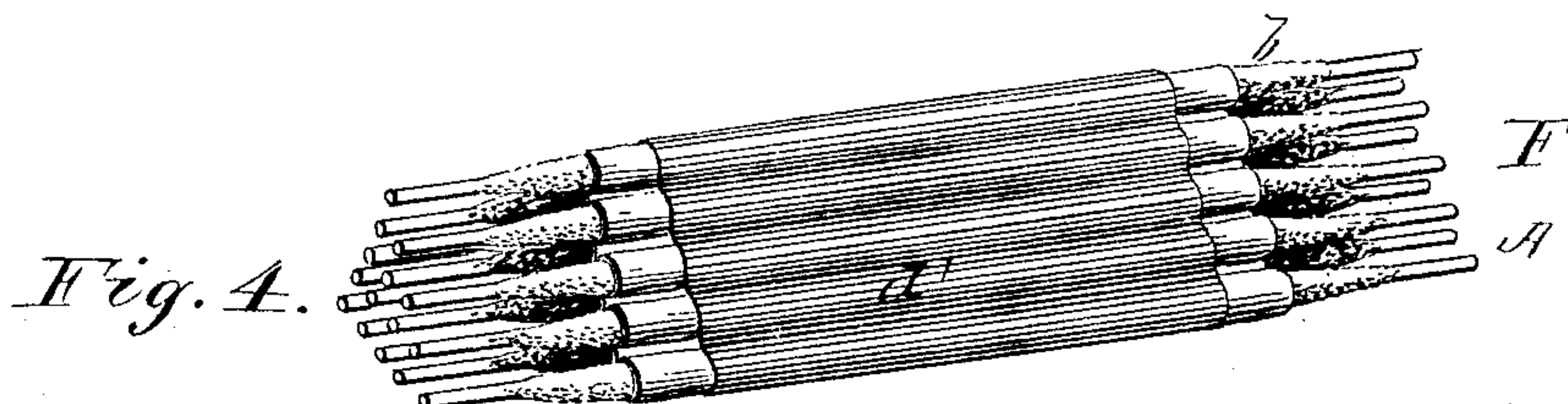
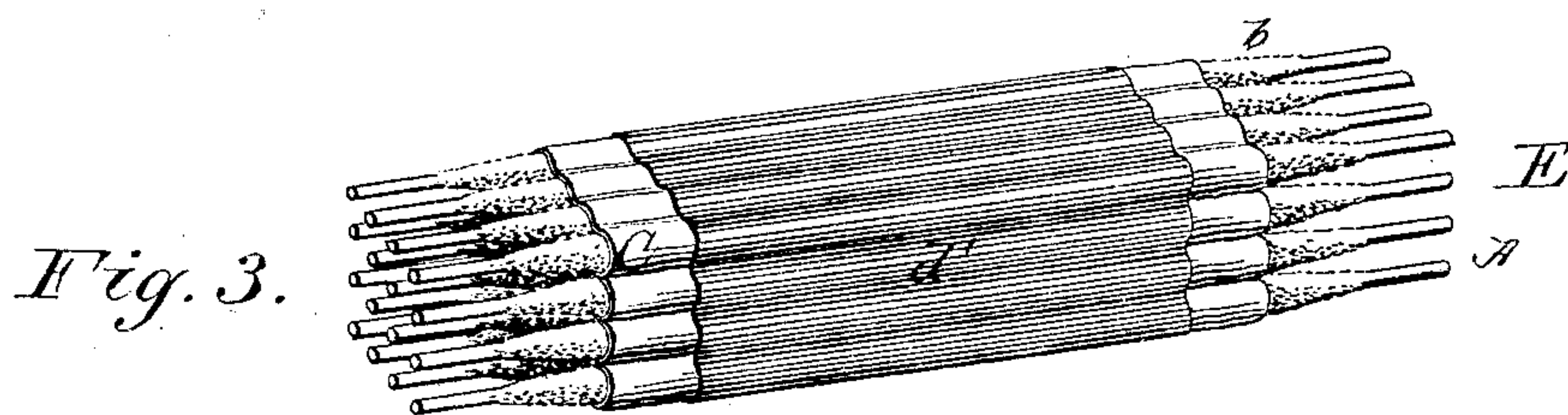
