

April 19, 1932.

J. HANSEN

1,854,302

DENTAL LIGHTING FIXTURE

Filed May 2, 1931

2 Sheets-Sheet 1

Fig. 1.

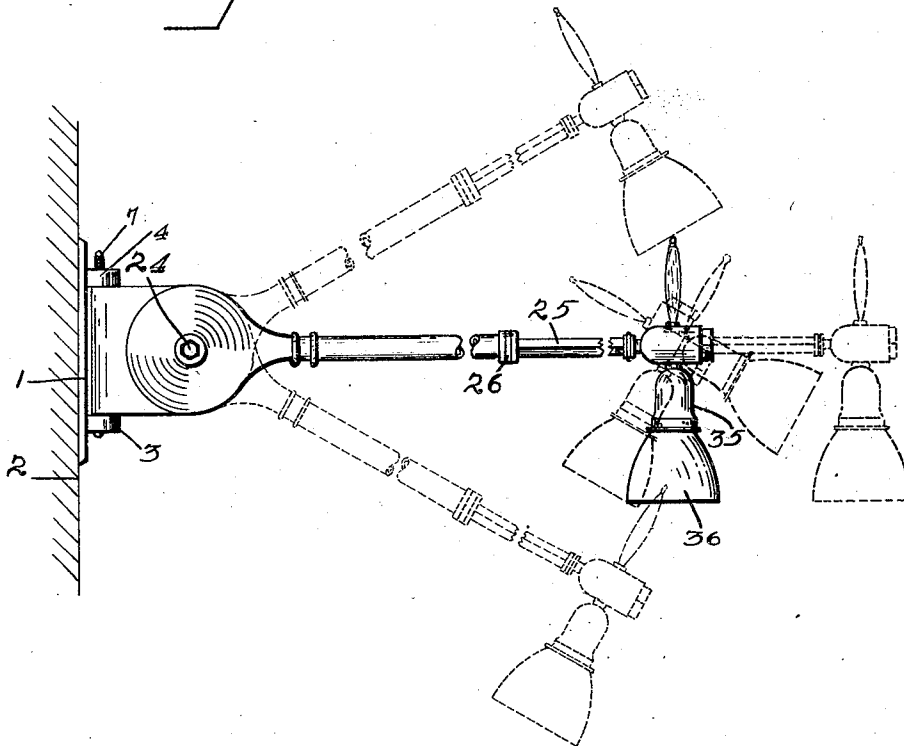
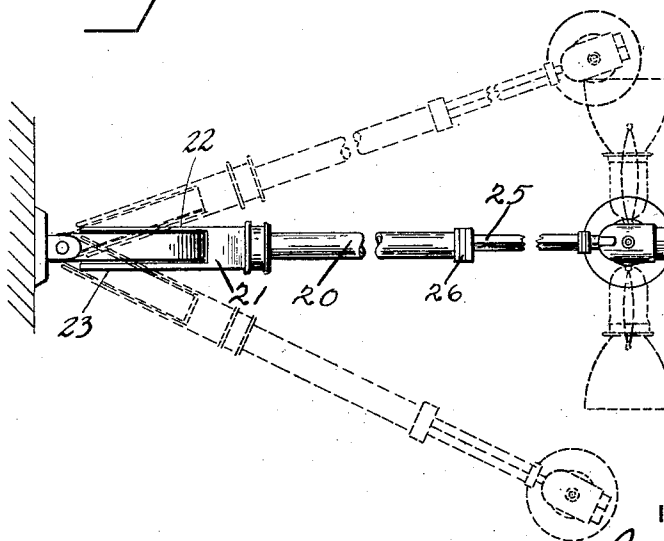


Fig. 2.



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Fig. 3.

