

Notice of opposition filed against EP3831740B1, granted to Mute&Mancer Corp (LT), and entitled "Wireless charging pad".

The Opponent is Paddle Science Laboratories, of 481 8th Avenue, New York 10001-1809, USA

The Opponent is represented by Ms. Molly Dorsett Pauley, of Todiet Kwiscus LLC, Upper Coxley, Wells BA5 1QS, Great Britain.

The opposition fee has been paid by deposit account.

We request revocation of the Patent (EP3831740B1; Annex 1; A1) in its entirety (claims 1 to 3 of part 1 of the examination). The patent is opposed at least on the grounds of Article 100(a) EPC for lack of novelty and lack of inventive step, and Article 100(c) EPC.

If the Opposition Division intends to reach a decision other than revocation of the patent, then oral proceedings are requested.

1. Claimed subject matter, and effective dates thereof

A1 claims priority from NO20200113 (P1), filed 14 March 2020 and NO20200355 (P2), filed 25 May 2020.

Claim 1 of A1 was amended during prosecution and finds no basis in the application **as filed**. Thus claim 1 of A1 does not have an effective filing date, and adds matter as will be discussed further below.

For completeness, and to pre-empt an amendment by the applicant, subject matter relating to claim 1 of A1, amended to limit the claim to include the features of paragraphs [12] and [13] of A1 as follows:

...the magnetic material comprising amorphous CoFeNi at 10-20% and nanocrystalline FeCuSiB at 30-40% by weight of the magnetic material.

is hereinafter referred to as claim 1A.

Claim 1A of A1 finds basis in the application as filed at [12] (for content of FeCuSiB) and [13] (for content of CoFeNi) of A1, both paragraphs being present in both priority documents P1 and P2. Thus, the subject matter of claim 1A is entitled to the earliest priority date, that of P1, 14 March 2020.

Claim 2 of A1 was present in the application as filed, and in priority documents P1 and P2. However, P1 and P2 were not the first filing by the applicant to the subject matter contained within claim 2 of A1. A2-P (EP19732000.1) was the first filing by the applicant to contain this subject matter. Therefore, the priority claim is invalid for claim 2 of A1, and claim 2 has an effective date of the filing date of A1, 25 July 2020 [Article 87(1) EPC; GL F-VI-1.4]. A2-P is discussed in further detail below.

Claim 3 of A1 was present in the application as filed, but not in priority documents P1 or P2. The subject matter of claim 3 does not correspond to that of the priority document. Thus claim 3 has an effective date of the filing date of A1, 25 July 2020 [Article 87(1) EPC; G2/98].

2. Documents relied upon

Annexes A2, A3, A4, A5 are attached.

Annex A2 is a European patent application filed before, but published after, the effective dates of claims 1, 1A, 2 and 3 of A1. Thus annex A2 is prior art according to A54(3) EPC for claims 1, 1A, 2 and 3 of A1 for the assessment of novelty only.

Annex A2 claims priority from EP19732000.1 (A2-P), having an identical scope, disclosure and subject matter of A2. A2-P was filed 18 January 2019, and published on 23 July 2020.

A copy of A2-P will be provided in due course.

A2-P and A4 published before the effective dates of claims 1, 2 and 3, and are thus prior art according to A54(2) EPC for claims 1, 2 and 3 of A1

A2-P and A4 are European applications filed before, but published after, the effective date of claim 1A of A1. Thus A2-P and A4 are prior art according to A54(3) EPC for claim 1A of A1 for the assessment of novelty only.

A3 and A5 were published before the effective dates of claims 1, 1A, 2 and 3 of A1 and are thus prior art according to A54(2) EPC for claims 1, 1A, 2 and 3 of A1.

3. Claim 1

Claim 1 adds matter because it has no basis in the application as filed and was added during prosecution.

Claim 1 comprises a magnetic material comprising:

- amorphous CoFeNi at 10-30%; and
- nanocrystalline FeCuSiB at 20-40% by weight of the magnetic material.

Amounts of amorphous CoFeNi are given at paragraphs [13] and [14] of the application as filed.

Paragraph [13] discloses the combination of end points of at least 10% and below 20% for a composite of high long term mechanical stability as detailed in A1[12].

