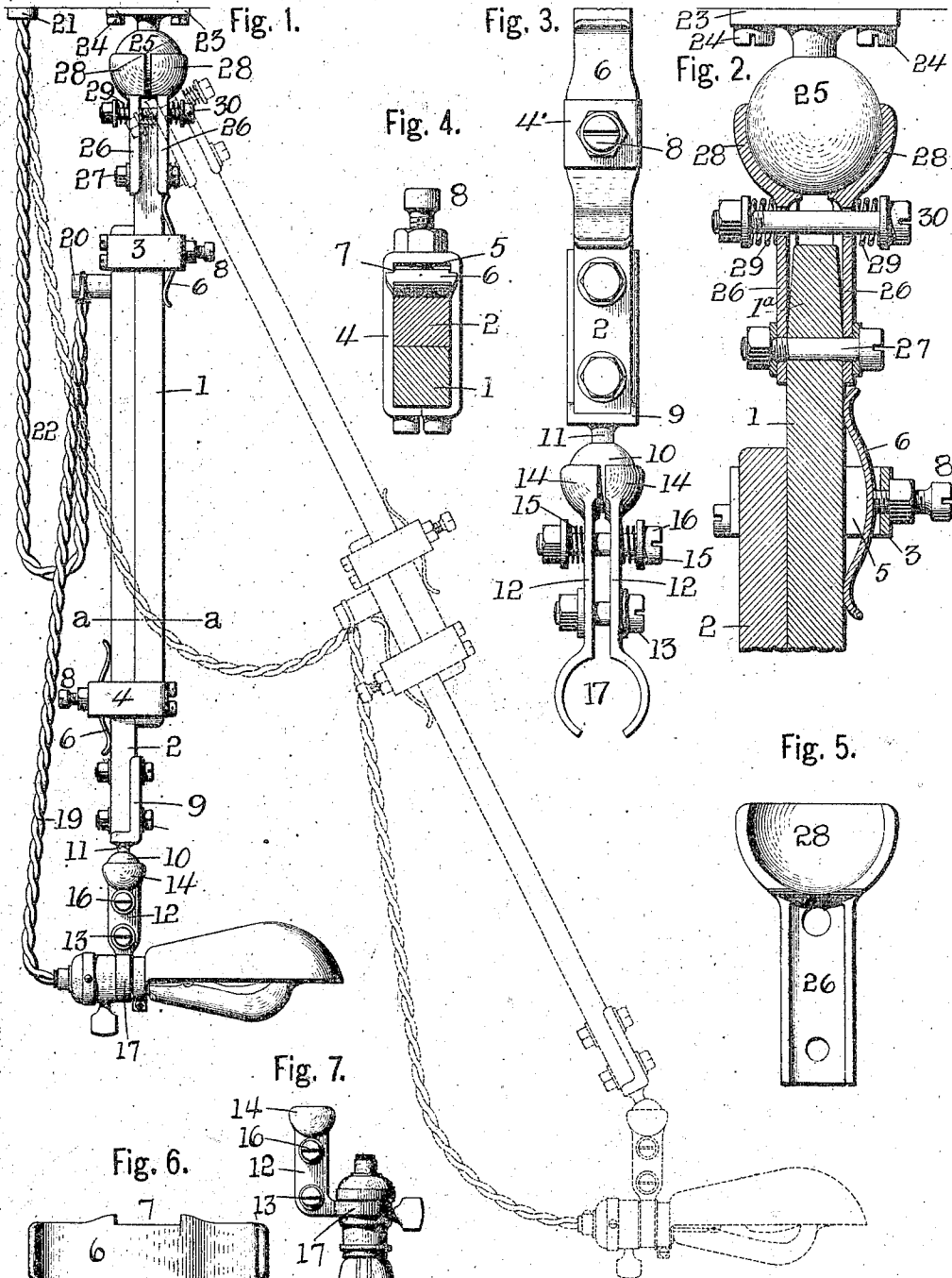


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ELECTRIC LIGHT SUPPORT.
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Patented Sept. 27, 1910.



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ELECTRIC-LIGHT SUPPORT.

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To all whom it may concern:

Be it known that I, THOMAS GRAY, a citizen of the Dominion of Canada, residing at Buffalo, in the county of Erie and State of New York, have invented a certain new and useful Improvement in Electric-Light Supports, of which the following is a specification.

This invention relates to an improved support for electric lights of the kind known as incandescent lights.

The principal object of this invention is to give the light a universal adjustment whereby the worker can with one movement of the hand, instantly bring the light into any desired position over the work-bench or table so that the light will be placed in the best possible position with respect to the work and rigidly held there against involuntary movement by gravity.