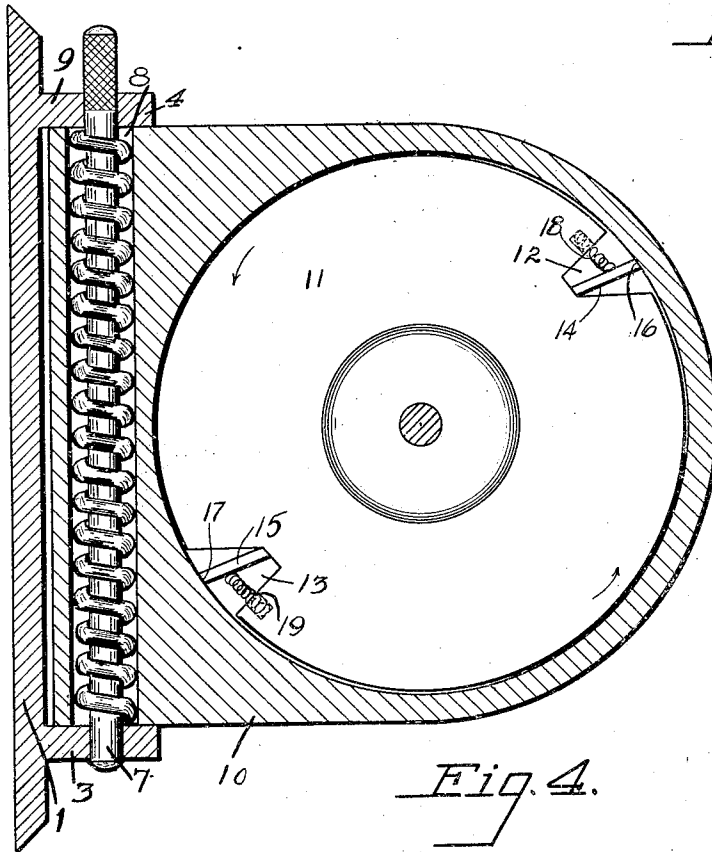
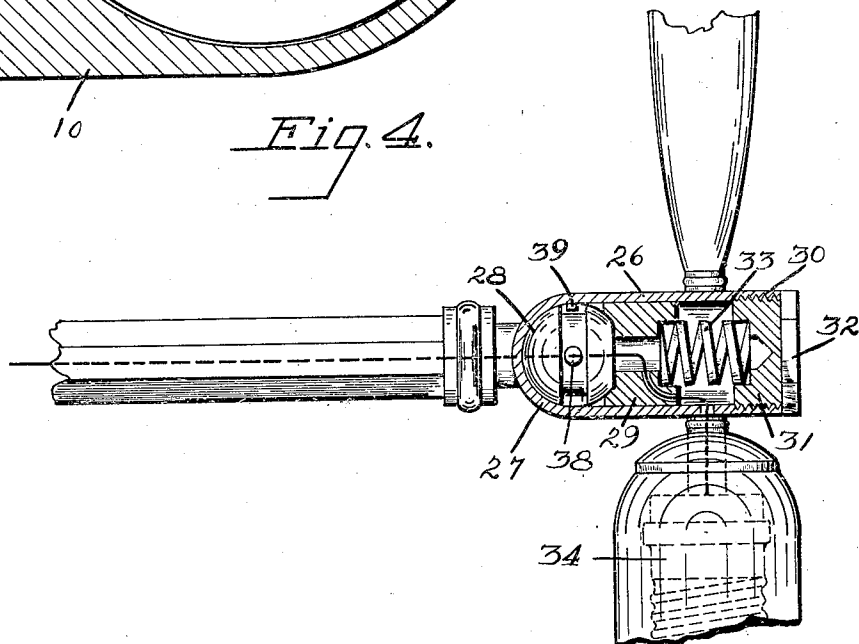


Fig. 4.



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DENTAL LIGHTING FIXTURE

Application filed May 2, 1931. Serial No. 534,526.

