Intellectual Property Office

BL O/0018/26

14 January 2026

PATENTS ACT 1977

PROPRIETOR	Chordata Ltd
ISSUE	Whether patent GB 2610710 B should be revoked under Section 73(1) of the Patents Act 1977
HEARING OFFICER	Nigel Hanley

DECISION

Background

1 This decision relates to whether patent GB 2610710 B should be revoked under Section 73(1) of the Patents Act.

2 The patent derives from application GB 2215447.0 which was filed on 19 October 2022. The application was searched, published and examined in the normal way, save that, at the request of the proprietor, the procedure was accelerated. Accordingly, the application was published on 15 March 2023 only 5 months after filing and some 13 months earlier than would normally have been the case.

3 The patent was subsequently granted on 13 December 2023, still earlier than the normal publication date of 18 months after filing (or earlier priority).

4 In view of this early grant, consideration needed to be given to the possibility that applications having an earlier filing or priority date than the filing date of the patent may still not have been published at the time the patent was granted. Accordingly, as is usual when dealing with accelerated applications, the examiner created a diary entry to complete the search for any such leapfrogged applications (see paragraph 17.118 of the Manual of Patent Practice). That search was completed in September 2024. As a result of that search, the Examiner identified two documents that were published after the patent had been granted but which had earlier priority dates. The documents identified were EP 4316358 A1 and EP 4319639 A1.

5 A letter was issued to the proprietor's agent on 30 September 2024 reporting that the Office considered that claim 1 lacked novelty in view of these documents. The letter gave the proprietor a period of time to either make observations on this objection or to propose amendment to overcome the objection. The letter further advised that if no reply was received the patent may be revoked.

6 No reply to the letter was received within the time period specified and a further letter was issued to the proprietor's agent advising that the patent would be revoked unless the proprietor requested to be heard.

7 This further letter elicited a response from the proprietor themselves in which they made observations. No amendment was proposed. Notably, the proprietor had by this point dispensed with the services of an agent and they were represented by their COO, Alistair McMahon.

8 The examiner did not agree with the observations and a further letter was issued advising that the patent would be revoked unless a request to be heard was made.

9 That request was made and the matter came before me for a hearing on 11 November 2025.

10 The proprietor was represented by Alistair McMahon and John Wisbey, directors of Chordata.

The law

11 Section 73(1) allows the Comptroller to revoke a patent on their own initiative in the event that a patent is found to lack novelty by virtue only of prior art falling within Section 2(3) of the Act.

12 Prior art published before the priority date of the application falls under Section 2(2). Section 2(3) covers GB patent applications and certain EP and PCT applications published after the priority date of the invention, but having their own earlier priority date.

13 The relevant sections of the Act read as follows:

> *Section 2(3)*
>
> *The state of the art in the case of an invention to which an application for a patent or a patent relates shall be taken also to comprise matter contained in an application for another patent which was published on or after the priority date of that invention, if the following conditions are satisfied, that is to say –*
>
> *(a) that matter was contained in the application for that other patent both as filed and as published; and*
> *(b) the priority date of that matter is earlier than that of the invention.*
>
> *Section 73(1)*
>
> *If it appears to the comptroller that an invention for which a patent has been granted formed part of the state of the art by virtue only of section 2(3) above, he may on his own initiative by order revoke the patent, but shall not do so without giving the proprietor of the patent an opportunity of making any observations and of amending the specification of the patent so as to exclude*

any matter which formed part of the state of the art as aforesaid without contravening section 76 below.

14 To further expand upon what constitutes an application for another patent under Section 2(3), I quote the relevant section from the Manual of Patent Practice (MoPP) :

> *2.30 The only kind of document whose contents can form part of the state of the art by virtue of this subsection is an application for a patent, that is, either an application which is made under the Act or one which is treated as such. The field for s.2(3) therefore consists only of the following :-*
>
> *(a) applications made under the Act and which have been published under S.16*
>
> *(b) patent specifications published under the 1949 Act;*
>
> *(c) applications for European patents (UK) which have been published by the European Patent Office (EPO) under a.93 EPC (see also (e) below).*
>
> *(d) international applications for patents (UK) which have been published by WIPO under a.21 PCT and which have entered the national phase (that is, the national fee (if any) has been paid and, if the application is in a foreign language, an English translation has been filed at the Office;*
>
> *(e) international applications for European patents (UK) which have been published by WIPO under a.21 PCT and which have entered the regional phase (that is, the national fee has been paid and, if the application is in a language other than English, German or French, a translation into one of those languages has been filed at the European Patent Office).*

The Citations

15 It is first necessary to consider whether the two citations identified by the examiner fall within the scope of Section 2(3) of the Act.

