

C. H. SMITH.

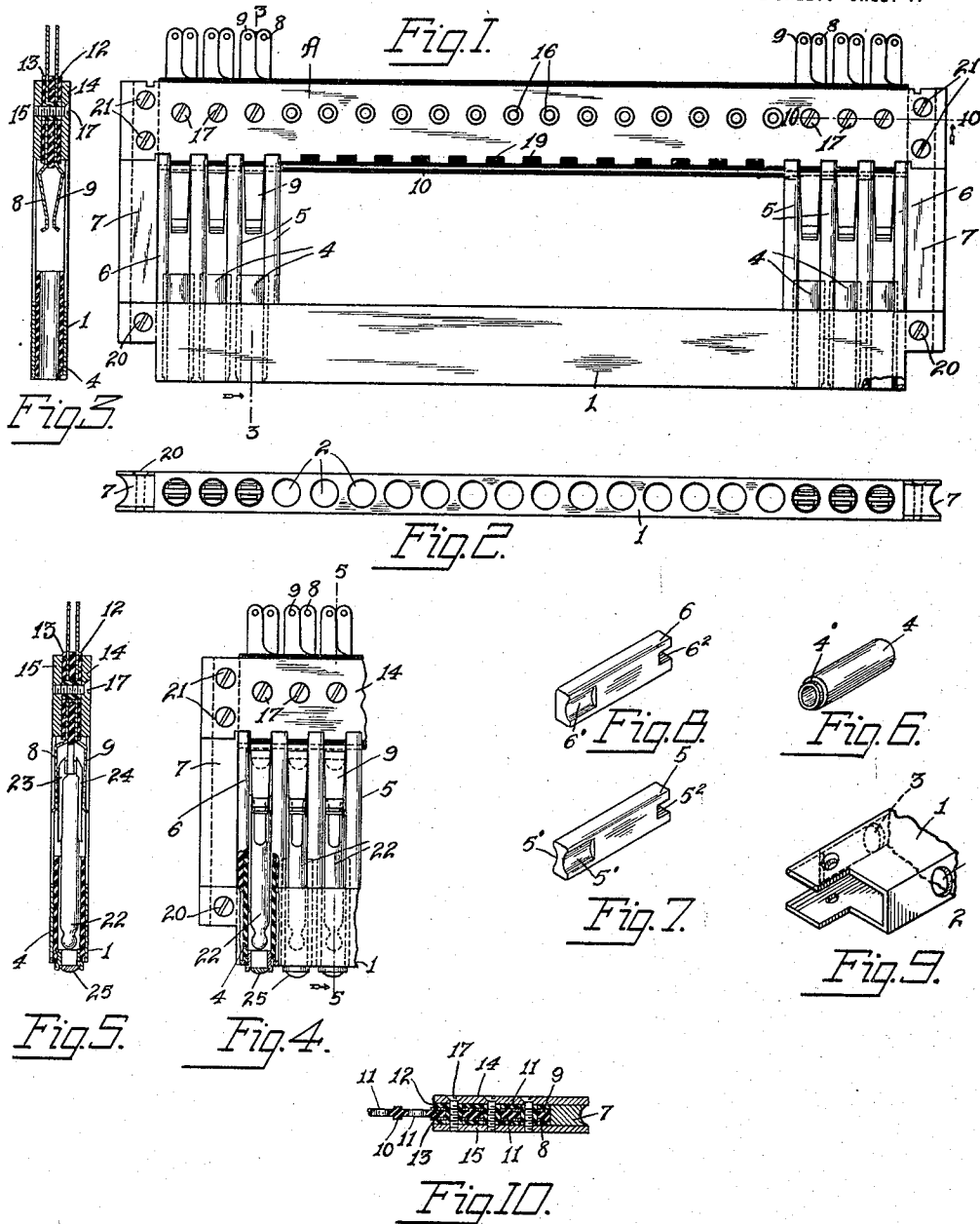
LAMP JACK.

APPLICATION FILED DEC. 3, 1914.

1,201,516.

Patented Oct. 17, 1916.

2 SHEETS—SHEET 1.



Witnesses:

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Inventor:

