

No. 896,617.

PATENTED AUG. 18, 1908.

L. A. BRINKMAN.
TELEPHONE SWITCHBOARD APPARATUS.

APPLICATION FILED FEB. 8, 1904.

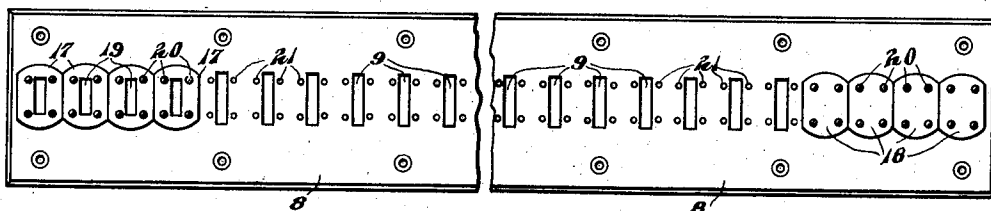


Fig. 1.

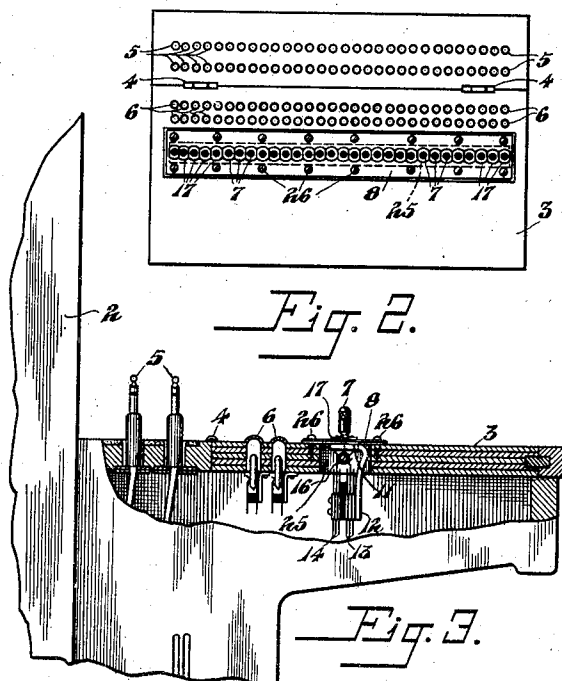


Fig. 2.

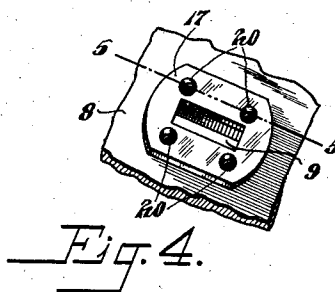


Fig. 4.

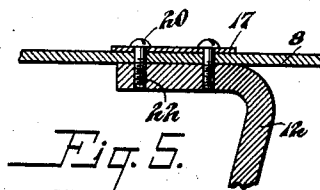


Fig. 5.

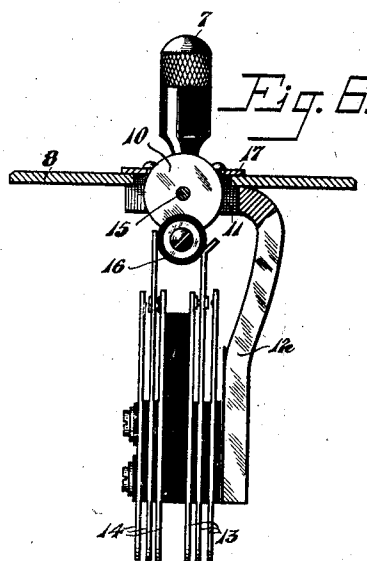


Fig. 6.

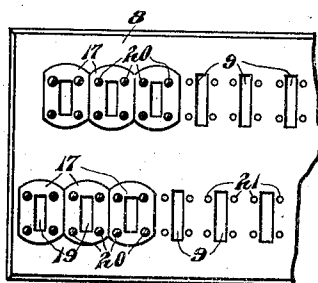


Fig. 7.

