May 6, 1930. C. E. CAZEL ET AL 1,757,172

AERIAL

Filed June 23, 1927

FIG. 1.

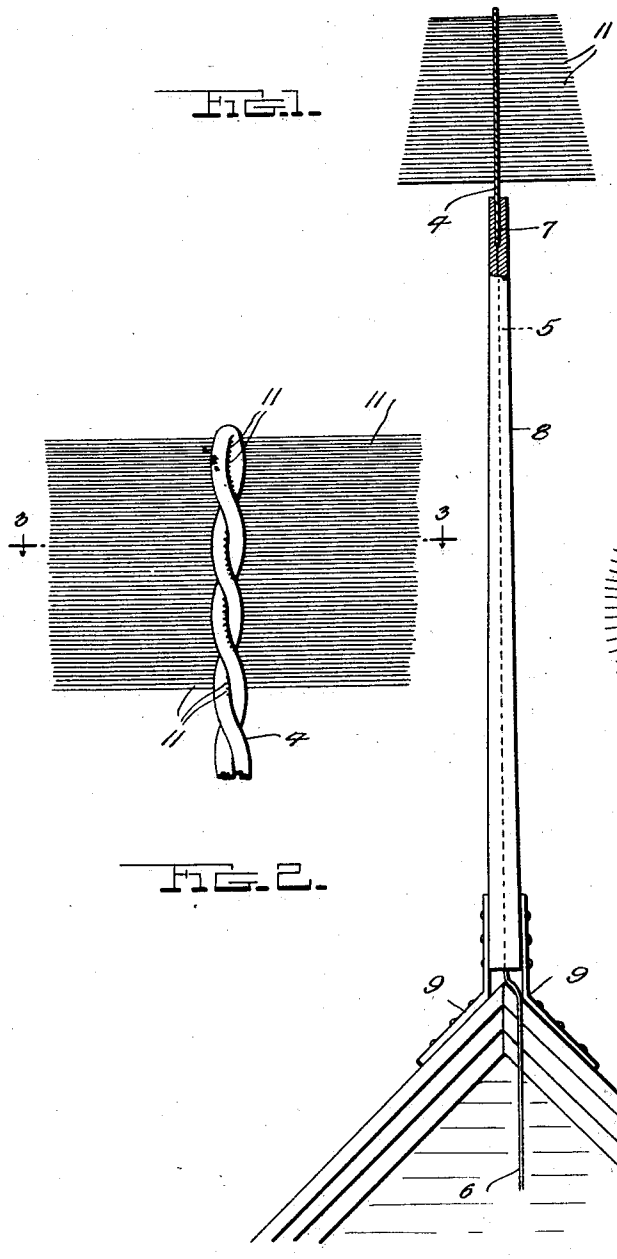
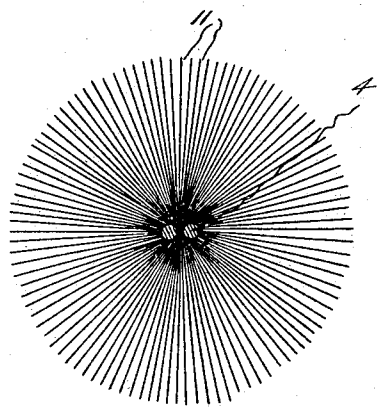


FIG. 2.

FIG. 3.



Witness
P. R. Pierce.

Inventors
C. E. Cazel and
C. H. Longman.
By H. B. Wilson & Co.
Attorneys

Patented May 6, 1930 1,757,172

UNITED STATES PATENT OFFICE

CASSIUS EDGAR CAZEL, OF COVINGTON, KENTUCKY, AND CECIL HERBERT LONGMAN, OF NORWOOD, OHIO

AERIAL

Application filed June 23, 1927. Serial No. 200,958.

The invention relates to improvements in aerials for radio reception, and on the theory that radio electrical energy is more easily and effectively collected on conductor points, than on surfaces, it is the object of our invention to provide a device so constructed that it possesses a multiplicity of conductor points extending in many directions.

In carrying out the above end, we make use of a central core to which a multiplicity of fine wires are secured, and it is a further object of our invention to provide novel means for tightly anchoring the wires to the core and insuring perfect contact between them, for conducting purposes.

With the foregoing in view, the invention resides in the novel subject matter herinafter described and claimed, the description being supplemented by the accompanying drawing.

