Sept. 24, 1963 H. H. FORD 3,104,832

CLUSTER LAMP-HOLDER

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FIG. 1.

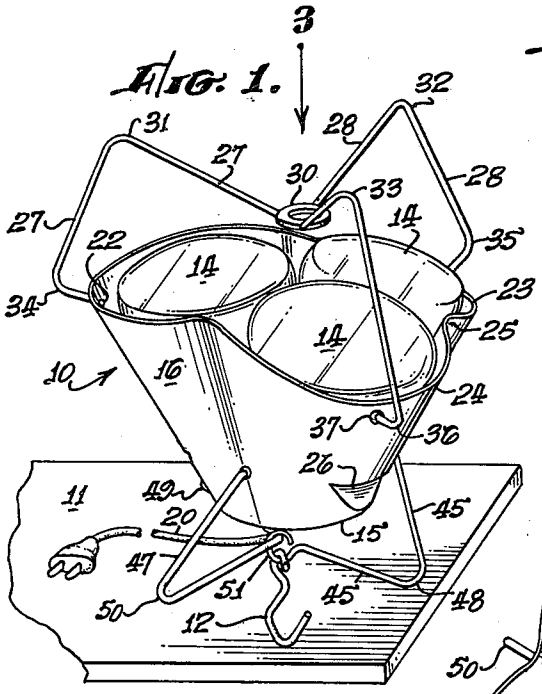


FIG. 2.

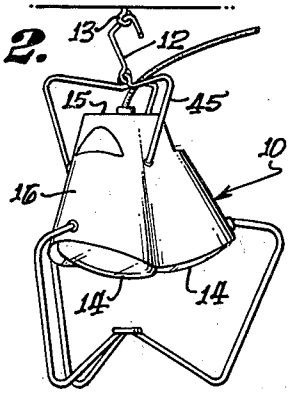


FIG. 3.

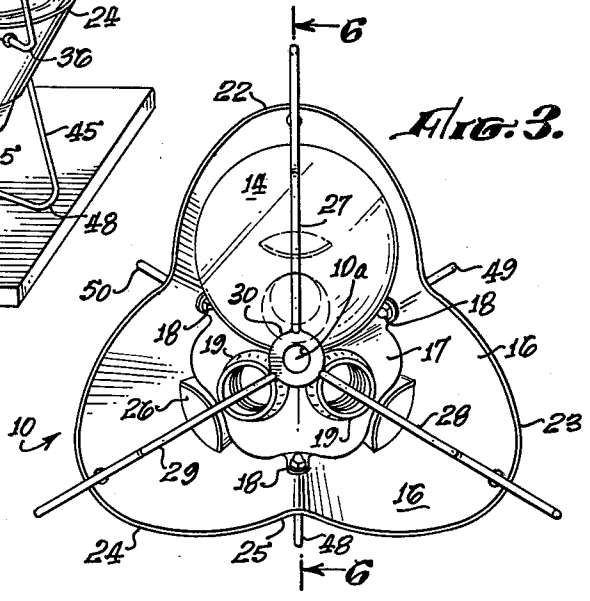
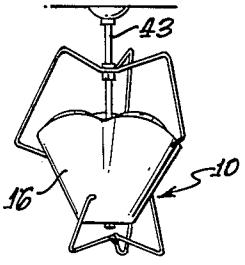


FIG. 9.



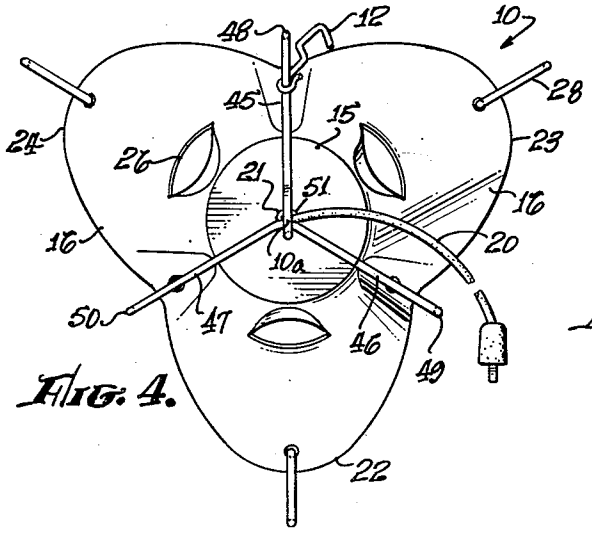
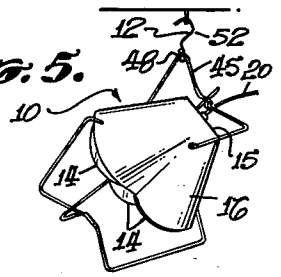