16 Both EP 4319639 A1 and EP 4316358 A1 and are derived from international applications and therefore fall potentially under category (e) of the passage at MoPP 2.30.

17 EP 4316358 derives from PCT application WO 2022/255662 A1, which was published on 8 December 2022 such that this citation falls within s.2(3) based on category (e) of MoPP 2.30.

18 EP 4319639 derives from PCT application WO 2022/216819 which was published on 13 October 2022. As this predates the 19 October filing date of the Patent, this citation falls within s.2(2) rather than s.2(3) and it is not relevant for consideration under Section 73. Accordingly, I do not need to consider this citation any further.

The Relevant Applications

19 Having given the matter due consideration, I now need to answer two questions.

a) Is Claim 1 of GB 2610710 novel in the light of EP 4316358?

b) If it isn't, is there an amendment that can be made to distinguish GB 2610710 over EP 4316358?

In view of the fact that the proprietor is no longer represented by an attorney, I have decided that given the circumstances of this application, I will only revoke the patent if no saving amendment is identified. Should that be the case then the proprietor will be provided with a further opportunity to make such an amendment. I will first set seek to come to an understanding of the claimed inventions in both the current patent and the citation.

The Patent – GB 2610710

20 The patent relates to an implantable device for detecting biomarkers in livestock and other animals.

21 Figures 2 and 2A of the patent (reproduced below) show a general arrangement of the invention and a circuit diagram of the sensor part respectively.

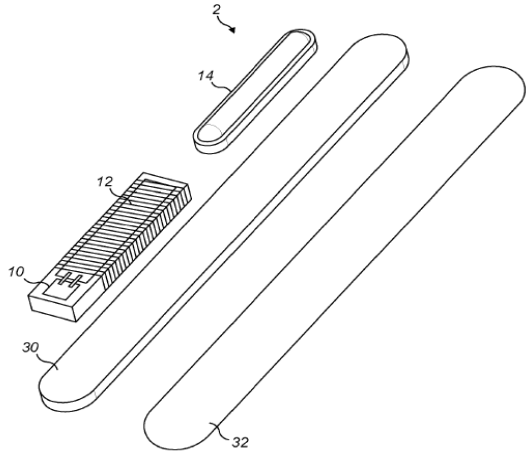


FIG. 2

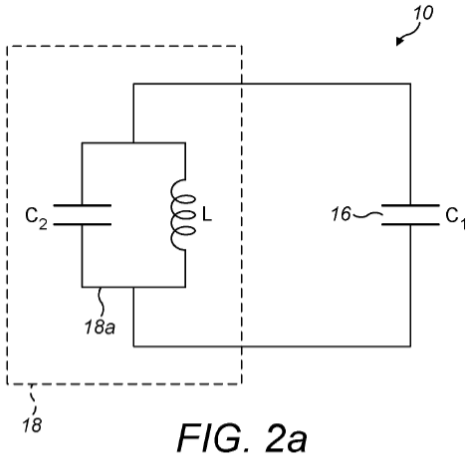


FIG. 2a

22 The device comprises a sensor (10) formed by a sensing capacitor (C_1) and an oscillator (18). The sensing capacitor comprises a pair of spaced apart electrodes (16). The oscillator comprises a capacitor (C_2) and an inductor (L) connected in parallel to form a resonant LC tank circuit. A capacitance change of the sensing capacitor affects the oscillation frequency of the oscillator.

23 In operation, the sensing capacitor is arranged in use to receive biological fluid between the electrodes. The composition of the biological fluid has an effect on its dielectric constant and this in turn affects the capacitance of the sensing capacitor. In this way an amount of biomarkers in the biological fluid can be determined. The operation frequency of the sensor is chosen to be in the range of 10-30GHz. An example given in the patent is a biomarker combination of 10% glucose and 90%

cortisol which corresponds to a measured oscillation frequency of 17 GHz, whilst a combination of 90% glucose and 10% cortisol corresponds to an oscillation frequency of 23 GHz.

