

Sept. 17, 1963

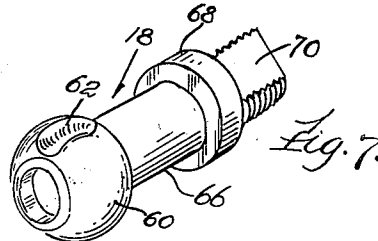
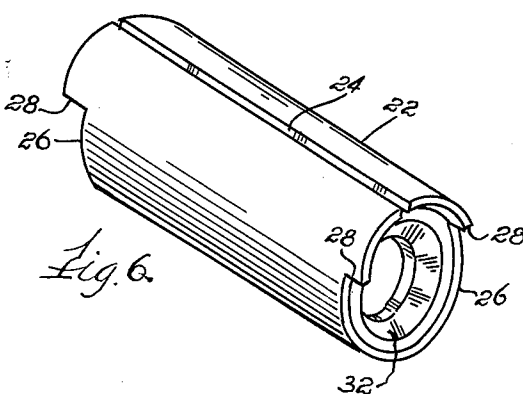
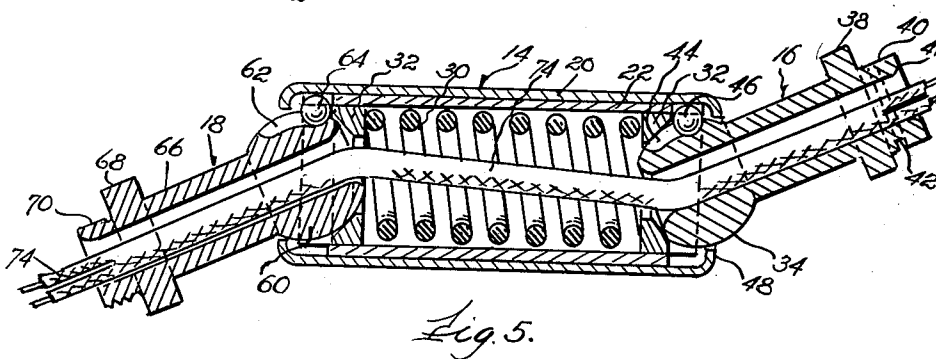
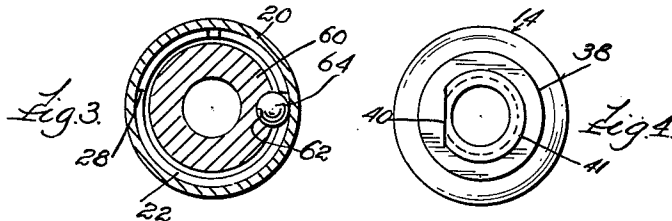
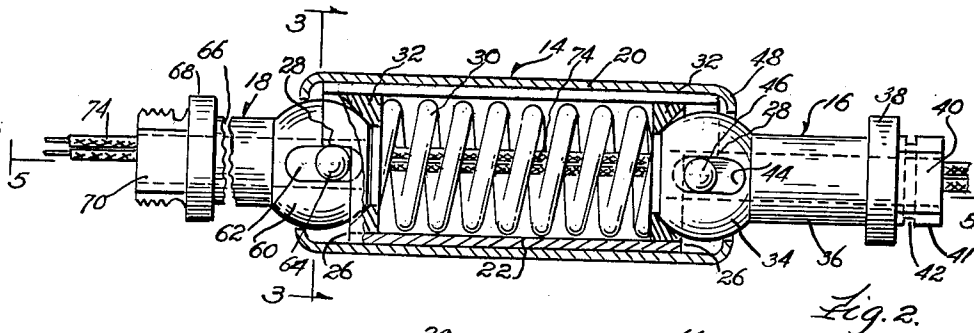
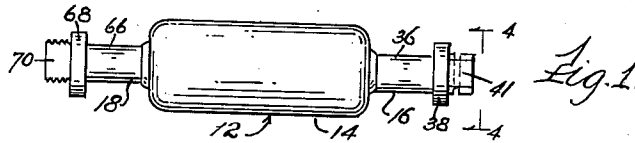
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3,104,067

