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Lamont

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[54] **LAMP GUARD**

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[52] **U.S. Cl.** ..... **240/54 R,** 240/54 A, 240/102

[51] **Int. Cl.** **F21v 15/02**

[58] **Field of Search** ..... 240/54 R, 54 A, 102

[56] **References Cited**

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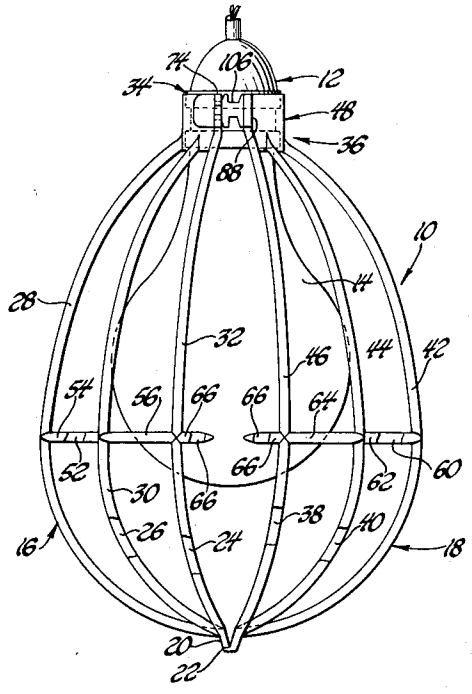
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Assistant Examiner—Russell E. Adams, Jr.
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[57] **ABSTRACT**

An integrally formed plastic guard for a lamp or bulb to be contained therein has a plurality of generally longitudinally extending curvilinear guard struts which are, at one end, joined to a generally medially situated hinge and, at another end, joined to a mounting bracket or collar assembly by which the entire plastic guard can be secured as to associated socket means carrying the lamp or bulb.

6 Claims, 7 Drawing Figures



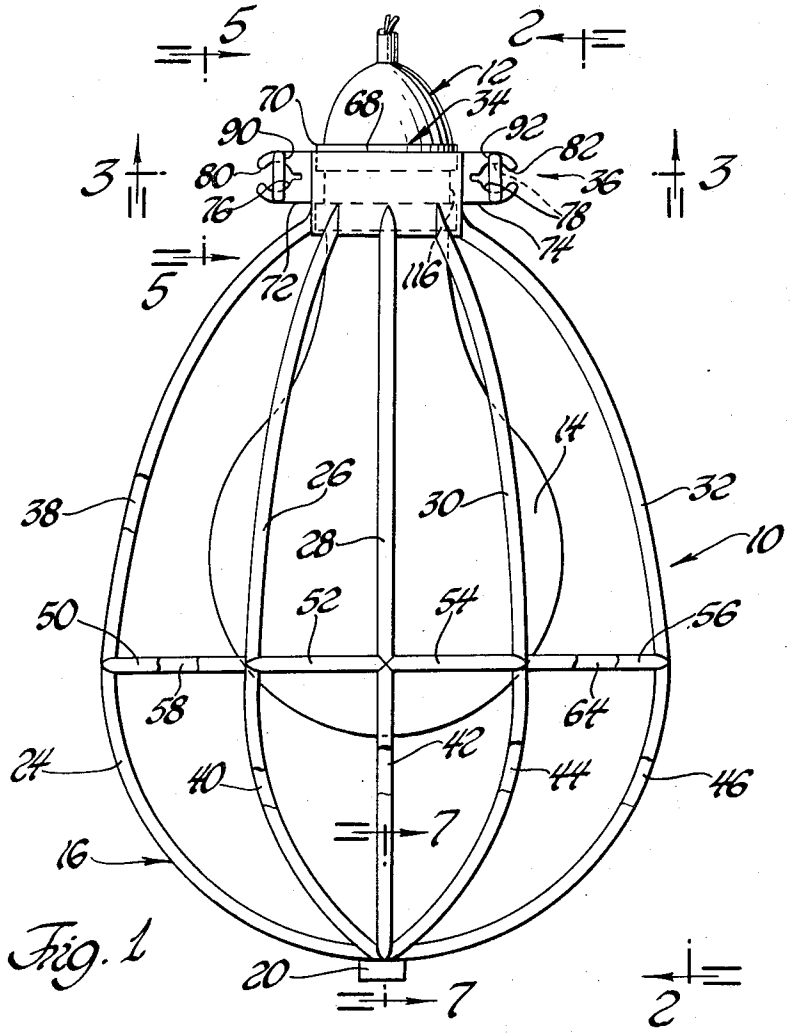

5
2
12
70
68
34
90
92
82
3
80
36
3
76
78
74
5
72
116
14
26
38
30
32
28
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64
42
24
40
44
46
7
16
20
7
2

