Sept. 2, 1958 A. E. F. JOHNSON 2,850,622

ADJUSTABLE LAMP

Filed May 5, 1954 2 Sheets-Sheet 1

Fig. 1.

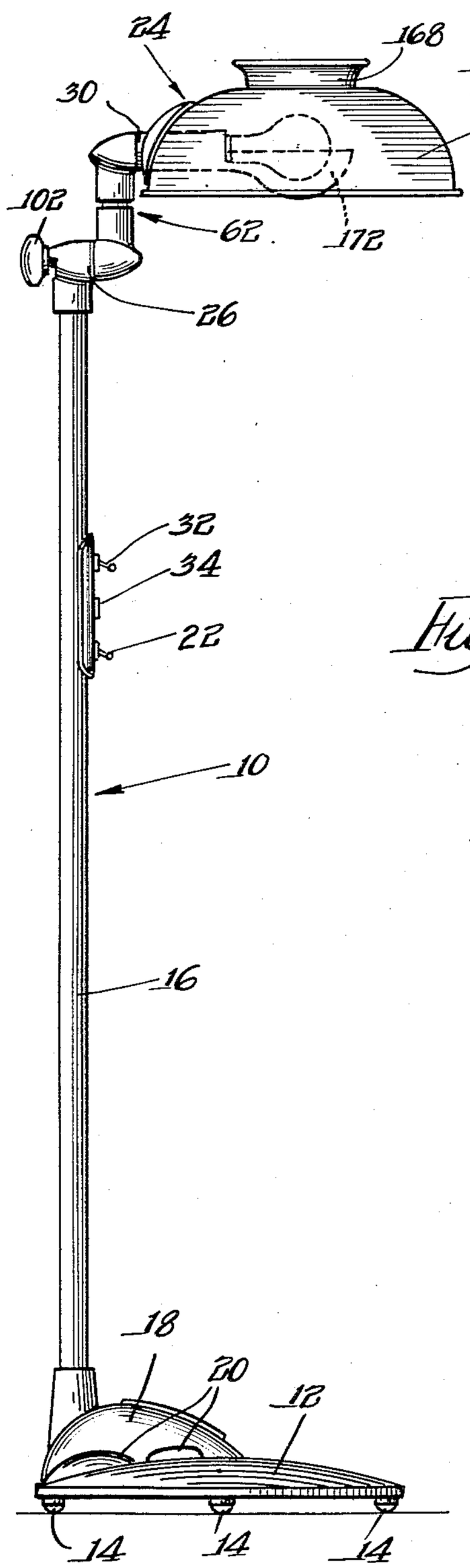


Fig. 2.

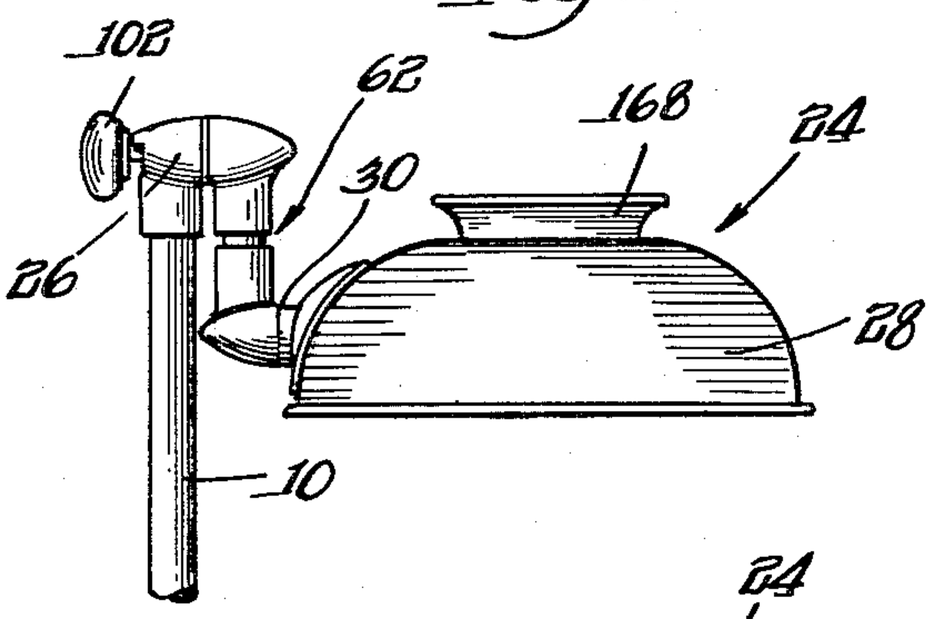


Fig. 3.

