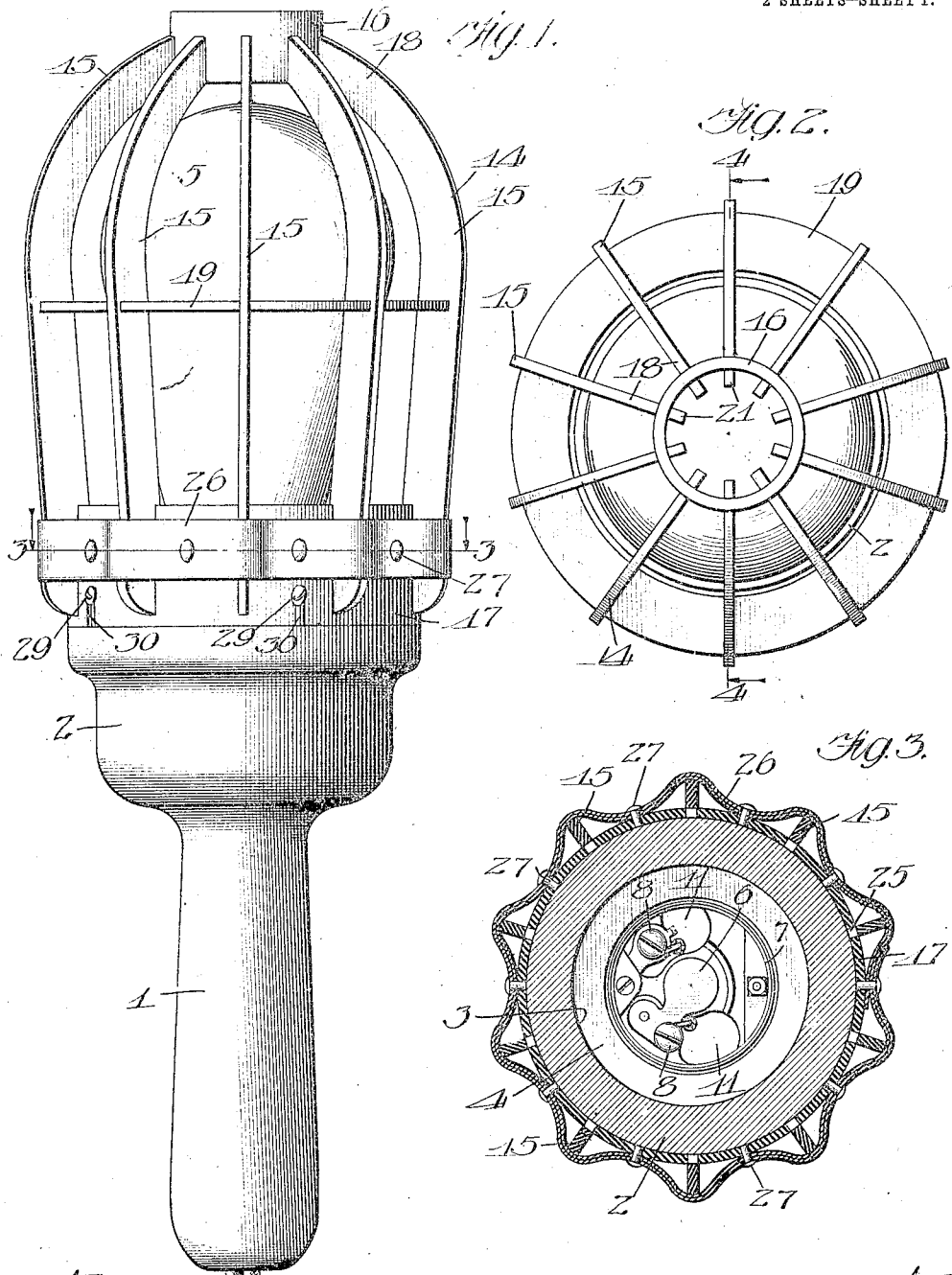


R. B. BENJAMIN.
 PORTABLE LAMP AND GUARD THEREFOR.
 APPLICATION FILED JUNE 7, 1907.

974,226.

Patented Nov. 1, 1910.

