

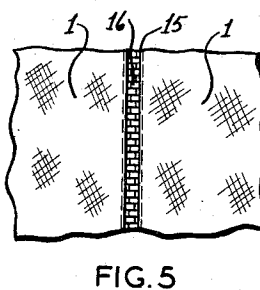
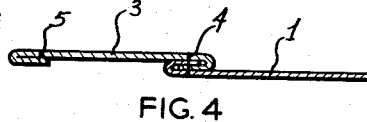
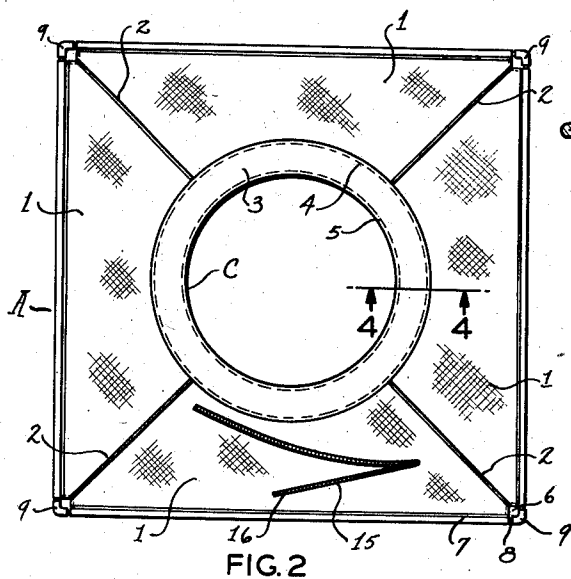
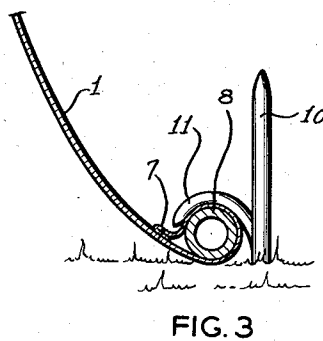
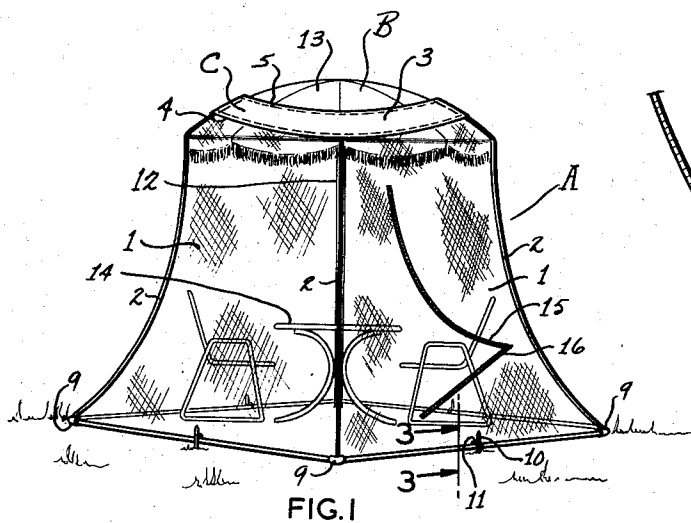
July 5, 1960

