April 20, 1965 R. LOWELL 3,179,366

PORTABLE MOUNTING FIXTURE

Original Filed Sept. 21, 1959

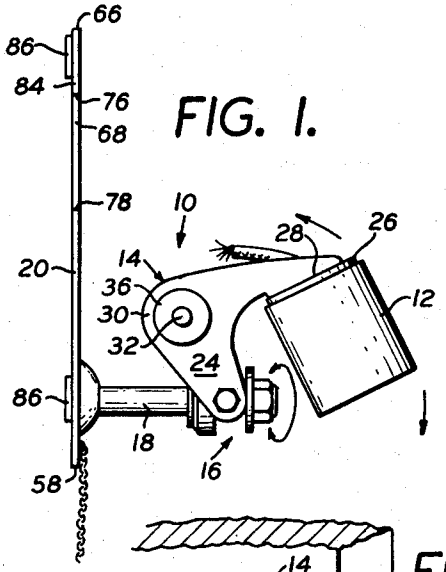


FIG. 1.

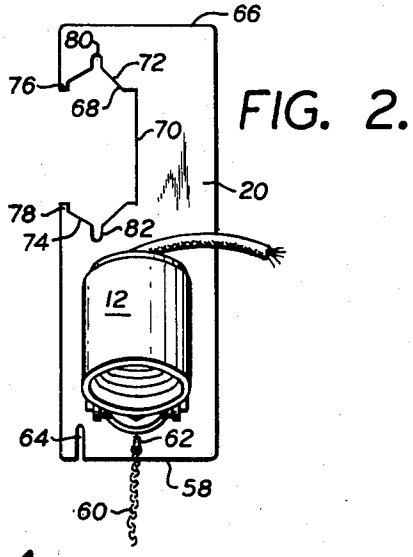


FIG. 2.

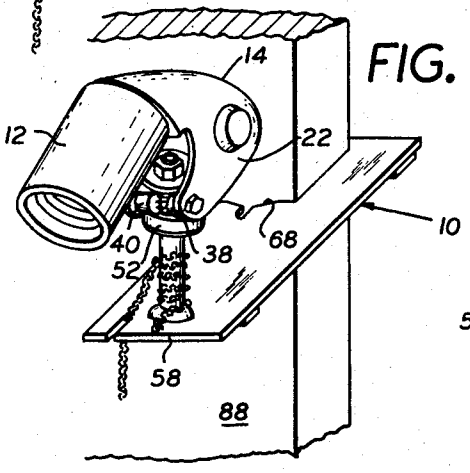


FIG. 4.

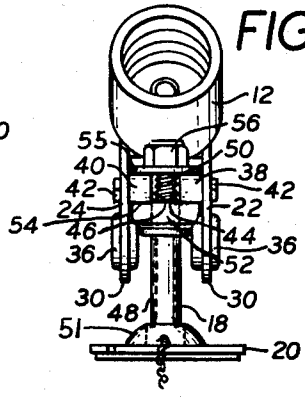


FIG. 3.

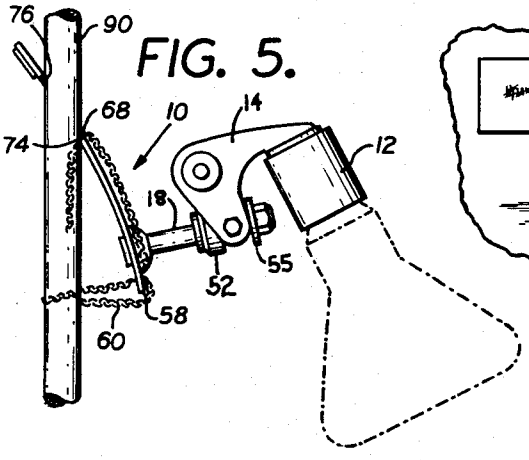


FIG. 5.

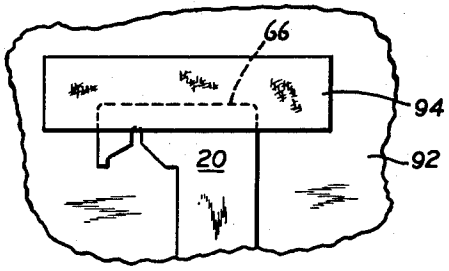


FIG. 6.

