Feb. 12, 1957 ISAMU NOGUCHI 2,781,444

LAMP CONSTRUCTION

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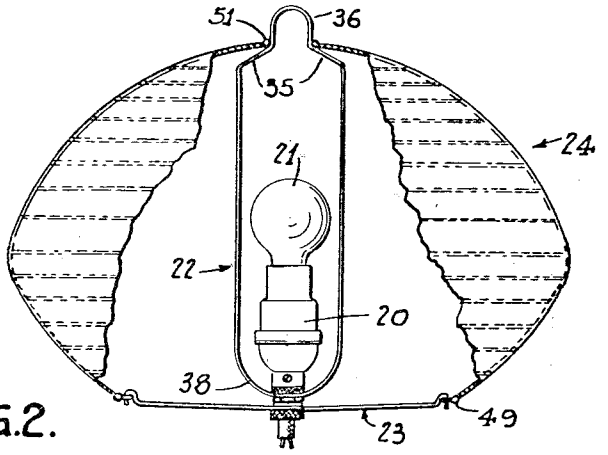



FIG.2.

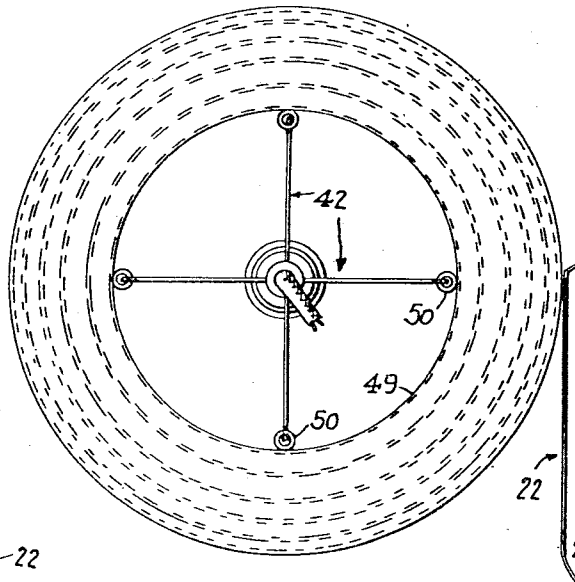
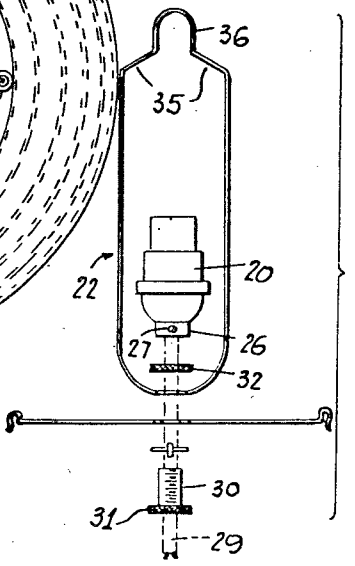



FIG.1.

FIG.3.



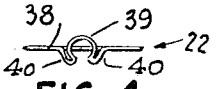




FIG.4.

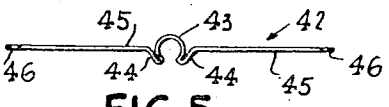



FIG.5.

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FIG.8.

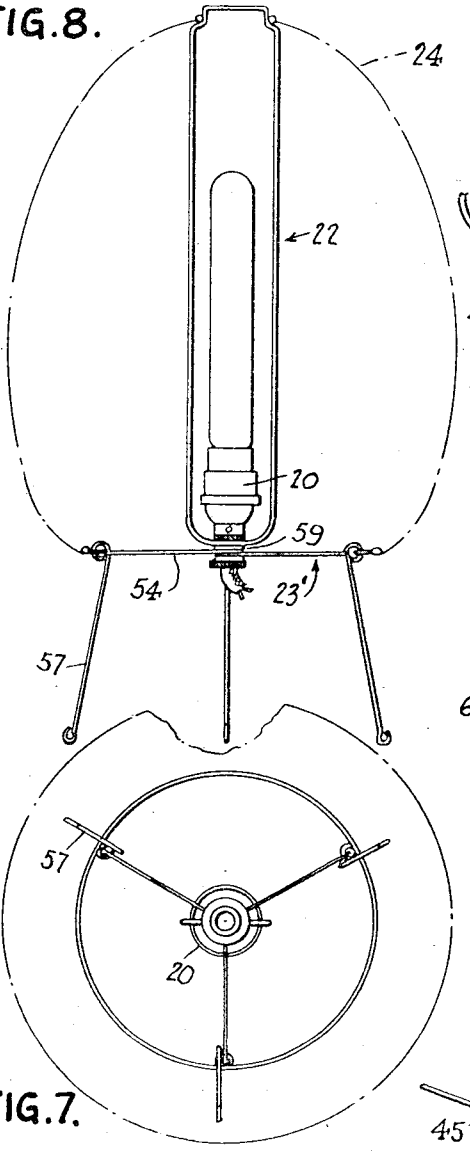



FIG.7.

