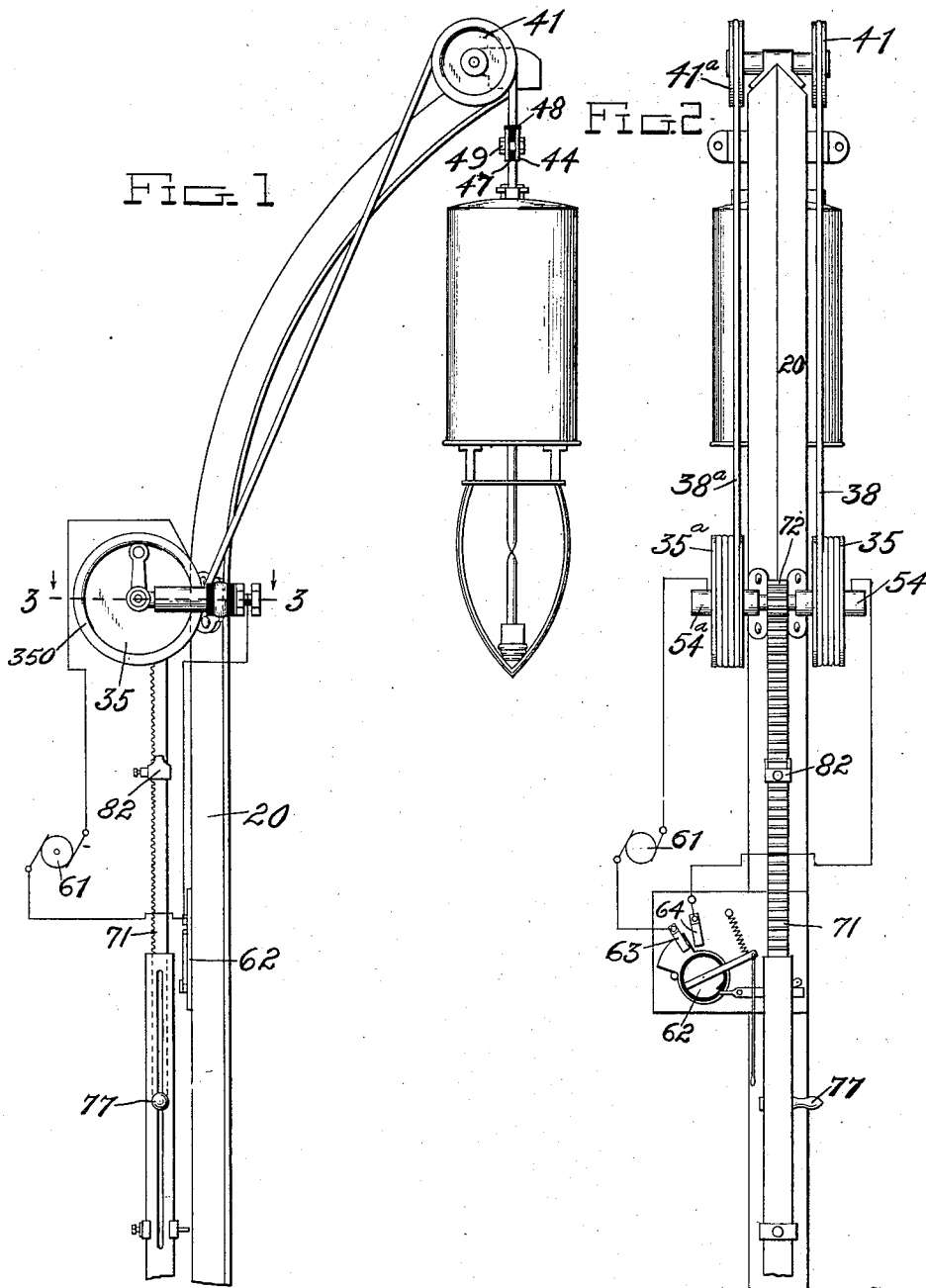


R. HERMAN.
ELECTRIC LAMP SUPPORTING MEANS.
APPLICATION FILED JULY 27, 1909.

1,050,020.

Patented Jan. 7, 1913.

3 SHEETS-SHEET 1.



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3 SHEETS—SHEET 2.