The invention also relates to certain details of construction all of which will be fully and clearly hereinafter described and claimed reference being had to the accompanying drawings, in which,—

Figure 1, is a side view of the improved support depending from a ceiling showing the light elevated to its highest position. In this figure the support is also shown in dotted lines as extended and swung to one side to bring the light close to the work. Fig. 2, is an enlarged fragmentary central longitudinal section through the upper portion of the support showing the construction of the universal joint and the friction lock for locking the members of the extensible support together, the ball member of the universal joint being shown in full. Fig. 3, is an enlarged fragmentary side view of the lower portion of the extensible support taken at right angles to the view shown in Fig. 1. Fig. 4, is an enlarged cross section on line *a-a*, Fig. 1. Fig. 5, is a detached inside view of one half of the socket member of the universal joint. Fig. 6, is a detached view of one of the springs for frictionally locking the two members of the extensible support together. Fig. 7, is a side view of one member of the lower universal joint formed so as to hold the light in a vertical position.

In referring to the drawings for the details of construction like numerals designate like parts.

The support, which is variable in length is secured at its upper end to the ceiling by a

universal joint, and consists of two members or bars, an upper member 1, and a lower member 2, formed of wood or similar light material and which are substantially of the same length. These bars are frictionally held together by means of spring locking devices formed as shown in Fig. 2.

Rectangular straps 3 and 4, of suitable metal are fastened by screws to the bars, 1 and 2, being placed oppositely to each other and fastened respectively to the lower end of the upper member and to the upper end of the lower member in the manner shown in Fig. 1. Each of the straps 3 and 4, is made sufficiently long so as to provide a space 5, between the top thereof and the adjacent surface of the bar. A curved spring 6, formed as shown in Fig. 2, is located in this space and is held against displacement by the sides of the straps which fit in notches 7, in the side edges of the spring (see Fig. 4.) The ends of the springs bear against the bars 1 and 2, and frictionally lock them together against involuntary movement. The springs 6, are tensioned by set screws 8, which screw through the tops of the straps 3 and 4, and provide means for taking up wear.

The light is secured to the lower end of the lower member 2, by means of a universal joint constructed as shown in Figs. 1 and 3.

A channeled plate 9 of L-shape receives and is fastened to the lower extremity of the bar 2, by bolts and said plate has a ball 10, attached thereto by a stem 11, so that it is centrally and vertically positioned beneath the end of the bar. This constitutes the ball member of the universal or ball and socket joint connecting the bar to the light holding clamp. The light holding clamp is made in two halves 12, which are secured together by a bolt 13, and are provided with dished upper ends 14, which form the socket and partially surround and grip the ball 10. The two portions 12, of the light holding clamp are forced toward each other so that the dished portions 14, grip the ball and prevent involuntary turning of the clamp, by spiral springs 15, which encircle the projecting ends of a bolt 16, passed through the portions 12. These springs are tensioned by screwing up the nut on the bolt and so provide means for taking up the wear.

The lower ends of the portions 12, are curved to form a pair or vertical jaws 17,

in which the socket of the light is placed, said portions being clamped around the light by the bolt 13.

The light holding clamp is immovably secured to the electric light by the bolt 13 and yieldingly clamped to the ball 10, by the bolt 16 so that the spring of the metal strips connecting the curved ends to the dish ends of the clamp members is utilized in addition to the spring 15 on the bolt 16 to frictionally clamp the ball between the dish ends.

The current conducting wire 19, extends upwardly from the lamp and is fastened to an insulated stud or support 20, secured at or near the upper end of the lower member 2, of the extensible support. From the insulated stud 20, the wire extends to and is fastened to a plug 21, attached to the ceiling or wall and from the connection plug 21, to any suitable source of supply of electricity.

The wire between the insulated stud 20, and the plug 21, is looped as shown at 22 in Fig. 1, so as to be of sufficient length to permit the longitudinal adjustment of the bars of the support.

The purpose of placing an insulated stud 20 at or near the upper end of the lower support is to prevent the wire hanging below the electric light and thus avoid the danger of catching upon the same.

A bracket 23, which is adapted to be attached to the ceiling or wall of a room or other suitable point by screws 24, has an enlarged ball 25 which forms one member of a ball and socket joint or universal connection. The other or socket member of the ball and socket joint is attached to one end of one of the bars and is formed in two channeled half portions 26, which are substantially duplicates and are secured to the end of the bar by a bolt 27 beneath its tapered extremity 1^a.

Each of the half portions has an enlarged dish part 28, which forms one half of the socket in which the ball 25, is held. The two portions are forced toward each other to frictionally grip the ball and thus prevent involuntary turning by spiral springs 29, mounted upon the opposite projecting ends of a bolt 30, passing transversely through the two portions.

The springs are sufficiently strong to hold the support in any position to which it may be turned so that the light will be held stationary and also serve to take up any wear in the ball and socket joint.

It will be observed by referring to Figs. 1 and 2 that two springs 29 are employed which are mounted upon opposite ends of the bolt 30. By this means both of the half portions of the socket member are independently tensioned or pressed toward each other by separate springs to embrace the ball

25 between them. This not only provides a strong clamping action sufficient to frictionally grip and retain the arm in any position to which it may be adjusted but also allows enough range of movement to permit the two portions to be separated sufficiently by a suitable tool to release them from the ball without disturbing the adjustment of the bolt 30.

