

May 29, 1956

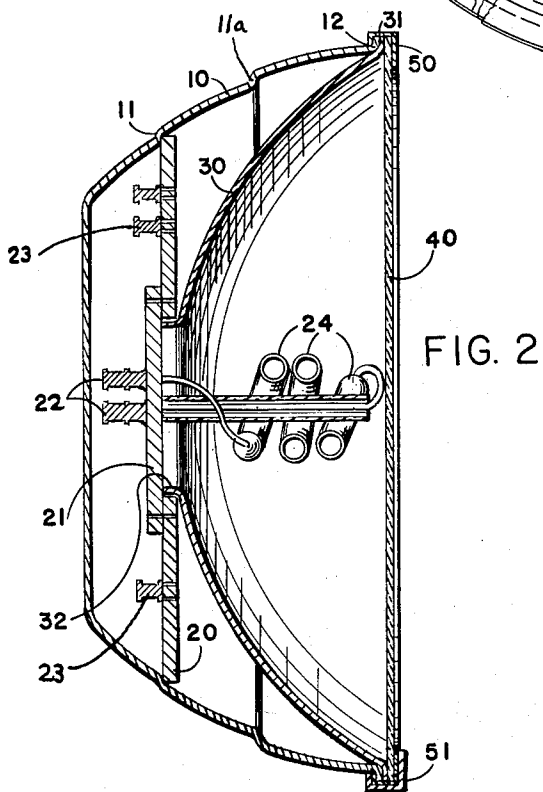
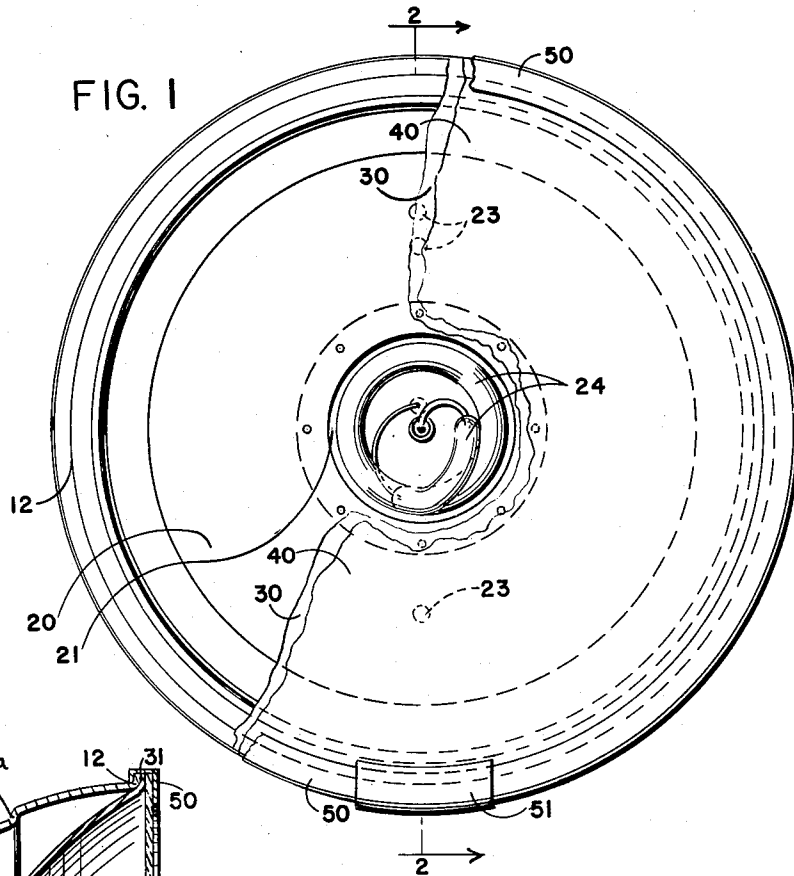
B. L. FRIEDMAN
PHOTO-FLASH ASSEMBLIES