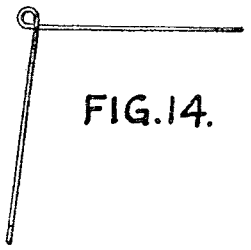


FIG.14.

FIG.9.

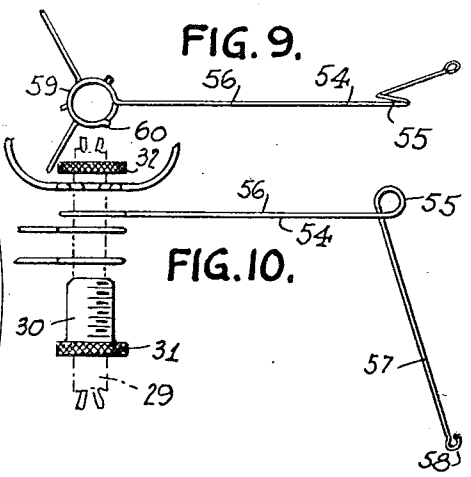



FIG.10.

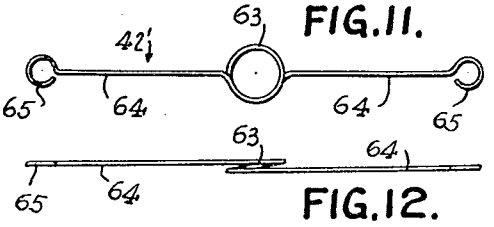



FIG.11.

FIG.12.

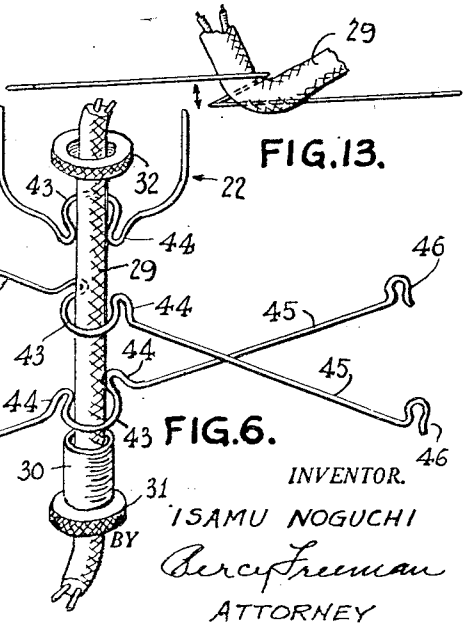



FIG.13.

FIG.6.

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# LAMP CONSTRUCTION

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Application February 14, 1955, Serial No. 487,917

2 Claims. (Cl. 240—36)

This invention relates generally to lamp constructions.

The particular embodiment of the present invention, which is illustrated in the drawings, and which will be described hereinafter in greater detail, comprises generally a bulb mounting having a cord-receiving nipple, a spider detachably secured to the nipple and extending radially therefrom, and a lampshade supported by the spider in spaced relation about the bulb mounting. While the present invention has been primarily developed and employed in connection with Japanese lanterns, and will be illustrated and described hereinafter with particular reference thereto, it is appreciated that the invention has wide application to other types and styles of lamps, such as floor lamps, table lamps, ceiling lamps, wall lamps, bed lamps and the like, having various illuminating means.

As is well known to those versed in the art, Japanese lanterns are substantially completely dismantled or disassembled for transportation and storage, so that ease of assembly and disassembly, as well as small size of the disassembled unit are of prime importance. That is, it is essential that Japanese lanterns and other similar types of lamps may be quickly and easily set up and knocked down in order to reduce labor costs and facilitate sale to the ultimate consumer in a disassembled condition. Further, as Japanese lantern shades are usually foldable to a substantially flat configuration, the minimum thickness of a container for shipment and storage is limited by the size of the component parts other than the frame. It is, therefore, highly desirable to provide a spider and frame which are adapted to lie as flat as possible when removed from the assembly.

More particularly, it was heretofore necessary, in assembling the spider with the bulb mounting, to disconnect or detach either the mounting or the electric plug from the electric cord, and insert or thread the latter endwise through the spider. This is, of course, a tedious and time-consuming procedure, and especially burdensome if the lanterns are repeatedly assembled and disassembled, as when stored between periods of use.

