Preliminary CEIPI results for C 2026

Part 1:

Notice of opposition

Opposition is filed against European patent EP 4 150 561 B1, entitled “Device for Purifying Air”, of which BrisaLimpia S.L. is the proprietor, by BreezyPeasy SARL, represented by Mr Art Vandelay.

Revocation of the patent in its entirety is requested on the basis of grounds 100(a) and 100(c) EPC.

The documents cited in support of the arguments are the following:

- Annex 2: article published in Clean Air Monthly, February 2020
- Annex 3: US 2020/0143950 A1
- Annex 4: EP 3 021 221 A1
- Annex 5: WO 2017/066987 A2

The fees are paid online.

Signature of the representative.

Effective date of the claims:

Claim 1 appears in the application as filed and therefore benefits from the priority date of 11 October 2019. The one-year period is respected and the support for Claim 1 appears in the priority application.

Claims 2 and 3 do not appear in the priority application, and likewise find no support in it. Thus, the effective date of Claims 2 and 3 is the filing date of application EP 4 150 561, namely October 8, 2020.

Usability of the documents:

Annex 2 refers to a commercial purifier model sold since spring 2019 and available to the public (“more than 20,000 items sold”). Thus, the Sondy Purifier Cool model forms part of the prior art under Article 54(2) EPC for all claims 1-3.

Annex 3 is a US patent application published on 29 July 2020. It is a 54(2) document for Claims 2 and 3, but not usable under 54(3) for Claim 1.

Annexes 4 and 5 are patent applications published before the priority date and are 54(2) documents for all claims 1-3.

Claim 1: inventive step with A2 + A4

CPA: A2 as: same technical field, namely a movable device for purifying air and same technical problem, namely a smart device with a sensor and for noise sensitive environments

A2 discloses a device for purifying air ([1] air purification) comprising:
- rotating means for displacing the device (it is moved by two wheels [7]);
- a casing
the casing further comprising:
- a means for measuring air quality. (it includes a sensor for formaldehyde [3] which is a sensor for air quality as formaldehyde is a pollutant and therefore relates to air quality)
- a means for purifying air (the device includes a filter to remove formaldehyde which is a means for purifying the air [4]); and
- a control unit configured to control the device based on data received from the means for measuring air quality (the device contains a smart unit which controls the device based on the sensor readings [5]);

Difference:

- The casing is coated with a sound insulation material

Effect: reduces the max operational noise, potentially up to 45 dB [8, 14, 15]

Objective technical problem: particularly advantageous for healthcare sector and noise-sensitive environments [9];

Second document to be combined: A4 as : same technical field: movable device for air treatment, eg. air purification ([7]), and relates to the problem of noise insulation ([8, 9, 10]

According to [8], the inner surface of the unit is coated with sound absorbing material to reduce noise to a max of 45 dB which is required by law for hospitals, as required by [8] of A1.

additional motivation: A2 relates to relatively quiet devices, ([1]), and A4 relates to quiet places such as hospitals [2].

Claim 2+1: novelty with A3 (54(2))

A3 discloses a device for purifying air ([9, 10] disclose that the device is suitable for purifying air as it removes dust from the air) comprising:
- rotating means for displacing the device (wheels [5]); and
- a casing coated with a sound insulation material (the inner surface of the casing is coated with an MLV which is sound insulating [11], see A1 [13]),
the casing further comprising:
- a means for measuring air quality (the optical air pollution (A1: [2] definition : dust is an air pollution) sensor measures the quantity of the dust in the air [9]
- a means for purifying air (the dust particles slide into a collection tank [8] and clean air is directed towards an air outlet [10]) ; and
- a control unit configured to control the device based on data received from the means for measuring air quality (optical air pollution sensor [9] and a smart unit 315 which adjusts the speed of the suction fan based on the sensor readings to achieve an optimal cleaning effect which is the definition according to A1 [11]),
wherein the rotating means comprises two wheels and a wheel driving unit (the vacuum cleaner comprises two wheels [5], in fact it comprises in addition an auxiliary wheel, but it does comprise two wheels), the motors driving the left and the right wheels [5]).