2,748,259

Filed Feb. 11, 1954

2 Sheets-Sheet 1

FIG. 1



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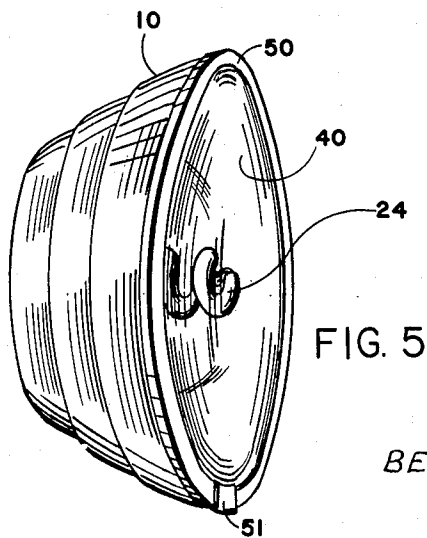
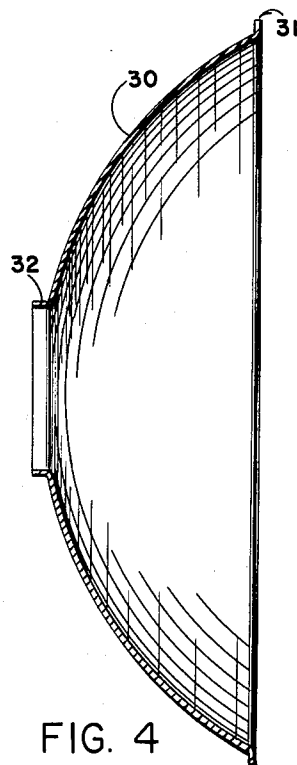
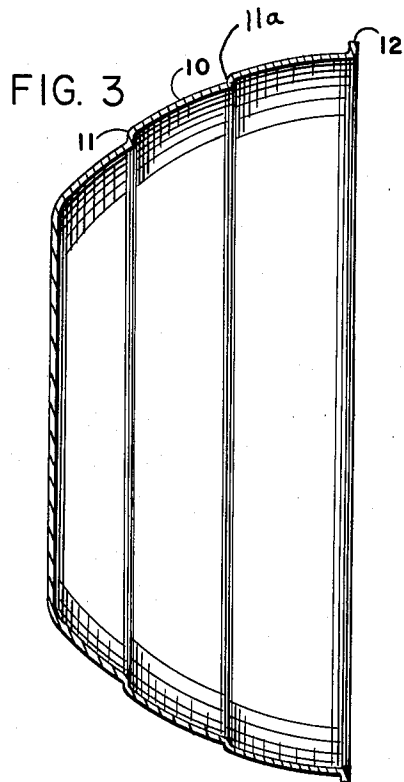
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PHOTO-FLASH ASSEMBLIES

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Application February 11, 1954, Serial No. 409,601

4 Claims. (Cl. 240—11.4)

The present invention relates to apparatus designed for flash photography. In particular it relates to lamp-containing assemblies associated with portable electronic flash equipment.

Electronic photo-flash units usually include a light or photo-flash tube, reflector, glass shield and associated electrical components such as a source of electrical current, condensers, resistors, leads and transformers. In some circuits, use is also made of special trigger tubes and the like. Portable units heretofore described consist of clusters of such parts, with a resultant bulk and unwieldiness. In particular, previously described assemblies for holding the light tube are often so massive that manipulation or fastening to ordinary cameras is difficult.

One object of this invention is to provide a simple, compact and inexpensive assembly for holding photo-flash tubes. A further object of this invention is to provide such an assembly which can also house a number of the electrical components desired to be in close proximity to a photo-flash tube. Other objects of this invention will be apparent from the following description and the appended drawings of a preferred embodiment of this invention.

With this embodiment an assembly is provided having as an outer housing a bowl-like receptacle, shaped somewhat in the form of an open, hollow hemisphere. Along the open edge of housing is an outwardly turning circular terminal lip or flange. In the body of the housing is an inwardly turning circular rib or flange which is parallel to the terminal lip. This body flange acts as a support for the circular dielectric plate which rests on the flange and has a central recessed portion. A parabolic reflector having a circular rim-like supporting portion fits into the recessed portion. The wide edge of the reflector has an outwardly turning circular terminal lip cooperative with the housing lip. A transparent shield fits over both lips and these structural parts are held together by a circular retaining rim which fits over the lips and shield, and is made secure by a superimposed clamp. The supporting portion of the reflector presses upon the dielectric plate and thus keeps it firmly in position on the body flange.

The photo-flash tube is mounted in the recess on the face of the dielectric plate with its terminals leading through the plate to the reverse side. On the reverse side of the plate are binding posts for the mounting of condensers, resistors, transformers and the like, which can be wired to the tube terminals and to exterior electrical leads.