Paragraph [14] discloses the combination of end points of more than 20% and less than 30% for a composite of high thermal tolerance.

These disclosures are separate embodiments. While it is sometimes allowable to combine end-points of ranges, this is often limited to the combination of a broader range and a preferred range [GL H-V-3.5]. This is not the case here, wherein two end points are taken from two *separate* embodiments. There is no direct and unambiguous disclosure of the combination of at least 10% and less than 30%, thus failing the 'gold standard' for added matter [CLBA II-E-1.3.1; G 3/89]. The range of claim 1 represents an unallowable intermediate generalisation of [13] and [14] [GL H-V-3.2.1]

The same arguments apply, *mutatis mutandis*, to the disclosure of amounts of nanocrystalline FeCuSiB in paragraph [12] and [14]:

Paragraph [12] discloses the range of 30-40% for a composite of high long term mechanical stability.

Paragraph [14] discloses the range of 20-30% for a composite of high thermal tolerance.

There is no disclosure of a range of 20-40%. Such a range adds matter.

Even if the ranges claimed in claim 1 were disclosed, there is further no disclosure of the combination of both of these ranges together. This is a further intermediate generalisation.

Therefore, claim 1 contains matter extending beyond the scope of the application as filed and contravenes Article 123(2) EPC. Claim 1 is objected to on the grounds of Article 100(c) EPC

For completeness, any amendment made by the proprietor to remove such a feature would contravene Article 123(3) EPC, as the resulting claim would have a broader scope than the claim as-granted. This is because the claim would not be limited to any specific magnetic material, including materials with CoFeNi and FeCuSiB contents outside the ranges of claim 1. [T 384/91; G 1/93]

4. Claim 1A

For completeness, and to pre-empt any attempt by the proprietor to amend out of the 'inescapable trap' [T 384/91; G 1/93], we propose that any amended claim (such as proposed claim 1A) corresponding to subject matter of paragraphs [12] and [13] of A1 would lack inventive step in view of A3 taken in combination with A5.

Closest prior art

Only A3 and A5 are A54(2) prior art for the assessment of inventive step for claim 1A.

Following the problem-solution approach laid out in GL G-VII-5, A3 can be considered closest prior art for the subject matter of claim 1A, as it discloses a charging pad comprising a first and second coil and a first layer comprising FeCuSiB as 30-40%.

A5 is less suitable, as there is no disclosure of a first and second coils, thus A5 is more distant prior art.

Thus A3 can be considered as closest prior art for Claim 1A.

Difference

A3 discloses the following features defined in claim 1A of A1:

The device of A3 is a charging pad, A3[2] (verbatim) comprising a first coil and a second coil, A3[2] (double-O solenoid, double-O has two coils - see Figure 2, solenoid consists of a conductive trace with several concentric windings (A4[3]) which is the same as a coil, which is a conductive trace with several concentric windings (A1[5])), both for resonant wireless charging, A3[2] (verbatim)

The first coil and the second coil being arranged side by side, A3[9] ("*a first solenoid with its windings is created and next to it a second solenoid with its windings. This is a double-O solenoid*", solenoid = coil as above)

The device of A3 also discloses a first layer made of a magnetic material, A3[5] (the material contains magnetic grains and is thus magnetic itself, A3[11])

As claim 1A defines the product in process features (i.e. is a product by process claim), the claim relates to the product *per se* regardless of how it was manufactured [GL F-IV-4.12].

The result of the steps of: "*wherein the first coil and the second coil have been placed on a first surface of the first layer and the first layer has been treated so that the first coil and the second coil have sunk into the first layer.*" is that that the coil is sunken into the first layer.

The device of A3 also has the coils sunken into the first layer, A3[7] and [8] (see also Figure 3, the coil is within the magnetic material).

