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Case No. HP-2020-000018

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
INTELLECTUAL PROPERTY LIST (ChD)
PATENTS COURT

Rolls Building
Fetter Lane
London, EC4A 1NL
4 August 2022

Before :

MR JUSTICE MEADE

Between :

SHENZHEN CAR KU TECHNOLOGY CO., LTD

Claimant

- and -

THE NOCO COMPANY

Defendant

**Hugo Cuddigan QC and Edward Cronan (instructed by Powell Gilbert LLP) for the
Claimant**

**James Abrahams QC and Adam Gamsa (instructed by Taylor Wessing LLP) for the
Defendant**

Hearing dates: 12-14 and 19 July 2022

JUDGMENT

I direct that no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic. This Judgment was handed down remotely by email circulation to the parties' representatives and release to the National Archives. Deemed date for hand-down: 4 August 2022.

Mr Justice Meade:

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INTRODUCTION

1. This action concerns battery-powered car jump starters.
2. The Claimant (“Carku”), a company incorporated in the People’s Republic of China, seeks the revocation of UK Patent GB 2 257 858 (“the Patent”), which is owned by the Defendant, an Ohio company (“NOCO”), which is a competitor of the Claimant.
3. The Claimant also alleges that statements made by NOCO to Amazon were actionable threats of patent infringement under s. 70 of the Patents Act 1977 (“the Act”). Those statements led to Amazon removing from sale on its site (“delisting”) various of the Claimant’s products sold there by the Claimant’s distributors.
4. NOCO denies that the Patent is invalid and has counterclaimed for infringement. It says that the communications to Amazon were not threats, and were justified if they were.
5. There has been parallel litigation in the USA. It is not of direct relevance, but Carku’s expert Professor Ricketts gave evidence there, and that was the basis for a submission that his evidence was less reliable because he had seen an equivalent of the Patent before giving his views on its inventiveness.

CONDUCT OF THE TRIAL

6. The trial was conducted in Court. The oral evidence was given live. NOCO’s expert, Professor Mitcheson, had COVID just before the trial. The timetable was adjusted slightly to ensure that he had had time for a full recovery.
7. Following discussion at the PTR the parties agreed that there was no need for cross-examination of the fact witnesses, who dealt with the threats issue.
8. Because of the claims and counterclaims the sequencing of the trial was a little unusual. Mr Cuddigan QC for Carku opened the case first, then Mr Abrahams QC for NOCO made a short opening and called his witness first. In closing Mr Cuddigan went first and later had a short reply. I am satisfied that this did not lead to any unfairness and both sides had a full say; neither said that they did not.

THE ISSUES

9. The issues are:
 - i) The scope of the common general knowledge (“CGK”). Most of the points were very minor.
 - ii) A number of points on claim scope relevant to validity over the prior art and to the infringement arguments.

- iii) Whether certain of Carku's products infringe. There was no dispute of fact; infringement turns on claim scope. A large number of products were involved and these were organised into families. For the purposes of this judgment I just need to decide whether two claim features are met by equivalence, it being accepted by NOCO that the features are not present as a matter of normal interpretation. The parties agreed that they would be able, with my decision on the two points, to identify which families did and did not infringe. NOCO accepted that some products do not infringe at all, but it is worth noting that they were not the subject of the alleged threats.
 - iv) On one of the claim features where equivalence is invoked by NOCO, Carku relies on file wrapper estoppel.
 - v) Validity over three pieces of prior art:
 - a) US Patent Application No. 2004/0130298, "Krieger", which is relied on for anticipation and obviousness.
 - b) US Patent Application No. 2013/0154543, "Richardson", which is also relied on for obviousness.
 - c) A manual for a jump starter made by a company called Projecta "Projecta". It is only relied for obviousness.
 - vi) In reply written submissions Carku sought to argue that the claims were invalid for *Agrevo* obviousness. I deal with this below and conclude that it was too late to add the point.
 - vii) The only claims of the Patent independently in issue are claims 1 and 19. Carku says that because claim 19 introduces a feature that is a mere collocation having no interaction with claim 1, it can combine prior art citations to knock out claim 19 without unallowable mosaicing.
 - viii) Carku also had a *Formstein* defence but this fell away given how the case of obviousness over Richardson was defended by NOCO.
 - ix) Whether NOCO's communications to Amazon were actionable threats. This is primarily a question of the interpretation of the communications in context, including, NOCO says, the context of its relationship with Amazon.
10. As will appear from the list above, there were many points; too many. Indeed the list above does not do justice to the details of the arguments made, since almost every point had multiple sub-points. For example, in relation to threats, Carku sought to rely on Parliamentary materials for *Pepper v. Hart* purposes and only gave up on it in closing. I have given an example from the Carku side, but both parties took too many points.
11. This was a category 2/3 patent case about a relatively simple electrical device intended to take 3 ½ days in Court (we sat an extra-long day in Court to fit in the closing arguments and even then it was a very tight fit). It would have been

