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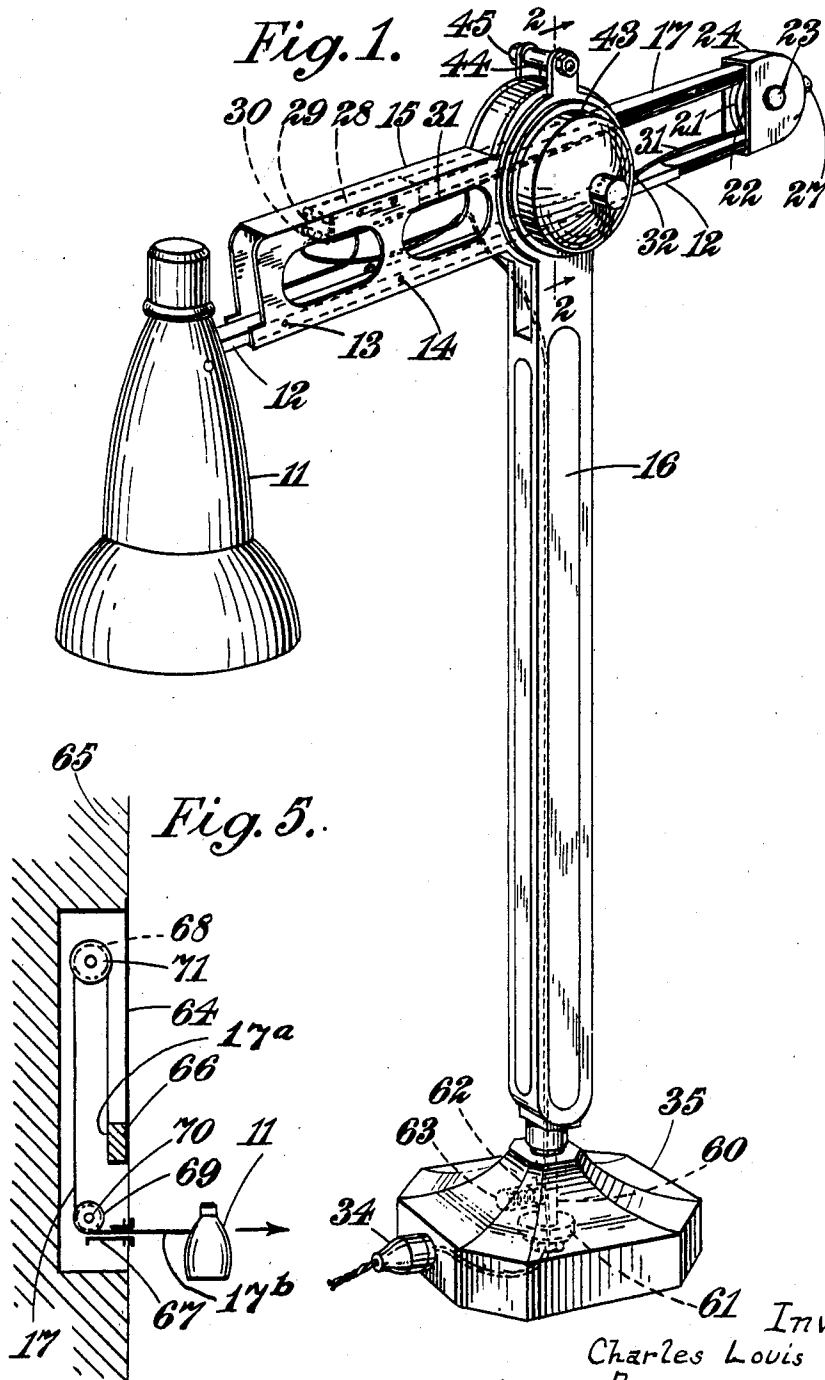
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ADJUSTABLE LAMP BRACKET AND THE LIKE

