Dec. 13, 1966 J. E. NAFE 3,291,977

EXTENSIBLE LAMP

Filed Aug. 10, 1964 2 Sheets-Sheet 1

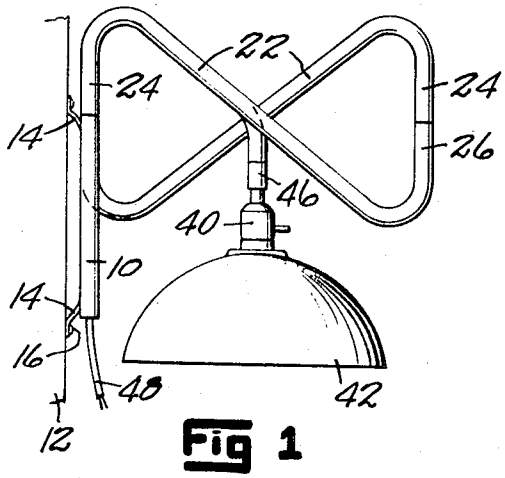


Fig 1

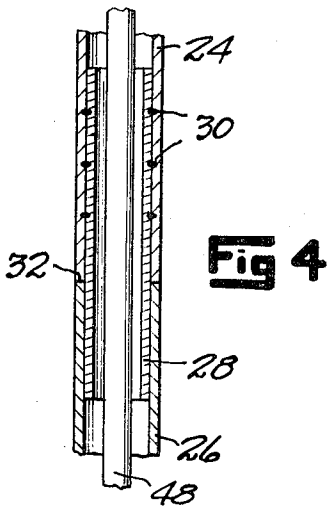


Fig 4

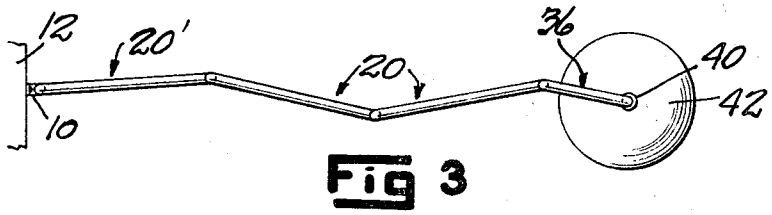


Fig 3

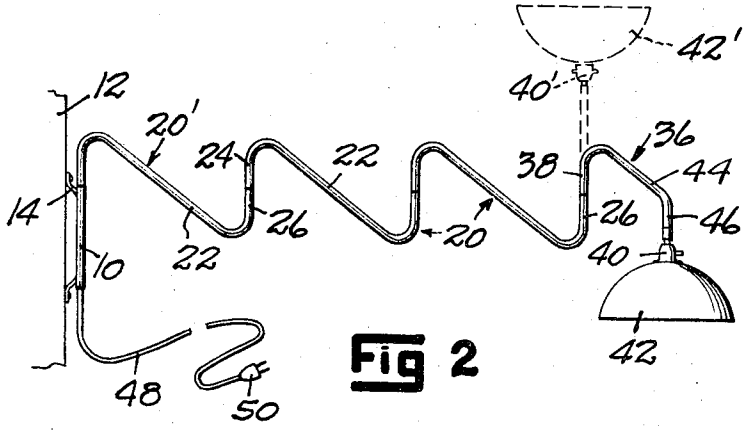


Fig 2

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Fig 5

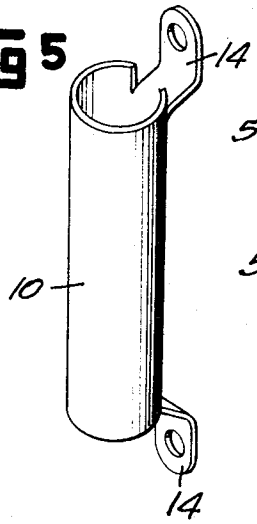


Fig 6

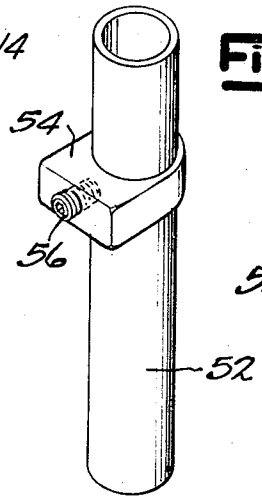


Fig 9

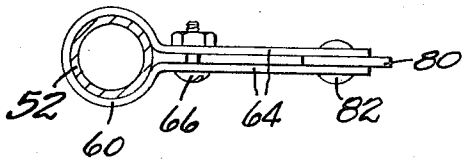


Fig 7

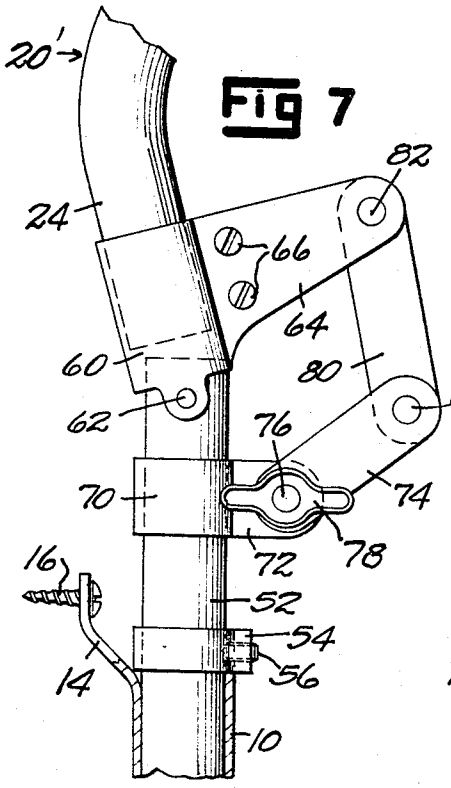
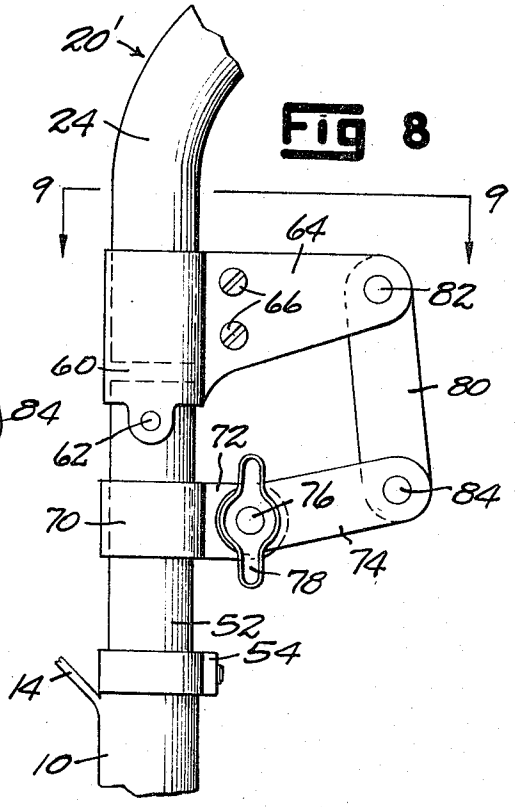


Fig 8



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United States Patent Office 3,291,977 Patented Dec. 13, 1966

3,291,977

EXTENSIBLE LAMP

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Filed Aug. 10, 1964, Ser. No. 388,625
7 Claims. (Cl. 240—73)

This invention relates to improvements in extensible lamps.

The primary object of the invention is to provide an extensible lamp of novel, simple and inexpensive construction having a wide range of extension and, at the same time, capable of compact arrangement in out of the way position when not in use.

A further object is to provide an extensible lamp formed of a plurality of similar sections pivotally connected together end to end, and capable of extension to substantial distance from a supporting point without sacrifice of adjustment thereof to selected intermediate extent as compared to maximum extended position and fully contracted position.

A further object is to provide an extensible lamp having a plurality of pivotally connected sections whose pivot axes are parallel and having means for varying at will the angular position of those pivot axes relative to the vertical.

Other objects will be apparent from the following specification.

In the drawing:

FIG. 1 is a side view of my improved lamp in its compact or retracted position;

FIG. 2 is a side view of my new lamp in extended position, illustrating in dotted lines an alternate arrangement of a reflector unit;

FIG. 3 is a top plan view of the lamp in an extended position;

FIG. 4 is an enlarged axial sectional detail view of one joint construction;

FIG. 5 is a perspective view of a bracket forming a part of the device;

FIG. 6 is a perspective view of a joint member cooperating with the bracket shown in FIG. 5;

FIG. 7 is a fragmentary side elevational view illustrating a modification of the invention;

FIG. 8 is a side elevational view illustrating the construction shown in FIG. 7 in a different position;

FIG. 9 is a horizontal sectional view taken on line 9—9 of FIG. 8.