FIG. 4.

FIG. 5.



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FIG. 6.

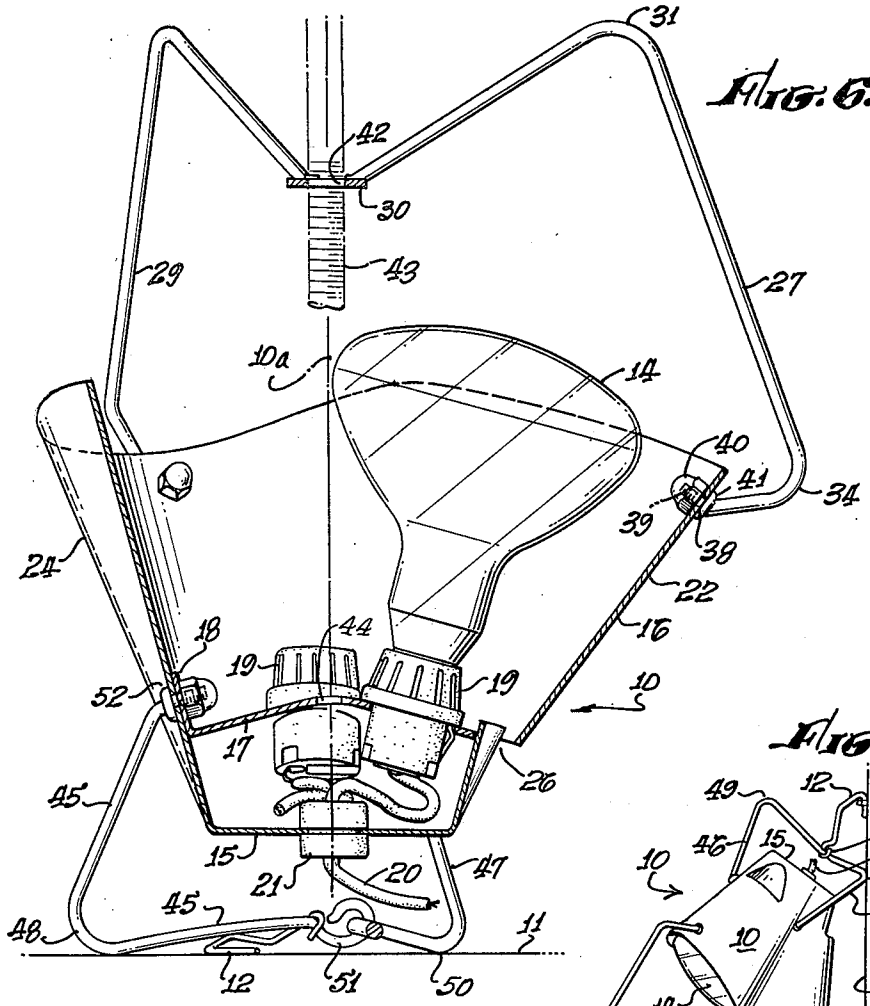


FIG. 7.