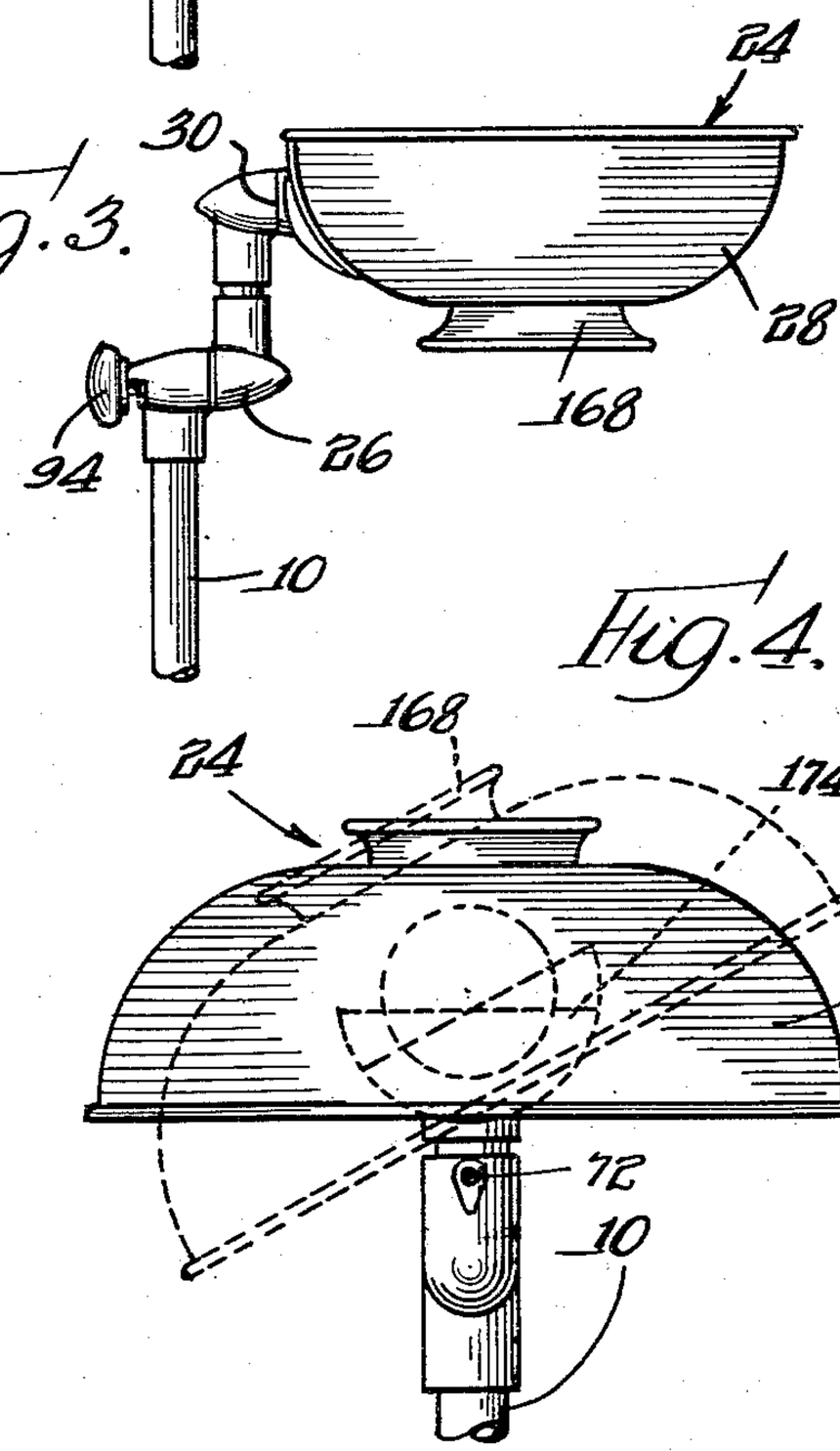
