

No. 727,495.

PATENTED MAY 5, 1903.

E. N. TODD.
GLOBE.

APPLICATION FILED OCT. 7, 1902.

NO MODEL.

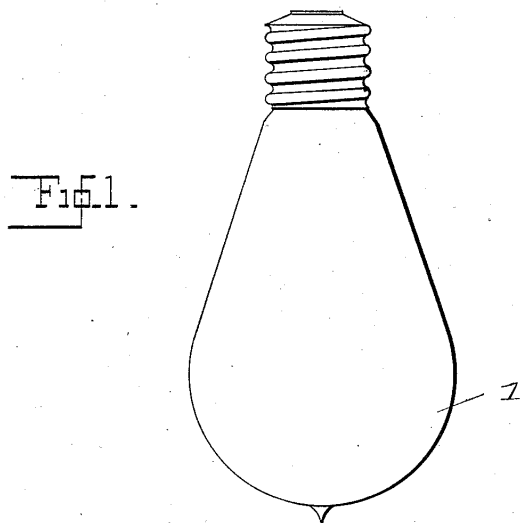


Fig. 2.

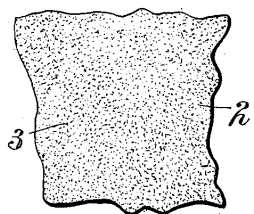
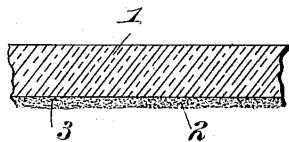


Fig. 3.



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UNITED STATES PATENT OFFICE.

EDMUND N. TODD, OF SHORTHILLS, NEW JERSEY, ASSIGNOR TO NEWARK CHEMICAL COMPANY, OF NEWARK, NEW JERSEY, A CORPORATION OF NEW JERSEY.

GLOBE.

SPECIFICATION forming part of Letters Patent No. 727,495, dated May 5, 1903.

Application filed October 7, 1902. Serial No. 126,363. (No model.)

To all whom it may concern:

Be it known that I, EDMUND N. TODD, a citizen of the United States, residing at Shorthills, Essex county, in the State of New Jersey, have invented a new and useful Improvement in Globes or Bulbs for Lamps, &c., of which the following is a specification.

My invention relates to globes, bulbs, chimneys, &c., for lamps and other sources of light, and has for its object to provide a globe or bulb which shall effectually screen the luminous filament, flame, arc, or other source of light from the eye, while permitting the passage and diffusion therethrough of all or nearly all of the emitted light-rays.

In the accompanying drawings I have illustrated, as well as the nature of the case permits, the features of my invention.

Figure 1 of the drawings represents a lamp globe or bulb having my improved coating thereon. Fig. 2 represents, on a magnified and exaggerated scale, a portion of the surface of said globe or bulb. Fig. 3 is a magnified and exaggerated section view of a portion of the globe.

It is known to me that many attempts have heretofore been made to provide globes and bulbs of a character to secure the above-stated results; but, so far as I am aware, such attempts have attained imperfect and unsatisfactory results by reason of the fact that while the luminous body has been effectually screened from the eye a very large proportion of the illuminating power of the light has at the same time been destroyed. Among the expedients resorted to for obtaining the obscuration of the light-giving body and the diffusion of the light may be mentioned that of providing globes, bulbs, &c., of porcelain, frosted glass, stained or colored glass, also of coating clear-glass globes, &c., with transparent color solutions. In the case of porcelain, frosted and colored glass globes, &c., it has been found that by their use about sixty per cent. of the illuminating power of the light was destroyed and that in the case of clear-glass globes, &c., coated with transparent color solutions about twenty per cent. of the light was destroyed.

My invention is designed to remedy the

above defects; and it consists in providing an ordinary clear-glass globe or bulb with a transparent coating in which is disseminated minute particles of an opaque substance, so that the coating presents to the eye a uniform texture.