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PORTABLE MOUNTING FIXTURE

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Original application Sept. 21, 1959, Ser. No. 841,260, now Patent No. 3,088,024, dated Apr. 30, 1963. Divided and this application Mar. 13, 1963, Ser. No. 264,959
2 Claims. (Cl. 248—230)

This invention relates to a lighting fixture and particularly to a portable lighting fixture eminently suited for use in connection with the making of television shows and motion pictures.

This is a divisional application of my earlier filed application Serial No. 841,260 filed by me on September 21, 1959 for Portable Light Fixture now Patent No. 3,088,024.

The lighting standards for photographing television shows and motion pictures are extremely exacting. Careful consideration must be given to the positioning of lights in order to provide the proper highlights and shadows in desired areas. In order to achieve the desired lighting distribution it is often necessary to place lights in positions where no ordinary stand can be employed. It is often necessary that lights be suspended from the centers of walls, hung from pipes, etc.

There have been numerous attempts in the past to meet these rigid lighting demands of television and motion pictures. For instance, a common portable lighting fixture in use in these industries is one having a lamp socket mounted on a large alligator clamp which may be clamped to various protuberances for positioning a light at a desired location. However, all of the past attempts have not been versatile enough to meet all demands.

It is the major object of the present invention to provide a new and improved portable light fixture which is inexpensive to manufacture, and which may be positioned practically anywhere on a set or on location.

Another object of the present invention is the provision of a portable light fixture which may be readily suspended from pipes, doors, rods or from a wall itself.

The above and other objects, characteristics and features of the present invention will be more fully understood from the following description taken in connection with the accompanying illustrative drawing.

In the drawing:

FIG. 1 is a side elevational view of a lighting fixture made in accordance with the present invention;

FIG. 2 is a front elevational view of the lighting fixture shown in FIG. 1;

FIG. 3 is an end elevational view of said lighting fixture, a portion thereof being broken away to more clearly show details of construction;

FIG. 4 is a perspective view of said lighting fixture suspended from the edge of a door;

FIG. 5 is a side elevational view of said lighting fixture mounted on a vertical rod or pipe; and

FIG. 6 is a fragmentary plan view of said lighting fixture suspended from a wall or other vertical surface.

Referring now to the drawing in detail, the lighting fixture is generally designated by the reference character 10. Lighting fixture 10 includes a lamp socket 12 mounted on a bracket 14 which is connected by means of a universal joint 16 to a stud 18. The stud 18 is mounted on a support plate 20.

The bracket 14 is here shown to be V-shaped in elevation and made of two spaced V-shaped arms 22 and 24 which are here shown as two separate pieces, although they may be bent from one piece, and which are secured to the end 26 of the socket 12 as by out-turned portions 28 which are screwed or riveted or otherwise connected to said end 26. Of course inturned portions may be used in lieu of out-turned portions 28. Adjacent the apex 30

of each of the V-shaped members 22 and 24 is an aperture 32 in which is disposed a grommet 36 of thermal insulating material such as, for instance, rubber or plastic. The bracket 14 may be grasped for moving the socket relative to plate 20, the grommets protecting the user from the heat. Fixedly secured to each V-shaped arm 22 and 24 is an inwardly directed stud 38 and 40, respectively, which studs may be fastened in any suitable fashion as by castellated nuts 42, although rivets, welding or other securing means may be employed. The confronting ends 44 and 46 of the studs 38 and 40 are spaced from one another to permit clearance of the stud 18 therebetween and are preferably planar.

Referring now particularly to FIG. 3, the stud 18 comprises an external hollow tube 48 and a threaded bolt 50 extending therethrough. The lower end of the tube 48 abuts against the top surface of a raised portion 51 of the plate 20. The raised portion 51 has, preferably centrally thereof, an aperture through which the threaded bolt 50 extends with the head of the bolt being disposed within the projected volume of the raised portion 51. Naturally, the width or diameter of the bolt head must be wider than the diameter of the aperture in the raised portion 51 to provide a complementary abutment to limit upward movement of the bolt 50. Surrounding bolt 50 and abutting the top end of the hollow tube 48 is a washer 52 having a grooved upper surface 54 which is complementary to and which receives the studs 38 and 40. Washer 52 is free to rotate relative to tube 48.