A1 states that the first layer may initially be liquid and solidify after provision of the coils, A1[10]. This is what happens in A3, wherein the material is melted to create a liquified area A3[7], then solidifies after provision of the wire A3[8]

the magnetic material comprising nanocrystalline FeCuSiB, A3[11] ("*These grains then contain crystal cells measuring between 150 nanometers and 300 nanometers.*" 250-300 nm is less than 1 micrometre thus nanocrystalline per A2[5]: Nanocrystalline alloys were discovered in 1993 and are characterised by having crystal cells smaller than 1 micrometre.) at 32-38% by weight of the magnetic material, A3[11] (32 and 38 both fall within range of 30-40, the entire range of A3 is within the claimed range of claim 1A, thus is disclosed)

Claim 1A of A1 therefore differs from A3 in that :

The magnetic material also comprises amorphous CoFeNi at 10-20% by weight of the magnetic material.

Technical effect and problem to be solved

A1 discloses at paragraph [13] that the combination of amorphous CoFeNi at 10-20% and nanocrystalline FeCuSiB at 30-40% by weight of the magnetic material has the effect of preventing oxidation of the FeCuSiB, without worsening the long-term mechanical stability.

The objective technical problem is therefore to provide a coil having a magnetic material that resists oxidation without worsening the mechanical stability of the magnetic material.

This problem is solved in an obvious manner by looking at A3 in combination with A5.

Obviousness

A3 incites the skilled person to look for additional methods of reducing corrosion (i.e. oxidation A1[12]) at A3[10]. Thus the skilled person would look for teachings that improve the corrosion resistance of the device used for cars.

The skilled person would look to A5 in an attempt to solve the above technical problem as it is in the same technical field as it discusses systems for resonant wireless charging, that is licenced from a car manufacturer (i.e. is **suitable for cars** see A3[10]). The devices are used outside thus corrosion and oxidation are issues to be overcome. Although not a car, this is discussed as not being a problem at A5[1].

A5 discloses the missing feature of the magnetic material also comprises amorphous CoFeNi at 10-20% by weight of the magnetic material. at A5[3].

The magnetic material comprises 52% by weight TP.190, thus remaining is 48% by weight of nanocrystalline FeCuSiB and amorphous CoFeNi at a ratio of 2:1. Thus 16% CoFeNi and 32% FeCuSiB. 16% falls within range of 10-20%.

This feature is said to provide the technical effect of being protective, and resisting corrosion (corrosion = oxidation, A1[12]) in wet conditions.

Thus the skilled person would adapt the teaching of A3 to also include the 16% CoFeNi in the composition in order to provide a material having improved oxidation resistance. Such a product falls within the scope of claim 1A.

Such a composition would also be found by the skilled person to have the additional effect of not impacting the long term mechanical stability of the magnetic material (inherent property as the resulting product has all the same structural features of claim 1A, which are said to provide the effect of long term mechanical stability).

Thus it would already have been obvious for a skilled person to arrive at something falling within claim 1A. The long-term mechanical stability is thus a mere bonus effect, arrived at by the one-way street formed by the prior art, that the skilled person would follow in order to improve oxidation resistance. Such an additional technical effect is thus non-inventive [GL G-VII-10.2; T 231/97; T 192/82]

There would be no barrier for the skilled person to make such a modification of the device of A3. CoFeNi is already

considered in A3 as being a suitable material for magnetic layers, A3[5] in combination with TP.190. No additional modifications are necessary.

Thus the skilled person would arrive at the subject matter of claim 1A without using inventive skill, starting from A3 and looking to A5. Thus claim 1A is not inventive and contravenes A56 EPC. Claim 1A is objected to under A100(a) EPC.

5. Claim 2

Claim 2 lacks novelty over A2-P, which is prior art under Article 54(2) EPC, because A2-P discloses all the features of claim 2. A2-P is identical to A2 in subject matter, the following references are made to A2 (but the arguments apply equally to A2-P).

The device of A2-P is a charging pad comprising a first coil and a second coil, both for resonant wireless charging, the first coil and the second coil being arranged side by side, A2[2] (verbatim)

The device of A2-P also comprises a first layer (135) made of a magnetic material, wherein the first coil and the second coil have been placed on a first surface of the first layer and the first layer has been treated so that the first coil and the second coil have sunk into the first layer, A2[3] (verbatim)

The magnetic material of A2-P comprises amorphous CoFeNi at 20 - 30% and nanocrystalline FeCuSiB at 20 - 30% by weight of the magnetic material, A2[4] (verbatim).

Therefore, claim 2 is not novel over A2-P, and contravenes Article 54 EPC.