Fig. 1 is an elevation partly in section giving a general idea of the invention and its application.

Fig. 2 is an enlarged vertical sectional view of a portion of the aerial.

Fig. 3 is a detail horizontal section on line 3—3 of Fig. 2.

The numeral 4 denotes a metallic core to which a conducting wire 5, leading to the usual lead-in wire 6, may be connected in any desired manner. In the present showing, the lower end of the core 4 is snugly held in a socket 7 in the upper end of a mast 8 formed of wood or other suitable material, the lower end of said mast being secured by appropriate brackets 9 upon a building 10 or other elevation. If desired, the mast 8 may have a central bore formed therethrough, for the reception of the wire 5, but this is not essential as the wire could well extend down the exterior of the mast.

11 denotes a multiplicity of fine metal wires which project in numerous directions from the core 4 and are spaced apart both circumferentially and longitudinally of said core and form a compact substantially cylindrical body, the wires being also distributed so that some of the same are out of both vertical and horizontal alinement whereby no entirely clear vertical or horizontal spaces are left between the wires, said wires 11 being sufficiently stiff to maintain their free ends in spaced relation, providing a sufficient number of reception points. The wires 11 may be secured to the core 4 in any desired manner. For purpose of illustration, we have shown this core formed of two reaches of wire twisted together, and the central portions of the wires 11 are tightly held between the twists of the core forming wire. Thus, the wires 11 are tenaciously held and at the same time, effective conducting contact of these wires with the core, is insured.

By actual tests, the improved aerial receives radio waves from all directions with equal volume. These tests further prove that reception by means of this device is clearer and more distinct than by any other method now in use. Moreover, these tests prove that with the improved aerial, static electrical interference is greatly reduced. In addition to these advantages, attention is invited to the facts that the aerial is neat in appearance and does not detract from beauty of surrounding objects or scenery; it is easily installed; it is economically constructed, and can be manufactured and marketed at a reasonable price.

The details of construction herein disclosed may be followed if desired, but within the scope of the invention as claimed, variations may of course be made, and it will be understood that while all of the wires 11 are shown radiating from the core 4, these wires may be extended in any desired directions.

We claim:

1. An aerial comprising a metal core to which to connect a conducting wire, and a multiplicity of fine metal wires projecting from said core and spaced apart both longitudinally and circumferentially thereof, said wires being arranged to form a compact, substantially cylindrical body and being sufficiently stiff to maintain their free ends in spaced relation, the wires being also distributed so that some of the same are out of both vertical and horizontal alinement, whereby no entirely clear vertical or horizontal spaces are left between the wires.

2. An aerial comprising a metal twisted wire core to which to connect a conducting wire, and a compact, substantially cylindri-

cal body formed of a multiplicity of fine metal wires held between the twists of said wire core, said fine wires projecting from said core, being spaced apart both circumferentially and longitudinally thereof and being sufficiently stiff to maintain their free ends in spaced relation, the wires being also distributed so that some of the same are out of both vertical and horizontal alinement, whereby no entirely clear vertical or horizontal spaces are left between the wires.

3. An aerial comprising a mast having a socket in its upper end, a metal core having its lower end secured in said socket, and a multiplicity of fine metal wires projecting from said core and spaced apart both longitudinally and circumferentially thereof to form a compact, substantially cylindrical body, said wires being sufficiently stiff to maintain their free ends in spaced relation, the wires being also distributed so that some of the same are out of both vertical and horizontal alinement, whereby no entirely clear vertical or horizontal spaces are left between the wires.

4. An aerial comprising a substantially cylindrical body including a central core from which fine wires project radially in all directions and in closely spaced relation, said wires being secured to said core midway between their ends, a mast having a longitudinal bore in the outer end of which the core fits and is frictionally held and a conducting wire connected with the core and extending through the mast.

5. An aerial comprising a core and a substantially cylindrical body composed of fine wires, the latter projecting radially in all directions from the core and being in closely spaced relation to each other, the core being formed of a length of stiff heavy wire doubled upon itself midway between its ends and twisted together, the fine wires of the body being rigidly clamped midway between their ends in the twisted parts of the core.

In testimony whereof we have hereunto affixed our signatures.

CASSIUS EDGAR CAZEL.
CECIL HERBERT LONGMAN.