2 SHEETS—SHEET 1.



Witnesses:
 Robert H. Weir
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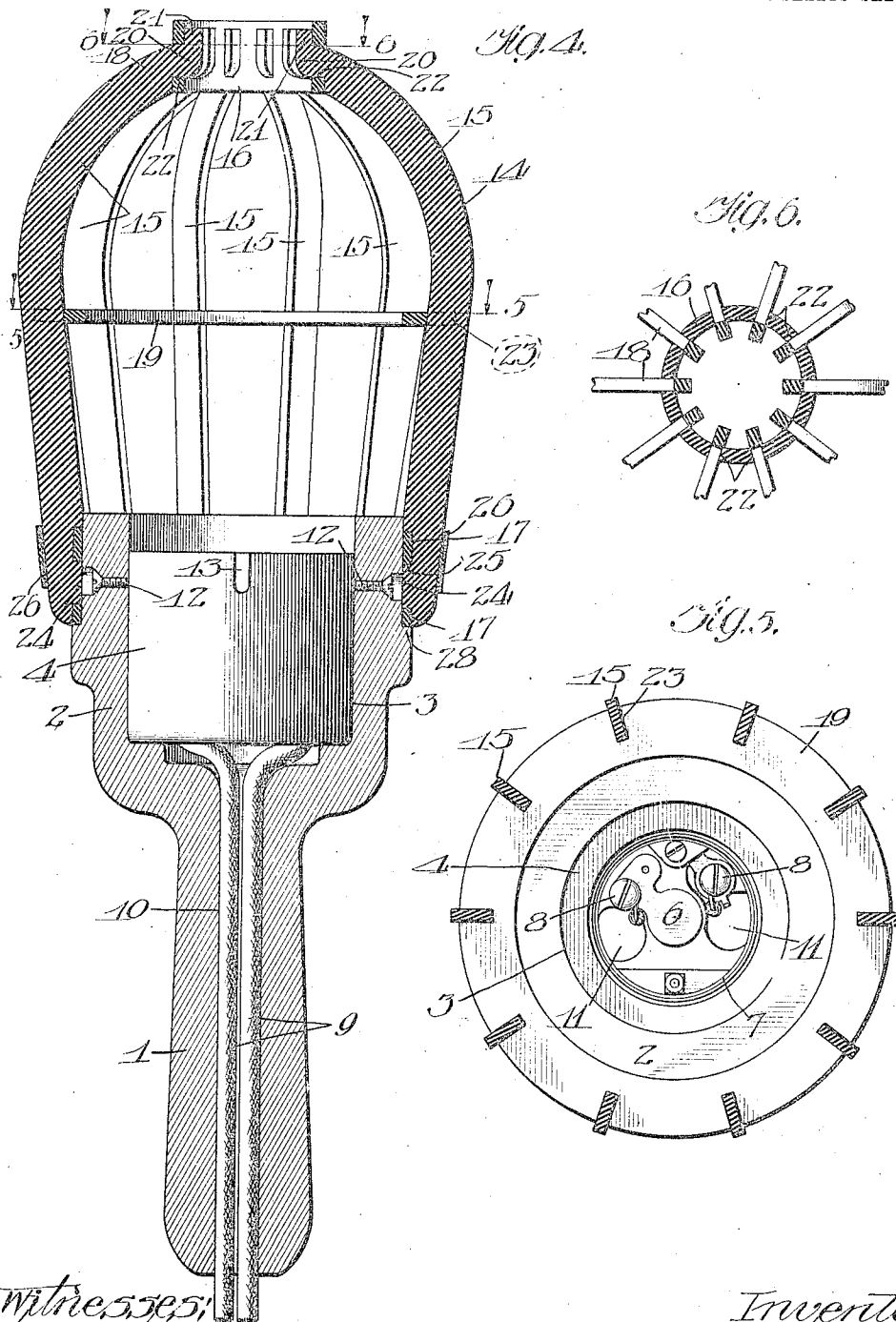
Inventor:
 Reuben B. Benjamin
 by Jones, Addington & Ames,
 Attys.

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UNITED STATES PATENT OFFICE.

REUBEN B. BENJAMIN, OF CHICAGO, ILLINOIS, ASSIGNOR TO BENJAMIN ELECTRIC MANUFACTURING COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PORTABLE LAMP AND GUARD THEREFOR.

974,226.

Specification of Letters Patent.

Patented Nov. 1, 1910.

Application filed June 7, 1907. Serial No. 377,785.

To all whom it may concern:

Be it known that I, REUBEN B. BENJAMIN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Portable Lamps and Guards Therefor, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawing, forming a part of this specification.

