Jan. 2, 1923. 1,441,002

H. W. KITCHIN.

MEANS OF GROUNDING ELECTRICAL PILOTING CABLES.

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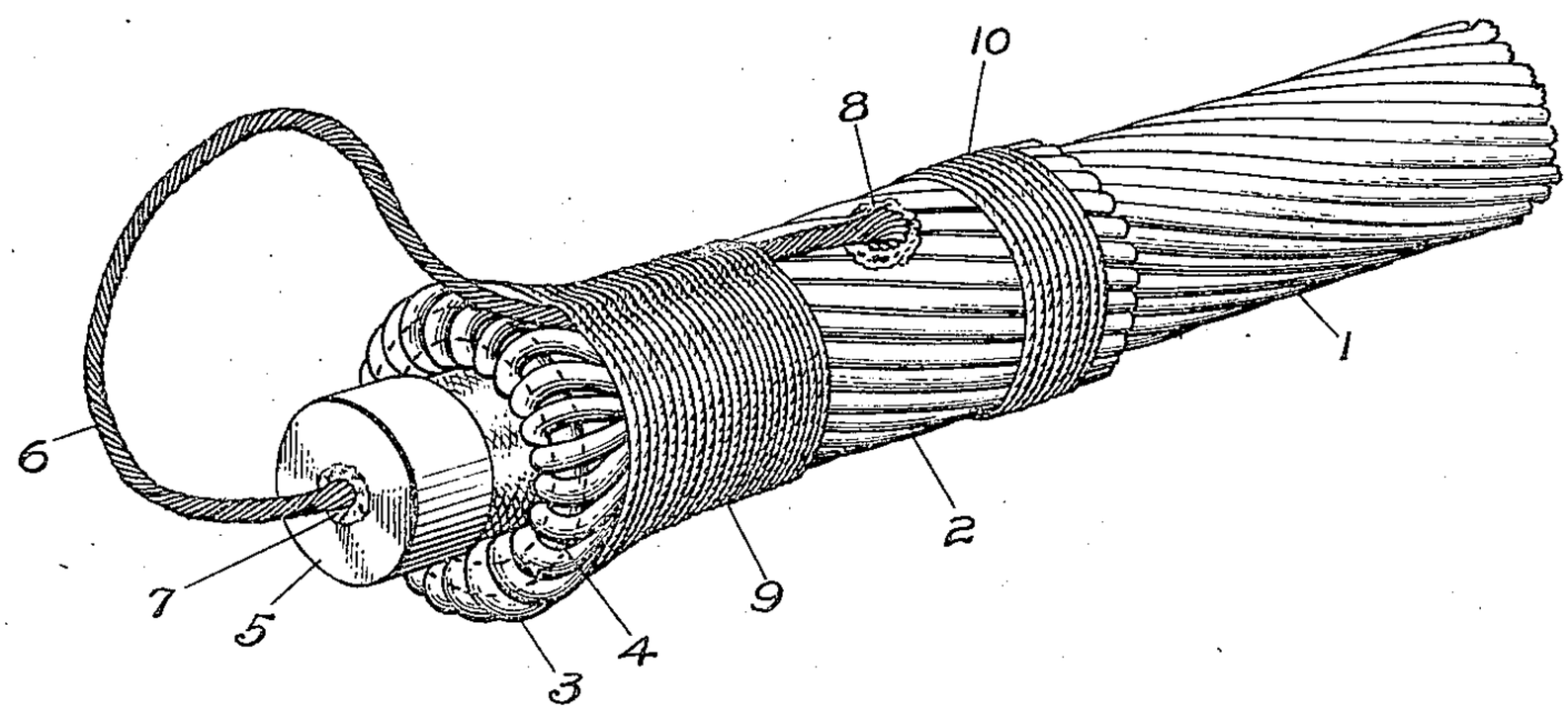

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MEANS OF GROUNDING ELECTRICAL PILOTING CABLES.

Application filed January 29, 1921. Serial No. 441,076.

To all whom it may concern:

Be it known that I, HOWARD W. KITCHIN, a citizen of the United States, residing at Washington, in the District of Columbia, have invented new and useful Improvements in Means of Grounding Electrical Piloting Cables, of which the following is a specification.

My invention relates to means for grounding electrical piloting cables and an object thereof is to provide a means of this character which is most simple and inexpensive in construction.

A further object of the invention resides in the provision of a grounding means which is lasting and will not be rendered less efficient as a result of breakage due to the action of tides and currents or from other causes.

Another important feature of the invention is to increase greatly the conduction surface between the conductor and the water and earth.

In electrical piloting systems it is necessary to ground the conductor in order to complete the circuit back to the generator at the shore end of the cable, the return circuit being through the cable armor, water, and earth. The prior practice has been to connect electrically the conductor of the cable with a grounding plate. Obviously this is a poor construction in that due to the action of tide and current, the conductor will be finally broken off near the point of connection with the grounding plate, thus greatly reducing the efficiency of the system.

One of the purposes of my invention is to overcome this serious defect, and I will now describe in detail the construction by which this is accomplished; reference being had to the accompanying drawings in which:

The figure is a perspective view of the sea end of the electrical cable, clearly showing the simple construction of the grounding means.

Numeral 1 refers to the usual armored piloting cable. At the end of the cable a short length of the armor 2 is turned back, as indicated at 3, over a ring 4.

A cap 5 which is preferably of brass covers the end of the cable core, the conductor 6 passing through this cap and being soldered or otherwise secured thereto as shown at 7.

The conductor 6 is turned back and is electrically connected with the turned back portion of the armor in any preferred manner as by soldering, the point of connection being indicated by numeral 8. The conductor and armor are secured in place by a metallic seizing referred to by numeral 9. The free ends of the armor beyond the point 8 at which the conductor is attached, may be secured by a seizing 10 or otherwise.

From the above description it will be apparent that I have devised a grounding means which is not only most simple in construction, but also is not affected by the action of tides and currents. It will also be apparent that by grounding the conductor to the armor a large surface of conduction is provided between the conductor and the surrounding water and earth, as the entire surface of the cable may act as a conduction surface, thus avoiding the necessity of employing a grounding plate of large area. It is, of course, obvious that many other means may be employed to directly or indirectly bring this large surface of the armor into play as a grounding or conducting means, the specific showing here being for illustrative purposes only.

Having fully described my invention, what I claim as new and desire to secure by Letters Patent is:

1. Grounding means for electrical piloting cables including an armored cable, the conductor of which is turned back over and grounded to the armor of said cable, and means for securing said turned-back grounded portion to said cable.

2. Grounding means for electrical piloting cables including an armored cable, the sea end of the armor turned back on the cable, and means for electrically connecting the conductor of the cable with the armor.

3. Means for grounding electrical piloting cables including an armored cable, the sea end of the armor turned back on the cable, and means for electrically connecting the conductor of the cable with the turned back portion of the armor.

4. Means for grounding electrical piloting cables including an armored cable, the sea end of the armor turned back over the cable, means for electrically connecting the conductor of the cable with the turned back portion of the armor, and means for securing the conductor and the turned back portion of the armor.

5. Means for grounding electrical piloting cables including an armored cable, a ring,

the sea end of the armor turned back over said ring, a cap fitted over the cable core, an electrical connection between the conductor of the cable and the armor, and means for securing the conductor and the turned back portion of the armor.

6. Grounding means for electrical piloting cables including an armored cable, the sea end of the armor turned back over the cables, the sea end of the electrical conductor turned back over and making electrical contact with the armor, and means for securing the turned back portion of the armor and conductor.

HOWARD W. KITCHIN.