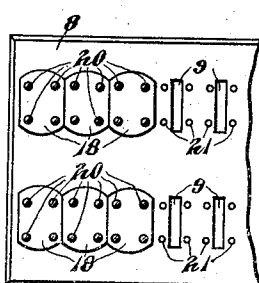


Fig. 8.

Witnesses.

R. H. Burfield
E. A. Ames

Inventor:
Lewis A. Brinkman
by Robert Lewis Ames,
Attorney.

UNITED STATES PATENT OFFICE.

LEWIS A. BRINKMAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO KELLOGG SWITCHBOARD AND SUPPLY COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

TELEPHONE-SWITCHBOARD APPARATUS.

No. 896,617.

Specification of Letters Patent.

Patented Aug. 18, 1908.

Application filed February 8, 1904. Serial No. 192,513.

To all whom it may concern:

Be it known that I, LEWIS A. BRINKMAN, a citizen of the United States of America, and resident of Chicago, county of Cook, and State of Illinois, have invented a new and useful Improvement in Telephone-Switchboard Apparatus, of which the following is a specification.

My invention relates to improvements in the key shelf construction of telephone switchboards and comprises means whereby the operators' switches of the ringing and listening type may be mounted upon a single escutcheon plate whereby numerous advantages in the construction and maintenance of the switchboard and shelf are secured.

The key shelf of the telephone switchboard is ordinarily pivoted or hinged at its rear edge and the operators' switches are mounted thereon with their operating buttons or handles projecting from the upper side and their contacts and the wiring placed upon the under-side, whereby the contacts and wiring are ordinarily concealed but are exposed to view by raising the said shelf. It has been common heretofore to mount the switches, usually termed the ringing and listening keys, individually upon the shelf, said keys being provided with individual top plates or supporting plates which were counter-sunk or let into the outer surface of the key shelf so that the upper face of the key supports were flush with the top of the shelf. This separate mounting of the keys requires accurately fitting the supporting plates into the depressions formed in the face of the key shelf, which may be composed of wood or hard rubber, it being necessary for the cabinet makers to work to dimensions as close as thousandths of an inch, which is almost impossible in material of this character. Any slight inaccuracy in the given dimensions of the supporting plates caused additional trouble in fitting them and it was often necessary to resort to patching and filling-in the cracks in order to present a finished and neat appearance to the outside of the key shelf.

By the present invention I avoid the tedious and careful work necessary to thus fit the parts into the shelf and provide a construction in which with even rough work on the part of the cabinet maker a neat and well appearing structure is accomplished. This result I achieve by providing a single escutcheon plate for the key shelf upon which

all of the operators' switches are adapted to be mounted and which requires merely a long slot in the key shelf, the springs and frames supporting the springs being secured to the under side of said plate and extending through said slot while the escutcheon plate itself, which may be nickel plated upon its upper face or otherwise finished, fits over the said slot and imparts a trim and finished appearance to the shelf. A great saving in time and labor results as well as a saving in material since in the old scheme it was often necessary to throw away parts that did not accurately fit and provide new ones, while with the present invention, all such waste is unnecessary. A less skilled grade of labor also may be employed.

My invention is illustrated in the accompanying drawing in which

Figure 1 is a plan view of the escutcheon plate; Fig. 2 is a plan view of a key shelf with the plate applied thereto; Fig. 3 is a transverse sectional view of a key shelf to which the invention is applied; Fig. 4 is a detailed view of the individual escutcheon plates; Fig. 5 is a sectional view of the same on the line 5—5 of Fig. 4; Fig. 6 is an enlarged view of a key which may be mounted upon the said escutcheon plate; Fig. 7 is a plan view showing the plate provided with an additional row of switches, the switches in the two rows being staggered or out of line transversely, and Fig. 8 is a plan view of a double row plate but in which the switches in the two rows are in line with each other transversely.

