Collegio Italiano dei
Consulenti in Proprietà Industriale

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FÉDÉRATION INTERNATIONALE DES CONSEILS EN PROPRIÉTÉ INTELLECTUELLE
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DISCLAIMER

- The following presentation contains private opinions of the tutors. It is intended to provide the best advice according to the knowledge of the tutors.
- Each paper is different, and there is no single „methodology“ guaranteed to yield the correct solution of the paper. The best methodologies are called „knowledge“ and „common sense“.
- This presentation is not intended as a „methodology”

WHAT DO YOU RECEIVE?

PART C(I)

- first Client´s letter
- A1 – patent to be opposed: only a part of the claims and/or description!
- Annexes A2 to A? (typically A2 to A6) – prior art documents provided by the client. Sometimes all prior art documents are provided, also those not usable for attacking claims of PART C(I)
- **Annexes may be printed**

PART C(II)

- second Client's letter
- A1 – patent to be opposed: complete version
- Annexes A2 to A? (typically A2 to A6) - comprising any Annex not available in the part C(II)

WISEFLOW

- Electronic tool since EQE 2021
- Familiarize with it! Read all documents, take part to mocks, prepare your PC system
- Solve papers in wiseflow mode

https://www.epo.org/learning/eqe/e-eqe.html

- Possible last-minute updates: stay tuned!
- Mock exams available in exam mode conditions

WHAT ARE YOU REQUIRED TO PREPARE?

FOR EACH PART

- A notice of opposition against A1
- Attack all claims
- Art. 100(a) EPC: not patentable under Art. 52-57 EPC
- Art. 100(c) EPC: added subject-matter
- Do NOT use Art. 100(b) EPC

ATTENTION

- All the information necessary to oppose the patent is found in the examination documents.
- Do not use any special knowledge of the technical field of the invention.
- Examination documents comprise definitions of technical nature related to claim features, aspects of the related technical effects and objective technical problems as well as motivations and hints.
- Marks were awarded for use of this information and argumentation based on it.

NOTICE OF OPPOSITION

- ✓ Identify the patent to be opposed and the opponent.
- ✓ Payment of the opposition fee has to be indicated.
- ✓ The intended opponent is the company and not the person signing the client's letter.
- ✓ All relevant information, a statement of the extent to which the European patent is opposed, opposition grounds, evidence, facts and arguments have to be in the answers.

STEPS

I. Read the client's letter
2. Establish the number of claims and their dependency
3. Establish effective dates of the claims
4. Establish dates of the prior art annexes and their usability
5. Read the claims
6. Read and analyze A1
7. Read and analyze prior art annexes A2 – AX (X = 5 or 6 typically)
8. Establish attacks
9. Draft the Notice of Opposition (features table are not awarded marks)

→ for part C(I) and part C(II)

ANNEX 1 – PART C(I)

Wireless charging pad

A composite having very good long-term mechanical stability is obtained if ***nanocrystalline FeCuSiB is 30 - 40%*** *by weight of the material. (par. 12)*

For such a composite the use of ***at least 10% amorphous CoFeNi*** *by weight of the material has the surprising effect of preventing oxidation of FeCuSiB. However, too much CoFeNi worsens the long-term mechanical stability, and therefore the amount of* ***amorphous CoFeNi has to be below 20%*** *by weight of the material for such a composite. (par. 13)*

An alternative composite having high thermal tolerance is obtained if the amount of ***amorphous CoFeNi is more than 20% and less than 30%*** *by weight of the material. In this case it is necessary to include* ***20 - 30% nanocrystalline FeCuSiB*** *by weight of the material; otherwise the composite is not usable because of insufficient long-term mechanical stability. (par. 14)*

