

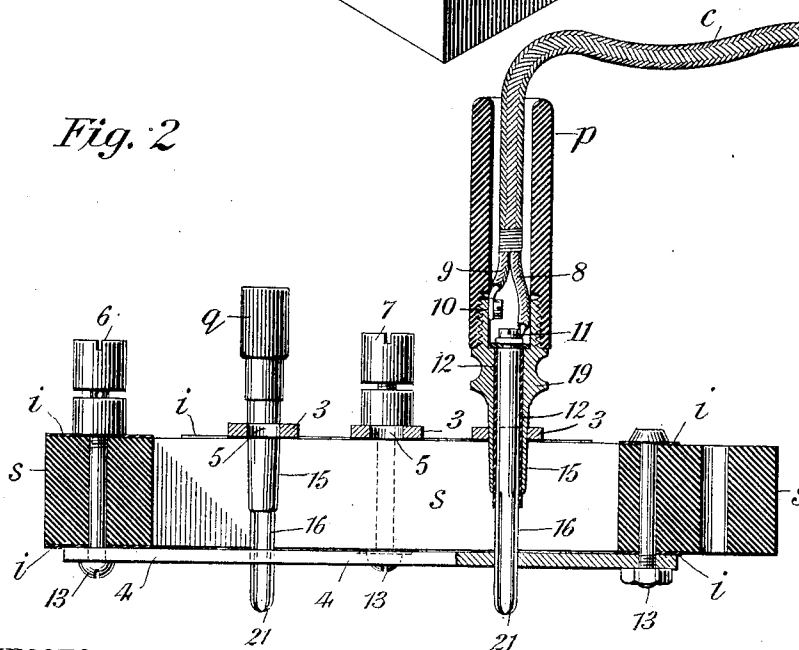
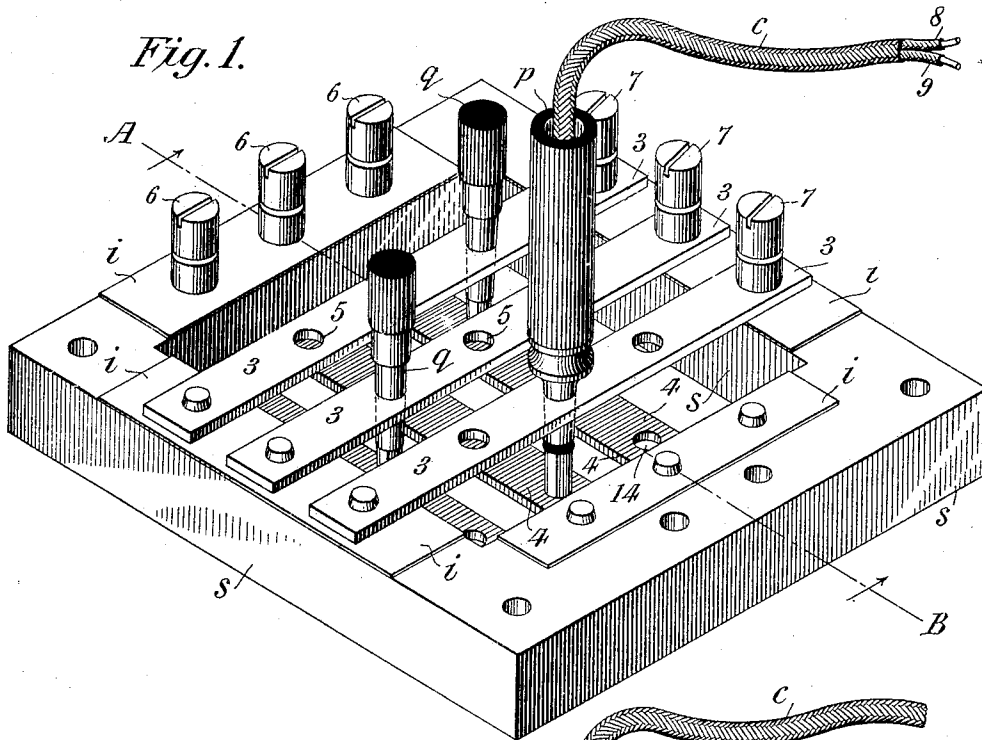
No. 664,557.

Patented Dec. 25, 1900.

F. W. JONES.
TELEGRAPH SWITCHBOARD.

(Application filed July 16, 1900.)

(No Model.)



WITNESSES:
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UNITED STATES PATENT OFFICE.

