March 6, 1951 T. LANG 2,544,388

PHOTOGRAPHIC FLASH GUN

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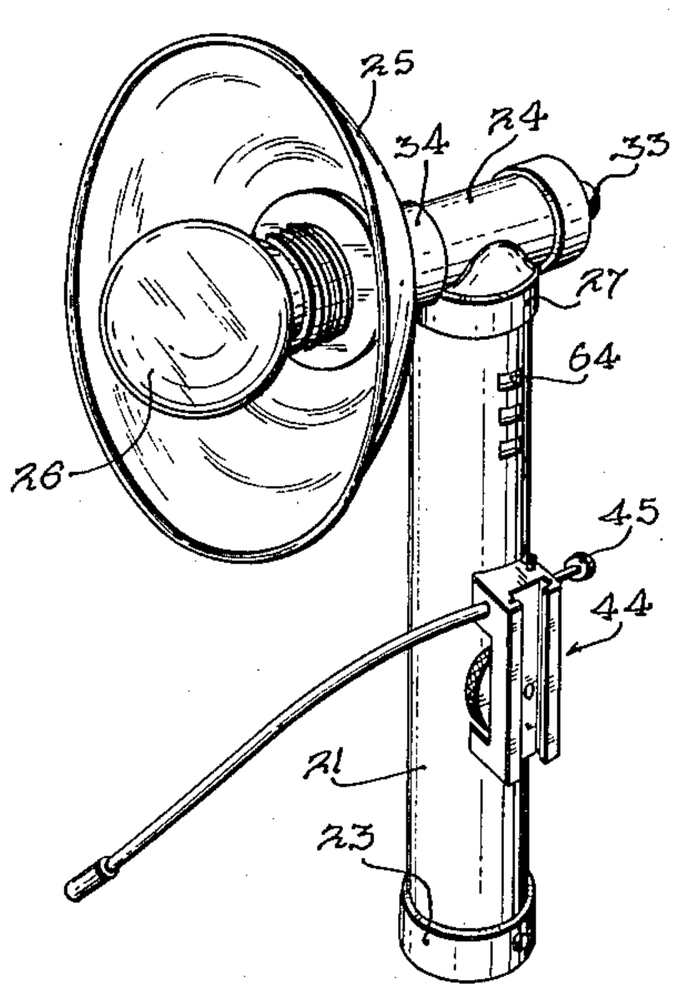

FIG. 1.