MEANS FOR SUPPORTING A LIGHTING FIXTURE

Filed Aug. 19, 1958

2 Sheets-Sheet 1



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2 Sheets-Sheet 2

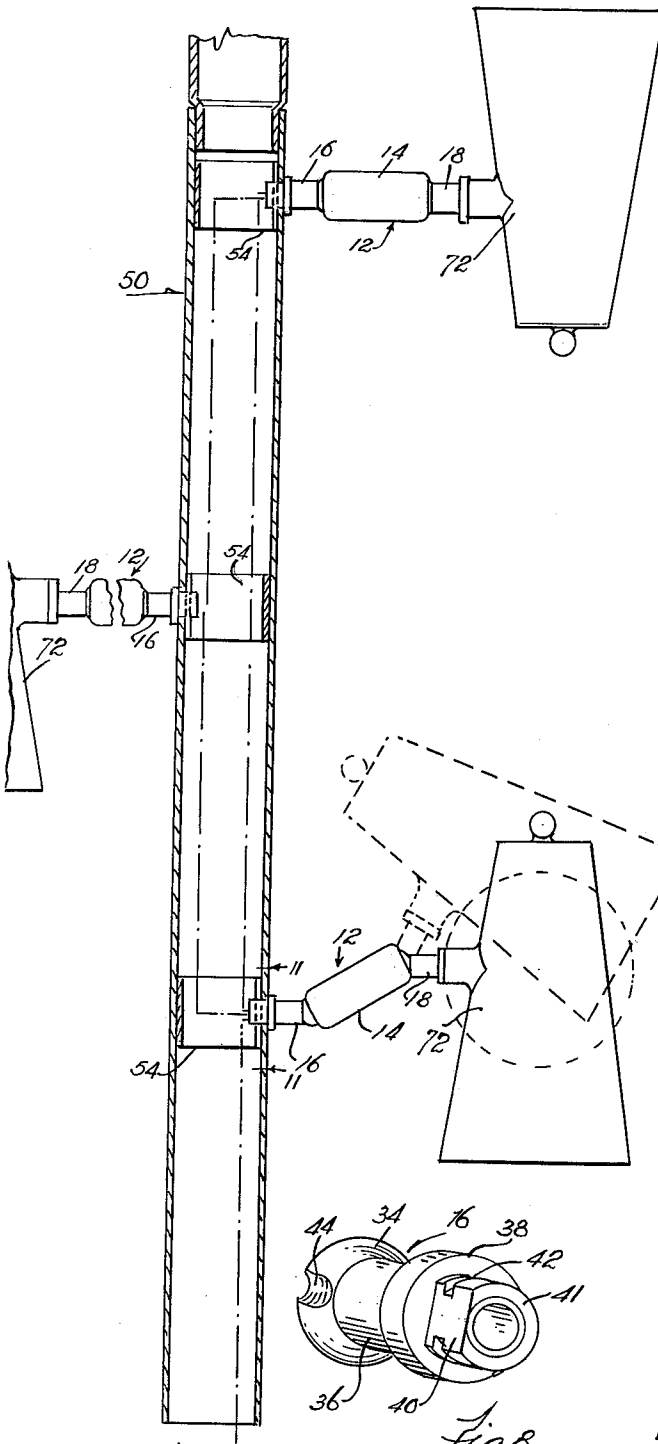


Fig. 9.

Fig. 8.

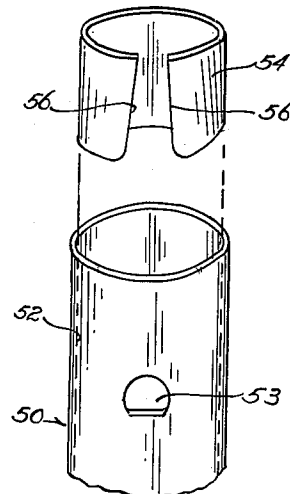


Fig. 10.