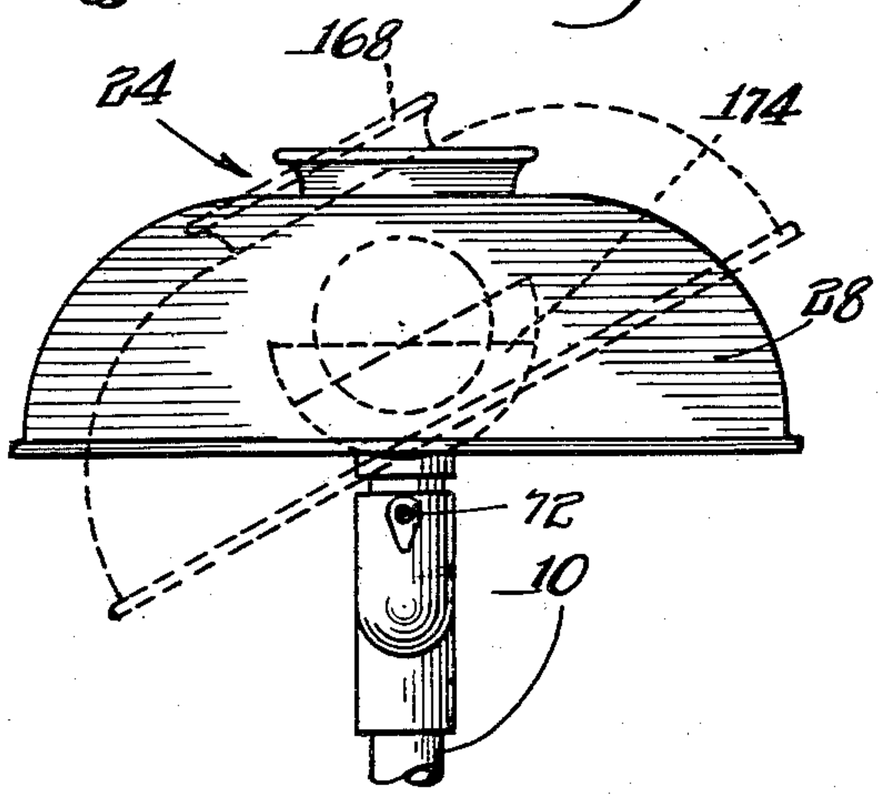


