

(No Model.)

A. J. WURTS.
BACK CONNECTION FOR SWITCHBOARDS.

No. 564,679.

Patented July 28, 1896.

Fig. 1.

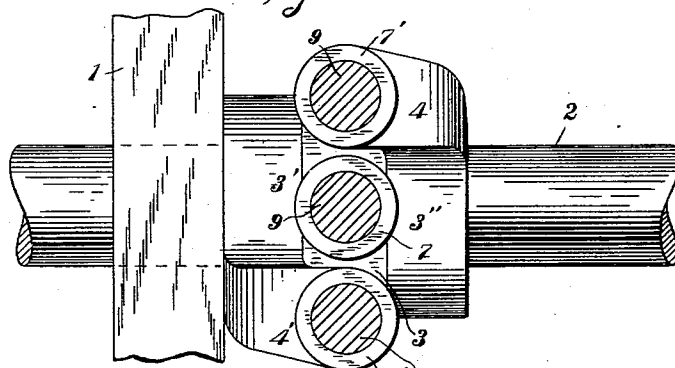


Fig. 2.

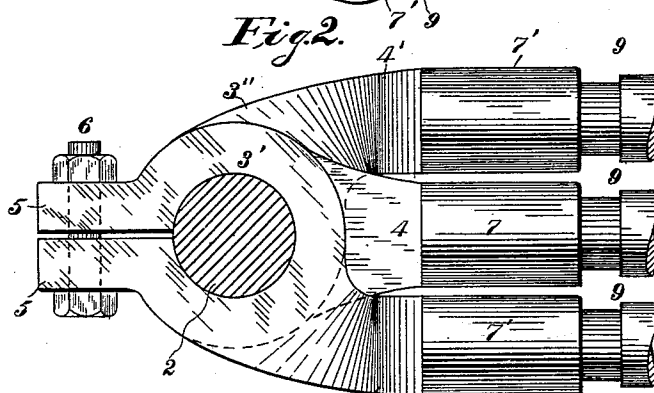
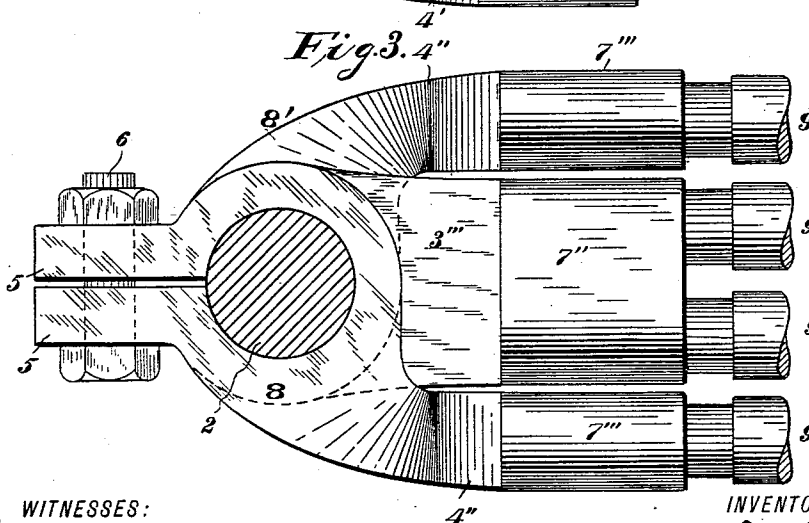


Fig. 3. 4''



WITNESSES:

Ethan D. Dodge
Hubert C. Tener

INVENTOR

Alexander Jay Wurts
BY

Jerry MacKay & Co.
ATTORNEYS

UNITED STATES PATENT OFFICE.

ALEXANDER JAY WURTS, OF PITTSBURG, PENNSYLVANIA, ASSIGNOR TO
THE WESTINGHOUSE ELECTRIC AND MANUFACTURING COMPANY, OF
SAME PLACE.

BACK CONNECTION FOR SWITCHBOARDS.

SPECIFICATION forming part of Letters Patent No. 564,679, dated July 28, 1896.

Application filed November 7, 1895. Serial No. 568,216. (No model.)

To all whom it may concern:

Be it known that I, ALEXANDER JAY WURTS, a citizen of the United States, residing in Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Back Connections for Switchboards, (Case No. 675,) of which the following is a specification.

My invention relates to switchboards for systems of electrical distribution, and more particularly to means for connecting the conducting-wires with the back terminal studs of such switchboards.

The object of my invention is to provide a means of this general character which may be readily applied and removed, and which will be adapted for the connection of any number of conducting-wires within reasonable limits without any special adaptation or alteration for any specific case.