welcome if the parties had reviewed and reduced the issues and/or promptly dropped those that ceased to have real relevance. There is obviously no love lost between the parties but that is not a reason to lose focus on the points that matter and those that do not.

12. The practical upshot of this is that I have aimed in this judgment to deal with only the points that matter, and only the main sub-points on each of them. It would be unwieldy and impractical to cover every sub-point in writing, but where I have not mentioned sub-points I have nonetheless borne them in mind.

THE WITNESSES

13. Each side put in evidence from one witness of fact in relation to threats. For Carku it was its CEO Mr Michael Zhang. For NOCO it was its President and Chief Visionary Officer Mr Jonathan Nook. As I have already mentioned, there was no cross-examination because the parties accepted some guidance I gave at the PTR that they might consider the meaning of the allegedly threatening communications as being purely an objective one.
14. Each side called one expert. I will deal with them in the order in which they were called at trial.
15. NOCO's expert was Professor Paul Mitcheson of Imperial College London. He is a Professor of Electrical Energy Conversion.
16. Carku made no criticism of Prof Mitcheson's independence or manner of giving evidence, and rightly so: he was scrupulously fair and honest and willing to agree to Carku's propositions where they had force. Carku did however make the following points:
 - i) That he lacked direct experience in the industry, although it agreed that this was remedied to some extent by an acceptance that the skilled person would conduct research on competitors' products. In my view his lack of direct experience did show and made his evidence on the approach of the skilled person a little less cogent than that of Prof Ricketts, so I have taken that into account.
 - ii) That he took an overly academic approach to the prior art and addressed obviousness only from the point of the finished items in the preferred embodiments. I agree that he did rather take the attitude that a "feature complete" product such as Projecta and Richardson (Krieger is a lot less fleshed out) would not readily be changed and this artificially limited his willingness to see or consider changes which at a technical level were uninventive. I would not have called this "academic", although it does not matter what label one applies.
 - iii) That his written reports lacked a *Pozzoli* analysis at question 4. I do not accept this. The point made was essentially that having been instructed about *Pozzoli* he said what was obvious over the prior art without expressly calling out why the change that would be necessary to reach the claims of

the Patent was not obvious. I think this is to treat the *Pozzoli* approach as too much of a straitjacket. The way he did his evidence did lead to his reports being thin on reasons why the steps to the Patent were not obvious, and, it being trite that such reasons are very important, I have taken that into account. But it is not a criticism of the witness personally.