A2 is prior art under A54(3), claim 2 is also not novel over A2 for the same reasons, and thus contravenes A54 EPC

Claim 2 is objected to under Article 100(a) EPC.

The same arguments apply, *mutatis mutandis*, even if the priority claim of Claim 2 is found to be valid, as A2-P would then be prior art under A54(3) EPC.

6. Claim 3

Claim 3 lacks inventive step in view of A2-P taken in combination with A4.

Closest prior art

A2-P, A3, A4 and A5 are all prior art under A54(2) EPC for claim 3.

Following the problem-solution approach laid out in GL G-VII-5, A2-P can be considered closest prior art for the following reasons.

As discussed above for the novelty of claim 2, A2-P discloses a charging pad having many similarities with the pad of claim 3. Furthermore, A2-P is the only other prior art document available for the assessment of inventive step that discloses a first layer made of magnetisable concrete.

The disclosure of A3, A4 and A5 are each more distant as they lack the feature of the magnetisable concrete. A3 discloses a first layer of ferrite, A3[3], or a polymer A3[5]-[10]. A4 does not discuss a first layer. A5 does not discuss the charging pad.

As such, A2-P can be considered closest prior art

Difference

A2-P discloses the following features defined in claim 3 of A1:

(again references to A2, but arguments apply to identical disclosure of A2-P)

The device of A2-P is a charging pad comprising a first coil and a second coil, both for resonant wireless charging, the first coil and the second coil being arranged side by side, A2[2] (verbatim).

In the device of A2-P, the magnetic material may be magnetisable concrete, A2[6] ("*magnetisable material has a density of at least 2000 kg/m³ and comprises cement and magnetic particles*", this is the same as magnetisable concrete per A1[15]: This is magnetic material comprising cement and having a density of at least 2000 kg/m³.)

The device of A2-P may also comprise a second layer arranged next to the first layer, A2[7] (verbatim)

Claim 3 of A1 therefore differs from A2-P in that:

The second layer is made of electrically conductive metal

Technical effect and problem to be solved

A1 discloses at [19] that within such a second layer neutralising currents, known as eddy currents, are created which locally cancel the unwanted radiation.

The objective technical problem to be solved is therefore to provide a charging mat that cancels unwanted radiation by use of eddy currents

The problem is solved in an obvious manner by looking at A2-P in combination with A4.

Obviousness

The skilled person, in an attempt to solve the above technical problem, would look to A4 because A4 is related to high-power wireless charging pads and ways of preventing unwanted electromagnetic fields (unwanted Electromagnetic fields = unwanted radiation, A4[5] and [6]). This is the same problem as laid out above.

A4 discloses the missing feature in that A4 discloses using a metal sheet close to the solenoid (i.e. coil, see above). A metal sheet is an electrically conductive material A1[19].

This feature is said to provide the effect of generating eddy currents within the metal sheet during use A4[7], A4[8] states that this results in unwanted radiation being locally neutralised.

This is **exactly** the same effect as discussed in A1. The skilled person would thus make the necessary modification taught in A4 (use of metal as the material for the second sheet of A2-P) to overcome the technical problem. The skilled person is clearly motivated in such a way that they **would** make such a change [GL G-VII-5.3]

A2-P even states that the product should be modified to make further improvements, A2[8]. Thus the skilled person would look to make such improvements when starting from A2-P.

The skilled person faces no difficulty in using metal as the material for the second sheet, no structural changes need to be made to accommodate this modification.

Therefore, the skilled person would arrive at the subject matter of claim 3 without using inventive skill, starting from A2-P and looking to A4. Claim 3 contravenes A56 EPC and is objected to under A100(a) EPC.

This represents a continuation of part 1; the opposition details are as provided in part 1.

The patent is opposed on the grounds of Article 100(a) EPC for lack of novelty and lack of inventive step, and Article 100(c) EPC. The patent is opposed in its entirety (claims 1-7),

1. Claimed subject matter and effective dates thereof

A1 claims priority from P1 and P2 as discussed above.

Claims 4 and 5 of A1 were present in both the application as filed and in priority document P2. The subject matter of these claims was not present in P1. Therefore, the subject matter of claims 4 and 5 of A1 have an effective date of the priority date of P2, 15 May 2020.