Overlying the tops of studs 38 and 40 is a washer 55 which may be planar or, in the alternative, may have a concave portion complementary to studs 38 and 40. In threaded engagement with the bolt 50 is the castellated nut 56 which when tightened holds the entire assembly together as shown particularly in FIG. 3. Preferably nut 56 is an elastic stop nut. The tension resulting from the tightening of nut 56 on bolt 50 is sufficient to hold the parts in their described relationship but to permit rotary movement of the studs 38 and 40 about their longitudinal axis, the washers 52 and 55 acting as bearings for the studs. However, it will be understood that the friction of the washer bearings against the studs must be sufficient to frictionally hold the stud in any predetermined position and thus hold the bracket 14 and the socket 12 in any predetermined position when a manual force is not applied thereto. With this arrangement it will be seen that the friction can be adjusted by adjusting the tightness of nut 56 to thereby adapt the fixture 10 for many sizes of bulbs regardless of the weight thereof. Moreover, the tension resulting from the tightening of the nut 56 must not be so great as to prevent rotary movement of the bracket 14 about the longitudinal axis of the bolt 50 which rotary movement is permitted due to the fact that neither washers 52 or 55 are fixed against rotation.

From the foregoing it will be seen that the bracket 14 is mounted on the stud 18 for universal pivotal movement. By virtue of the fact that the studs 38 and 40 can turn about their longitudinal axis between the washers 52 and 55, rotation about a horizontal axis in FIG. 3 is achieved. By virtue of the fact that the washers 52 and 55 are themselves rotatable about the longitudinal axis of bolt 50, rotation of the bracket 14 and socket 12 is also achieved about a vertical axis as seen in FIG. 3. Of course, other means for achieving this universal pivotal movement may be employed. For instance, an arrangement may be made wherein studs 38 and 40 are locked against rotation but bracket arms 22 and 24 are free to rotate about studs 38 and 40. In lieu thereof the entire arrangement can have substituted therefor a ball and

socket joint. Other means for achieving the universal pivotal movement of bracket 14 and socket 12 relative to stud 18 will suggest themselves to anyone skilled in the art.

Referring now to FIG. 2 wherein the construction of plate 20 may be seen in greater detail, plate 20 is preferably made out of a relatively thin, stiff but flexible sheet-like material such as aluminum, steel or some rigid plastic. Adjacent the end 58 of plate 20 which is close to the area of mounting stud 18 thereon is connected a linked chain 60 as by hooking it through a small aperture 62 in the plate. Extending in from the end 58 is an elongated notch 64 which is proportioned to receive the chain 60 endwise thereinto but which will prevent longitudinal movement of the chain relative to the plate 20. In lieu of a chain, a spring or other means having an irregular peripheral shape may be employed. The reason for the chain 60 and the notch 64 will become apparent hereinafter. Plate 20 is provided adjacent its opposite end 66 with a relatively large notch or cut-out 68. Preferably the notch or cut-out 68 has roughly the shape of a C. As shown herein the notch or cut-out 68 has a relatively long longitudinally extending inner edge 70 with two approximately V-shaped upper and lower edges 72 and 74, respectively. At the outer edge of the cut-out 68 there are two tips 76 and 78 which are directed toward one another. Also, as shown in FIG. 2 and elsewhere, the cut-out 68 is preferably provided at the apex of one of the V-shaped portions 72 and 74 with oppositely directed rounded cut-out portions 80 and 82, which prevent lateral movement when a small diameter shaft passes through cut-out 68, and increase the purchase of the plate into small diameter shafts and rods. Preferably, the rear surface 84 of the plate 20 adjacent the upper edge 66 of the lower edge 68 is provided with padding 86 which may be secured to the rear surface 84 in any suitable manner as by gluing.

