Nov. 22, 1932. C. R. LUDER 1,888,600

REFLECTOR SUPPORT

Filed April 7, 1931

Fig. 1

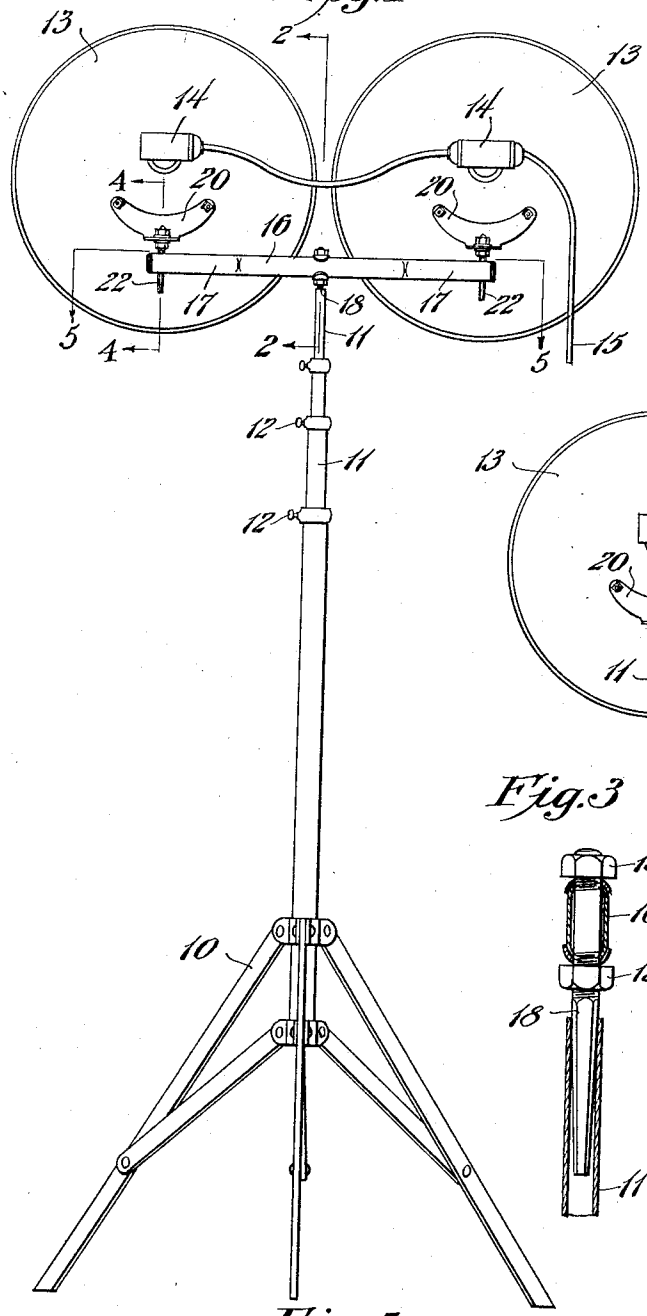


Fig. 2

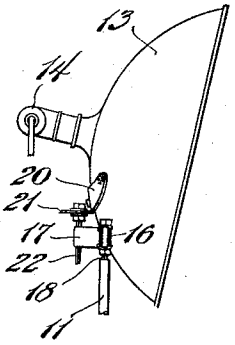


Fig. 6

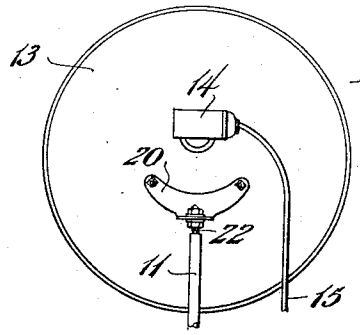


Fig. 3

Fig. 4

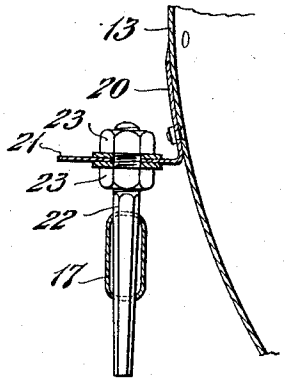
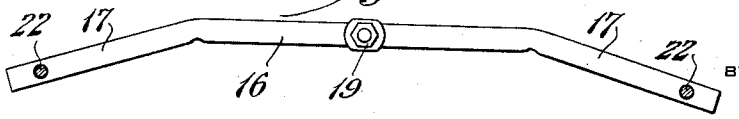


Fig. 5



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UNITED STATES PATENT OFFICE

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REFLECTOR SUPPORT

Application filed April 7, 1931. Serial No. 528,375.

This invention relates to portable reflector supports for use in photography and, among other objects, aims to provide improved supporting brackets for flash-lamp reflectors having novel means to facilitate easy attachment to and removal from a stand and means whereby the reflectors may be used interchangeably and quickly adjusted to focus the light in any direction.

Other aims and advantages of the invention will appear in the specification, when considered in connection with the accompanying drawing, wherein:—

Fig. 1 is a rear elevation of a pair of reflectors supported on a tubular stand by the preferred form of brackets;

Fig. 2 is a sectional view taken on the line 2—2 of Fig. 1;

Fig. 3 is an enlarged, detail sectional view taken on the same section line as Fig 2;

Fig. 4 is an enlarged sectional view taken on the line 4—4 of Fig. 1;

Fig. 5 is a horizontal sectional view taken on the line 5—5 of Fig. 1 and showing the preferred form of cross arm; and

Fig. 6 is a rear elevation showing a single reflector applied to the tubular standard.