Filed April 21, 1942

2 Sheets-Sheet 1



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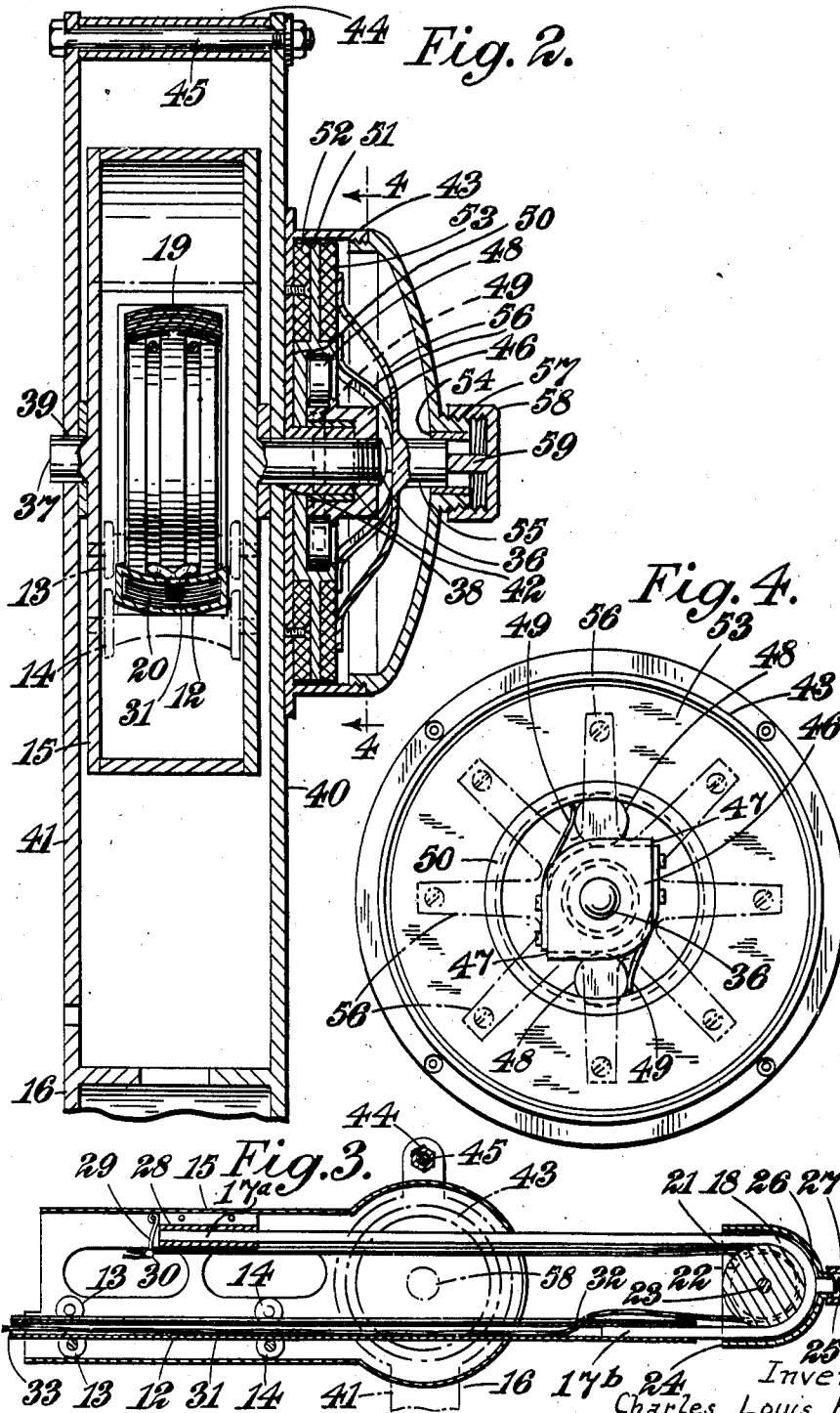
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ADJUSTABLE LAMP BRACKET AND THE LIKE

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This invention relates to adjustable brackets and while particularly applicable to lamp brackets is also applicable to brackets for carrying other articles.

The object of the invention is to provide an improved form of extensible bracket for a lamp or other article whereby a large range of extension may be obtained by a simple form of construction.

The invention consists in an extensible bracket for lamps and other articles wherein the extensible part of the bracket comprises a flexible strip of concave-convex section of which one end portion is guided and is used to carry the article or is connected to a guided member which carries the article, while the other end portion is fixed, having one or more bends formed intermediately between its end portions the arrangement being such that when the part of the strip or the guided member carrying the article is moved inwards or outwards the bend or bends change their position or float to and fro on the strip.

The invention further consists in the improved lamp brackets to be hereinafter described.

