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Date: 2018-04-24
Our ref: P9217/WO
Pages: 7

WIPO

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SUBJECT: Filing of informal comments on the WO-ISA of the International Application
Patent: "IMPROVED WIRELESS TRANSMISSION SYSTEM OF ELECTRICITY FOR ELECTRIC DRIVE VEHICLES"
Int. App. No. PCT/BA2017/000005
Applicant: **MUSIC, Salih**
Voloder 40, 77244 Otoka, BA

Dear Sirs,

We refer to the notification of transmittal of the International Search Report and the Written Opinion of the International searching Authority of 20. March 2018.

The applicant hereby wishes to file the informal comments on the WO-ISA of the above International Application.

Additionally, the applicant is filing amendments with respect to claims under Article 19. explaining the amendments below.

The amendment in claim 1 refers to technical features essential to the definition of the invention, i.e. constitutive parts of the system.

The amendment in claim 2 is only containing additional wording at the end of the sentence "of the vehicle".

Finally, the formal amendments are made in all claims 1 – 9 due to the fact the claim 1 is intended to be independent claim in the first place, with eight dependent claims.

Attached, please find the informal comments and amended set of claims 1 – 9.

Sincerely yours,


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Subject: **Informal comments to the WO-ISA**
Application number: PCT/BA2017/000005
Applicant: MUSIC, Salih
Voloder 40, 77244 Otoka, BA

Informal comments are being made to the following documents in general:

D1 WO 2009/042214 A1
D2 WO 2011/059109 A1
D3 WO 2011/059108 A1
D4 US2016/372955 A1
CN202632526U

where according to the searching authority D1 is considered closest state of art.

Comment: All the above cited patents have the same technical basis, with almost the same state of art, which is reflected in the fact that the system in operation has one large energy transmitter that serves one or more smaller receivers. The difference with respect to the subject application is that the application has one or more smaller transmitters, which during the exploitation phase serve only one receiver.

The disadvantages of all the aforementioned patents are therefore the same, the reasons being as follows:

1. A larger transfer coil which is not completely shaded by the receiving coil radiates the huge amount of energy into the environment and thus has a significantly lower degree of exploitation,
2. A larger transfer coil that is not completely shaded by the receiving coil causes waste of the energy into the environment, thereby causing unwanted induction currents in surrounding objects and living beings, causing overheating, electric shock, flaring of electric circuits, danger of fire, burns and other diseases caused by radiation,
3. A larger transfer coil that is not completely shaded by the receiving coil radiates much of the energy in the environment, thereby causing unwanted induction currents, disrupting the operation of other electronic devices in the vehicle itself, and especially radio and medical devices in the area.
4. Economic ineffectiveness: measuring the received energy of individual receivers is very difficult and subject to manipulation, the system is unprotected from unregistered receipt and consumption.
5. Low degree of utilization
6. Frequency spectrum limitation

7. Low permeability of data transfer
8. Impossibility of precise positioning of the receiver / vehicle
9. Impossible to determine the trigonometric and dynamic values of the vehicle
10. The impossibility of selective transmission of energy to a particular receiver
11. The impossibility of selectively switching off the transmission of energy to a particular receiver
12. Problematic technical realization due to the size of the transfer coil (in Patent WO 2009/042214 it is even the size of the island of Manhattan, which is a technically and economically unreal project without the possibility of realization in small steps)

The advantages of the subject invention and obvious inventive step in relation to all the previous patents, the reasons being as follows:

1. A small transfer coil which is completely shaded by the receiving coil radiates the most of the energy to the receiving coil, and very little in the environment, thereby having a substantially higher degree of exploitation,
2. The smaller transfer coil, which is completely shaded by the receiving coil, radiates a very small amount of the energy in the environment, thereby causing minimal or no induction in objects and living beings in the environment,
3. A smaller transfer coil that is completely shaded by the receiving coil radiates a very small amount of energy in the environment and thus does not cause interference and operation of other electronic devices in the vehicle itself, or radio and medical devices in the surrounding area,
4. Economic cost-effectiveness: measuring the received energy of individual receivers is very precise and resistant to manipulation, the system is protected from unregistered reception and consumption,
5. High degree of utilization,
6. Wide frequency spectrum options,
7. High permeability of data transmission,
8. Possibility of precise positioning of the receiver / vehicle,
9. Possibility of determining the trigonometric and dynamic values of the vehicle,
10. Possibility of selective transmission of energy to a particular receiver,
11. Ability to selectively switch off the transmission of energy to a particular receiver,
12. Small transfer coils (sizes 60-80cm, at intervals of 5 to 15m) are real technical and economic basis for realization in small steps.

