

(No Model.)

H. W. JOHNS.
CONDUIT FOR ELECTRIC WIRES.

No. 465,564.

Patented Dec. 22, 1891.

Fig. 1.

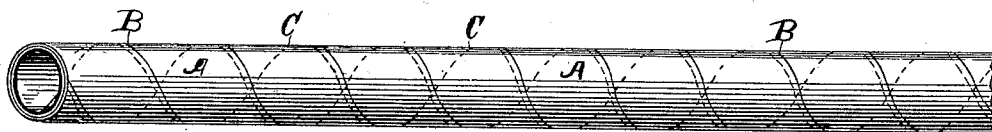
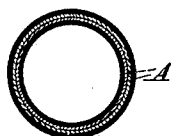


Fig. 2.



WITNESSES:

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HENRY W. JOHNS, OF NEW YORK, N. Y.

CONDUIT FOR ELECTRIC WIRES.

SPECIFICATION forming part of Letters Patent No. 465,564, dated December 22, 1891.

Application filed April 1, 1891. Serial No. 387,316. (No model.)

To all whom it may concern:

Be it known that I, HENRY W. JOHNS, a citizen of the United States, and a resident of New York city, in the county of New York and State of New York, have invented a certain new and useful Conduit for Electric Wires, of which the following is a specification.

My invention relates to an improvement in conduits for electric wires specially intended for interior work, although adapted also under many conditions to outside work.

Figure 1 illustrates an elevation of a piece of my improved conduit. Fig. 2 illustrates an end view thereof.

Heretofore various means have been employed for protection of electric wires, especially upon the inside of buildings. Such conduits or protections should have three distinctive qualities: First, they should be sufficiently strong to withstand blows or shocks to which they are liable; second, they should be fire-proof, and, third, they should be water-proof. Various attempts have been made to give such conduits these qualities, but not, as I believe, with very great success. By my invention I secure, as I think, a completely satisfactory article for the use stated.

In constructing my improved conduit I take a piece or strip of strong asbestos paper and wind it about a mandrel, or otherwise, so as to form a tube. This may be done by winding a series of strips superposed upon each other, all wound the same way or in different ways, as desirable; or it may be made of a single thickness of material wound so that the edges meet one another, edge to edge, or overlapping, as preferred. The exterior and interior may be coated with cementing material to add strength and smoothness to the inside and outside, so that the finished tube may be easily placed in position and so that the wires may be quickly and easily inserted therein; or the tube may be formed directly from water-proofed asbestos pulp by any suitable mechanical means, and cementing matter may be added to the asbestos pulp to add to the density and strength of the product, and this product may have an outer layer of asbestos paper or cloth added for strengthening and other purposes. In the figures of the drawings I show it as made of a series of overlapping strips wound in opposite directions, so as to

give increased strength. A A are the strips. B shows the meeting edges of the outer layer and C the meeting edges of one of the under layers. There may be as many layers superposed upon one another as desired. In order that the tube may be a stiff strong structure, I cement the sheets together with any suitable cementing material. For this purpose I prefer a fire-proof material such as silicate of soda, and in order to give the water-proof quality to the product it may be treated or coated with any suitable waterproofing material, such as oil, shellac, india-rubber solution, or cement and the like. The shellac and the india-rubber will themselves serve both to waterproof and to adhere or cement the material together, if preferred; or the asbestos paper or sheet may be rendered water-proof during the process of manufacture, which will render the product both fire-proof and water-proof. Also, before the cementing material is dry I may add powdered mineral matter, such as oxide of zinc, powdered asbestos, or the like; or I may make a thick fire-proof coating or paste embodying suitable mineral matter and coat the inner or outer side, or both, to form a strengthened plaster-like tube, in which case I can use Manila or other paper instead of asbestos. As above stated, I prefer a fire-proof material such as silicate of soda or other cementing material having substantially the same characteristics, because then in the event of a hot wire touching it the cementing material will not be either burned or fused or become softened, as would be the case with rubber or asphaltum or glue or any similar cementing material, some of them being inflammable and some of them, while not strictly inflammable, are readily softened by heat, so that they lose their holding or cementing quality. For outside use an additional coating of asphalt or other water-proof material may be applied to give greater strength and resisting power to withstand abrasion and the action of the elements. I may also attach or melt or mold upon the tube a sheet or film of lead or other metal. The asbestos paper, being fire-proof, will not be injured by molten metal.

I claim—

1. A conduit for electric wires, composed of strips of compacted asbestos fiber wound in opposite directions, and waterproofing ma-

terial and cementing material, substantially as set forth.

2. A conduit for electric wires, made, essentially, of compacted asbestos fiber, fire-proof
5 and infusible cementing material, and waterproofing material, substantially as set forth.

3. A conduit for electric wires, made of compacted asbestos fiber, fire-proof and infusible cement, waterproofing material, and an exterior
10 protecting and strengthening layer or covering, substantially as set forth.

4. A conduit for electric wires, made of strips

of compacted asbestos fiber wound in opposite directions, fire-proof and infusible cementing material, and waterproofing material, 15 substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 18th day of March, A. D. 1891.

HENRY W. JOHNS.

Witnesses:

PHILLIPS ABBOTT,
E. W. GIFFORD.