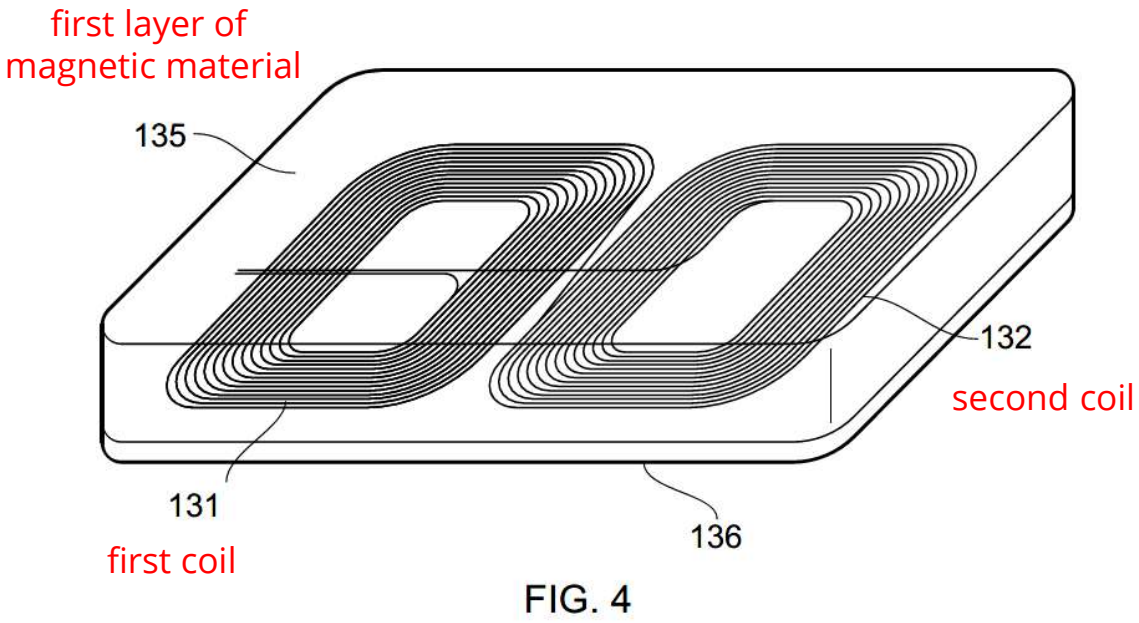


FIG. 4

CLAIMS

1. Charging pad comprising:
   - a first coil (131) and a second coil (132), both for resonant wireless charging, the first coil and the second coil being arranged side by side, and
   - 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,
   - the magnetic material comprising amorphous CoFeNi at 10 - 30% and nanocrystalline FeCuSiB at 20 - 40% by weight of the magnetic material.

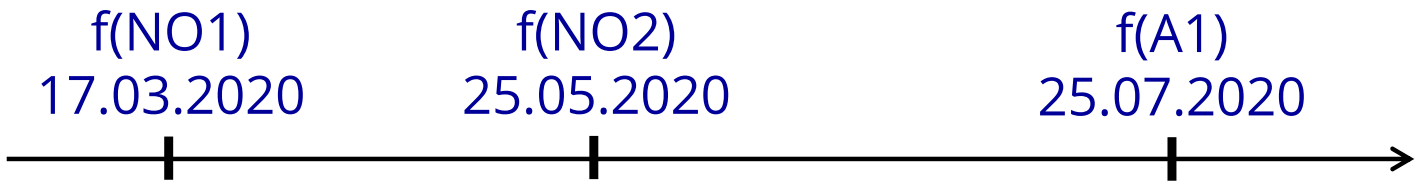
2. Charging pad according to claim 1, wherein the magnetic material comprises amorphous CoFeNi at 20 - 30% and nanocrystalline FeCuSiB at 20 - 30% by weight of the magnetic material.

EFFECTIVE DATES OF CLAIMS AND PRIOR ART

- Identify all claim objects (different alternatives in a claim introduced by OR language, multiple dependencies of a claim, etc.)
- The client's letter usually provides information essential to identify priority issues and/or applicability of prior art (for example, claim object was in the priority document? Priority document was a first filing for the claim object?)
- Other information are found in the bibliographic data of the Annexes (check carefully publication dates, filing dates and applicants)

EFFECTIVE DATES OF CLAIMS AND PRIOR ART

- A1 claims priority of NO1 and NO2

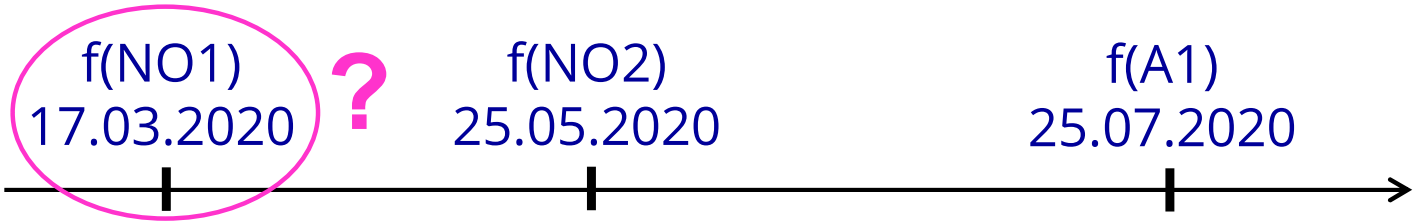


- **Claim 1**: amorphous CoFeNi 10-30% and nanocrystalline FeCuSiB 20-40% introduced in examination and not supported by description

NO effective date,
attack under Art. 100(c) EPC

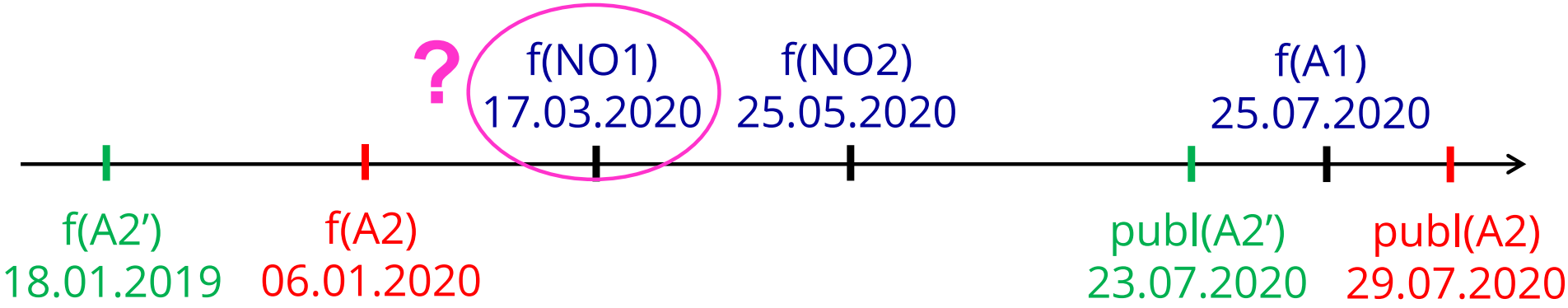
EFFECTIVE DATES OF CLAIMS AND PRIOR ART

- **Claim 2**: amorphous CoFeNi at 20 - 30% and nanocrystalline FeCuSiB at 20 - 30%



- Claim 2 disclosed in NO1 and NO2: effective date 17.03.2020?
- Annex 2 is a European patent application of the same Applicant as Annex 1
- Annex 2 claims priority of EPxxx (Annex 2') – same description, claims and figures as Annex 2

EFFECTIVE DATES OF CLAIMS AND PRIOR ART



- If the effective date of claim 2 were 17.03.2020, both Annex 2 and Annex 2' were prior art under Art. 54(3) EPC
- So, let's try to attack claim 2 under Art. 54(3) EPC using Annex 2 or Annex 2' (identical) ...

