Sept. 6, 1932. D. C. SENTER ET AL 1,876,318

RADIO ANTENNA

Filed Aug. 1, 1930

Fig 1

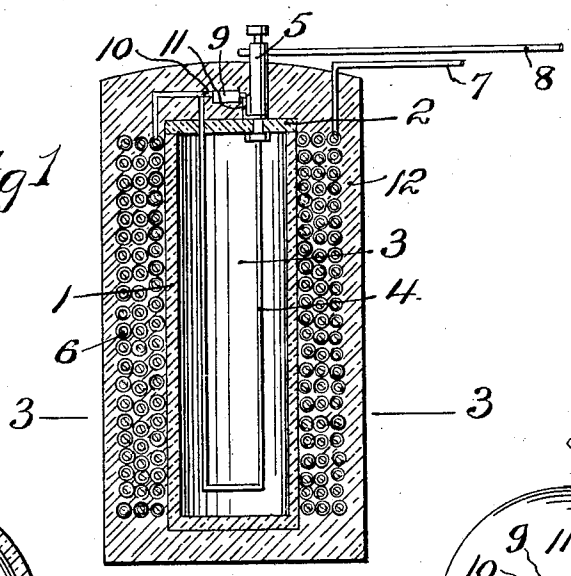


Fig 3

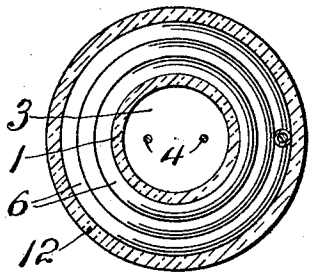


Fig 4

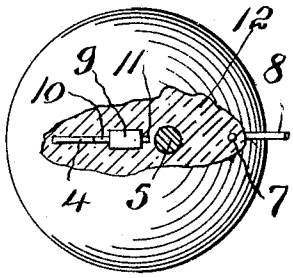


Fig 2

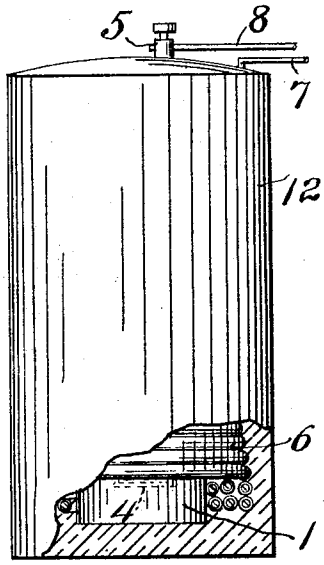
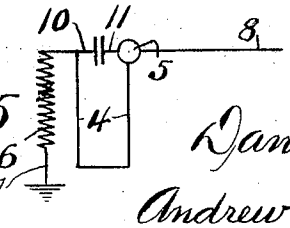


Fig 5



Daniel C. Senter
Andrew F. Senter
INVENTORS.

BY

Warren D. House.
Their ATTORNEY

Patented Sept. 6, 1932 1,876,318

UNITED STATES PATENT OFFICE

DANIEL C. SENTER AND ANDREW F. SENTER, OF GRANDVIEW, MISSOURI

RADIO ANTENNA

Application filed August 1, 1930. Serial No. 472,241.

Our invention relates to improvements in radio antennæ.

It is particularly well adapted for the interception of subterranean waves.

One of the objects of our invention is the provision of a novel aerial of the kind described, which is simple, cheap, durable, not likely to get out of order, which requires no elevated supports, which can be buried in the ground or included in the casing of a radio receiving set, which largely eliminates static disturbances and many other disturbances and distortions which occur with the use of elevated aerials, and with which the naturalness of the original tones is retained.

The novel features of our invention are hereinafter fully described and claimed.

In the accompanying drawing, which illustrates the preferred embodiment of our invention,

Fig. 1 is a central vertical sectional view of our improved radio aerial.

Fig. 2 is a side elevation, partly broken away, of the same.

Fig. 3 is a section on the line 3—3 of Fig. 1.

Fig. 4 is a top view, partly broken away of our improved aerial.

Fig. 5 is a diagrammatic view of the circuit arrangement of our improved aerial.

Similar characters of reference designate similar parts in the different views.

1 designates the tubular body of a core having a cover 2 and providing an air tight chamber 3. The body 1 and cover 2 are, preferably, non-magnetic and non-conductive, and may be of glass, vulcanized fibre, or other suitable material.

We provide an electric conductor, which includes in series a loop 4 in the chamber 3 and having one arm connected to a binding post 5 mounted on the cover 2, the other arm of said loop being connected to one terminal of an insulated inductance winding 6, which encircles the body 1 and the other terminal of which is connected to a conductor 7 which is adapted to be grounded. Connected to the binding post 5 is a conductor 8 which is adapted to be connected with the input of a radio receiving set, not shown.

A fixed condenser 9, preferably of about .0025 capacity is connected across the arms of the loop 4 by two conductors 10 and 11 which are respectively connected to one arm of the loop 4 and to the binding post 5 which is attached to the other arm of the loop.

The winding 6 is preferably composed of about 100 feet of insulated wire wound in three layers, although the length and number of layers may be varied.

The winding 6 and the core body 1 and cover 2, when the aerial is to be buried in the ground, are embedded in a suitable non-conductive, non-magnetic material 12, preferably sealing wax, wax or other substance which will afford a water proof covering for the winding 6.

In use, the conductor 7 is grounded and the conductor 8 is connected to the input binding post of the set with which the aerial is to be used.

With the use of our improved aerial, the reception is very strong, clear, natural in tone, and remarkably free from the usual static disturbances, even during an electric storm, when the same set, used with an overhead aerial of usual type would emit a large amount of static produced sounds.

The loop 4 is disposed in the winding 6 so as to be inductively related thereto. By embedding the winding 6 in sealing wax or similar material, a casing is provided, which is non-magnetic, non-conductive, which serves to hold the coils of the winding 6 stationary and insulated from each other, which hermetically seals the interior from air and moisture, and which serves as a container for the core 1.

We do not limit our invention to the structure shown and described, as modifications, within the scope of the appended claims, may be made without departing from the spirit of our invention.

What we claim is:—

1. In a radio antenna, a casing composed of non-magnetic insulating material impervious to water and air, a conductor the ends of which extend outside said casing, said conductor having an inductance winding embedded in and insulated by the material of said casing, said conductor having a loop

extending into and spaced from and in series with said winding, and a connection including a condenser between the arms of said loop.

2. In a radio antenna, a casing composed of sealing wax, a conductor having an inductance winding embedded in and insulated by said sealing wax, the ends of said conductor extending outside said casing, said conductor having a loop extending into, spaced from and in series with said winding, and a connection including a condenser between the arms of said loop.

In testimony whereof we have signed our names to this specification.

DANIEL C. SENTER.
ANDREW F. SENTER.