April 28, 1925. 1,535,218

E. A. EVERETT

LAMP SUPPORT

Filed Jan. 16, 1924 3 Sheets-Sheet 1

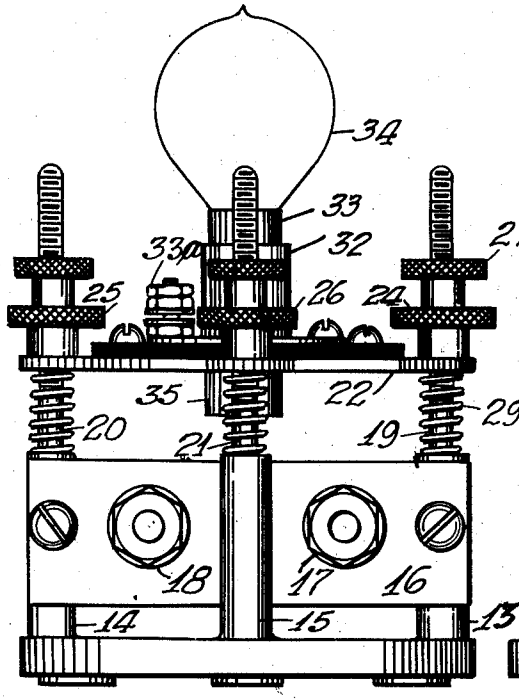


Fig. 1

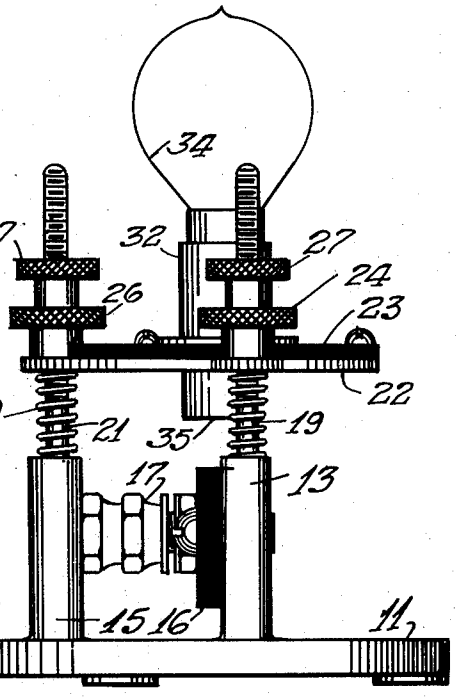


Fig. 2

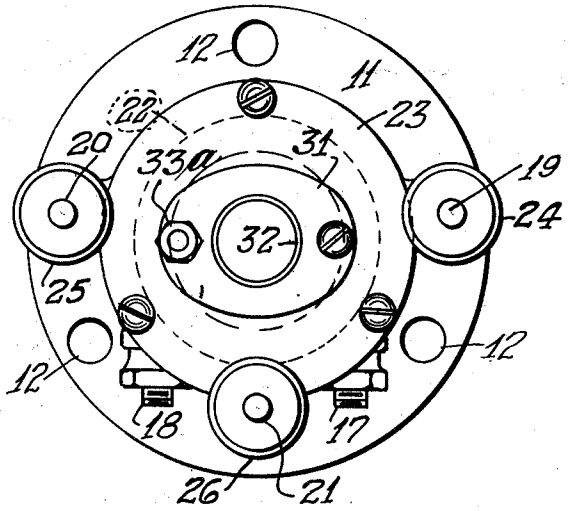


Fig. 3

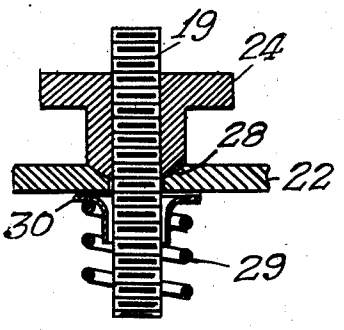


Fig. 4

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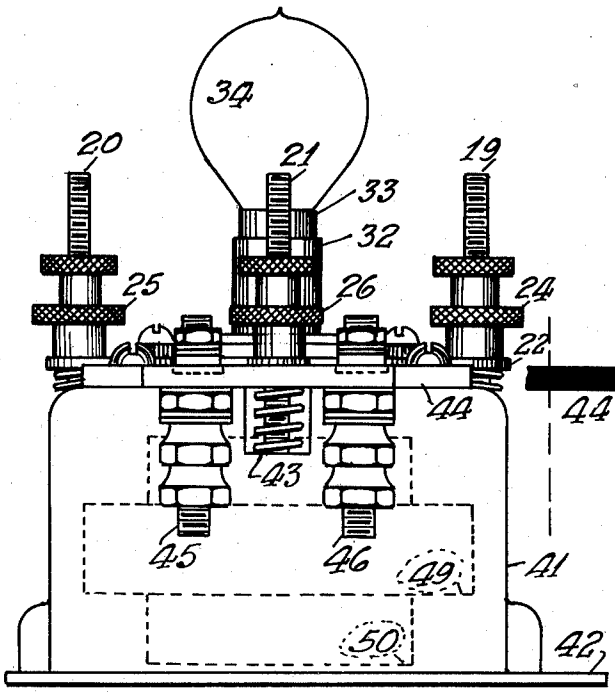