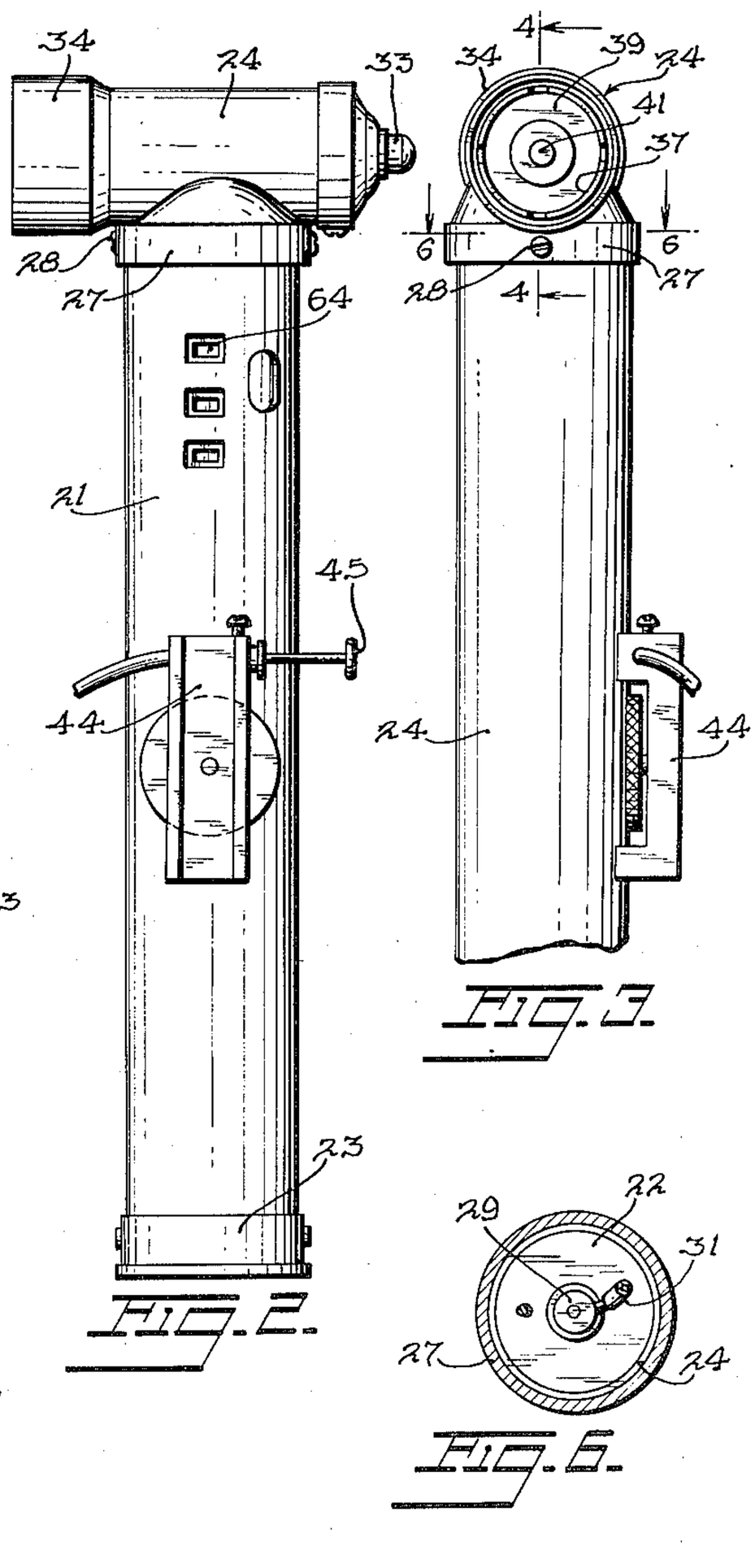

FIG. 2.

FIG. 3.

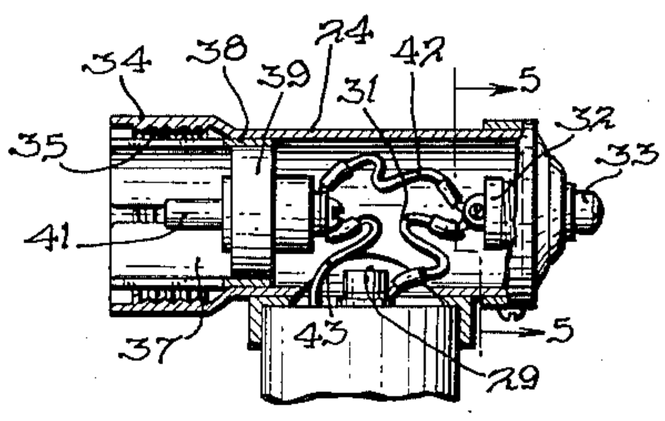

FIG. 4.

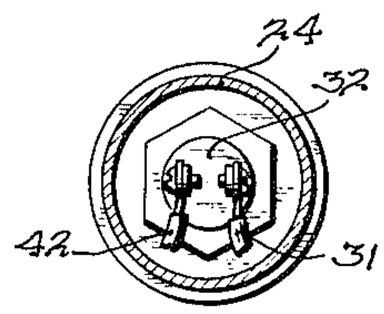

FIG. 5.

FIG. 6.

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PHOTOGRAPHIC FLASH GUN

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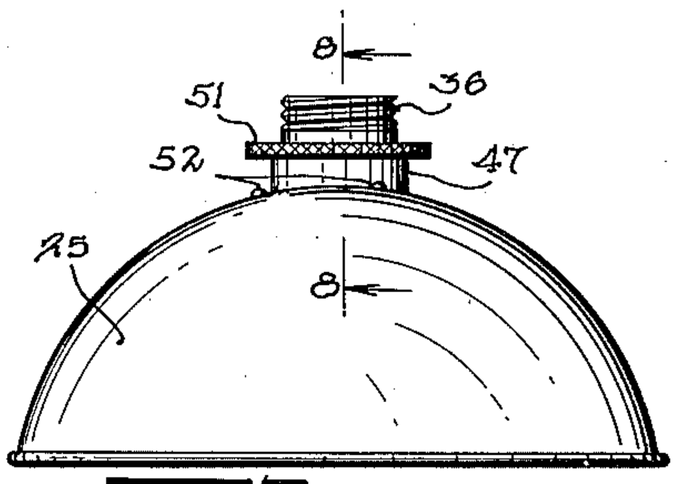