Claims 6 and 7 of A1 were present in the application as filed but not present in either P1 or P2. Therefore the effective date of claims 6 and 7 is the filing date, 25 July 2020.

2. Documents relied upon

Herein are filed documents A6 and A7.

Annex A6 is a transcript of a public oral disclosure that occurred on 30 May 2020.

Herein submitted is a digital copy of the entire oral disclosure. This can be downloaded from:
<https://www.podcloud.com/BBC9/programmes/b07dx75g/20200430.ogg>

The standard of proof for oral disclosures is higher than for written disclosures, however the full recording as above fulfills this standard, as the disclosure was recorded it is no longer transient in nature [GL G-IV-7.3.4] Radio broadcasts are considered print-equivalent [GL G-IV-7.5.3.2]. Hence the date given (30 May 2020) can be taken as a date of publication.

The podcast of A6 also contains proof of public prior use of two separate products:

A6-Q

A6 discusses the product "model Q" produced by OS-corp. This product was sold between 2015 and 2017. A public sale discloses all features of the device.

Disclosure of the G-IV-7.1 The state of the art may also be made available to the public in other ways, as for example by demonstrating an object or process on (online) media platforms.

The details contained in A6 relating to model Q are herein after referred to as A6-Q

A6-P

A6 also discusses the product "model P" produced by OS-corp. This product is not yet on sale, however, the details referred to in the public disclosure were made to the presenter either on the morning of 30 May 2020 (A6[2]) or the day before the broadcast (A6[13]), 29 May 2020.

As the presenter was clearly not bound by any secrecy agreements due to the public announcement [GL G-IV-7.2.1], the disclosure made to the presenter, and then publicised forms part of the state of the art, with an effective.

A6-Q was published in 2015, before the effective dates of all claims 1-7 of A1. Thus it is prior art under A54(2) EPC for claims 1-7.

A6-P was published after the effective dates on claims 1A, 4 and 5 and is not available as prior art for these claims.

A6-P was published before the effective dates of claims 2, 3, 6 and 7 and is thus available as prior art under A54(2) EPC for

claims 2, 3, 6 and 7 of A1.

A7 was filed before, but published, after the effective dates of all claims 1-7 and is thus available as prior art under A54(3) EPC for claims 1-7 and is available for the assessment of novelty only.

3. Claim 4

Claim 4 lacks novelty in view of A5, which is prior art under A54(2) EPC as A5 discloses all the features of claim 4 as follows:

The device of A5 comprises a system for charging a battery

The system comprises a processing unit, A5[6] (microprocessor = processing unit per A1[32])

The system comprises a first coil, A5[3] (windings = coil A1[5]) for resonant wireless charging, A5[2].

The system comprises a detection circuit comprising a plurality of second coils, A5[9] and [10] (excitation selenoid and probing selenoid, selenoid = coil as detailed in part 1), for resonant sensing, A5[5] and [12]

said detection circuit being configured to:

- create a sensing field with a first of said second coils, A5[9]
- probe said sensing field with a second of said second coils, A5[10]
- obtain a signal representative of the sensing field, A5[10] (detection current, this same term is used in A1 at [27], the detection current is turned into a signal A5[7])
- provide said signal to the processing unit, A5[7]

As the system comprises all the structural features configured to achieve the same effect, the product disclosed in A5 is a system "suitable for" charging a battery [GL F-IV-4.13.1]

Therefore claim 4 is not novel over A5 and contravenes A54 EPC. Claim 4 is objected to on the grounds of A100(a) EPC.

4. Claim 5

Claim 5 lacks novelty in view of A7, which is prior art under A54(3) EPC, as A7 discloses all the features of claim 5:

A7 discloses a method for controlling a charging system to selectively charge a battery of an electric vehicle, A7[4] and [5] (car = vehicle A1[1])

the method comprising the following steps

- receiving a signal, A7[8] (verbatim)
- deciding, based on the received signal, whether the battery should be charged or not, A7[9] ("may trigger", i.e. there is choice)
- if it is decided that the battery should not be charged, causing an electrical connection outside the vehicle to be inactive. A7[10] and [9] (in the charging terminal, this is external A7[6], the RFC-7511-x standard is external)

The steps being executed by a processing unit included in the charging system: A7[7] (microprocessor - processing unit A1[32])

Therefore claim 5 is not novel over A7 and contravenes A54 EPC. Claim 4 is objected to on the grounds of A100(a) EPC.