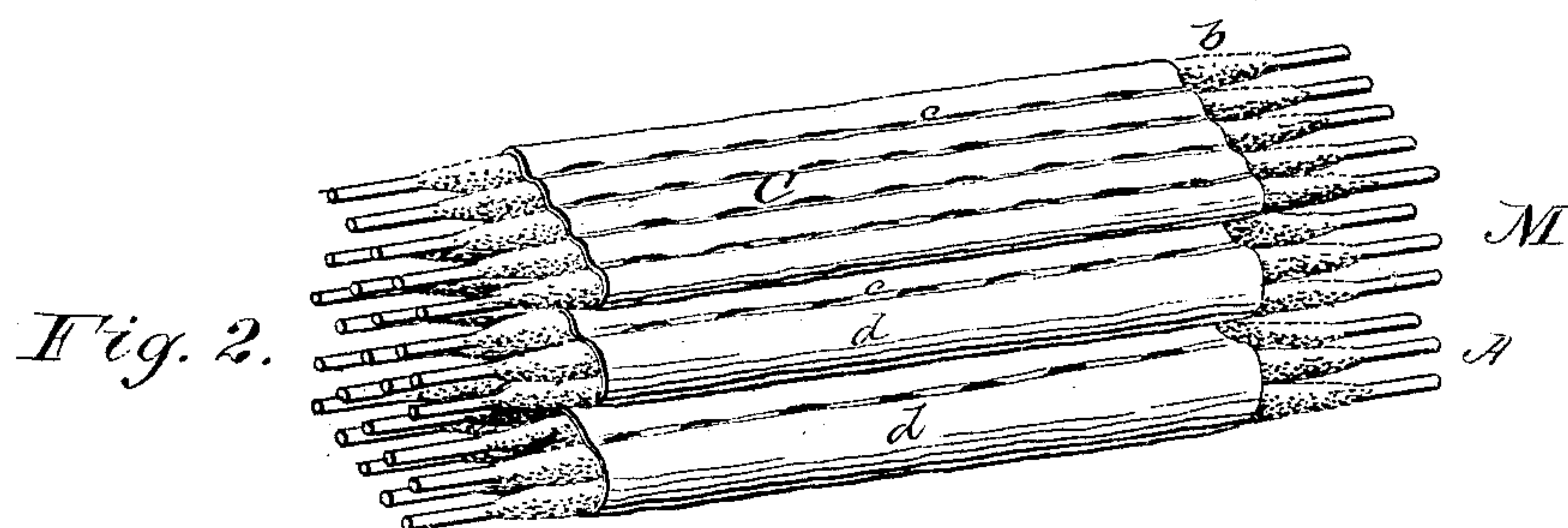
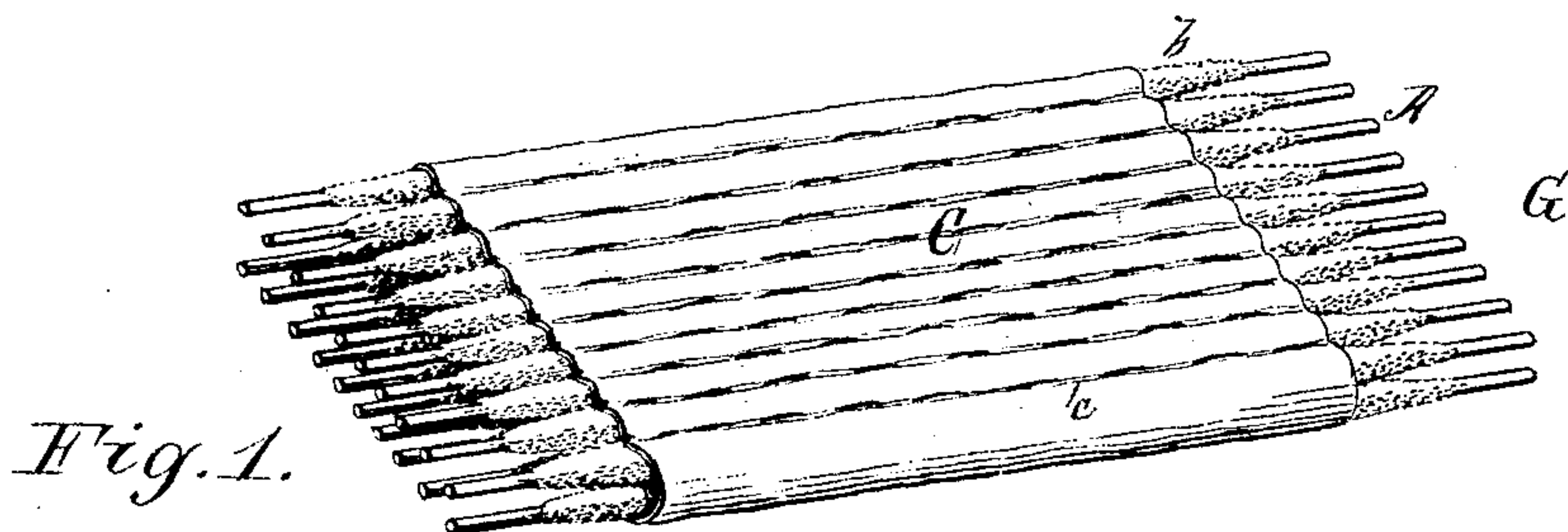


