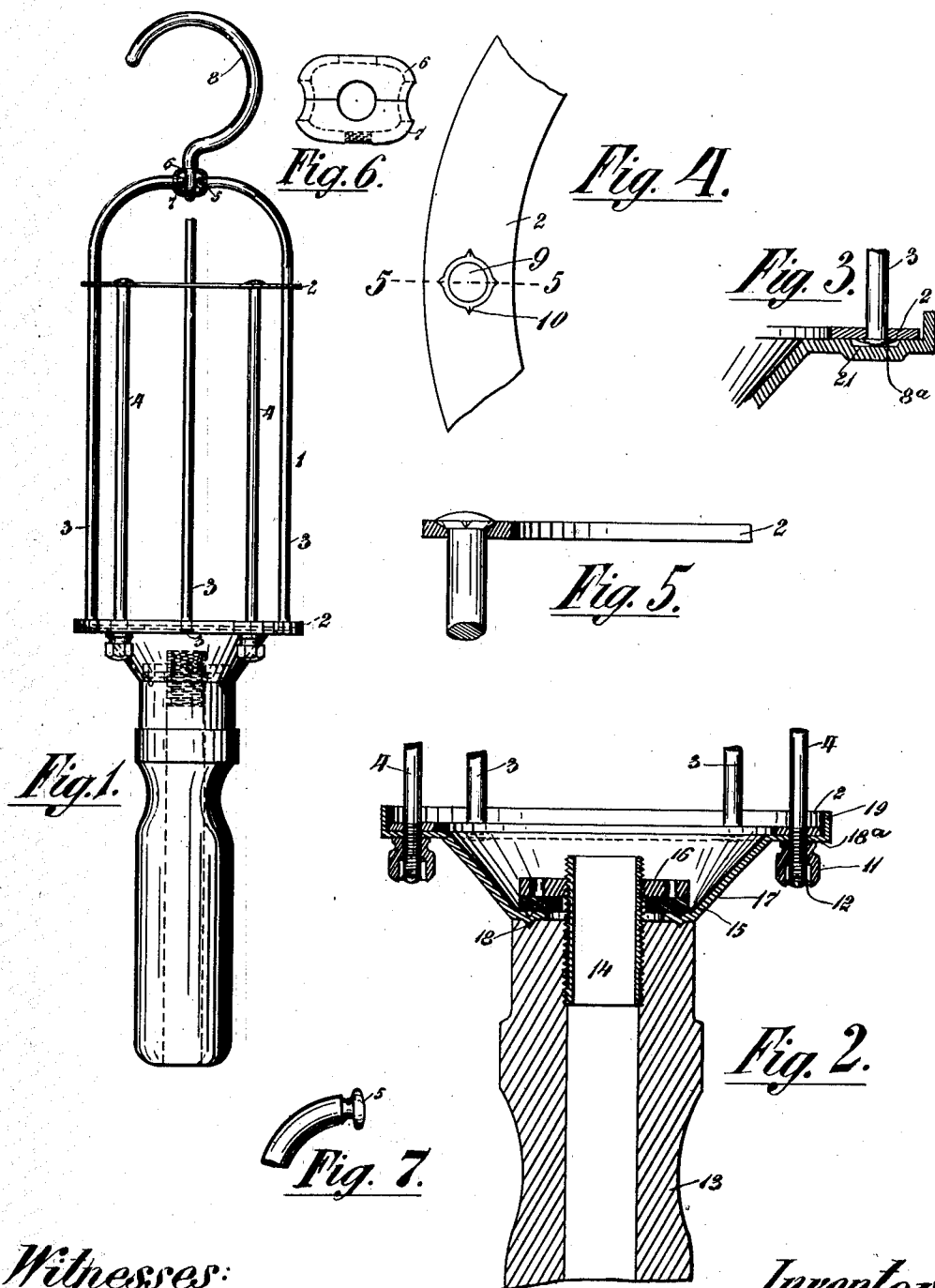


No. 870,637.

PATENTED NOV. 12, 1907.

C. MOLITOR.
INCANDESCENT LAMP GUARD.
APPLICATION FILED MAR. 8, 1906.

3 SHEETS—SHEET 1.



Witnesses:

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E. F. Wilson

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3 SHEETS—SHEET 2.

