

(No Model.)

T. J. McTIGHE.

MANUFACTURE OF ELECTRICAL CONDUCTORS.

No. 246,407.

Patented Aug. 30, 1881.

Fig. 1.

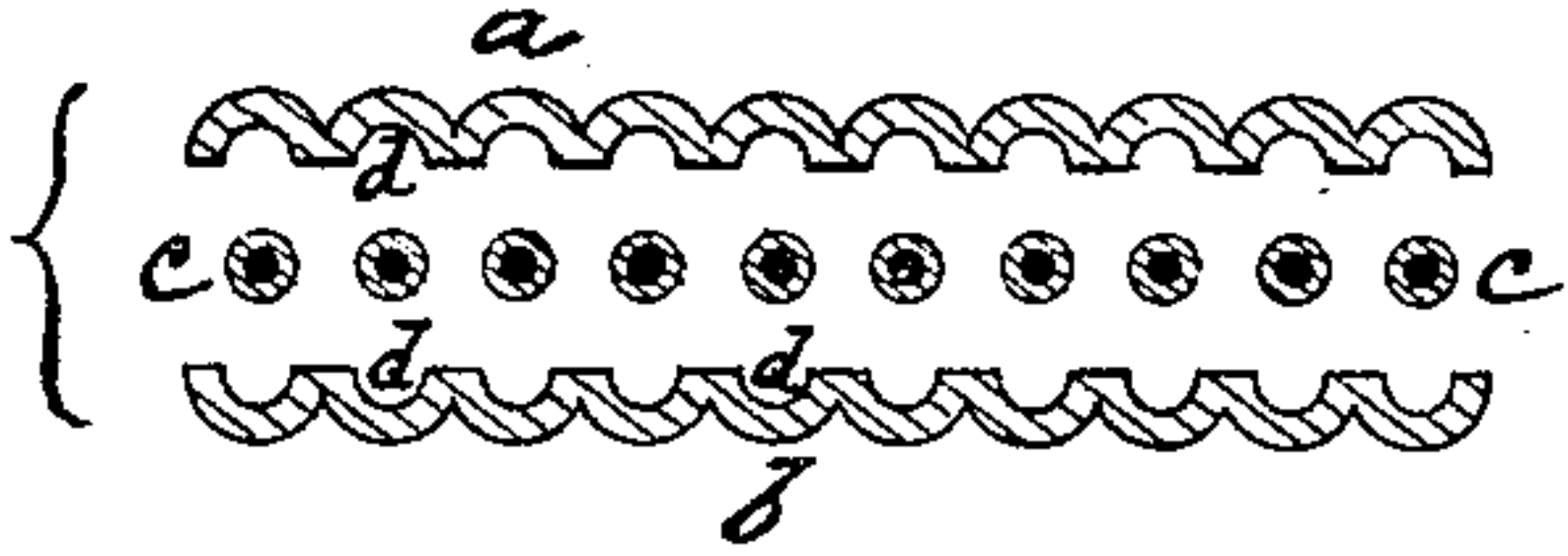


Fig. 3.

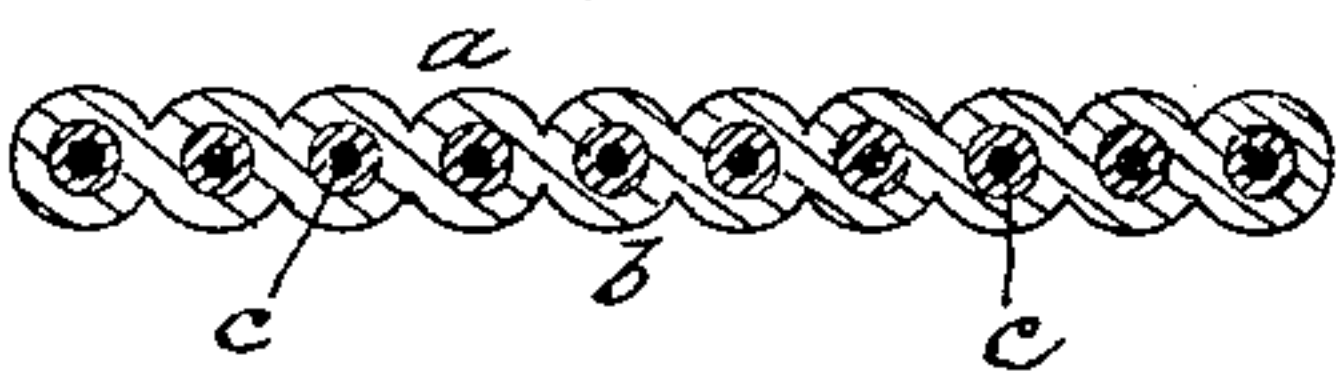


Fig. 2.

