Oct. 23, 1951 E. F. GUTH 2,572,825

BUILT-IN LIGHTING FIXTURE WITH ADJUSTABLE SPOTLIGHT

Filed Nov. 27, 1946 2 SHEETS—SHEET 1

FIG. 3.

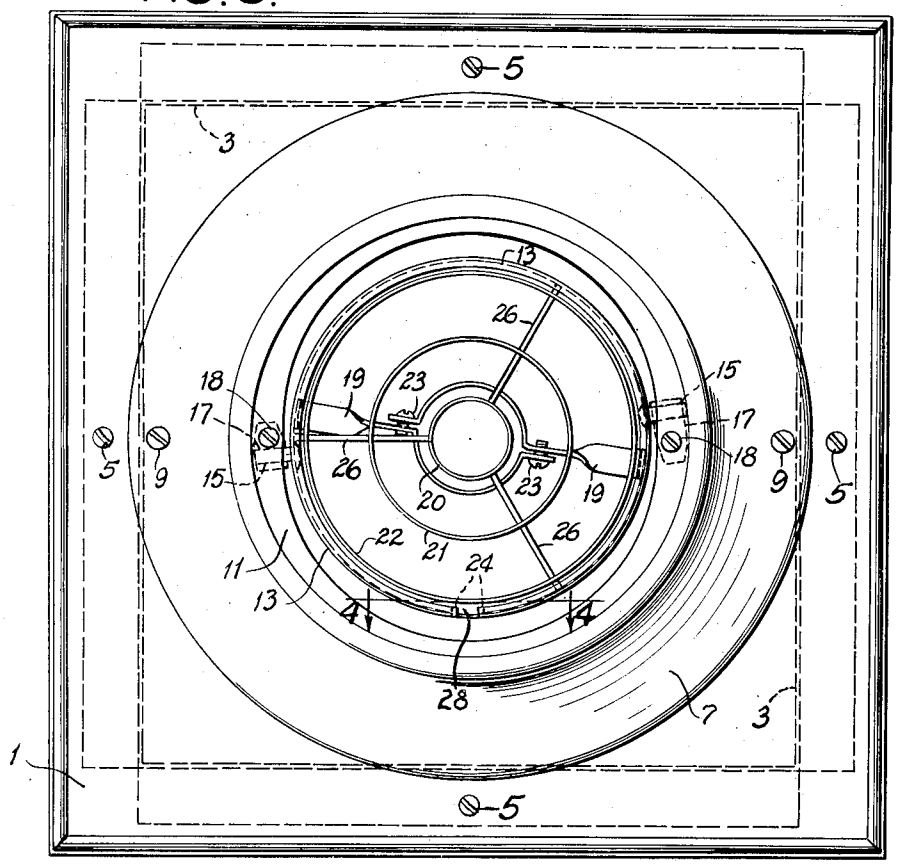
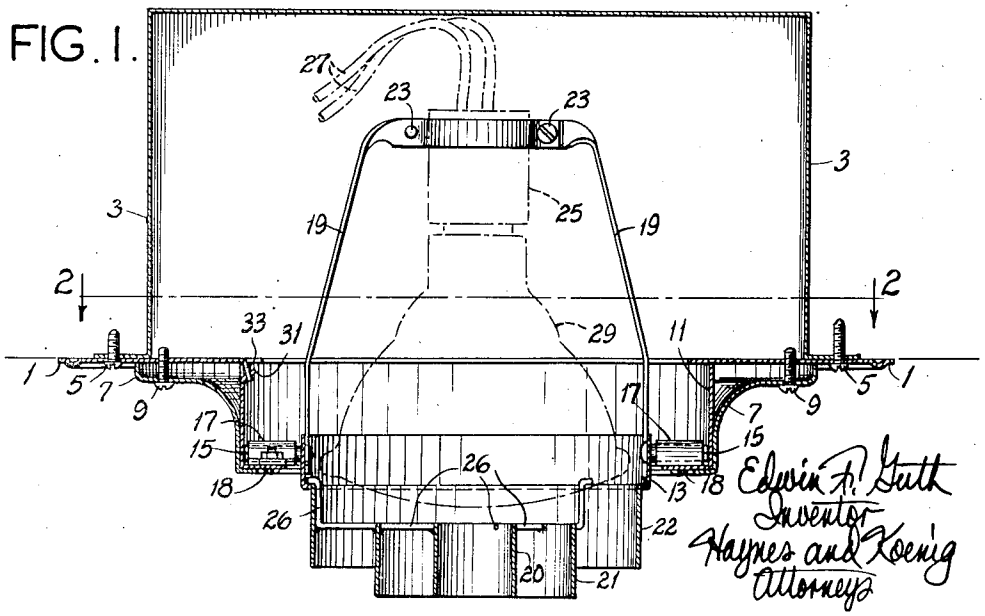