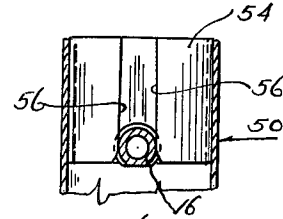


Fig. 11.

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3,104,067

MEANS FOR SUPPORTING A LIGHTING FIXTURE

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3 Claims. (Cl. 240—81)

This invention relates to means for supporting a lighting fixture.

One of the objects of this invention is to provide means for attaching and supporting a lighting fixture in relation to a supporting structure whereby the lighting fixture may be rotated about its axis without shearing or unduly twisting the electrical conducting wires extending therethrough.

Another object of this invention is to provide means for supporting a lighting fixture in relation to a supporting structure, which means comprises a central portion and an inner and outer member connected thereto, which inner member is connected to the supporting structure and the outer member is connected to the light fixture, whereby the outer member may be rotated with respect to the central portion to any desired degree but slightly less than a complete revolution and the central portion may be rotated with respect to the inner member to any desired degree, but slightly less than a complete revolution, which thereby permits the light fixture to be rotated to any desired degree without twisting or shearing the conducting wires extending therethrough, and which also permits any angular adjustment of the light fixture.

Another object of this invention is to provide means for supporting a lighting fixture having a central coupling portion provided with attaching means at the opposite ends thereof, one of the attaching means being connected to the supporting structure and the other to the lighting fixture, said coupling portion being provided with stop means which permits the lighting fixture supporting means to be rotated approximately 180° or any degree less than 360° with respect to the coupling member, and permits the coupling member to be rotated approximately 180° or any degree less than 360° with respect to the support attaching means, thereby permitting the lighting fixture to be rotated about its axis without damage to the electrical conducting wires extending therethrough and which also permits the lighting fixture to be adjusted at any desired angular position.

Another object of this invention is to provide improved means for supporting a lighting fixture and for readily attaching said means to a supporting structure.

Another object of this invention is to provide a structure of the foregoing character which is simple and inexpensive to manufacture and which may be readily attached.

Other objects will become apparent as this description progresses.

In the drawings:

FIG. 1 is a plan view of the unit in substantially normal size.

FIG. 2 is an enlarged longitudinal sectional view of same.

FIG. 3 is a cross-sectional view taken on lines 3—3 of FIG. 2.

FIG. 4 is an enlarged end view taken on lines 4—4 of FIG. 1.

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FIG. 5 is a longitudinal sectional view taken on lines 5—5 of FIG. 2.

FIG. 6 is an enlarged perspective view of the split sleeve with a raceway positioned therein.

FIG. 7 is an enlarged perspective view of the inner stem which supports the lighting fixture.

FIG. 8 is an enlarged perspective view of the stem which is secured to the supporting structure.

FIG. 9 is a view of a portion of a tubular post which forms the supporting structure and shows the manner in which this invention is secured thereto.

FIG. 10 is an exploded view showing the sleeve before it is inserted in the tubular section, and

FIG. 11 is a detail section taken on line 11—11 of FIG. 9.

The unit forming this invention is indicated generally by the numeral 12 and comprises a central portion generally indicated at 14, an inner stem-like portion generally indicated at 16 which is connected to the supporting member, and an outer stem-like portion 18 which is secured to the light fixture.

The central portion 14 includes an outer tubular member 20 which receives a split sleeve 22. The split 22 extends longitudinally of the sleeve. The split sleeve 22 is held tightly in position in the outer tubular member 20. Each of the opposite ends of the split sleeve has a cutout 26 for a portion of its circumference which provides on each end a pair of diametrically spaced edges or lips 28. These edges or lips 28 serve to limit the rotation or swivel, as will be described.

Positioned within the split sleeve 22 is a coil spring 30, and also positioned within each of the opposite ends of the split sleeve 22 is a raceway 32, each of which is in engagement with the end of the spring 30 which urges same outwardly.