EFFECTIVE DATES OF CLAIMS AND PRIOR ART

- Annex 2 (and hence Annex 2') discloses <u>exactly the subject matter of claim 2</u>:

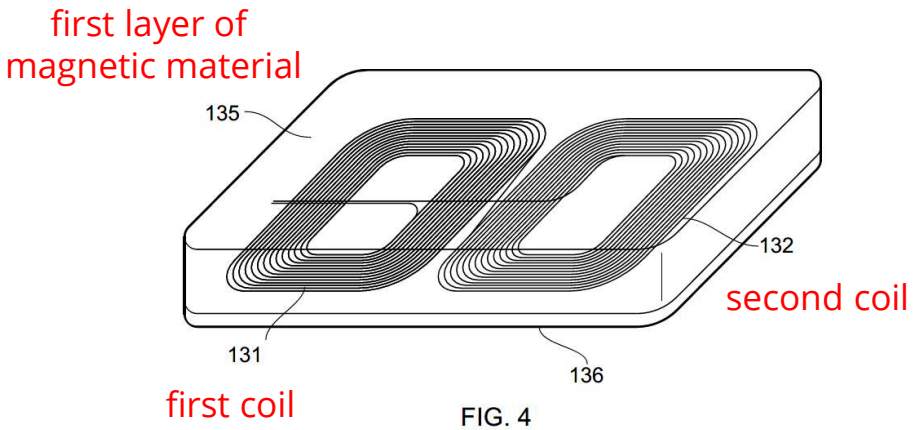
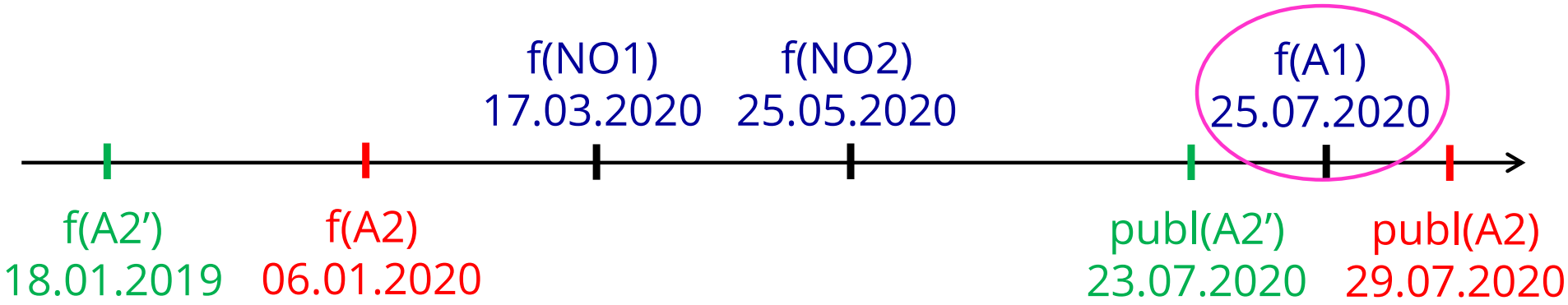


FIG. 4

The magnetic material in the embodiment of the invention is a composite comprising suitable amounts of an alloy of cobalt, iron and nickel (CoFeNi) and an alloy of iron, copper, silicon and boron (FeCuSiB). Preferably, the magnetic material comprises grains of ***amorphous CoFeNi at 20 - 30% and nanocrystalline FeCuSiB at 20 - 30%*** *by weight of the magnetic material. (par. 4)*

- Since both Annex 2 and Annex 2' were filed before NO1 and NO2 by the same Applicant, the priority of claim 2 is invalid - see Art. 87(1) and 87(4) EPC!

EFFECTIVE DATES OF CLAIMS AND PRIOR ART



- The effective date of claim 2 is 25.07.2020
- Annex 2 is prior art under Art. 54(3) EPC, Annex 2' is prior art under Art. 54(2) EPC
- Claim 2 is not novel over Annex 2 under Art. 54(3) EPC and over Annex 2' under Art. 54(2) EPC (both attacks expected!)