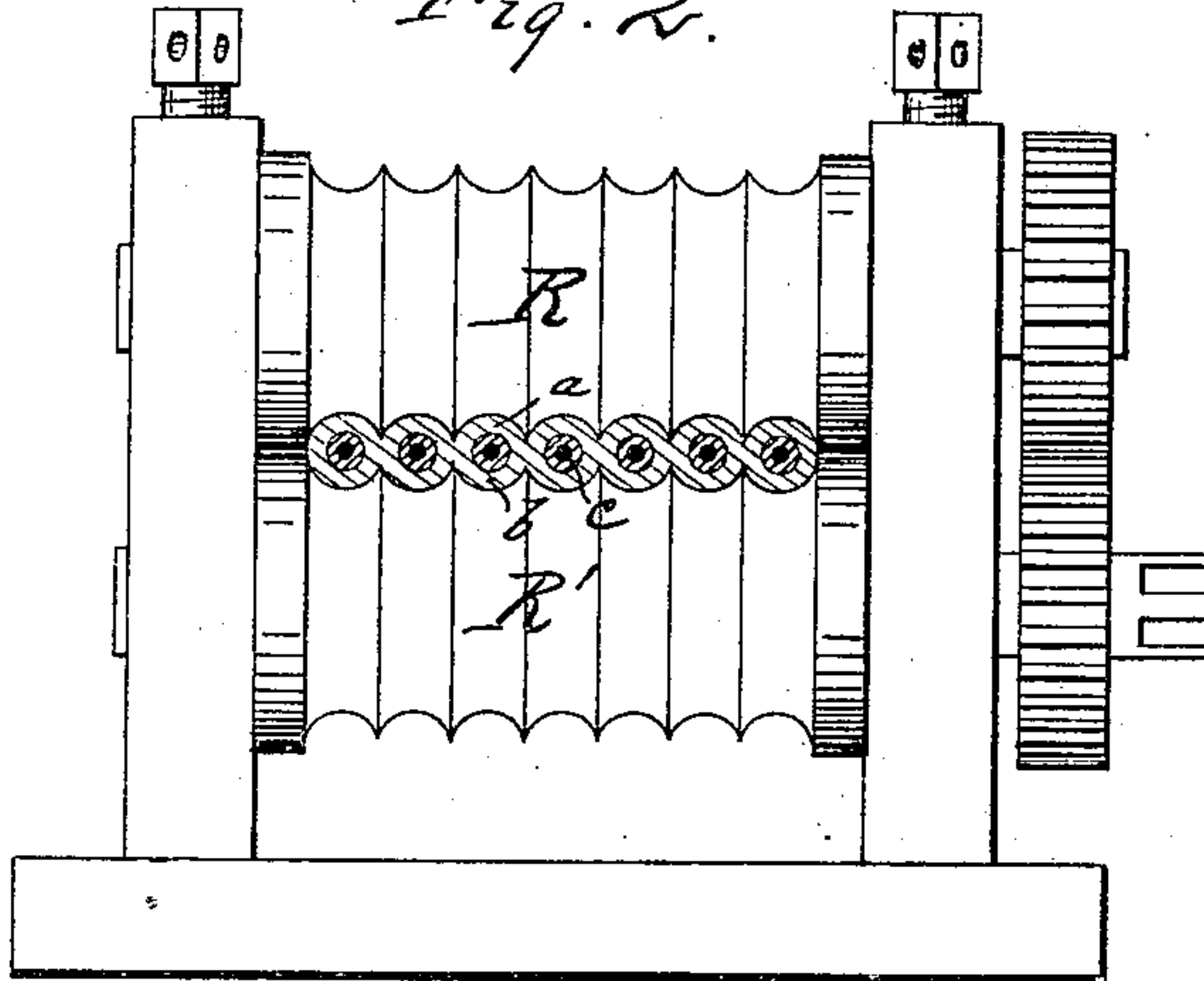
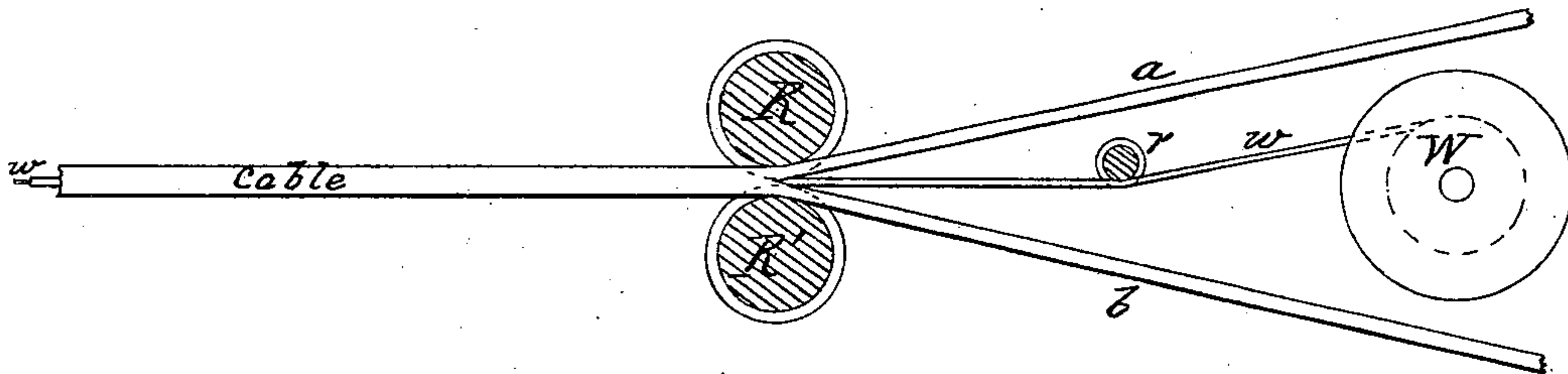