FIG. 7

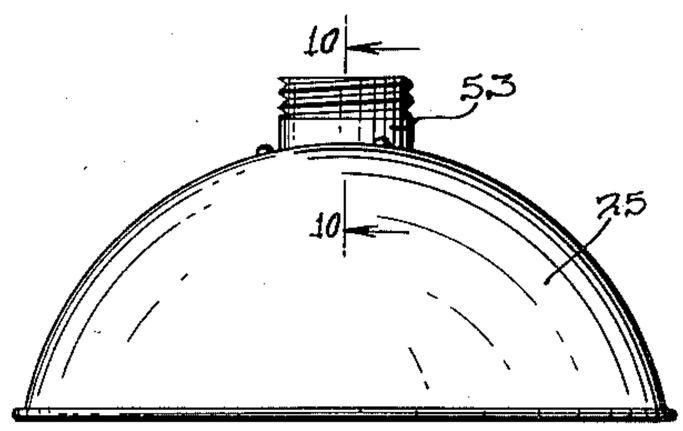

FIG. 9

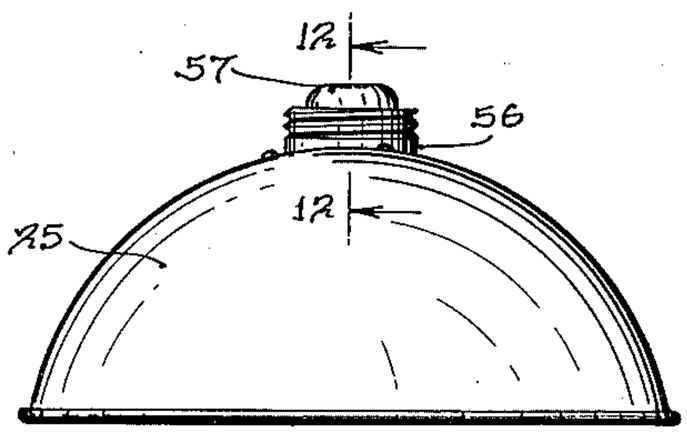

FIG. 11

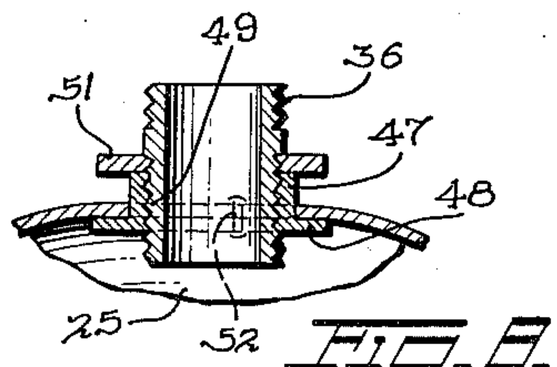

FIG. 8

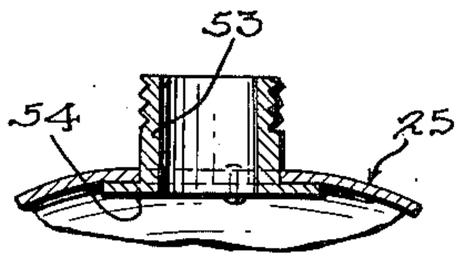

FIG. 10

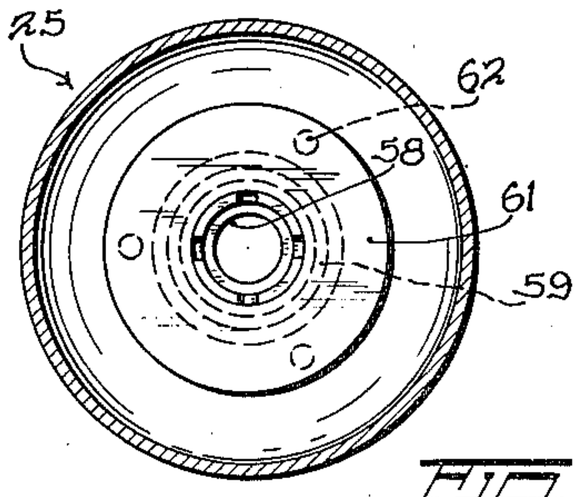

FIG. 13

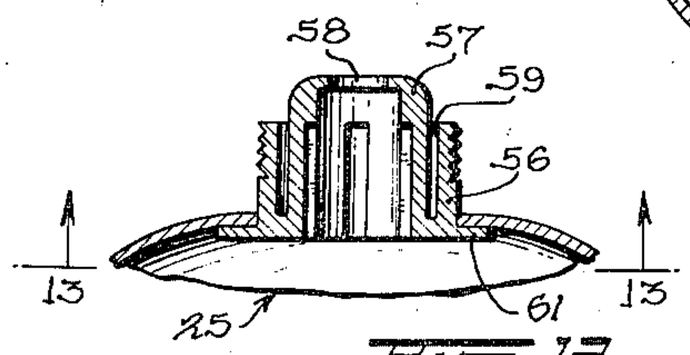

FIG. 12

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UNITED STATES PATENT OFFICE

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PHOTOGRAPHIC FLASH GUN

Theodore Lang, Flushing, N. Y.

Application September 24, 1947, Serial No. 775,946

2 Claims. (Cl. 240—1.3)

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This invention relates to flash guns.

It is an object of the present invention to provide a flash gun with a top part for supporting a lamp bulb. This top part includes a plunger which is engaged by the lamp bulb as the same is inserted into the socket and wherein the top part has no projections which need to be extended downwardly into the battery casing upon making the connection of the top part therewith and wherein the top part has a switch for igniting the bulb.

Another object of the present invention is to provide an arrangement for using the center of the reflector to serve as a means for connecting the reflector to the socket, the socket being of simple construction and easily assembled upon the reflector.

Other objects of the present invention are to provide reflector constructions for flash guns which are of simple construction, easy to attach to the flash gun socket, inexpensive to manufacture and efficient in operation.

According to the invention, the flash gun has the usual battery case in which batteries are stored and the top of the gun is provided with a cap having a horizontally extending top part with a socket opening at one end and a switch at the opposite end adapted to be depressed to ignite the flash bulb. Within this top part is a plunger adapted to be engaged by the lamp bulb when placed in position. The reflectors are provided with adaptors having threads which engage with the threads of the socket of the top part.

Internally of the socket threads are longitudinally extending contact terminals which extend outwardly through the sockets from a ring formation containing the plunger contact. The lamp bulb will be inserted into the reflector and into the socket and against the contact projections lying therewithin and will depress the contact plunger centrally to establish the connection of the bulb with the plunger. The flash gun may also be provided with the usual shutter operating device for the camera.