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INSECT-PROOF ENCLOSURES

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2 Sheets-Sheet 1



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2 Sheets-Sheet 2

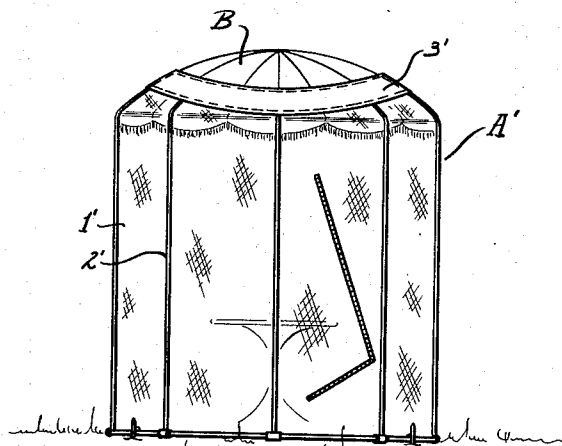


FIG. 6

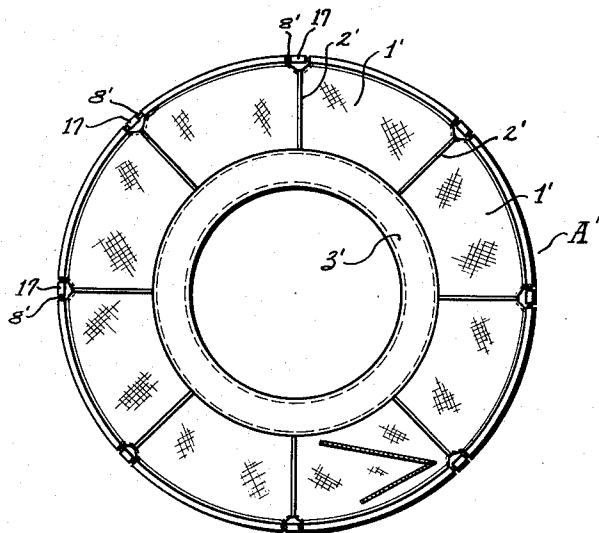


FIG. 7

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1 Claim. (Cl. 135—1)

This invention relates in general to enclosures, and, more particularly, to insect-proof enclosures for use with lawn-shading devices.

Heretofore, various expedients have been utilized in an effort to render yard or lawn areas proof against insects, such as mosquitoes and the like, encountered during warm weather, so that individuals may enjoy fresh air without annoyance by such pests. Among these expedients is included the well-known summer house, which is a permanent structure having a rigid framework for supporting metal screening and is, thus, closely akin to screened-in house porches. Also, there have been used the customary tent-like structures having rigid support members for an open mesh-like fabric such as mosquito netting. But none of such expedients have been widely accepted, for various, apparent reasons, such as costliness, difficulty of erection and disassembling, or generally unsatisfactory and inadequate accommodation.

Therefore, it is an object of the present invention to provide an insect-proof enclosure for support by a lawn-shading device, such as an umbrella.

It is another object of the present invention to provide an insect-proof enclosure which does not entail heavy, rigid frame members, but which is of exceedingly light weight and when not in use may be compacted into a relatively small parcel for facile portability as well as storage in minimum space.

It is a further object of the present invention to provide an enclosure of the type stated which may be cheaply manufactured; which is durable and reliable in usage; and may be utilized with shade devices or other support members of varying size.

It is an additional object of the present invention to provide an enclosure of the type stated which may be installed in operative position in minimum time and without the exercise of any developed skill on the part of the user, there being no requirement for the use of any tools to effect erection, and similarly, disassembly may be as easily accomplished.

These and other detailed objects are obtained by the structures illustrated in the accompanying drawings (two sheets), in which—

Figure 1 is a perspective view of an insect-proof enclosure constructed in accordance with and embodying the present invention illustrating the enclosure as supported by a lawn umbrella.

Figure 2 is a top plan view of the enclosure in operative position, with the umbrella being omitted.

Figure 3 is a vertical transverse section taken on the line 3—3 of Figure 1.

Figure 4 is a horizontal transverse section taken on the line 4—4 of Figure 2.

Figure 5 is a fragmentary plan view of the fastener in closed condition.

Figure 6 is a perspective view of another form of insect-proof enclosure constructed in accordance with and embodying the present invention.

Figure 7 is a top plan view of the enclosure shown in Figure 6, with the umbrella being omitted.