17. Carku's expert was Professor David Ricketts. He is currently a Professor of Electrical and Computer Engineering at North Carolina State University. He previously had industry experience, including in relation to lead acid batteries.
18. NOCO accepted that Prof Ricketts was qualified to give his evidence (which he obviously was) and that he attempted to assist the Court. However, it said that his evidence was "thoroughly infected with hindsight". The factual basis for this was that he had seen the US equivalent of the Patent before he read the prior art in this case, and he knew when reading the prior art in this case that it related to the UK equivalent of the US patent. Prof Ricketts accepted these facts.
19. NOCO pointed out that in his first report Prof Ricketts explained how he would try to address hindsight by saying that he tried to recall what his understanding of the prior art was before he saw the Patent or any patents in the same family. NOCO said that that did not make sense because there was no time when Prof Ricketts had seen the prior art but not the US equivalent. NOCO is right about this as a matter of literal reading and that paragraph of Prof Ricketts' report is somewhat miswritten. But clearly what he meant was that he had tried, as he understood was necessary, to clear his mind of the Patent or equivalents when dealing with the prior art and obviousness. I accept that he tried to do so, and the substantive question is whether he succeeded, not one of parsing his report.
20. NOCO reinforced its position by saying that Prof Ricketts had confirmed that his first report contained what he thought was obvious from the prior art, and that Carku "cannot realistically" rely on anything in his later reports. This is an unfair interpretation of what he said and also unrealistic. In his later reports he was responding in large measure to what Prof Mitcheson had said in his first report and to NOCO's interpretation of the claims as revealed or implied in it. Some of NOCO's interpretation points clearly were not anticipated by Prof Ricketts, and in addition there were more claims in issue than to cloud matters. It is not a fair or practical burden on an expert (or the parties, or the Court) to have to try to list every single thing that would be obvious from the prior art without regard to the issues.
21. Although these aspects of NOCO's hindsight criticism were rather pedantic and literalistic, that does not mean that there was no underlying substance to it; I think there was some, and that Prof Ricketts was affected by hindsight in some degree. I do not think, however, that hindsight is a binary matter so that a witness affected by it to any degree is somehow disqualified entirely. Its impact has to be assessed where it arises. It may well have come into play on some prior art and not others, and it may reduce the force of evidence without destroying it.
22. Overall, I think the impact of hindsight on Prof Ricketts' evidence was modest, and only of any real significance on Krieger, where I reject the validity attack for

reasons that include hindsight. In essence on the other pieces of prior art (this will take on more colour when I deal with them below in more detail):

- i) In relation to Projecta the position is a curious one since both experts started off thinking that it disclosed what was called a broad override (which would benefit NOCO) and ended up thinking that the better view was that it was directed to a narrow override (which helped Carku's case). This was not really to do with hindsight in my view, but rather to not completely and systematically thinking through what Projecta said and would imply for someone actually designing a product. I do not think there was any hindsight in Prof Rickett's analysis of how to implement the functionality taught.
- ii) In Richardson the positive change that Prof Ricketts said was obvious was to omit a feature. The need to address this arose from NOCO's "timing" point, which was not apparent when Prof Ricketts did his first report. Prof Ricketts did over-interpret the logic at point 252 in the flow diagrams and it may well be that hindsight was part of the reason, but it did not affect the result, for reasons given below.

THE SKILLED PERSON

23. It was common ground that the skilled person would be an engineer working in product design of devices for use in vehicles such as batteries, battery chargers, jumper cables, jump starters and the like. They might not necessarily have worked on jump starters specifically. They would be a graduate electronic or electrical engineer with two to three years' experience.

THE COMMON GENERAL KNOWLEDGE

24. In keeping with current practice in the Patents Court, there was a joint document which showed the CGK that was agreed and that was in dispute.
25. Little was in dispute. The points identified at the start of the trial (by Carku) were:
 - i) Did "reverse polarity sensor" have a CGK meaning? Prof Mitcheson said that it did. But this was not pursued as a point of CGK in the cross-examination of Prof Ricketts, the parties instead treating it as a point of purposive claim construction. So there is no decision for me to make as to CGK and I deal with the topic under claim scope.
 - ii) Whether a particular example of manually overriding an automatic lighting system was CGK. Neither side gave any time to this at trial and it can be forgotten.
 - iii) Whether, as Prof Ricketts had said, it was CGK that proper practice when jump starting was to connect the negative terminal of the jump starter to the engine block rather than the negative terminal of the car battery itself. Prof Mitcheson disputed that it was. I find that it was CGK as Prof Ricketts said,

being shown in a number of relevant contemporaneous documents. As the arguments have developed, it is not of direct relevance, but it reflects Prof Ricketts' greater knowledge of the field.