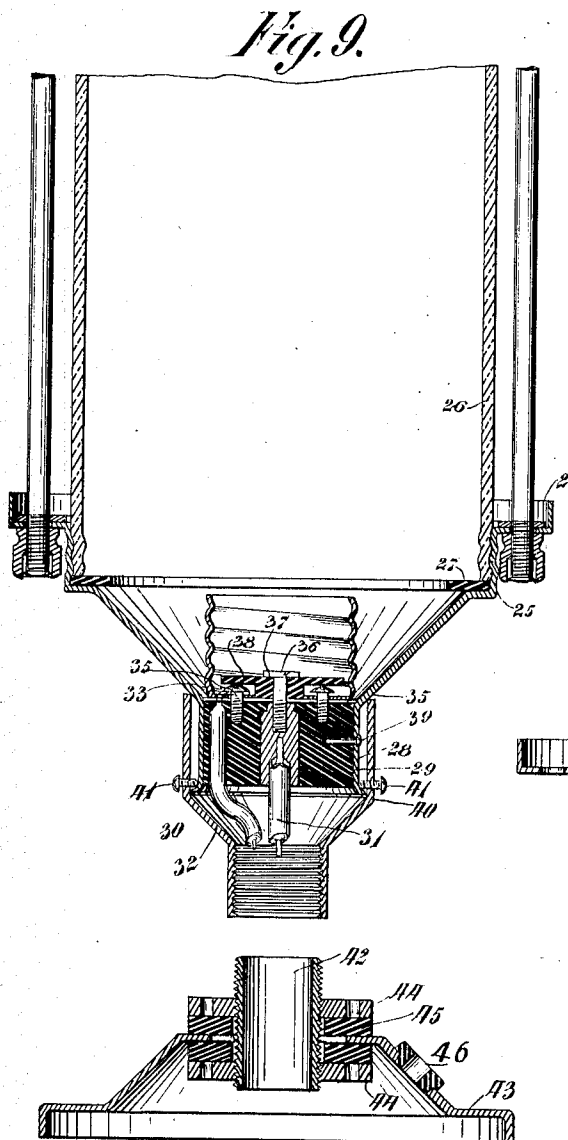


Fig. 9.

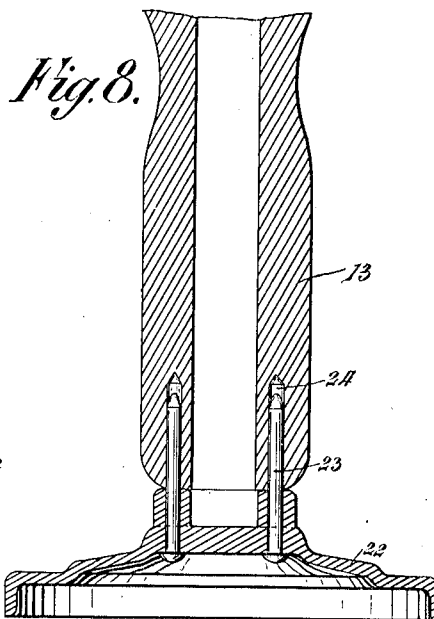


Fig. 8.

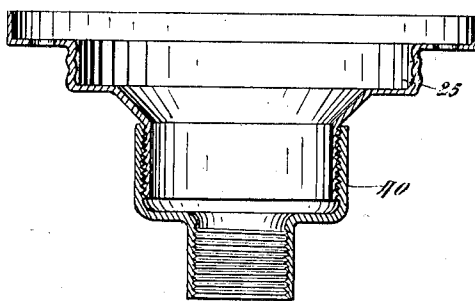


Fig. 11.

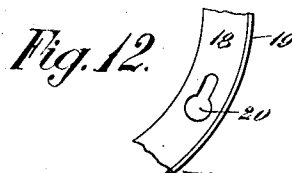


Fig. 12.

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3 SHEETS—SHEET 3.

Fig. 13.

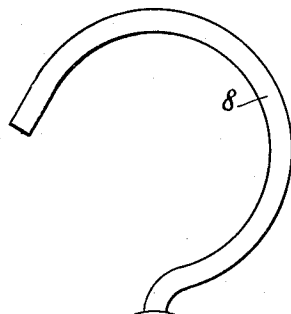


Fig. 15.