Claims

24 Claim 1 is the only independent claim. It reads as follows:

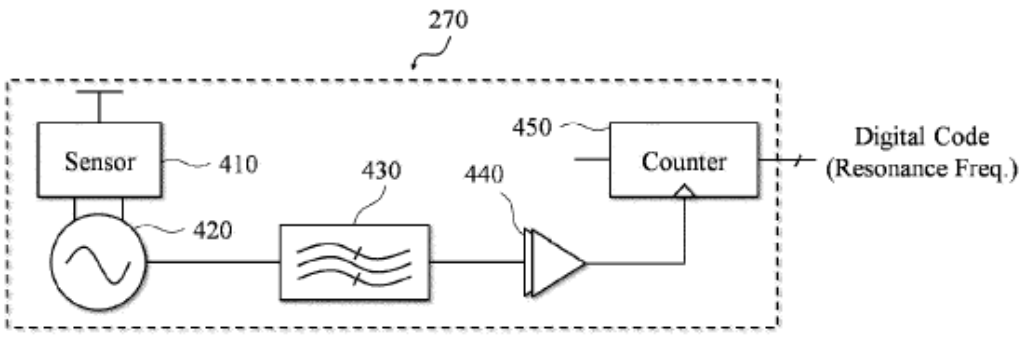
> 1. An implantable device for detecting biomarkers in livestock, the device comprising:
>
> a sensor comprising:
> a pair of electrodes spaced apart from each other, the pair of electrodes having a first capacitance;
> an oscillator configured to oscillate at a first frequency and output a first signal at the first frequency;
>
> wherein the sensor is configured to receive an amount of biological fluid wherein the biological fluid causes the capacitance of the pair of electrodes to change from the first capacitance to a second capacitance;
> wherein the oscillator is coupled to the pair of electrodes and arranged such that a change in the capacitance of the pair of electrodes causes a change in oscillation of the oscillator from the first frequency to a second frequency;
> wherein the oscillator is configured to output a second signal at the second frequency, the second signal indicative of a biomarker in the biological fluid.

25 I do not consider that there are any issues with construction of the claim, and it may be construed as read.

The Citation - EP 4316358

26 EP 4316358 discloses an implantable device for measuring biological data of an animal.

27 Figure 4 of EP 4316358 (reproduced below) schematically illustrates the components of the implantable device.

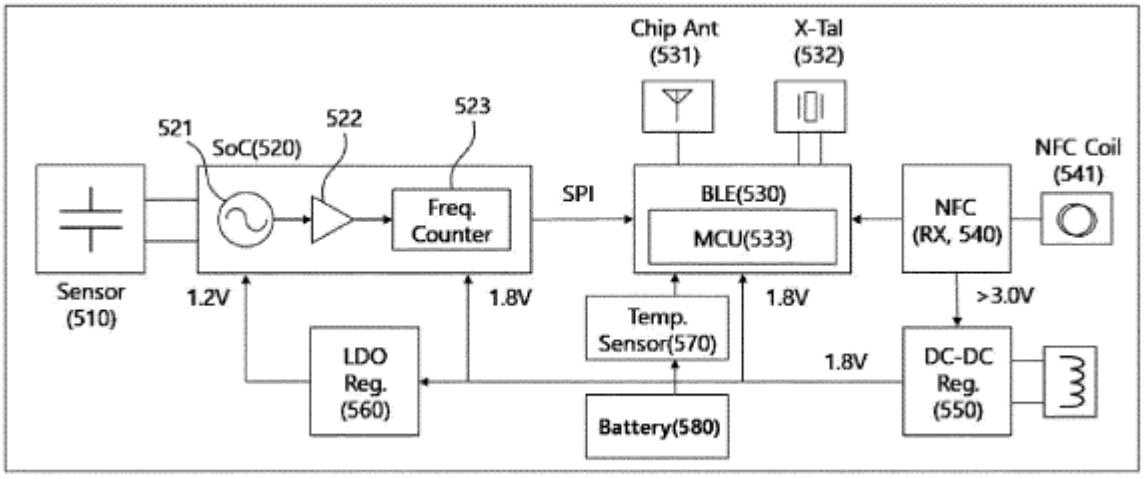


28 The implantable device (270) comprises a sensor capacitor (410) connected to an oscillator (420).

29 Paragraph [0057] describes the construction and operation of the implantable device as follows:

> *[0057] The sensor **410** may be substantially configured in such a manner as to include a fringing-field capacitor included in the oscillator 420. The fringing-field capacitor may form a fringing field, and an oscillation frequency (resonance frequency) generated by the oscillator 420 may be changed as a change in capacitance caused by a change in an analyte in the fringing field area is reflected on the oscillator 420. In this case, the sensor part **270** may measure the characteristics of the change in the analyte (for example, a change in the concentration of the analyte) in the fringing field in response to the change in the resonance frequency.*

30 Figure 5 shows a more detailed schematic of the implantable device



31 In this embodiment the sensor capacitor (510) is connected to a system-on-chip (SoC)(520) which includes the oscillator (521).