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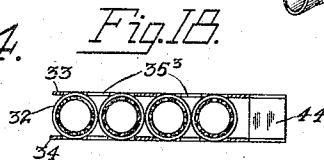
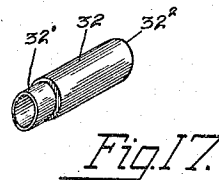
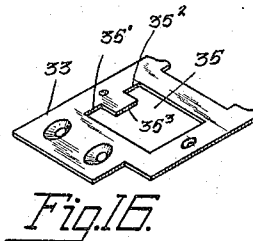
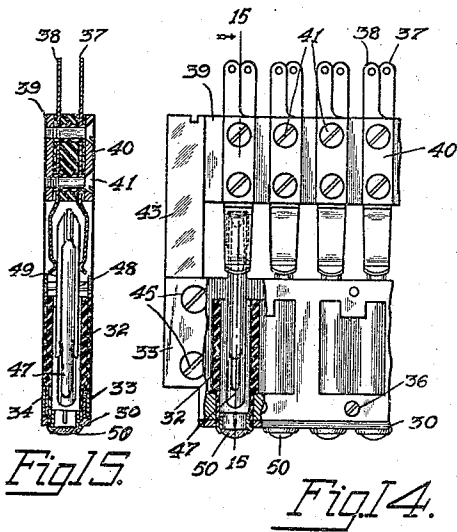
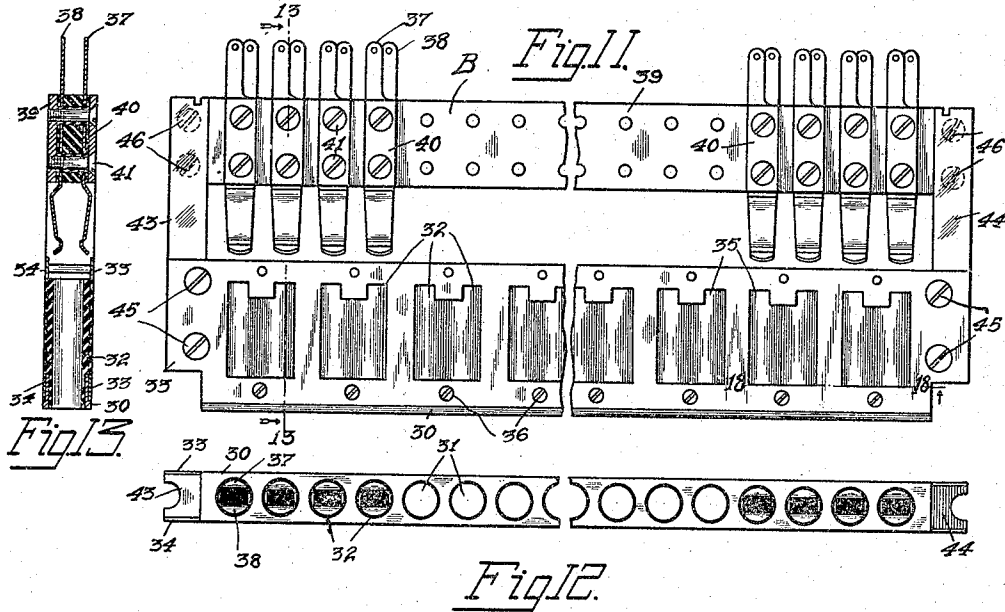
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2 SHEETS—SHEET 2.



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UNITED STATES PATENT OFFICE.

CHARLES H. SMITH, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD AND SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

LAMP-JACK.

1,201,516.

Specification of Letters Patent.

Patented Oct. 17, 1916.

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To all whom it may concern:

Be it known that I, CHARLES H. SMITH, a citizen of the United States of America, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Lamp-Jacks, of which the following is a specification.

My invention relates to lamp jacks such as are in general use in telephone switchboards, an object being to provide an improved construction having means for guiding the lamps into their jack springs, which means also serve as partitions to aid in preventing the lamps from affecting the lens of other than their own positions.

In lamp jacks for telephone switchboards it is necessary that they be very compact and of small construction so that the lamps are usually mounted upon very close centers. It frequently happens that in attempting to insert a lamp into its jack it will engage adjacent lamp springs. Also on account of the close relation of the lamps, when lighted, they may affect other positions than their own. To overcome these troubles I have provided an improved lamp jack having guiding means in the form of elongated tubes whereby when the lamp is inserted it finds its way into the proper jack springs, this tube also serving as a light retainer and partition to aid in preventing the rays of a lamp from illuminating the adjacent positions.

For a more complete understanding of my invention reference may be had to the accompanying drawings in which like reference characters denote like parts and in which—

Figure 1 is a plan view of a lamp jack embodying one form of my invention; Fig. 2 is a face view of Fig. 1; Fig. 3 is a sectional view along the line 3, 3, of Fig. 1; Fig. 4 is a view of a portion of the lamp jack strip showing lamps inserted into the spring jacks; Fig. 5 is a sectional view on the line 5, 5, of Fig. 4. Fig. 6 is a perspective view of the tubing which is inserted in the openings of the face strip. Fig. 7 is a perspective view of one of the partitions inserted between the tubes to separate the lamps and hold the tubing in position in the face strip. Fig. 8 is a perspective view of an end partition which fits between the connecting lug of the lamp jack strip and the

end tubing; Fig. 9 is a perspective view of the rectangular tubular metal face strip; Fig. 10 is a sectional view along the line 10, 10 of Fig. 1; Fig. 11 is a plan view of a modified form of lamp jack embodying my invention; Fig. 12 is a face view of Fig. 11; Fig. 13 is a sectional view along the line 13, 13 of Fig. 11. Fig. 14 is a view of a portion of Fig. 11, but with lamps inserted; Fig. 15 is a sectional view along the line 15, 15 of Fig. 14; Fig. 16 is a perspective view of a portion of the tube retaining and connecting plate; and Fig. 17 is a perspective view of one of the tubes. Fig. 18 is a view along line 18, 18 of Fig. 11 showing the manner in which the sides of the tubes protrude into the openings of the holding plates.

