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(54) Transmitting and receiving antenna with matching circuit

(57) Refers to a transmitting and receiving antenna, destined to its use in movable units with remote control, includes at least a second capacitor (8) of fixed capacity, in parallel connected with respect to the first capacitor

(3), placed between the active pole of the signal or power supply (4) and the nonactive pole (9) of the own source corresponding to ground, to which the nucleus (5) of the inductance coil is also electrically connected.

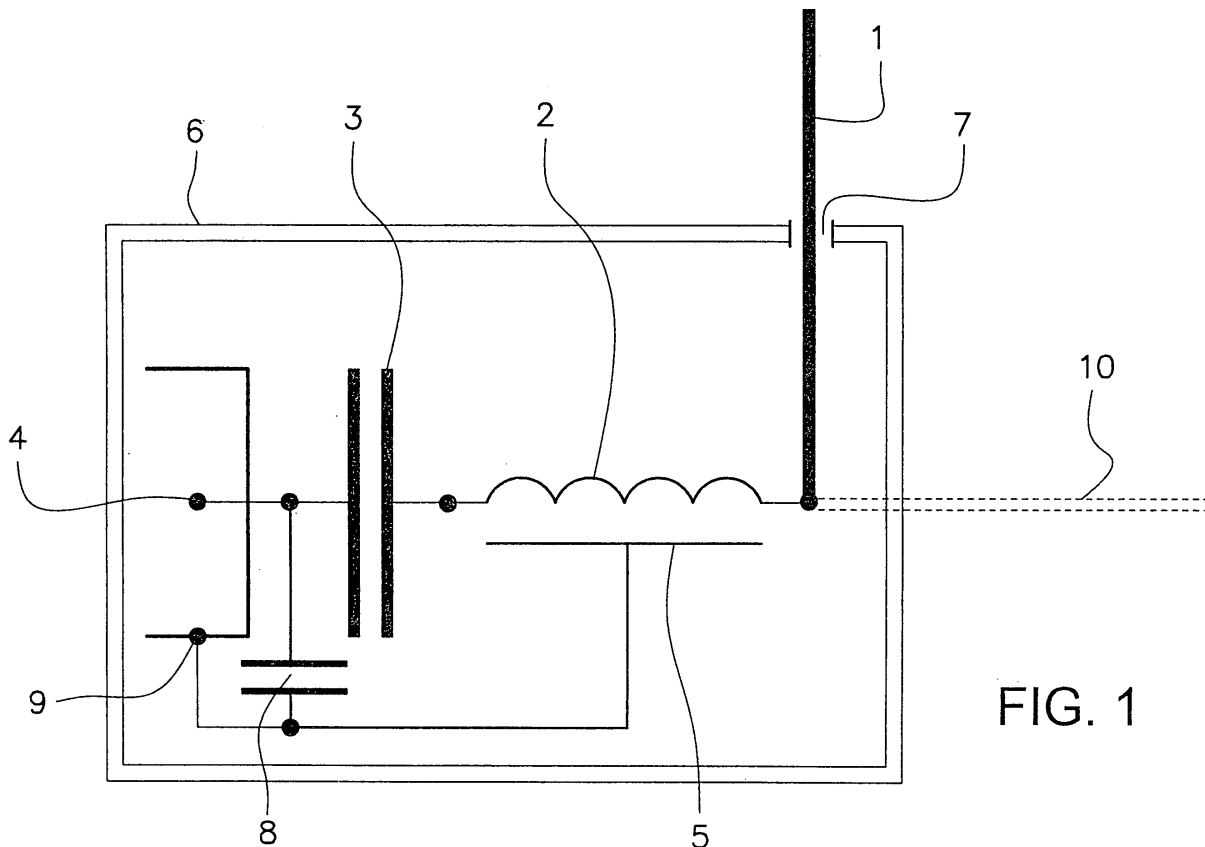


FIG. 1

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Description

Object of the invention

[0001] The present invention refers to a transmitting and receiving antenna, destined to its use in movable units with remote control, that comprises, inside a surrounding box-housing made of insulating material, at least one inductance coil and at least a first capacitor of fixed capacity in series connected with the signal or power supply, characterized in that it includes at least a second capacitor of fixed capacity, in parallel connected with respect to the first capacitor, placed between the active pole of the signal or power supply and the nonactive pole of the own source corresponding to ground, to which the nucleus of the inductance coil is also electrically connected.

[0002] The new antenna can operate with a wide range of frequencies and powers, and its electrical characteristics are settled down by means of the values of an inductance coil and a capacitor included in its circuit.