Fig. 4.



WITNESSES:

Thomas S. Hornor
Pharm. as. J. Patterson

Thos. J. McTighe INVENTOR,
Counsell Bros & McTighe
ATTORNEYS

UNITED STATES PATENT OFFICE.

THOMAS J. MCTIGHE, OF PITTSBURG, PENNSYLVANIA.

MANUFACTURE OF ELECTRICAL CONDUCTORS.

SPECIFICATION forming part of Letters Patent No. 246,407, dated August 30, 1881.

Application filed July 13, 1881. (No model.)

To all whom it may concern:

Be it known that I, THOMAS J. MCTIGHE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain
5 new and useful Improvements in the Manufacture of Electrical Conductors; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it ap-
10 pertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, in which—

Figure 1 shows in section the strips and wires ready to be united. Fig. 2 shows the rolls com-
15 pressing the strips on the wires. Fig. 3 shows the cross-section of the completed conductor. Fig. 4 is an elevation showing the manner of continuous production.

This invention has for its object the eco-
20 nomical production of insulated and protected electrical conductors, and is especially designed for the production of underground-tel-
graph conductors.

The invention is based on the principles now
25 well known and practiced in the manufacture of lead pipe—namely, that clean lead in a warm state may be separated and reunited perfectly by the application of pressure.

It consists in producing by drawing, press-
30 ing, or rolling two correspondingly-corrugated strips of lead, placing in the corrugations of one a series of insulated wires, and then forcing the two strips together under pressure so as to unite them, thus completely incasing
35 the insulated wires in a flexible and durable material, and doing it in a manner which permits of great facility in making very long lengths of conductor, requiring but few joints.

The invention further consists in the appa-
40 ratus hereinafter described and claimed.

In the drawings, *a* designates a strip of sheet or milled lead, corrugated longitudinally; or it may be corrugated by pressing it through a suitable die, after the manner of forming lead
45 pipe. *b* is a similar strip inverted. Wires *c*, covered with silk, cotton, kerite, or other insulating material, are laid in the grooves *d* or corrugations of the strips *a b*, by which means the wires are guided absolutely and prevented
50 from all possible contact with each other. Then the strips *a b*, with the wires *c*, are passed between suitably corrugated or grooved rolls *R R'*, as in Fig. 2, which exert a powerful com-

pression and unite the adjacent faces of the strips. I prefer corrugated rolls, as shown; but 55 they may be plain cylindrical rolls, in which case I would make the preparatory strips *a b* grooved on one side only and flat on the exterior.

By the above process the two strips *a b* may 6c be of great length without in the slightest interfering with the successful production of the finished article. This will be better understood by referring to Fig. 4. Here *W* represents a series of reels of insulated wire, *w*, which 65 pass to a guiding-roll, *r*. Beyond this are situated the consolidating-rolls *R R'*. The two corrugated or grooved lead strips *a b* converge to the rolls *R R'*, where they receive the wires *w* in their grooves, and the complete cable or 70 group of conductors emerge on the other side solid and continuous, requiring no additional steps to complete it. To facilitate the production it would be preferable to manufacture the grooved strips *a b*, and while they emerge from 75 the press or rolls which produce them, and while still warm and unoxidized, to lead them directly into the rolls *R R'*.

Instead of the rolls *R R'*, a suitably-shaped
“draw-plate” may be employed. 80

I am aware that insulated conductors have heretofore been inserted in metallic pipes, both flexible and rigid, and I do not therefore claim such, as my invention is widely different.

I claim as my invention— 85

1. The method of manufacturing insulated and protected electrical conductors, consisting in first producing longitudinally grooved or cor-
90 rugated strips of lead, then inserting insulated conductors in the grooves, and finally subjecting the whole to pressure, substantially as described.

2. The method of manufacturing insulated and protected electrical conductors, consisting in simultaneously drawing two separate longi- 95 tudinally-grooved lead strips and interposed insulated electrical conductors through a suitable compressor, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in 100 presence of two witnesses.

THOMAS J. MCTIGHE.

Witnesses:

THOMAS S. O'CONNOR,
THOMAS J. PATTERSON.