32 Paragraph [0063] explains its operation as follows:

> *[0063] The SoC **520** may include an oscillator **521**, an amplifier **522**, and a frequency counter (Freq. Counter) **523**. The oscillator **521** may be used to produce a signal with a precise frequency, and the produced signal with that frequency may be outputted in order to measure a change in permittivity caused by a change in a surrounding target material. The sensor **510** may detect a reflected signal, and the amplifier **522** may amplify the detected signal and transmit it to the frequency counter **523**. The frequency counter **523** is a circuit that calculates the frequency of a signal transmitted via the amplifier **522**, which may be a circuit that detects zero-crossings of an input signal.*

33 Paragraphs [0092] and [0093] explain how the implant is used to measure biological data:

> *[0092] In the step **1060**, the implant device **110** may measure the animal's internal biological data via the driven sensing circuit. For example, the implant device **110** may generate a fringing field by using the sensing circuit, measure a change in a resonance frequency generated by an oscillator based on a change in capacitance caused by a change in an analyte in the fringing field area, and measure the characteristics of the change in the analyte in the fringing field, as the biological data, in response to the change in the resonance frequency. These characteristics of the change in the analyte may refer to the characteristics of a change in the concentration of the analyte.*
>
> *[0093] In this instance, the implant device **110** may generate a fringing field by a fringing-field capacitor of the oscillator which is included as the sensing circuit. Also, the implant device **110** may generate a periodic oscillation signal by using a feedback network, which includes the fringing-field capacitor of the oscillator, as the sensing circuit, and a frequency selective filter, and which passes back some portion of an output signal as input to provide a desired phase shift. In this case, the implant device **110** may measure the characteristics of the change in the analyte within the fringing field in response to the change in the resonance frequency by measuring a change in capacitance caused by a change in permittivity by means of a sensing part including a material with a dielectric constant.*

34 It is clear from these passages that the implant works by measuring a change in frequency due to a change in capacitance of a sensing capacitor, the sensing capacitor being immersed in an analyte. As such it works in a similar way to the implantable device of the patent. Specifically, the analyte changes the capacitance of the sensing capacitor and as a consequence the oscillation frequency of the circuit.

35 There appeared to be some confusion at the hearing over what the capacitance sensor part of the implant of EP 4316358 was measuring. It is noted that figure 5 shows a temperature sensor (570) and this is used to monitor the body temperature of the animal. The capacitance sensor measures biological data, and blood sugar levels and oxygen saturation are given as examples of such data (paragraph [0048]).

Is Claim 1 of GB 2610710 novel over EP 4316358?

36 There was some initial suggestion from the proprietor that the prior art sensor was not defined to the same level of detail as the sensor of the patent. However, following discussion of the importance of the claim and the fact that the prior art sensor was stated to be a capacitor as required by claim 1, the proprietor made no further significant attempt to distinguish the invention of claim 1 from the disclosure of EP 4316358.

37 The embodiments of EP 4316358 and the patent rely on the same principles of operation and share many similar components, certainly at the level of generality required by claim 1 of the patent. I am satisfied that EP 4316358 discloses all the features of claim 1 and accordingly claim 1 lacks novelty.

Is there an amendment that can be made to distinguish GB 2610710 over EP 4316358?

38 The remainder of the hearing focussed on the differences between the disclosure of EP4316358 and the invention of the patent. I will make it clear at this point that this is for the proprietor to set out. In my view it is not the role of the hearing officer to identify potentially allowable amendments

39 Two particular differences were put forward by the proprietor and discussed in detail, the frequency of the oscillator and encapsulation of the sensor.

40 Firstly, regarding the frequency of the oscillator, the proprietor submits that their use of terahertz frequencies is not disclosed in EP 4316358.