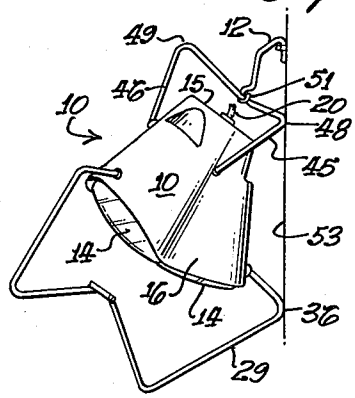
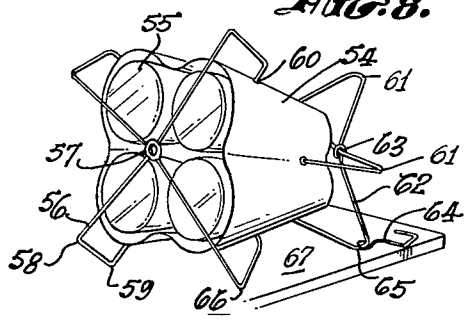


FIG. 8.



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CLUSTER LAMP-HOLDER

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Filed Oct. 26, 1960, Ser. No. 65,059
5 Claims. (Cl. 240—53)

The present invention relates to light fixtures supporting one or a plurality of electric lamps, and more particularly to a readily portable lamp-holder of the cluster type which is adapted to engage a preferred plurality of three illuminating or heat lamps within a structural envelope. In a preferred form it has rigid wire grids extended therefrom which serve as legs to support the device in various positions, as guards to protect the lamps against breakage, and as spacing elements to prevent the lamps or enclosing structure from touching any generally flat surface regardless of the position or manner in which the lamp-holder may be in contact therewith.

Of the various lamp-holders presently available for domestic or personal use, most are designed for use with a single illuminating or heat lamp and are suited to a single purpose such as bed lamps, photo flood and flash reflectors, automobile trouble lamps, therapeutic and heat lamps, etc. Further, the only cluster lamp-holders adapted to accommodate a plurality of standard base lamps that have come within the scope of applicant's observation have heavy standards that are not easily moved or have been designed for permanent installation in fixed locations.

Some residential lighting fixtures which have been adapted to receive three or more lamps in what might be considered a cluster arrangement, have been offered during the past decade by fixture manufacturers, but since they are installed in a fixed location their versatility is limited. A lamp holder should be portable to enable it to serve the maximum number of various purposes.

The present invention has been made with the foregoing considerations in mind and can be said to have a number of objects.

One primary object of my invention is the provision of a lamp-holder device adapted to receive therein a plurality of lamps of a generally available size and base type for purposes of ordinary illumination, photographic lighting, heating, sunbathing, and other purposes, and readily convertible from one function to another simply by changing the lamps therein.

Another important object of the present invention is the provision of a device of the character described adapted in size and general conformation for great convenience in portability and for use in various positions, and having means for hanging it overhead in various positions or resting it on the floor or other supporting surfaces.

A further object of the present invention is the provision of a device of the character described provided with means to safeguard the lamps from breakage and to space the lamps from any adjacent surface to avoid injury thereto from heat generated by the lamps.

An additional object of my invention is the provision of a device of the character described characterized by maximum economy of materials in order that the entire device can be made easily and at minimum cost.

A still further object of the present invention is the provision of a device of the character described which is also adapted for use in the close range local application of heat for purposes such as food-warming, or drying paint, laundry and other objects.

In its broader aspects, the cluster lamp-holder device of my invention includes a side wall preferably of metal, providing a protective envelope resembling generally the

frustum of a cone with the closed top of the device being in the plane of truncation, and the open end of the device being in the basal plane of the conic frustum. In a preferred embodiment, a plurality of sockets are disposed at divergent angles interiorly of the closed top, and the side wall is flared outwardly and downwardly from and below each of the sockets so as to provide a local enlargement of the device in which the larger end of a lamp is received. At each end of the housing is an open grid comprising three or more rigid elements, such as wires or rods, attached to the side wall and each lying in an axially extending plane. The grid elements extend axially and laterally beyond the housing to provide a stand or guard on which the device rests. The elements of one grid are angularly displaced about the central axis from elements of the other grid to provide multiple point support at the side of the housing in a plurality of positions as well as at the ends of the housing.

In the case of the three lamp unit constituting the preferred embodiment, and which will be described in detail in the following specification, the basal opening is trefoil or trilobal in form, and the envelope housing consists of three conical segments with externally concave longitudinal areas therebetween.