Fig. 4.



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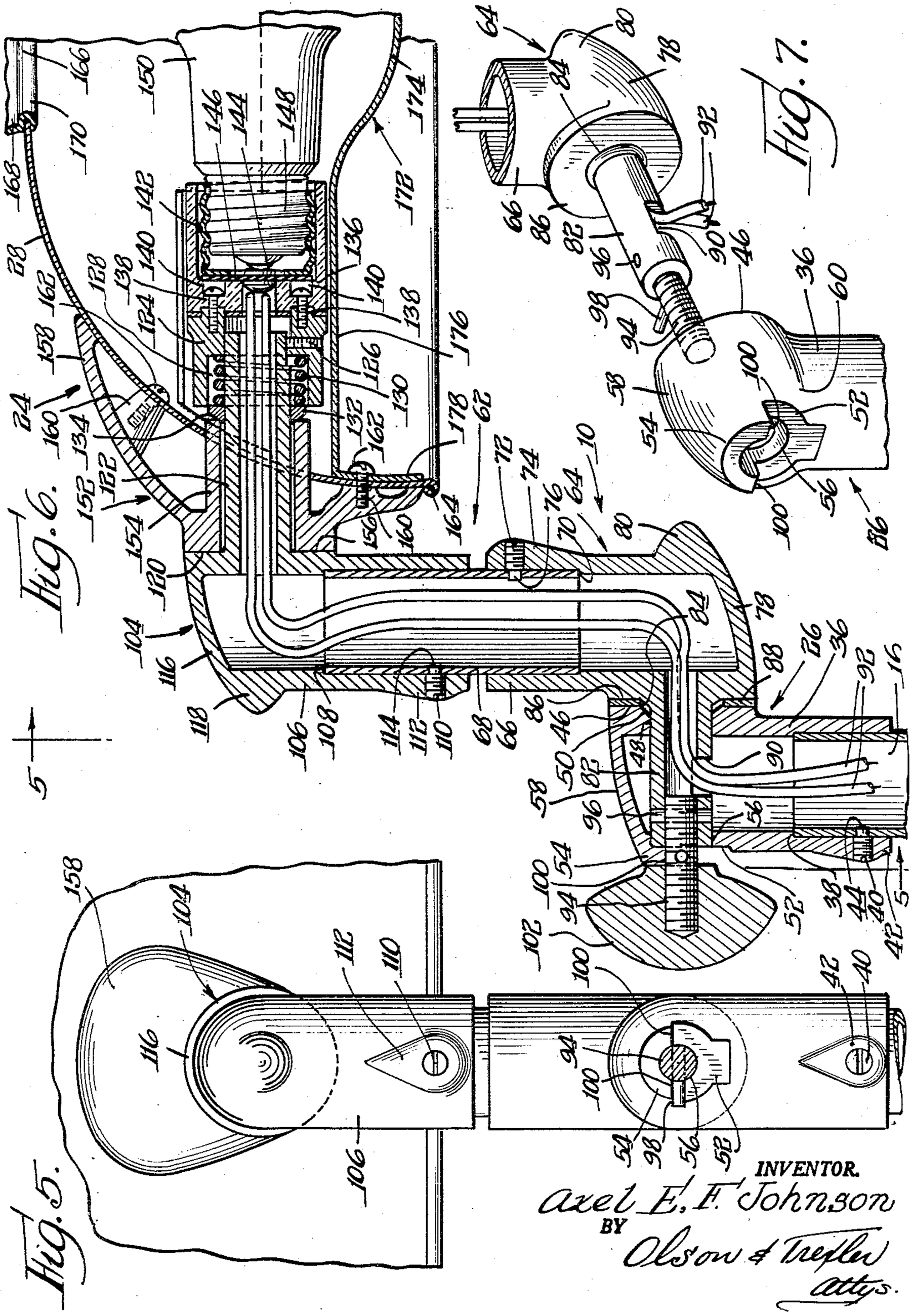

Fig. 6.

Fig. 7.

Fig. 5.

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ADJUSTABLE LAMP

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Application May 5, 1954, Serial No. 427,813

11 Claims. (Cl. 240—81)

This invention is concerned with a lamp, particularly with an adjustable lamp designed for hospital or similar bedside use.

Several characteristics are necessary or desirable in lamps designed for bedside use, particularly for use in hospitals with adjustable hospital beds. A general broad level illumination on the bed is necessary for reading in bed and for general observation of a patient. However, it is desirable that this broad level of illumination be confined more or less to the particular hospital bed with which the lamp is associated so that other patients in a room or ward will not be disturbed. Furthermore, a relatively small spot of light is necessary for certain diagnostic and observational purposes. This small spot of light must be capable of rather precise aiming. Furthermore, it will be appreciated that hospital beds are adjustable as to height, most particularly the upper end of the spring and mattress against which a patient's head and shoulders rest are adjustable up and down to attain various positions of comfort. It will be apparent that an ordinary reading lamp having a fixed light would not be satisfactory with a bed that is adjustable up and down, as the lamp would be too high part of the time, or too low part of the time, and would be of satisfactory height for only one position of adjustment of the bed.

Accordingly, it is an object of this invention to provide a hospital floor lamp of improved adjustability.

More particularly, it is an object of this invention to provide a hospital floor lamp having a head which is vertically adjustable for maintaining the light source at a proper height relative to an adjustable hospital bed.

A further object of this invention is to provide a vertically adjustable hospital lamp wherein such vertical adjustment does not upset the balance of the lamp.

