No. 714,226. Patented Nov. 25, 1902.

W. H. NORTHALL.

COIL FOR ARC LAMPS.

(Application filed May 1, 1902.)

(No Model.)

Fig. 1.

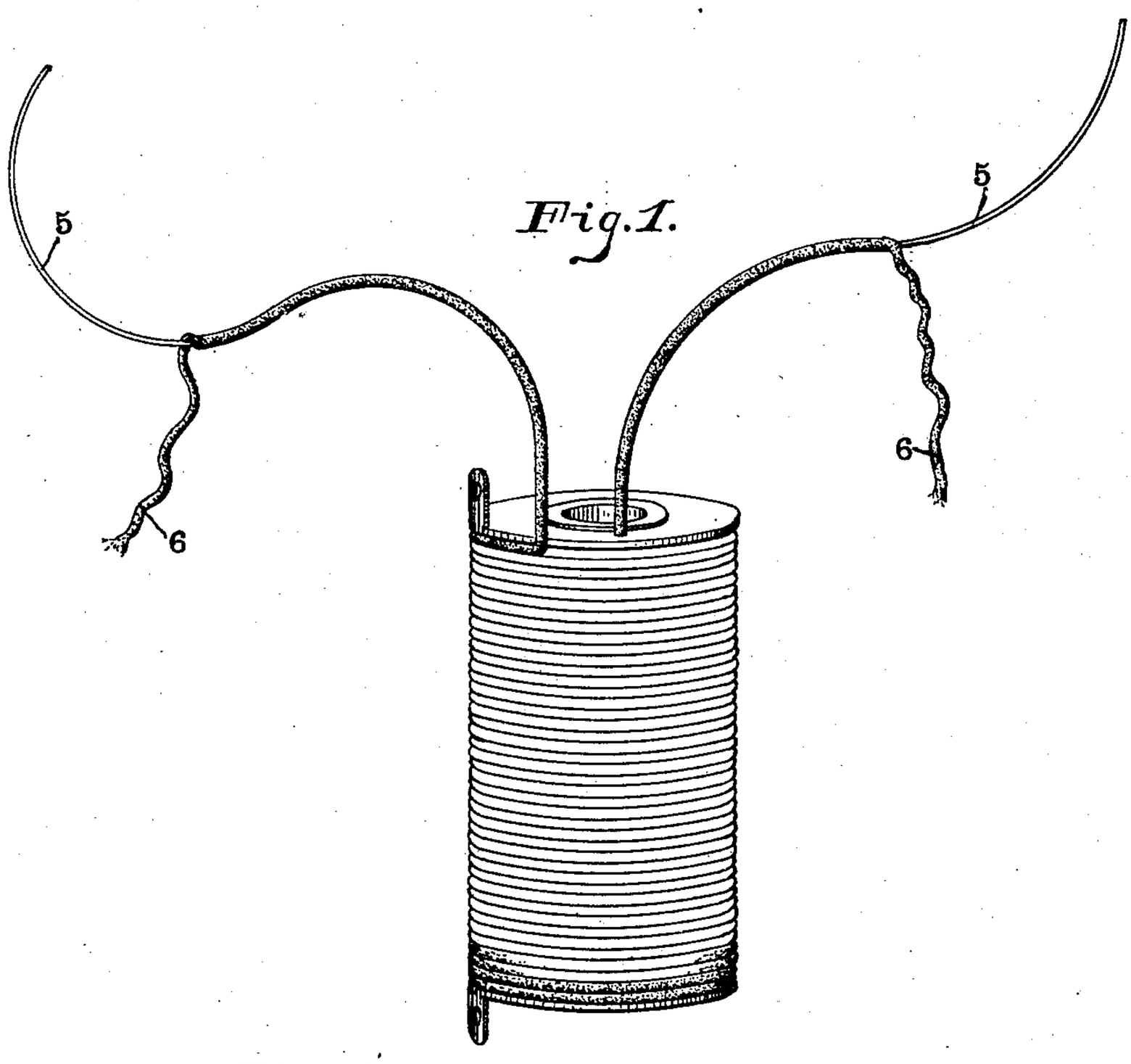

Fig. 2.