Accordingly, it is a principal object of the present invention to provide a lamp construction of the type described, which overcomes the above-mentioned difficulties and permits of rapid and efficient set up and dismantling of a spider and bulb mounting without disconnecting or otherwise detaching the bulb mounting or the plug from the electric cord.

It is a further object of the present invention to provide a lamp construction having the advantageous characteristics mentioned in the foregoing paragraph, which is extremely simple to assemble and disassemble, requiring a minimum of light weight and relatively flat parts, which is durable in use, permitting of indefinitely repeated setting up and dismantling without noticeable wear, which is neat and attractive in appearance, and can be manufactured, transported and sold at a reasonable cost.

Other objects of the present invention will become apparent upon reading the following specification and referring to the accompanying drawings, which form a material part of this disclosure.



The invention accordingly consists in the features of construction, combinations of elements, and arrangements of parts, which will be exemplified in the construction hereinafter described, and of which the scope will be indicated by the appended claims.

In the drawings:

Fig. 1 is a bottom view showing a Japanese lantern constructed in accordance with the present invention.

Fig. 2 is a side elevational view showing the lantern of Fig. 1, with the shade partially broken away for clarity of understanding.

Fig. 3 is an exploded elevational view showing the component parts of the lamp of Figs. 1 and 2 without the shade.

Fig. 4 is a bottom end view of the lamp frame removed from the lamp.

Fig. 5 is a bottom view showing a spider element removed from the lamp.

Fig. 6 is a partial, enlarged perspective view showing the frame and spider in an intermediate stage of assembly or disassembly with respect to the lamp mounting.

Fig. 7 is a bottom view showing a slightly modified form of lamp constructed in accordance with the present invention, the shade being indicated in dot-and-dash outline.

Fig. 8 is a side elevational view showing the lamp of Fig. 7.

Fig. 9 is a partial plan view showing the spider elements in their assembled relation with respect to each other, but disassociated from the bulb mounting.

Fig. 10 is a partial, exploded elevational view showing the spider elements, frame and bulb mounting of the modification illustrated in Figs. 7 and 8.

Fig. 11 is a plan view showing another form of spider element constructed in accordance with the present invention.

Fig. 12 is a side view showing the spider element of Fig. 11.

Fig. 13 is a side view similar to Fig. 12 but showing the spider element in an intermediate stage of assembly with an electric cord.

Fig. 14 is an elevational view showing a spider element of the lamp of Fig. 7, removed therefrom.

Referring now more particularly to the drawings, and specifically to Figs. 1–6 thereof, the embodiment of the invention illustrated therein comprises an upstanding support, mounting or socket 20 for a bulb 21, and a generally vertically disposed frame 22 in which the socket is supported. A spider or radially extending frame, generally designated 23 is fixedly connected to the socket 20 adjacent to the lower end of the frame 22, and a distendable lampshade, generally designated 24, is circumposed in spaced relation about the bulb support 20 and frame 22, having its lower end secured to the spider 23 and its upper end held by the upper end of the frame 22.

The bulb-holding socket 20 may be conventional in construction, as illustrated, terminating at its lower end in an annular neck or collar 26 having a radially inwardly extending set screw 27. The collar 26 provides an opening for an electric cord 29 connected to the lamp socket and extending outwardly through the neck for connection to a source of electric supply.

A tubular member or nipple 30 adapted to surround or receive the cord 29, is preferably externally threaded and has one end insertable upwards into the socket collar 26, being releasably retained therein by the set screw 27. Of course, the collar 26 may be internally threaded for threadedly receiving the upper end of the nipple 30, if desired. The lower end of the nipple 30 is formed with an external, peripheral shoulder 31; and, an internally threaded, annular clamping member or ring 32 is circumposed about the nipple 30 in threaded engage-

ment with the latter for rotation thereabout and longitudinal movement therealong toward and away from the shoulder 31. The shoulder 31 and clamping ring 32 are preferably externally knurled, as illustrated, to facilitate hand manipulation. If desired, the shoulder 31 may, of course, be formed separate from the nipple tube 30 and threadedly circumposed thereabout, as desired.