Yet another object of this invention is to provide a vertically adjustable hospital lamp wherein the lamp can be locked in any position of vertical adjustment.

A further object of this invention is to provide a hospital floor lamp wherein the head of the lamp is vertically adjustable by a swinging movement.

Yet another object of this invention is to provide a hospital floor lamp wherein the height of the head is adjustable by a swinging movement and wherein the direction in which the light is directed from the head is independent of such swinging movement.

Other and further objects and advantages of the present invention will be apparent from the following description when taken in connection with the accompanying drawings wherein:

Fig. 1 is a side elevational view of a lamp constructed in accordance with the principles of my invention.

Fig. 2 is a side elevational view of the top portion of the lamp showing the lamp in another position of adjustment;

Fig. 3 is a similar view showing yet another position of adjustment;

Fig. 4 is a front elevation of the top portion of the lamp taken at right angles to Figs. 1–3;

Fig. 5 is a rear view of the top portion of the lamp taken substantially along the line 5—5 of Fig. 6;

Fig. 6 is a vertical sectional view through the center of the top portion of the lamp; and

Fig. 7 is an exploded perspective view of the adjusting portions of the lamp.

Referring first to Fig. 1, there will be seen a lamp generally designated as numeral 10. This lamp includes a weighted base 12 having feet 14 of rubber or the like for resting on a floor. A lamp standard 16 of substantial height upstands from the base adjacent one edge thereof so that the base and center of gravity of the lamp can be placed beneath a bed with the standard positioned immediately adjacent the bed. A housing 18 is provided on the base 12 having light transmitting openings 20 in the sides thereof. A light bulb is placed within the housing 18 and is energized under the control of a switch 22 on the standard 16 so that the lamp readily may be located in the dark, and yet will have no light thrown up into a patient's eyes.

A lamp head generally designated by the numeral 24 is provided at the top of the standard 16 and comprises a swivelly adjustable connection 26 forming the subject matter of this invention, and shortly to be set forth in detail. The lamp head 24 also includes a shade or reflector 28 which is provided with a rotatable mounting 30 as also will be set forth in detail shortly. A switch 32 is provided on the lamp standard 16 immediately above the switch 22 for controlling a light bulb housed in the shade or reflector 28. A socket or receptacle 34 is provided intermediate the switches 22 and 32 for attachment of an electrical appliance such as a radio or clock.

Turning now to Figs. 5–7, the swivel adjustment 26 will be seen to comprise a substantially cylindrical base 36 mounted on top of the lamp standard 16. The substantially cylindrical base 36 is hollow, and is provided with a pair of bores of slightly different diameters providing a shoulder 38 limiting movement of the base onto the standard 16. A set screw 40 is threaded through an enlargement 42 on the side of the base 36 and has an unthreaded tip 44 projecting into a complementary aperture in the lamp standard 16 positively to lock the base 36 on the lamp standard.

The upper portion of the base is provided with a flat face 46, and a cylindrical bore 48 communicates with the interior of the base and is arranged prependicular to this face. It will be observed that the bore 48 is chamfered into the face 46 as indicated at 50. The opposite side of the base from the face 46 also is provided with a flat face section 52. The flat face section 52 is substantially semi-circular in extent, and a projection 54 extends outwardly over this flat face. A bore 56 is provided in the rear of the face communicating with the face 52, and forms a continuation of the bore 48. The exterior of the top portion of the base preferably is paraboloidal in form as indicated at 58, and fairs into the cylindrical portion of the base as at 60, thus providing a neat appearance while serving its function as is now being brought out.

An arm 62 is swivelly carried by the base 36 and supports the head 28. The arm 62 includes an elbow 64 which is generally similar in configuration to the base 36, including a cylindrical portion 66 receiving a tube 68. The tube seats against a shoulder 70, and is locked in place by a set screw 72 threaded through an enlargement 74 and having a tip 76 projecting into a complementary aperture in the tube.

The elbow, in addition to the cylindrical portion 66, includes a transversely arranged paraboloidal portion 78 having a protuberance 80 at its rear end, and having a hollow stud 82 projecting from its front end. The stud is beveled or chamfered at 84 into a flat face 86, and the stud is rotatably journaled in the bores 48 and 56. A friction washer 88 is trapped between the flat face 86 of the elbow and the opposed flat face 46 of the base.