FIG. 1.



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FIG. 2.

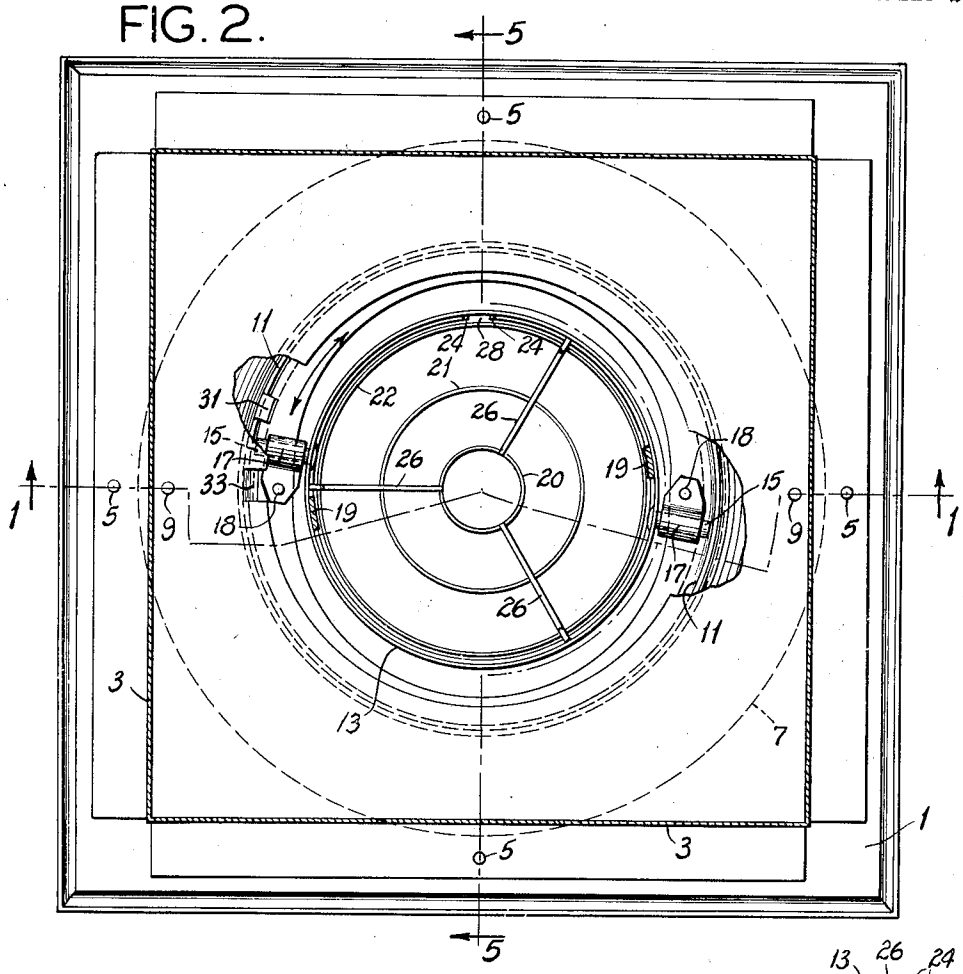


FIG. 5.

