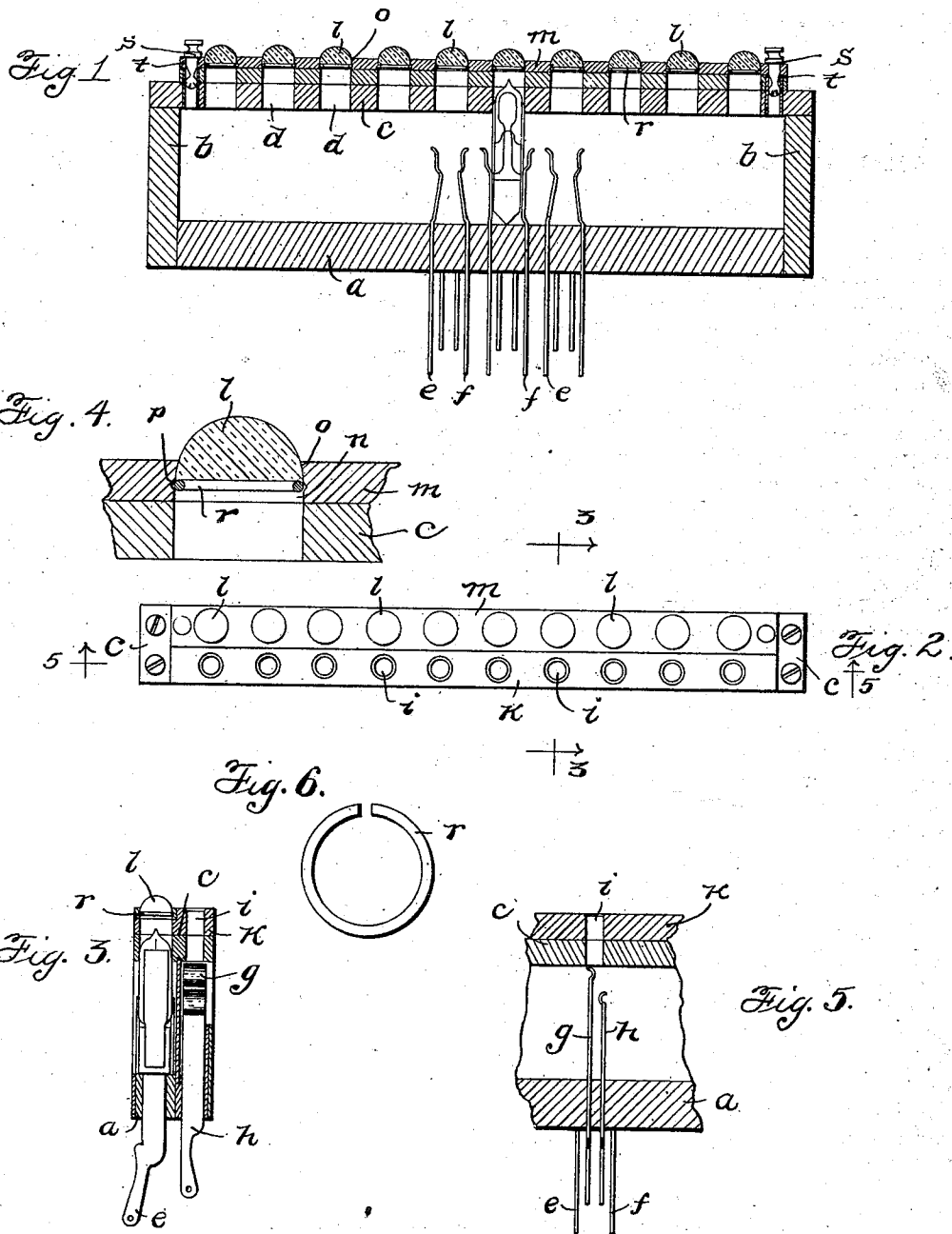


W. MEYER.
SWITCHBOARD APPARATUS.

(Application filed Oct. 10, 1901.)

(No Model.)



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UNITED STATES PATENT OFFICE.

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SWITCHBOARD APPARATUS.

SPECIFICATION forming part of Letters Patent No. 698,038, dated April 22, 1902.

Application filed October 10, 1901. Serial No. 78,188. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM MEYER, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Switchboard Apparatus, (Case No. 4,) of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to switchboard apparatus, and more particularly to telephone-switchboards, and has for its object the provision of an improved manner of mounting lamps or other signaling devices in boards of this kind. In mounting lamps or other signals in boards of this kind they are usually mounted in horizontal rows or banks, with small opalescent globes mounted in front of each lamp to more effectively convey a signal. Difficulty has hitherto been experienced in providing proper mounting for the opals in front of incandescent lamps, as metallic sleeves had to be provided within which the opals were mounted and these metallic sleeves inserted in holes provided in the board in front of the lights.

In accordance with my invention I provide an improved supporting-bar which is adapted to receive a number of opals corresponding to the number of lamps in the bank, which bar or strip is then to be removably secured to the switchboard-frame in front of the lamps. In this manner the opals are all readily removable to replace burnt-out lamps or to cure other deficiencies occurring in the operation of a telephone-exchange, the change being easily effected from the front of the board.

My invention further contemplates improved means for mounting the opals in the strip, so that they may also be readily removable from said board; also, improved means for mounting the opal-carrying strip in the switchboard-frame.

I will explain my invention in detail by reference to the accompanying drawings, illustrating one embodiment thereof, in which—

Figure 1 is a longitudinal sectional view

through a bank of lamps and opals constructed in accordance with my invention. Fig. 2 is a front view thereof, the lamp-bank being shown in association with a bank of answering-jacks. Fig. 3 is a sectional view on line 3 3 of Fig. 2. Fig. 4 is a detail sectional view showing the manner of mounting the opals. Fig. 5 is a sectional view on line 5 5 of Fig. 2. Fig. 6 is a detail view of a fastening-ring.

