

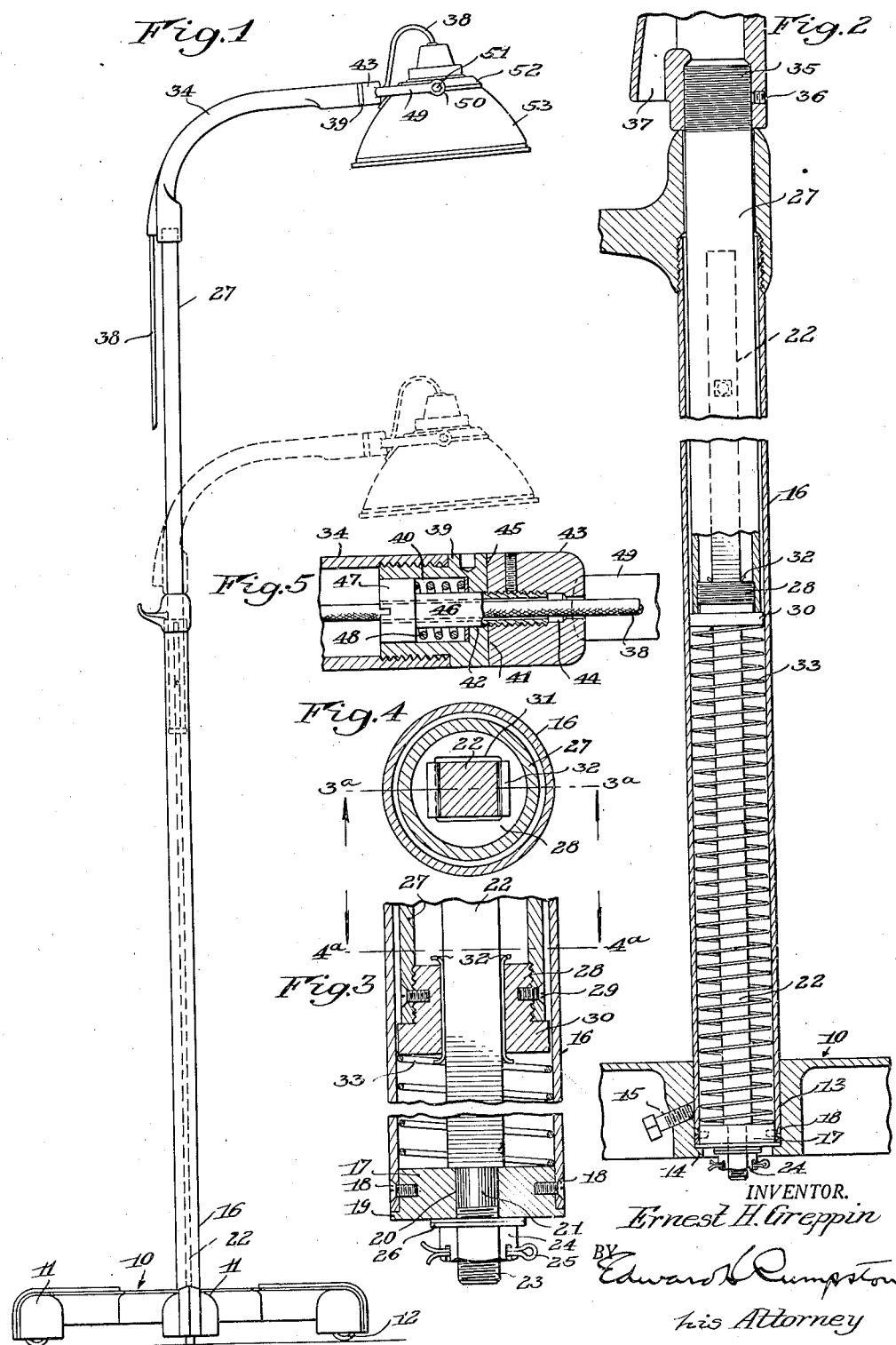
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ADJUSTABLE LAMP SUPPORT

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ADJUSTABLE LAMP SUPPORT

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6 Claims. (Cl. 248—161)

1 This invention relates to adjustable lamp supports, of the portable variety having a base movable about a floor and mounting adjustable standard means for supporting a lamp in various positions of adjustment relative to the work, one object of the invention being to provide an improved lamp support of the above character adapted to be more easily and flexibly adjusted through a wider range of positions adjacent the work.

Another object is to provide such a lamp support in which the adjustable parts are counterbalanced and flexibly retained in adjusted position without mechanical locks.

Another object is to provide a support of the character described having a counterbalanced, universally adjustable standard and a lamp supported for universal adjustment relative to said standard, with means for frictionally retaining the parts in adjusted position subject to easy and flexible adjustment through a wide range of movement by light adjusting pressure without manipulation of mechanical locks.

A further object is to provide a lamp having the above features in a simple and practical type of construction capable of being readily and economically manufactured.