My invention relates to improvements in portable electric lamps, and has for its objects,—first, a new form of lamp-holding device; and second, an improved guard for the bulb to protect the same from mechanical injury as well as to prevent any metallic part of the device from coming into accidental contact with a live wire or a live part of any electrical apparatus in the neighborhood of which the user may be working.

A third object is to provide a lamp guard in which the minimum of obstruction to the radiation of light from the lamp is present, while, at the same time, great rigidity in the structure is secured.

These and other objects of my invention will become apparent as the specification proceeds.

In the drawings, which illustrate one embodiment of my invention, Figure 1 is a side view of my portable electric lamp and guard; Fig. 2 is a top view of the same; Fig. 3 is a section on line 3—3, Fig. 1; Fig. 4 is a longitudinal sectional view on line 4—4, Fig. 2, showing the lamp-socket and the connecting wires leading thereto, in elevation; Fig. 5 is a top view, partly in section, on line 5—5, Fig. 4; Fig. 6 is a fragmentary top view, partly in section, on line 6—6, Fig. 4.

Referring to the drawings, the handle 1, of convenient size and shape, and made of insulating material, such as wood, is provided with a head or enlargement 2, which is hollowed out to form a pocket or recess 3 for the reception of the lamp-socket 4. This socket may be of any preferred type to hold an incandescent bulb, and in the particular instance shown, comprises a hollow cylindrical block of porcelain or other suitable insulating material, to the bottom of which are secured the two metallic terminals 6 and 7. As is usual in such sockets, one of the terminals (indicated by 6 in Figs. 3 and

5) is centrally located, while the other terminal (indicated by 7 in Figs. 3 and 5) is in the form of a cylindrical shell or lining, screw-threaded so as to receive the screw-threaded metallic neck or shank of the lamp. When the lamp is in place in the socket, the central terminal 6 engages a correspondingly located terminal on the lamp, as is well understood by those skilled in the art. This expedient for electrically connecting the terminals of an incandescent bulb with the terminals of the receiving socket, is so common and well known in the art that further description thereof is believed to be unnecessary. The terminals 6 and 7 have binding screws 8 for electrically connecting the leads 9 therewith. The handle 1 is formed with a bore 10 through which the leads extend to openings 11 in the base of the socket 4, as clearly shown in Figs. 3 and 5. In this way I readily effect electrical connection between the leads and the lamp-socket, although it is apparent that other arrangements may be resorted to for accomplishing the same purpose; the precise arrangement shown being merely for the sake of illustration. The socket 4 is conveniently secured in its recess by means of screws 12 which pass through the sides of the head 2, and at their ends preferably project into notches 13 on the socket to lock the latter against rotation.

It will thus be seen that my improved portable lamp, as above described, is a device compact and simple in structure, and conveniently handled. Of especial use is my portable lamp to persons in charge of electrical apparatus—such as switchboards—where it is frequently necessary to inspect certain parts located in more or less dark places, in which it is impossible to work without a light. My portable lamp is admirably adapted for use in such instances. But, in order to prevent mechanical injury to the electric bulb, as well as to guard against injury to the user and to apparatus by keeping the metallic portions of the lamp out of possible contact with any live circuit, I surround the bulb with a novel form of guard 14, whose structure I shall now proceed to describe in detail. This guard is made of insulating material (I have found vulcanized fiber excellent for the purpose), and consists of a plurality of thin strips or

ribs 15, connected at their ends to rings 16 and 17. The lower ends of the ribs (that is "lower" as viewed in Figs. 1 and 4) are spread apart by the ring 17 to form an opening of sufficient size to permit the ready passage therethrough of the bulb, as well as the firm seating of the guard upon the head 2 of the handle. To impart to the guard an appearance of neatness, I form the upper ends of the ribs with inwardly projecting portions 18, held in close proximity to each other by the connecting ring 16. In this way I provide the guard with a contour more or less similar to that of the bulb. Of course, it is to be understood that the general configuration of the guard may be of any desired style. A stiffening ring 19 may be employed to connect the ribs in a plane about midway between the ends of the ribs. One method of conveniently assembling the parts comprising the guard is as follows: It will be observed that the inwardly curved ends of the ribs have L-shaped lugs or projections 20, whose outer portions 21 are adapted to be inserted through the slots 22 in the ring 16, when the ribs are held in a position substantially at right angles to that in which they are shown in Figs. 1 and 4. In other words, to connect a rib with the ring 16, the parts are so held with respect to each other, that the portion 21 of the lug 20 on the rib extends toward the center of the ring into one of the slots 22. With the parts in this position the portion 21 is pushed radially inward through the slot, whereupon the rib may be pivoted or rocked into the position shown in Fig. 4. During this rocking of the rib the portion 21 will move from the inwardly extending or radial position it occupied in the beginning of the operation, to the upwardly extending or longitudinal position shown in Fig. 4. At the same time, when the rib approaches the limit of its rocking movement, care is taken that the central part of the rib enters the corresponding slot 23 in the stiffening ring 19, and that the lug 24 at the other end of the rib passes into its corresponding slot 25 in the ring 17. In this simple manner the proper assemblage of the elements constituting the guard is readily and easily effected. Attention is called to the fact that the ribs are arranged radially edgewise. The object of this arrangement is two-fold,—first, to impart to the structure a greater degree of firmness and rigidity by causing the ribs to receive the stress of the impact, to which the guard is liable to be subjected during the ordinary usage of the same, in the direction of the longer axes of their cross-sectional areas; and second, to present the minimum amount of interfering surface to the rays of light radiating from within the guard, and thereby obstruct the light as little as possible.