The complete assembly may be mechanically coupled to various devices such as mounting bosses and the like which serve as a means of attachment to cameras or to separate frames. The choice of assembly-contained electrical components is governed by the circuit to be used. It is usually preferred to place as many components as possible in the assembly, the exterior equipment being limited to switches and such circuitry as a power supply

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and condensers. In cases where certain electrical components must be close to the photo-flash tube, this invention provides a unique space saver.

This invention may be best understood by reference to the drawings in which

Figure 1 is a partially cut-away front view of the assembly;

Figure 2 is a vertical section taken along line 2—2 of Figure 1;

Figure 3 is a sectional view of the main housing of the assembly;

Figure 4 is a sectional view of the reflector;

Figure 5 is a perspective view of the complete assembly.

Referring now to the drawings, a hemispherically surfaced bowl-like housing is shown having circular inwardly turning body flanges 11 and 11a and a circular terminal clamping lip 12 which turns outward. Seated on the flange 11 is a fitted circular dielectric plate 20 having a central recessed portion 21 on its face and lamp binding posts 22 and auxiliary binding posts 23 on its rear. A helical gas-filled photo-flash tube 24 is mounted in the recess 21 and connected with the lamp binding posts 22. Also seated in the recessed portion 21 of the dielectric plate 20 is the circular mounting rim 32 of a parabolic reflector 30. The reflector is provided with an outwardly turning circular terminal lip 31 cooperable with the clamping lip 12 of the housing 10. A transparent shield 40 is provided which protects the lamp and reflector. The various parts of the assembly are held together by a circular double-flanged rim 50 fitted over the lip 12, lip 31 and shield 40, and a fitted clamp 51 placed over a portion of the retaining rim 50. It should be noted that the flange 11a is not essential to the functioning of this invention and serves only for symmetry of appearance.

On the reverse side of the dielectric plate the binding posts 23 may be used for mounting small electrical components such as a trigger-transformer, resistances or condensers associated with the operation of the flash tube. This invention is not intended in any way to limit the type of circuitry used with the flash tube—it being possible to incorporate some of the components on the back of the dielectric terminal plate and the remainder in exterior equipment.

Such a photo-flash assembly with a properly coupled mounting boss for attachment to a camera provides a much smaller, more compact and lighter unit than hitherto described. There are no excess structural components and the assembly is tight and highly shock resistant.

Although the flash tube illustrated is of the helical gas filled type, it is, of course, understood that any flash or light tube with its associated circuitry may be used in the practice of this invention. Further, this invention is not limited in the shape of its housing, since obviously many other forms having appropriately placed body flanges would be within its scope. Also, although it is preferred that the terminal flanges turn outward, inwardly turning terminal flanges would be operative with appropriate retaining and clamping means.

I claim:

1. In a compression assembly for a light tube, an outer housing comprising a unitary, open, bowl-like receptacle with a terminal flange on its open end and a body flange, a dielectric plate having a central recessed portion and shaped to seat upon said body flange, a curved reflector having at its small end an orifice and a tubular extension shaped to seat in said recessed portion and having at its large end a terminal flange shaped to fit against said receptacle terminal flange, a light tube attached to said recessed portion and protruding through said tubular extension and orifice, a transparent shield shaped to cover the open end of said receptacle and said reflector flange,

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and retaining means for holding said terminal flanges and shield in position; the entire assembly being so constructed that when the said parts are assembled as indicated, said reflector, shield and dielectric plate are held firmly in position without additional attaching means.

2. An assembly as in claim 1, wherein means are provided on said dielectric plate for holding electrical components associated with said light tube within said receptacle.

3. In a compression assembly for a light tube, an outer housing comprising a unitary, open, bowl-like receptacle with an outwardly turning terminal flange on its open end and an inwardly turning body flange, a dielectric plate having a central recessed portion and shaped to seat upon said body flange, a curved reflector having at its small end an orifice and a tubular extension shaped to seat in said recessed portion and having at its large end an outwardly turning terminal flange shaped to fit against said receptacle terminal flange, a light tube attached to said recessed portion and protruding through the said

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tubular extension and orifice, a transparent shield shaped to cover the open end of said receptacle and said reflector flange, and a double flanged retaining and clamping rim shaped to fit over said terminal flanges and shield; the entire assembly being so constructed that when said parts are assembled as indicated said reflector, shield and dielectric plate are held firmly in position without additional attaching means.

4. An assembly as in claim 3 wherein means are provided on said dielectric plate for holding electrical components associated with said light tube within said receptacle.

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