A light fixture of the type described may be of very light weight as all the parts thereof with the exception of the socket 12 itself may be made of lightweight metal such as aluminum or magnesium or of plastic. Also, the plate 20 and the arms 22 and 24 may all be made of relatively light gauge sheet to keep weight down. It will also be seen that the overall size of fixture 10 can be relatively small particularly when compared with an alligator clamp having a light fixture connected thereto. Accordingly a large number of fixtures 10 can be carried in a relatively small case when it is desired to use light fixtures 10 on location. The compactness of the fixture 10 is enhanced by the inclusion of the V-shaped bracket 14 which bracket permits the overall thickness of the fixture 10 to not exceed the length of the threaded bolt 50. The light fixture 10 may be suspended from many different items and a few of these are shown in FIGS. 4, 5, and 6.

Referring now to FIG. 4, the light fixture 10 may be connected to the end of a door 88 the thickness of which is less than the spacing between the tips 76 and 78 of the cut-out 68. Thus the cut-out 68 is adapted to receive the edge of the door and with the weight of the socket 12 and the bracket 14 adjacent one end of plate 20 the plate will tend to tilt downwardly at the end 58 which will cause the tips 76 and 78 to bite the front and rear surfaces of the door and thus hold the entire fixture 10 as shown in FIG. 4. With a relatively thick article disposed in the cut-out 68 there is no end for any auxiliary means to hold the fixture 10 fixed relative to the door and it will remain stationary in the position illustrated in FIG. 4 so long as may be desired. In that position the socket 12, due to its universal mounting on the plate 20, may be moved in any desired direction in order to direct the light as may be required.

The light fixture 10 may also be mounted on a relatively thin round member such as a small pipe or shaft. It will be understood, of course, that the C-shaped cut-out 68 is not restricted to receiving round pipes or shafts. Clearly, non-circular elongated articles such as hexagonal

legs of tripods, square uprights of stands, etc., may be used for mounting fixture 10 and will act exactly the same as a round shaft like the shaft 90 in FIG. 5. When the diameter is relatively big the mounting procedure is exactly the same as that shown in FIG. 4, no supplementary connecting means being required. When the diameter of the shaft is small as is true of the shaft 90 shown in FIG. 5 the shaft will be received in the cut-out 68 and with the weight of the socket 12 and associated apparatus adjacent the end 58 the plate 20 will tilt downwardly in the direction of the edge 58. However, even with the rounded cut-out portions 80 and 82 giving added purchase, with the small diameter pipe or shaft 90 there may not be enough grasping or purchase for the cut-out and this may result in a slipping downwardly of the fixture 10 relative to the shaft 90. To overcome this the chain 60 may be wound around the shaft 90 and pulled tight to flex the plate 20 as shown in FIG. 5. Then the chain may be slipped into the notch 64 to hold it in tension. The added grasping of the chain plus the added friction adjacent the edges 72 and 74 of the notch or cut-out 68 will securely hold the fixture 10 in the described and illustrated position. However, with the two rounded cut-outs 80 and 82 at the apexes of the V-shaped cut-out portions 72 and 74 additional purchase is obtained and this purchase becomes more significant as the diameter of the rod 90 is increased. While additional purchase is achieved by the inclusion of the rounded cut-out portions 80 and 82 their primary function is to insure that there will be no lateral shifting of the plate 20 relative to a small diameter shaft 90. This is particularly true when the diameter of the shaft 90 approaches or is less than the width of the rounded cut-outs 80 and 82.

Referring now to FIG. 6 there is shown therein one of the major advantages of using a relatively large area plate 20 as the support means for the socket 12. With the plate 20 having a relatively large surface area it may be disposed in surface-to-surface engagement with a wall or other planar surface 92 and a piece of pressure sensitive adhesive tape 94 may be placed in overlapping relation with the end portion of the plate 20 adjacent end 66 and the adjacent portion of surface 92 to literally tape the fixture 10 to a planar surface where desired.

