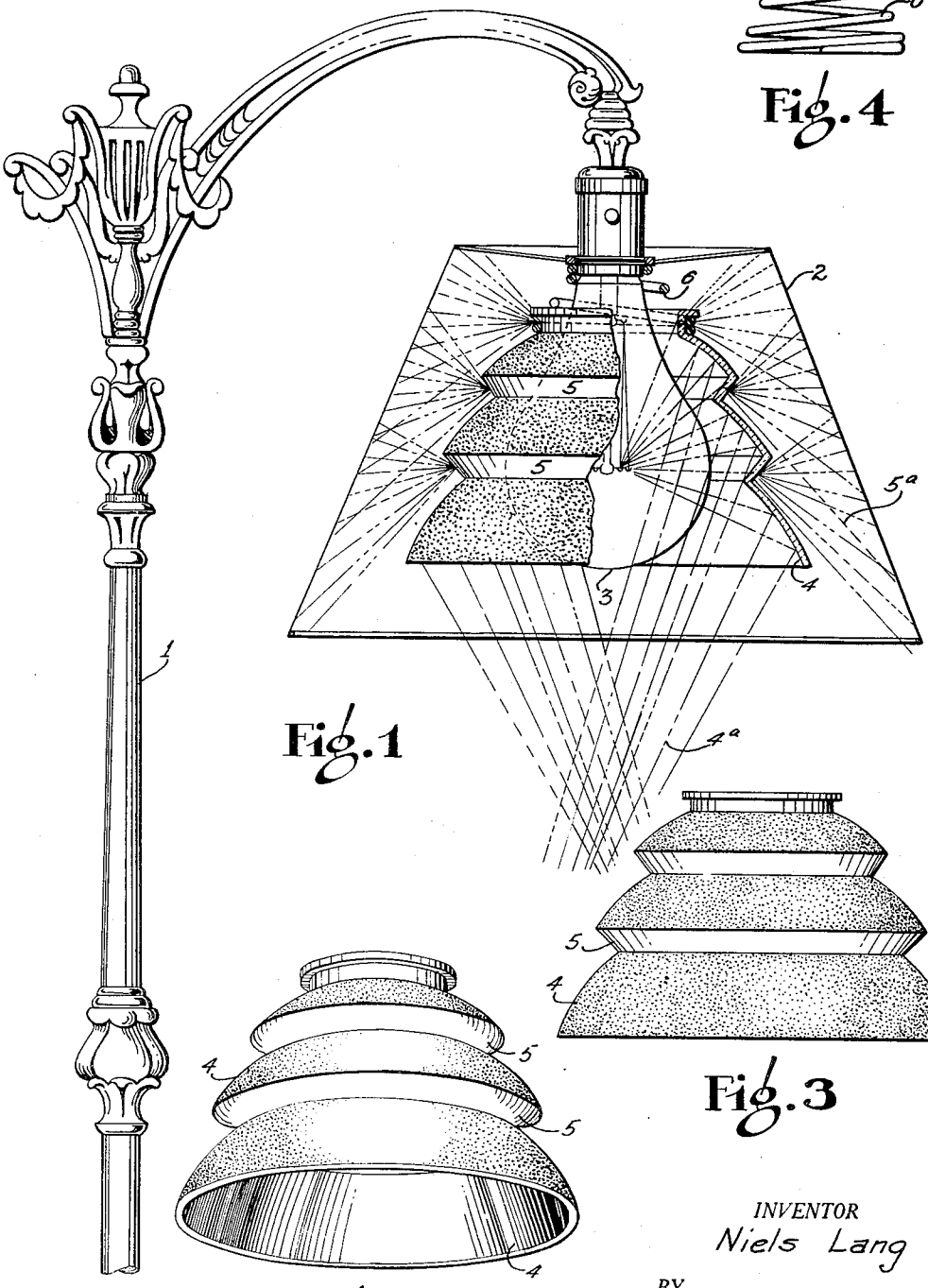


Fig. 1

Fig. 4

Fig. 3

Fig. 2

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REFLECTOR

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2 Claims. (Cl. 240—81)

This invention relates to the art of lighting fixtures and comprises a reflector which is adapted especially for use in connection with floor lamps for household use.

As is well known, it has been the custom to employ in connection with the incandescent bulb of the floor lamp an artistic form of shade which, however, is not well adapted for reading purposes, since it contains no provision for the direction of the rays of light over the area below the lamp. The light rays are merely diffused by the translucent form of shade.

It is therefore the object of the present invention to devise a particular form of reflector which upon being inserted between the incandescent bulb and the shade, will concentrate a portion of the light rays upon the reading matter so as to increase the efficiency of the lamp for this purpose, and at the same time will transmit the other part of the rays to the shade for display of the shade and general illumination of the room.

Another object consists in embodying the features just referred to in a comparatively simple, convenient, and efficient form of reflector which is especially adapted for such combined purpose together with means for readily attaching the reflector to the lamp.

Other objects will appear from the following description and claims when considered together with the accompanying drawing.