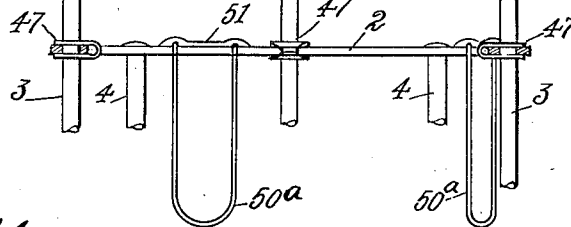
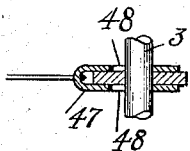


Fig. 14.

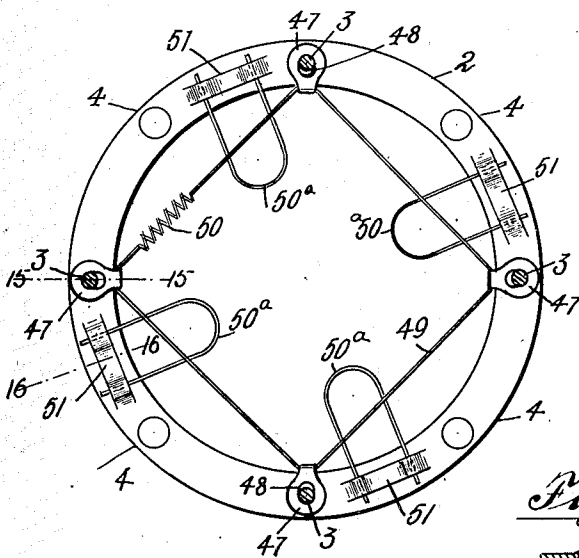


Fig. 17.

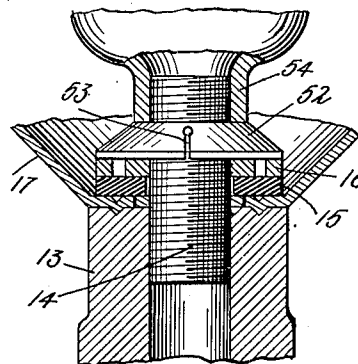


Fig. 18.

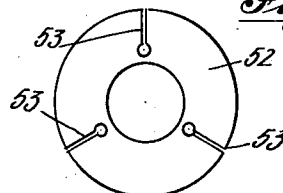
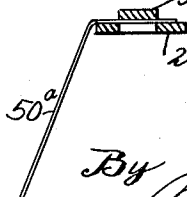


Fig. 16.



Witnesses

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Inventor

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UNITED STATES PATENT OFFICE.

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INCANDESCENT-LAMP GUARD.

No. 870,637.

Specification of Letters Patent.

Patented Nov. 12, 1907.

Application filed March 8, 1906. Serial No. 304,946.

To all, whom it may concern:

Be it known that I, CHARLES MOLITOR, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Incandescent-Lamp Guards; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to a novel construction in a guard for incandescent lamps, the object being to provide a device of this character which is simple and durable, adapted for portable or stationary lamps, and can be rendered water-proof if desired, and consists in the features of construction and combinations of parts hereinafter fully described and claimed.

In the accompanying drawings illustrating my invention: Figure 1 is a side elevation of a portable lamp guard constructed in accordance with my invention: Fig. 2 is a fragmentary central longitudinal section of same, on an enlarged scale. Fig. 3 is a fragmentary detail section, on an enlarged scale, on the line 3 3 of Fig. 1. Fig. 4 is a detail fragmentary top plan view of the upper ring of the cage showing the riveted end of a bar of same. Fig. 5 is a detail section on the line 5 5 of Fig. 4. Fig. 6 is a side elevation of a socket piece for receiving the ends of certain bars of the cage and the hook for hanging the latter. Fig. 7 is a detail elevation of the end portion of one of the bars. Fig. 8 is a central longitudinal section of the handle and a stand for supporting the portable guard in an upright position. Fig. 9 is a central longitudinal section of a slightly modified form of construction including means for rendering the guard water-proof. Fig. 10 is a central vertical section of a base adapted to receive and support the water-proof guard shown in Fig. 9. Fig. 11 is a similar section showing a modified form of construction of supporting member. Fig. 12 is a detail fragmentary plan view of the lower plate of the guard showing the form of slot constituting part of the bayonet joint between said plate and the cage or guard proper. Fig. 13 is a fragmentary view in elevation of the upper portion of the cage of the guard showing means disposed thereon for engaging the free end of the lamp bulb to reinforce the same. Fig. 14 is a plan section on the line 14 14 of Fig. 13. Figs. 15 and 16 are fragmentary detail sections on an enlarged scale on the lines 15 15 and 16 16 respectively of Fig. 14. Fig. 17 is a fragmentary detail view partly in elevation and partly in central vertical section of the upper portion of the handle showing a cushioning washer disposed below the lamp socket. Fig. 18 is a detail plan view of the cushioning washer.