To prevent the lugs 24 from slipping out of their slots 25 in the ring 17, I wind a few layers of thin flexible bands 26 of insulating material, (such as vulcanized fiber) about the base portion of the guard. I secure these bands in place by screws or rivets 27 which hold the bands against the ring 17 about midway between adjacent ribs, as most clearly illustrated in Fig. 3. I thus provide, in effect, a flexible corrugated clamping ring, which, by tightly embracing the lower ends of the ribs, gives considerable strength to the structure of the device.

To attach the guard to the handle, it is only necessary to slip the ring 17 over the head 2, the parts being so proportioned that the ring 17 fits snugly over the head 2, so as to be held there by friction. The peripheral shoulder or projection 28 on the head 2 limits the movement of the guard on the head. I may, however, employ additional means for securing the guard to the handle, in the shape of screws 29 which, when the guard is forced over the head, enter slots 30. A little tightening of the screws 29 locks the guard firmly to the handle.

Inasmuch as the handle and the guard are constructed of insulating material, it will be observed that my improved portable lamp may be used with perfect safety around electrical apparatus, as above mentioned. The only exposed metal parts are the isolated screws 27 and 29, which are incapable of completing a circuit in the event that they come into contact with the exposed portion of a charged wire. In other words, the lamp is inclosed in an insulating sheath or housing which protects the lamp mechanically as well as electrically.

I do not claim to be the first to devise a portable electric lamp, or a guard for a lamp, but

What I do claim as new and desire to secure by Letters Patent is:

1. A lamp guard comprising an end member, a plurality of guard strips interlocking at their ends with said end member, a second end member interlocking with the other ends of said guard strips, and means for retaining one of said end members and the ends of said guard strips in their interlocked position.

2. A lamp guard comprising an end member, a plurality of guard strips interlocking at their ends with said end member, a second end member interlocking with the other ends of said guard strips, and a retaining member surrounding said last-mentioned end member and the ends of the guard strips to retain them in their interlocked position.

3. A lamp guard comprising an end member, a plurality of guard strips interlocking at their ends with said end member, a ring interlocking with the other ends of said guard strips, and a retaining member sur-

rounding said ring and the ends of the guard strips to retain them in their interlocked position.

4. A lamp guard comprising an end member, a plurality of guard strips interlocking at their ends with said end member, a ring interlocking with the other ends of said strips, and a retaining strip surrounding said ring and the ends of the guard strips to retain them in their interlocked position, said retaining strip being secured to said ring at points intermediate the guard strips.

5. A lamp guard comprising an end member, a plurality of guard strips connected at their ends thereto, a ring interlocking with the other ends of said guard strips, means for retaining the ends of said guard strips and said ring in interlocked relation, and a spacing ring engaging said guard strips intermediate their ends.

6. A lamp guard comprising in combination a plurality of circularly disposed flat insulating strips arranged radially edgewise, a member interlocking with the ends of said strips so as to connect them together, a ring intermediate the ends of said strips, said ring being formed of non-conducting sheet material and arranged edgewise with respect to the lamp, and said ring being notched for the reception of said strips, and means for connecting the other ends of said strips together.

7. A lamp guard comprising a plurality of circularly disposed flat insulating strips arranged radially edgewise, a ring arranged to interlock with the corresponding ends of said strips, a member to which the opposite ends of the strips are attached, and a flat ring of insulating material intermediate the ends of the strips, said ring being arranged edgewise with respect to the lamp and having its outer edge notched for the reception of the inner edges of said strips.