Fig. 1

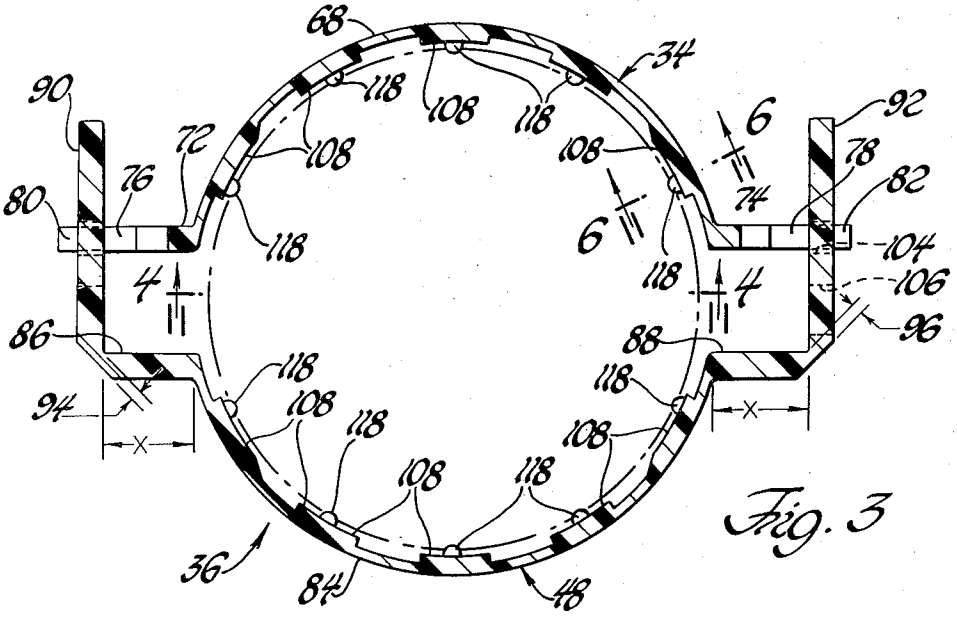

68
34
118
108
118
90
92
72
108
108
6
78
76
74
82
80
6
118
104
118
4
4
106
86
96
88
118
118
94
108
118
108
108
118
108
118
36
84
48