Claim 3+2+1: inventive step with A3 (same reason as above c.p.a.) + A4 +A5

A3: [11] discloses that the sound insulation material is a mass loaded vinyl (MLV) there is a specific other MLV

differences:

(i) MLV comprising barium sulfate in a range from 19 to 27 wt% based on the total weight of the mass loaded vinyl
(ii) the device further comprising an optical navigation unit (in A3 accoustic navigation, but optical is better as disclosed in A5 [7])

effects from A1:

(i) MLV with barium sulfate: very effective sound insulation [13], and with 19-27 wt% barium sulfate: superior sound insulation with improved thermal conductivity [15],
(ii) device further comprising an optical navigation unit: higher resolution [17],

OTP:

(i) lowering operational noise without impairing the dissipation of heat [15],
(ii) can detect also smaller objects such as toys on the floor [17],

no synergetic effect, so partial problems.

First Partial solution in A4:

(i) [10]: MLV with 20-25 wt% barium sulfate which falls within range of 19-27 and therefore provides for a disclosure thereof. It is said that this provides for an optimal compromise of sound and thermal insulation

Second partial solution in A5 (similar technical field namely movable robots with sensors and air treatment devices):

(ii) [7]: laser navigation unit 502 to detect small objects as it surpasses conventional ultrasound units in accuracy.

Part 2:

Effective date of the new claims:

Claims 4 and 5 appear in the application as filed and therefore benefit from the priority date of 11 October 2019.

Claims 6 and 7 do not appear in the priority application, and likewise find no support in it. Thus, the effective date of Claims 6 and 7 is the filing date of application EP 4 150 561, namely October 8, 2020.

Claim 8 has no basis wherever in the application as originally filed and is thus an unallowable amendment against 100c). Claim 8 has no effective date.

Usability of the documents:

The new documents cited in support of the arguments are the following:

New documents annexes 6 and 7 (screen shot July 2019) are published before the priority date and are 54(2) documents for all claims 4-7

Previous documents:

A3 (29.7.20): 54(2): for claims 6 and 7

A2 (launched in spring 2019), A4, A5: 54(2) for all claims 4-7

Claim 8: added subject matter (not claim 7 as [25] is the same as claim 7): claim 8 is not identical to [26] and therefore added subject matter in an undisclosed embodiment

Claim 4: inventive step with A6 + A5

[20] of A1 discloses that it is important that all components are housed within the air purifier, so it is important not to have parts (sensors) in external fixed devices.

A2: is not a moving air purifier but is moved and then stabilised, so remains immobile, not for dust but formaldehyde
A4: [1] has fixed air-conditioning units which operate interdependently with the pet robot, which measures the air, so not all in one casing. It is the fixed units which purify the air. [12] of A4 points away from having the sensors together with the purifier! In [6]: *Dust refers to particles of matter with a size range from 1 to500 µm*
A5: techn. field of air treatment, all in one robot, together with sensors and treatment, but specifically humidifier, does not disclose dust purifying. [10] discloses that it can contain one or more sensors commonly employed in air conditioning systems for monitoring the environmental conditions. Could use this as cpa? But then the difference is dust compared to humidifier. Effect???

A7: mobile air purifier to clean air in the flat. Used with an app. No sensor, so does not measure the dust concentration.

This leaves A6 as closest prior art as it relates to a method for reducing dust concentration in the air [1] of indoor spaces [2] by a moving air purifier with plurality of sensing stations [6].

A6 discloses a method for **reducing dust concentration** in the air (air purification if performed by a HEPA filter which are installed in the casing of the mobile air purifier [3], and acc to A4, [6], HEPA filters are particularly effective in reducing dust concentration.)
of an indoor space [2],
comprising the steps of:
- **measuring dust concentration** in the air of the indoor space (The particle sensor detects the concentration of particles ranging in size from 1 to 100 µm [6], and
- based on the measured dust concentration, **controlling the movement of the moving air purifier** ([10]:Through the receiving unit, the control unit of the air purifier periodically receives the AQI from the various sensing stations, compares them, ranks them in order of need for purification and controls the wheels 601 to move the air purifier 600 towards the room which needs purification the most),

Diff: the purifier is a **moving air purifier**

Effect: A1 [20]: By applying this method, the air purifier can detect contaminants throughout the entire space being purified without the need to interact with sensors external to the air purifier.

