

No. 754,868.

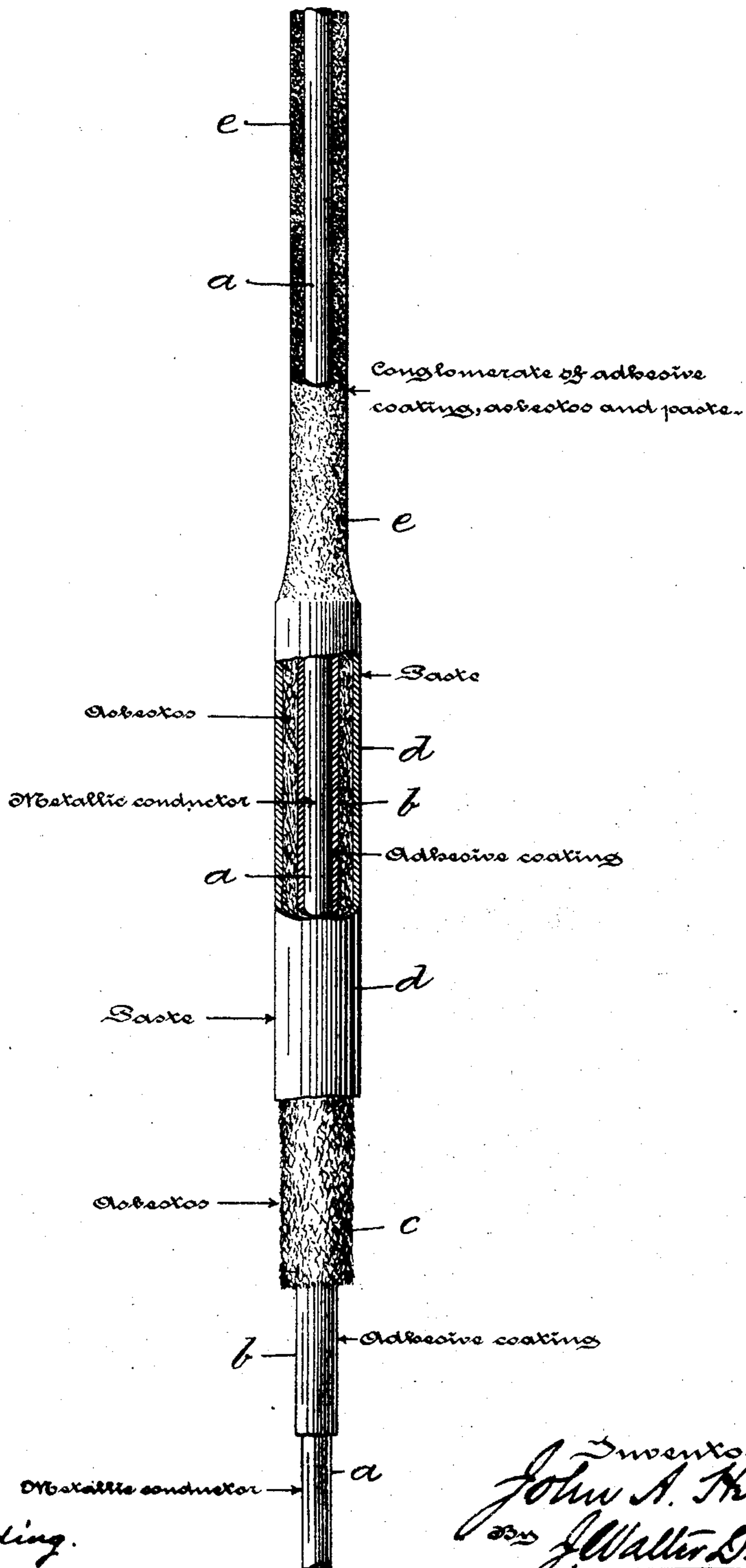
PATENTED MAR. 15, 1904.

J. A. HEANY.

FIRE AND WATER PROOF INSULATING COVERING FOR
METALLIC SURFACES.

APPLICATION FILED MAY 10, 1902.