The hollow stud 82 is provided with a transverse open-

ing 90 for accommodating the electric wires 92 leading to the light source as hereinafter will be set forth. A solid, threaded stud 94 is threaded into the outer end of the stud 82 and projects axially therefrom, being locked in place by a transverse pin or dowel 96. A limiting pin 98 extends radially from the stud 94 in only one direction and rides against the flat face 52 and beneath the projection 54 to limit the elbow 64 and arm 62 to 180° rotary motion, the pin abutting the shoulders 100 formed between the projection 54 and the flat face 52. These shoulders thus act as positive stops limiting rotary motion of the arm and elbow. In Fig. 7 the transverse pin 98 has been shown in place in the stud 94, but it will be appreciated that this transverse pin is not actually assembled with the stud until the stud has been assembled with the hollow stud 82 and the two studs have been assembled in the bores 48 and 56.

A knob 102 is threaded onto the stud 94 and abuts the end of the projection 54. When this knob is threaded tightly onto the stud, it pulls the elbow 64 toward the base 36 to clamp the friction washer 88 between the flat faces 46 and 86, and thereby to lock the elbow 64 and arm 62 relative to the base 36 and the lamp standard 16. Reverse threading of the knob 102 to loosen the same on the stud 94 releases the pressure on the friction washer 88 and allows the arm 62 and elbow 64 to be swiveled to 180° as limited by the pin 98 and stops 100.

An L-shaped member 104 generally similar to the elbow 64 is mounted on top of the tube 68 and comprises a cylindrical portion 106 fitting on top of the tube and having a shoulder 108 abutting the top edge of the tube. A set screw 110 threaded through an enlargement 112 on the side of the cylindrical portion has a tip 114 projecting through a complementary hole in the side of the tube 68 positively to lock the L-shaped member on the tube. The L-shaped member is provided with a paraboloidal portion 116 at right angles to the cylindrical portion and providing a protuberance 118. The front of the paraboloidal portion is provided with a flat face 120, and a hollow stud 122 projects therefrom.

Socket holder 124 is held on the end of the stud 122 by means such as a set screw 126 and is provided with a counterbore 128 which receives a coil spring 130. This spring is compressed against a washer 132 having a bevelled edge 134 forced against the end of the hollow stud for frictionally locking the shade or reflector 28 and simultaneously for centering the shade or reflector.

A socket 136 of porcelain or other suitable insulating material is held to the socket holder 124 by a pair of screws 138 received in countersunk bores in the socket and threaded into suitable tapped apertures in the socket holder 124. The socket incorporates a screw threaded metal shell 142 in accordance with conventional practice, and one of the wires 92 leads to this shell. A central contact button 144 is mounted on an insulating plate 146 arranged across the open inner end of the screw threaded shell 142, and the other wire 92 is connected to this button. The screw base 148 of an ordinary light bulb 150 is threaded into the screw shell of the socket as readily will be apparent.

A shade holder 152 rotatably mounts the shade or reflector 28 on the L-shaped member 104 and comprises a cylindrical portion 154 rotatably fitting about the hollow stud 122. The outer end of the cylindrical member 154 abuts the beveled face 134 of the ring 132, and a flat face 156 on the shade holder frictionally abuts the flat face 120 of the L-shaped member. The spring 130 wedges the ring 132 against the cylinder 154 and frictionally forces the faces 156 and 120 together, thus to hold the shade holder in frictionally adjustable position. The shade holder further includes an integral shell 158 having internal bosses 160 receiving screws 162 which extend

through the sheet material of the shade or reflector 28 to mount the shade or reflector on the holder 152. The shade or reflector thus is rotatable with the holder about the hollow stud 122.