[0003] This invention includes the improvements in the antenna described in the Utility Model ES1047452, which belongs to the same applicant, and introduces advantages in the operative and the yield of said device.

[0004] Said Utility Model refers to an improved transmitting and receiving antenna, specially applicable to remote controls and for all the frequencies, that characterizes in that it includes a protective capsule in that changer elements of antenna are housed, in concrete by at least one coil and at least a capacitor in series connected, with a signal or power supply and at least a rod constitutive of a half-wave antenna, that projects or stands out by an orifice of the mentioned capsule.

Brief description of the invention

[0005] The new antenna includes in its electrical circuit a second capacitor of fixed capacity, connected between both poles (active and ground) of the signal or power supply and also the nucleus (normally made of a ferromagnetic material) of the inductance coil, and in parallel connected with the first capacitor. It is obtained with this circuit an elimination of the nonwished frequencies in the antenna and a better balance of the equipment.

[0006] Therefore it introduces a new capacitor, in parallel connected in relation to the at least one capacitor of the utility model of the backgrounds of the invention.

[0007] It is an object of the present invention a transmitting and receiving antenna, destined to its use in movable units with remote control, that comprises, inside a surrounding box-housing made of insulating material, at least one inductance coil and at least a first capacitor of fixed capacity in series connected with the signal or power supply, characterized in that it includes at least a second capacitor of fixed capacity, in parallel connected with respect to the first capacitor, placed between the active pole of the signal or power supply and the nonactive pole

of the own source corresponding to ground, to which the nucleus of the inductance coil is also electrically connected.

[0008] With the purpose to facilitate the explanation a sheet of drawings is attached to the present description, in which a practical case of an embodiment has been reproduced, which is mentioned only for exemplificative, non limitative of the scope of the present invention.

Brief description of the drawing

[0009] The only figure represents the electrical circuit of the new transmitting and receiving antenna, with its characteristic components, housed in a box-housing of mechanical protection.

Detailed description of the invention

[0010] The new antenna comprises a metallic rod 1, which can be made of a single piece and length adapted to the frequency band of work.

[0011] The inductance coil 2 and the first capacitor 3 of fixed capacity are in series connected with the signal or power supply 4, externally connected to an electromagnetic wave transmitter or receiver.

[0012] Characteristically, the new antenna includes a second capacitor 8 of fixed capacity, connected between the active or main pole of the signal or power supply 4 and the nonactive or ground pole 9 of the same source, corresponding to ground. To this last point the nucleus 5 of the inductance coil 2 is electrically connected.

[0013] The new second capacitor 8 is used to bypass to ground, as a filter, the nonwished frequencies, specially the interfering and the standing waves and, that could appear in the antenna. Also it improves the gain of the transmission and/or reception and the adaptation of the antenna to the equipment.

[0014] In the case that an electrical discharge affects the equipment (for example, due to a storm or similar), the new second included capacitor 8 serves as a protection, as a fuse, even getting destroyed before the surge reaches to the transmitter or receiver.

[0015] The margins of transmission or reception frequency can be changed, modifying the values of the included capacitors, and to adapt the length of the rod 1 to these margins of frequencies.

[0016] The shell or box-housing 6, made of insulating material, of the antenna, has an opening 7 in order that the rod 1 gets through. Rod can adopt, with respect to the box-housing, the position represented in the figure with full line or a position 10 perpendicular to the previous one and indicated with dash lines, as well as a series of intermediate positions, in accordance with the characteristics of the transmission reception in which it the new antenna should work.

[0017] The present patent describes a new transmitting and receiving antenna. The examples mentioned here are not limitative of the present invention, for that

reason it will be able to have different applications and/or be adapted, all of them within the scope of the following claims.

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Claims

1. Transmitting and receiving antenna, destined to its use in movable units with remote control, that comprises, inside a surrounding box-housing (6) made of insulating material, at least one inductance coil (2) and at least a first capacitor (3) of fixed capacity in series connected with the signal or power supply, **characterized in that** it includes at least a second capacitor (8) of fixed capacity, in parallel connected with respect to the first capacitor (3), placed between the active pole of the signal or power supply (4) and the nonactive pole (9) of the own source corresponding to ground, to which the nucleus (5) of the inductance coil is also electrically connected.