Referring now to the accompanying drawings—

Figure 1 illustrates in perspective an elevation of a table lamp stand constructed according to the invention.

Figure 2 shows a cross-section on the line II—II in Figure 1.

Figure 3 shows a sectional elevation of the flexible strip and its guides illustrated in Figure 1.

Figure 4 shows a detail view of the clutch illustrated in Figure 2.

Figure 5 shows a diagrammatic view of a wall bracket lamp.

In carrying the invention into effect according to one form and as applied by way of example to a table lamp stand, the lamp 11, Figure 1, is jointed preferably by means of an universal joint, not shown, to the outer end of a tubular slide bar 12. The slide bar 12 is slidably mounted on two sets of rollers 13 and 14 spaced apart from each other, Figures 2 and 3, which are fitted to a pivoted arm 15 constituting a support for the flexible strip referred to hereinafter. The arm 15 is of box-section and is pivotally mounted on the column 16 of the lamp stand in a manner to be hereinafter described.

To the inner end of the slide bar 12 is rigidly attached one end 17b of a flexible strip 17, Figure 3. The strip 17 is of laminated form, in the present example, the laminae being of steel and of concave-convex section similar to that of flex-

ible steel measuring tapes which when unwound from their coiled condition straighten and become rigid. The strip 17 is in the form of a U-bend 18 turned on its side, the limbs of the U being substantially parallel. The upper face 19 of the upper length of strip 17 is convex, while the upper face 20 of the lower length is concave. The laminae are of graduated lengths in order to provide for their varying radii on passing round the bend 18, the innermost lamina being the shortest and the outermost lamina the longest.

In the bend 18 of the strip 17 is arranged a roller 21 of cylindrical shape, and on the periphery of this roller are formed two circumferentially-extending grooves 22 for the accommodation of the leads for the lamp 11 to be hereinafter described. The spindle 23 of the roller 21 is rotatably mounted in a casing 24, and in conjunction with this casing a spring-plunger 25 is arranged and carries at its inner end a curved shoe 26 which contacts with the outer surface of the outermost laminae of the strip 17 so that the resulting frictional resistance acts as a brake on the movement of the strip. The amount of this resistance may be regulated by means of the screwed cap 27 of the plunger 25. The weight of the casing 24 is carried by the strip 17, the casing being otherwise unsupported. The casing 24 is arranged to slide into and out of the arm 15 as the slide bar 12 is moved outwards and inwards in the vicinity of its extreme outward position. In its innermost position the casing 24 abuts against a socket 28 on the arm 15, and the end 17b of the strip then projects from the said arm.

The end 17a (Fig. 3) of the upper length of the strip 17 is clamped in the socket 28, Figure 3, which is fixed to the arm 15. On the socket 28 there is mounted a spring arm 29 which carries at its free end a clamp 30 for the flexible leads 31 of the lamp 11. The leads 31 pass from the arm 29 in one direction round the grooves 22 in the roller 21 and thence through a hole 32 into the slide bar 12. After passing through the hole 32 the leads 31 are led through the open outer end 33 of the slide bar to the lamp 11. From the arm 29 the leads 31 pass in the other direction into the interior of the column 16 to a plug socket 34 in the base 35 of the lamp stand. The leads 31 are placed under a certain amount of tension by the spring arm 29 so as to prevent kinks forming in them. There is no relative movement between the leads 31 and the strip 17 or the slide bar 12.

The arm 15 is provided with pivot pins 36 and 37, Figure 2, on its opposite sides and these pins are mounted in bearings 38 and 39 in the side plates 40 and 41 of the column 16. The pivot pin 36 is longer than the pivot pin 37, and in addition to being mounted on the bearing 38 is also mounted in the bearing 42 formed in a hub 43 which is attached to the side plates 40. The plates 40 and 41 are spaced apart by the distance piece 44 and connected by a bolt 45 passing through the distance piece.