For further comprehension of the invention, and of the objects and advantages thereof, reference will be had to the following description and accompanying drawing, and to the appended claims in which the various novel features of the invention are more particularly set forth.

In the accompanying drawing forming a material part of this disclosure:

Fig. 1 is a perspective view of the completely assembled flash gun embodying the features of the present invention.

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Fig. 2 is an enlarged side elevational view of the flash gun with the reflector and bulb removed therefrom and looking upon the side face of the top part.

Fig. 3 is a fragmentary front elevational view of the flash gun with the reflector removed.

Fig. 4 is a longitudinal cross sectional view taken on line 4—4 of Fig. 3.

Fig. 5 is a transverse vertical cross sectional view taken on line 5—5 of Fig. 4.

Fig. 6 is a horizontal cross sectional view taken on line 6—6 of Fig. 3.

Fig. 7 is an elevational view of one form of reflector.

Fig. 8 is an enlarged cross sectional view taken on line 8—8 of Fig. 7.

Fig. 9 is an elevational view of another form of reflector.

Fig. 10 is a cross sectional view taken on line 10—10 of Fig. 9.

Fig. 11 is an elevational view of still another form of reflector.

Fig. 12 is a fragmentary enlarged cross sectional view taken on line 12—12 of Fig. 11.

Fig. 13 is a transverse cross sectional view taken on line 13—13 of Fig. 12.

Referring now to the figures, 21 represents a casing adapted to receive batteries 22 for effecting the operation of the flash gun. A closure element 23 is disposed on the bottom end of the gun. On the top of the battery casing 21, there is connected a top part 24 extending transversely across the top end of the battery casing 21 and serving as a support for a reflector 25 and a flash bulb 26. This top part 24 has a cover member 27 adapted to be fitted over the top of the battery casing and secured thereto by fastening screws 28. A battery terminal 29 will extend upwardly through an opening in the top part 24 (Fig. 4) for receiving a wire connection 31 which is connected directly to a switch element 32 fixed to the rear end of the top part 24 and operated by a switch button 33 which may be depressed to close the electric current to the flash bulb 26.