Fig. 3

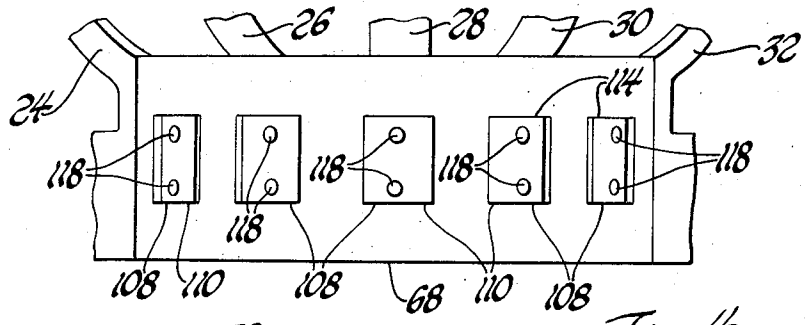


Fig. 4

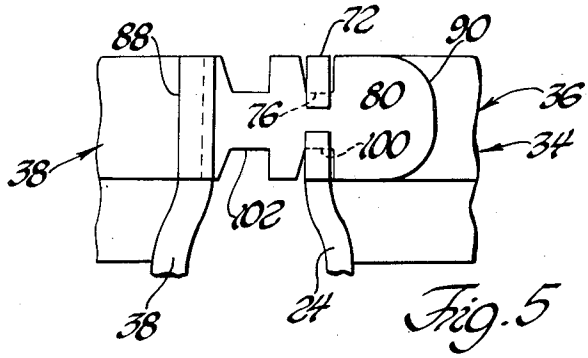


Fig. 5

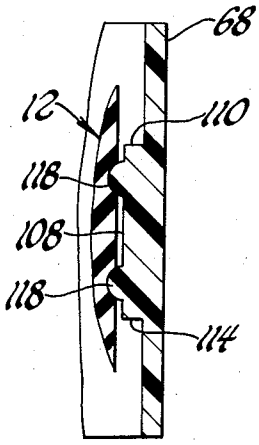


Fig. 6

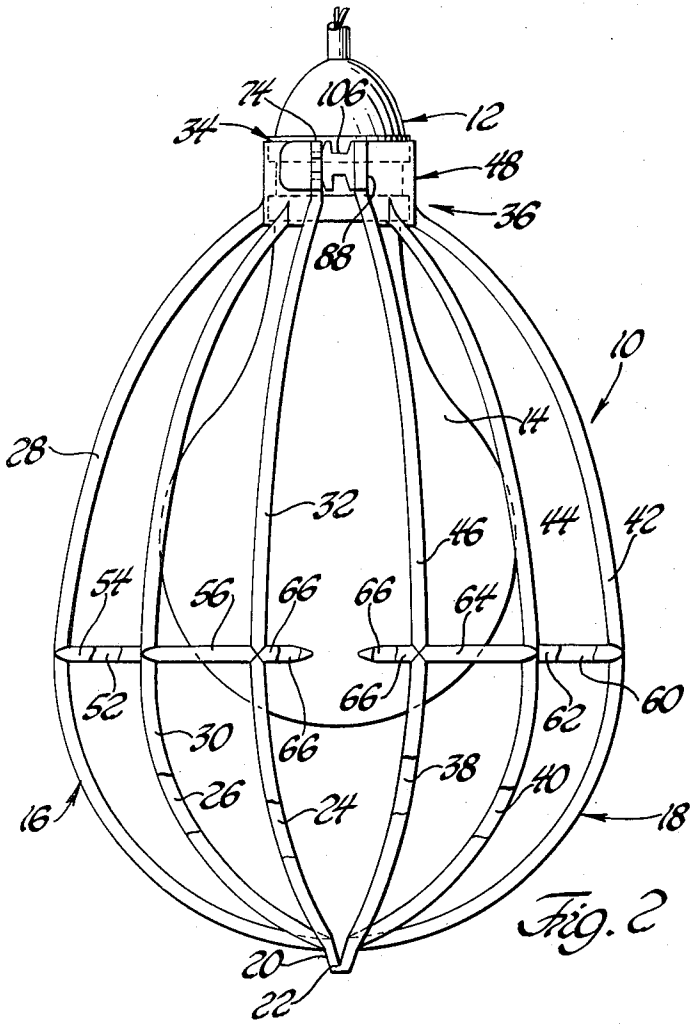


Fig. 2

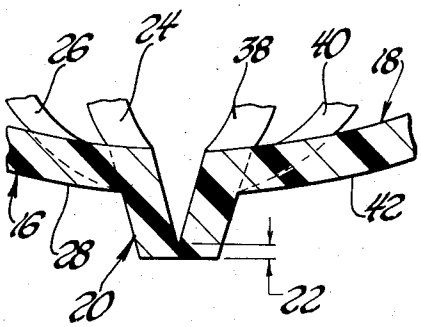


Fig. 7

LAMP GUARD

BACKGROUND OF THE INVENTION

Metal cage-type guards have heretofore been employed for protecting otherwise exposed electrical lamp bulbs from being broken. Such metal cage type guards have been and are still being employed not only within buildings but also on construction sites, where such are exposed to all weather conditions, as well as on electrical extension cord assemblies as used, for example, by mechanics doing automotive engine repairs.

The use of such prior art metal cage-type guards presents a number of problems, not the least of which is the comparatively high cost of such guards.

For example, experience has shown that a high percentage of theft has occurred with regard to such prior art metal guards. Because of the relatively high cost thereof, the screws employed for securing the guard clamp to an associated bulb socket have been made of a special design as to enable the removal of the metal guard from its associated bulb socket only by the use of a corresponding special tool. Therefore, a secondary expense is incurred by the requirement to buy such a special tool. Obviously, on any major construction site, or anywhere where a great number of such metal guards are employed, there may not be a proliferation of such special tools because such would destroy the very purpose of having the special tools in that such could be used for unauthorized removal of the metal guards. Consequently, since the use of such special tools must be closely controlled and accordingly restricted, whenever there is a failure of a particular bulb, time has to be taken to get the particular person having custody of such special tool to come and remove the metal guard, change the bulb and then replace the metal guard.

Further, because of existing safety standards, when such prior art metal guards are employed, each such guard must be separately electrically grounded to prevent shock hazards to those coming into contact with the metal guard. This, of course, is a great expense especially where on construction sites hundreds or thousands of such metal guards may be employed. Additionally, each ground connection must be periodically inspected to assure that it is still operative; this again is an added expense.