- My invention relates to a fixture which is primarily designed for use by dentists, although it will be obvious from the hereinafter contained design that it is not limited to such use. In dentistry it is frequently necessary for the operator to work on teeth in different locations of the patient's mouth and good light is essential in order to good work.
- 10 My invention has for its object to provide a device which can be swung into practically any position and which will remain in such position until manually moved therefrom.
- A further object is to provide for the longitudinal adjustment of said light without permitting the rotation thereof.
- 15 A further object is to provide automatic operative means to hold said light in any desired angular position.
- 20 A further object is to provide means to prevent a complete revolution of the light and thus avoid any possibility of twisting the electric wires and causing a short.
- My means of accomplishing the foregoing objects may be more readily understood by having reference to the accompanying drawings in which—
- Fig. 1 is a side elevation of my improved light, the various positions to which it may be moved, being indicated by dotted lines;
- Fig. 2 is a top or plan view of the same;
- Fig. 3 is an enlarged detail view of the base; and
- Fig. 4 is an enlarged detail view of the universal joint which carries the light.
- Similar reference numerals refer to similar parts throughout the entire description.
- As shown in the drawings, the device consists of a base 1 which is designed to be suitably attached to a wall 2 or other convenient support. This base 1 has two outwardly extending lugs 3 and 4. These lugs are provided with apertures 5 and 6 in which is mounted a pin 7 which passes through an opening 8 on the one side 9 of an annular member 10. A coil spring surrounds the pin 7 and exerts a pressure against the lugs 3 and 4. This coil spring fits so closely into the opening 8 that the expanding of the coils by its compression produces frictional engagement with the walls of the opening 8 so that while the annular member 10 may be swung on the pivot pin 7, as clearly seen in Fig. 2, there is sufficient friction to hold it in the position in which it is placed until manually moved to another. Inside the annular member 10 I mount a disc 11. This disc 11 has two diametrically opposite notches 12 and 13 formed in its periphery. In the notch 12 I locate a pawl or dog 14 and in the notch 13 I locate a similar dog 15, the outer edge 16 and 17 of each dog is shaped to conform to the curvature of the annular member. Coil springs 18 and 19 are provided to hold them normally in the position shown in Fig. 3. An arm 20, having a fork 21, the tines 22 and 23 of which comprise plates which straddle the disc and are attached thereto by a bolt 24, is formed of tubing thus providing convenient means to carry the electric wires to the lamp (not shown). Another arm 25 is telescopically mounted in the forked arm 20; a suitable frictional clutch 26 of standard construction being provided to hold it in the extended position as shown in Fig. 1 by the dotted lines. Obviously it can be extended or retracted as desired. Secured to the end of the telescopic arm 25 is a universal joint formed, as clearly seen in Fig. 4, of a sleeve 26, having a closed end 27 which forms part of a socket for a ball 28. This ball is formed with a central opening therethrough for the passage of the electric wires indicated by the heavy dotted line Fig. 4. A plug 29 is slidably mounted in the sleeve 26, its inner end being concave forming a socket for the ball 28. Threads 30 are cut on the end of the sleeve 26, preferably on its internal wall, and a threaded plug 31 having a hexagon head 32 is screwed into the threads 30 and provide convenient means for adjusting the tension of a coil spring 33 mounted intermediate the two plugs 29 and 31. It is apparent as the tension of the spring 33 is increased, that the friction upon the ball 28 will be increased and this can be so regulated that the joint, and in turn the lamp, can be held in any desired position. A standard electric socket 34 is suitably attached to the sleeve 26 and is enclosed in a canopy 35 which

carries a shade 36 designed to enclose the lamp (not shown).

If one were to rotate the universal joint completely around on its axis it is obvious
6 the wires would be twisted and danger of a short incurred. I prevent this by forming a groove 37 in the ball 28 and mounting a detent 38 in the groove which engages a stop
10 pin 39 fastened to the sleeve 26. Thus while the lamp may be freely swung about its axis it cannot go beyond the point where the detent 36 engages the pin 39.

Having described my invention what I regard as new and desire to secure by Letters
15 Patent of the United States, is:

1. In a device of the character described for electric lamps in which a lamp is supported at the outer end of a telescoping tube, the lamp socket being connected to the tube
20 by a universal joint, the tube being polygonal in cross section, and a forked arm in which said tube is slidably mounted, characterized by the fact that the fork on said arm is provided with plates adapted to engage a disk
25 mounted in an annular member, a base to which said annular member is pivotally secured, there being notches cut in the periphery of said disk, a spring pressed dog in each notch which engages the inner surface of said
30 annular member when the disk is rotated in one direction whereby said arm will be held in any position to which it is moved.