Referring now by reference characters to the drawings which illustrate practical embodiments of the present invention, A designates an insect-proof enclosure, the sides of which are comprised of a plurality of panels 1 of a suitable open-mesh fabric, such as mosquito netting and the like, stitched together by seams 2 along their side edges. Said panels 1 may be tapered inwardly and upwardly along their sides so that the upper end of enclosure A will be relatively reduced in cross section, the upper ends of said panels 1 terminating short of the meeting of the side edges. As the form shown in Figure 1 indicates, said panels 1 may have a degree of taper such as to impress a generally frusto-conical character to the enclosure. At their upper ends, panels 1 are fixed to a supporting ring or crown 3 made of flexible, durable material, such as canvas or duck, providing an annular band or edging, which may approximate 8 inches wide. To effect securement to crown 3, the upper margins of panels 1 are folded upwardly and backwardly for reception within an under-fold on the proximate outer edge of crown 3, and the thus interengaged and overlapping fabric layers are stitched together along annular outer seam 4 (see Figure 4). At its inner edge, crown 3 is turned under to form a hem secured along an inner annular seam 5.

At their lower ends, each panel 1 is cut away to cooperate with the adjacent panel for forming an opening 6, and along its lower margin is turned up and stitched along a transverse seam, as at 7, to form an open hem for receiving a, preferably tubular, frame or rigidifying member 8, made of aluminum or other light-weight, durable material, the ends of which project into the adjacent openings 6 for engaging elbow-like fittings 9 uniting said frame member 8 into a square base frame. Ground stakes 10 are provided, having hooks 11 for frictional hold-down, disposition upon the frame-member receiving lower ends of panel 1 to prevent accidental displacement of the base frame (Figure 3). When members 8 are made of a heavy material, such as lead, the need for ground stakes 10 often can be eliminated.

Said enclosure A is adapted to be supportingly suspended by any suitable means, but desirably by an umbrella of the conventional lawn type. Such an umbrella is indicated at B in Figure 1, and comprises the usual center post 12 upon the upper end of which is mounted a collapsible, fabric-carrying frame 13 formed of a plurality of ribs (not shown) which in open position will assume an inverted, saucer-like configuration or approximate a segment of a hollow sphere. The diameter of the umbrella when opened, or chord of the segment formed thereby, as the case may be, is of greater extent than the inside diameter of crown 3 of enclosure A, and preferably, but not necessarily, greater than the outside diameter thereof, for purposes presently appearing. Customarily, umbrellas B are integrated with a table, as 14, to provide a popular article of lawn furniture.

In order to erect or set up enclosure A, umbrella B is extended in shade-providing condition, and enclosure A is placed upon the outer surface of fabric-covered frame 13 so that crown C will be preferably concentric with the uppermost point thereof. As crown 3 has a lesser inside and outside diameter than the extended umbrella frame, the same will be disposed retainingly thereon (as indicated in Figure 1) and panels 1 will then be pulled down, or permitted to drop downwardly, about the outer peripheral portions of the umbrella frame. Panels 1 are of such length so that the same will reach ground level and thereby effectively enclose the area defined by the umbrella periphery. This area may be increased by the design of the panels, as, for instance, by the tapering

3

panels of the type illustrated in Figure 1, whereby the base of the enclosure may be square with the sides thereof being greater than the diameter of the umbrella. After the panels 1 have thus been suspended, frame members 8 are inserted into the tubular hems and secured to fittings 9 to complete the base frame construction. Thereupon, stakes 10 are properly spotted and driven into the ground to present hooks 11 in operative position. It will thus be seen that enclosure A is reliably sustained by umbrella B in providing an insect-proof space which may contain chairs, tables, and the like, for the comfort of the users. Crown C being of relatively heavy material, will lie snugly upon the top of the umbrella frame, conforming to the contours thereof, and, due to its size relation to the said frame, will not become displaced except through the intentional upward removal of same therefrom. The downward, evenly distributed pull thereon effected by the suspended panels and the base frame assure constant centered positioning of crown 3. Although not requisite for support, it is desirable that the outside diameter of crown 3 be less than that of the umbrella frame, as that the entire crown may be received thereon.

