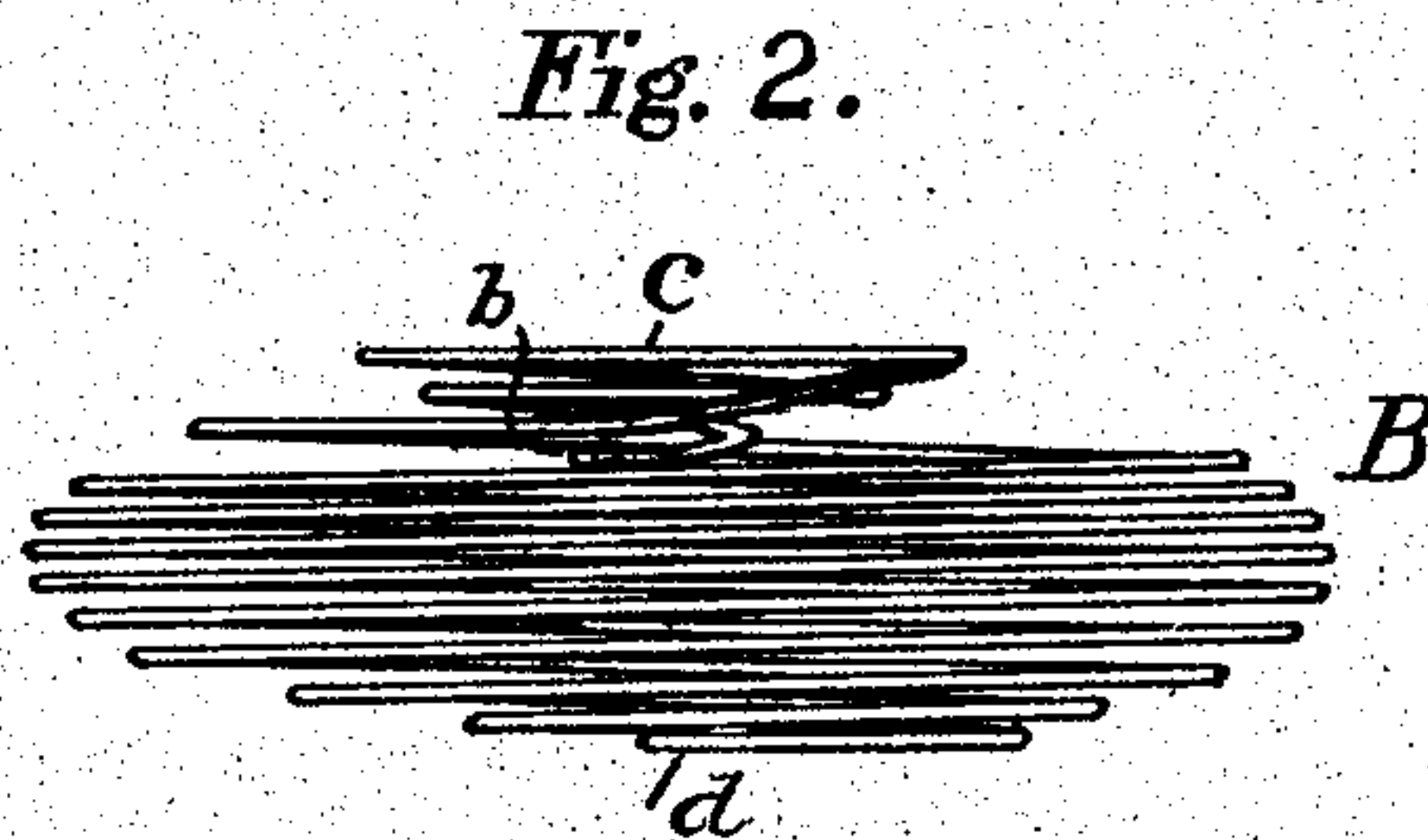
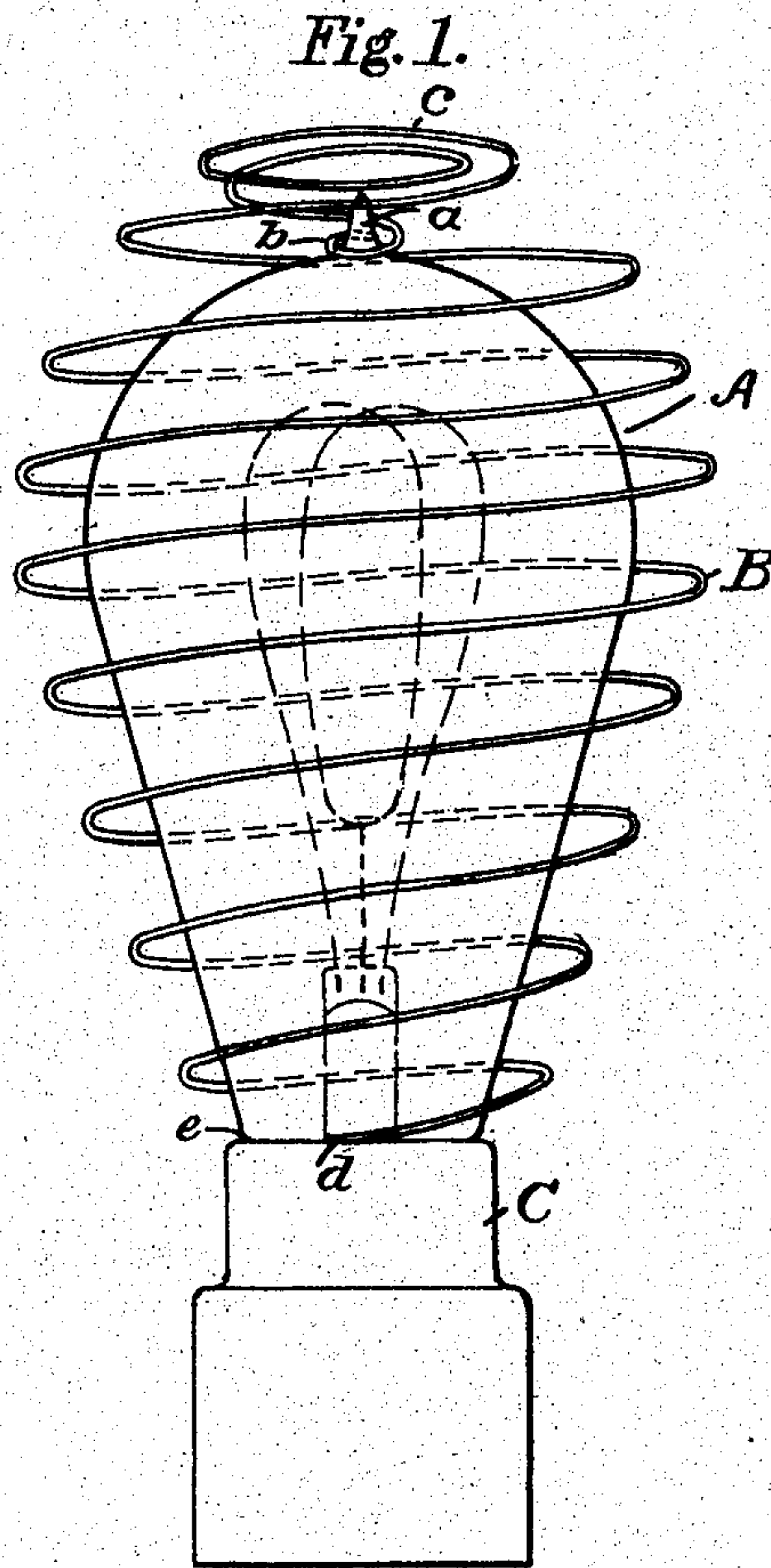