The pivot pin 36 carries a cam 46 rigidly attached to its outer end, the cam being shaped as illustrated in Figure 4. The cam 46 is formed with side flanges 47 for retaining in position the rollers 48 associated therewith. Springs 49 attached to the cam 46 maintain the rollers 48 in contact with the inner periphery of the ring 50 and with the cam. The ring 50 is formed with a flange 51 and is rotatably mounted on the bearing 42 for the pivot pin 36 on the hub 43. The flange 51 is in contact with washers 52 and 53 of frictional material, the washer 52 being attached to the hub 43. The cover of the hub 43 has a bearing 54 in which the boss 55 of a spider spring 56 is mounted. The bearing 54 has an external screw thread 57 and with this screw thread engages a screwed cap 58 provided with a central stud 59 which contacts with the boss 55 of the spider spring 56. By manipulating the screwed cap 58 the tension of the spider spring and consequently the frictional resistance acting on the flange 51 of the ring 50 may be varied as desired.

The column 16 may be formed of pressings provided with flanges and secured together by any suitable means. The lower end of the column 16 is formed with a vertical pivot pin 60 which is rotatable in a vertical bearing 61 formed in the base 35 of the stand. One or more spring-mounted balls 62 engage with recesses 63 in the pivot pin 60 so that the column 16 may be resiliently locked in a number of positions.

The tension of the spring-plunger 25 is adjusted so that the friction between the shoe 26 and the strip 17 is sufficient to prevent the weight of the lamp 11 and slide bar 12 from moving under gravity when the arm 15 is inclined to the column 16, while the spider spring 56 is adjusted so that the friction between the washers 52 and 53 and the flange 51 of the ring 50 is sufficient to prevent the weight of the lamp 11 and slide bar 12 when in the fully extended position from causing rotation of the arm 15 on its pivot 36 and 37.

When the slide bar 12 is pulled outwards from the arm 15 the roller 21 is rotated and moves inwards towards the arm 15 so that the lower length of the strip 17 progressively increases while the upper length thereof progressively decreases. When the slide bar 12, on the other hand, is pushed inwards the roller 21 is rotated in the opposite direction to that in which it previously rotated and moves outwards from the arm 15 so that the lower length of the strip 17 progressively decreases while the upper length progressively increases. The bend in the strip 17 thus changes its position or floats on the strip as the slide bar 12 is moved inwards or outwards. The movement of the slide bar 12 is twice that of the distance moved by the centre of the roller 21.

The clutch comprising the cam 46, rollers 48 and the ring 50 is of the free wheel type and prevents the weight of the lamp 11 and its associated parts, when the slide bar 12 is fully extended, from dropping under gravity, since the

rollers 48 ride on the straight portions of the cam 46 and are jammed between the cam and the inner periphery of the ring 50, which is thus held by the friction between the flange 51 of the ring 50 and the friction washers 52 and 53. Downward movements of the arm 15, however, may be made by applying a force to the arm 15 to overcome the frictional resistance between the flange 51 of the ring 50 and the washers 52 and 53. Upward movements of the arm 15 may, however, be easily made as in this case the rollers 48 ride on the curved portions of the periphery of the cam 46 and on cessation of the movement the springs 49 force the rollers 48 into the jamming position and hold the arm 15 in the position in which it has been set.

Instead of the clutch above described, the drive between the pivot pin 36 and the ring 50 may be effected by a ratchet wheel and pawl arranged so that the pawl slides over the teeth of the ratchet wheel on upward movement of the arm 15 while on downward movement of this arm the pawl engages with the teeth of the ratchet wheel and the frictional resistance of the washers has to be overcome. The ratchet wheel in this case may be fixed to the ring 50 and the pawl co-acting therewith is fixed to the pin of a crank attached to the pivot 36.

In Figure 5 the application of the invention to a wall bracket lamp is diagrammatically illustrated. In this figure a laminated strip 17 constructed as above described, is arranged in a casing 64 inserted in the wall 65 of a room. One end of the strip 17 is fixed to the bar 66 of the casing 64 while its other end may be attached to a slide bar mounted in a guide 67 or it may project itself through the guide. The strip 17 has a U-shaped bend 68 and in addition makes a right-angled bend round the roller 69 of which the spindle 70 is rotatably mounted in the casing 64. The lamp 11 in this case may be carried on the outer end of a slide bar or it may be carried on the strip itself. A roller and casing in this case is arranged in the bend 68 similar to the roller 21 and casing 24 of Fig. 1.

The laminae of the strip 17 are assembled together but are not attached to one another. They may, if necessary, be prevented from separating by pins arranged at intervals along the length of the strip, the holes through which the pins pass being progressively enlarged or elongated from the innermost lamina to the outermost lamina so as to provide for relative movement of the laminae on passing round the bend.