A tripodal grid of rigid wire, each leg of which has two more or less well defined outwardly extended bends or knee points, is disposed over the open end of the envelope, the legs radiating from a common junction at the axis of the envelope and being individually secured to the side wall centrally of each of the lobal enlargements thereof. A similar, but smaller grid is mounted above the closed top of the device, its legs each having only a single bend or knee point and being individually secured to the side wall in the recessed areas between the lobal enlargements. A hook for hanging the lamp-holder from a ceiling or wall is slidably attached to one leg of the small grid. Ventilation and cooling of the lamps is provided by transverse louvres indented in the lobal enlargements adjacent the sockets.

As will be readily understood from later description, the device may be suspended from a wall or ceiling by means of its hook; it will support itself on a horizontal surface on the three knee points of its larger grid, or in an inverted position with its open end facing upwardly when resting on the three knees of its small grid; or it will rest in an angular position diverging from the horizontal on three knee points selected from both grids which are in a common plane.

Certain variations in the particular form of the device as set forth herein, and further objects of my invention will become apparent from the following detailed description taken together with the accompanying drawing, in which:

FIG. 1 is a perspective showing a lamp-holder constituting a preferred embodiment of my invention as it appears standing in the inverted position on a horizontal surface.

FIG. 2 is a side elevation showing the device as it appears in the upright position and suspended by a hook member from an eyebolt in an overhead surface.

FIG. 3 is a plan view of the open bottom of the inverted device as seen from the direction of the arrow 3 in FIG. 1, two of the lamps being removed to reveal details of the interior construction.

FIG. 4 is a top plan view of the top of the device when upright as in FIG. 2 showing the louvres and the relative positioning of other structural elements.

FIG. 5 is a side elevational view similar to that of FIG. 2 illustrating how the device is suspended to direct the lamps at an angle by sliding the hook member to the knee point of a leg of the smaller grid.

FIG. 6 is an enlarged vertical section through the de-

vice taken along the line and in the direction indicated by the arrows 6—6 in FIG. 3.

FIG. 7 is a side elevational view similar to FIG. 5, showing the device suspended by its hook member from an eyebolt in a vertical wall, indicating the manner in which the legs serve to hold the lamp housing away from the wall surface.

FIG. 8 is a perspective of a variation or alternate form of lamp-holder constructed according to my invention and adapted for use with four lamps and having quadripodal grid assemblies, shown as it would appear resting on a horizontal surface.

FIG. 9 is a view similar to FIG. 2 showing an alternative manner of suspending the lamp-holder from a ceiling or the like.

Reference is again made to FIG. 1 which is a perspective, looking downwardly of a cluster lamp-holder constructed in accordance with my invention and indicated generally by the numeral 10. It is shown standing in the inverted position upon the horizontal surface 11. In FIG. 2 the device 10 is seen suspended by the hook member 12 from an eye 13 in an overhead surface and with its lamps 14 directed downwardly in what may be considered its normal upright position. In both positions the central longitudinal axis 10*a* of the lamp-holder is vertical, or substantially so.

The lamp-holder 10 has a circular top wall 15, seen in the top view of FIG. 4, from which the side wall 16 depends, extending entirely around top wall 15 and axis 10*a*. These walls are shown as integrally formed, but they may be joined in other ways. Additional rigidity is provided to the side wall 16 by a partitioning panel 17 which is disposed interiorly of and generally parallel to the top 15 and is securely affixed to the side wall 16 by means of tab portions 18, as is clearly shown in FIG. 3. The partitioning panel 17 is provided with a plurality of circular perforations in each of which is a generally conventional porcelain socket 19, having interfitting sections. The exposed terminals of the sockets are completely enclosed in the wiring compartment defined between the partitioning panel 17 and the top 15. Wiring of the sockets 19 is completed before installation of panel 17 and connector cord 20 is extended outwardly of top 15 through the insulator 21 in the manner clearly shown in the sectional view of FIG. 6.

As will be understood from FIG. 3 taken with FIG. 6, the partitioning panel 17 is slightly convex whereby the axes of the sockets 19 are all divergent relative to each other and to the central axis of the lamp-holder.

