

(No Model.)

F. MOORE.

INCANDESCENT ELECTRIC LAMP.

No. 389,526.

Patented Sept. 11, 1888.

FIG. 1.

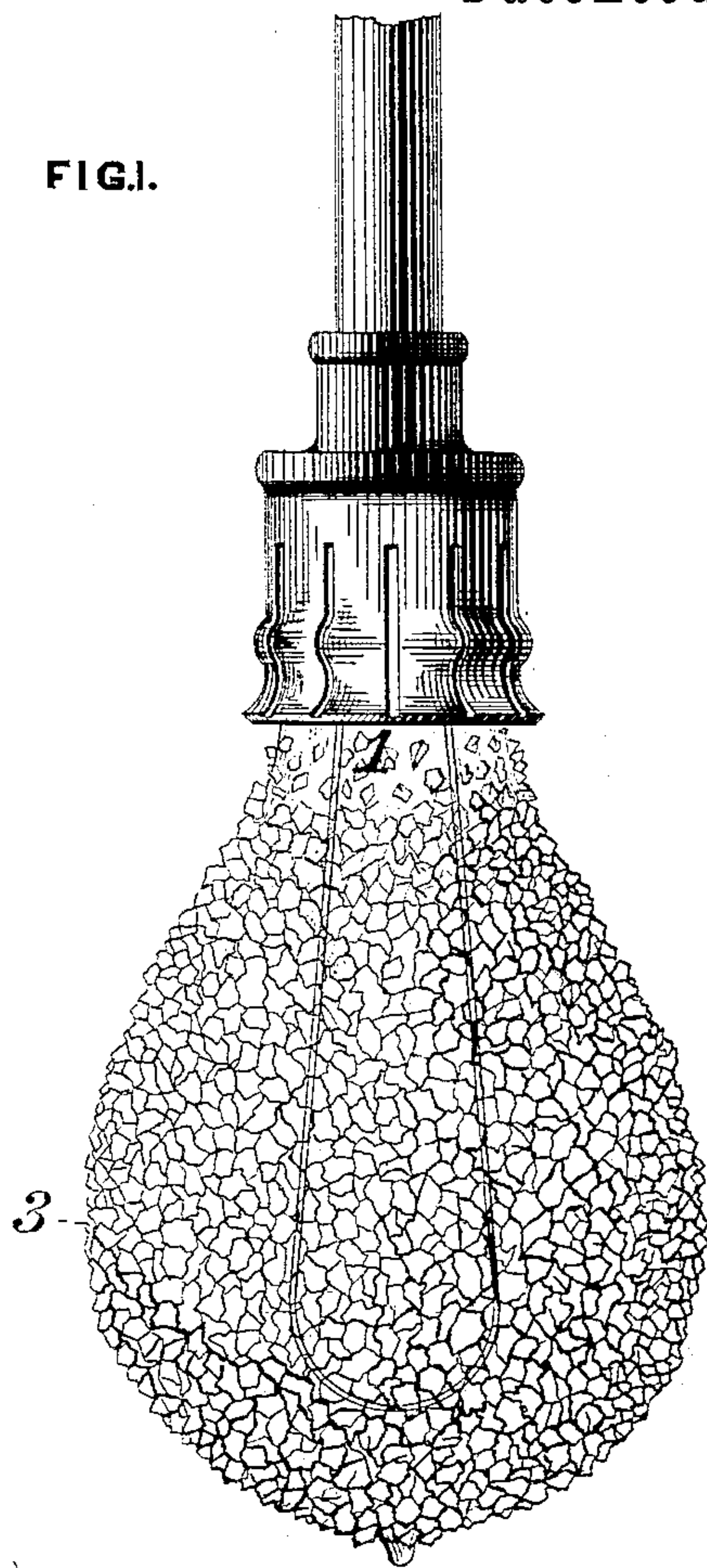
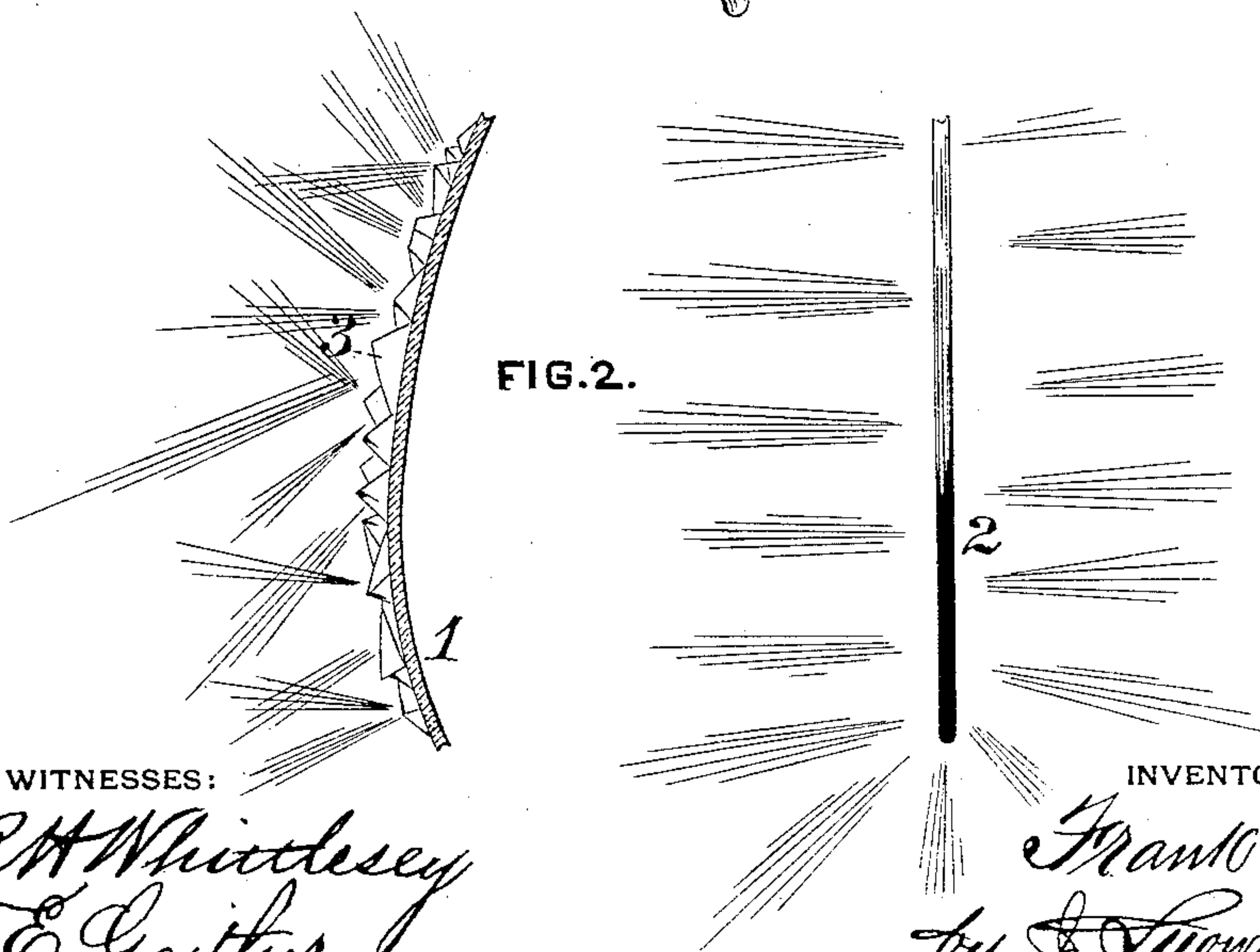