Claim 5 also lacks inventive step in view of A5 taken in combination with A5

closest prior art

A3, A5 and A6-Q are all available for the assessment of inventive step of claim 5.

A6-Q is the closest prior art as it concerns and electric car, which is the same intended use as for claim 5, that can decide whether to charge the battery or not based on a signal to the processor..

A3 does not concern electric vehicles but rather the pads per se

A5 does not decide to charge or not based on a signal, it moves to the charging pad when out of battery

Thus A6-Q is closest prior art.

Difference

A6-Q discloses:

Method for controlling a charging system to selectively charge a battery of an electric vehicle, A6[8]-[10] (battery control system = charging system as it allows charging)

the method comprising the following steps

- receiving a signal A6[9] (from the temperature sensor)
- deciding, based on the received signal, whether the battery should be charged or not, A6[9] (verbatim)

the steps being executed by a processing unit included in the charging system A6[[8]

A6-Q does not disclose:

- if it is decided that the battery should not be charged, causing an electrical connection **outside** the vehicle to be inactive.

Technical effect and problem to be solved

A1 discloses at [30] that the step of if it is decided that the battery should not be charged, causing an electrical connection outside the vehicle to be inactive. has the feature of having the charging area is free of any charging field, preventing inadvertent field exposure.

The objective technical problem is thus to provide a method that prevents inadvertent field exposure.

This problem is solved in an obvious manner starting from A6-Q and turning to A5

Obviousness

The skilled person starting from A6-Q would look to A5 as it relates to devices that can be used in automotive products A5[1].

A5 discloses the missing feature in that A5 discloses a pad that contains switches that switch the charging dock on and off (i.e. externally) A5[4].

Thus when the battery should be charged (when the device is present) the charging will start, and will stop when the device moves off the pad.

This feature is linked to the effect of increasing safety A5[4], thus the skilled person would make such an adaptation to the teaching of A6-Q. As such, this implicitly causes the feature of avoiding inadvertent field exposure, as the switch only activates when the device is charging.

This would require minimal changes to the device of A6-Q

The skilled person would thus arrive at the subject matter of claim 5 without using inventive skill by starting from A6-Q and

looking to A5. Thus claim 5 contravenes A56 EPC, and is objected to under A100(a) EPC.

5. Claim 6 + 5

Claim 6 also lacks inventive step in view of A6-P taken in combination with A5.

Closest prior art

A6 is suitable as closest prior art because A6-P discloses a method of claim 5 on which claim 6 relies.

No other piece of prior art (available for inventive step) discloses all the features of the method of claim 5. A6-Q is less suitable as there is no disclosure of the electrical connection being inactivated externally to the car.

Difference

A6-P discloses the method of claim 5:

The model P comprises a charging system comprising a processing unit, A6[15] (computer = processing unit A1[32])

A6-P discloses a method for controlling a charging system to selectively charge a battery of an electric vehicle, A6 [2, [15], [18]

the method of A6-P comprising the following steps executed by a processing unit included in the charging system:

- receiving a signal A6[15] (sensors output current is sampled by the on board computer, current = signal A6[15])

- deciding, based on the received signal, whether the battery should be charged or not, A6[16] and [18]

- if it is decided that the battery should not be charged, causing an electrical connection

outside the vehicle to be inactive. A6[18] - also the power switches within the charging terminal, these are external to the car A6[6] and [7]

Claim 6 therefore differs from A6-P in that:

The charging system is the system as defined in claim 4; and the received signal is

- the signal provided to the processing unit by the detection circuit.

Technical effect and problem to be solved

A1 discloses at paragraph [22] that this has the technical effect of not requiring a human to check the charging area. It further has the effect of reliably detecting if an animal, human body or metal object has entered the charging area.

The objective technical problem is therefore to provide a method that reliably detects if an animal, human body or metal object has entered the charging area, without the need for a human to check.

This problem is solved in an obvious way by looking at A6-P and turning to A5.