Referring to the drawings, and particularly to FIGS. 1 to 4 thereof which illustrate one embodiment of the invention, the numeral **10** designates a tubular bracket adapted to be fixed in substantially upright position upon a suitable support **12**. The support **12** may be an upright or a standard or a building wall, or an article of furniture, or the like. The bracket **10** preferably constitutes a rigid tubular member of substantially uniform dimension throughout its length which has laterally projecting therefrom at its upper and lower ends flanges or legs **14** which preferably project both laterally and longitudinally and are apertured to receive securing means **16**, such as screws, bolts or rivets, for securely anchoring the tubular bracket upon the support **12** in desired orientation, that is, preferably in an orientation in which the axis of the tubular bracket is vertical.

A plurality of tubular sections **20**, which preferably are similar in size and shape, are interconnected end to end with one endmost section **20'** being pivotally interconnected with the tubular bracket **10**. Each of the tubular sections **20** has an intermediate portion **22**, a downwardly extending end portion **24**, and an upwardly extending end portion **26**. The sections **20** are bent into substantially S-shape with the parts **24** and **26** thereof substantially

parallel, and with the intermediate portion **22** extending at an acute angle between the end parts **24** and **26**. The tubular sections **20** are preferably formed of tube stock of substantially the same diameter as the tubular bracket **10**. The downwardly extending end portion **24** of each section has a reduced diameter projection **28**, having an outer diameter adapted for a snug slide fit within the inner diameter of the tubular bracket **10** or the inner diameter of the upwardly extending end portion **26** of an adjacent tubular section **20**. As illustrated in FIG. 4, the reduced diameter projecting part **28** may constitute a tube fitting within a downwardly projecting end portion **24** and spot welded or otherwise fixed thereto at **30**. The reduced diameter projecting portion **28** will be of a length greater than the diameter of the tubular sections and will cooperate therewith to define a circumferential shoulder **32** which is adapted to bear upon the upper edge of the tubular bracket **10** or of the upwardly extending end portion **26** and the adjacent tube section **20**.

A tubular end section **36** is provided with an upwardly extending end part **38** with a reduced dimension elongated extension similar to extension **28** described above adapted for snug rotative fit within the upwardly extending end portion **26** of an adjacent tubular section **20**. At its opposite end the tubular end section **36** mounts a socket or adaptor **40** which preferably includes a switch and mounts an electric bulb (not shown) and also mounts a reflector **42**. The shape of the tubular end section **36** may be similar to a hook with an inclined intermediate section **44** extending at an acute angle to the end part **38** similar to the acute angle between the parts **22** and **24**, and with the part **44** of a length approximately one-half the length of the intermediate section **22** of tubular section **20**. The tubular end section **36** of this construction terminates in a vertical downturned part **46** of a length substantially equal to the length of a section **26**, so that the reflector **42** will be positioned clear of the tubular sections **20** in all adjustments of the parts, including a collapsed adjustment as illustrated in FIG. 1.

The hook-shape of the tubular end section **36** is not essential, however, and said end section may constitute a simple straight tube which carries a socket or adaptor **40'** and an inverted reflector **42'** at its upper end, as illustrated in dotted lines in FIG. 2.

The tubular parts **10**, **20** and **36** and their reduced portions **28** are of a diameter to receive with clearance an elongated insulated flexible electrical conductor **48** having electrical connection at one end with the socket or adaptor **40** and extending through the sections **20**, **36** and the bracket **10**, projecting from the latter and carrying a connector **50** at its free end, such as a conventional separable electrical connector well understood in the art.

It will be apparent that the various sections **20** and **36** are readily assembled for pivotal connection with each other and for pivotal connection of the endmost tubular section **20'** with the tubular bracket **20** by simply inserting the reduced end parts **28** of downwardly projecting parts **24** and **38** into upwardly projecting parts, such as tubular bracket **10** and upwardly extending portion **26** of tubular sections **20**. When the unit is mounted upon a support, the weight of the respective sections holds them assembled and accommodates their relative pivoting with respect to each other between a collapsed position as illustrated in FIG. 1, and an extended position as illustrated in FIGS. 2 and 3. In the collapsed position of the device the various sections **20**, **20'** and **36** are positioned side by side, substantially in register as shown in FIG. 1, so that the space occupied thereby will be of a length equal to the length of one of the sections **20** or **20'** and will be of narrow width determined by the number of juxtaposed sections. The unit may be swung to any de-

sired position while collapsed as well as while extended. Thus the collapsed unit may extend alongside the wall to which the bracket **10** is supported, with its position being determined by the dimension of the reflector **42**, which normally will engage such wall before the unit will assume full parallelism with the wall.