The circumferential side wall 16 of the lamp-holder 10 extends divergently from the top wall 15, and is shaped in a manner providing three pronounced lobal enlargements which, in order to facilitate reference to them in FIGS. 1, 3, and 4, are individually designated by the numerals 22, 23 and 24, with less divergent longitudinal areas as at 25 therebetween. Each of these lobal enlargements is flared divergently relative to one of the sockets 19, as is readily seen in FIG. 3, and is adapted in size to accommodate the bulbous end of a lamp of standard size common to infra-red, photo-flood, and spot and flood type illuminating lamps, all of which are now readily available as normal articles of commerce. Movement of air interiorly of the side wall 16 for cooling the lamps there is permitted by means of a plurality of louvres 26 at least one of which is cut and indented into each of the lobal enlargments, such as 23, adjacent the associated socket 19 in the manner shown in FIG. 3.

An open grid member formed of rigid wire elements is disposed over the open end of the lamp housing defined by the termination of the side wall 16. Since the lamp holder has three sockets and the housing has three lobes, the grid preferably has three angular leg members 27, 28 and 29 which are joined to the ring 30, the ring 30 being in alignment with the axis of lamp holder 10. As indicated in FIG. 3, the legs 27, 28 and 29 are extended radially from the ring 30 and they are equiangularly spaced around axis 10*a*. Each leg is disposed at one of the sockets 19 and centrally of one of the lobal arrangements such as 22 of the housing 16.

As best seen in FIG. 6, the legs such as 27 radially extended from the ring 30 are generally U-shaped. When in the position of FIGS. 1 and 6 the legs are inclined downwardly from the bends at the points 31, 32 and 33, respectively and thence inwardly from the bends at 34, 35 and 36, respectively, each leg being joined to the side wall 16 near its lower end and at the center of one of the lobal enlargements as indicated at 37 in the case of the leg 29. The particular manner in which the legs are attached is best shown at 38 in the sectional view of FIG. 6 wherein the leg 27 is shown to terminate in a threaded end portion which passes through an aperture in the side wall 16 and is secured by means of the cap nut 40 tightened against the pressure grommet 41.

Each of the legs in a rigid member made from wire or a small diameter rod, and suitably bent. It will be apparent that the exact shape of each element is not critical and can depart considerably from the shape illustrated if desired for any reason. For example, the radius of one or both bends may be changed to obtain a different shape for ornamental reasons yet retain the same functions and versatility of the legs. Three elements for each grid is a practical minimum to obtain all the advantages of the invention, but more elements may be used if desired.

It will also be observed in FIG. 6 that the junction ring 30 to which the legs are attached is centrally apertured as indicated at 42, the aperture 42 being of a size to accommodate standard fittings generally used in hanging light fixtures. A section of tubing indicated in phantom at 43 may be extended downwardly through aperture 42 and the centrally located aperture 44 between the sockets 19 in the partitioning panel 17, thus making it possible to run the connector cord 20 outwardly through the tubing 43 if it is desired to use the lamp holder in inverted position as an overhead indirect lighting fixture. A lamp-holder suspended in this manner is shown in FIG. 9.

To facilitate the use of the lamp-holder in the close range local application of concentrated heat, the bends at points 31, 32 and 33 are located in a common transverse plane perpendicular to the axis 10*a* of the holder so that when the device is positioned to rest on these bends it will stand in the upright position (FIG. 4) with axis 10*a* substantially vertical relative to a horizontal plane of support; and the bend points have been kept close to the open end of the housing 16 but still provide the clearance space between the legs and the structure required for the installation and replacement of the electric lamps. Furthermore, the points 31, 32 and 33 have been spaced radially from the axis, measured in their common plane of alignment, as far as practicable for the purpose of providing stability to the device when supported thereon, thus providing an obviously favorable position, wherein the lamps are directed downwardly and completely covered and protected from breakage by the housing structure, in which to stand or store the device when not in use.

Additionally significant with regard to the local application of heat is the manner in which the location of ring 30 is nearer the open end of the housing than is the aforementioned transverse plane of alignment of the bend points 31, 32 and 33, as is most clearly shown in FIGS. 1 and 6. The inclination of the legs 27, 28 and 29 between their bends 31, 32 and 33 and the ring 30 is collectively effective to provide a concave cradle in which any generally circular pen or vessel may be supported in close adjacency to the heat sources, such as infra-red lamps or helical coil heating elements installed in the sockets below.