Fig. 5

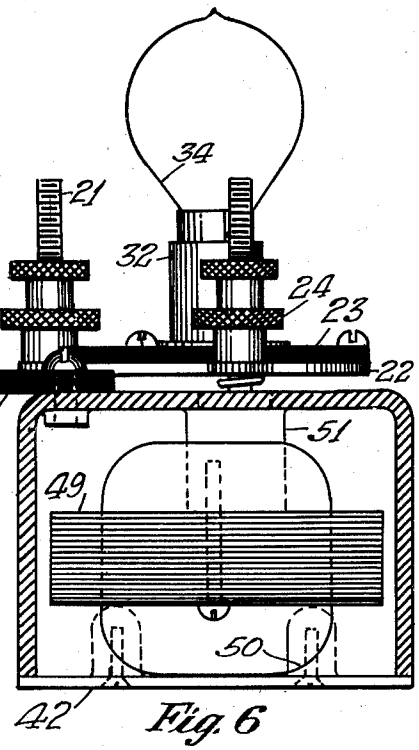


Fig. 6

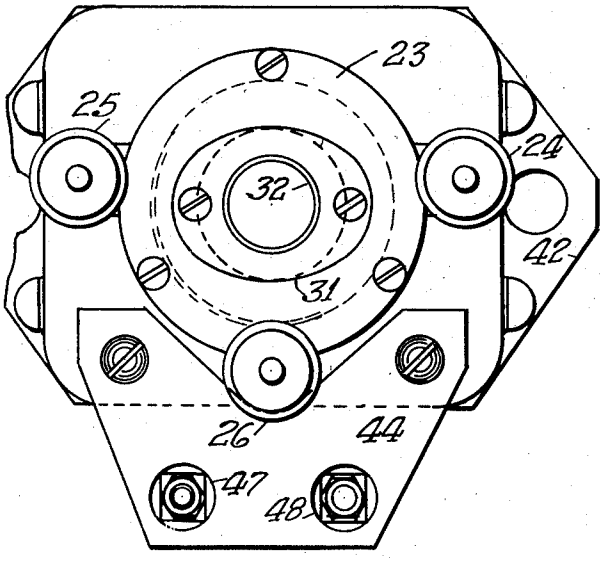


Fig. 7

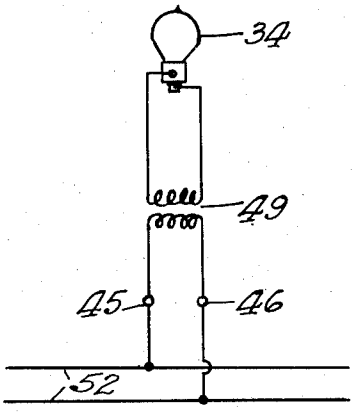


Fig. 8

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LAMP SUPPORT

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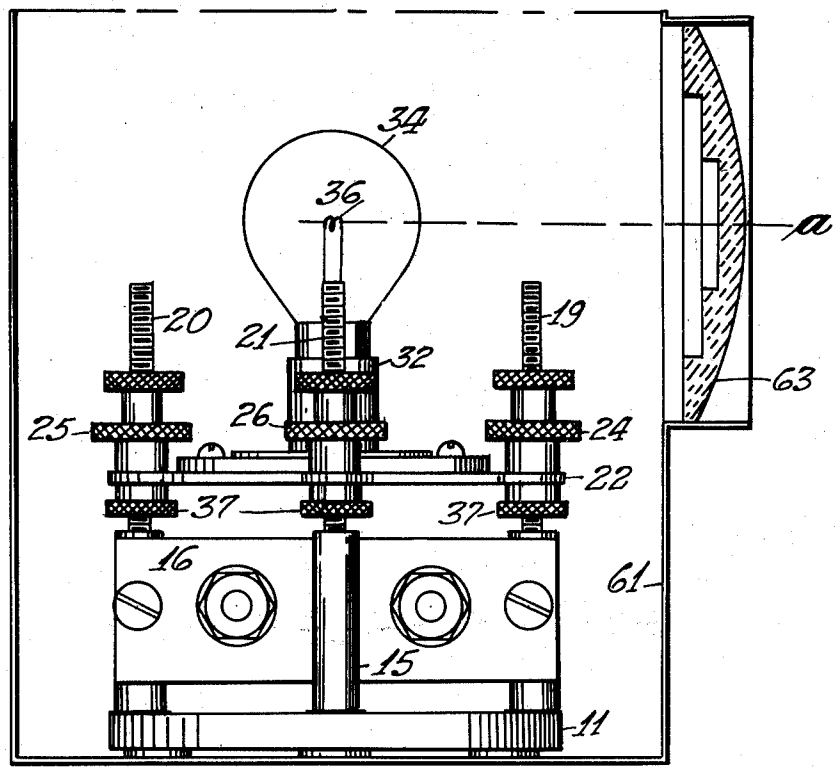


Fig. 9

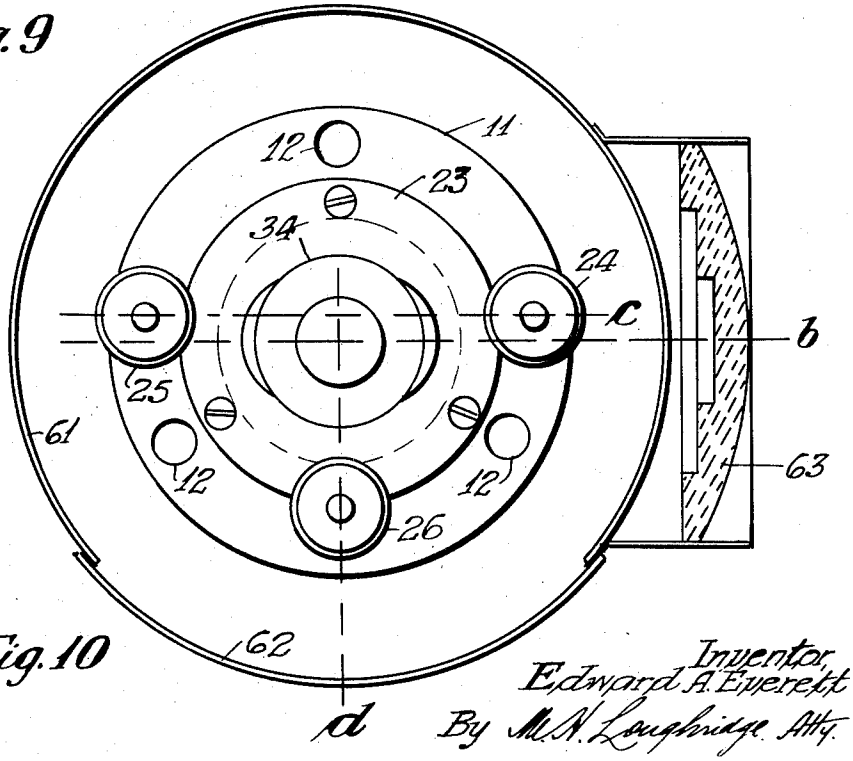


Fig. 10

Inventor,
Edward A. Everett
By M. N. Loughridge Atty.

Patented Apr. 28, 1925. 1,535,218

UNITED STATES PATENT OFFICE.

EDWARD A. EVERETT, OF NEW YORK, N. Y.

LAMP SUPPORT.

plication filed January 16, 1924. Serial No. 686,574.

To all whom it may concern:

Be it known that I, EDWARD A. EVERETT, a citizen of the United States, and resident of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Lamp Supports, of which the following is a specification.