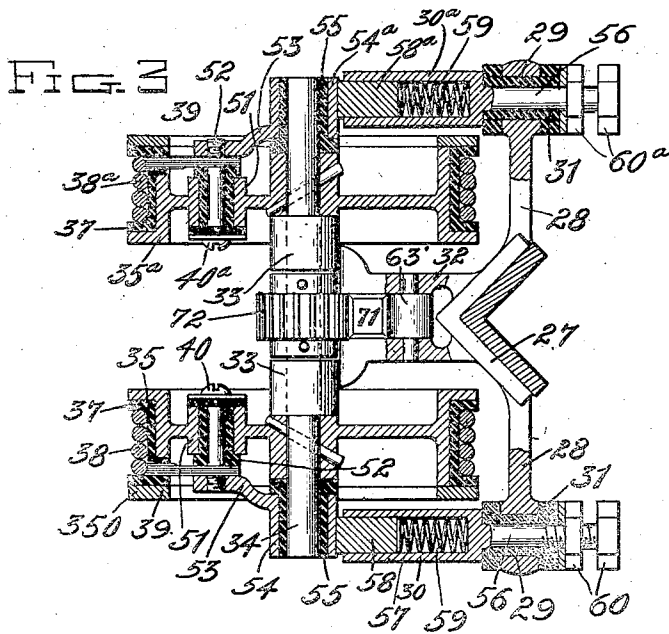
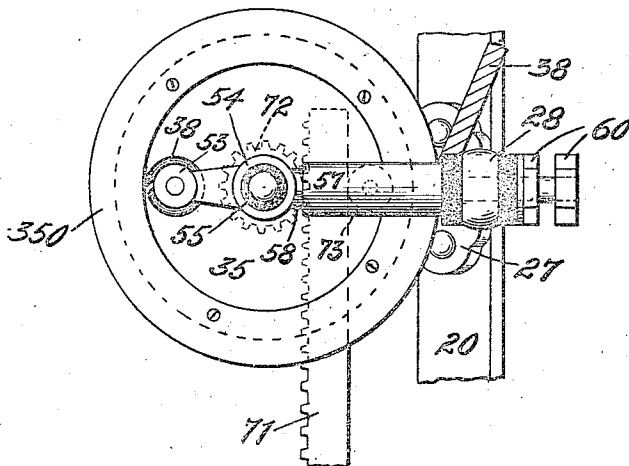


FIG. 4



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3 SHEETS—SHEET 3.

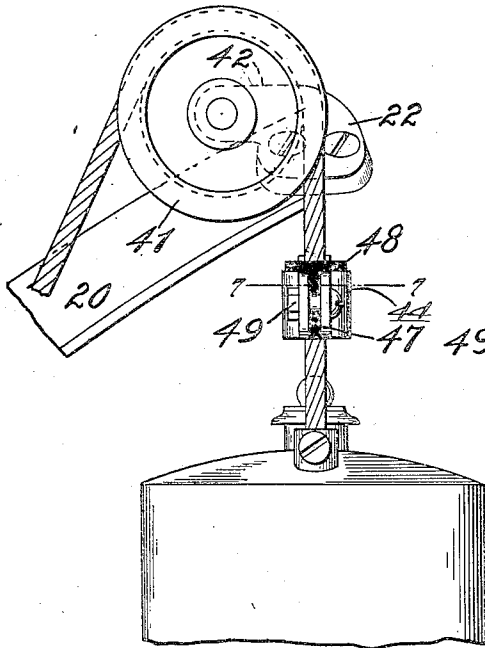


FIG. 5

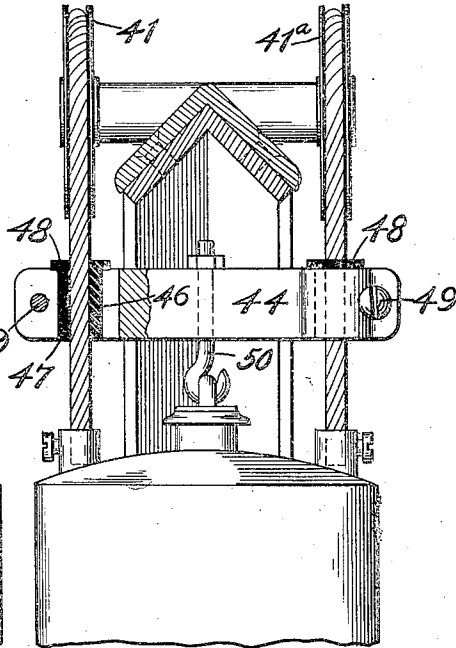


FIG. 6

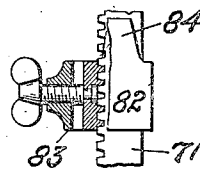


FIG. 8.