2. In a device of the character described for electric lamps in which a lamp is supported at the outer end of a telescoping tube,
35 the lamp socket being connected to the tube by a universal joint, the tube being polygonal in cross section, and a forked arm in which said tube is slidably mounted, characterized
40 by the fact that the fork on said arm is provided with plates adapted to engage a disk mounted in an annular member, a base to which said annular member is pivotally secured, a spring to cause frictional engagement
45 between the base and the annular member, there being notches cut in the periphery of said disk, a spring pressed dog in each notch which engages the inner surface of said annular member when the disk is rotated in one
50 direction whereby said arm will be held in any position to which it is moved.

3. In a device of the character described for electric lamps in which a lamp is supported at the outer end of a telescoping tube, the
55 lamp socket being connected to the tube by a universal joint, the tube being polygonal in cross section, and a forked arm in which said tube is slidably mounted, characterized by the fact that the fork on said arm is provided with plates adapted to frictionally engage a disk mounted in an annular member,
60 a base to which said annular member is pivotally secured, there being notches cut in the periphery of said disk, a spring pressed dog in each notch which engages the inner surface

of said annular member when the disk is rotated in one direction whereby said arm will be held in any position to which it is moved.

4. In a device of the character described
70 for electric lamps in which a lamp is supported at the outer end of a telescoping tube, the lamp socket being connected to the tube by a universal joint, the tube being polygonal in cross section, and a forked arm in which
75 said tube is slidably mounted, characterized by the fact that the fork on said arm is provided with plates adapted to engage a disk mounted in an annular member, a base to which said annular member is pivotally secured,
80 a lateral projection on said annular member, there being a vertical aperture in said projection, a coil spring in said aperture to cause frictional engagement between the base and the annular member, there being
85 notches cut in the periphery of said disk, a spring pressed dog in each notch which engages the inner surface of said annular member when the disk is rotated in one direction whereby said arm will be held in any position
90 to which it is moved.

5. In a device of the character described for electric lamps in which a lamp is supported at the outer end of a telescoping tube, the lamp socket being connected to the tube
95 by a universal joint, the tube being polygonal in cross section, and a forked arm in which said tube is slidably mounted, characterized by the fact that the fork on said arm is provided with plates adapted to engage a disk
100 mounted in an annular member, a base to which said annular member is pivotally secured, said disk being arranged to rotate freely in one direction, yieldable friction means mounted in the disk which resist its movement
105 in the opposite direction whereby said disk and arm will be held in any position to which it is moved.

6. An adjustable dental lighting fixture in which a lamp is supported at the outer end of
110 a telescoping tube, the tube being polygonal in cross section and slidable in a forked arm which is frictionally secured to a disk mounted in an annular member pivotally attached to a base, said disk having yieldable frictional
115 means which permit its rotation freely in one direction but resists its movement in the opposite direction, characterized by the fact that the lamp socket is connected to the tube by a universal joint comprising a sleeve closed
120 at one end to form a socket, a ball which fits said socket, a plug one end of which fits said ball slidably mounted in said sleeve, a plug threaded into the open end of said sleeve, a coil spring intermediate said plugs, whereby
125 screwing in said threaded plug will increase the friction between said ball and said socket, there being a central aperture through said ball for the passage of wires to the lamp, a handle on said sleeve by which it may be ro-
130

tated and means to prevent the complete rotation of said sleeve.

7. An adjustable dental lighting fixture in which a lamp is supported at the outer end of a telescoping tube, the tube being polygonal in cross section and slidable in a forked arm which is frictionally secured to a disk mounted in an annular member pivotally attached to a base, said disk having yieldable frictional means which permit its rotation freely in one direction but resists its movement in the opposite direction, characterized by the fact that the lamp socket is connected to the tube by a universal joint comprising a sleeve closed at one end to form a socket, a ball which fits said socket, a plug one end of which fits said ball slidably mounted in said sleeve, a plug threaded into the open end of said sleeve, a coil spring intermediate said plugs, whereby screwing in said threaded plug will increase the friction between said ball and said socket, there being a central aperture through said ball for the passage of wires to the lamp, a handle on said sleeve by which it may be rotated and means to prevent the complete rotation of said sleeve, said means comprising a peripheral groove formed in said ball, a pin in said groove, and a detent on said sleeve adapted to engage said pin.

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