No. 781,391.

PATENTED JAN. 31, 1905.

C. C. BLAKE.  
GUARD FOR INCANDESCENT LAMPS.  
APPLICATION FILED OCT. 22, 1904.



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# UNITED STATES PATENT OFFICE.

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## GUARD FOR INCANDESCENT LAMPS.

SPECIFICATION forming part of Letters Patent No. 781,391, dated January 31, 1905.

Application filed October 22, 1904. Serial No. 229,542.

*To all whom it may concern:*

Be it known that I, CHARLES C. BLAKE, residing at Brookline, in the county of Norfolk and State of Massachusetts, have invented certain Improvements in Guards for Incandescent Lamps, of which the following is a specification.

The invention about to be described relates to means such as wire guards for the protection of electric-incandescent-lamp bulbs which are permanently placed in exposed positions or which are attached to a flexible cord and carried in the hand of the user. All such wire guards that I am aware of are made to inclose the glass bulb and are spaced from the same so that they nowhere touch its surface, and such guards have to be made quite rigid and be secured to the lamp base or socket and are therefore quite expensive in original cost.

My invention concerns a wire guard consisting of a helical spring of one piece of wire which when not attached to a bulb has its helices nearly closed to each other by their natural resiliency, so that the guard occupies but little space and many of them can be packed in small compass. The helices are of varying diameters and conform generally to the contour of the lamp-bulb and spaced therefrom, the end of the lower helix being adapted to tightly grasp the base of the bulb and the succeeding helices being gradually enlarged at the greatest diameter of the bulb and then decreasing in diameter over its dome, while the last two or three turns of the wire reënter the helices and its end terminates in an eye some distance inside the helices, which helices constitute the protection for the upper end of the guard, the said eye embracing the "sprue" or pointed projection from the center of the bulb-top, all of which I will now proceed to describe, and point out in the claims.