Often, especially in automobile service garages, the mechanics do not bother to either electrically ground the metal guard or, if such ground connection was made, to check the grounding connection to see if it is functional. This, of course, exposes the mechanic using the extension cord with such a metal guard to the possibility of an electrical shock.

Accordingly, the invention as herein disclosed and claimed is directed primarily to the solution of the above as well as other attendant problems.

SUMMARY OF THE INVENTION

According to the invention a lamp guard comprises a plastic body having first and second body portions pivotally connected to each other as to be swingable toward and away from each other, each of the body portions comprising a plurality of spaced strut-like members positioned as to be capable of generally containing a bulb when such body portions are brought toward each other, and integrally formed collar-like securing means for detachably securing the entire guard as to an associated lamp socket.

Various general and specific objects and advantages of the invention will become apparent when reference is made to the following detailed description considered in conjunction with the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

In the drawings, wherein for purposes of clarity certain details or elements may be omitted from one or more views:

FIG. 1 is an elevational view of a lamp guard, embodying the teachings of the invention, shown attached to an associated lamp socket assembly;

FIG. 2 is an elevational view taken generally on the plane of line 2—2 of FIG. 1 and looking in the direction of the arrows;

FIG. 3 is an enlarged cross-sectional view taken generally on the plane of line 3—3 of FIG. 1 and looking in the direction of the arrows;

FIG. 4 is a fragmentary elevational view taken generally on the plane of line 4—4 of FIG. 3 and looking in the direction of the arrows;

FIG. 5 is an enlarged fragmentary elevational view taken generally on the plane of line 5—5 of FIG. 1 and looking in the direction of the arrows;

FIG. 6 is a somewhat typical cross-sectional view taken on the plane of line 6—6 of FIG. 3 and looking in the direction of the arrows; and

FIG. 7 is an enlarged fragmentary cross-sectional view taken generally on the plane of line 7—7 of FIG. 1 and looking in the direction of the arrows.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now in greater detail to the drawings, FIGS. 1 and 2 illustrate a lamp guard **10** detachably secured as to an associated socket assembly **12** containing an electrical lamp or bulb **14.** As can best be seen in FIG. **2,** the lamp guard **10** is formed generally of two opposite or opposed body or cage portions **16** and **18** which are hingedly connected to each other as by an integrally formed downwardly depending hinge means **20** provided with a portion **22** of reduced cross-sectional thickness thereby enabling general pivotal or bending motion thereat.

As can be seen in both FIGS. **1** and **2** cage or body section **16** is shown as being comprised of a plurality of generally curvilinear guard struts or rods **24, 26, 28, 30** and **32** extending from, and integrally formed with, hinge means **20** upwardly to and integrally formed with a first section **34** of a mounting or receiving means **36.** Similarly, cage or body section **18** is shown as being comprised of a plurality of generally curvilinear guard struts or rods **38, 40, 42, 44** and **46** extending from, and integrally formed with, hinge means **20** upwardly to and integrally formed with a second section **48** of the mounting or securing means **36.** Members **24, 26, 28, 30** and **32** are supported in laterally spaced relationship as by integrally formed generally laterally extending reinforcing members or struts **50, 52, 54** and **56,** while struts **38, 40, 42, 44** and **46** are similarly supported in laterally spaced relationship as by integrally formed generally laterally extending reinforcing members or struts **58, 60, 62** and **64.** Further, as generally typically depicted by struts **32** and **46** in FIG. **2,** additional later-

ally extending strut-like portions **66** are respectively formed on struts **32** and **46** as well as struts **24** and **38** so as to at least substantially close the space as between struts **32** and **46** and struts **24** and **38.** As should be apparent, the individual lateral struts or guard bars **50, 52, 54, 56, 58, 60, 62, 64** and **66** effectively combine to form a lateral ring-like guard for guarding against the inward intrusion of generally vertically disposed foreign elements to minimize the possibility of bulb breakage thereby. Although only one such laterally disposed ring-like guard means is shown, it is evident that additional ring-like guard means can be provided without in any way departing from either the scope or spirit of the invention.

Further, as should be apparent, just as the ring-like guard means serves to guard against vertically disposed foreign elements, the generally vertically extending guard bars or struts serve to guard against the inward intrusion of generally horizontally (or inclined with respect to the horizontal) disposed foreign elements to thereby also minimize the possibility of bulb breakage thereby.