To these and other ends the invention resides in certain improvements and combinations of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawings:

Fig. 1 is a side elevation of a lamp support embodying the present invention and showing the standard in different vertical adjustments;

Fig. 2 is an enlarged central sectional elevation of parts of the standard;

Fig. 3 is an enlarged sectional elevation on the line 3a—3a in Fig. 4;

Fig. 4 is a sectional plan view on the line 4a—4a in Fig. 3, and

Fig. 5 is an enlarged sectional elevation of the bearing for the lamp yoke.

The embodiment of the invention herein disclosed comprises, preferably, a metal base indicated generally at 10 having four branching legs 11 mounted on concealed swiveling caster rollers 12, as well understood in the art, so that the base may be easily rolled over the floor to any position adjacent the work. The base is cast metal construction, relatively small, but heavy, to increase the stability of the standard against tipping. As best shown in Fig. 2, the base is formed centrally with a cylindrical socket 13 open

2 at both ends, the lower end being reduced in diameter to provide a shoulder or step 14 for supporting the standard. A set screw 15 enters the socket laterally, as shown, for firmly clamping the standard therein.

The supporting standard comprises, preferably, a lower element 16 of tubular or cylindrical construction, the lower end of which is closed by a cylindrical plug 17 secured therein by means of screws 18 and having a flange 19 underlying the end of the tube and resting on step 14 in socket 13 of the base. The plug is formed centrally with a bearing opening 20 in which is rotatably mounted the reduced lower end 21 of an upright or guide rod 22 having above the plug a non-circular and preferably rectangular cross-sectional shape, as best shown in Fig. 4. The lower end of the rod is extended below the plug and threaded as at 23 for the reception of a castellated nut 24 locked by cotter pin 25, one or more washers 26 being interposed between the nut and plug to facilitate rotation of the rod in the plug.

The standard comprises an upper element 27, the lower portion of which is of tubular, cylindrical shape, having an external diameter slightly less than the internal diameter of the lower element 16 and rotatably and slidably received in the lower element through the open upper end thereof. The lower end of the upper element is closed by a collar 28 threadedly engaged therewith and secured by means of screws 29, the collar having a flanged lower end 30 underlying the end of the element and having a diameter closely fitting the internal surface of the lower element 16 to more closely guide the upper element in its vertical telescoping adjustment. Collar 28 is formed centrally with a non-circular and preferably rectangular opening 31 somewhat larger than the rod 22 on which the collar slides. Spring strips 32 are inserted between opposite sides of the opening 31 and the adjacent faces of the rod 22, these resilient strips being formed in such longitudinally curved or other shape as to press upon the surfaces of the rod and supply a frictional resistance to the vertical sliding of the collar and the upper element relative to the rod, for frictionally retaining the upper element in vertically adjusted position. The rectangular shape of the rod affords longitudinally extending, flat surfaces of substantial, friction producing area and the rod thus serves as a frictional resistance element as well as a guide.

The weight of the upper element and lamp carried thereby are counterbalanced by a coiled

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compression spring 33 interposed between the plug 17 in the lower end of the lower element and the collar 28 in the lower end of the upper element, the spring having an external diameter approximating the internal diameter of the lower element so as to guide and retain the spring in position. It will be apparent from the above described construction that the upper element 21 together with its guide rod 22 are adjustably rotatable in the lower element, free from any resistance by the frictional engagement between rod 22 and the spring strips 32 and that the upper element is effectively counterbalanced for easy adjustment to different vertical positions in which it is retained by the frictional shoe means interposed between it and its guide rod 22, so that the upper element is flexibly mounted for easy vertical and horizontal adjustment merely by the application of light pressure without operation of any mechanical locks.

The upper end of the upper element carries a relatively long, rigid, horizontally curved or offset hollow arm 34 threadedly engaged therewith as at 35 and secured by a set screw 36. This end of arm 34 is formed with an outlet opening 37 for a lamp circuit cord 38 and the other or upper end of the arm is provided with means for flexibly supporting the lamp which will now be described.

As best shown in Fig. 5, the upper end of arm 34 has threadedly engaged therein a sleeve 39 formed adjacent one end with a cylindrical chamber 40 and at its outer end with a bearing face 41 having therein a bearing opening 42. At 43 is the hub of a lamp supporting yoke having formed therein a central opening or bore 44. The outer end of the hub is formed with a bearing surface 45 cooperating with the arm surface 41 and the bore 44 of the hub has threaded therein a tubular stem 46 pivotally mounted in bearing 42 of the end of the arm and provided at its end with a cylindrical piston head 47 having a rotating and sliding bearing in the cylindrical chamber 40 of sleeve 39. Within the chamber, between the sleeve bearing 42 and the head 47 of the yoke stem, is a coiled compression spring 48 which takes up for any wear on the bearing surfaces 41 and 45 and maintains them in cooperating seated relation.