Another important reason for having plate 20 of substantial area is that with such a plate forming part of the fixture 10 the fixture can be placed on a substantially horizontal planar surface, such as a table top or a shelf, in a position similar to that shown in FIG. 3. With the plate 20 being of substantial area the entire fixture will be stable on such a surface and the fixture 10 can be directed in any desired direction by manipulation as hereinbefore described.

In addition to the means for mounting the fixture 10 shown in FIGS. 4, 5 and 6 the chain 60 may be employed by itself as a mounting means if desired. For instance, if a very large diameter pole or pipe, either vertical or horizontal, is available to secure the fixture to but the diameter of said pole or pipe is too large to be received within the notch or cut-out 68 the chain 60 may be wrapped one or more times around the pole or pipe and drawn tightly and then inserted in the notch 64. This will suffice to hold the fixture against the large diameter pipe or pole.

In lieu of the support means of the chain 60 and the slot 64 a straight cord may be employed as a substitute for the chain provided at least two slots similar to the slot 64 are incorporated in the plate 20. In such an event the cord may be wound through both slots to frictionally hold it against slipping or a knot may be tied to so hold the cord. Other than this modification the function of the cord would be precisely the same as that of the chain 60. In addition to the applications hereinbefore described, other means of positioning light fixture 10 will no doubt suggest themselves to those skilled in the art. For instance, a fixture 10 may be hooked to the edge of a

horizontal shelf at an angle thereto with the end of the shelf received in the cut-out **68**, and the socket and mounting means therefor disposed above the top plane of the shelf and the portion of plate **20** adjacent end **66** disposed below the bottom surface of the shelf. In addition, fixture **10** can be hung from mouldings or backs of chairs or on columns and beams. Furthermore, fixture **10** can be connected to the ends of partitions in the manner described hereinbefore with respect to a door or the fixture **10** may be connected to legs of furniture, etc. Further, by using slot **64** as a mounting means by itself the plate **20** can be connected to thin edged material such as is encountered on the sides or louvers of fluorescent fixtures, on ventilator grills, etc. In such a case a thin edge portion of the article to be connected to the fixture **10** may be received within the slot **64** and if the proportioning of the parts is correct the fixture will hang in the described condition.

It will be further understood that the mounting means including the plate **20**, the stud **18** and the bracket **14** or some adaptation thereof may be used for mounting articles other than a lamp socket **12**. For instance, photoflash lamps, strobe lights, lighting meters may be mounted or a microphone or other apparatus may be connected to bracket **14** in lieu of socket **12**.

While I have herein shown and described one form of the present invention and have suggested modifications therein various other changes and modifications may be made therein within the scope of the appended claims without departing from the spirit and scope of this invention.

What I claim is:

1. A portable mounting means for mounting on an elongated member, said mounting means comprising a relatively stiff slightly flexible substantially flat plate having two ends and two sides, said plate being provided with a substantially **C**-shaped cut-out in one of the sides and

located between the central axis parallel to said ends and one of said ends, said plate having a pair of tabs along said side and extending into said cut-out, said cut-out being adapted to receive an elongated member of smaller cross-section than said cut-out, a chain connected to said plate adjacent the other end thereof, said plate further having an elongated slot extending inwardly from said other end, said slot being adapted to receive said chain therewithin but being proportioned to prevent longitudinal movement of said chain therethrough, said chain being of sufficient length to extend around said elongated member and be received within said slot when said elongated member is in said cut-out whereby to resist movement of said plate relative to said elongated member.

2. A portable mounting means for mounting on an elongated member, said mounting means comprising a relatively stiff slightly flexible substantially flat plate having two ends and two sides, said plate being provided with a substantially **C**-shaped cut-out in one of the sides and located between the central axis parallel to said ends and one of said ends, said cut-out being adapted to receive an elongated member of smaller cross-section than said cut-out, a chain connected to said plate adjacent the other end thereof, said plate further having an elongated slot extending inwardly from said other end, said slot being adapted to receive said chain therewithin but being proportioned to prevent longitudinal movement of said chain therethrough, said chain being of sufficient length to extend around said elongated member and be received within said slot when said elongated member is in said cut-out whereby to resist movement of said plate relative to said elongated member.

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