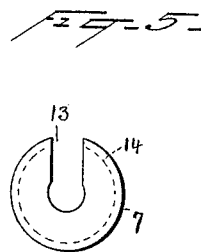
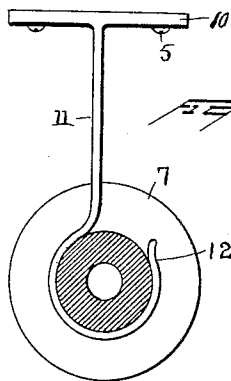
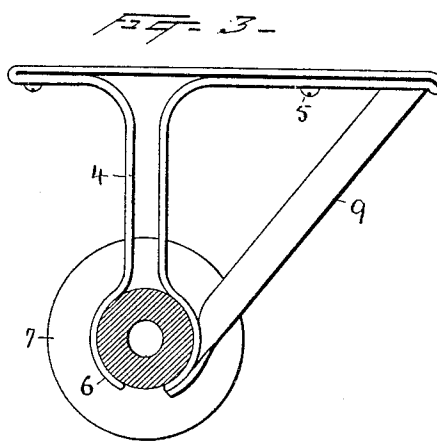
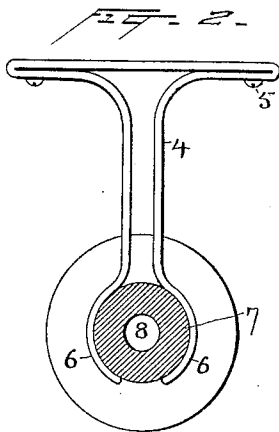
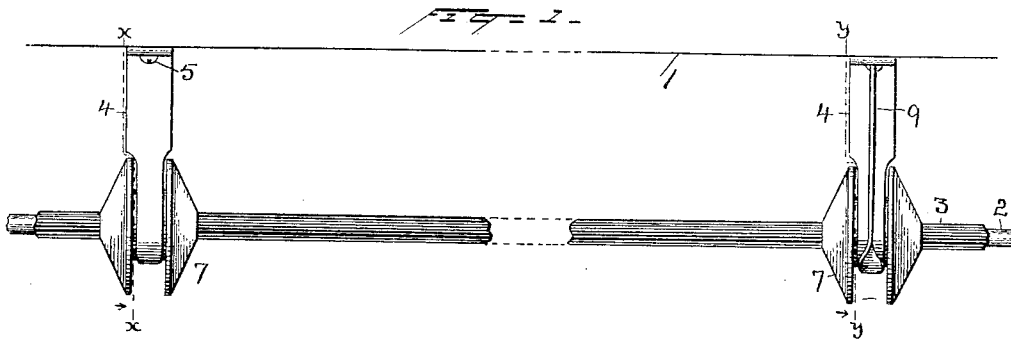


(No Model.)

F. D'A. GOOLD.
INSULATOR.

No. 477,753.

Patented June 28, 1892.



Witnesses
Norris A. Clark.
Eugene Conran

Inventor
F. D'A. Goold,
By his Attorneys
Syer & Sully.

UNITED STATES PATENT OFFICE.

FREDERICK D'A. GOOLD, OF NEW YORK, N. Y., ASSIGNOR TO THE EDISON
GENERAL ELECTRIC COMPANY, OF SAME PLACE.

INSULATOR.

SPECIFICATION forming part of Letters Patent No. 477,753, dated June 28, 1892.

Application filed October 24, 1891. Serial No. 409,646. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK D'A. GOOLD, a citizen of the United States, residing at New York city, in the county and State of New York, have invented a certain new and useful Improvement in Supporting and Insulating Electrical Wires, of which the following is a specification.

The object of this invention is to produce an improved mode of supporting and insulating conductors and means for accomplishing the same, which means are especially designed for supporting heavy wires, such as those used in are lighting, and the devices are so formed that it shall be easy to string up or to remove the wires.

In the accompanying drawings, Figure 1 is a side view of a section of wire supported according to my invention. Fig. 2 is a section on line *xx*; Fig. 3, a section on line *yy*. Fig. 4 is a section on line corresponding to line *xx* of a modified form, and Fig. 5 is a side or end view of a modified form of insulating-spool.

1 is a ceiling or other support at a short distance from which it is desired to support an electrical conductor 2, which preferably has an insulated coating 3. Supported from the ceiling at suitable intervals are hangers or brackets 4. The bracket at the left in Fig. 1 is formed of a single piece of spring metal bent into the shape shown in Fig. 2 and having screws 5 for fastening the same to the ceiling. The outer spring ends 6 are so bent as to surround the central portion of the insulating spool or body 7, forming a holder therefor, which spool or body has a central perforation 8 of sufficient size to receive the insulated conductor 2. The modified form of hanger shown at the right in Fig. 1 is the same as that described, except that it is provided with a brace 9 on one side to support the spring-arm on that side. This is required when unusually heavy conductors are to be suspended or in places where the conductor is carried around a corner and would therefore tend to put a heavier strain on one arm of the hanger. It is not essential that the entire body of the hanger be made of a single piece, although this is by far the cheaper and preferable construction. The hanger shown

in Fig. 4 consists of a base 10 and a depending arm 11, having at its lower end a holder in the form of a spring-hook 12, adapted to spring over the central portion of the insulating spool or body 7. Instead of making the insulating body in the form of a complete spool with a central passage I may cut a slot 13 from the periphery of the insulating-body to the central passage, so that the insulating-body may be placed on the wire to be supported without threading it on from the end. In this form the end flanges of the insulating-body are omitted, and a small groove 14 is formed around the body to prevent the latter moving longitudinally in its holder; but I usually prefer to employ the spools with end flanges, since there is less danger of their getting out of place and since they more thoroughly cut off communication between the wire and the hanger.

When a wire is to be suspended, the required number of hangers are put in place, an equal number of insulating spools or bodies are placed on the wire, being placed at distances apart equal to the distance between the several hangers or being moved along to the proper position, as required, and the spools or bodies are then raised with the wires carried thereby and forced one after another between the spring-arms of the several hangers. If necessary, a suitable tool may be employed to spring the arms of the clip apart.

In the form of hanger shown in Fig. 2 the arm at the left only will be sprung in inserting the body 7. In the form shown in Fig. 4 the end of the hook will be sprung to admit the body 7.

What I claim is—

1. The combination of a support, a hanger on said support, having at its lower end a spring-holder, and an insulating-body in and clamped by said holder, having a passage through it for the reception of a wire to be supported, substantially as described.

2. The combination of a hanger having at its outer end a spring-holder, and an insulating-body in said holder, having a passage through it for the reception of a wire to be supported, said body being clamped and held by the spring-holder, substantially as described.

3. The combination of several hangers having spring-holders on a suitable support and insulating spools or bodies on a wire, said spools or bodies being inserted in and supported by
5 said spring-holders, substantially as described.

4. The combination of a hanger or bracket having a spring-holder at its outer end, means for bracing the same, and an insulating-body having a passage for a wire in said holder,
10 substantially as described.

5. A hanger for insulators, consisting of a single strip of metal bent to form a base and two spring-arms, the latter constituting a

holder for said insulator, substantially as described.

6. A hanger for insulators, consisting of a single strip of metal bent to form a base, two spring-arms, the latter constituting a holder for said insulator, and a brace for one of said
15 arms, substantially as described.

This specification signed and witnessed this
20 20th day of October, 1891.

FREDK. D'A. GOOLD.

Witnesses:

AUGUSTUS BALLON,
FRED. DIMON.