This invention relates to lamp supports and particularly to an adjustable support for an electric bulb whereby the filament of the bulb may be brought into focus and accurately positioned in the focal plane of a lens or reflector. The objects of the invention are to provide means whereby the filament may be accurately positioned in a plurality of planes, said means being readily accessible and easily adjusted and another object of the invention is to provide a combination lamp support and transformer in a unitary construction, other objects of the invention will appear from the following specification and the accompanying drawings in which, Fig. 1, is a front elevation of one form of my invention, Fig. 2 is a corresponding side elevation and Fig. 3 is a top plan view of the same. Fig. 4 shows in section a detail of the construction; Fig. 5 is a front elevation of another form of my invention which includes a transformer housing, Fig. 6, is a sectional side elevation corresponding to Fig. 5 and Fig. 7 is a top plan view of Fig. 5. Fig. 8 is a diagram of the circuits that may be used for controlling the light. Fig. 9 shows the application of this lamp support for positioning a lamp bulb in the focal plane of the lens of a semaphore lantern and Fig. 10 is a plan view corresponding to Fig. 9.

The use of low voltage lamps of the bayonet socket type has become popular for the lighting of semaphores in railway signaling. It is not possible in the manufacture of lamps of this type to position the filament accurately with relation to the socket with the result that each time a lamp bulb is changed the filament is liable to be displaced with relation to the support. The bulb is located behind a lens in the lantern and owing to the concentration of the light in a very small filament and to the comparatively small illuminating power of the lamp it is essential that the filament be brought exactly into focus with the lens. The present invention provides means for accomplishing this result which is conveniently located and readily accessible through the opening in the lantern. This means comprises a horizontal plate to which the base of the lamp bulb is secured, this plate is supported at three points which are independently adjustable and by means of which the bulb may be raised or lowered or tilted in a plurality of directions. The support includes terminals for the wires energizing the light so that by disconnecting these wires the support and lamp may be removed. When used with alternating current a step-down transformer may be housed in the base of the support and protected thereby.

Referring to the drawings, 11 is the circular base of the support having openings 12 by means of which it may be secured in position. 13 and 14 are a pair of legs standing upright from the base 11 and diametrically opposed. To these legs the insulated terminal plate 16 is secured, this plate supporting the binding posts 17 and 18 within the plane of the base 11 as indicated in Fig. 3. In a plane at right angles to the legs 13 and 14 is the leg 15 standing upright from the base 11 and near the edge thereof as shown.

The stud 19 projects from the leg 13, stud 20 projects from leg 14 and stud 21 projects from leg 15. Over each of these studs is placed a coil spring as indicated at 29 and threaded through the studs and resting upon the coil springs is the metallic plate 22. This plate has a ring formation being hollow in the centre and supports the insulating disc 23 which is rigidly attached thereto. To this disc the flange 31 of the socket 32 is secured and the base 33 of bulb 34 fits the socket 32 by a bayonet connection, or by a screw connection if screw type sockets are used. The bulb 34 is thus held rigid with plate 22 and moves therewith.

The adjusting nut 24 works on stud 19, nut 25 works on stud 20 and nut 26 works on stud 21. These nuts work against the springs 29 for raising and lowering the plate 22, each being independently adjusted. Lock nuts as indicated at 27 may be provided to prevent the movement of the adjusting nuts under vibration.

The controlling wires connect to terminals 17 and 18 and from these terminals connect by flexible wires through socket 35 to the lamp bulb. In certain types of bulbs the base 33 forms part of the circuit and in

this case connection is made by one wire to socket 32 through the terminal 33a.

The detailed construction of the terminal post or stud is shown in Fig. 4. From the sectional drawing it will be noted that the adjusting nut 24 is conical shaped on the end as indicated at 28 and engages a concaved aperture in plate 22 forming a universal joint and enabling the adjusting nuts to engage properly with plate 22 when it is tilted from the level. The end of spring 29, it will be noted, is provided with a flanged collar 30 made in the form of an eyelet which forms a horizontal seat upon which the plate 22 bears.

In Fig. 5, the base 41 of the support is hollow and is provided with the bottom cover 42 by means of which the support is secured in place. The plate 22 and the mechanism associated therewith is similar to Fig. 1, the parts having corresponding reference characters. The sides of the base are hollowed out as shown at 43 to make room for the studs and springs.