Further, instead of a laminated strip being used, a single flexible strip may be employed. The strips may be of curved section of uniform thickness instead of concave-convex section as above described or they may be of any other suitable section.

The number of laminae in the strip may be varied as required.

Again, the strips may be of metallic material other than steel or they may be of any suitable non-metallic material such as Celluloid.

The strip instead of being formed with a single bend as above described may be formed with two or more such bends.

The bends may in some cases be provided with guide rollers alone the casings therefore being dispensed with, or the guide rollers and the casings may both be dispensed with so that the bends are unprovided with guides.

The column of the table lamp stand in addition to being rotatable on the stand about an

upwardly extending axis may also be hingedly mounted thereon to turn about an axis extending transversely to the column.

The electric lamp leads may, if desired, be enclosed in a flexible rubber moulding which is attached to the strip by pins or clips, or if a laminated strip is used the moulding may be inserted between any two adjacent laminae.

Although the invention has been described by way of example as applied to extensible brackets for lamps, its use is not limited to this application as it may be applied to extensible brackets for articles other than lamps.

I claim:

1. An extensible bracket for a lamp or other article comprising a support, a flexible strip of concave-convex section fixed at one end to the support, the other end being free to slide over a bearing surface carried by the support and to project therefrom to constitute a bracket-arm, said strip being doubled into at least one bend intermediately between its ends so that said bracket-arm may be slid in and out over the bearing surface while the bend floats along the strip, and means on said other end for attachment of said lamp or other article.

2. An extensible bracket as claimed in claim 1 wherein the two parts of the strip which are joined by the bend are substantially parallel with one another.

3. An extensible bracket as claimed in claim 1 wherein the strip is composed of several laminations.

4. An extensible bracket as claimed in claim 1 wherein the bend is provided with a guide roller located inside the same.

5. An extensible bracket as claimed in claim 1 wherein a guide roller is provided at the bend inside the same and the guide roller and bend of the strip are enclosed in a casing provided with friction-applying means for the strip.

6. An extensible bracket as claimed in claim 1 to constitute a lamp stand wherein the bracket-arm portion of the strip carries a lamp fitting at the end thereof and an electrical flexible conductor extends along the strip from the lamp fitting to the fixed end thereof, around the bend.

7. An extensible lamp bracket comprising a hub, a support pivotally mounted therein, a flexible strip or concave-convex section fixed at one end to the support, the other end being free to slide over a bearing surface carried by the sup-

port and to project therefrom to constitute a bracket-arm, the said strip being doubled into at least one bend intermediately between its ends, a lamp fitting on the end of said bracket-arm, electric conductors extending along said strip and round the bend from the lamp fitting to the fixed end of the strip and means between the hub and the support for resisting rotatable movement of the bracket-arm, due to gravity, when the bracket-arm is extended.

8. A lamp bracket as claimed in claim 7 wherein the bend of the flexible strip encloses a guide roller and the flexible conductor passes around the guide roller within the bend.

9. A lamp bracket as claimed in claim 7 wherein the bend of the flexible member encloses a roller, a flexible conductor is passed around the roller within the bend, and the roller and bend are enclosed within a casing fitted with friction means to engage the strip.

10. A lamp bracket as claimed in claim 7 wherein the means for resisting rotatable movement of the bracket-arm comprise a frictional device between the hub and the support and a free-wheel clutch between the hub and the support such that upward movements of the bracket-arm are readily permitted by the free-wheel clutch and downward movements are resisted by the frictional device.

11. An extensible bracket as claimed in claim 1 in which the bracket-arm and support are pivotally mounted in a hub and the hub is carried on a column adjustable rotatably on a base about an upwardly extending axis.

12. An extensible bracket as claimed in claim 7 in which the bracket-arm and support are pivotally mounted in a hub and the hub is carried on a column adjustable rotatably on a base about an upwardly extending axis.

13. A lamp bracket comprising a wall fitting, a concave-convex flexible strip, one end of which is secured within said wall fitting, an aperture in the wall fitting providing a bearing surface on its lower side through which aperture said strip projects, means behind said aperture to guide said strip around one or more bends so that said strip may be drawn in and out from said aperture, the free end of said strip constituting a bracket-arm, and a lamp fitting on the free end of said bracket-arm.

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