As is shown by FIGS. **1, 2, 3** and **4,** securing means **36** is preferably formed in a collar-like configuration when the two sections **16** and **18** are closed as about a bulb or lamp **14.** That is, section **34** has an arcuate band-like body **68,** which is adapted to circumscribe a substantial portion of an associated lamp socket body **70** provided with laterally extending and opposed arms or tabs **72, 74** respectively having enlarged recesses **76** and **78** formed therein which, in turn, are respectively provided with clearance passages **80** and **82.**

Similarly, section **48** has an arcuate band-like body **84,** which is adapted to circumscribe a substantial portion of the associated lamp socket body **70,** provided with opposed laterally directed arm members **86** and **88** which respectively hingedly carry swingable latching arms **90** and **92.** As illustrated, the latching arms **90** and **92** are preferably integrally connected to fixed arms **86** and **88** as through sections of reduced cross-sectional thickness as generally indicated at **94** and **96** which define such integral hinging means and provide for a hinging or bending motion thereat of latching means **90** and **92** with respect to support arm portions **86** and **88.**

As best seen in FIG. **3,** in the preferred embodiment of the invention, latch support arms **86** and **88** extending, generally radially of the clamping collar means **36,** a substantial distance, X, as similarly, do arms or tabs **72** and **74.** As will subsequently become evident, such preferred form of the invention presents additional benefits.

FIG. **5** illustrates latch lever **90** as having a first reduced or narrowed portion **100** which is adapted to be confined within aperture **76** of detent arm or tab **72.** Lever **90,** as also shown, is preferably provided with a second tandem reduced or narrowed portion **102** which is also adapted to be capable of being confined within aperture **76.** Because of the relative resiliency of the material employed in making the preferred embodiment of the invention, the opening **80** will resiliently increase in size as either portion **100** or **102** is forced therethrough and, subsequently, again return to its normal size when such portions **100** or **102** are received within opening or aperture **76.** In a similar manner, referring to FIG. **3,** latching lever **92** is provided with reduced portions **104** and **106,** which respectively correspond to portions **100** and **102,** and are adapted to be selectively received through opening **82** and contained within aperture **78.**

As is illustrated in FIGS. **3, 4** and **6,** the annular collar-like sections **68** and **84** are each provided with a plurality of rectangular-like, integrally formed, radially inwardly extending and angularly spaced projections or portuberances **108.** Each of such are preferably provided with upper and lower abutment surfaces **110** and **114,** the purpose of which is to be received within an annular recess **116,** of such lamp sockets **12** as may be provided with such annular recess, and thereby provide a mechanical lock against undue axial movement of the guard **10** relative to the lamp socket assembly **12.**

The lamp socket assemblies, with which the invention is intended to cooperate, vary both in configuration and size. That is, some socket assemblies may be provided with such an annular recess as typically illustrated at **116** while others may be provided with no such annular recess; further, each of such types of socket assemblies may vary substantially in terms of diametrical dimensions. Accordingly, the preferred form of the invention also comprises relatively small tit-like projections or anchoring means **118** which, as typically shown in FIG. **6,** serve to in effect "bight-into" the associated socket means **12** in order to thereby greatly minimize or totally prevent realtive axial movement.

Further, in order to accommodate varying diameter sizes, the latching levers **90** and **92** can be selectively engaged with the cooperating detent or retainer arms **72** and **74.** That is, basically, the latching means provides for three major sizes. One size is determined by having necked-down portions **100** and **104** of levers **90** and **92** latched within apertures **76** and **78;** the second size is determined as by having portion **100** of lever **90** latched within aperture **76** and portion **106** of lever **92** latched within aperture **78,** and the third and smallest size is determined by having necked-down portions **102** and **106** latched within apertures **76** and **78.** At this point it should also be pointed out that the resilience of arms **86, 88** and detent arms **72, 74** along with the fact that such extend radially outwardly, enable such arms to undergo a considerable degree of resilient deflection thereby accommodating for many variations in configuration and size of cooperating socket assembly within the general range of sizes from the smallest to even in excess of that size nominally determined by latched necked-down portions **100** and **104.**

Although various materials may be employed in the manufacture of the invention, it has been determined by various tests that polypropylane is of particular suitability having the necessary characteristics relating to temperature, tensile strength, impact, flexibility and dielectric qualities.

Although only one preferred embodiment of the invention has been disclosed and described, it is apparent that other embodiments and modifications of the invention are possible within the scope of the appended claims.