EFFECTIVE DATES OF CLAIMS AND PRIOR ART

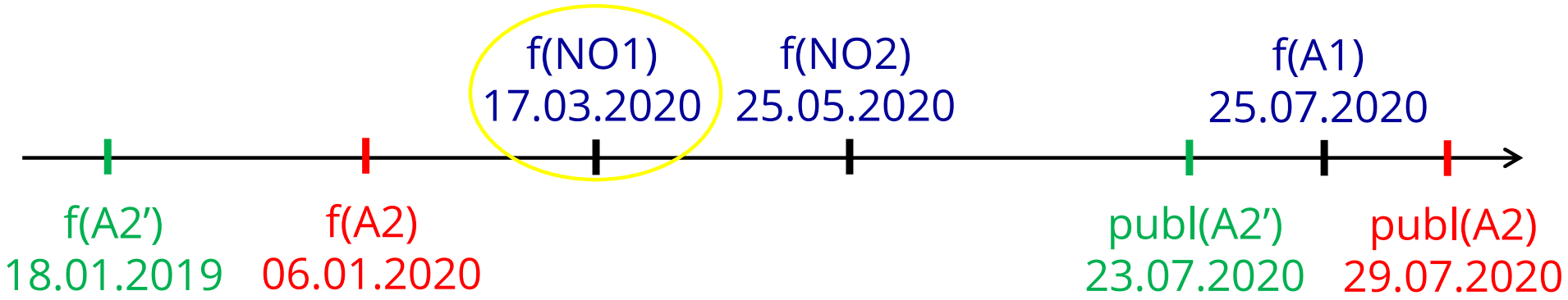
- The client requests to attack also possible fall-back positions!
- Claim 1 is attacked under Art. 100(c) EPC (amorphous CoFeNi 10-30% and nanocrystalline FeCuSiB 20-40% not supported)
- Possible fall-back positions: limit claims to supported ranges!
- Supported ranges are sub-ranges of the whole claimed range
- Ranges may have partial priorities (G1/15 and GL F VI 1.5)

1A: amorphous CoFeNi 10-20% and nanocrystalline FeCuSiB 30 - 40% (par. 12-13)

1B: amorphous CoFeNi 20 - 30% and nanocrystalline FeCuSiB 20 - 30%) (par. 14 and claim 2; same effective date as claim 2)

EFFECTIVE DATES OF CLAIMS AND PRIOR ART

- **Claim 1A**: amorphous CoFeNi 10-20% and nanocrystalline FeCuSiB 30 - 40%
  - Disclosed in NO1 and NO2 but NOT disclosed in A2 or A2'



  - The effective date of claim 1A is 17.03.2020
  - Annex 2 and Annex 2' prior art under Art. 54(3) EPC

POSSIBLE ATTACKS

- ADDED SUBJECT MATTER ➔ CLAIM 1
- NOVELTY ➔ CLAIM 2 & CLAIM 1A (PART)
- INVENTIVE STEP ➔ CLAIM 1A

ADDED SUBJECT MATTER ATTACK

- Compare the text of the application **as filed** with the text of the granted claim
- Explain why the claim has no basis in the application as filed
- If also the relevant part of the description has been added after filing, the claim has nonetheless **NO** basis in the application as filed

- **ATTENTION:** the reference for a 123(2) attack is A1 as filed, NOT the priority document!
- **ATTENTION:** all the combination of features of the claim must have BASIS in the application as filed, check if the claim is a dependent claim

CLAIM 1

1. Charging pad comprising:
   - a first coil (131) and a second coil (132), both for resonant wireless charging, the first coil and the second coil being arranged side by side, and
   - 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,
   - **the magnetic material comprising amorphous CoFeNi at 10 - 30% and nanocrystalline FeCuSiB at 20 - 40% by weight of the magnetic material.**

ADDED DURING EXAMINATION ➔ BASIS IN THE APPLICATION AS FILED?

ADDED SUBJECT MATTER ATTACK

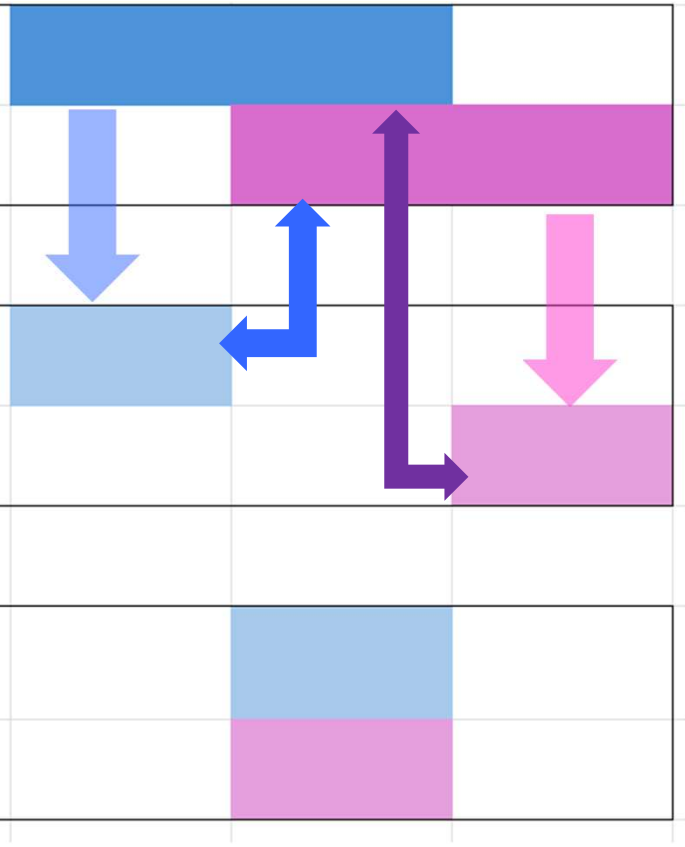
[12] A composite having very good long-term mechanical stability is obtained if nanocrystalline FeCuSiB is **30 - 40%** by weight of the material. However, FeCuSiB has a high oxidation susceptibility, which entails the problem of corrosion sensitivity.