- iv) Whether the skilled person would be aware of a particular industry guide for booster cables. NOCO accepted it was CGK in its written closing, but it is inconsequential in any event.
 - v) Although it was agreed that the skilled person would conduct a thorough analysis of products on the market, there was disagreement on what would be found.
26. The last point merits some separate comment and findings and I provide them below. First I will set out the CGK according to the parties' agreed document as it relates to the process of jump starting and available jump starters, with minor alterations to reflect my findings mentioned above. I have not reproduced the earlier parts of the document which went into detail about batteries, switches, FETs, MOSFETs, BJTs, LEDs or the interface between logic circuits and power circuits, because they are not central to an understanding of this judgment. That material remains CGK and I have borne it in mind.

Agreed CGK - Jump Starting a Car

27. If a car is left for a long time without being started, or in very cold weather, a car battery may lose charge and fail to start the car engine. In this situation the car battery must be jump started, which provides the power needed to start the motor, which will then in turn charge the car battery. One way to jump start a car is to use jumper cables. (Ricketts 1 §113)
28. It is also possible for a car to run without any battery at all. Once the car has been jump started, the alternator can provide the electricity needed to keep the car's systems running. In this way, a jump starter can be used to help return a car without a battery, or with a failed battery, to a garage for repair. This approach is less likely to work with more modern vehicles. (Ricketts 1 §114). The skilled person would note that by the Priority Date, vehicles had a variety of electrical operations and systems within them (referred to in the automotive industry as ECUs or electronic control units) and driving such a vehicle without a battery would mean that any electrical power supply would be direct from the alternator and could be subjected to large voltage transients in the event of a load dump event. This could damage the electrical systems of the vehicle. The skilled person would know that jump starting a vehicle without a battery and then driving the vehicle would be a last resort because the only power to the electrical system would be coming straight from the alternator which may not be able to instantly match the power requirements of the vehicle (Mitcheson 2 § 6.22).
29. The skilled person would be aware of the dangers associated with carrying out manual work with high charge capacity batteries. They would know that when jump starting a car a suitable safety procedure should be adopted. The voltages involved in the batteries themselves are inherently safe, being typically 12V, sometimes 24V. However, the whole jump-starting circuit contains very significant inductance. When that inductance is combined with high transient or

switching currents, very high voltages are generated (Electric fields of ~30kV/cm) which are sufficient to break down air and cause a spark. Sparking does not occur when the cable is connected, but rather when it is momentarily disconnected after current is flowing. Human manual connections of jumper cables are not instantaneous, but have mechanical vibrations such that there are many connections/disconnections before a fixed connection is made. This is why sparking can be observed when the battery terminals are touched together (12V is too low for such sparking), and why there are significant safety concerns associated with jump-starting procedures. (Ricketts 1 §116)