FRANCIS W. JONES, OF NEW YORK, N. Y., ASSIGNOR TO THE POSTAL
TELEGRAPH-CABLE COMPANY, OF SAME PLACE.

TELEGRAPH-SWITCHBOARD.

SPECIFICATION forming part of Letters Patent No. 664,557, dated December 25, 1900:

Application filed July 16, 1900. Serial No. 23,706. (No model.)

To all whom it may concern:

Be it known that I, FRANCIS W. JONES, a citizen of the United States, residing in the city of New York, county and State of New York, have made certain new and useful Improvements in Telegraph-Switchboards, of which the following is a specification.

My invention is an improvement upon a switchboard patented to C. S. Jones, No. 90,270, dated May 18, 1869. I arrange two series of metal strips transversely on opposite sides of an insulating-frame, so that the space between the strips is greater than the arcing distance of the electric currents usually employed in lighting or in an electric-railway system. At coincident or crossing points are holes or perforations in the strips. The holes in one series of strips are larger than those in the other series. I provide a novel contact connecting-plug consisting of a metal pin having its free or entering end split to engage the smaller hole or that in the lower strip. Upon or fixed to this pin is a tapered sleeve or section (it may be an insulated sleeve) which closely engages the larger hole in the upper or exterior strip. This tapered section or sleeve only extends about half the length of the pin and in double contact-plugs is insulated by a suitable insulating-bushing. An insulating hollow handle is provided, and for the double contact-pin through this handle passes a flexible double conducting-cord. One conductor is connected to the pin and the other conductor is connected to the described sleeve. When the pin is inserted, one of said conductors is thus connected to one strip through the sleeve and the other conductor is connected to the other strip through the pin. The improved form of switch-pin is also employed to connect a strip of one series to a strip of the other series; but both the single and double contact-pins are formed with a tapering contact for the larger hole and a resilient contact for the smaller hole, by which means I am enabled to secure a good electrical contact with both strips.

The accompanying drawings illustrate my invention.

Figure 1 is a complete perspective view of

the board with pins in position. Fig. 2 is a cross-section on the line A B, Fig. 1.

s is a frame of fireproof non-conducting material, as slate. It may, however, be made of wood coated with fireproof paint, in which latter case I employ sheets or strips of insulating glass as a means of increasing the insulation resistance. On one side of this frame—say the upper or exterior side—I place a series of metal strips, as brass, 3, which I securely fix to the frame by bolts 13. At one end of the strips these bolts 13 terminate in screw-cups 7. The strips 3 are perforated with holes 5. Upon the opposite side of the frame are a series of strips 4, similarly fixed to the frame, provided with screw-cups 6 and arranged transversely with respect to the first series of strips. At crossing-points there are holes 14 in strips 4. The holes 14 in strips 4 are directly in line with holes 5 in strips 3—that is to say, they coincide; but the holes 5 are of greater diameter than the holes 14.

p is a double contact-plug. q is a connecting-plug for connecting one of each pair of strips together. The exterior of these pins is the same, and the outline is such that the tapered portion 15 and split terminal 16 provide for a long sliding contact with the holes in the strips through which they respectively pass. It is to be noticed that it would be difficult to secure a good electrical contact with the two holes if the pin were tapered from end to end, and it is a merit of this invention that by the construction and arrangement shown and described a good electrical connection may be had with two strips separated a considerable distance. The double connecting-plug p has a split terminal 16. The divisions 21 in both pins are in the form of saw cuts at right angles. There is a sleeve 19 having a taper, as shown, at 15. The sleeve 19 is insulated, by a bushing 12 from the pin 16, and the double conducting-cord c has one conductor 8 connected to the sleeve 19 by a screw 10, the other conductor being connected to the pin 16 by the screw 11. By the use of the plug p a telegraph instrument or a loop-circuit may be connected in between the circuit-terminals formed by any two strips 3 and

4, and by the use of the pin *q* two strips 3 and 4 may be connected together without loop or instrument.

What I claim, and desire to secure by Letters Patent, is—

In a switchboard the combination of two transverse series of conducting-strips fixed at opposite sides of an insulating-frame, each strip having holes or perforations, the holes
10 in the upper or exterior strips being larger than those in the lower or interior strips, and

a double contact-plug consisting of a split metal pin engaging the smaller of said holes and a tapered metal sleeve or section located on said pin but insulated therefrom closely
15 engaging the larger of said holes, substantially as described.

FRANCIS W. JONES.

Witnesses:

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