Referring now more in detail to the lamp jack as illustrated in Figs. 1 to 10 inclusive, it comprises a face strip 1 having a plurality of openings 2 and 3. The face strip 1 is preferably made of rectangular metal tubing, the openings 2 being located in the face of the face strip 1, while the openings 3 are located in the rear face of the face strip 1. I have illustrated a face strip having 20 openings which is commonly called, in telephone practice, a 20-lamp jack strip, but I do not wish to be limited to the exact number as shown as other combinations can be built.

The openings 2 and 3 are in alinement so as to allow the short pieces of tubing 4, which are of suitable insulation material, preferably fiber, to be inserted from the rear of the strip 1. The end 4¹ of tubing is turned down to a size to fit the opening 2 and as the opening 2 is slightly smaller than the opening 3, the shoulder thus formed on the end 4¹ rests against the inner surface of the face strip 1 so as to hold the tubes in place. The tubes 4 are held in position in the openings by the partitions 5 and 6 which are made of any suitable insulation material such as fiber or porcelain. Partitions 5 are so formed at 5¹ that they can be inserted between rearwardly extending pieces of tubing 4 so as to keep them in alinement, the partitions 6 of which there are two per strip, being used for the two end pieces of tubing. The spring mounting frame A locates the rear ends of the partitions 5 and 6 and this will be more fully described in another part of the specification. End partitions 6 which

are inserted between the connecting lugs 7 and the two end pieces of tubing 4 have only one of their sides 6¹ formed so as to conform to a portion of the periphery of the end tubing, the other surface resting against the inner face of the lugs 7.

Spring mounting frame A which clamps the spring terminals 8 and 9, comprises a mounting strip 10 of suitable insulation material and having grooves 11 (Fig. 10) of a size and depth to receive the spring terminals 8 and 9 cut in both top and bottom surfaces. The spring terminals 8 and 9 form connection means for the lamps 22, which are inserted between the said terminals. Strips 12 and 13 of suitable insulation material are placed between the top and bottom clamping plates 14 and 15 and the jack springs, these strips being the length of the jack. The clamping plate 14 has holes 16 drilled and countersunk to receive the clamping screws 17 which are suitably insulated from the springs and threaded into the plate 15 thus securely holding the springs in place. The top plate 14 has the notches 19 cut into it which correspond to the partitions 5 and 6 which in turn have slots 5² and 6² cut into their rear ends to allow the insulation of the mounting frame to fit into said slots so as to hold the partitions. The connecting lugs 7 for connecting the face strip 1 and mounting frame A are placed between the clamping plates 14 and 15 and the top and bottom surfaces of the face strip 1, the portion of the rear face of the strip 1 being cut away, as shown in Fig. 9, to allow the lugs 7 to be inserted between the two surfaces and fastened by the screws 20. Clamping plates 14 and 15 hold the lugs by the screws 21.

In Fig. 4, I have illustrated lamps 22 inserted between springs 8 and 9, the terminals 23 and 24 of the lamp engaging the said springs 8 and 9. The forward end of the lamps extend into the tubes 4 to insulate them from the metal face strip 1, and partitions 5 and 6 which are inserted between the tubes 4 insulate the lamps from each other. The partitions 5 and 6 and the tubes 4 also aid in preventing the light of one lamp from reaching the section or stall of another, and as a large portion of the lamp 22 extends into the tube 4 this aids in concentrating the rays of a lighted lamp upon the lens 25 which is inserted into the tube 4. It will also be seen that in inserting a lamp, due to guidance of the tube the lamp will engage its own springs only.