The main object of my invention is to provide a guard which is simple, strong neat in appearance, light

and relatively cheap to manufacture, a further important object being to so construct the same that it is adapted to be rendered water-proof and for portable or stationary use. To these and other ends my said device comprises a cage 1 consisting of two parallel rings 2 and a plurality of parallel bars 3 and 4 disposed perpendicularly to the planes of said rings and secured therein. The said bars 3 and 4 are each preferably four in number, said bars 3 being secured at one end in the lower ring 2 and at their other ends passing through openings in the upper ring, the free ends of same being curved and converging toward each other, the extreme ends terminating in small heads 5. These are adapted to be engaged by clamping members 6 and 7, each consisting of a concavo-convex plate provided on its edge with four semi-circular recesses adapted to receive the end portions of said bars behind said heads 5, said recesses of said members when disposed edge to edge being adapted to form substantially circular openings. Said member 6 is provided with a smooth bored central opening through which the reduced end portion of the shank of a hook 8 is adapted to pass freely, the threaded end of said reduced portion being adapted to enter the threaded central opening in the member 7, said shank serving in a well-known manner to force said members toward each other. The said bars 3 and 4 are alternated, the lower ends of said bars 3 passing through the lower ring 2 and being upset like a rivet to form a small convex projection 8^a, and the bars 4 being similarly passed through the countersunk openings 9 in the upper ring and upset, there being a plurality of recesses 10 surrounding said openings 9 into which the edges of said upset ends of said bars are forced to hold the latter against revolution. At their lower ends said bars 4 are threaded and pass through threaded openings in the lower ring 2. The projecting portions of said threaded ends receive nuts 11, the central openings in which are enlarged at the outer end portions thereof, as at 12 and are adapted to receive the upset extreme ends of said threaded end portions of said bars to hold said nuts against removal. The cage or guard thus formed is adapted to receive the lamp carried by the supporting member which I will now proceed to describe. The said supporting member carries a hollow stem or handle 13, of wood or other non-conducting material, in the upper end of which a threaded metal sleeve 14 is mounted, which projects therefrom and is adapted to receive a washer 15 of non-conducting material, and a metal nut 16. The said washer 15 is adapted to bear upon the lower end of a cup 17 having a central opening of larger diameter than said sleeve 14 and provided adjacent said opening with a plurality of projections 18 adapted to enter the end of the handle to hold said cup against lateral or rotary movement relatively thereto, the same being held

against relative longitudinal movement by the nut 16 and washer 15. The said cup 17 is tapered between its ends and at its upper end is provided with an annular flange 18 provided on its outer edge with an upwardly extending annular flange 19 within which the lower ring 2 is adapted to be received and to rest upon said flange 18, the latter being provided with keyhole or bayonet openings 20 through which the nuts 11 are adapted to pass and to engage the lower face of said flange 18 when the supporting member and the cage are relatively turned to throw the threaded ends of the bars into the narrow portions of said openings 20. Said flange 18 is further provided with depressions or recesses 21 in its upper face in which the upset ends of said bars 3 are adapted to be received when said guard and supporting member are relatively turned as above described. The said sleeve 14 is adapted to receive a lamp socket, the wires or cords for connecting the same to the source of supply of current being adapted to pass through said hollow stem or handle. To support the said supporting member in an upright position, I provide a base plate 22 of any suitable form carrying two parallel upwardly extending prongs 23 which are adapted to enter longitudinal openings 24 in the lower end of said stem or handle 13, as shown in Fig. 8. To render the said guard water-proof and adapt it for stationary as well as portable use, the same is somewhat modified in construction, such modification consisting mainly in providing an L-shaped annular recess 25 in said cup 17 inwardly of said flange 18^a, the outer wall of said recess being threaded to receive the lower threaded end of an inverted glass cup 26, the lower end of which bears upon and compresses a rubber washer 27 in a well-known manner to effect a fluid tight joint, the said cup 26 being received within and protected by said guard or cage. To prevent water from entering said cup from below or reaching the electrical connections, the cup 17 terminates at its lower end in a cylindrical sleeve 28 having a flaring lower end as shown in Fig. 9, or which may be externally threaded as shown in Fig. 11. In said sleeves a cylindrical plug 29 of a suitable non-conducting material is snugly inserted to render said sleeve fluid-tight and in and through the said plug the electrical connections are made. To this end said plug is provided with a centrally embedded metallic core provided in its lower end with a central stepped opening 30 to receive the end and part of the insulation of the feed wire 31, the other feed wire 32, together with the insulation, passing through an opening at one side of said plug, the end of said wire passing through a metal plate 33 resting on said plug. The socket 34 for the lamp rests on said metal plate and is held in place by means of two set-screws 35 passing into threaded openings in said plug, one of which engages the wire 32, said socket being further held by means of a set-screw 36 passing through an insulating block 37 disposed in the bottom of said socket, and entering a threaded opening in the upper end of the core of said plug. The said block 37 is provided with an annular flange 38 overhanging the set-screws 35 and serving to prevent the latter from dropping out. To hold said plug against revolution, a pin 39 is inserted radially through the wall of the sleeve and into said plug. To secure said supporting member to a wall plate or the like, I pro-

