

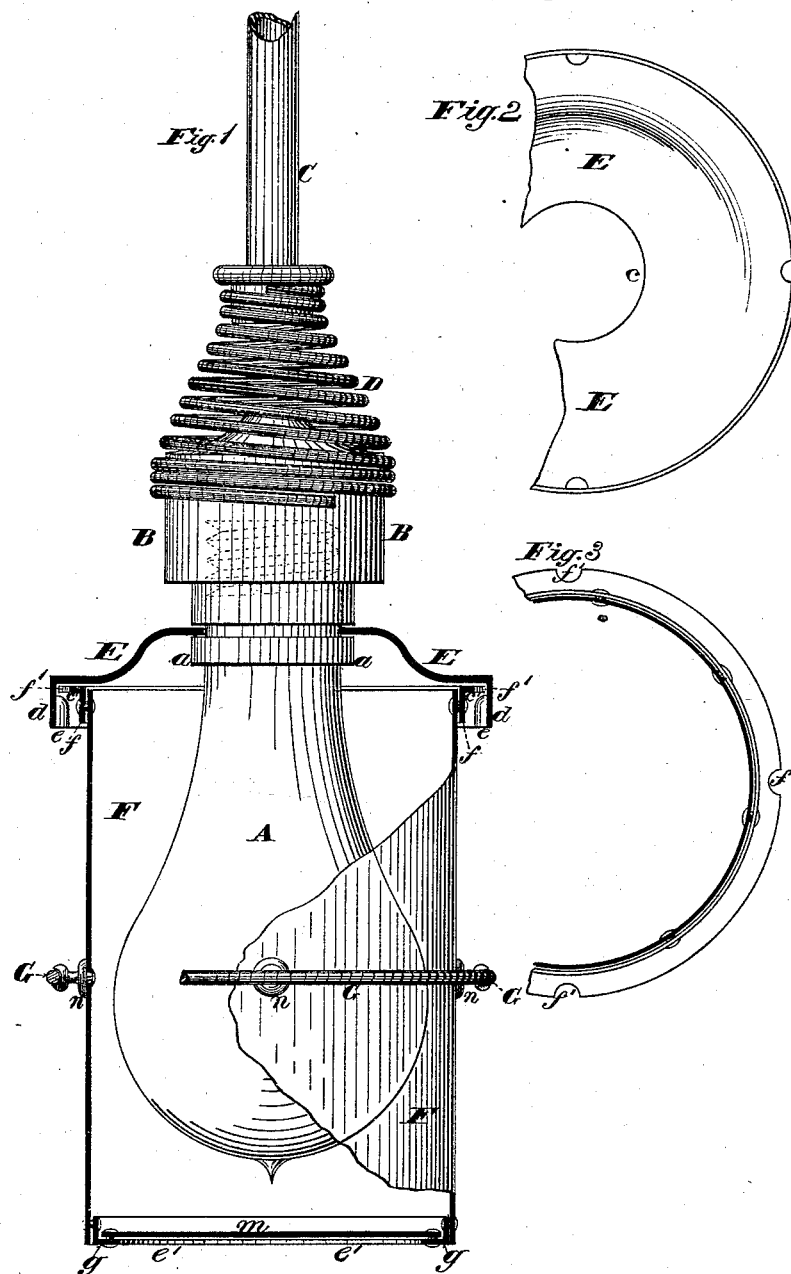
(No Model.)

A. W. MORTON.

ELECTRIC LAMP.

No. 264,328.

Patented Sept. 12, 1882.



Witnesses:

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UNITED STATES PATENT OFFICE.

ALBANUS W. MORTON, OF RAHWAY, NEW JERSEY.

ELECTRIC LAMP.

SPECIFICATION forming part of Letters Patent No. 264,323, dated September 12, 1882.

Application filed December 22, 1881. (No model.)

To all whom it may concern:

Be it known that I, ALBANUS W. MORTON, late of Brooklyn, in the county of Kings and State of New York, but now of Rahway, in the county of Union, in the State of New Jersey, have invented certain Improvements in Electric Lamps, of which the following is a specification.

This invention is more particularly designed to protect electric lamps of the incandescent order, and which as hitherto constructed have always been liable to breakage from various causes—such, for example, as from the effects of a blow, a jar, a splash of water, and too high electric tension, and the like. In cases of breakage, as aforesaid, such lamps are in most cases shattered or comminuted into exceedingly small fragments, which, falling upon carpets, rugs, &c., are almost incapable of removal from the fabric, and consequently rapidly destroy the same. Very often, also, if the lighting apparatus breaks while suspended over a printing-press or any other delicate machinery, the injury wrought to the mechanism is commonly difficult, and sometimes impossible, to repair at material and considerable expense. So, also, accidents of this class very often occur from jarring of the ceiling from which the apparatus is suspended from the falling or moving of heavy articles on floors above.

The object of my invention is to provide against the occurrence of such accidents so far as is practicable, and, in case they do occur, to limit the damage to that relating to the lamp itself. This I accomplish by certain novel means of reducing the transmission of jar or concussion to the lamp, and also by certain novel means for preventing the fractured glass from falling downward from the lamp when the latter is broken.

Figure 1 is a side view and partial vertical sectional view of an electric lighting apparatus embracing my said invention. Figs. 2 and 3 are detail views of certain parts embraced in the construction of said apparatus.

A is the glass shell or external portion of an electric lamp of the "incandescent" class, so called, and which may be of any ordinary or suitable construction. The said shell A is suspended from the boss or knob B in the

usual or any appropriate manner, said boss or knob being hollow or tubular to permit the passage therethrough of the conducting-wires or rods of the lamp.