8. A lamp-guard comprising, in combination, a plurality of circularly disposed strips of insulating material arranged radially edgewise, and means for spacing the corresponding ends of said strips, said spacing means being adapted to interlock with said strips and thereby secure them together.

9. In a lamp-guard, in combination, a plurality of circularly disposed strips arranged radially edgewise, a ring to which corresponding ends of the strips are attached, a second ring to which the opposite ends of the strips are connected, and a flexible corrugated band carried by said second ring and embracing the lower ends of the strips to hold the same firmly upon the ring.

10. In a lamp-guard, in combination, a pair of rings provided each with suitably spaced slots, a plurality of strips having radially projecting lugs at their upper and lower ends, said lugs extending into said slots to connect the rings and the strips

together, whereby a rigid skeleton-structure is formed.

11. In a lamp-guard, in combination, a pair of rings provided each with suitably spaced slots, a plurality of strips having radially projecting lugs at their upper and lower ends, said lugs extending into said slots to connect the rings and the strips together, and a flexible corrugated band carried by one of said rings and embracing said strips to hold the same firmly upon the ring.

12. In a lamp-guard, in combination, a pair of rings provided each with suitably spaced slots, a plurality of strips having lugs at their upper and lower ends, said lugs extending into said slots to connect the rings and the strips together, and a stiffening member arranged substantially midway between said rings to engage the strips for bracing the same.

13. In a lamp-guard, in combination, a pair of rings provided each with suitably spaced slots, a plurality of strips having lugs at their upper and lower ends, said lugs extending into said slots to connect the rings and the strips together, a flexible corrugated band carried by one of said rings and embracing said strips to hold the same firmly upon the ring, and an auxiliary member arranged substantially midway between said rings and provided with radial slots for engaging the strips to brace the same.

14. A lamp-guard comprising a plurality of flat strips of insulating material disposed around the lamp and arranged radially edgewise, a ring arranged to interlock with the corresponding ends of the strips, a member to which the opposite ends of the strips are attached, and an insulating ring intermediate the opposite ends of said strips, said ring being notched for the reception of said strips.

15. A guard for a lamp comprising a plurality of flat insulating strips with their edges presented to the lamp and curved to conform to the shape of the lamp, a member interlocking with the corresponding ends of said strips, a member to which the opposite ends of the strips are attached, and a flat ring of insulating material located between the ends of said strips and having its outer edge notched for the reception of the inner edges of said strips.

16. A portable electric lamp, comprising in combination, an insulating handle having an enlargement at one end thereof, said enlargement having a portion reduced in external diameter, a lamp carried by said handle, and a guard for the lamp removably secured to said enlargement and extending around said reduced portion, said guard being formed of insulating material.

17. A portable electric lamp comprising, in combination, an insulating handle having

an enlargement at one end thereof, a lamp carried by said handle, and an insulating skeleton-structure embracing said enlargement and secured thereto for inclosing the lamp, said enlargement having a portion of reduced diameter providing a shoulder against which the guard is seated.

18. In a lamp-guard, in combination, a plurality of strips, means for spacing and connecting the lower ends of said strips to form the base of the guard, and a ring to which the opposite ends of the strips are connected, said ends being provided with lugs which, when the parts are in position, extend along the periphery of the ring to prevent separation of the strips therefrom.

19. In a lamp-guard, in combination, a plurality of strips, means for spacing and connecting the lower ends of said strips to form the base of the guard, and a ring to which the opposite ends of the strips are connected, said ends being provided with lugs which, when the parts are in position, extend axially along the inner periphery of the ring to prevent separation of the strips therefrom.

20. In a lamp-guard, in combination, a plurality of strips, means for spacing and connecting the lower ends of said strips to form the base of the guard, and a slotted ring for receiving the opposite ends of the strips, said ends being provided with lugs or projections that extend first radially through the slots in said ring and then in a direction parallel to the axis of the ring.

21. In a lamp-guard, in combination, a plurality of strips, means for spacing and connecting the lower ends of said strips to form the base of the guard, and a slotted ring for receiving the opposite ends of the strips, said ends being provided with L-shaped lugs or projections whereby the strips may be connected with said ring for assembling the parts, and firmly held thereto after the parts are thus assembled.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

REUBEN B. BENJAMIN.

Witnesses:

ARTHUR H. BOETTCHER,
C. L. HOPKINS.