(No Model.)

J. MACKINTOSH.
ELECTRIC WIRE CABLE.

No. 269,868.

Patented Jan. 2, 1883.



Witnesses.

J. R. Siddall
Alex. Scott

Inventor.

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UNITED STATES PATENT OFFICE.

JAMES MACKINTOSH, OF PHILADELPHIA, PENNSYLVANIA.

ELECTRIC WIRE CABLE.

SPECIFICATION forming part of Letters Patent No. 269,868, dated January 2, 1883.

Application filed June 16, 1882. (No model.)

To all whom it may concern:

Be it known that I, JAMES MACKINTOSH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia, State of Pennsylvania, have invented new and useful Improvements in Telegraph, Telephone, and Electric Wire Cables, (and that I have not had the same patented or applied for a patent in any foreign country,) of which the following is a specification.

My invention relates to conductors for electric wires to form a cable or the like; and the novelty consists in the construction and arrangement of parts and materials, as will be more fully hereinafter set forth, and specifically pointed out in the claims.

In the drawings I have illustrated several forms which embody the essential elements of the invention.

The object of the invention is to insulate electric wires; and it consists essentially in applying to the wire, previously dipped or immersed in a liquid that will harden by exposure—as liquid silex—glass reduced to powder. After drying, the wires thus coated are placed between two sheets of waxed canvas, the wax having been forced into the material by heat and the sheets of canvas stitched together, one row of stitching being placed upon each side of each wire, thus leaving the insulated wire in an open-ended pocket. Folding-spaces are left at desired intervals to allow the canvas to be folded upon itself to form a triangular or rectangular body of the whole.

To prevent injury from vermin, rodents, worms, &c., the body is then covered with thin sheet metal.

In the drawings the figures are all in perspective, and Figure 1 illustrates a twenty-wire cable arranged in two rows of ten each;

Fig. 2, a twenty-five wire cable; Fig. 3, a sixteen-wire cable, &c. Fig. 4 is a triangular cable, and Figs. 3 and 4 have the metal covering.

A represents the wires; *b*, the powdered glass; C, the canvas, having rows of stitching *c* and spaces *d*; and *d'*, the metal covering.

The waxed canvas will deaden the vibrations, and the glass covering will prevent escape of electricity to communicate fire.

In some climates the canvas may be treated with a mixture of wax and gutta-percha.

With this construction the wires may be numbered, and connection may be made with any wire by its number.

The drawings only illustrate the formation of the cable; but it will be understood that the separate wires are spliced in any approved manner, and that the covering as described continues over the splice and throughout the length of the cable.

What I claim as new is—

1. An electric cable composed of a series of wires, each wire insulated with powdered glass and silex, the several wires embraced between sheets of waxed canvas and separated by rows of stitching, and the canvas thus provided being folded upon itself, as and for the purposes set forth.

2. A series of electric wires insulated with powdered glass and silex, as described, placed between sheets of waxed canvas and secured therein in separate pockets by rows of stitching, the fabric folded upon itself to form a body, and the body covered with sheet metal, as specified.

JAMES MACKINTOSH.

Witnesses:

JAMES H. COX,

CHARLES BIGLER.