Since the advent of electric, photo-flash lamps, there has developed a need for a portable and adjustable support whereby a photographer can quickly set up and adjust the apparatus so as to get the best exposure. This invention, therefore, aims to provide improved supporting means whereby one or two reflectors may be quickly mounted and adjusted on an ordinary collapsible stand.

In the accompanying drawing, the supporting stand is shown as comprising a collapsible tripod 10 having a standard composed of telescoping, tubular sections 11 adapted to be held adjusted by means of set screws 12. In Fig 1, the tripod stand is shown as supporting a pair of reflectors 13, each of which carries a lamp socket (not shown) and electric plugs 14 on a lamp cord 15 are removably connected to the sockets. The lamp cord may be plugged into an ordinary lamp or a floor socket and the stand moved to any convenient location.

The two reflectors 13 are shown as being removably mounted on the opposite ends of a cross-arm 16, preferably made of a flat tube having angularly bent ends 17. To the center of this cross-arm is secured a tapered pin 18 which preferably projects through holes in the tube 16 and is fastened thereto by means of nuts 19. See Fig. 3. However, the pin may be welded or otherwise secured to the cross-arm. In this example, the tapered part of the pin is non-circular, conveniently being hexagonal in cross section, so as to present side edges which will wedge against the inner wall of the tubular standard 11 and prevent accidental turning of the reflector after the cross-arm is adjusted. The tapered pin permits the cross-arm to be inserted and removed very easily.

Each of the reflectors is shown as having a crescent-shaped, sheet metal bracket 20 secured to its rear wall below the center and each bracket has a rearwardly projecting flange 21 to which is secured a tapered hexagonal pin 22 by means of jamb nuts 23. The pins 22 are of the same size as the pin 18 and are adapted to be inserted and properly adjusted in vertical holes or openings through the cross-arm, as shown in Fig. 4. The angularly bent ends 17 of the cross-arm are so designed as to bring the center of gravity of the cross-arm and supported reflectors over the upper end of the tubular standard, so that the assembly is stable and not readily toppled over.

When it is desired to use only one reflector or flash-lamp unit on the stand, the cross-arm may be omitted and the tapered pin 22 of a reflector inserted in the open end of the tubular standard 11, as shown in Fig. 6. Thus, the single reflector may be adjusted on the stand so as to concentrate the light in the desired direction. Since the reflectors are removable, and are interchangeable with each other, as well as with the cross-arm or bracket, a double-unit outfit can easily be converted into a single unit.

From the foregoing description, it will be seen that the improved reflector supporting attachments can be made at a small cost. The improved mounting permits instant adjustment of the reflectors without using set-

screws or other fastening elements on the brackets. Moreover, the non-circular pins on the cross-arm and the reflector brackets prevent accidentally turning the reflectors out of adjustment. The parts may be quickly set up and dismantled. Further, the parts can be stored in a relatively small box or container so that the outfit can easily be carried as a part of a photographer's equipment.

Obviously, the present invention is not restricted to the particular embodiment thereof herein shown and described. Moreover, it is not indispensable that all the features of the invention be used conjointly, since they may be employed advantageously in various combinations and sub-combinations.

What I claim is:—

1. A reflector support of the class described comprising, in combination, a tubular standard; a cross-arm having a tapered pin removably mounted in the upper end of the standard; said cross arm having a vertical opening at each end; and a reflector having a tapered pin removably mounted in the opening at each end of the cross-arm, said tapered pins preventing turning of the cross-arm and of the reflectors because of their frictional engagement with the members in which they are inserted.

2. A reflector support of the class described comprising, in combination, a tripod stand having a tubular standard; a cross-arm having a non-circular, tapered pin removably mounted in the upper end of the standard; said cross-arm having vertical openings near the opposite ends; and a pair of reflectors having non-circular tapered pins similar to the tapered pin in said cross-arm removably and adjustably mounted in said openings, said cross-arm being removable from the tubular standard and either of the reflectors being adapted to be supported directly on the standard.

3. A reflector support of the class described comprising, in combination, a tubular supporting standard; a cross-arm having angularly bent ends; a non-circular tapered pin secured to the middle of the cross-arm adapted to be inserted in the open end of said tubular standard; a pair of reflectors; and means selectively and interchangeably to secure said reflectors to the bent ends of said cross-arm and to the standard.

4. A support for flash-lamp reflectors comprising, in combination, a collapsible stand having a tubular standard; a cross-arm swivelled at its center to the upper end of the standard; and a pair of reflectors having supporting means on their rear faces removably and adjustably secured to the cross-arm opposite sides of the standard said cross- having rearwardly bent ends arranged ing the center of gravity of the cross-arm flectors substantially directly over the standard so as to prevent the stand from toppling over.

5. A support for flash-light reflectors comprising, in combination, a tripod having a tubular standard composed of telescoping sections; a tubular cross-arm having angularly bent ends; a tapered, hexagonal pin secured to the middle of the cross-arm and adapted to be inserted in the open end of the tubular standard; said bent ends of the cross-arm having vertical openings; a pair of reflectors having sheet metal brackets secured to their rear walls; and a tapered hexagonal pin secured to each of said brackets and adapted to be inserted in one of the vertical openings in the cross-arm, said last named hexagonal pins being similar to the hexagonal pin on the cross-arm whereby the cross-arm may be removed from the tubular standard and either one of the reflectors mounted thereon in its place.

6. A support for a flash-light reflector comprising, in combination, an upright tubular standard; a reflector; a sheet metal bracket secured to a rear wall of the reflector and having a rearwardly projecting flange; and a tapered, non-circular pin secured to said flange adapted to be removably inserted in the open end of the tubular standard so as to hold the reflector by friction in any adjusted position.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature.

CHARLES R. LUDER.