I claim:

1. A unitary plastic lamp guard, comprising at least first and second body sections, said first body section comprising a plurality of generally angularly spaced longitudinally extending first guard members, said second body section comprising a plurality of generally angularly spaced longitudinally extending second guard members, first securing means integrally formed with

said first guard members as to form a unitary and integral portion of said first body section near one end thereof, second securing means integrally formed with said second guard members as to form a unitary and integral portion of said second body section near one end thereof, hinge means integrally formed with and carried by said first and second body sections at respective ends thereof opposite to said one ends for permitting said first and second body sections to pivotally swing toward and away from each other so as to thereby bring said first and second securing means into operatively juxtaposed relationship about an associated support when said first and second body sections pivotally swing toward each other, said first securing means comprising a first annular collar section, said second securing means comprising a second annular collar section, detent-like latching means integrally formed with and carried by said collar sections for detachably securing said collar sections to each other and about said associated support, first and second detent arms formed integrally with said first annular collar section at opposed ends thereof and respectively extending in opposed directions generally radially of said first annular collar section, said first and second detent arms respectively having first and second detent surfaces formed thereon, third and fourth arms formed integrally with said second annular collar section at opposed ends thereof and respectively extending in opposed directions generally radially of said second annular collar section, first and second detent levers, second and third hinging means respectively integrally formed with said third and fourth arms as well as said first and second detent levers as to thereby permit the pivotal rotation of said first and second detent levers at the respective ends of said generally radially extending third and fourth arms, and third and fourth detent surfaces respectively formed on said first and second detent levers for respective latching engagement with said first and second detent surfaces formed on said first and second detent arms.

2. A lamp guard according to claim **1** and further comprising a plurality of first spacing members integrally formed with as to be connected to said first guard members, a plurality of second spacing members integrally formed with as to be connected to said second guard members, said first and second guard members being disposed in a plane generally transverse to said first and second guard members and further situated as to be generally between said one ends and said opposite ends, at least certain of said first and second spacing members being effective to maintain said first and second guard members in said spaced relationship.

3. A lamp guard according to claim **1** wherein said guard members are of a curvilinear configuration so as to have their mid-portions disposed generally radially outwardly of said ends.

4. A lamp guard according to claim **1** and further comprising protuberance means integrally formed on and carried by said first and second annular collar sections and extending radially inwardly thereof, said protuberance means comprising a plurality of discrete angularly spaced protuberances which deflectably engage said associated support when said first and second collar sections are closed against said associated support to thereby enhance the degree of angular locking engagement between said collar sections and said associated support.

5. A lamp guard according to claim **1** wherein each of said third and fourth detent surfaces comprises at least a first detent surface portion and a second detent surface portion with said first and second detent surface portions being discrete and spaced from each other as to thereby enable the selective engagement of either of said first and second detent surface portions with a cooperating said detent surface formed on said detent arms.

6. A unitary plastic lamp guard, comprising at least first and second body sections, said first body section comprising a plurality of generally angularly spaced longitudinally extending first guard members, said second body section comprising a plurality of generally angularly spaced longitudinally extending second guard members, first securing means integrally formed with said first guard members as to form a unitary and integral portion of said first body section near one end thereof, second securing means integrally formed with said second guard members as to form a unitary and integral portion of said second body section near one end thereof, hinge means integrally formed with and carried by said first and second body sections at respective ends thereof opposite to said one ends for permitting said first and second body sections to pivotally swing toward and away from each other so as to thereby bring said first and second securing means into operatively juxtaposed relationship about an associated support when said first and second body sections pivotally swing toward each other, said first securing means comprising a first annular collar section, said second securing means comprising a second annular collar section, detent-like latching means integrally formed with and carried by said collar sections for detachably securing said collar sections to each other and about said associated support, at least two first detent latching arms formed integrally with said first collar section at opposed ends thereof, at least two second detent latching arms formed integrally with said second collar section at opposed ends thereof, detent latching surfaces integrally formed on each of said detent latching arms for enabling the operative latching of said first detent latching arms with said second detent latching arms, and at least certain of said detent latching arms having a plurality of said detent latching surfaces in spaced relationship to each other as to have such spaced detent latching surfaces discrete from each other and thereby enable the selective latching engagement with either of said spaced detent latching surfaces of said certain of said detent latching arms with cooperating other of said detent latching arms to thereby accommodate various sizes of said associated support between said first and second collar sections.

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