OTP: Housing all components within the air purifier itself allows the device to operate fully autonomously.

2nd document to be combined: A5: same technical field, namely air treatment [1] for indoor spaces (green houses) and same technical purpose, namely having sensors in fixed placements, which limits the robot [4].

[5]: discloses that the sensor is placed in the robot: The present invention overcomes these drawbacks by providing a fully autonomous humidifying robot comprising a humidity sensor, which allows an extremely high autonomy of operation and flexibility of use.

[11]: The incorporation of sensors into a stand-alone, compact mobile robot has led to significant improvements in autonomy of operation compared to the prior art in all technical areas related to air treatment. The robot of the invention is fully autonomous and operates on its own, requiring no human intervention during its operation.

[10]: add motivation: discloses that the robot can contain one or more sensors commonly employed in air conditioning systems for monitoring the environmental conditions. Therefore, no structural changes are necessary.

Could-would approach:

A6, [2]: it navigates autonomously through an indoor space.
A6, [9]: The cartridge 608 is large enough so that it can easily integrate further electrical components. **Additional motivation!**

Claim 5: inventive step with A4, Missing features are non-technical (user convenience).

COMVIK: First check which features and technical and non technical. Then find the technical features in a document (here in A4)

5. Computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out the following steps:
- dividing an indoor space into a plurality of regions: (non technical feature: presentation of information)
- controlling the movement of a device; technical
- for each of the regions, receiving dust concentration data measured by the device; technical
- generating a virtual map of the dust concentration in the indoor space; Non technical: presentation of information
- causing a screen of a user interface to display the generated virtual map. Non technical: presentation of information

Therefore, the only technical features are:

- controlling the movement of a device; technical
- for each of the regions, receiving dust concentration data measured by the device; technical

A4 is cpa as it relates to air treatment [7]: The air conditioning units 410 are designed to operate in multiple modes, including cooling, heating, purification and dehumidification.

A4 discloses a system with a dust sensor [12] 424 and a smart unit with a control unit [14]. The smart unit comprises a computer program for controlling the movement of a device [15] (movement of the pet robot),

It receives environmental data for each region [15] measured from the device (pet robot), according to [16] it is the dust concentration.

The features
Computer program comprising instructions which, when the program is executed by a computer, cause the computer to carry out the following steps:
- dividing an indoor space into a plurality of regions: (non technical feature: presentation of information)
- generating a virtual map of the dust concentration in the indoor space; Non technical: presentation of information
- causing a screen of a user interface to display the generated virtual map. Non technical: presentation of information

are non technical and therefore claim 5 is not inventive over A4 (COMVIK approach, see Guidelines G-VII, 5.4).

Claim 6: inventive step with A4

6. The computer program of claim 5, further comprising the steps of:
- ranking the plurality of regions according to their need for purification based on the dust concentration data received from the device;
- causing the device to move to the first-ranked region.

These features are disclosed in A4 : The smart unit ranks these regions based on dust concentration level, thereby establishing a hierarchy of purification priority. The pet robot is then directed to the highest-priority region to monitor the purification process. [16].

Therefore, claim 6 is not inventive over A4.

Claim 7: novelty/inventive step with A7 (as the client specifically asks to also attack the preferred options).

7. Application program comprising instructions which, when executed by a smart device, command a mobile air purifier (100) to recharge when the battery level is below a first threshold, the first threshold being preferably 20%.

2 attacks: one without the optional feature of 20%, and one with the preferred 20%. Novelty attack with A7 (l. 10-12) on the first part of claim 7 without the optional feature.

Inventive step: A7 as cpa combined with A3 [6] (18%), extending battery life span (A1 [25] says the same), so 18% and 20% have same purpose and are very close to each other. Add motivation: A7 also discloses the objective of maximising the battery´s performance, s. l 22/23).

Claim 8: 100c) attack

Claim 8 has no basis wherever in the application as originally filed and is thus an unallowable amendment against 100c). This cannot be healed other than cancelling claim 8. No further attack required.