Of the drawings which form a part and illustrate the specification, Figure 1 is an elevation of an electric incandescent lamp with my invention attached thereto, and Fig. 2 is a side view of the improved wire guard detached from a lamp-bulb.

In the drawings, A represents an electric incandescent lamp attached to a base *c* in the ordinary manner. All of the bulbs of such lamps have at their upper ends and central thereof a tapering point or sprue *a* where the bulb is sealed after the air has been exhausted. I take advantage of this point *a* and use the same as a support for the upper terminal of my improved wire guard, as will be presently seen.

The wire guard B is made from a single piece of resilient wire, preferably of steel, which is shown as wound into ten or twelve helices of varying diameters, so that when it is placed over the lamp it will correspond in contour with the surface of the bulb. The end *d*, which is to grasp the lower part of the bulb, is bent inward so as to hug to the bulb in the slight crevice *e* where the glass bulb joins the metal base produced by the quick inward curving of the globe toward said base, making a shoulder at the apex of the curve, while at the opposite end the helices are tapered down and the wire terminates in an eye *b*, and the last three helices are drawn inward, so that the eye *b* is inclosed, as represented. The helices are wound closely together and normally present the flat appearance shown in Fig. 2, with the eye end *b* projected inside the end helices, in which position they are packed in boxes for transportation and take up the least possible room.

When the guard is to be applied to a lamp-bulb, the helices are pulled apart and expanded, so that the end *d* embraces tightly the lower end of the bulb and the eye *b* at the opposite end is slipped over the sprue or point *a* of the bulb, which serves as an abutment for the pressure of the spring and by means of which the helices are kept separated. The compression of the guard upon the bulb is sufficient to maintain its helices rigid against external pressure, but not so strong as to endanger the safety of the bulb itself, and the bulb serves as a strut between the wire terminals. As the eye end *b* of the guard is inclosed by the outer helices *c* of the guard, the point *a* is protected from external injury, as is the upper end or dome of the bulb. It will



be seen that the lamp is perfectly protected on its sides and dome from external injury by the resilient helices of the wire guard, which helices may be placed as close to each other  
 5 as desired. The guard is wholly supported by the bulb, to which it may be readily attached and from which it may be as readily detached, and it can be quickly and cheaply made and transported in a small space.

10 In forming the helices of the guard from the resilient wire I prefer to make those of the largest diameter nearer to each other, as represented in Fig. 2, where the helices covering the top of the bulb-dome are regularly  
 15 spaced, while the succeeding helices are closer to each other and those of lessening diameter are more widely spaced from one another in order that when the guard is stretched upon the bulb (after the helices are separated and  
 20 the bulb passed therethrough) all the helices will be equally spaced, or practically so, from each other. If the helices of larger diameter are not so placed near to each other, they will be so widely spaced or separated when  
 25 stretched as not to provide adequate protection for the bulb.

I claim as my invention—

1. A guard-wire for electric incandescent lamps made from resilient wire, having helices  
 30 to inclose the lamp-bulb, those of greater diameter being close to each other and those of lesser diameter more widely spaced apart, means as an eye for grasping the sprue of the bulb, and means as a curved end of the wire

to embrace the lower end of the bulb, as set forth. 35

2. As an article of manufacture, a wire guard for electric incandescent lamps made from resilient wire whose helices of great diameter are close to each other while those  
 40 at the ends of lesser diameter are more widely spaced apart, but adapted when separated to conform to the contour of a lamp-bulb and present a comparatively even spacing from each other, one end of the wire terminating  
 45 in an eye disposed within the adjacent helices, and the other end adapted to embrace the lower end of the bulb, as set forth.

3. The combination with the bulb of an incandescent lamp, of a guard made from resilient wire, having helices to inclose the lamp-bulb those of larger diameter made close to  
 50 each other while those of lesser diameter are made more widely spaced apart, but when attached to said bulb all of the helices presenting comparatively even spacing apart, means  
 55 at one end for grasping the lower end of the bulb, and means at the opposite end to embrace the sprue of the bulb, as set forth.

In testimony whereof I have signed my name  
 60 to this specification, in the presence of two subscribing witnesses, this 18th day of October, 1904.

CHARLES C. BLAKE.

Witnesses:

GEO. WILLIS PIERCE,  
 CHAS. W. PITMAN.