Fig. 3 shows a portion of a switchboard provided with a key shelf 3 hinged at 4 in the ordinary manner. It is common to mount the connecting plugs 5 of the operators' cord circuits upon the stationary part of the operator's table or shelf and the supervisory signals 6 upon the hinged portion of the shelf. The operators' switches indicated in this figure at 7 are also carried upon the hinged shelf. In order to mount these keys or switches in accordance with my invention, I provide an escutcheon plate 8 shown more fully in Fig. 1, having a plurality of slots 9 formed therein, preferably in a row, to accommodate the key levers 10 of the said switches. The keys which I have shown applied to the plate include a metallic supporting member having a horizontal portion 11, and a depending portion

12 to the lower end of which the contact springs 13 and 14 preferably in double sets, are secured in the ordinary manner. The key lever 10 of this switch is pivoted as at 5 15 upon a horizontal portion 11 of the supporting member and is preferably provided with rollers 16 at its lower end which are located between the upwardly extending ends of the opposed sets of contact springs 10 and serve when the lever is vibrated to actuate said springs. The central portion of this key lever is of disk form and passes through the slot 9 of the escutcheon plate, the operating handle 7 being secured at its 15 upper edge to a threaded stud. The slots 9 are preferably formed larger than necessary to accommodate the said key lever and an individual escutcheon plate 17 is provided for each key, said plates having slots 19 in 20 which the disk-like portions of the key levers accurately fit, screws 20 pass through suitable apertures in the individual escutcheon plates 17 and through apertures 21 in the escutcheon plate 8 and thence thread 25 into apertures 22 formed in the portion 11 of the supporting member as shown more clearly in Fig. 5. The slots 19 accurately fit the disk-like portions of the key levers to prevent dust and dirt from passing down 30 into the contacts of the switches.

The individual switches after having been assembled may be secured to the escutcheon plate 8 by unscrewing the hard rubber handle 7 of the key lever, inserting the lever 35 through the proper slot 9 from the inner side and thence applying the individual escutcheon plate 17 and inserting the screws 20. The threading of the handle 7 in place completes the mounting of the switches. 40 When all of the key levers are secured to the escutcheon plate they are passed through the slot 25 in the key shelf 3 and the plate itself is secured to the upper side of said shelf by means of suitable screws 26. The es- 45 cutcheon plate 8 is preferably provided with an ornamental beveled edge and may be nickel plated, oxidized, or otherwise finished upon its outer face. The slot 25 in the key shelf may be formed without extreme exact- 50 ness, and the escutcheon plate with its switches requires no accurate fitting, but merely to be placed in the desired position and secured therein by the screws 26. After the parts have been wired together it is pos- 55 sible to remove any of the individual switches by unscrewing the handles of the key levers, removing the screws 20 and if necessary sever-

ing the connecting wires which are attached to the lower ends of the springs 13 and 14 of the switch to permit the same to be with- 60 drawn.

Fig. 7 shows the escutcheon plate provided with a pair of rows of slots which is sometimes desirable in case party line ring- 65 ing is desired or in case additional switches are desired upon the key shelf for any purpose. The holes in these rows may be staggered as shown in Fig. 7 or placed in line transversely as shown in Fig. 8. In order to permit of increasing the installation at 70 any future time without the necessity of providing a new plate 8, the full row of holes may be provided and the unused holes covered with blunt individual escutcheon plates 18, as shown at the right hand in Fig. 1 and 75 Fig. 8.

While I have described specifically one commercial form of my invention, I do not wish to be limited thereto in all respects, as various changes and alterations may be made 80 therein without departing from the scope or principle thereof. But

Having thus described my invention what I claim is:

1. In a telephone switchboard, the combi- 85 nation with an operator's key shelf having a longitudinal opening therein, of a plurality of operators' switches, each secured to a separate frame, a single escutcheon plate adapted to cover the opening in said key 90 shelf and upon which the frames of said keys are adapted to be separately mounted, and an individual escutcheon plate for each key mounted upon said main escutcheon plate, and secured thereto from above the plate 95 substantially as described.

2. In a telephone switchboard, the combination with an operator's key shelf, of a main plate adapted to be secured to the upper surface of said key shelf, a plurality of 100 small plates secured to the upper surface of said main plate, and a plurality of operators' keys adapted to be individually secured to or removed from said plates without the removal of the main plate from the switch- 105 hook, substantially as described.

Signed by me at Chicago, county of Cook, State of Illinois, this 6th day of January 1904.

LEWIS A. BRINKMAN.

Witnesses:

E. A. GARLOCK,
ROBERT LEWIS AMES.