A second grid assembly, likewise of tripodal design, is disposed at and over the top of the lamp-holder and is smaller but formed similarly to the grid described above. The second grid has its three leg members 45, 46 and 47, as seen in FIGS. 1 and 4 co-joined at a point substantially at the axis of the lamp-holder housing and in axial alignment with the ring 30 of the first grid. The legs 45, 46 and 47 are each formed with only a single acute angle bend at the points 48, 49 and 50, as shown variously in FIGS. 1, 3, 4 and 6. Each leg is individually attached at one end to the housing side wall 16 in the recessed area intermediate the lobal enlargements thereof as shown at 52 in FIG. 6. One leg 45, as clearly shown in FIGS. 1 and 6, is conformed with an arcuate offset 51 which serves as positioning means for the hook member 12 when the device is hung as shown in FIGS. 2 and 7. The hook 12 is slidable along the leg 45 and may be positioned at the bend point 48 for the purpose of suspending the lamp-holder in the position shown in FIG. 5 in which housing axis 10*a* is inclined to the vertical.

The bends 48, 49 and 50 of the small grid are the contact points of support when standing the device in the inverted position (FIGS. 1, 3 and 6). Also one or two of these bends are contact points when the device is hung on a wall as indicated in FIG. 7. As in other positions, the elements of the grid space the housing and lamps away from the surface against which the holder rests. In the position shown in FIG. 7, the lamp-holder 10 engages the vertical wall 53 at the bend 36 of the leg 29 of the large grid, and the bends 48 and 50, the latter being directly behind the former, of the small grid. From the above description it will be apparent that the invention is not necessarily limited to the exact shape illustrated of the legs of the grid but includes other shapes of the grid.

A lamp-holder of slightly different shape but also constructed in accordance with my invention, as shown in the perspective view of FIG. 8 includes a side wall 54 formed with four lobal enlargements and is adapted to hold four illuminating or heat lamps such as 55. It is provided with a large quadripodal grid disposed over its main aperture, and a small quadripodal grid over its circular top; the legs 56 of the large grid are affixed to the axially disposed ring 57, and each has a longitudinally extended bent point such as 58, a laterally extended bend point such as 59, and is attached to the side wall 54 centrally of one of its lobal enlargements, as indicated at 60, in the manner previously described and illustrated in FIG. 6. The legs of the small quadripodal grid are co-joined axially of the housing 54, and each leg is angularly formed to provide an outwardly extended bend such as 61, and one leg 62 is adapted with an axially aligned arcuate offset 63 in which the hook member 64 is removably engageable. The hook 64 is slidable on the leg 62 and may be positioned at the bend point 65 to suspend the lamp at an angle as indicated in FIG. 5.

The interior arrangement of the alternate lamp-holder seen in FIG. 8 is substantially the same as that of the previously described embodiment except for the added socket, as also is the method of assembly and installation and wiring of the sockets.

However, the alternate form shown in FIG. 8 is characterized by an additional feature of functional versatility. Whereas, because of its widely flared body form and the consequent relative spacing of the bends of its two tripodal grids, it is necessary that the three-lamp unit be supported by one leg of its large grid and two legs of its small grid when positioned on its side on a horizontal surface, the four-lamp unit may be positioned on two legs of either grid and one of the other. As shown in FIG. 8, the device is supported on the horizontal surface 67 at the bends 59 and 66 of its large grid and the bend 65 of its small grid. As will be understood from the figure, the unit could be rotated clockwise one-eighth turn, and would then be supported at the bend point 66 of its large grid and the bend points 61 and 65 of its small grid, thereby providing a choice of angles, diverging from the horizontal, along which the rays of the lamps are directed.

It should not be implied from the disclosure herein of a single alternate form of the device of my invention that no other variations are possible. The alternate form described above and illustrated in FIG. 8 indicates the scope of the invention and suggests additional forms and embodiments thereof. For example, in its broad aspects, the present invention is independent of the number and character of the lamps provided. The typical embodiment is of a size and design to accommodate three lamps; but the same housing and grid arrangement, perhaps at a smaller size if desired, might be adapted to a single lamp. A single lamp would be centrally located on axis 10*a*.