30. For a jump starter, it is necessary to provide a burst of high current from the power source to the vehicle battery (which is nominally 12 V) when the user engages the ignition, so that there is sufficient power to turn over the starter motor. A circuit is made by connecting the positive terminal of the jump starter battery to the positive terminal of the vehicle battery, and connecting the negative terminal of the jump starter battery to the engine block. Safety issues arise if the connections are made the wrong way around – this is referred to as being in reverse polarity. At this point, the positive voltage of the jump starter battery adds to the positive voltage of the vehicle battery (which would put 24 V directly across the jump starter cables), causing very large currents to flow through both batteries and the connecting cables potentially causing harm to the batteries, cables and user. This situation could also cause the onboard electronics in the vehicle to be damaged as the electronics modules could be subjected to negative voltages across their inputs under these conditions. Another safety incident could arise if the jump starter battery is connected through cables with crocodile clips to the terminals of the vehicle battery with correct polarity. If the crocodile clip on the positive terminal of the vehicle battery comes loose and touches the vehicle chassis this can create a short circuit because the negative terminal of the vehicle battery is connected to the chassis (to provide the vehicle “ground”). A short circuit like this can cause harm to the jump starter battery, cables and user. (Mitcheson 1 §5.28).
31. The skilled person would know that in practice users were liable to deploy an automatic jump starting system together with a vehicle battery that was almost totally depleted. They would also know that jump starters were sometimes used to allow a car without any battery to be driven (Ricketts 1 §262). Carku relied on this aspect of CGK heavily since it provides a “use case” where an override of an isolation sensor is necessary. I accept its point on this.

Agreed CGK - Commercially available jump starters at the Priority Date

32. The skilled person would also be aware of portable jump starters that could be used to jump start vehicles. Prof Ricketts used such devices before the Priority Date. (Ricketts 1 §124)
33. Portable jump starters contain an internal power source, such as a battery. A battery that is used to jump start a car would require a very high discharge rate, but would not necessarily need to have a large battery capacity. Originally, portable jump starters used lead acid battery technology. Lead acid batteries have a lower peak current relative to other battery types for a given size, therefore the

jump starters had to be relatively large to allow for the donor battery to have the CCA required to jump start a car. (Ricketts 1 §125)

34. One of the advantages of portable jump starter devices is that they can include safety features. For example, a switch can be included in the jump starter to mitigate the sparking dangers. The switch can be either a manual switch (operated by hand) or an electrically actuated switch (relay, FET, etc.). When the connections of the jumper cables are physically connected to the car battery, no power flows from the jump starter battery to the vehicle battery ('no power' means no current and thus the effects of inductance are removed). The connection of power is only made when the switch closes. Portable jump starters can also be designed to only provide power when connected correctly to a vehicle battery. (Ricketts 1 §127)
35. If the skilled person were tasked with a project to design a jump starter device at the Priority Date, the early stages of that project would involve a thorough analysis of the devices already available on the market. (Ricketts 1 §139; Mitcheson 2 §4.1)
36. The skilled person would have had two main objectives in mind when attending trade shows: (1) to try to source new components for use in their products and (2) to see what features were present in competitor products. Prof Mitcheson would expect the skilled person to look around suppliers' and competitors' stands for ways in which their own products can be improved, be it by sourcing new components or by taking inspiration from competitors' products. The amount of information the skilled person would have been able to ascertain from looking at competitors' products at trade shows would have been limited. It would have been the information being advertised and the information the skilled person might be able to glean from any product demonstrations. The skilled person would not have been able to ascertain the internal workings/components of products, aside from the basic specifications/features. (Mitcheson 2 §4.2)
37. In addition to attending trade shows the skilled person would also undertake internet searches of products on the market (Mitcheson 2 §4.3). It is possible to use the "Wayback Machine" to check commercial devices available on the internet at the Priority Date. (Mitcheson 1 §5.28).

Competitor research and marketed products – disputed aspects

38. I have set out above the general approach to competitor research that was agreed CGK. So far as disputed matters on this topic are concerned, I agree with Carku as to the state of the CGK as follows:
 - i) Competitor research would identify to the skilled person that key players were Black & Decker, Bosch and Sealey.
 - ii) The skilled person would do internet research with Google, Amazon and retailers like Halfords, and on the websites of the competitors mentioned above.