The branching arms 49 of the yoke are formed at their ends with pivotal bearings 50 for trunnions 51 on the body 52 of the lamp 53. Such pivotal mounting of the lamp in the yoke and the pivotal connection of the bearing surfaces 41 and 45 afford for the lamp a universal movement about relatively transverse axes by means of which it is supported for universal adjustment on the upper or outer end of the offset arm of the standard.

The construction thus provides, in an effectively counterbalanced arrangement, for easy, flexible and universal adjustment of the arm 34 on the standard and of the lamp on the outer end of the arm, by light adjusting pressures, without manipulation of cumbersome flexible conduits or of mechanical locks. The construction thus permits of easy and wide adjustment of the relatively long offset arm, so that the lamp head may be readily positioned directly over the center of a table or other operating area, and turned to direct its beam in any desired direction or toward any desired point, and, when not in use, the lamp may be conveniently lowered and disposed of in an out-of-the-way position in a corner or other small space.

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The invention thus accomplishes its objects and while it has been herein disclosed by reference to the details of a preferred embodiment, it is to be understood that such disclosure is intended in an illustrative, rather than a limiting sense, as it is contemplated that various modifications of the construction and arrangement of the parts will readily occur to those skilled in the art, within the spirit of the invention and the scope of the appended claims.

I claim:

1. An adjustable lamp support comprising a base, a lower tubular standard element fixed at its lower end to said base, an upper tubular standard element rotatably and slidably received in said lower element through the open upper end thereof, compression spring means interposed between said lower element and the lower end of said upper element for counterbalancing the weight of said upper element, a guide rod rotatably mounted in said lower element and extending slidably into said upper element, and rotatable therewith and friction means connecting said upper element and guide rod for frictionally retaining said upper element in adjusted vertical position.

2. An adjustable lamp support comprising a base, a lower tubular standard element fixed at its lower end to said base, an upper tubular standard element rotatably and slidably received in said lower element through the open upper end thereof, compression spring means in said elements for counterbalancing the weight of said upper element, a guide rod of non-circular cross-sectional shape affording longitudinally extending, flat frictional surfaces of substantial area, said rod being rotatably mounted inside said elements, said upper element having a portion slidably and non-rotatably fitted to said rod, and friction means between said element portion and rod for frictionally retaining said upper element in adjusted vertical position.

3. An adjustable lamp support comprising a base, a lower tubular standard element fixed at its lower end to said base, an upper tubular standard element rotatably and slidably received in said lower element through the open upper end thereof, compression spring means in said elements for counterbalancing the weight of said upper element, a guide rod of non-circular cross-sectional shape rotatably mounted in said lower element, a collar on the lower end of said upper element having therein a non-circular opening slidably receiving said rod for rotating said rod with said upper element, and frictional shoe means in said collar opening engaging said rod for frictionally retaining said upper element in adjusted vertical position.

4. An adjustable lamp support comprising a base formed with a socket, a lower tubular standard element having its lower end fixed in said socket, a plug closing the lower end of said lower element and formed with a bearing opening, an upper tubular standard element rotatably and slidably received in said lower element through the open upper end thereof, a collar on the lower end of said upper element having therein a non-circular opening, a compression spring in said lower element between said plug and collar for counterbalancing the weight of said upper element, a guide rod of non-circular cross-sectional shape rotatably mounted at its lower end in said plug and slidably received in said collar opening for rotation with said collar and upper element, and frictional shoe means positioned in said

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collar opening and engaging said guide rod for frictionally retaining said upper element in adjusted vertical position.

5. An adjustable lamp support comprising a base, a lower tubular standard element fixed at its lower end to said base, an upper tubular standard element rotatably and slidably received in said lower element through the open upper end thereof, spring means for counterbalancing the weight of said upper element, a guide rod having a mounting in said elements in which said rod is freely rotatable but held against movement longitudinally of said elements, said upper element and rod being connected for relative sliding movement and for rotation together as a unit, friction means between said upper element and rod for frictionally retaining said element in adjusted position, a yoke for pivotally supporting a lamp, the upper end of said upper element and said yoke having cooperating bearing surfaces, pivotal means connecting said bearing surfaces for rotatably supporting said yoke, and spring means for maintaining said surfaces in bearing engagement with each other.

6. An adjustable lamp support comprising a base, a lower tubular standard element fixed at its lower end to said base, an upper tubular standard element having one end thereof rotatably and slidably received in said lower element through the open upper end thereof and having at its other end a rigidly curved, laterally offset lamp arm, spring means for counterbalancing the weight of said upper element, a guide rod mounted in said elements for rotation with said

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upper element, frictional means connecting said upper element and guide rod for yieldably holding said upper element against vertical movement, a lamp yoke, a lamp pivotally supported in said yoke, the outer end of said arm and said yoke having cooperating bearing surfaces and a pivotal connection about an axis perpendicular to the axis of pivotal support of said lamp for universal adjustment of said lamp relative to said arm, and spring means for retaining said bearing surfaces in bearing engagement with each other.

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