vide a stepped cylindrical sleeve 40 adapted to receive said sleeve 28 and provided with radially disposed set-screws 41 adapted to engage the latter, the other and smaller end of said sleeve 40 being internally threaded and adapted to receive the projecting end of the threaded sleeve 42 of the wall plate 43, the latter preferably consisting of a dished plate having a central opening of larger diameter than said sleeve 42 through which the latter passes, being held in place therein by two nuts 44 disposed on opposite sides of the wall of said plate and on said sleeve 42 and bearing upon two non-conducting washers 45, by means of which said sleeve is maintained out of contact with said plate. The latter is provided with an opening 46 for the passage of wires 31 and 32. The said sleeve 28 may also be externally threaded and the upper end of the sleeve 40 internally threaded to receive the same as shown in Fig. 11.

In Figs. 13 to 16 inclusive, I have shown means for yieldingly supporting the free end of the lamp bulb to prevent the same from breaking by the jar imparted thereto in the event that the lamp falls. These means comprise U-shaped loops 47 provided in the free ends of their arms with longitudinal slots 48 through which the wires 3 pass and which are adapted to receive the inner edge portion of the ring 2 and are thereby held against longitudinal movement. Through the free end portions of the loops 47 a relatively fine wire 49 is drawn relatively taut thus forming a rectangular frame which is adapted to receive and yieldingly engage the lamp bulb at its free end. To render such wire yielding the same is preferably bent at one point to form a spiral spring 50. The said loops 47, it will be noted, are capable of limited motion in a direction substantially radial to the guard and likewise of pivotal motion, and, in the event that the guard is dropped or is subjected otherwise to a severe jar, the impact of the lamp-bulb against the wire 49 will impart compensating movements to said loops against the action of said wire which serves to normally hold said loops at the inner limits of their movement.

To further cushion the jar on the bulb and to provide cushioning means adapted to engage bulbs of smaller size, I provide spring tongues 50^a on said ring 2 which project inwardly and downwardly therefrom. The said tongues 50^a consist preferably of U-shaped wire loops the free ends of which are secured to the said ring 2 by cutting into the latter between the openings for the wires 3 and 4, parallel incisions and forcing the intermediate strip 51 of metal upwardly above the plane of said ring and passing said free ends of said U-shaped wires underneath the same and then again forcing the middle portion of said strip 51 downwardly. The said wires are thus firmly clamped upon said ring.

In order to further cushion the lamp I also provide means disposed below the lamp socket consisting of a dished washer 52 provided in its outer edge with a plurality of radial slots 53 thus providing a plurality of spring tongues thereon.

The stem portion of the lamp socket 54 is internally threaded to receive the tube 14, both said members being provided with standard size threads. Said threads, however, are apt to fit somewhat loosely and if the socket becomes slightly loose thereon the lamp will obviously be capable of limited swing, which, in the event that the guard is dropped will cause the lamp

to break. By interposing said washer 52 below said socket, however, the latter will be yieldingly held against swinging and any jar will be considerably lessened.