FIG. 2.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK MOORE, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO GEORGE WESTINGHOUSE, JR., OF SAME PLACE.

INCANDESCENT ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 389,526, dated September 11, 1888.

Application filed March 21, 1887. Serial No. 231,696. (No model.)

To all whom it may concern:

Be it known that I, FRANK MOORE, a citizen of the United States, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented or discovered a certain new and useful Improvement in Incandescent Electric Lamps, of which improvement the following is a specification.

The object of my invention is to provide an incandescent electric lamp in the illuminating action of which the rays of light evolved from its incandescing carbon shall be thoroughly and effectively moderated and diffused; to which end my improvement consists in an incandescent electric lamp having a facing of fragments of transparent or translucent material secured by soluble glass to its bulb.

The improvement claimed is hereinafter set forth.

In the manufacture of incandescent electric lamps as heretofore practiced it has been sometimes proposed to reduce and diffuse to some degree the light evolved from the incandescing carbon by rendering the bulb of the lamp partially opaque by grinding or corresponding abrasion by a sand blast or by covering the bulb by a separate inclosing-casing, the surface of which is formed of a series of light-diffusing faces or projections.

My improvement is designed to attain the same result in a more thorough and economical manner, and presents the further advantage of enabling the bulbs to serve as shades in addition to their ordinary function of envelopes for the incandescing carbon filaments, thereby diffusing the light and increasing its useful effect, while moderating its intensity and dazzling action.

In the accompanying drawings, Figure 1 is a view in elevation of an incandescent electric lamp in which my invention is applied; and Fig. 2, a partial section, on an enlarged scale, through the same.

In the practice of my invention the carbon filament 2 is inserted in the bulb 1, which is exhausted and sealed in the ordinary manner. The outer surface of the bulb is then coated with a wash or film of solution of silicate of soda or soluble glass, forming a transparent and adhesive base for the connection of the light-diffusing medium. A facing, 3, com-

posed of small angular fragments of transparent or translucent material—as crushed glass, porcelain, or the like—is then applied to and spread over the coating of soluble glass while the same is yet liquid, and upon the setting or hardening of the coating will be securely fixed thereby to the bulb 1. The facing 3 completely surrounds the incandescing carbon 2 and acts as a series of facets or prisms to refract and diffuse the rays of light evolved therefrom, as indicated in the enlarged section, Fig. 2.

The salient feature of my invention consists in the employment of a base or attaching medium for the light-diffusing material which shall not only possess the qualities of transparency and adhesiveness when first applied, but shall also be infusible under any degree of heat to which an incandescent electric lamp is subjected in normal service and insoluble in water, so as to be unaffected by the contact thereof or by atmospheric moisture. I attain by the adoption of soluble glass, which satisfactorily complies with the requirements above stated, a result which would be wholly impracticable with the use of varnish, gum, or other analogous adhesive substances, which have been heretofore proposed as cements in decorating the rear or inner surfaces of articles of glass by attaching thereto a backing of fragmentary mineral substances.

The manufacture of incandescent electric lamps under my invention involves only an inconsiderable increase of cost over that of lamps of the ordinary construction, and the character of the operation is such that no risk of injury or breakage of the bulbs is sustained. It affords, in addition to its action in moderating and diffusing the light, a novel and tasteful ornamentation for the bulb, and will be found particularly advantageous by reason of the fact that the comparatively intense light of the carbons renders a shade of some description materially desirable, while the short life of the bulb does not justify any substantial expense in that regard.

I am aware that it has heretofore been proposed to ornament glass shades, globes, &c., in the process of manufacturing the same by attaching particles of broken glass thereto by fusion, then crackling the glass by immersion

in cold water, and finally reheating and forming the article into the desired shape.

I am further aware that it is not new to attach powdered glass to the surface of sheets of glass by first causing it to adhere thereto by gum or cement and thereafter fusing or vitrifying it to the sheets. Articles of such character, which I hereby disclaim, differ both in their method of manufacture and in their finished state from incandescent lamps in accordance with my invention, the latter being formed without the application of heat in the connection of the facing, and thereby being exempt from risk of fracture of the bulb, and the structure of the bulb not being in any wise affected by the facing or its connecting medium.

I claim as my invention and desire to secure by Letters Patent—

In an incandescent electric lamp, the combination of a bulb, a facing of fragments of transparent or translucent material, and a coating of material infusible at the maximum temperature to which the lamp is exposed and insoluble in water, said coating securing the facing to the outer surface of the bulb, substantially as set forth.

In testimony whereof I have hereunto set my hand.

FRANK MOORE.

Witnesses:

J. SNOWDEN BELL,
R. H. WHITTLESEY.