In Figs. 11 to 18 I illustrate another form of lamp jack which is a modification of the lamp jack illustrated in Figs. 1 to 10, and comprises a face strip 30 preferably of rubber and having a plurality of openings 31 which are adapted to receive the short pieces of insulating tubing 32. The tubing 32 has

its end 32¹ turned down to fit the opening 31 and the shoulder thus formed rests against the inner face of the face strip 30 and holds the tube in place. The tubes 32 extend rearwardly from the openings 31 and to keep them in alinement and position I provide the retaining plates 33 and 34. The plate 33 is clearly shown in Figs. 11 to 16 and it is to be understood that the plate 34 is similarly constructed and by describing one plate it will be clear as to the method of holding the tubes in alinement. The plate contains a plurality of openings 35 which correspond to the rearwardly extending tubes. The tubes having been inserted into the openings of the face strip, the retaining plates 33 and 34 are placed above and below and fastened to the face strip 30 by means of screws 36. The openings 35 and the rear portions of the tubes are for the same length and thus when the plates are in place the tubes protrude slightly into the openings 35 as shown in Fig. 18. The rear face 32² of the tube thus rests against an edge 35¹, 35² of the opening, preventing longitudinal movement of the tubes, each opening being adapted to hold two tubes. The lug 35³ of the opening 35 rests upon the periphery of each of the two tubes, the edges 35¹ and 35² resting against the rear ends 32² of the tubes keeping them in position.

A spring mounting frame B which supports springs 37 and 38 comprises a mounting plate 39 upon which each set of springs 37 and 38 is individually mounted and suitably insulated from each other. The clamping plates 40 have holes drilled and countersunk to receive the screws 41 which are threaded into the base 39. The connecting lugs 43 and 44 for connecting the face strip 30 and the mounting frame B are placed between the retaining plates 33 and 34 and on the inner face of the mounting plate 39. The lugs 43 and 44 are fastened to the retaining plates by the screws 45 and to the mounting base 39 by means of the screws 46 as shown in dotted lines in Fig. 11. In Fig. 14, I have illustrated lamps 47 inserted between the springs 37 and 38 so that terminals 48 and 49 of the lamp engage therewith. The forward ends of the lamps extend into the tubes 31 thus being insulated from the metal face strip 31, the said tubes also aiding in preventing the light of one lamp from reaching the lens of another. As a large portion of the lamps 47 extend into the tubes 31 this aids in concentrating the rays of a lighted lamp into its lens 50.

Having described my invention, what I claim as new and desire to secure by United States Letters Patent, is:—

1. A lamp jack for telephone switchboards comprising a flat elongated rectangular frame, a plurality of adjacently disposed spring jacks mounted upon the rear of said

frame and projecting toward the face thereof, tubular members positioned between the face and spring jacks for guiding the lamps when inserted therein, and light partitions for holding the tubular members in place.

2. A lamp jack for telephone switchboards comprising a face strip having a plurality of adjacently positioned openings for insertion of the lamp, a jack spring mounting frame suitably supported to the rear of the face strip, a plurality of spring jacks corresponding to the face openings and supported by said frame and extending toward said face strip, tubular guiding means corresponding to the openings and jack springs positioned between the face strip and jack springs, and partitioned members for holding the said tubular guiding means in position.

3. A lamp jack for telephone switchboards comprising a face strip having a plurality of adjacently positioned openings for insertion of the lamp, a jack spring mounting frame suitably supported to the rear of the face strip, a plurality of spring jacks corresponding to the face openings and supported by said frame and extending toward said face strip, tubular guides corresponding to the openings and spring jacks, and means for holding said tubes in position between the face strip openings and corresponding spring jacks, said means including partitioned members inserted between the tubular members and the jack spring mounting frame.

4. A lamp jack for telephone switchboards comprising a face strip, a plurality of elongated tubular members having one end held in adjacently disposed openings in the face strip, a spring jack mounting frame suitably supported to the rear of the face strip, a plurality of spring jacks supported by said frame and extending toward said face strip, said tubular members extending toward said spring jack for guiding the lamps when inserted therein, and partitioned members for holding said tubular

members in place in the openings in the face strip.

5. A lamp jack for telephone switchboards comprising a face strip having a plurality of adjacently disposed openings therein, an insulating tubular member extending through each of said openings so as to be flush with the face of the strip, a spring jack mounting frame suitably held to the rear of the face strip, spring jacks mounted upon said frame and having free ends extending toward the rear end of the tubular members into close proximity therewith to serve as guiding means for the lamp, and light partitions for holding said tubular members in said openings.

6. A lamp jack strip for telephone switchboards comprising a front strip having jack openings therein, a jack spring mounting frame removably supported to the rear of the face strip, a plurality of spring jacks supported by said frame and extending toward said face strip, suitable guides corresponding to the openings and spring jacks adapted to be inserted into the openings in the face strip, and means supported by said face strip and said spring mounting frame for holding said tubular guides in position.

7. A lamp jack strip for telephone switchboards comprising a face strip, a plurality of tubular members, each of said members being provided with an annular portion adapted to fit into disposed openings in the face strip, a removably supported spring jack mounting frame supported to the rear of the face strip, and means supported between said face strip and said mounting frame for securely holding said tubular members in place.

Signed by me at Chicago, county of Cook and State of Illinois, in the presence of two witnesses.

CHARLES H. SMITH.

Witnesses:

GEORGE E. MUELLER,
M. R. ROCHFORD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."