While the arrangement described herein contemplates the projection of a part **28** from the lower end of a downwardly projecting part **24** of each of the sections **20**, **20'** and **36**, it will be apparent that a reduced portion may be formed at the upper end of the upwardly projecting part **26** of each section if a similar reduced diameter part projects upwardly from the upper end of the tubular bracket **10**. Likewise, it will be apparent that the reduced portion **28** may be formed integrally with the part from which it projects rather than being formed by the anchorage of a separate tubular member to a member **20**, etc.

Means may be provided for adjusting the elevation of the extensible lamp-carrying parts relative to the tubular bracket **10**. One such means is illustrated in FIG. 6 and constitutes an elongated tube **52** preferably of substantially uniform cross-section throughout its length and of an outer diameter to fit snugly within the tubular bracket **10**. An adjustable member **54** is slidably mounted upon the elongated tube **52** and preferably constitutes a ring encircling said tube. Anchoring means, such as a set screw **56**, may be provided to position the abutment member **54** upon the elongated tube **52**. The tube **52** will be of such diameter to cooperate with and support rotatively the downwardly projecting end **24–28** of the end tubular section **20'** in the manner above described. The elongated tube **52** will itself be supported by fitting within the tubular bracket **10** to the desired extent determined by the location of the abutment member **54** which bears against the top edge of the bracket **10**.

Another modified embodiment of the invention for varying the elevation of the lamp socket **40** and reflector **42** relative to the tubular bracket **10** is illustrated in FIGS. 7, 8 and 9. This construction utilizes a bracket **10** and an elongated extension tube **52**, as previously described. A socket member **60** is pivotally connected at **62** to the upper end of the elongated tube **52**. The socket member **60** will preferably be a split clamp having a pair of elongated laterally projecting arms **64** interconnected by securing means **66**, such as cooperating screws and nuts adapted to draw together the arms **64** adjacent to the part-cylindrical socket portion **60** for the purpose of clamping and securely mounting the downwardly extending end portion **24** of the end tubular section **20'**. A clamp member **70** encircles the elongated tube **52** spaced below the pivot **62** connecting the socket member **60** with the tube **52**. Clamp member **70** may be of any suitable character and preferably includes laterally projecting arms or an arm **72** to which is connected pivotally a link member **74** by any suitable means. Link **74** is pivotally connected to the lateral clamp arm or arms **72** by securing means, such as a screw **76** and a wing nut or other adjustable securing means **78**. The free ends of the lateral arms **64** of socket member **60** and of the link or links **74** are interconnected by a connector link **80** and pivot connector members **82** and **84**.

The construction is such that the angular relation of the socket **60** to the elongated tube **52** and to the axis of the tubular bracket **10** may be adjusted by releasing the wing nut **78** to permit swinging of the parts **64**, **74** and **80** to desired relation, followed by tightening of the wing nut to anchor those parts in desired position. By this means the axis of the part **24** of the terminal section **20'** is tilted. Inasmuch as the end parts **24** and **26** of each of the sections **20** and **20'** are parallel, this tilting of the end **24** of the end section **20'** will produce similar tilting of each of the parts **24**, **26** and **38** at their respective telescopic pivotal interconnections. Thus the elevation of the reflector **42** may be controlled relative to the tubular bracket **10** at will to meet different requirements of use. The range of tilting movement or adjustment will preferably be limited, and deviation of the position of the telescoping pivotally interconnected parts **24**, **26** from a true vertical position will be limited, and will not be detrimental to the maintenance of the desired assembled relation of the parts. At the same time, adjustment of the structure to desired length and swinging of the structure in different directions from the supporting bracket is possible. In this connection, it will be seen that swinging action will be compensated by turning of the part **52** within the bracket **10**.

While the preferred embodiments of the invention have been illustrated and described, it will be understood that changes in the construction may be made within the scope of the appended claims without departing from the spirit of the invention.