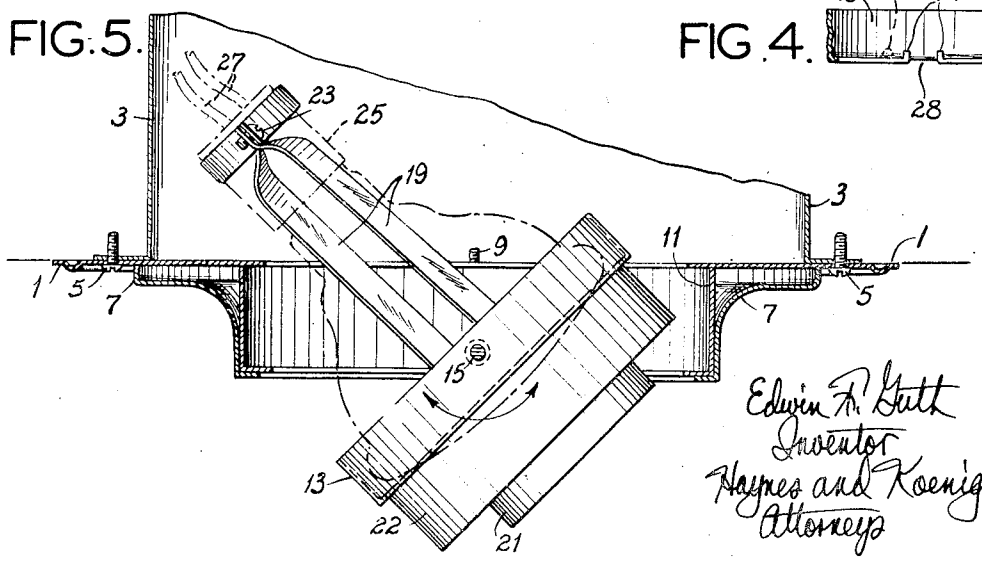


FIG. 4.

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BUILT-IN LIGHTING FIXTURE WITH ADJUSTABLE SPOTLIGHT

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8 Claims. (Cl. 240—78)

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This invention relates to lighting fixtures and more particularly to an adjustable spot light.

Among the several objects of this invention may be noted the provision of a spot light that has an exceptionally wide range of beam adjustment; the provision of a spot light that is neat in appearance, inexpensive in construction, and simple in operation; the provision of a spot light of the class described that may be easily and readily adjusted and will maintain this desired adjustment with stability; the provision of a spot light that is rugged in construction and readily accessible for lamp replacements; and the provision of a spot light of the class indicated in which the source of illumination may be adjustably mounted. Other objects will be in part apparent and in part pointed out hereinafter.

The invention accordingly comprises the elements and combinations of elements, features of construction, and arrangements of parts which will be exemplified in the structures hereinafter described, and the scope of the application of which will be indicated in the following claims.

In the accompanying drawings, in which one of various possible embodiments of the invention is illustrated,

Fig. 1 is a vertical section of the spot light taken on line 1—1 on Fig. 2;

Fig. 2 is a section taken on line 2—2 on Fig. 1;

Fig. 3 is a bottom plan view of the spot light;

Fig. 4 is a section taken on line 4—4 on Fig. 3; and,

Fig. 5 is a partial section taken on line 5—5 on Fig. 2, but showing the light source positioned at a 45° angle.

Similar reference characters indicate corresponding parts throughout the several views of the drawings.

Referring now to Fig. 1, numeral 1 indicates a mounting plate and numeral 3 indicates a box firmly affixed to plate 1 by means of bolts 5. Plate 1 and box 3 together comprise a mounting base assembly. A collar 7 is affixed to mounting plate 1 by means of bolts 9. An outer bezel 11 is supported by collar 7 and is rotatable parallel to the plane of mounting plate 1 within collar 7. An inner bezel 13 is mounted within bezel 11, by means of pins or trunnions 15 which pivot within clamps 17. These clamps 17 are attached to the upper and inner surfaces of bezel 11 by means of bolts 18. The relation between pins 15 and clamps 17 is such that there is sufficient friction to insure stability and solidity in the adjustment of inner bezel 13 without making the mechanical adjustment unduly difficult.