Additionally, the applicant refers in more detail with respect to the document D1 WO 2009/042214 A1.

Comment: The left part of Fig. 1 as shown below, [image A] is the system according to WO 2009/042214 D1. According to this patent, one large transfer coil 1 includes the entire area in which roads, receivers 2, vehicles 3, and surrounding objects with electronics and living beings are located. 4. In order to achieve energy transmission, receivers must be emitted continuously, so all the vehicles, objects and living beings are constantly exposed to the radiation of the transmitter.

The right part of the Fig. 1 [image B] represents the system according to the present application, in which several small transmitters 1 were installed in road, and which are broadcast individually only when vehicle 3 is above them, i.e. completely overshadowed by the receiving coil. 2. Surrounding objects and living beings 4 are not exposed to this radiation, because the vehicle with its coil produces the effect of a Faraday cage above the given transmitter currently being emitted, while the other transmitters are in standstill.

Relevant tags are:

A 1-transmitter coil that covers the entire area

2- receiver in the vehicle

3-vehicle

4-living beings and objects with electronics

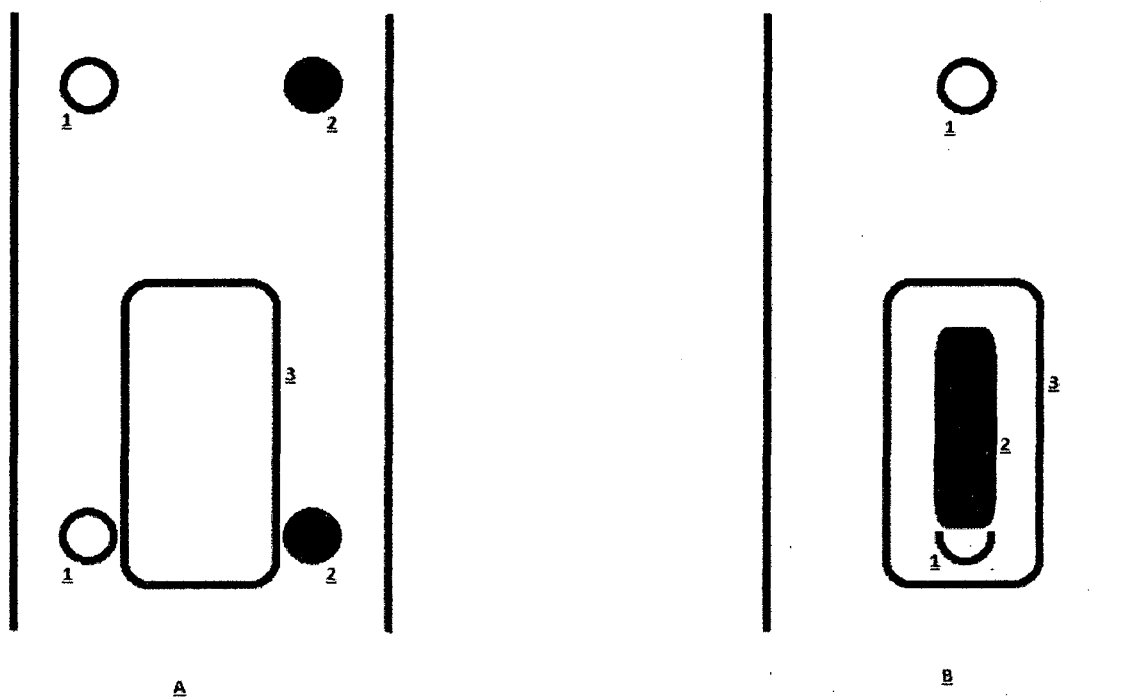


Fig.1

Figure 2. furthermore, indicates clearly the difference between the systems according to document D1: WO 2009/042214 A1 and our invention..