[13] For such a composite the use of **at least 10%** amorphous CoFeNi by weight of the material has the surprising effect of preventing oxidation of FeCuSiB. However, too much CoFeNi worsens the long-term mechanical stability, and therefore the amount of amorphous CoFeNi **has to be below 20%** by weight of the material for such a composite.

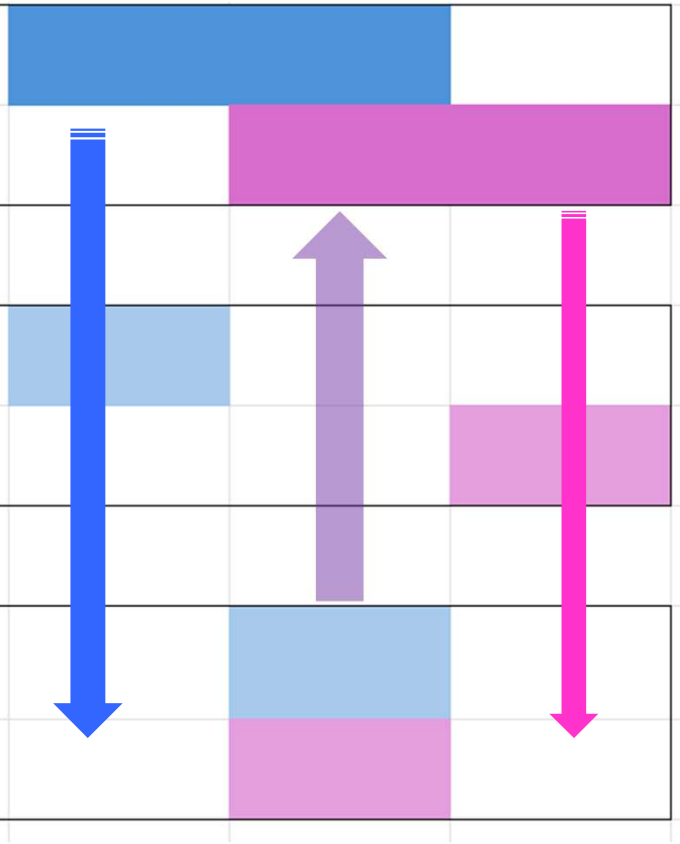
ADDED SUBJECT MATTER ATTACK

[14] An alternative composite having high thermal tolerance is obtained if the amount of amorphous **CoFeNi is more than 20% and less than 30%** by weight of the material. In this case it is necessary to include **20 - 30% nanocrystalline FeCuSiB** by weight of the material; otherwise the composite is not usable because of insufficient long-term mechanical stability.

ADDED SUBJECT MATTER ATTACK

CLAIM 1	CoFeNi 10-30 wt %	
	FeCuSiB 20-40 wt %	
[012] & [013]	CoFeNi 10-<20 wt %	
	FeCuSiB 30-40 wt %	
[014]	CoFeNi 20-30 wt %endpoint excl	
	FeCuSiB 20-30 wt %	

ADDED SUBJECT MATTER ATTACK

CLAIM 1	CoFeNi 10-30 wt %	
	FeCuSiB 20-40 wt %	
[012] & [013]	CoFeNi 10-<20 wt %	
	FeCuSiB 30-40 wt %	
[014]	CoFeNi 20-30 wt %endpoint excl	
	FeCuSiB 20-30 wt %	

ADDED SUBJECT MATTER ATTACK

Claim 1 was amended during examination by addition of the expression “the magnetic material comprises amorphous CoFeNi at 10 – 30 % and nanocrystalline FeCuSiB at 20 – 40 % by weight of the magnetic material“.

Claim 1 has no basis in the application as filed because the combination of the ranges claimed is not originally disclosed in the description of the application as filed.

Claim 1 as granted contains subject-matter which goes beyond the original disclosure because it cannot be derived directly and unambiguously from the content of A1§12-14.

Therefore claim 1 contravenes Art. 100(c) EPC

IS IT ENOUGH FOR OBTAINING FULL MARKS?

ADDED SUBJECT MATTER ATTACK

Claim 1 was amended during examination by addition of the expression “the magnetic material comprises amorphous CoFeNi at 10 – 30 % and nanocrystalline FeCuSiB at 20 – 40 % by weight of the magnetic material“.

A1§12 and A1§13 link FeCuSiB in the range of 30-40 wt% to CoFeNi in the specific range of 10 to below 20 wt% to avoid worsening long-term mechanical stability.

A1§14 discloses that CoFeNi between 20 and 30 wt % (endpoints excluded) has to be combined with FeCuSiB in the range of 20-30 wt%, otherwise the composite is not usable because of insufficient long-term stability.

ADDED SUBJECT MATTER ATTACK

The combination of values outside the aforementioned intervals is not originally disclosed.
For example, a combination of FeCuSiB at 35 wt% and CoFeNi at 25 wt% is within the scope of the amendment but goes beyond the content disclosed by A1§12 and A1§13.

On the contrary from the description the skilled man would be led to avoid any combinations of values falling outside the disclosed ranges.

No other part of A1 deals with this subject-matter.

Claim 1 as granted contains subject-matter which goes beyond the original disclosure because it cannot be derived directly and unambiguously from the content of A1§12-14.
Therefore claim 1 contravenes Art. 100(c) EPC.