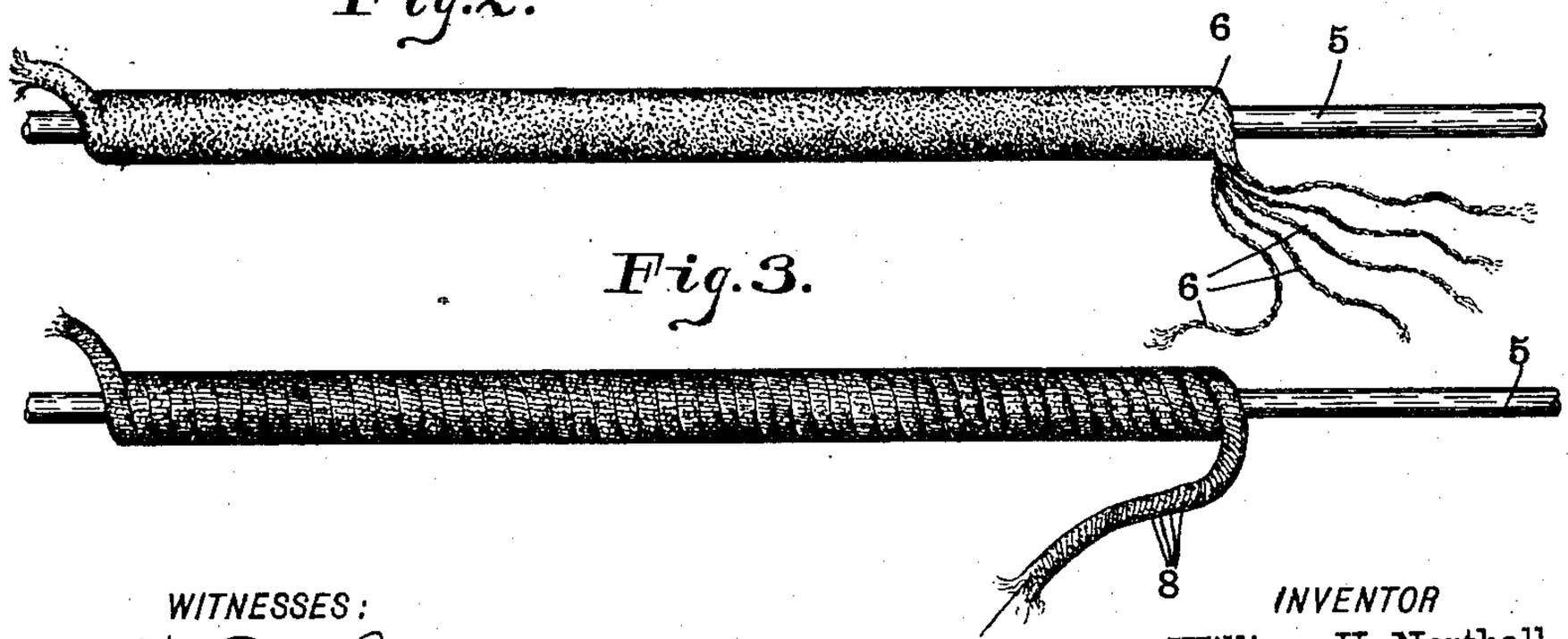

Fig. 3.

WITNESSES:

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WILLIAM H. NORTHALL, OF ELWOOD, INDIANA.

COIL FOR ARC-LAMPS.

SPECIFICATION forming part of Letters Patent No. 714,226, dated November 25, 1902.

Application filed May 1, 1902. Serial No. 105,436. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. NORTHALL, a citizen of the United States, residing at Elwood, in the county of Madison and State of Indiana, have invented certain new and useful Improvements in Coils for Arc-Lamps, of which the following is a specification.

There are in many electrical appliances constructions where a magnet-coil is subjected to considerable external heat, and as a result after long-continued use the insulation, ordinarily composed of cotton or linen fiber, becomes charred, so as to result in a short circuit. This is especially true of the coils used in arc-lamps, and great difficulty has heretofore been experienced by reason of the short-circuiting of such coils because of the charring of the insulation, resulting from the long-continued heat of the arc. I am well aware that asbestos is well known as an insulating substance; but so far as I am aware it has always heretofore been used in sheet form or loosely-packed fiber and has never been used as an insulating-covering for wire.

The object of my present invention, therefore, is to produce a magnet-coil the wire of the winding of which is insulated by a covering of asbestos, said asbestos being formed into a string which is wrapped about the wire.

The accompanying drawings illustrate my invention.

Figure 1 is a perspective view of an arc-lamp coil constructed in accordance with my invention. Fig. 2 is a side elevation of a wire insulated in accordance with my invention. Fig. 3 is a similar view of a slightly-modified form, the insulation in this case consisting of a twine or thread composed of a central core of asbestos fiber and an external wrapping of linen or other long-fiber strands, which, however, form but a very small percentage of the total.

In the drawings, 5 indicates an electrical conductor to be used for the winding of a coil, and this conductor is covered by the wrapping of asbestos twine 6, which is preferably formed of a plurality of strands, as shown in Fig. 2. Asbestos is of short tender fiber, and for convenience in winding it may be desirable to provide the asbestos strand with a long-fiber holder consisting of strands of linen or other suitable thread 8, which will be either incorporated with or wrapped about a central core of asbestos fiber, the said long-fiber threads, however, forming but a very small percentage of the total insulation. A coil constructed in this manner is fire and heat proof, and actual tests have proved that an arc-lamp coil constructed in this manner may be used indefinitely without charring and without short-circuiting. The entire coil may also be brought to a red heat without causing short-circuiting even though the insulation be of the form shown in Fig. 3, for the reason that the vegetable fiber, though becoming charred, forms so small a percentage of the total as not to interfere with the insulation.

I claim as my invention—

1. A coil for arc-lamps in which the wire-winding is insulated by a wrapping of asbestos twine composed of fibrous asbestos and a small proportion of tough long fiber.

2. A coil for arc-lamps in which the wire of the winding is insulated by a wrapping consisting of a twine formed of a central core of asbestos and an external wrapping of long-fiber twine which forms a comparatively small percentage of the whole.

3. An insulator for wire consisting of a twine formed of asbestos and a small proportion of tough long fiber incorporated therewith, which may be wrapped about the wire.

4. An insulator for wire consisting of a twine formed of a central core of asbestos, and an external binder consisting of long-fiber vegetable twine which forms but a small percentage of the whole.

In witness whereof I have hereunto set my hand and seal, at Elwood, Indiana, this 2d day of April, A. D. 1902.

WILLIAM H. NORTHALL. [L. S.]

Witnesses:
JACOB LOOMIS,
A. L. HAPPER.