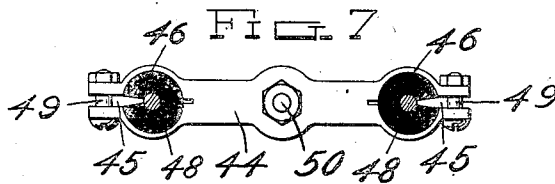


FIG. 7

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UNITED STATES PATENT OFFICE.

REINHOLD HERMAN, OF CRAFTON, PENNSYLVANIA.

ELECTRIC-LAMP-SUPPORTING MEANS.

1,050,020.

Specification of Letters Patent.

Patented Jan. 7, 1913.

Original application filed January 8, 1909, Serial No. 472,844. Divided and this application filed July 27, 1909. Serial No. 509,874.

To all whom it may concern:

Be it known that I, REINHOLD HERMAN, a citizen of the United States of America, residing at Crafton, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Electric-Lamp-Supporting Means, of which the following is a specification, reference being had therein to the accompanying drawing.

My invention relates to improvements in electric lamps, and has particular relation to the means for supporting the lamp to provide continuous lamp circuit connections whether the lamp be moving or stationary.

The principal object of the invention is to provide a cable connection between the lamp and the main lamp circuit and which will serve as a support for the lamp, the structure permitting the lamp to be moved relative to its permanent support to raise or lower the lamp without affecting the circuit connections.

A further object is the provision of improved means for connecting the lamp cables in the electric circuit.

A further object is the provision of a novel supporting means for the lamp whereby the usual point of connection of the cable and lamp is freed from the strain of the lamp support.

A further object is to provide a rotary circuit connector within and forming a part of the current path, said connector carrying the supporting cables for the lamp. Additional thereto, a further object is to provide means for imparting movements to the circuit connector and means for adjustably controlling the length of such movements.

Minor objects of the invention are to provide various mechanical improvements in the construction of the different parts of the apparatus and their manner of interconnection so as to produce an apparatus which is efficient, durable, of comparative low cost, and simple in operation.

To these and other ends, the nature of which will be understood as the invention is hereinafter disclosed, my invention consists in the improved construction and combination of parts hereinafter fully disclosed, illustrated in the accompanying drawings, and particularly pointed out in the appended claims.

In the accompanying drawings, in which

similar reference characters indicate similar parts in each of the views:—Figure 1 is a front elevation of a portion of a permanent lamp support, showing my improved construction in position thereon. Fig. 2 is a side elevation thereof. Fig. 3 is a horizontal sectional view taken on line 3—3 of Fig. 1, and showing the lamp cable supporting means and the circuit connections by means of which the current flows to the lamp. Fig. 4 is a front elevation of the structure shown in Fig. 3. Fig. 5 is a view in elevation of the upper portion of the lamp, the sheaves for the lamp cables, and the connector for the lamp and its cables. Fig. 6 is a view taken at right angles to Fig. 5, a portion of the connector being shown in section. Fig. 7 is a top plan view of the connector and showing the lamp cables in section, the section being taken on line 7—7 of Fig. 5. Fig. 8 is a vertical sectional view showing the stop mechanism for limiting the downward movement of the lamp.

The invention herein disclosed forms a portion of the disclosure in my application for Letters Patent, filed January 18, 1909, Serial No. 472,844, for improvements in blue-printing apparatus, being a division from said application. The construction shown is particularly adapted for use in connection with such apparatus, but it is to be understood that the same may be employed in other relations, as for instance, as a support for the ordinary street lamp; the drawings herein illustrating it in connection with the latter form, the particular construction of the permanent stationary support being immaterial, the invention pertaining more particularly to the cable support for the lamp.

The permanent stationary support is indicated at 20, and may be of any desired form or shape. That shown in the drawing is angular in cross-section with its upper end curved, this construction being that employed in said blue-printing apparatus.

The particular construction of the cable support will now be described.

Referring first to Figs. 3 and 4, 27 designates a bracket secured to the bar or support 20, said bracket having wings 28 extending on opposite sides of the bar 20, each of said wings having an opening 29 to receive a brush holder, an insulating collar 31 being interposed between the holder and the

bearing. The central portion of said bracket is extended outwardly, as at 32, the extension being in two spaced parts substantially duplicated and terminating in bearings 33 spaced apart a greater distance than the two parts of the extension, said bearings 33 being adapted to support a shaft 34 extending therethrough. Mounted on the shaft 34, on the outer sides of the bearings 33, are two sheaves 35, 35^a, said sheaves being secured to and deriving movement from said shaft in any preferred manner.