The frame 22, as shown in the illustrated embodiment comprises an elongated, generally vertically disposed loop, and may be fabricated of relatively stiff, resilient wire, or other suitable material, as desired. The upper region of the frame loop 22 converges symmetrically, as at 35, 35 and terminates in a reduced section 36 of inverted, U-shaped configuration. The lower end portion of the frame loop 22 curves inwards, as at 38, 38 and terminates in a generally horizontally disposed, laterally open annulus 39. More specifically, the downwardly converging, curved frame portions 38, 38 are bent laterally as at 40, 40 to one side of the frame 22. The open annulus or loop 39 is disposed axially with respect to the frame and has its free ends fixedly secured to the outer ends of the laterally extending portions 40, 40. Of course, the entire frame 22 may be cut and bent of a single piece of wire, if desired.

The spider 23 is composed of at least two elongated wire elements, generally designated 42, and best seen in Fig. 5.

Each of the spider elements 42 is preferably formed of a single piece of relatively stiff, resilient wire and has its medial portion arcuately curved as at 43 to form an open annulus or loop. Extending from the ends of the open loop 43, exteriorly of the latter and away from each other are relatively short connecting portions 44, 44 which merge into a pair of radially outwardly extending spokes 45, 45. That is, the spokes 45 extend radially outwards relative to the open loop 43 and have their inner ends connected to the ends of the loop by the wire portions 44. On the outer end of each spoke 45 is a hook 46 disposed at substantially right angles with respect to the open loop 43. That is, the hooks 46 are substantially coplanar, both opening downwards as seen in Fig. 2, and disposed in a plane at right angles to the plane of the loop 43. As both spider elements are identical, a detailed description of one will suffice.

In the assembly operation, the spider elements 42 are arranged to receive the cord 29 in the open loops 43 and superposed one above the other with the radially extending spokes 45 angularly spaced apart from each other. More specifically, by one method, the nipple 30 may be detached from the neck 26 and slid along the cord 29 away from the socket 20, the position seen in Fig. 3. The cord portion between the spaced nipple and clamping ring is then passed laterally between the ends of the open loop 43 of each spider element into the center thereof, with the hooks 46 of the spider elements opening downwards. The frame 22 is then arranged vertically with the open loop 39 lowermost, and the cord portion between the spider elements 42 and the clamping ring 32 is inserted between the ends of the loop 39 into the center of the latter. The spider elements 42 and the frame 22 are then slid downwards along the cord 29 until their respective open loops engage over the upper end of the nipple 30. After the spider elements and frame are arranged angularly about the nipple 30, preferably as illustrated, the clamping ring 32 is threaded on the upper end of the nipple to firmly secure the loops 43 and 39 between the shoulder 31 and ring 32. The upper end of the nipple 30 may then be inserted into and fixed within the socket neck 26 to define a relatively firm and staunch socket, spider and frame assembly. Assembly of the spider and frame with the lamp or bulb mounting may also be effected without separating the nipple 30 from the socket, by forcibly engaging or snapping the open loops 43 and 39 about the nipple. While this latter method may be simpler and quicker than the first described procedure, it requires considerable flexing of the open loops 43 and 39, and consequently effects more rapid wear.

The frame 24 is illustrated as comprising a flexible covering over a framework of concentric annuli, and is collapsible in an accordion-like manner from the extended position illustrated, to a substantially flat configuration. Of course, the lampshade framework may be formed of the convolutions of a continuous helical member rather than a series of concentric rings, as illustrated. On the lower end of the lampshade 24, extending inwards from the lowermost lampshade ring 49 are a plurality of circumferentially spaced generally horizontally disposed eyes 50, each adapted to receive one of the spider hooks 46. In this manner, the lower end of the lampshade 24 is secured to and held down by the spider 23. The uppermost ring 51 of the lampshade framework is engageable over the reduced upper end frame portion 36 and held upwards by the converging frame portions 35, so that the upper and lower ends of the lampshade are stretched apart and held by the frame 22 and spider 23. While the socket 20 has been illustrated and described as upstanding in disposition, it is, of course, appreciated that the socket, and hence the entire lantern may be equally well employed in an inverted condition, if desired.

In Figs. 7–10 are illustrated a slightly modified form of lamp having a bulb mounting or socket 20 disposed within and supported by a frame 22, a spider 23′ and a lampshade schematically illustrated at 24.

The socket 20 is provided with an externally threaded, tubular nipple 30 having an external, peripheral enlargement or shoulder 31 on its lower end and an internally threaded clamping ring 32 removably positionable about and in threaded engagement with the nipple 30, all substantially the same as described hereinbefore in connection with the form of Figs. 1–6.