From the foregoing it will be observed that I have provided through my invention a lamp-holder device having heretofore unavailable functional versatility since it is equally well suited for use with lamps of various types for various purposes.

It will be further observed that I have shown the lamp holder of my invention to be readily portable and easily suspended or supported in a plurality of positions.

Also from the foregoing it will be noted that I have provided in my invention grid means for protecting the lamps from breakage and to prevent the housing structure from coming into actual contact with any adjacent surface.

It will be seen further that the protective grid means provided in my invention serve also as legs and spacing members by means of which the lamp-holder may be supported or suspended in a number of different positions in which the grid elements space the housing from the surface on which the lamp-holder rests.

Although my invention has been shown and described in considerable detail, it is to be understood that these details are subject to change and substitution, and the preferred embodiment is open to substantial variation as has been suggested by alternate form shown herein. The invention itself is amenable to adaptation to a plurality of embodiments and therefore the foregoing is not considered to be limitative upon the scope of the following claims.

I claim:

1. A portable lamp-holder adapted to engage a surface at a selected one of various combinations of points to rest against the surface in a selected one of various positions, comprising:

a housing having a side wall disposed completely around a central axis and an end wall closing one end of the housing, the other end remaining open;

socket means inside the housing adjacent said end wall to receive at least one lamp;

and a pair of cooperating open grids, one of said pair of open grids at each end of the housing, each grid comprising a plurality in excess of two of rigid elements attached at one end to said side wall and extending laterally and axially beyond the housing to a position in the vicinity of the axis of the housing, and the elements of one grid being angularly displaced about said axis from the elements of the other grid to positions intermediate the elements of the other grid whereby when said housing is positioned in certain selected positions the housing rests on at least two of the rigid elements of the grid at one end of the housing and on at least one of said rigid elements of the grid at the other end of said housing.

2. A portable lamp-holder as claimed in claim 1 in which said element of a grid lies substantially in an axially extending plane and the elements of each grid are joined together substantially at the axis of the housing.

3. A portable lamp-holder as claimed in claim 1 in which each element of both grids has a bend located

radially beyond the housing, one grid having its bends at a greater distance from the housing axis than the other grid, whereby three bends distributed over both grids engaging a planar surface incline the housing axis relative to the surface.

4. A cluster type lamp-holder comprising:

a generally rigid housing including a top wall and a circumferential side wall, being open at the bottom;

a perforate partitioning panel slightly convex in contour, affixed to said side wall adjacent and interiorly of said top wall and having three sockets engaged in said perforations;

said circumferential side wall of said body extending divergently from said top and flared outwardly and downwardly relative to each of said sockets so as to provide three lobal enlargements of said side wall disposed symmetrically about a central axis;

and a large and small tripodal wire grid fixedly attached respectively over the open bottom and the closed top of said housing, the three legs of each grid being co-joined at points aligned axially with said body and extending radially and at equal angles therefrom; each leg of said small grid having therein a single acute angle bend defining a single knee point disposed beyond said circular top, and being individually attached to said side wall between two of said lobal enlargements thereof; each leg of said large grid being formed with two angular bends defining two knee points, one disposed axially outwardly from said opening, and the other disposed laterally thereof, said legs being individually attached to said body side wall centrally of one of said lobal enlargements thereof.

5. The invention in accordance with claim 4 that is additionally characterized by each leg of one grid being aligned in an axial-diametric plane with an axially opposite leg of the other grid, and in which two knee points of said small grid and one knee point of said large grid when engaging a planar surface incline the axis of said body relative to said surface, whereby the rays emitted by lamps engaged within said body are directed at an acute angle relative to said surface.

References Cited in the file of this patent

UNITED STATES PATENTS

240,891	Cook	May 3, 1881
1,338,486	Burdick	Apr. 27, 1920
2,444,540	Stoeck et al.	July 6, 1948
2,808,219	Petrich	Oct. 1, 1957