NOVELTY ATTACK (I)

- Basically copy the claim and for each feature explain in parentheses **where** it can be found in the cited Annex (paragraph, line, page, figure)
- If prior art uses different terminology, explain **why** it has the same meaning (using information provided in the annexes, not based on your knowledge)
- Correspondances and definitions may be provided in the same Annex OR **in another Annex (maybe not usable as such)** OR **in the patent to be opposed**

NOVELTY ATTACK (II)

- Generic vs. specific (specific disclosure takes away the novelty of generic disclosure, but not vice versa - e.g. copper vs. metal and ranges, see GL G VI 5 and 8)
- Implicit features – only if there is a strong case (sometimes hinted on by other documents) – do not speculate or overthink, do not use your specialist knowledge
- "Apparatus for ...", "product for ..." (an apparatus or product which possesses all the features specified in the claim but is unsuitable for the stated purpose is not considered as anticipating the claim, see GL F IV 4.13.1)

NOVELTY ATTACK TO CLAIM 2

A2 discloses a charging pad (A2, title) comprising:

- a first coil and a second coil, both for resonant wireless charging, the first and the second coil arranged side-by-side (A2, par. 2) and
- a first layer 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, par. 3)
- the magnetic material comprises amorphous CoFeNi at 20 and 30 wt% and nanocrystalline FeCuSiB at 20 - 30% by weight of the magnetic material (A2, par. 4).

Therefore claim 2 lacks novelty over A2 according to Art. 54(3) EPC.

THINGS MAY BE MORE DIFFICULT: ANNEX 3

Ground charging pad

first solenoid

second solenoid

polymer

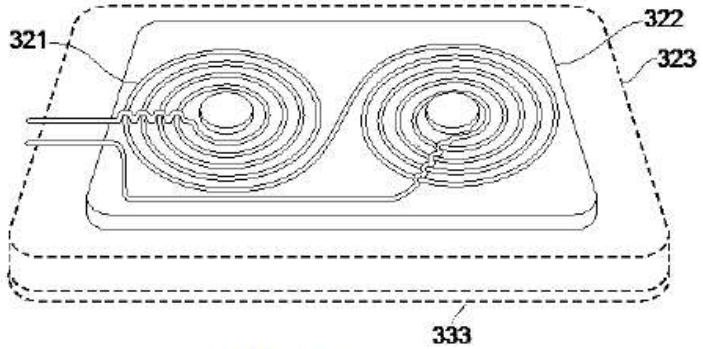


FIG. 2

… the polymer is TP.190 […] combined with grains made from alloys such as CoFeNi, FeCuSiB or NbSiBCo. Such alloys are magnetic (par. [5])

TP.190 is prepared so that it is in the liquid phase and grains of the alloys in the desired proportions are mixed in. The mixture is extruded and then left to solidify in a mold to form a blank having the shape of a car charging pad (par. [6])

a first solenoid with its windings is created and next to it a second solenoid with its windings. This is a double-O solenoid. It can be used in a charging pad (par. [9])

We have found that it is advantageous to heat the grains of amorphous FeCuSiB to 390°C and let them cool down before mixing them with TP.190. These grains then contain crystal cells measuring between 150 nanometers and 300 nanometers. If these grains constitute 32 to 38% by weight of the blank, … (par. [11])

CLAIM 1A VS ANNEX 3

CLAIM 1A	ANNEX 3	OTHER ANNEXES
a first coil and a second coil [...] arranged side-by-side	a first solenoid with its winding is created and next to it a second solenoid with its winding. This is a double-O solenoid (par. [9])	a coil is a conductive trace with several concentric windings (A1, par. [5])
a first layer made of a magnetic material	blank obtained by extruding and solidifying a mixture of liquid polymer TP.190 with grains of magnetic alloy such as CoFeNi, FeCuSiB or NbSiBCo (par. [5]-[6])	magnetic material is any material having at least some magnetic particles (A1, par. [11)]. Grains are particles (A2, par. [5]).
the magnetic material comprising [...] nanocrystalline FeCuSiB at 30 - 40% by weight of the magnetic material.	FeCuSiB grains constitute 32 to 38% by weight; grains contain crystal cells measuring between 150 nm and 300 nm (par. [11])	nanocrystalline alloys are characterized by having crystal cells smaller than 1 micrometer (A2, par. [5])

PART OF AN ATTACK TO CLAIM 1A (1)

A3 discloses [...]:

- a first coil and a second coil [...] arranged side-by-side (A3, par. [9] discloses first and second solenoid with respective windings; a conductive trace with concentric windings is a coil, see A1, par. [5]; hence, a solenoid is a coil; the first and second solenoid of A3 are arranged next to each other, see par. [9]); [...]
- a first layer made of a magnetic material (A1 defines a magnetic material as any material having at least some magnetic particles, see par. [11]; A3 discloses a blank 332 obtained by extruding and solidifying a mixture of liquid polymer TP.190 with grains of magnetic alloy such as CoFeNi, FeCuSiB or NbSiBCo, see par. [5]-[6]; grains are particles, see A2, par. [5]. Hence, the blank 332 disclosed by A3 is a layer made of magnetic material);

PART OF AN ATTACK TO CLAIM 1A (2)

- the magnetic material comprises [...] nanocrystalline FeCuSiB at 20 - 30% by weight of the magnetic material (A3, par. 1: discloses the range 32 to 38 % by weight, which is within the claimed range; A3 also discloses that the grains of FeCuSiB have crystal cells between 150 nm and 300 nm, see par. [11]; this range is lower than 1 micrometer, which corresponds to the definition of nanocrystalline according to the common general knowledge as explained by A2, par. 5)