In order to remove enclosure A from installed condition, a simple reverse process is engaged in, whereby stakes 10 are withdrawn, fittings 9 disengaged from members 8 which are then removed from their respective hems, and then enclosure A is very easily, through its exceedingly light weight, lifted over and from umbrella B. If desired, umbrella B may be first collapsed so as to allow the enclosure to fall to the ground therefrom.

In erection, enclosure A could be held in proper relationship to a collapsed umbrella, which upon opening would lift enclosure A into suspended position. However, it would be necessary that due care be exercised in such operation to avoid any inadvertent snagging of the fabric of panels 1 upon any frame elements of umbrella B.

A line of opening 15, preferably of an angular nature so as to provide easy access to, and exit from, the enclosure interior, is provided in one of the panels 1, with such line of opening being sealingly closeable, as by a slide fastener 16.

If desired, another form of enclosure A' may be provided for support by umbrella B, which comprises a crown 3' and an increased number of panels 1', such as eight, secured together along their side seams 2' in octagonal fashion, so that when suspended, enclosure A' will enclose an area substantially equal to that defined by the peripheral margins of umbrella B or other support member, in assuming the general appearance of a bell. Enclosure A' is provided with an annular base frame comprised of a plurality of arcuate frame or rigidifying members 8' received within tubular hems (not shown) on the lower ends of panel 1' and which are joined at their ends by means of sleeve-like fittings 17. Crown 3', panel 1', and frame members 8' are substantially similar in character to crown 3, panels 1, and frame members 8 above described in conjunction with enclosure A.

It is to be recognized that the panel arrangements

4

shown hereinabove with enclosures A and A' are merely exemplary of the various panel arrangements which might be utilized with enclosures of the present invention. Enclosure A demonstrates one of numerous panel arrangements which provide for enclosure of a greater space than that merely directly beneath the umbrella or other support member, whereas enclosure A' illustrates an arrangement of panels for enclosing such space directly beneath the umbrella. The enclosures of this invention have been designed for ready utilization with lawn umbrellas, since the latter are in widespread usage and are popular as a summer lawn furniture item. However, other suitable support means may be provided which would be adapted to provide a surface for receiving the crown in snug relationship so as to prevent the movement of any pests therebetween and to successfully permit suspension of the panels.

By the use of the present enclosures, an enclosed area is provided which will be proof against the usual discomforts caused by summer insects. These enclosures may be erected in minimum time with little effort, being sufficiently light and easily manipulatable so that a housewife could readily install and dismantle same.

It should be understood that changes and modifications in the formation, construction, arrangement, and combination of the several parts of the insect-proof enclosures may be made and substituted for these herein shown and described without departing from the nature and principle of my invention.

What is claimed is:

In combination with an umbrella having a collapsible, covered frame capable of assuming an inverted saucer shape when open and means under said umbrella for sustaining same spacedly above a base support, an insect-impervious enclosure comprising a headpiece, said headpiece being of relatively heavy fabric and in the form of an annular ring having an outside circumference which approximates the periphery of said umbrella and having an inside diameter which is at least one-half of its outside diameter, and a plurality of panels of flexible netting secured to each other along their side edges and secured at their upper ends to said headpiece for suspension therefrom downwardly from said umbrella when said headpiece is in supported disposition thereon, said panels being of such length as to extend to the base support when so suspended.

References Cited in the file of this patent

UNITED STATES PATENTS

Re. 1,816	Palmer	Nov. 8, 1864
574,091	Irvine	Dec. 29, 1896
607,933	Laird	July 26, 1898
860,379	Hodes	July 16, 1907
1,409,609	Stockle	Mar. 14, 1922
1,601,889	Silverstein	Oct. 5, 1926
2,696,825	Lamb	Dec. 14, 1954

FOREIGN PATENTS

468,051	France	Apr. 11, 1914
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