Like characters of reference indicate like parts throughout the different figures.

The bank of lamps, as shown in the figures, comprises a suitable spring-carrying strip *a*, provided with end pieces *b b* and a front piece *c*, which is adapted to be placed in the front of the switchboard. The front piece *c* may be constructed of two parts, if desired, for ease in the manufacture thereof. Holes *d d* of sufficient size to accommodate the small incandescent lamps used in telephone practice are provided in the front piece *c*, each hole registering with a set of springs *e f*, adapted for connection with the signaling-circuit, as is well understood. The bank of lamps is preferably arranged adjacent to a bank of answering-jacks comprising the springs *g* and *h*, with which contact is to be effected by means of plugs inserted through holes *i*, provided in the cover-plate *k*.

It is essential in order to insure efficient operation of the telephone-exchange to provide small opals *l l* in front of the holes *d d*, so that the light from the incandescent lamps may be of a diffused nature. The difficulty as heretofore experienced in mounting each separate opal in place in front of each lamp is avoided by means of my improved construction, in which I employ a supporting-plate *m*, provided with holes *n*, suitably registering with the holes *d*, provided in the front plate *c*. The holes *n* in the plate *m* are in accordance with my invention provided at their outermost extremity with a sloping surface *o*, which is adapted to receive and maintain in position the opals, which may be introduced therein from the other end, as is well shown in Fig. 4. An annular groove *p* is provided in association with each hole *n*, which groove is provided near the extremity

of the opal *l* and by means of which the opal is to be held in place when a spring collar or ring *r* is inserted therein.

The manner of mounting the opals in the strip *m* is as follows: The opal is first placed in the hole *d* and is held from passing through the same by the inclined surfaces *o*. The spring collar or ring *r* is then inserted and by reason of its resiliency forces itself into the groove *p*, thereby holding the opal *l* in place in the strip *m*. A number of opals are thus mounted in each strip in such manner as to register with the holes *d*, provided in the front piece *c*, and the whole strip is then removably mounted in the front of said board *c* by means of spring-catches *s s*, fixedly secured at the two extremities of said bar *m*, which spring-catches are adapted to fit into suitable clasping-holes *t*, provided in the front piece *c*. When thus mounted in the front of the board, the spring-catches, together with the clasps, maintain the strip *m*, with its associated opals, readily in place upon the switchboard. In order to remove the said strip *m* from said board, all that is required is to manually withdraw the spring-catches *s* from the clasps *t*, and the lamps may be taken out or renewed. It will thus be apparent that a very simple construction is attained by means of my invention of mounting these opals, which construction could not be employed if each opal were mounted separately, as the space occupied by the spring-catches would be in excess of that which is allowable, whereas by mounting the opals in a suitable strip in a bank and then removably securing the said strip to the front of the switchboard the objects of my invention are attained.

While I have herein shown and particularly described one means of carrying out my invention, I do not wish to limit myself to the precise construction and arrangement as herein shown and specifically set forth; but,

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination with a bank of incandescent lamps, of a framework for mounting said lamps, a cover-plate for said lamps, provided with apertures registering with the said lamps, opals provided in said apertures, and means for removably securing said cover-plate to said framework, substantially as described.

2. The combination with a bank of incandescent lamps, of a framework for mounting said lamps, contact-springs provided in said framework, a cover-plate for said lamps provided with apertures registering with the said lamps, opals provided in said apertures, and means for removably securing said cover-plate to said framework, substantially as described.

3. The combination with a bank of incan-

descent lamps, of a framework for mounting said lamps, contact-springs provided in said framework, a cover-plate for said lamps, provided with apertures registering with the said lamps, opals provided in said apertures, and spring-clasps for securing said cover-plate to said framework, substantially as described.

4. The combination with a bank of lamps, of a framework wherein said lamps may be mounted, springs for effecting electrical contact with said lamps, the framework for said lamps comprising a front plate provided with holes wherein the lamps may be secured at one end, a cover-plate provided with apertures registering with said holes, opals mounted within said cover-plate, and spring-clasps for removably securing said cover-plate to said framework, substantially as described.

5. The combination with a bank of lamps, of a framework wherein said lamps may be mounted, springs for effecting electrical contact with said lamps, the framework for said lamps comprising a front plate provided with holes wherein the lamps may be secured at one end, a cover-plate provided with apertures registering with said holes, said apertures having inclined surfaces, opals mounted within said cover-plate and impinging against said inclined surfaces, and spring-clasps for removably securing said cover-plate to said framework, substantially as described.

6. The combination with a bank of lamps, of a framework wherein said lamps may be mounted, springs for effecting electrical contact with said lamps, the framework for said lamps comprising a front plate provided with holes wherein the lamps may be secured at one end, a cover-plate provided with apertures registering with said holes, said apertures having inclined surfaces, opals mounted within said cover-plate and impinging against said inclined surfaces, a spring *r* for holding the opals in place, and spring-clasps for removably securing said cover-plate to said framework, substantially as described.

7. A cover-plate for mounting opals in front of a bank of lamps, comprising a plate *m*, provided with apertures having inclined surfaces, opals provided in said apertures impinging against said inclined surfaces, a spring *r* for securing the opals in place within the strip *m*, and spring-clasps *t* provided upon said strip *m*, substantially as described.

8. A cover-plate for mounting opals in front of a bank of lamps, comprising a plate *m* provided with apertures having inclined surfaces, opals removably secured within said apertures, and spring-clasps *t* provided upon said strip, substantially as described.

In witness whereof I hereunto subscribe my name this 5th day of October, A. D. 1901.

WILLIAM MEYER.

Witnesses:

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