INVENTIVE STEP ATTACK (I)

1. determine closest prior art (CPA)
   - **add reasoning for selecting the CPA**
   - not necessarily the document used for a novelty attack of the independent claim
   - not necessarily the document having the highest number of features in common
2. mention features in common with the claim
   - similar to a novelty attack
3. determine the difference between claim and CPA
   - in term of object
4. technical effect of that difference
   - as presented in A1

INVENTIVE STEP ATTACK (II)

5. formulate objective technical problem
    1. Choose the "macroscopic effect"
    2. Effect is the same as in the CPA – the OTP is to find an alternative
    3. No technical effect of the different feature – no OTP

6. combine CPA with another document/disclosure and mention why said document may be considered by skilled person
    1. Motivation of the skilled person to find the second document (e.g., same field, more general field, neighboring field – why the SP would look there)

7. argue why skilled person is motivated to use solution from said document (could/would approach)
    1. compatibility of materials, no need for further technical modifications, direct hint in the second document that the solution is generally utilizable, etc..

8. Conclusion

CLAIM 1A

A2:	54(3) for all claims but does not disclose all the features of claim 1A
EP3383351 (priority of A2):	54 (3) EPC claim 1a;
A3:	charging pad;
A4:	54 (3) EPC claim 1a;
A5:	robot mower.

ANNEX 3

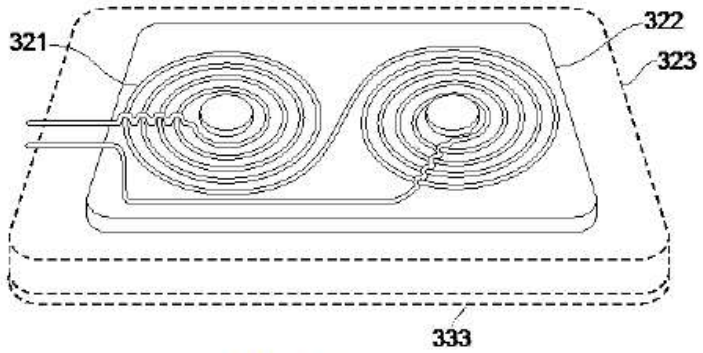
Recently it has been proposed to replace the single solenoid of a charging pad with a double-O solenoid. Admittedly, such a structure has drawbacks: it can be used only for resonant wireless charging (par. [2])

Ground charging pad

... the polymer is TP.190, a thermoplastic with a melting point of 190°C. It is combined with grains made from alloys such as CoFeNi, FeCuSiB or NbSiBCo (par. [5])

first solenoid

second solenoid



polymer

FIG. 2

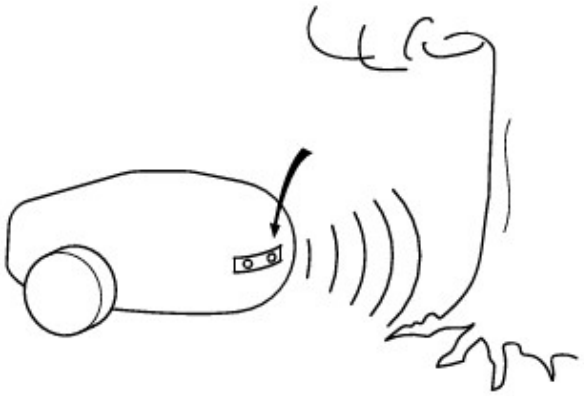
... the amorphous alloys are prepared and ground separately to obtain grains measuring between 1 micrometer and 1 millimeter (par. [6])

A robot arm 331 moves along a desired wire path on the blank 332. The robot arm has a heater head 333 which locally heats the blank to a temperature above the melting point of the polymer to create a liquified area 336 (par. [7])

A wire feeder 334 behind the heater head lays the conductive wire 335 into the liquified area. As the robot arm moves forward, the polymer re-solidifies over the wire (par. [8])

ANNEX 5

robot mower for professional lawn care



… equipped with a system for resonant wireless charging licensed from a leading car manufacturer (par. [2])

… the wireless charging system uses reverse windings for active shielding which are embedded in a protective magnetic material consisting of TP.190 at 52% by weight and nanocrystalline FeCuSiB and amorphous CoFeNi at a ratio of 2:1 (par. [3])

CLAIM 1A VS PRIOR ART

CLAIM 1A	ANNEX 3	ANNEX 5
Charging pad comprising	already discussed above	wireless charging system
a first coil (131) and a second coil (132)	already discussed above	reverse winding
both for resonant wireless charging	double-O solenoid can be used for resonant wireless charging (par. [2])	reverse winding for active shielding (par. [3])
the first coil and the second coil being arranged side by side, and	already discussed above	
a first layer (135) made of a magnetic material,	already discussed above	magnetic material (par. [3])
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,	robot arm moves along a desired wire path on the blank 332 and locally heats the blank above melting point to create a liquified area; wire feeder lays the conductive wire into the liquified area; then the polymer re-solidifies over the wire (par. [6]-[7])	reverse windings embedded in protective magnetic material (par. [3])
the magnetic material comprising amorphous CoFeNi at 10 - 20% and nanocrystalline FeCuSiB at 30 - 40% by weight of the magnetic material.	nanocrystalline FeCuSiB at 30 - 40% already discussed above. Amorphous CoFeNi (par. [5] and [6]) – **range of amorphous CoFeNi undisclosed**	magnetic material consisting of TP.190 at 52% by weight and nanocrystalline FeCuSiB and amorphous CoFeNi at a ratio of 2:1