The sheaves 35 and 35^a, with their co-operating parts, are substantial duplicates in construction, and I will therefore describe, in detail, the structure in connection with the sheave 35. The sheave 35 has its periphery formed with an annular depression in which is secured an insulating bushing 37 also formed with an annular depressed portion to receive the strands of an insulated lamp cable 38 having one end passed through a radial opening 39 formed in the bushing 37 and the rim of the sheave, (the opening in the latter being insulated) and suitably secured in position on a screw 40. To enable the bushing 37 to be placed in position the sheave 35 is formed with a detachable side face 350, held in position by suitable screws, as shown in Fig. 4. The opposite end of the cable 38 is carried over a sheave 41 (Figs. 5 and 6) carried by a bracket 42 formed on the casting 22, and secured to the proper binding screw of the lamp. To prevent liability of grounding the electric circuit on the frame through the sheave 41, said sheave is provided with an annular insulating bushing within which the cable is located.

For the purpose of preventing liability of the cables being withdrawn from their connection with the lamp, I provide a supporting device which is best illustrated in Figs. 5, 6 and 7. This device comprises a bar 44 having its ends split or bifurcated, as at 45, each end being provided intermediate the ends of the bifurcations with an enlarged opening 46 to receive an insulated bushing 47; which also is split longitudinally on one of its sides and provided with a head 48 which normally rests on the upper face of the bar 44. A bolt 49 extending transversely of the bar 44 adjacent each of its ends, serves as a clamping member to provide pressure on the split insulating bushing 47. A suitable hook 50 has its shank extending vertically through the bar 44 at its center, said hook being adapted to be removably engaged with an eye formed at the upper end of the lamp.

The supporting of the lamp by means of the bar 44 is obtained by permitting the bifurcated ends of the bar to be opened by the release of the bolts 49 and the insertion of the insulating bushings 47 into the open-

ings 46, the bushings being passed over the cables. The hook is then inserted in its eye and the cables connected to their binding posts on the lamp. The bar is then moved along the cables until properly positioned thereon to take all strain off of the end of the cables, after which the bolts 49 are tightened, placing the grip of the bushings 47 on the cables a distance extending the entire length of the bushings. By this construction, not only is the weight of the lamp removed from the point of connection of the cables and lamp, but in addition, the bar and insulating bushings form positioning members for the cables which prevent the latter from being swung out of the sheaves 41, and tend to counteract a rotatory swinging of the lamp.

From the above description of parts, it will be understood that the cables from which the lamp is supported are wound around the sheaves 35 and 35^a and have their sheave ends secured to a screw carried by the sheave, and that a rotative movement of the shaft 34 will wind or unwind the cables from the sheaves 35 and 35^a according to the direction in which the shaft is being rotated.

The circuit connections by means of which the current is supplied to the lamp through the cables 38, are as follows: The sheave 35 is provided in its web with a bearing 51, and within said bearing is located an insulating collar 52, through which the screw 40, heretofore referred to, is passed, the outer end of said screw being adapted to receive a threaded-extension 53 formed on a rotary circuit connector or collector ring 54 mounted on a collar 55 formed of insulation and located on the shaft 34. For the purpose of insulating the extension 53 from the sheave 35, the insulating collar 52 projects beyond the face of the bearing 51; the end of the cable is located between said projecting portion of the collar and the extension 53, being clamped in position by the action of the screw 40 in placing the connector 54 in proper position.

The brush-holder 30, which provides the connections between the binding posts for the wires from the line to the connector 54, comprises a shank 56 located within the collar 31 and having a projecting portion 57 which is recessed longitudinally to receive a brush 58, of suitable type, and an actuating spring 59 which serves to retain the brush in contact with the face of the connector 54. The free end of the shank 56 is provided with screw threads to receive two nuts 60 which serve to clamp the wires for the circuit connections, a brass washer being interposed between the inner nut and the insulation.

It will be understood that as the shaft 34 is rotated, as hereinafter described, the con-

necter 54 moves therewith, and, through the brush and brush holder with its binding post, forms a part of the circuit connections for supplying the lamp with current.

5 For the purpose of clearly distinguishing the parts carried by or cooperating with the sheave 35^a, from the similar parts in connection with sheave 35, the parts are designated as follows: the lamp cable 38^a; 10 sheave, 41^a; binding post or screw, 40^a; rotary circuit connector, 54^a; brush-holder, 30^a; brush 58^a, and nuts 60^a.