Secured to the inner end of the tubular member 20 is the inner stem-like portion which has been generally indicated at 16 which comprises a hollow partially ball shaped member 34 which seats in one of the raceways 32, as best shown in FIGS. 2 and 5. Extending from said parti-ball shaped member is a tubular stem 36 which has an enlarged annular shoulder 38. The stem 36 extends rearwardly of the annular shoulder 38 and is provided with a flat surface 40 to give the end 41 of the stem a D shape in section. A groove 42 is provided in the stem adjacent the shoulder 38.

The parti-ball shaped member 34 has a longitudinal recess 44 to receive a small ball bearing 46. The opposite ends of the recess 44 are closed to prevent the ball bearing from moving outwardly of the recess. The parti-ball shaped head 34 seats in the raceway 32 and the end of the tubular member 20 is peened over as at 48 to retain the ball shaped head 34 against outward displacement. It also will retain the ball bearing 46 in the recess 44.

The stem 36 is adapted to be secured to a tubular support generally indicated at 50, which may be one of the tubular sections 52 of an upright column forming a lighting fixture like that shown in my Patent No. 2,793,286. The tubular section 52 is provided with a D shaped cut-out 53 which receives the D shaped end 41 of the stem 36. The D shaped end 41 extends into the tubular section 52 and same is fixedly secured therein by a split sleeve generally indicated at 54. The split sleeve 54 at the split has inclined edges 56 inclining outwardly to

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ward the bottom, with the lower ends thereof being somewhat rounded. The split sleeve 54 is inserted in the open end of the tubular section 52 with the widest part or entrance of the split positioned against the groove 42. By forcing the split sleeve 54 into engagement with the groove 42, the sleeve 52 will grip the groove 42 and positively lock the stem 36 to the tubular section and thus support the entire unit. The D shaped cutout 53 and the D shaped end 41 of the stem will prevent rotation of the stem with respect to the tubular section.

The central portion 14 may be swiveled like a universal joint about the ball shaped head 34 of the rigidly secured stem 16 and the central portion 14 may be rotated approximately 180° with respect to the head 34, as shown in the drawings. It will be seen that the ball bearing 46 in the head 34 will permit rotation of the central portion 14 about the ball shaped head 34 as an axis until the ball bearing 46 engages the diametrically opposite edges or lips 28 of the split sleeve 22 which limits its rotation. Thus, the central portion 14 may be manually rotated as long as the ball bearing 46 is not in engagement with either of the edges 28 of the sleeve 22, but when either of the diametrically opposite edges 28 of the split sleeve 22 in the central portion 14 are engaged by the ball bearing 46, rotation is arrested.

The opposite end of the central portion 14 supports an outer stem-like portion 18 which comprises a part-ball shaped hollow head 60 having a recess 62 for receiving a ball bearing 64, all similar to the head, recess and ball bearing previously described. Extending forwardly of the ball shaped head is a hollow stem 66 having a shoulder 68 and a D shaped externally threaded end 70 to which is secured a lighting fixture 72. The outer stem-like portion 18 which supports the lighting fixture may be swiveled with respect to central portion 14, as in a universal joint, and may be positioned at an angle of approximately 30° with respect to the longitudinal axis of the central portion 14. The outer stem 18 may be rotated approximately 180°, as shown in the drawings, with respect to the central portion 14 by engagement of the ball bearing 64 with the edges or lips 28 of the sleeve 22, similar to that previously described. By increasing or reducing the size of the cutouts 26 on the opposite ends of the split sleeve 22, the edges or lips 28 thereof may be positioned at any degree around the circumference of the sleeve to allow for a greater or lesser rotation of the outer stem 18 with respect to the central portion 14 and the rotation of the central portion with respect to the inner stem 16. The edges or lips 28 prevent each of the rotatable members from making a complete 360° rotation. If desired, the sleeve 22 may be eliminated and segments may be secured inside the outer tubular member 20 which will serve the same purpose as the spaced edges or lips 28.

An electrical conducting wire 74 extends through the inside of the unit, one end of the wire being connected to the fixture 72 mounted on the outer stem 18 and the other end extending into the tubular section 52 and extending therefrom and connected to a source of current supply.