NO MODEL.



Witnesses:

Wilhelm Fock

Henry C. Ewing.

Metallic conductor

Inventor:

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UNITED STATES PATENT OFFICE.

JOHN ALLEN HEANY, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
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FIRE AND WATER PROOF INSULATING COVERING FOR METALLIC SURFACES.

SPECIFICATION forming part of Letters Patent No. 754,868, dated March 15, 1904.

Application filed May 10, 1902. Serial No. 106,670. (No specimens.)

To all whom it may concern:

Be it known that I, JOHN ALLEN HEANY, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Insulated Electric Conductors, of which the following is a specification.

My invention has relation to the production of insulated electric conductors which are fire, acid, and water proof.

The principal object of my invention is to provide an efficient insulated electric conductor which is non-combustible or fireproof, as well as moisture or water proof—that is, an insulated electric conductor which is not affected by moisture or water and is not destructible by heat generated within the conductor by the passing of an electric current through the same or by heat from an external source.

As is well known, asbestos is a substance which is non-combustible. It has been found difficult to cause the necessary adhesion of asbestos to a metal surface or wire to avoid in the bending or twisting of the wire or surface the asbestos cracking or peeling off.

My invention has been designed to provide an electric conductor which is uniformly insulated, so that no matter how the coated wire or conductor is bent or twisted it is not injuriously affected, and is fire, water, and acid proof.

The nature, scope, and characteristic features of my invention will be more fully understood from the following description, taken in connection with the accompanying drawing, illustrating, partly in elevation and partly in section, an insulated electric conductor embodying the features of my said invention.

Referring to the drawing, *a* represents a bare wire of any suitable metal. To this wire is applied a cohering adhesive mass *b*, consisting of a solution of glue, gum, and resin, or certain of them, according to the particular use to be made of said solution as a coating for a metallic wire for electric or other pur-

poses. The cohering adhesive mass as a coating, consisting essentially of a glue, gum, and resin, or certain of said materials, is mixed with an acid, as boracic or sulfuric acid. After the wire *a* has been coated with the cohering adhesive mass as a coating flocculent fibrous material *c*, such as asbestos, is twisted onto and into the cohering adhesive mass, as a coating *b*, on the wire and projects in a fluffy mass from the same, as illustrated. Onto the asbestos *c* is then applied a non-destructible fire and water proof paste or cement *d*, consisting of the substances constituting the cohering adhesive coating *b*, together with a clay, such as kaolin, six parts, by weight; oxide of alumina, two parts, by weight, and sulfid of lime, four parts, by weight. The cohering coating *b*, non-destructible fire and water proof paste or cement *d*, and the asbestos *c* under pressure and heat are caused to thoroughly intermingle each with the other, as shown at *e* in the drawing. The substances used on account of their nature intermingle intimately and compactly with each other and the asbestos on the wire *a* to render the same water, fire, and acid proof without affecting the flexibility of the wire as a conductor, and even with abnormal heating of the covered conductor the insulation is still reliable and effective. The cohering coating *b* and the non-destructible fire and water proof paste or cement *d* may be used either in a thick or thin mass, according to requirements.

In instances where the covering is required to possess appreciable flexibility, as in the insulating of electric wires adapted to be bent into helices or coils, it is found that equal proportions, by weight, of the gummy or gluey mass or composition give good results.

Having thus described the nature and object of my invention, what I claim as new, and desire to secure by Letters Patent, is—

An electric conductor having a waterproof cohering adhesive mass formed of gluey substances applied as a coating to the conductor, flocculent asbestos agglomerated with said coating and a covering formed of the water-

proof gluey substances combined with fire-
proofing materials agglomerated with the as-
bestos and the gluey coating of the conductor
to form an insulating mass, wherein the ma-
5 terials and asbestos are thoroughly inter-
mingled and firmly united to the conductor.
In testimony whereof I have hereunto set

my signature in the presence of two subscrib-
ing witnesses.

JOHN ALLEN HEANY.

Witnesses:

J. WALTER DOUGLASS,
THOMAS M. SMITH.