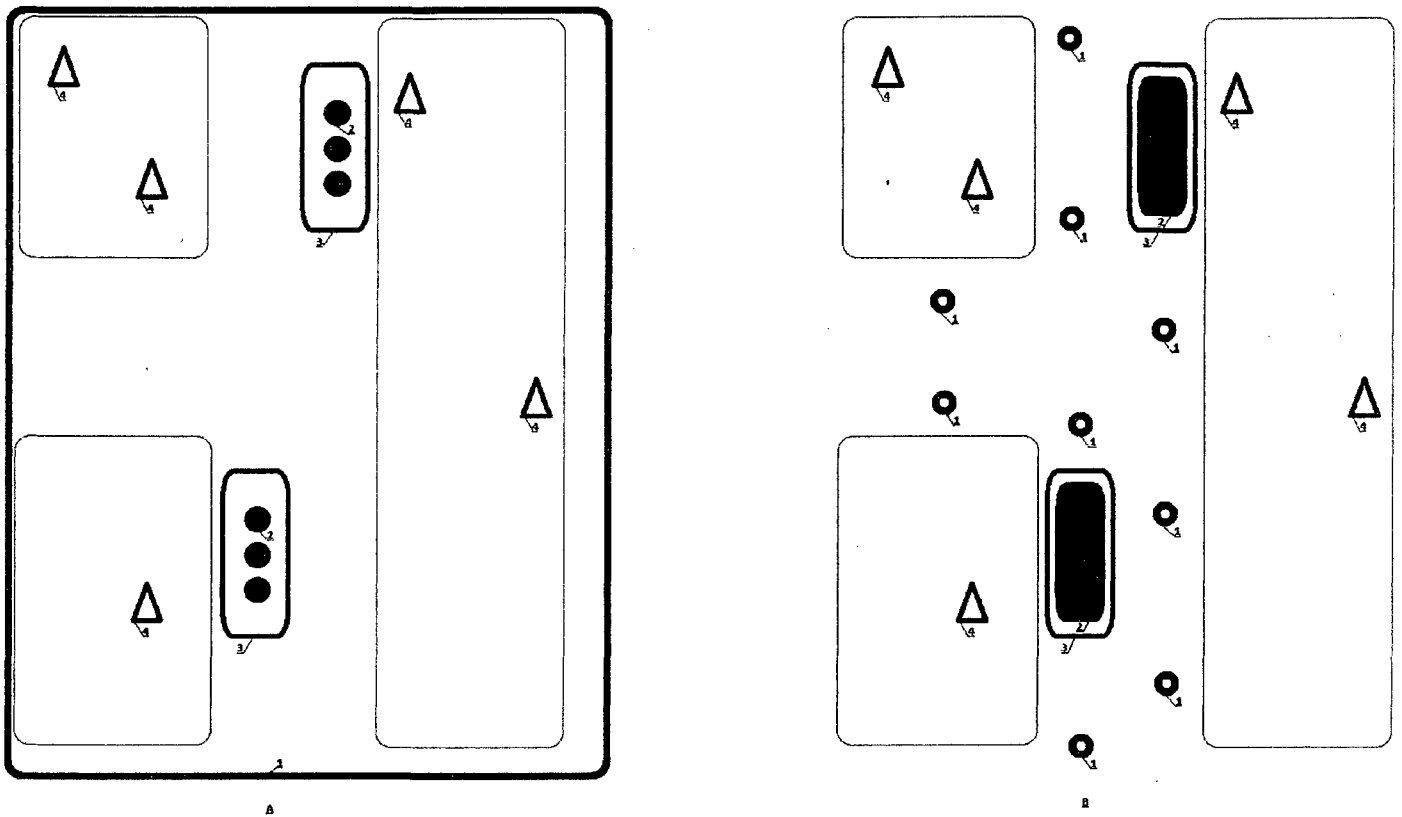


Fig.2

At the end, the applicant is further referring with respect to the cited document CN202632526U.

Comment: Patent CN202632526U represents a traffic flow meter, i.e. number of vehicles measured between two points: stationary transmitter and stationary receiver. In the following text we will indicate the basic characteristics of this system and in the same line we will point out the differences and inventiveness of our patent:

1. The main technical feature of the patent CN202632526U is that both transmitters 1 and associated receivers 2 are stationed in road.

Our patent differs from the disclosed patent that the transmitters 1 have been installed stationary in road, and receivers 2 installed in the vehicle 3 which is standing still or moving (as shown in Fig. 1).

2. Another feature of the CN202632526U patent is that vehicles do not have digital communication with a measuring system, but participate in measurement only by passive induction of their body.

With this description, our patent differs from the described patent that every vehicle actively participates in the exchange of digital signals when determining its trigonometric and geodetic position and is defined for each vehicle individually.

3. The third feature of the CN202632526U patent is that the system detects only the passage of the vehicle, without the possibility of measuring the trigonometric, geodetic and dynamic values of the movement. With this description, our patent differs from the described patent that the vehicles are technically registered in the system and are equipped to measure and exchange data, giving the system its trigonometric, geodetic and dynamic values of movement not only in relation to the transmitters built into road as reference (stationary) trigonometric and geodetic points, but also for other vehicles on the same road, which creates the condition of synchronized traffic.