A plate of insulation 44 is secured to the top of 41 and projects beyond the side as shown. This plate carries the binding posts 45 and 46 projecting downwardly and clear of the plane of the adjusting nuts. To prevent the stems of these binding posts from turning they are formed with a square shoulder which is wedged into a round recess as indicated at 47 and 48 in the insulation 44.

The transformer 49 is enclosed by the base and is secured to the pad 51, Fig. 6, by suitable screws. The winding of the tansformer is indicated at 50 which it will be noted, is entirely enclosed and protected by the base. A suitable opening, not shown in the drawings, is provided in the top of 41 through which the connections to the transformer are made.

The circuit arrangement by which the lamp is energized is indicated in Fig. 8 in which 52 indicates the supply mains which connect to the terminals 45 and 46 and through the transformer 49 to the lamp as shown.

This lamp support is used in a housing as indicated in Figs. 9 and 10 in which 61 is a cylindrical casing, 62 is a door on one side of the casing and 63 is a lens for projecting a beam of light from the filament. The support 11 is inserted through the door 62 with the middle adjusting nut 26 to the door so that the three adjusting nuts and the binding posts are easily accessible from the restricted opening of the door these parts being arranged in different vertical planes. In Fig. 9 it will be noted that springs 29 are omitted and bottom nuts 37 are substituted therefor.

The object of the invention is to so adjust the lamp base that the filament 36 shall come in the focal plane *a*, Fig. 9, and in the focal plane *b*, Fig. 10. The vertical height of the filament is adjusted by working the three nuts 24, 25 and 26 until plate 22 is at the proper height. The lamp may then be tilted on line *c* by adjusting nut 26 while nuts 24 and 25 remain fixed. It can also be tilted on line *d* by leaving 26 stationary and working nuts 24 and 25. Other adjustments may be made by moving nut 25 while 24 and 26 are stationary or by moving 24 while 25 and 26 are stationary. These tilting adjustments, owing to the height of the filament above the base, enable the filament to be positioned through a wide range with a micrometer adjustment.

The adjustments necessary for new lamps are thus readily and permanently made in a unitary device which can be applied to standard signal lanterns for use with either oil founts or with an electric lamp support of the kind described.

In certain types of lanterns instead of a door being provided on the side as indicated in Fig. 10, the top turns back on a hinge and in this case the lamp stand is available only from the top. It will be observed however that the adjusting nuts and lamp bulb are readily accessible from the top and the springs 29 maintain the plate 22 in contact with the adjusting nuts without lost motion or vibration.

Having thus described my invention, I claim:

1. In a device of the class described, the combination of a lamp housing with a lens, a supporting base in said housing, three upstanding studs in spaced relation on said base, a coil spring on each stud, a plate on said studs and resting upon said springs, a lamp base with a lamp secured to said plate and adjusting nuts on said studs for adjusting the position of said lamp relative to said lens, said studs being arranged on the base so as to be accessible from a fixed opening in said housing.

2. In a device of the class described, the combination of a lamp housing with a lens, a supporting base in said housing, three upstanding studs on said base each located at the apex of a triangle, a coil spring on each stud, a plate on said studs and resting on said springs, a lamp base with a lamp secured to said plate, adjusting nuts on said studs for adjusting the position of said lamp, said studs and nuts being arranged on the base so that they are accessible from the front of said housing and adjusting said lamp relative to said lens.

3. In a device of the class described, the combination of a lamp housing with a lens, a supporting base in said housing, three upstanding studs on said base each located at the apex of a triangle, a coil spring on each stud, a plate on said studs and

resting on said springs, a lamp base with a lamp secured to said plate, adjusting nuts on said studs for adjusting the position of said lamp relative to said lens, a pair of terminals for the circuit of said lamp. said adjustihg nuts, studs and terminals being arranged on the base so that they are accessible from the front of said housing.

4. In a device of the class described, the combination of a lamp housing with a lens, a supporting base in said housing, three upstanding studs on said base, a coil spring on each stud, a flanged collar on each of said studs with the collar resting on the top of said springs and the stem inside the springs, a plate resting on said collars, a lamp base with a lamp secured to said plate, adjusting nuts with conical ends on said studs for adjusting the position of said lamp relative to said lens, and formed cavities in said plate for the conical ends of said nuts.

Signed at New York, in the county of New York and State of New York this 14th day of December A. D. 1923.

EDWARD A. EVERETT.