By providing a universal joint connection at each of the opposite ends, the unit may be swiveled and angled as desired so that the lighting fixture may be positioned within a wide range of adjustments. As shown in the drawings, the central portion 14 may be rotated approximately 180° with respect to the inner stem 16, and the outer stem 16 may be rotated 180° with respect to the central portion 14; the electrical wire 74 within same is prevented from being sheared or broken as where the unit is capable of being continually rotated, yet this unit has a substantially combined 360° rotation. As previously explained, the degree of rotation of each of the rotatable members may be varied if desired.

It will be understood that various changes and modi-

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fications may be made from the foregoing without departing from the spirit and scope of the appended claims.

I claim:

1. A device for attachment to a lighting fixture and a supporting structure, said device comprising a central cylindrical casing, a sleeve secured within said casing, said sleeve having stop means at each of the opposite ends thereof, a raceway supported within each of the opposite ends of said sleeve, a single spring within said sleeve with the opposite ends of said spring bearing against said raceways and urging said raceways outwardly, an inner stem having a ball shaped head secured within one of said raceways and adapted for attachment at its outer end to a supporting structure, means cooperating with said ball shaped head adapted to engage the adjacent stop means on said sleeve, an outer stem having a ball shaped head secured within the other raceway and adapted for attachment at its outer end to a lighting fixture, means cooperating with said last mentioned ball shaped head adapted to engage the adjacent stop means in said sleeve, said aforementioned stop means limiting rotation to less than a complete revolution of said central casing with respect to said inner stem and limiting rotation to less than a complete revolution of said outer stem with respect to said central casing.

2. A device for supporting a lighting fixture in relation to a tubular vertical supporting column, said device comprising a central cylindrical casing, a sleeve secured within said casing, said sleeve having stop means at each of its opposite ends thereof, a raceway supported within each of the opposite ends of said sleeve, a single spring within said sleeve with the opposite ends of said spring bearing against said raceways and urging said raceways outwardly, an inner stem having a ball shaped head secured within one of said raceways, said inner stem having a recess and an adjacent shoulder with the recessed end of said stem inserted in said tubular vertical column, a sleeve insertable in said tubular column and engaging said recess to immovably lock said stem to said tubular post, said ball shaped head having means adapted to engage the adjacent stop means in said first mentioned sleeve, an outer stem having a ball shaped head secured within the other raceway and attached at its outer end to a lighting fixture, said last mentioned ball shaped head having means adapted to engage the adjacent stop means in said first mentioned sleeve, said aforementioned stop means limiting rotation to less than a complete revolution of said central casing with respect to said inner stem and limiting rotation to less than a complete revolution of said outer stem with respect to said central casing.

3. A device for supporting a lighting fixture in relation to a tubular vertical supporting column, said device comprising a central cylindrical casing, a sleeve secured within said casing, said sleeve having stop means at each of the opposite ends thereof, a raceway supported within each of the opposite ends of said sleeve, a single spring within said sleeve with the opposite ends of said spring bearing against said raceways and urging said raceways outwardly, an inner stem having a ball shaped head secured within one of said raceways, said inner stem having a recess and an adjacent shoulder with the recessed end of said stem inserted in said tubular vertical supporting column, a sleeve insertable in said column and engaging said recess to immovably lock said stem to said tubular post, said ball shaped head having means adapted to engage the adjacent stop means in said first mentioned sleeve, an outer stem having a ball shaped head secured within the other raceway and attached at its outer end to a lighting fixture, said last mentioned ball shaped head having means adapted to engage the adjacent stop means in said first mentioned sleeve, said aforementioned stop means limiting rotation to less than a complete revolution of said central casing with respect to said inner stem and limiting rotation to less than a complete revolution of said outer stem with respect to said central casing.

tion of said outer stem with respect to said central casing, an electrical conducting wire extending through said stem and said cylindrical casing and attached at one end to said lighting fixture and extending into and through said column and adapted to be connected to a source of current supply.

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