5 I claim as my invention:

1. A guard for incandescent lamps, comprising in combination a supporting member consisting of a cup having a stem through which the electrical connections pass, and carrying the lamp socket, an annular flange on said cup at one end provided with a plurality of key-hole openings, a perpendicular annular flange at the free end of said first-named flange, and a plurality of recesses in said first-named flange alternating with said openings therein, and a guard member comprising a cage consisting of two parallel flat rings, two sets of perpendicularly disposed bars passing through and secured in said rings, said bars being relatively alternated and one set thereof secured in one end in the upper ring and held thereby against revolution relatively to said ring, and the other ends of said bars being threaded and passing through threaded openings in the lower ring, thumb-nuts on the threaded ends of said bars having central openings enlarged at one end, the extreme free ends of threaded ends of said bars being upset to prevent removal of said thumb-nuts.

2. A guard for incandescent lamps, comprising in combination a supporting member consisting of a cup having a stem through which the electrical connections pass, and carrying the lamp socket, an annular flange on said cup at one end provided with a plurality of key-hole openings, a perpendicular annular flange at the free end of said first-named flange, a plurality of recesses in said first-named flange alternating with said openings therein, said cup being provided with an annular L-shaped recess inwardly of said first-named flange, the cylindrical wall of said recess being threaded, an inverted glass cup threaded at one end adapted to fit said recess, and a rubber washer disposed in said recess and adapted to be compressed by the edge of said cup, and a guard member comprising a cage consisting of two parallel flat rings, two sets of perpendicularly disposed bars passing through and secured in said rings, said bars being relatively alternated and one set thereof secured in one end in the upper ring and held thereby against revolution relatively to said ring, and the other ends of said bars being threaded and passing through threaded openings in the lower ring, thumb-nuts on the threaded ends of said bars having central openings enlarged at one end, the extreme free ends of threaded ends of said bars being upset to prevent removal of said thumb-nuts.

3. A guard for incandescent lamps comprising in combination a supporting member consisting of a cup having a stem through which the electrical connections pass, and carrying the lamp socket, an annular flange on said cup at one end provided with a plurality of key-hole openings, a perpendicular annular flange at the free end of said first-named flange, a plurality of recesses in said first-named flange alternating with said openings therein, said cup being provided with an annular L-shaped recess inwardly of said first-named flange, the cylindrical wall of said recess being threaded, an inverted glass cup threaded at one end adapted to fit said recess, and a rubber washer disposed in said recess and adapted to be compressed by the edge of said cup, an insulating plug in said stem, through which said electrical connections pass, a member adapted to receive said stem, and a supporting member to which said last-named member is adapted to be removably secured, and a guard member comprising a cage consisting of two parallel flat rings, two sets of perpendicularly disposed bars passing through and secured in said rings, said bars being relatively alternated and one set thereof secured in one end in the upper ring and held thereby against revolution relatively to said ring, and the other ends of said bars being threaded and passing through threaded openings in the lower ring, thumb-nuts on the threaded ends of said bars having central openings enlarged at one end, the extreme free ends of threaded ends of said bars being upset to prevent removal of said thumb-nuts.

4. A guard for incandescent lamps comprising a sup-

porting member carrying the lamp and having an annular portion provided with openings, and a guard or cage member adapted to receive said lamp and be secured to said supporting member, said guard or cage member carrying a plurality of threaded projections carrying nuts, said nuts being adapted to pass through said openings at one end thereof and to engage said annular portion adjacent said openings when said cage is turned relatively to said supporting member, said openings and said threaded ends of said bars and said nuts constituting a bayonet joint, the central openings in said nuts being enlarged at one end and said threaded ends of said bars being upset at their ends to prevent removal of said nuts.

5. In a device of the kind specified, the combination with a supporting member having an annular supporting surface provided with a plurality of key-hole openings and with recesses between said openings, of a cage or guard member comprising a plurality of parallel rings, bars disposed perpendicularly to said rings and passing there-through, alternate bars being threaded at their ends and passing through threaded openings in the lowermost ring, nuts on the projecting threaded ends having their openings enlarged at one end to receive the upset extreme ends of said threaded portions, the other bars being upset at their lower ends below said rings, the said threaded ends and nuts being adapted to pass through said keyhole openings and said upset ends of said other bars being adapted to enter said recesses.

6. In a device of the kind specified, the combination with a supporting member having an annular supporting surface provided with a plurality of key-hole openings and with recesses between said openings, of a cage or guard member comprising a plurality of parallel rings, bars disposed perpendicularly to said rings and passing there-through, alternate bars being threaded at their ends and passing through threaded openings in the lowermost ring, nuts on the projecting threaded ends having their openings enlarged at one end to receive the upset extreme ends of said threaded portions, the other bars being upset at their lower ends below said rings, the said threaded ends and nuts being adapted to pass through said key-hole openings and said upset ends of said other bars being adapted to enter said recesses, the other ends of said last-named bars being curved and convergent and provided with heads, recessed clamping members adapted to receive said heads and engage said bars, and a hook having a reduced threaded shank adapted to engage said clamping members and force the same toward each other.