The coating I have found best suited to the purpose is composed of a cellulosic solution having suspended and uniformly disseminated therein an insoluble powder or pigment, such as zinc-white. The cellulosic solution I employ is a solution of pyroxylin; but other cellulosic solutions may be used. For making a solution of pyroxylin any of the well-known solvents may be employed—such as, for example, amyl acetate, methyl alcohol, acetic ether, acetone, &c. With these solvents any of the well-known diluents may be used—such as, for example, benzine, fusel-oil, amyl alcohol, &c. With the pyroxylin camphor may be used. Camphor is well known as a latent solvent for pyroxylin and when used in a coating has a very beneficial effect in serving to render the same more flexible or yieldable to strains suffered under changes of temperature.

Instead of preparing a pyroxylin solution I may redissolve transparent scrap celluloid in a suitable solvent and use the solution so obtained for my purpose.

I give the following illustrative formula for a coating for a lamp globe or bulb: one pound pyroxylin, one gallon amyl acetate, one-fourth gallon naphtha, (76°,) one ounce camphor, one-fourth pound zinc-white.

The above ingredients are thoroughly and uniformly incorporated and the globes, bulbs, &c., are dipped therein or coated therewith in any convenient manner. They are then supported in any suitable place which will admit of a ready evaporation of the solvent and insure the setting of the coating. The coating so produced presents to the eye an opaque uniform pearly-white appearance; but when the luminous body is viewed therethrough it is seen that the light-rays pass freely through, while at the same time the luminous body itself is perfectly obscured from the eye. The minute particles of zinc-white dispersed throughout the coating being opaque obscure

the luminous body itself; but the light-rays pass freely through the transparent pyroxylin between the interstices of the zinc-white particles.

5 In Figs. 2 and 3 of the drawings, 1 represents the glass wall of the globe or bulb, 2 represents the transparent portion of the coating, and 3 represents the opaque particles.

10 With the above coating I secure ninety per cent. more illumination from the same source of light than when globes or bulbs of porcelain, frosted glass, or colored glass, &c., are employed. My coating is translucent to the highest degree, while being non-transparent.

15 In addition to the features of advantage possessed by my invention as above pointed out it has a further advantage in that the coating of the bulb or lamp is resistant to atmospheric influences and is weatherproof. 20 These advantages admit of lamp bulbs, globes, &c., being used out of doors and also admit of their being cleaned or washed when used indoors. The cellulosic medium which I employ is not affected by water. The opaque 25 particles carried thereby are retained upon the bulb or globe and do not rub off in handling.

30 I am aware that lamp-bulbs have been coated with colored solutions of pyroxylin or celluloid; but my invention is distinguished therefrom in that I do not employ a colored solution. I employ a pigment or obscuring substance which is insoluble in the pyroxylin solution, so that the latter is maintained clear, 35 transparent, and uncolored, thus permitting free passage of the light-rays.

40 My invention is particularly adapted for use in connection with bulbs for incandescent electric lights. This form of illumination is extensively used for lighting interiors and for obtaining artistic lighting effects. The concentrated brilliance of the filament is, however, very objectionable and causes 45 much discomfort and fatigue to the eye, besides being unsuited to artistic illumination.

By my invention I have provided a cheap and efficient means for improving illumination by obtaining a much greater amount of light from a given source without impairing the softness and diffusion of light obtained 50 by the usual means.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent, is—

1. A light globe, bulb, &c., having a translucent non-transparent coating thereon consisting of a transparent body portion resistant to atmospheric influences and having dispersed and disseminated therethrough finely-divided opaque particles. 60

2. A light globe, bulb, &c., having a translucent, non-transparent coating thereon consisting of transparent cellulosic material having dispersed and disseminated therethrough finely-divided opaque particles. 65

3. A light globe, bulb, &c., having a translucent, non-transparent coating thereon consisting of transparent pyroxylin having dispersed and disseminated therethrough finely-divided opaque particles. 70

4. A light globe, bulb, &c., having a translucent, non-transparent coating thereon consisting of transparent pyroxylin having dispersed and disseminated therethrough finely-divided opaque particles insoluble in the solvents of pyroxylin. 75

5. A light globe, bulb, &c., having a translucent, non-transparent coating thereon consisting of transparent pyroxylin having dispersed and disseminated therethrough finely-divided particles of zinc-white. 80

6. A light globe, bulb, &c., having a translucent, non-transparent coating thereon consisting of transparent pyroxylin and camphor having dispersed and disseminated there- 85 through finely-divided particles of zinc-white.

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