In the form of light holding clamp shown in Fig. 7, the lower ends of the portions 12 are bent at right angles to said portions thereby forming a pair of horizontal jaws in which the lamp is held in vertical position.

The main advantages of this device are that it is adjustable both in length and at an angle, and that the light can be arranged at any elevation and any angle within the range of movement of the support and will be held immovably and without vibration in its adjusted position.

I claim as my invention—

1. A light support comprising a bracket formed with an upper ball member, a socket member consisting of a pair of half portions each formed with an enlarged dish part providing a socket embracing the ball, an upper bar having its upper end seated between the half portions, means securing the socket member fixedly to the upper bar beneath its upper end, a spring bolt securing the half portions yieldingly together between the dish parts and its upper end, a lower bar, an upper strap embracing the upper and lower bars and secured to the upper end of the lower bar, a lower strap embracing the upper and lower bars and secured to the lower end of the upper bar, a plate formed with a lower ball member and secured to the lower end of the lower bar, a holding clamp consisting of two halves each formed with an enlarged dish end providing a socket embracing the lower ball member and a curved jaw providing a clamp, means securing the two halves fixedly together at the jaws and a spring bolt securing the two halves yieldingly together.

2. A light support comprising a bracket formed with an upper ball member, a socket member consisting of a pair of channeled half portions, each formed with an enlarged, dish part providing a socket embracing the ball, an upper bar having its upper end seated between the half portions, a bolt securing the socket member fixedly to the upper bar beneath its upper end, a spring bolt securing the half portions yieldably together between the dish parts and the upper end, a lower bar having an insulated stud, a rectangular strap embracing the upper and lower bars and securing the upper end of the lower bar, a rectangular strap embracing the upper and lower bars and secured to the lower end of the upper bar, a

curved lower spring located between the lower strap and the lower bar, and formed with notches receiving the sides of the lower strap, an L-shaped channeled plate receiving the lower end of the lower bar and formed with a lower ball member, bolts securing the channeled plate to the lower bar, a holding clamp consisting of two halves each formed with an enlarged dished end providing a socket embracing the lower ball member and a curved jaw providing a clamp, a bolt securing the two halves fixedly together at the jaws, a spring bolt securing the two halves yieldably together at the upper dished ends, a connection plug, a light socket and a wire having means for supporting it upon the insulated stud and leading from the connection plug to the light socket.

3. A light support comprising a bracket formed with an upper ball member, a socket member consisting of a pair of channeled half portions each formed with an enlarged dished part providing a socket embracing the ball, an upper bar having a tapered upper end seated between the half portions, a bolt securing the socket member fixedly to the upper bar beneath the tapered end, a spring bolt securing the half portions yieldingly together between the dished parts and the tapered upper end, a lower bar having an insulated stud, a rectangular upper strap embracing the upper and lower bars and secured to the upper end of the lower bar, a curved upper spring located between the upper strap and the upper bar, and formed with notches receiving the sides of the strap, a set screw in the top of the upper strap and taking up the wear of the upper spring, a rectangular lower strap embracing the upper and lower bars and secured to the lower end of the upper bar, a curved lower spring located between the lower strap and the lower bar, and formed with notches receiving the sides of the lower strap, a set screw in the top of the lower strap and taking up the wear of the lower spring, an L-shaped channeled plate receiving the lower end of the lower bar and formed with a lower ball member, bolts securing the channeled plate to the lower bar, a holding clamp consisting of two halves each formed with an enlarged dished end providing a socket embracing the lower ball member and a curved jaw pro-

viding a clamp, a bolt securing the two halves fixedly together at the jaws, and a spring bolt securing the two halves yieldingly together at the upper dished ends.

4. A light support comprising a bracket formed with an upper ball member, a socket member consisting of a pair of channeled half portions each formed with an enlarged dished part providing a socket embracing the ball, an upper bar having a tapered upper end seated between the half portions, a bolt securing the socket member fixedly to the upper bar beneath the tapered end, a spring bolt securing the half portions yieldingly together between the dished parts and the tapered upper end, a lower bar having an insulated stud, a rectangular upper strap embracing the upper and lower bars and secured to the upper end of the lower bar, a curved upper spring located between the upper strap and the upper bar, and formed with notches receiving the sides of the strap, a set screw in the top of the upper strap, and taking up the wear of the upper spring, a rectangular lower strap embracing the upper and lower bars and secured to the lower end of the upper bar, a curved lower spring located between the lower strap and the lower bar, and formed with notches receiving the sides of the lower strap, a set screw in the top of the lower strap and taking up the wear of the lower spring, an L-shaped channeled plate receiving the lower end of the lower bar and formed with a lower ball member, bolts securing the channeled plate to the lower bar, a holding clamp consisting of two halves each formed with an enlarged dished end providing a socket embracing the lower ball member and a curved jaw providing a clamp, a bolt securing the two halves fixedly together at the jaws, a spring bolt securing the two halves yieldingly together at the upper dished ends, a connection plug, a light socket and a wire having means for supporting it upon the insulated stud and leading from the connection plug to the light socket.

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