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Also affixed to inner bezel 13 are a two piece mounting bracket 19 and concentric cylindrical louvers 20, 21 and 22. The upper portion of bracket 19 forms an adjustable collar in which an electrical socket 25 may be clamped. Bolts 23 provide means to adjust the diameter of this collar portion. The concentric cylindrical louvers 20, 21 and 22 are interconnected and supported by radial supporting rods 26. Louvers 20, 21 and 22 and their supporting rods 26 are easily removable as a unit to provide rapid and simple bulb replacement.

Fig. 4 shows in greater detail the arrangement of the inner surface of inner bezel 13. Two projections 24 extend upwardly and serve to prevent supporting rods 26 from slipping through the entry slot 28 between these projections 24. By engaging any two of the supporting rods 26 with the inner surface of the inner bezel 13 and then lifting the third supporting rod 26 through entry slot 28 and then rotating the entire louver assembly, the cylindrical louvers 20, 21 and 22 may be easily attached to bezel 13. These cylindrical louvers may also be easily removed by merely raising and rotating the louvers 20, 21 and 22 and rods 26 until one of the attached supporting rods 26 is aligned over entry slot 28. This rod is then lowered through the slot and the remaining two supporting rods 26 may then be slipped out of bezel 13. Thus, projections 24 and rods 26 serve as quick-detachable connections between the bezel 13 and the louvers.

Fig. 1 shows an electric lamp socket 25, powered by electrical leads 27, clamped in place by bracket 19. An electric lamp 29 is mounted in socket 25. If a replacement lamp 29 is not of the same physical dimensions as the original lamp, socket 25 may be adjusted easily within bracket 19 by means of bolts 23.

Outer bezel 11 has a projection or stop 31 which is so arranged that it will engage a projection or stop 33 which is a downwardly projecting portion of base plate 1. Thus bezel 11 may be rotated approximately 360°, but is prevented from continuous rotation by the action of projections 31 and 33. In this way leads 27 are protected from undue twisting.

Figs. 2 and 5 show respectively the swinging of outer bezel 11 within collar 7 and the rotation of inner bezel 13 upon clamps 17. By cooperative adjustment of bezel 13 within bezel 11 and the proper adjustment of bezel 11, it can be seen that a beam of light can be projected in any of a multitude of directions over an exceptionally broad range.

The opening in the outer bezel 11 is shown as an elliptical aperture. Although this opening could be made circular, it has been found that such an elliptical shape will permit a substantially greater movement of the inner bezel 13 and lamp 29, thus increasing the adjustment limits of the light beam. The pivotal axis of the inner bezel 13 is the minor axis of the elliptical opening in bezel 11.

It is to be understood that the lighting fixture of the present invention may be mounted on walls or on any type of standard as well as on a ceiling and that the mounting plate 1 and mounting box 3 may be of many various shapes and contours.

It has been found in accordance with the present invention that such a novel lighting fixture may be adjusted so that the light beam can be directed to display counters as much as 45° beneath the fixture. When this lamp fixture is attached to any mounting, the exposed portion of the fixture presents a neat and finished appearance, and any adjustment of the lamp or the replacement of any component is exceptionally simple.

In view of the above, it will be seen that the several objects of the invention are achieved and other advantageous results attained.

As many changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.

I claim:

1. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said base assembly, a bezel having an inner opening and supported by said collar, said bezel rotatable on an axis and within a plane parallel to the plane of said collar, a pair of diametrically opposed trunnions affixed to said bezel, the inner opening of said bezel being elliptical in shape, a second bezel mounted on said trunnions and movable through an arc within said first bezel on a pivotal axis normal to the axis of rotation of said first bezel, the axis of pivotal movement of said second bezel being the minor axis of said elliptical opening, a bracket affixed to said second bezel, and an electric lamp mounted within said bracket.

2. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said base assembly, a bezel having an inner opening and supported by said collar, said bezel rotatable on an axis and within a plane parallel to the plane of said collar, the inner opening of said bezel being elliptical, a pair of diametrically opposed trunnions affixed to said bezel, a second bezel frictionally journalled on said trunnions with sufficient friction firmly to maintain any adjustment of said second bezel, said second bezel being supported by said first bezel and pivotal within an arc within said first bezel and on an axis normal to the axis of rotation of said first bezel, the axis of pivotal movement of the second bezel being the minor axis of said elliptical opening, a bracket affixed to said second bezel, and an electric lamp mounted within said bracket.

3. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said mounting base assembly, a bezel supported by said collar and rotatable on an axis and within a plane parallel to the plane of said collar, a pair of diametrically opposed trunnions affixed to said bezel, a second bezel frictionally journalled on said trunnions with sufficient friction firmly to maintain any adjustment of said second bezel, the axis of pivotal movement of the second bezel being normal to the axis of rotation of the first bezel, an electric lamp mounted within a bracket affixed to said second bezel, and concentric cylindrical louvers affixed to the lower surface of said second bezel.

4. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said mounting base assembly, a bezel having an inner opening and supported by said collar, said bezel rotatable on an axis and within a plane parallel to the plane of said collar, a pair of diametrically opposed trunnions affixed to said bezel, the inner opening of said bezel being elliptical, a second bezel journalled on said trunnions on said first bezel and pivotal on an axis normal to the axis of rotation of the first bezel and coincident with the minor axis of said elliptical opening, an electric lamp mounted within a bracket affixed to said second bezel, concentric cylindrical louvers, and quick-detachable connections mounting said louvers on the lower surface of said second bezel.

5. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said mounting base assembly, a bezel having an inner opening and supported by said collar, said bezel rotatable on an axis and within a plane parallel to the plane of said collar, the inner opening of said bezel being elliptical in shape, a mechanical stop on said first bezel engageable with a stop on said mounting base assembly to prevent continuous rotation greater than 360°, a pair of diametrically opposed trunnions affixed to said first bezel, a second bezel mounted on said trunnions and having an axis of pivotal movement normal to the axis of rotation of the first bezel and coincident with the minor axis of said elliptical opening, and an electric lamp mounted within a bracket affixed to said second bezel.

6. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said mounting base assembly, a bezel supported by said collar and rotatable on an axis and within a plane parallel to the plane of said collar, a mechanical stop on said first bezel engageable with a stop on said mounting base assembly to prevent continuous rotation greater than 360°, a pair of diametrically opposed trunnions affixed to said bezel, a second bezel frictionally journalled on said trunnions with sufficient friction firmly to maintain any adjustment of said second bezel, said second bezel having an axis of pivotal movement normal to the axis of rotation of the first bezel, and an electric lamp mounted within a bracket affixed to said second bezel.

7. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said mounting base assembly, a bezel having an inner opening and supported by said collar, said bezel rotatable on an axis and within a plane parallel to the plane of said collar, the inner opening of said bezel being elliptical in shape, a mechanical stop on said first bezel engageable with a stop on said mounting base assembly to prevent continuous rotation greater than 360°, a pair of diametrically opposed trunnions affixed to said first bezel, a second bezel journalled on said trunnions and having an axis of pivotal movement normal to the axis of rotation of the first bezel and coincident with the minor axis of said elliptical opening, an electric lamp mounted

within a bracket affixed to said second bezel, concentric cylindrical louvers, and quick-detachable connections mounting said louvers on the lower surface of said second bezel.

8. An adjustable lighting fixture comprising a mounting base assembly, a collar affixed to said mounting base assembly, a bezel supported by said collar and rotatable on an axis and within a plane parallel to the plane of said collar, a pair of diametrically opposed trunnions affixed to said first bezel, a second bezel journalled on said trunnions on said first bezel and having an axis of pivotal movement normal to the axis of rotation of the first bezel, an electric lamp mounted within a bracket affixed to said second bezel, the inner periphery of said second bezel being provided with an entry slot with upwardly extending projections on the edges thereof, and concentric cylindrical louvers radially supported by rods engaging said second bezel, said rods being removable through said entry slot.

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