The circuit, which is best illustrated in Figs. 1 and 2, includes the following: 61 is 15 a diagrammatic representation of the source of electrical supply and 62, a switch having switch contact clips 63 and 64, which may be employed where it is desired to cut out the lamp without affecting the remainder of 20 the line. As will be understood, the circuit passes from source 61 to the switch contact clip 63, through the sector of the switch, to the switch contact clip 64, and thence to the brush holder 30 and brush 58. From the 25 brush 58 it passes to the rotary circuit connector 54 and binding post or screw 40, from which it passes to the insulated cable 38 carried by the sheave 35, through said cable (the latter passing over sheave 41) to the 30 lamp. The return circuit passes from the lamp to the cable 38^a (the latter passing over sheave 41^a), through said cable, over sheave 35^a, to the binding post or screw 40^a, carried by the circuit connector 54^a, through said 35 connector brush 58^a, and brush-holder 30^a to the source of supply 61. It will now be understood that when the switch 62 is set to complete the circuit, a complete circuit will be formed through the lamp which circuit will be continued regardless of the 40 movements of the cables and their sheaves, and will continue until the switch has been operated to break the circuit.

The shaft 34 may be rotated in any suitable manner. For instance, it may be provided with a pinion 72 pinned to the shaft and which is adapted to be engaged by a rack bar 71 operated by and provided with a handle 77 by means of which the rack bar 50 may be moved to cause rotative movement of the shaft. To retain the rack bar in operative engagement with the pinion, a suitable roller 63 (Fig. 3) may be employed. If desired, a stop may be adjustably secured 55 on the rack bar for the purpose of limiting the downward movement of the lamp, a preferred form of stop being indicated in Fig. 9, in which 82 designates a sleeve loosely surrounding said rack bar and having a follower block 83 adapted to be engaged with the teeth of the rack bar, as indicated in said figure, said sleeve having an upwardly projecting portion 84 which is adapted to contact with a stationary part 60 of the bracket 32. By disengaging the fol-

lower block 83, it will be obvious that the stop may be moved longitudinally for any desired length of vertical movement of the lamp.

What I claim is:

1. In combination, a suspended electric 70 lamp, supporting cables therefor, and a lamp circuit, said cables providing a current-path within the circuit, said circuit including a rotatable support for the cables, 75 said support comprising a shaft, a pair of spaced-apart sheaves pinned to said shaft intermediate the ends thereof, insulating collars carried by the shaft outside the sheaves, a binding post carried by each 80 sheave and insulated therefrom and adapted to provide a circuit connection for one end of a cable, a rotary circuit connector mounted on each shaft collar and having a radial arm connected to the binding post of 85 the adjacent sheave, and a relatively stationary brush for and in contact with each connector and adapted to complete the lamp circuit through the cable support.

2. In combination, a suspended electric 90 lamp, supporting cables therefor, and a lamp circuit, said cables providing a current-path within the circuit, said circuit including a cable support comprising two rotatable sheaves pinned to a single shaft, 95 each sheave having a circuit connector carried thereby but insulated therefrom, said connector also being positioned on the shaft and insulated from the latter, a stationary brush holder for each connector, said holder 100 having a socket opening toward the connector, and a spring-supported brush mounted within each socket, said brush holder and brush being adapted to complete the circuit through the cable carrier. 105

3. In combination, a suspended electric lamp, supporting cables therefor, and a lamp circuit, said cables providing a current-path within the circuit, said circuit including a cable support comprising a shaft, 110 a pair of spaced-apart sheaves pinned to said shaft intermediate the ends thereof, insulating collars carried by the shaft outside the sheaves, an insulating collar carried by each sheave, each collar carrying a binding 115 post and adapted to provide a circuit connection for one end of a cable, a rotary circuit connector mounted on each shaft collar and having a radial arm mounted on the binding post of the adjacent sheave, and a 120 relatively stationary brush for and in contact with each connector and adapted to complete the lamp circuit through the cable support.

4. In combination, a suspended electric 125 lamp, supporting cables therefor, and a lamp circuit, said cables providing a current-path within the circuit, said circuit including a cable support comprising a shaft, a pair of spaced-apart sheaves pinned to 130

said shaft intermediate the ends thereof, insulating collars carried by each sheave, each collar carrying a binding post and adapted to provide a circuit connection for one end
5 of a cable, a rotary circuit connector mounted on each shaft collar and having a radial arm mounted on the binding post of the adjacent sheave, and a relatively stationary brush for and in contact with each connector and adapted to complete the lamp cir-
10

cuit through the cable support, each sheave having a peripheral groove, the walls of which are formed of insulation.

In testimony whereof I affix my signature in the presence of two witnesses.

REINHOLD HERMAN.

Witnesses:

ERNEST PAYNE,
C. HERMAN.