41 I agree, although I note that the patent refers to both terahertz and gigahertz. For example, the sensor is described in the patent both as operating in the range of 10-30 GHz and being a terahertz sensor. It is not immediately apparent that a sensor operating at 10-30GHz would be understood by the skilled person as a terahertz sensor. However, in any event, the only frequency range disclosed in the citation is "sub-MHz frequency range" (paragraph [0053]). The preferred frequencies of the sensor specified in the patent therefore serve to distinguish the invention from the cited prior art.

42 It follows that the subject matter of claims 2 and 3 is not anticipated by the citation. Although some care may need to be taken in view of the different frequencies referred to in the patent, an amendment to claim 1 directed to the frequencies of claims 2 or 3 would provide a suitable basis for amendment. I consider that such amendment of claim 1 would not add matter and would distinguish the invention from the citation.

43 Secondly, in relation to encapsulation, claim 9 of the patent refers to "the sensor and transponder are encapsulated in a package". Furthermore, the specification of the patent discloses on page 10, line 16 that "*the sensor 10 and transponder 14 are encapsulated in a single package*". Additionally, at page 10, lines 21 to 26 with reference to figure 4, the patent discloses:

> *As shown in Figure **4**, for example, the package is housed within a housing **30** which in some examples takes the form of an epoxy mould housing. Encapsulation and housing multiple components (namely the sensor **10** and the transponder **14**) in a single package reduces the number of individual components that need to be implanted into the animal **8**, simplifying the implant procedure. A single package also limits migration of components within the animal.*

44 There is no explicit disclosure of encapsulation in EP 4316358. There was some brief discussion about whether or not it might be implicit that an implant should be encapsulated. The proprietor argued that if the implant only needed to be implanted temporarily then there may be no need to encapsulate it. I accept that argument and consider that encapsulation is not implicitly disclosed in the citation.

45 Accordingly, it follows that the subject matter of claim 9 is not anticipated by the citation. Consequently, I consider that amendment of claim 1 to additionally include the feature of encapsulation of the sensor as in claim 9 would not add matter and would distinguish the invention from the citation.

46 Several other issues were raised by the proprietor. There was some suggestion that the use of Near Field Communication (NFC) to communicate with a monitoring device on the outside of the body was not disclosed in EP 4316358. However, such an arrangement is clearly disclosed in at least paragraph [0069] with reference to figure 7.

47 There was also discussion of whether the citation discloses dielectric or electro-impedance spectroscopy. There is only passing reference to these terms in the patent. At page 3, line 5 it is stated that:

> *"The implantable device is based on the dielectric spectroscopy principle for detecting the biomarkers biological fluid of livestock."*

48 Similarly, at page 7, line 12, the patent states:

> *"The sensor 10 generally operates based on electro-impedance spectrometry where a high frequency signal (for example in the GHz range) is applied to electrodes and the electrical response of the chemical system is measured."*

49 There is no further elucidation of the meaning of these terms in the patent and their interpretation would ultimately depend on the skilled person's understanding of their meaning. The proprietor was asked what their understanding of the meaning was (accepting that their representatives were not skilled persons). However, their explanation seemed to apply just as much to the principles of operation of the apparatus of EP 4316358 as it did to the patent, irrespective of the fact that these terms are not used explicitly in the citation. I could not discern any relevant difference that distinguished the citation based on these terms. Further evidence of the skilled person's understanding of these terms would need to be provided if they were to be used to attempt to distinguish the invention from the prior art.

Decision

50 I find that the patent lacks novelty in light of the disclosure of EP 4316358 which constitutes section 2(3) prior art. Section 73(1) therefore applies to the patent.

51 Section 73(1) provides that the comptroller may revoke the patent but shall not do so without giving the proprietor an opportunity of making amendments. Although the proprietor has had a chance to make amendments, in view of the circumstances of the case, whereby the proprietor is not represented by an attorney and that potential amendments have been identified, I propose to give the proprietor a further opportunity to propose amendments.

52 I therefore give the proprietor a period of 28 days from the date of this decision to submit amendments to the claims to overcome the lack of novelty based on EP 4316358. Although, I am aware that the proprietor has dispensed with the services

of an attorney, I would strongly advise them to seek professional help when considering any amendments.

53 I therefore remit the patent back to the Examiner to deal with such amendments. If after three months the examiner is not satisfied with the amendments, then I will make a final determination on the allowability of the amendments, and should I find them unacceptable then the patent will be revoked.

Appeal

54 Any appeal must be lodged within 28 days after the date of this decision.

Nigel Hanley

Patent Examination Group Head