C is a tubular stem, from which the apparatus as a whole is suspended, but which, instead of being attached rigidly and direct to the boss or knob B, has interposed between it and the said boss or knob a spring, D. A spiral spring is to be preferred, and may have the conical contour indicated in Fig. 1, the smaller end of said spring being attached or fixed in any suitable manner to the lower end of the tube C, while its larger end is passed around and attached in any suitable manner to the boss or knob B. The glass shell A of the lamp has formed upon it a flange or collar, *a*, and its upper end is cylindric and provided with a screw-thread, by which it may be screwed into a correspondingly-shaped socket formed centrally in the boss or knob B. E is a circular disk or plate, which may be made of metal and formed with a central opening, *e*, so that the said plate may be passed over and around the neck or cylindrical portion of the glass shell A above the collar or flange *a*, as indicated in Fig. 1. The plate or disk E is provided with a circumferential downwardly-extending rim or flange, *d*, at the inner side of which, at suitable intervals apart, are inwardly-projecting studs *e*, which may be formed either by indenting the metal of the rim or flange *d* from the outside, or may be formed by suitable pieces of metal soldered to the inner surface of the said rim or flange.

F is a cylinder of transparent mica, around the upper end of which is affixed an annular collar, *f*, from the upper edge of which is extended a horizontal flange, *c'*, and formed in this flange at intervals apart corresponding to the intervals between the projections *e* of the flange *d* are notches *f'*, more fully indicated in Figs. 2 and 3. In order to attach the cylinder F to the disk or plate E, the notches *f'* of the flange *c'* are brought coincident with the projections *e* of the flange *d*, so that the cylinder F may be pushed upward until the flange *c'* is beyond the upper ends of the projections *e*, whereupon, by axially turning the cylinder F, the unbroken portions of the flange *c'* are

brought above the projections *e*, thereby attaching the cylinder F to the disk or plate E. The cylinder, as thus connected with the disk or plate E by what may be termed a kind of "bayonet-joint," is readily capable of detachment and replacement when required.

To the bottom of the cylinder F is secured a ring, *g*, formed of angle-iron or brass of requisite size, to the lower or horizontal portion, *e'*, of which is riveted or otherwise attached a plate or disk, *m*, of transparent mica.

Riveted to the cylinder F, at or near the horizontal center thereof, and at suitable intervals apart, are radial metallic studs *n*, to the outer ends of which is soldered a wire or ring, G, which, being substantially concentric with the cylinder F, and at or near the horizontal thereof, as aforesaid, and as shown in Fig. 1, constitutes a guard by which most blows laterally directed will be liable to be intercepted before reaching the cylinder F, so that their force will be extended to and dissipated substantially throughout the whole of the latter, instead of being concentrated at any one point thereof. The lamp, including its fragile glass shell A, being suspended from the tubular support C by means of a spring, as described, concussions from the ceiling above will be immeasurably intercepted and broken up by the said spring, and their injurious effects upon the lamp prevented; and, furthermore, when it is subjected to impact laterally from any cause its elastic connection with the support C will enable it to yield without material jar or liability of injury, and will insure its return to its normal position without the continued swinging action incident to a simple suspension, as from a chain or pivot, so that under all ordinary conditions of use the lamp is secure against the accidents incident to lamps suspended in the ordinary way. In like manner the effects of any concussion exerted through the atmosphere or otherwise directly upon the lamp or its immediate surroundings will lose their effect, inasmuch as the lamp is permitted to yield more or less by the elasticity of its connection with the tube or support C. Furthermore, any moderate blow, force, or concussion directed toward the lamp will be itself intercepted by the cylinder F, thereby, to a certain extent, protecting the said lamp, including its fragile glass shell A; and, even should the concussion under such circumstances be sufficient to fracture the glass, the closed lower end of the cylinder F will receive and hold the fragments of glass, as in a basket, and their dispersion and the injury which would result if the fragments

of glass were suffered to fall upon carpets, machinery, victuals, or other article or material liable to be injured thereby is prevented; and, further, the guard, by anticipating blows the force of which would otherwise be concentrated upon some one portion of the cylinder F, prevents the latter from being injured from any ordinary accident.

It will be observed that the cylinder F, being made of mica, is transparent, and at the same time tough, flexible, and strong, so that it will not be fractured, as would be the case if said cylinder were made of glass. It is obvious that the great value and utility of the said cylinder in its connection with the fragile glass shell A of the lamp lies in the fact that it is possessed of resistant properties which do not exist in glass, and which unfit glass for the construction or uses of said cylinder F.

What I claim as my invention is—

1. In an electric-lighting apparatus, a lamp attached to the lower end of a spring, the upper end of which is attached to the lamp-support in such manner that the spring serves the double purpose of breaking concussions from above and of permitting an elastic lateral movement when the lamp receives a lateral impact or impulse, the whole combined, constructed, and arranged substantially as and for the purpose herein set forth.

2. In an electric-lighting apparatus, the combination of the lamp with the glass shell A thereof, and fixed supports from which the said parts are suspended, and a spiral spring, D, the lower end of which is connected with the lamp and the upper end of which is attached to the supporting devices, whereby the glass shell and the lamp are protected against jar or concussion, whether from above or laterally exerted, all substantially as and for the purpose herein set forth.

3. The combination, with the glass shell of an electric lamp, of a mica cylinder or basket placed around the said shell to protect the same when in use and to receive and retain the fragments in case of its fracture, all substantially as and for the purpose herein set forth.

4. The combination, with the glass shell of an electric lamp, of the mica cylinder F, surrounding the said shell, and an annular guard, G, attached to and surrounding the said cylinder, all substantially as and for the purpose herein set forth.

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Witnesses:

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