Obviousness

The skilled person would look from A6-P to another document as there is the issue of detecting metal beer can (i.e. metal objects) as well as animal bodies.

The skilled person would look to A5 as it discloses a sensing system for detecting animal bodies (i.e. pets) for mobile devices that are battery powered (i.e. battery powered lawnmower

A5 states that automotive technology is compatible A5[1].

A5 discloses the missing features in that A5 discloses the device of claim 4, as detailed above.

A5 also discloses that the received signal is the signal provided to the processing unit by the detection circuit A5[7] and [10]

These features are said to provide the effect of reliably detecting pets (ie animal bodies) because a living body strongly distorts the sensing field. Resonant sensing also reliably detects metal objects such as beer cans A5[12] [13] [9]. The sensing can be used to detect if an obstacle is blocking the charging area A5[13].

Thus, by adapting the method of A6-P to use the disclosure of A5, the method would reliably detect if an animal, human body or metal object has entered the charging area, without the need for a human to check.

The skilled person would have no difficulty in adapting the teaching of A6-P to use such a feature - the RSS sensor is swappable with the USS sensor in the product of A5 ([5]) and can thus be expected to be swappable with other sensors.

The device of model-P is also regularly updated by engineers A6[20] as long as the body is not adapted. A5[8] indicates that the body need not be changed when using the RSS module.

Thus the skilled person would have no difficulty in making such a modification.

The skilled person would thus arrive at the subject matter of claim 6 without using inventive skill. Thus claim 6 contravenes A56 EPC, and is objected to under A100(a) EPC .

6. Claim 7 + 5

Claim 7 lacks inventive step in view of A6-P and A5, using partial problems and the COMVIK approach.

Claim 7 comprises technical and non-technical features. A mixed type approach applies based on G-VII-5.4 and T 641/00

The technical features of claim 7 are

A method for controlling a charging system to selectively charge a battery of an electric vehicle, the method comprising the following steps executed by a processing unit included in the charging system:

- receiving a signal,
- deciding, based on the received signal, whether the battery should be charged or not,
- if it is decided that the battery should not be charged, causing an electrical connection outside the vehicle to be inactive,

wherein the charging system comprises

a processing unit (152),
a first coil (151) for resonant wireless charging, and
a detection circuit comprising a plurality of second coils (153a, 153b, 153c)
for resonant sensing,

said detection circuit being configured to:

- create a sensing field with a first of said second coils,
- probe said sensing field with a second of said second coils,
- obtain a signal representative of the sensing field, and
- provide said signal to the processing unit.

The non-technical features are:

the received signal being representative of the price of electric energy to be used for charging the battery.

This is a non-technical feature as it relates purely to a business method, as activities of a financial, commercial, administrative or organisational nature fall within the scope methods for doing business [GL G-II-3.5.3]. Reducing costs is clearly a financial effect, see also A7[9]

The closest prior art is identified with a focus on the features contributing to the technical character of the invention [GL G-VII-5.4] A6-P can be considered closest prior art for the same reasons as listed above for claim 6, namely that it discloses a method as defined in claim 5, on which claim 7 depends.

The subject matter of claim 7 differs from the disclosure of A6-P in that:

(i) the system is as defined in claim 4, and (ii) that the received signal being representative of the price of electric energy to be used for charging the battery.

The technical effect of (i) is as discussed above for claim 6:

A1 discloses at paragraph [22] that this has the technical effect of not requiring a human to check the charging area. It further has the effect of reliably detecting if an animal, human body or metal object has entered the charging area.

The objective technical problem is therefore to provide a method that reliably detects if an animal, human body or metal object has entered the charging area, without the need for a human to check.

Feature (ii) solves the problem of reducing costs for the user. This problem is unrelated to the problem solved by feature (i) and therefore the partial problem approach can be taken [GL G-VII-5.2 and 6]

As discussed above, starting from A6-P it would be obvious to arrive at a method of claim 6 having feature (i) above, in view of A5.

Feature (ii) is non-technical due to being a business method and cannot provide an inventive step.

Therefore, claim 7 lacks an inventive step for the same reasons as for claim 6 discussed above, starting from A6-P taken in combination with A5.

Signed, yours faithfully

Ms. Molly Dorsett Pauley