CLAIM 1a INVENTIVE STEP ATTACK

A3 is the closest prior art of the invention.
A3 discloses a charging pad comprising: a first coil and a second coil
(A3§9: 1st and 2nd solenoid; a solenoid is a conductive trace with several concentric windings, see A4§3, so a solenoid is a coil, see A1§5)
both for resonant wireless charging (A3§2)

the first and the second coil arranged side-by-side (A3§9: "next to") and
a first layer made of a magnetic material (A3§6: blank contains grains; these are from a magnetic alloy (A3§4) and grains are particles (A2§5)

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

CLAIM 1a INVENTIVE STEP ATTACK

and the magnetic material comprises nanocrystalline FeCuSiB between at 30 and 40 wt % (see A3§11: 32 to 38 wt% is within the claimed range; the grains have crystal cells between 150 nm and 300 nm)
and amorphous CoFeNi (A3§5: CoFeNi; A3§6: amorphous).

Claim 1a differs from the disclosure of A3 in that a mixture of the two alloys in a particular range is required (A3 is silent on numerical values/range of CoFeNi)

A1§13 states that the technical effect of this difference is the prevention of oxidation of FeCuSiB.
This solves the objective technical problem of reducing corrosion sensitivity (A1§12).
A skilled person would consult A5 when seeking to improve A3.
A3§11 mentions that sensitivity to corrosion is an issue for FeCuSiB so a skilled person is prompted to look for solutions.

CLAIM 1a INVENTIVE STEP ATTACK

A5§3 discloses a combination of TP.190, the same polymer as that used in A3, but with nanocrystalline FeCuSiB at 32 wt% and CoFeNi at 16 wt% (2:1 ratio of the remainder of 52%).
These values are within the claimed subrange of claim 1a.

The skilled person would apply this teaching of A5 to A3 thus obtaining a charging pad falling within the scope of claim 1a.

Thus, claim 1a lacks inventive step (Art. 56 EPC) with respect to a combination of A3 with A5

IS IT ENOUGH FOR OBTAINING FULL MARKS?

Is the answer fitted on the specific case?

CLAIM 1a INVENTIVE STEP ATTACK

A3 is the closest prior art of the invention because A3 discloses a charging pad comprising: a first coil and a second coil (A3§9: 1st and 2nd solenoid; a solenoid is a conductive trace with several concentric windings, see A4§3, so a solenoid is a coil, see A1§5) both for resonant wireless charging (A3§2)

the first and the second coil arranged side-by-side (A3§9: "next to")
and
a first layer made of a magnetic material (A3§6: blank contains grains; these are from a magnetic alloy (A3§4) and grains are particles (A2§5) thus, a magnetic material is disclosed in view of A1§11)

CLAIM 1a INVENTIVE STEP ATTACK

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

(product by process, see Guidelines F-IV, 4.12.1: the process of A3§7&8 leads to a product having the same structural features: the wire is laid into the liquefied area A3§8 which re-solidifies over the wire; afterwards it is protected from spray water, see A3§10; compare with A1§10: “may [not be] completely covered [...] effectively surrounded”)

CLAIM 1a INVENTIVE STEP ATTACK

and the magnetic material comprises nanocrystalline FeCuSiB between at 30 and 40 wt % (see A3§11: 32 to 38 wt% is within the claimed range; the grains have crystal cells between 150 nm and 300 nm) this corresponds to the definition of nanocrystalline (A2§5, general common knowledge)

and amorphous CoFeNi (A3§5: CoFeNi; A3§6: amorphous).

Claim 1a differs from the disclosure of A3 in that a mixture of the two alloys in a particular range is required (A3 is silent on numerical values/range of CoFeNi)

A1§13 states that the technical effect of this difference is the prevention of oxidation of FeCuSiB.

CLAIM 1a INVENTIVE STEP ATTACK

This solves the objective technical problem of reducing corrosion sensitivity (A1§12).

A3§11 mentions that sensitivity to corrosion is an issue for FeCuSiB so a skilled person is prompted to look for solutions.

A skilled person would consult A5 when seeking to improve A3.

A5 would be considered by a skilled person because it mentions a wireless charging system (A5§2) and mentions protecting against corrosion (see A5§2 or 4).

CLAIM 1a INVENTIVE STEP ATTACK

A5§3 discloses a combination of TP.190, the same polymer as that used in A3, but with nanocrystalline FeCuSiB at 32 wt% and CoFeNi at 16 wt% (2:1 ratio of the remainder of 52%).
These values are within the claimed subrange of claim 1a.

The skilled person is prompted to apply this teaching of A5 to A3 in view of the following.
A5§4 states that this composition has been designed specifically to withstand corrosion, i.e. applying this teaching will solve the objective technical problem.
The same polymer TP.190 is mentioned in A3 (§§5, 6, 11) and A5§3. A3§5 states that alloys of FeCuSiB and CoFeNi have a melting point higher than that of TP.190, therefore the compound of A5§3 is compatible (cf. A3§4).
Finally, A3§10 calls for improvements using “any way to reduce corrosion”.

Thus, claim 1a lacks inventive step (Art. 56 EPC) with respect to a combination of A3 with A5.

THANK YOU FOR YOUR ATTENTION!