4. Unlike Patent CN202632526U, our present invention uses trigonometric and geodetic data of stationary transmitters, trigonometric, geodetic and dynamic data for the movement of individual vehicles, pre-defined navigation paths and targets of the same individual vehicles and delivers data to the central traffic control server in the given part of road. It defines the optimal and safe route and speed of individual vehicles, instructing and communicating their electronics control system to correct the paths and speeds, thereby gaining control and synchronization of their movement with respect to the edge of the pavement, the distance and speed of other vehicles.

The above is considered sufficient to prove the inventive step of the subject invention in particular, especially bearing in mind the most of the patent claims are considered novel (4-6, 8,9) and the fact of the above advantages of the subject invention which are a result of the comprehensive research and multiple experiments carried out by the inventor, which are novel, not known and thereby non obvious to the skilled person.


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STATEMENT UNDER ARTICLE 19

In accordance with the Article 19. Of the PCT applicant submits herewith one replacement sheet. The amendments – corrections are formal, and made in accordance with the Written Opinion of the ISR.

The amendment in claim 1 refers to technical features essential to the definition of the invention, i.e. constitutive parts of the system only.

The amendment in claim 2 is only containing additional wording at the end of the sentence “of the vehicle”.

Finally, the formal amendments are made in all claims 1 – 9 due to the fact the claim 1 is intended to be independent claim in the first place, with eight dependent claims.

Attached, please find the informal comments and amended set of claims 1 – 9.

PATENT CLAIMS

1. Wireless transmission system of electricity and data for electric drive vehicles and systems when moving in a near field consisting of the body of the receiving coil, windings of the receiving coil, the body of the transmitter coil, windings of the transmitter coil using receiving and transmitting resonant inductive coils, **characterized in that**, said receiving inductive coil is positioned in parallel to the line and the surface of the vehicle movement, in the bottom side of the vehicle, as wider and longer with respect to the vehicle dimension capabilities.
2. The system of claim 1, **characterized in that**, the receiving coil is made spirally or in some other form, from single-layer or multilayer windings, arranged to fill the most possible or the entire surface of the body of the vehicle.
3. The system of claim 1 or 2, **characterized in that**, parallel to the line of movement, the transmitter coils are placed in the middle of the traffic lane, in a much smaller width with respect to the width of the receiving coil.
4. The system of claim 1 or 2, **characterized in that**, parallel to the line of movement, the transmitter coils are placed in the middle of the traffic lane at a distance smaller than, equal to or greater than the length of the body of the receiving coil.
5. The system of claim 3 or 4, **characterized in that** the receiving coil is positioned in the way to completely cover the surface of at least one transmitter coil with its surface during a vehicle movement and the longest possible time interval, placing both surfaces parallel at the closest possible distance.
6. The system of any of the preceding claims, **characterized in that**, the said system includes measuring the power of high-frequency signals between the transmitter and the receiver, and based on that data enable precise determination of the position, direction, angles and speed of the movement of the receiving coil in relation to the transmitter coils, and hence the position, direction, angles and speed of the vehicle movement.
7. The system of claims 2 to 6, **characterized in that**, the said system improves the efficiency of the transmission of energy by using singlelayer and multilayer spiral or some other coil shapes.
8. The system of any of the preceding claims, **characterized in that**, said system excludes a mechanical carrier and position corrector of the receiving coil.
9. The system of claims 6 to 8, **characterized in that**, traffic control and synchronization of one or more electric vehicles is being achieved through the system and its components.

PATENT CLAIMS

1. Wireless transmission system of electricity and data for electric drive vehicles and systems when moving in a near field consisting of the body of the receiving coil, windings of the receiving coil, the body of the transmitter coil, windings of the transmitter coil using receiving and transmitting resonant inductive coils, **characterized in that**, said receiving inductive coil is positioned in parallel to the line and the surface of the vehicle movement, in the bottom side of the vehicle, as wider and longer with respect to the vehicle dimension capabilities.
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6. The system of any of the preceding claims, **characterized in that**, the said system includes measuring the power of high-frequency signals between the transmitter and the receiver, and based on that data enable precise determination of the position, direction, angles and speed of the movement of the receiving coil in relation to the transmitter coils, and hence the position, direction, angles and speed of the vehicle movement.
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