The lamp shade or reflector 28 is of dished out configuration, preferably being of sheet metal having a rolled outer edge 164 for strength and rigidity. The top of the shade or reflector is aligned with the light bulb 150 and is provided with an opening 166. An outwardly flared spot shade 168 is secured in this opening or aperture by means of a flared-over rim 170 gripping the sheet metal 28 of the reflector. An auxiliary reflector 172 is mounted on the inside of the shade or reflector 28 and comprises a reflecting portion 174 of cup-like configuration aligned with the spot shade 168 for reflecting light from the bulb 150 directly through the opening 166. The auxiliary shade or reflector 172 further includes a split cylindrical section 176 encircling the socket 136 and socket holder 124. An outwardly directed edge or flange 178 on the cylindrical section is held against the inner face of the shade or reflector 28 by some of the mounting screws 162.

Operation of the lamp and adjustment thereof will best be understood from Figs. 1–4. As shown in Fig. 1, the arm 62 may extend upwardly to hold the lamp head 24 at a relatively high elevation, and the open side of the shade or reflector 28 may be directed downwardly for a broad, diffused light source. When the lamp is to be used with a lower bed, then the knob 102 is loosened, and the arm 62 is swivelly adjusted up to 180° (the extreme position being shown in Fig. 2) to lower the lamp head. The knob 102 then is tightened to lock the head in lower position. Additionally, the lamp shade 28 may be rotated about its mounting, such as from the position shown in Fig. 1 to the inverted position shown in Fig. 3. In this position, a spot of light is projected downwardly from the lamp head. Fig. 4 indicates this rotary adjustment of the lamp shade about its mounting, and it will be understood that this rotatable adjustment may extend to 360° or more.

From the foregoing it will be apparent that the height of the lamp head can be adjusted readily through a substantial range, and the direction in which the light is aimed likewise may be varied considerably.

The lamp shade and associated parts at all times substantially overlie the base 12 so that there is no chance of tipping over the lamp. The lamp base can be positioned beneath the edge of the bed so that the light from the lamp is directed directly onto the bed. The swiveling vertical adjustment of the elevation of the lamp shade is readily accomplished, and the lamp shade and associated parts are locked in adjusted position against accidental movement. Adjustment of the shade about its mounting for obtaining a broad diffused light, or a spot-light effect is easily done with little likelihood of annoying other patients. In fact, the arrangement of parts of the lamp is such that all adjustment is in a plane parallel to the length of the bed. Thus, no light will be thrown transversely of the bed to annoy an adjoining patient when the hospital beds are conventionally arranged side by side in a room or ward.

It will be understood that the specific embodiment of the invention herein shown and described is by way of illustration only. Various structural changes will no doubt occur to those skilled in the art and will be understood as forming a part of this invention insofar as they fall within the spirit and scope of the appended claims.

I claim:

1. A lamp comprising a base, an upstanding standard on said base, a lamp head including a light source and shade, an elongated arm, means mounting said elongated arm on said upstanding standard for angular adjustment relative to said standard in a plane substantially parallel to the longitudinal axis of said standard, and means supporting said lamp head from said arm for angular adjust-

ment relative to said arm about an axis perpendicular to said arm, said lamp head lying to one side of said arm in the direction of said axis, angular adjustment of said arm thereby varying the height of said lamp head.

2. A lamp comprising a base, a standard upstanding from said base and fixed relative thereto, a lamp head including a light source and shade, an arm, means mounting said arm on said upstanding standard for angular adjustment relative thereto about an axis perpendicular to said standard, and means adjustably supporting said lamp head from said arm to one side of said arm and including means for angularly adjusting the shade relative to said arm, angular adjustment of said arm thereby varying the height of said lamp head.

3. A lamp comprising a base, an upstanding standard on said base, a lamp head including a light source and shade, an arm, means mounting said arm on said standard for angular adjustment about an axis forming an angle other than a straight angle with said standard, said adjustment being through substantially 180° relative to said standard between up and down positions parallel to said standard, said arm being angularly adjustable to and from the plane containing said standard and said arm in up and down positions, and means supporting said lamp head from said arm to one side thereof for angular adjustment relative to said arm.