I claim:

1. An extensible lamp comprising

a support including a substantially vertical tubular bracket,

a plurality of rigid tubular intermediate sections,

a tubular rigid end section,

said tubular bracket, tubular intermediate sections and tubular end section being rotatably connected end to end,

said rotatable connections constituting telescopic interfitting substantially vertical relatively rotatable parts having communicating bores and a circumferential shoulder on one part engaging the end of the other part,

said intermediate sections having substantially parallel end and vertical portions and a central inclined portion extending from the top of one end portion to the bottom of other end portion,

an electric socket carried by the free end of said end section, and

an elongated insulated electrical conductor connected to said socket and extending continuously through and concealed by said tubular end and intermediate sections and said bracket and having clearance within said communicating bores of said connection parts.

2. An extensible lamp as defined in claim **1**,

wherein said intermediate sections are of substantially similar size and shape to substantially register in collapsed position.

3. An extensible lamp as defined in claim **1**, wherein said intermediate sections are of S-shape and each carries at one end thereof a reduced diameter portion having a snug rotative fit in the opposite end of another section and defining said circumferential shoulder.

4. An extensible lamp comprising

a support including a substantially vertical open-ended tubular bracket,

a plurality of rigid open-ended tubular intermediate sections,

a tubular open-ended rigid end section,

said tubular bracket, tubular intermediate sections and tubular end section being rotatably connected end to end, said rotatable connections constituting telescopic interfitting substantially vertical relatively rotatable parts each telescoped part having a shoulder engaging the end of a telescoping part, said intermediate sections having substantially vertical and parallel end portions and a central inclined portion extending diagonally between said end portions,

an electric socket carried by the free end of said end section,

an elongated insulated electrical conductor connected to said socket and extending continuously through said tubular end and intermediate sections and said bracket, and

an elongated tube interposed between and having a telescopic connection with said bracket and one of said intermediate sections, and

an abutment longitudinally adjustable on said last named tube to vertically adjust the portion of said last named tube projecting above said bracket and the elevation of said connected intermediate section.

5. An extensible lamp comprising

a support including a substantially vertical tubular bracket,

a plurality of rigid tubular intermediate sections,

a tubular rigid end section,

said tubular bracket, tubular intermediate sections and tubular end section being rotatably connected end to end,

said rotatable connections constituting telescopic interfitting substantially vertical relatively rotatable parts,

said intermediate sections having substantially parallel end portions and a central portion extending at an angle to said end portions,

an electric socket carried by the free end of said end section, and

an elongated insulated electrical conductor connected to said socket and extending through said tubular end and intermediate sections and said bracket, and

means for tilting the connection between said bracket and the adjacent intermediate section,

whereby each of said rotatable connections is tilted and said assembly of intermediate and end sections is inclined when extended.

6. An extensible lamp comprising

a support including a substantially vertical tubular bracket,

a plurality of rigid tubular intermediate sections,

a tubular rigid end section,

said tubular bracket, tubular intermediate sections and tubular end section being rotatably connected end to end,

said rotatable connections constituting telescopic interfitting substantially vertical relatively rotatable parts,

said intermediate sections having substantially parallel end portions and a central portion extending at an angle to said end portions,

an electric socket carried by the free end of said end sections, and

an elongated insulated electrical conductor connected to said socket and extending through said tubular end and intermediate sections and said bracket,

an elongated tube having a rotatable telescopic connection with said bracket,

a clamp member pivoted to the upper end of said last named tube and supporting one end of an intermediate section and

means for locking said clamp in selected angular relation to the axis of said bracket.

7. An extensible lamp comprising

a support including a substantially vertical tubular bracket,

a plurality of rigid tubular intermediate sections,

a tubular rigid end section,

said tubular bracket, tubular intermediate sections and tubular end section being rotatably connected end to end,

said rotatable connections constituting telescopic interfitting substantially vertical relatively rotatable parts,

said intermediate sections having substantially parallel and portions and a central portion extending at an angle to said end portions,

an electric socket carried by the free end of said end sections, and

an elongated insulated electrical conductor connected to said socket and extending through said tubular end and intermediate sections and said bracket,

an elongated tube having a rotatable telescopic connection with said bracket,

a clamp member pivoted to the upper end of said last named tube and supporting one end of an intermediate section,

a link projecting laterally from said last named tube and pivoted to swing vertically,

means locking said link in selected position,

arm means projecting laterally from said clamp, and

a link pivotally connected to the free ends of said arm means and said first link.

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