Fig. 1 is a view partly in elevation and partly in section illustrating the installation of my improved form of reflector; Fig. 2 is a perspective view of the reflector; Fig. 3 shows the reflector in elevation; and Fig. 4 is a view of the connection means for the reflector.

Although the present invention is herein described in connection with a floor lamp in which the reflected rays are directed downwardly for purposes of reading, yet it is to be understood that this same invention may be put to other uses, as, for instance, in connection with indirect illumination, and that any and all other such adaptations of the present device are intended to be comprehended by the present invention as herein described and claimed. The form of reflector itself may also be modified without departing from the spirit of the present invention.

The familiar form of lamp stand is illustrated in part, as indicated by reference numeral 1, and the customary form of translucent shade of silk, parchment or other such material, is indicated by reference numeral 2. As above stated, the rays of light from the incandescent lamp 3 would ordinarily be diffused by the shade 2, while some of the rays would illuminate the area beneath the same but without any means of concentrating or conservation of the light rays for reading purposes. While it is desirable to increase the efficiency of such a lamp for reading purposes, it is at the same time desirable also to permit illumination of the artistic shade for the sake of appearance, and at the same time for the purpose of general illumination of the room. The insertion of the old form of reflector which would merely concentrate the rays of light over the area below so as to improve the reading conditions, would cause the lamp shade to be darkened and there would thereby be lost the artistic appearance of the shade as well as the general illumination of the room by the rays transmitted through the shade.

Accordingly, the present form of reflector comprises the opaque reflecting portions 4 and the translucent, light-diffusing portions 5. In the present form of reflector, the reflecting portions and the light-diffusing portions are arranged alternately and co-axially along the axis of the reflector, the light-reflecting portions being of a frusto-conical form, while the light-diffusing portions are inclined inwardly so as to connect the light-reflecting portions. The present reflector is formed of a single piece of glass or other suitable material adapted to give a color approximating that of natural daylight, and the reflecting material for the opaque portions is in the present illustration applied to the outer surface of the frusto-conical sections of glass. The light-diffusing property is then given to the intermediate inwardly inclined portions by means of frosting the same, or by treating them in any other suitable manner so as to give them the necessary light-diffusing translucency.

As a means of mounting the reflector in proper position, I have provided the spiral spring 6 with its larger end adapted for engagement about the flanged edge at the top of the reflector so as to suspend the same while the upper restricted end portion of the spring 6 is adapted to engage the socket of the lamp. In this way, the reflector is so supported immediately above the lamp that it will be maintained in proper position regardless of the position of the lamp to which it may be adjusted by means of the familiar form of adjustment usually provided as part of a floor lamp. Any other suitable form of connecting means may be provided for mounting the reflector so as to surround the lamp bulb.

Thus, it will be seen that the rays of light

indicated by reference numeral 4^a are entirely reflected by the opaque portions 4 so as to be directed over a restricted and predetermined area below the lamp for reading purposes. These rays are projected by regular reflection. The other rays indicated by the reference numeral 5^a are permitted to pass from the bulb through the translucent sections 5 so as to be diffused thereby and scattered to all portions of the lamp shade 2. It is to be understood that the translucent character of the sections 5 may be varied according to choice, the main object being to permit the transmission of light rays through the sections 5 so as to permit illumination of the shade 2 which is itself usually of a light-diffusing character and which will therefore diffuse the rays which reach the same. With the light-transmitting portions, not only will the artistic design of the shade 2 be illuminated but the rays diffused thereby will serve also to illuminate the surrounding area of the room.

The form of device here disclosed may be further modified so long as there are provided the sections which are primarily light-reflecting and the sections which are primarily light-transmitting, according to the principle of invention as herein set forth. For instance, the reflector may be formed of metal and apertures provided therein for the transmission of light rays for the purpose as herein explained.

It will thus be seen that my improved form of reflector serves the double purpose of improving the reading efficiency of the lamp and at the same time permits illumination of the lamp shade and the general lighting of the room. This reflector is of a particular design which is especially well adapted for this purpose and is of a comparatively simple form so that it can be manufactured and sold at a comparatively low cost. Furthermore, this reflector can be readily installed by the user.

What I claim is:

1. A tubular shaped reflector, comprising a body of generally frusto-conical form and having a plurality of co-axially arranged annular frusto-spherical light-reflecting surfaces having their centers of curvature arranged at different points along the direction of the longitudinal axis of the reflector, said reflecting surfaces being connected by annular co-axially arranged reversely disposed light-diffusing translucent portions, whereby the reflected rays can be transmitted through the enlarged end of the reflector body and employed for the illumination of a given area, and the diffused rays can be employed for general illumination.

2. The combination of a light-diffusing lamp shade, a reflector within the shade, and a lamp arranged within the reflector, said reflector comprising a body of generally frusto-conical form and having a plurality of coaxially arranged annular frusto-spherical light-reflecting surfaces having their centers of curvature arranged at different points along the direction of the longitudinal axis of the reflector, whereby the reflected rays are directed through the enlarged end of the reflector body for the illumination of a given area, said reflecting surfaces being connected by annular co-axially arranged reversely disposed light-transmitting portions of such dimensions and configuration as to illuminate substantially the entire inner surface of the shade.

NIELS LANG.