4. A lamp comprising a base, a standard upstanding from said base and fixed relative thereto, a lamp head including a light source and shade, an arm, means mounting said arm on said upstanding standard for angular adjustment about an axis substantially transverse of said standard through substantially 180° relative to said standard between raised and lowered positions parallel to said standard, said arm being rotatably adjustable in and out of the plane containing said standard and said arm when in either of said two positions, and means adjustably supporting said lamp head to one side of said arm from said arm for angular adjustment of said shade relative to said arm about an axis substantially transverse of said arm.

5. A floor lamp comprising a base, a standard of substantial height upstanding from one side of said base whereby said base can be positioned beneath a bed with the standard extending up beyond the edge of the bed, a lamp head including a light source and shade, an arm, means adjustably mounting said lamp head to one side of said arm for angular adjustment of said shade relative to said arm about an axis angularly arranged relative to said arm at an angle other than a straight angle, and means mounting said arm on said standard for movement angularly about an axis forming an angle other than a straight angle with said standard to and from a plane containing said standard and the center of said base whereby to vary the height of said lamp head while maintaining said lamp head over a bed at all times.

6. A lamp comprising a base, an upstanding standard on said base, a lamp head including a light source, an arm, means including a pivot having an axis substantially transverse of said arm for adjustably supporting said lamp head from said arm to one side thereof, bearing means in said standard having an axis substantially transverse of said standard and stud means on said arm interfitting with said bearing means for pivotally supporting said arm from said stand, friction means, and means for clamping said friction means between said arm and said standard for locking said arm in adjusted position.

7. A floor lamp comprising a base, a standard upstanding from said base adjacent one edge thereof whereby said base may be placed beneath a bed with the standard extending upwardly beyond the edge of said bed, a lamp head including a light source and shade, an arm carrying said lamp head for angular adjustment of said shade to one side of said arm about an axis substantially transverse of said arm, means mounting said arm on said upstanding standard for angular adjustment relative thereto in a plane perpendicular to the plane containing said standard and the center of said base whereby the height of said lamp head can be adjusted for maintaining said head at all times above said bed, friction means, and means for utilizing said friction means to lock said arm in adjusted position.

8. A lamp comprising a base, a standard on said base, a lamp head including a light source and shade, an elongated arm, means mounting said lamp head adjustably from said arm to one side thereof for rotation of said shade about an axis transverse of the arm, cooperating means on said arm and on said standard mounting said arm on said standard for angular adjustment relative thereto about an axis transverse of the standard, friction means adjacent said cooperating means, opposed clamping faces on said arm and said standard on opposite sides of said friction means, and means for forcing said clamping faces toward one another to clamp against said friction means for locking said arm in adjusted position relative to said standard.

9. A lamp comprising a base, a standard on said base, a lamp head including a light source and shade, an arm, means for adjustably supporting said lamp head from said arm to one side thereof, resilient means holding said head in adjusted position relative to said arm, cooperating stud and bearing means on said arm and standard and perpendicular to both said arm and standard for mounting said arm on said standard for angular adjustment relative thereto, said arm and standard having cooperating clamping faces adjacent said stud and bearing, friction means mounted between said clamping faces, and means including a knob threaded on said stud for forcing said clamping faces relatively toward one another to clamp said friction means between them and thereby to lock said arm in adjusted position relative to said standard.

10. A lamp comprising a base, a standard on said base, a lamp head including a light source and shade, an arm, a stud projecting transversely from one end of said arm, means at the other end of said arm adjustably supporting said lamp head, a hollow housing at the end of said standard opposite to said base, said hollow housing having a transverse bore therethrough and swivelly receiving said stud, a projection on said stud extending substantially radially thereof, stop means on said housing engageable with said stud and limiting angular movement of said arm relative to said standard to a predetermined angle, a friction washer surrounding said stud and positioned between said housing and said arm, said housing and said arm having flat faces opposing said friction washer, and a rotary member threadedly engaged with said stud for pulling said stud into said bore to clamp said friction washer between said flat faces and thereby to lock said arm in adjusted position relative to said housing and said standard.

11. A lamp as set forth in claim 10 wherein the arm includes a hollow tube and a housing similar to the housing on the end of said standard, said stud projecting transversely from said housing and including a hollow portion for accommodating electric wires, said stud further including a solid portion threaded into said hollow portion and held against retraction by a cross pin.

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