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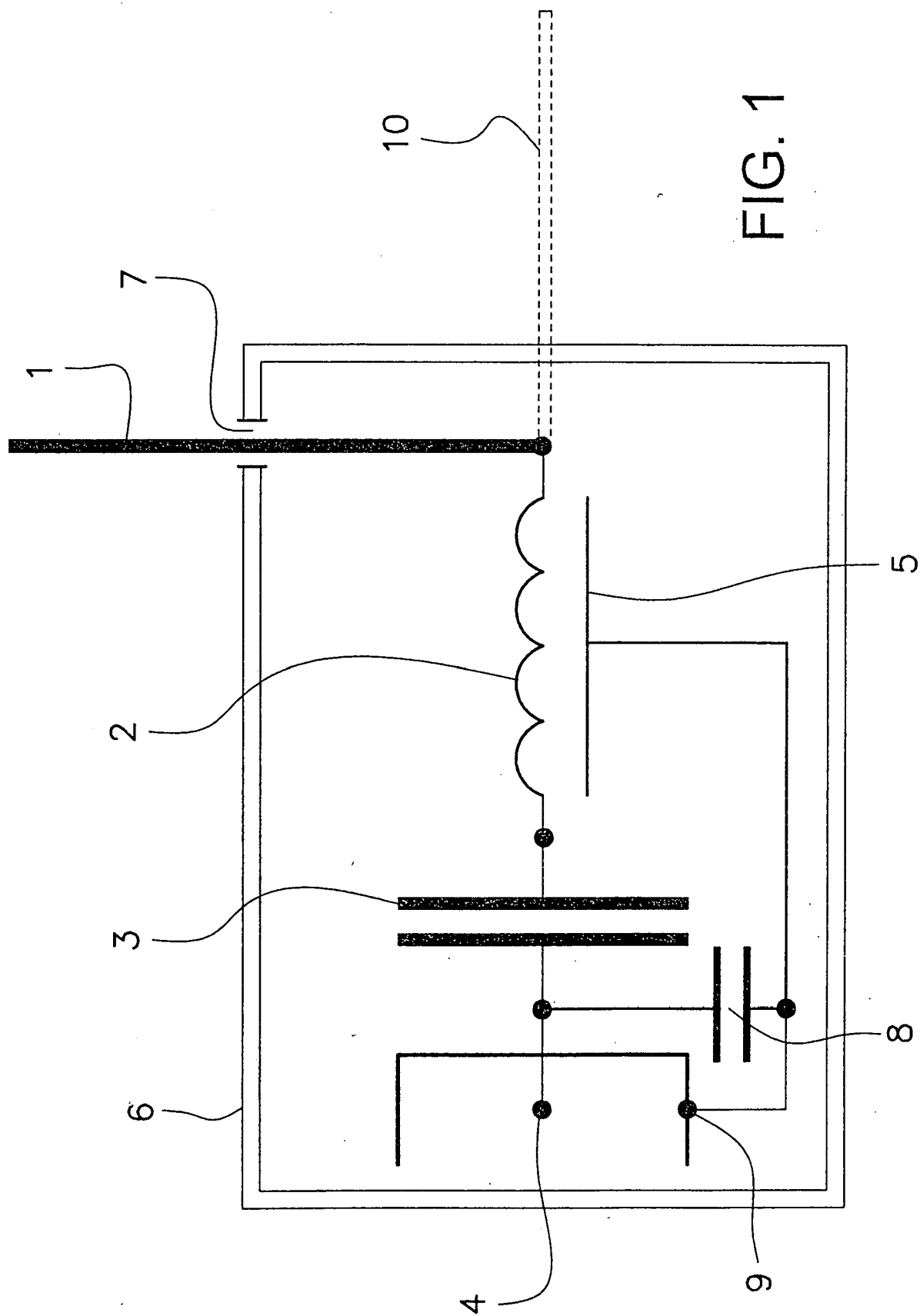


FIG. 1



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EUROPEAN SEARCH REPORT

Application Number
EP 05 38 0205

DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	US 6 057 807 A (MARTINSSON ET AL) 2 May 2000 (2000-05-02) * column 4, line 59 - column 5, line 11; figures 2a,2b *	1	H01Q9/30 H01Q1/24 H01Q3/04
X	US 3 775 707 A (FRAZIER M,US) 27 November 1973 (1973-11-27) * column 1, line 49 - column 2, line 14; figure 1 *	1	
A	GB 127 318 A (MARIUS LATOUR) 5 June 1919 (1919-06-05) * page 5, lines 49-53; figure 3 *	1	
			TECHNICAL FIELDS SEARCHED (IPC)
			H01Q
The present search report has been drawn up for all claims			
Place of search Munich		Date of completion of the search 8 December 2005	Examiner Jäschke, H
CATEGORY OF CITED DOCUMENTS		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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08-12-2005

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82