Heretofore it has been the general practise to provide a single connecting device for each back terminal-stud, thus rendering it necessary to drill such device in accordance with requirements of each particular case, both as regards the number of conductors and the size of the same. In this old form of connecting device conductors are held or fastened by means of set-screws. This makes comparatively poor contact, and the set-screws are at any time liable to become loose. A soldered connection would be better, but the wires cannot be soldered to the connecting device when the latter is in position on the back terminal stud, because in many instances the heat necessary for soldering would be conveyed through the stud to the instrument on the face of the switchboard and there cause damage. Nor is it feasible to adjust several wires into one connecting device while on its terminal stud, then remove the connecting device with wires in position and solder, because after soldering there would be some slight adjustment necessary, which would be exceedingly difficult to make after soldered connection had been made to several large wires. By my invention I am able to provide certain sizes and forms of connectors, which may be kept in stock, and any desired number of each may be employed

without making any changes therein to suit any particular case, it being merely necessary to make the proper connection between the ends of the conductors and these connecting devices and to clamp the latter upon the back terminal stud. Each conductor has its own connecting device, so that each conductor and each connecting device may be first adjusted, then removed, soldered, and finally replaced, thus securing not only better electrical contact, but avoiding the possibility of any loosening of the contacts. By my invention it is also possible to increase the number of conductors from one or more studs, and consequently the total carrying capacity, without disturbing the existing conductors and without having previously made allowance for such increase of capacity in the connecting device.

In the accompanying drawings, Figure 1 is a side elevation of a portion of a switchboard and a single back terminal stud provided with three connectors. Fig. 2 is a rear elevation showing the stud in section, the three connectors in position thereon, and portions of three conductors. Fig. 3 is a view similar to Fig. 2, showing a slightly-modified construction.

Reference being now had to the details of the device shown in the drawings, 1 is the insulating switchboard-base, and 2 the back terminal stud supported thereby.

3, 3', and 3'' are the individual members of a set of connecting devices independently supported upon the back terminal stud 2. The base portion of each of these devices is provided with an opening of such size and shape as to closely fit the stud 2, and is also split at one side to form two projecting lugs 5, these lugs being perforated for the reception of a bolt 6, in order that when the device is in position upon the stud 2 it may be rigidly clamped thereon. The middle connector 3 is provided with a shank 4, which projects at right angles to the stud 2, and has a cylindrical outer end 7. The connectors 3' and 3'', located, respectively, at the inner and the outer side of the connector 3, are alike in form, and their supporting and clamping means are like the corresponding parts of the device 3.

These connectors 3' and 3'' are provided with shanks 4', however, which are offset or curved so as to bring their cylindrical ends 7', together with the end 7 of the connector 3, into a plane substantially parallel to the back of the switchboard, the two connectors 3' and 3'' being reversed in position in order to accomplish this result. It is apparent that either a less or a greater number than three of these devices may be employed, if desired.

In case one or more additional connectors be employed, it will obviously be necessary either to make the connecting-shank of greater length than has been indicated in the drawings or to begin a second set of connectors in a second plane parallel to the plane of the first set.

Each of the cylindrical ends 7 7' has a cylindrical socket for the reception of the end of a conductor 9, a good electrical and mechanical connection between these parts being made, preferably, by means of solder.

In Fig. 3 of the drawings the middle connector is exactly like the corresponding device shown in Figs. 1 and 2, except that its shank 3''' is of greater width and the portion 7'' is provided with two sockets for the reception of the ends of two conductors 9. The connectors 8 and 8' are constructed and arranged the same as the corresponding devices 3' and 3'', in Figs. 1 and 2, except that the form and dimensions of their shanks 4'' are varied sufficiently to accommodate the larger part 7'' between the parts 7'''.

It will be apparent from the foregoing description and illustration that the number of conductors connected to any back terminal stud may be varied to suit the requirements of any particular case without any special fitting or alteration of connecting devices, it being feasible to keep the few necessary forms of connecting devices in stock, and when it is desired to add an additional conductor or conductors this may be done by simply inserting its end in the socket of the connector, applying the solder, slipping the connector upon the stud, and clamping it in the desired position thereon. It is also apparent that the ar-

range of the conductors in a plane parallel to the back of the switchboard is an important and desirable feature.

I claim as my invention—

1. The combination with a switchboard back terminal stud, of a plurality of movable coupling devices independently clamped upon said stud, said devices having conductor-receiving sockets arranged in a plane substantially parallel to that of the base-board of the switch.

2. The combination with a switchboard back terminal stud, of a plurality of separable coupling devices independently clamped thereon, each of said coupling devices having a socket for the reception of the end of a conductor.

3. The combination with a switchboard back terminal stud, of a coupling device clamped upon said stud and projecting substantially at right angles thereto, and a second coupling device independently clamped to said stud and having its free end projecting parallel to the corresponding end of the first-named coupling device, and in a plane substantially parallel to the plane of the base-board of the switch.

4. The combination with a switchboard back terminal stud, of a coupling device removably clamped upon said stud and projecting at right angles thereto, and a pair of coupling devices, one on each side of the first-named device and alike in construction, each of said three coupling devices having a socket in its free end and all of said sockets being in a plane parallel to the switch-base.

5. A plurality of connecting devices for switchboard back terminal studs having base or body portions in alinement in one plane and conductor-sockets located in a plane at right angles thereto.

In testimony whereof I have hereunto subscribed my name this 30th day of October, A. D. 1895.

ALEXANDER J. WURTS.

Witnesses:

JOHN B. WHITEHEAD, Jr.,
JAMES B. YOUNG.