Thus, the embodiment of Figs. 7–10 is substantially the same as that of Figs. 1–7 with the exception of the spider 23′, which includes a plurality of spider elements 54, best seen in Figs. 7, 8, 9 and 10. Each of the spider elements 54 is preferably formed of a single piece of relatively stiff, resilient wire having a medial convolution or loop 55, a relatively straight spoke 56 extending from one end of the convolution, and a relatively straight leg or prop 57 extending from the other convolution end and disposed at an angle with respect to the spoke. The distal or free end of the leg 57 may be curved or hooked as at 58, while the free, distal end of the spoke 56 is bent to form an open, arcuate loop 59 terminating in a slight radial projection or lug 60. In the lamp of Fig. 7 and Fig. 8, it is preferred to employ at least three spider elements 54 disposed in angularly spaced relation with respect to each other.

In order to assemble the lamp of Figs. 7 and 8, it is only necessary to insert the portion of cord 29 disposed between the nipple 30 and clamping ring 32, see Fig. 10, inwards through the circumferential opening of each loop 59 into the center thereof, and slide the loops longitudinally along the cord 29 over the upper end of the nipple. The cord-receiving open loop of the frame 22 is then placed about the cord 29 between the clamping ring 32 and nipple 30, and slid over the upper end of the latter, as described hereinbefore. The ring 32 may then be threadedly engaged about the nipple 30 to clamp the open loops of the spider elements and frame firmly between the ring and shoulder 31.

Where it is desired to employ a collapsible, accordion-type lampshade, the medial loops 55 are interengaged with the eyes 50 of the shade 24 before assembling the spider elements with the nipple 30. In fact, the spider elements 54 may be permanently associated with the collapsible shade 24, and turned to lie substantially flat in the plane of the collapsed lampshade when not in use.

It will, of course, be readily apparent that the spider elements 54 and frame 22 are firmly clamped to the bulb

socket 20 to maintain the shade in distended condition, and that the struts or legs 57 may serve to support the entire lamp upon a suitable surface, and thus provide a standing type lamp having substantially the same ease of assembly and disassembly as the first described form of the present invention.

In Figs. 11, 12 and 13 are shown another type of spider element 42' adapted for interchangeable use with the spider element 42, and also preferably fabricated of a single piece of relatively stiff, resilient wire. The spider element 42' is bent in its medial portion to form a relatively tight, but open spiral loop 63, the illustrated form having 1½ convolutions and being further openable upon distention coaxially of the helix. Extending from the ends of the helical loop 63 and radially outwards with respect thereto are a pair of relatively straight spokes 64, 64 which terminate at their distal ends in hooks 65, 65. The hooks 65 are preferably disposed coplanar with each other and in a plane at right angles to the convolutions of the loop 63, in the same manner as the spider elements 42.

In the assembly operation, the loop 63 may be opened sufficiently, by distention axially of the helix, to receive the wire portion between the nipple and clamping ring between the convolutions of the helix. That is, the wire is inserted sidewise between the convolutions of the helical loop until it is disposed within the central portion of the helix. The subsequent assembly procedure is the same as that of the previously described forms of the present invention.

From the foregoing, it is seen that the present invention provides a lamp construction which fully accomplishes its intended objects, and which is well adapted to meet practical conditions of manufacture, transportation and use.

Although the present invention has been described in some detail by way of illustration and example for purposes of clarity of understanding, it is understood that certain changes and modifications may be made within the spirit of the invention and scope of the appended claims.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:



1. A lamp construction comprising a stretcher frame, a bulb mounting disposed within said frame, a cord-receiving nipple on said bulb-mounting and detachably secured to said frame, a spider detachably secured to said nipple and extending radially therefrom, and a distendable shade spacedly surrounding said frame having one end connected to said spider and the other end connected to said frame so as to be distended by the latter, said spider comprising a plurality of relatively stiff, resilient wires each having its medial portion bent to form a tight helix circumposed about said nipple, said helices being resiliently distendable to permit the insertion of a cord between its convolutions into the central opening thereof, the end portions of said wires extending radially from said nipple and being connected to said shade.

2. A lamp construction comprising a stretcher frame, a bulb mounting disposed within said frame, a cord-receiving nipple on said bulb-mounting and detachably secured to said frame, a spider detachably secured to said nipple and extending radially therefrom, and a distendable shade spacedly surrounding said frame having one end connected to said spider and the other end connected to said frame so as to be distended by the latter, said spider comprising a plurality of relatively stiff wires detachably disposed in radially spaced relation about said nipple, each said wire being formed of a single piece having a medial convolution or loop secured to said shade and having a relatively straight spoke extending from one end of the convolution radially from the shade to the nipple and a relatively straight portion extending from the other convolution end and disposed downwardly at an angle with respect to the spoke to serve as a prop or leg to support the lamp construction, the distal or free end of the spoke being bent to form an open arcuate loop to embrace said nipple.

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