The opposite end of the top part 24 is enlarged as indicated at 34 and has internal threads 35 for receiving external threads 36 of a reflector. Inwardly of these internal threads 35 are projections 37 carried on a ring formation 38 which surrounds a plunger device 39 having a plunger element 41 therein. These projections 37 serve to receive the inner end of the flash bulb 26 as the same is extended into the socket to depress the plunger element 41. The plunger device 39 is connected by a wire connection 42 with the

switch 32 and by a wire 43 with a battery terminal.

On the side of the battery casing 21 is a shutter operating device 44 having a press button 45.

Referring now to Figs. 7 and 8, there is shown one form of means for connecting the reflector to the socket. This reflector 25 includes the usual reflector casing in which there is extended a sleeve 47 having an inner flange 48 adapted to engage with the inner face of the reflector casing. This sleeve 47 is internally threaded to receive a central sleeve 49 which is locked in place on the sleeve 47 by a collar 51 threaded on the sleeve 49. The threads 36 are provided upon the sleeve 49. The sleeve 47 may be fixed to the rear face of the reflector casing by rivets 52.

Referring now to Figs. 9 and 10, there is shown a simplified thread formation on the reflector. A single sleeve 53 is used and its flange 54 engages with the inner face of the reflector and can be retained thereagainst by a solder connection.

Referring now to Figs. 11, 12 and 13, there is shown still another form of the invention in which a sleeve 56 is provided with an internal angularly extending socket portion 57 adapted to receive the lamp bulb. This socket portion has an opening 58 in the bottom through which the plunger 41 of the top part will extend for engagement with the contact terminal on the bulb. The projections 37 will enter recesses 59 of the sleeve 56. The sleeve 56 has a flange 61 and this flange is fastened to the casing of the reflector by rivets 62.

Plug receiving sockets 64 are provided in the battery casing for the connection thereto of an electrically operated shutter tripping device arranged to trip the shutter at the instant of maximum intensity of the flash lamp carried on the top part 24 and fired by depressing button 33 of the switch 32.

It is to be understood that these reflectors have no cut-out portion, which increases the light reflection considerably as compared to the standard reflectors with cut-outs.

While I have illustrated and described the preferred embodiments of my invention, it is to be understood that I do not limit myself to the precise constructions herein disclosed and the right is reserved to all changes and modifications coming within the scope of the invention as defined in the appended claims.

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

1. A flash gun comprising a battery casing adapted to house the batteries, a top part extending transversely across the upper end of the battery casing and having a cover member adapted to fit over the battery casing, said top part having a switch at one end and a socket opening at the other end, a plunger within the top part adapted to be engaged by a flash bulb upon the same being inserted into the socket opening, wire connections extending between the plunger device and the switch and batteries lying within the battery casing, a reflector having a threaded portion, said socket opening having internal threads adapted to receive the threaded portion of the reflector, said reflector comprising a casing and an element extending centrally therethrough and having the external threads thereon, said element further including a portion for receiving the flash bulb to retain the same, said portion being in the form of a sleeve lying concentric with the threaded portion and having an opening in its bottom end through which the plunger may extend for engagement with the lamp bulb.

2. A flash gun comprising a battery casing adapted to house the batteries, a top part extending transversely across the upper end of the battery casing and having a cover member adapted to fit over the battery casing, said top part having a switch at one end and a socket opening at the other end, a plunger within the top part adapted to be engaged by a flash bulb upon the same being inserted into the socket opening, wire connections extending between the plunger device and the switch and batteries lying within the battery casing, a reflector having a threaded portion, said socket opening having internal threads adapted to receive the threaded portion of the reflector, said reflector comprising a casing and an element extending centrally therethrough and having the external threads thereon, said element further including a portion for receiving the flash bulb to retain the same, said portion being in the form of a sleeve lying concentric with the threaded portion and having an opening in its bottom end through which the plunger may extend for engagement with the lamp bulb, said socket opening on the top part having terminal projections extending longitudinally of the opening and radially spaced therefrom, said threaded portion of the reflector element extending into the base between the contact terminals and the internal threads of the socket opening of the top part.

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