7. In a device of the kind specified, the combination with a supporting member having an annular supporting surface provided with a plurality of key-hole openings and with recesses between said openings, of a cage or guard member comprising a plurality of parallel rings, bars disposed perpendicularly to said rings and passing there-through, alternate bars being threaded at their ends and passing through threaded openings in the lowermost ring, nuts on the projecting threaded ends having their openings enlarged at one end to receive the upset extreme ends of said threaded portions, the other bars being upset at their lower ends below said rings, the said threaded ends and nuts being adapted to pass through said key-hole openings, and said upset ends of said other bars being adapted to enter said recesses, the other ends of said last-named bars being curved and convergent and provided with heads, recessed clamping members adapted to receive said heads and engage said bars, and a hook having a reduced threaded shank adapted to engage said clamping members and force the same toward each other, the other ends of said threaded bars being upset and engaging the uppermost ring, and means for holding said threaded bars against revolution relatively to said rings.

8. In a device of the kind specified, the combination with a cage comprising a plurality of parallel rings, and two sets of bars disposed perpendicularly relatively to said rings and passing through openings in the latter, one set of said bars being upset to engage the lowermost ring and having their ends curved and converging and provided with heads at their ends adapted to enter and be engaged by a suitable clamping device, and the other set of bars being upset at their upper ends to engage the uppermost

- ring and threaded at their lower ends, said threaded ends passing through threaded openings in the lowermost ring and carrying nuts below the latter, said ends being upset to prevent removal of said nuts, of a supporting member
- 5 carrying the lamp and provided with a concentric supporting surface provided with key-hole openings to receive said nuts and threaded ends and with recesses to receive the upset lower ends of the other set of said bars, a stem on said supporting member through which the feed wires
- 10 pass, and a base adapted to be removably secured to said stem.
9. In a guard cage, the combination with converging wires provided adjacent their free ends with annular grooves, of dished clamping members provided in their
- 15 edges with recesses adapted to receive the grooved portions of said wires, said clamping members being each provided with a central opening, one of said openings being threaded, and a member of greater diameter than either of said central openings having a threaded shank adapted to pass
- 20 freely through the central opening in one of said members and engage the threaded opening in the other to draw said members toward each other.
10. In a guard cage, the combination with converging wires provided adjacent their free ends with annular
- 25 grooves, of dished clamping members disposed edge to edge and provided with recesses in said edges adapted to receive the grooved portions of said wires, there being central openings in said clamping members, and means passing through said central opening and engaging both said
- 30 clamping members for holding the same in engagement with said wires.
11. A device of the kind specified, comprising a handle-portion and a cage portion, a supporting plate on handle portion provided adjacent its periphery with a plurality of
- key-hole slots, threaded projections on said cage member
- 35 adapted to enter said slots, and nuts disposed on said threaded projections having their central openings annularly enlarged at their outer ends, the free ends of said threaded projections being upset to prevent removal of said nuts.
12. A lamp guard having a cage adapted to receive the lamp bulb, a plurality of inwardly projecting laterally
- 40 movable loops disposed in said cage, and a wire passed through said loops and engaging the lamp bulb adjacent its free end to cushion the same.
13. A lamp guard having a cage adapted to receive the lamp bulb, a plurality of inwardly projecting laterally
- 45 movable loops disposed in said cage, and a flexible wire passed through said loops and engaging the lamp bulb adjacent its free end to cushion the same.
14. A lamp-guard having a cage provided between its ends with a reinforcing ring, flexible tongues secured to said ring and projecting inwardly therefrom and longitudinally toward the mouth thereof, said tongues being
- 50 adapted to yieldingly engage the lamp bulb to cushion the same.
15. A guard for incandescent electric lamps provided with a threaded projection adapted to receive a lamp socket, and cushioning means disposed in the path of said
- 55 socket, said means comprising a dished washer provided in its outer edge with substantially radial recesses.
- In testimony whereof I have signed my name in presence of two subscribing witnesses.

CHARLES MOLITOR.

Witnesses:

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E. F. WILSON.