- iii) Prof Mitcheson had no reason to doubt that the skilled person would find the product manuals listed by Prof Ricketts (with one irrelevant exception). The manuals listed included Projecta.
 - iv) Many products had the ability to detect reverse polarity and the ability to tell the difference between a vehicle battery that was very depleted and a healthy battery (essentially, an isolation sensor). This was CGK, and I refer to the “use case” point above.
 - v) The awareness of reverse polarity sensors and isolation sensors was such that the skilled person would potentially want to include both if designing a device.
 - vi) Portable jump starters of the kind relevant to this trial can be divided into three categories:
 - a) Automatic jump starters: these used programmed logic to check whether a connection had been safely made between the donor battery and the vehicle battery, and automatically electrically connected the batteries if it was safe to do so. The user could then turn the key in the vehicle to start it.
 - b) Manual jump starters with a switch: these required the user to manually push a button to electrically connect the two batteries, following which the user could then turn the key in the vehicle to start it.
 - c) Manual jump starters without a switch: these require the user to connect the jump starter correctly and safely to the battery in the vehicle to be jump started. These devices use the same color coding and safety directions as taught for jump starting with jumper cables only.
 - d) Of the automatic jump starters, some of the devices available on the market also contained a manual mode, so that the user could push a button to manually make the connection between the two devices.
 - vii) Numerous products had manual overrides. The manual overrides included overriding the otherwise automatic function of the devices, in particular their isolation sensors, so that a vehicle with a very depleted battery could be jump started.
39. Although it was CGK to have a manual override of the isolation sensor, no CGK document referred, at least not in clear terms, to overriding an isolation sensor but not a reverse polarity sensor when the latter was present. The documents were silent about this. So it was not CGK positively to leave the reverse polarity sensor in action during an override, but nor was it CGK that overrides always overrode, or had to override, both/all sensors. It was CGK that some devices did so.
40. Carku put to Prof Mitcheson that it would be CGK or at least obvious to take a feature from one product and use it in another. I would see this more as a question

of obviousness than CGK and although Prof Mitcheson agreed, I did not interpret his agreement to be that taking any feature from any product and putting it on any other product would be obvious. It would depend on the circumstances.

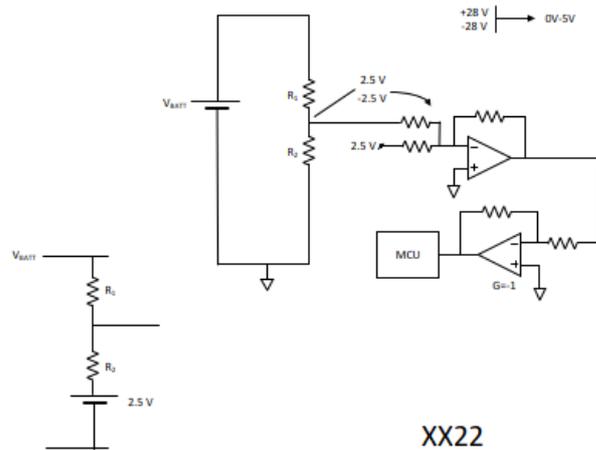
41. I also did not understand Prof Mitcheson to agree that every single competitor product would be found or would be CGK. The significance of this is really in relation to Projecta, which Carku would like to be able to mosaic with (in particular) Krieger. Furthermore, even if a product would be found by a search that does not make every detail of it CGK. Close and detailed reading of Projecta is necessary to get out of it what Carku seeks. Projecta is just one product (or two closely related ones) from a company which was not said to be one of the major players. It is very much the sort of thing from which the skilled person would reach the understanding set out above about general, prevalent product functionality, but its details were not themselves all CGK.

Redundancy and failure analysis

42. The skilled person would understand the general concept of redundancy, and that there were different ways of achieving it, including having two identical components, or having a back-up which worked in a different way to the main component, so that the same failure mode would not break both. I am not sure that NOCO really disputed this, but anyway I find it was CGK.
43. Relatedly, it was CGK to think about the potential for a product to fail, and to think about how that would happen, and the impact on safety. For large companies like Bosch, that would be done systematically.
44. I also find that these devices were regarded as being capable of causing injury or damage if misused. It was CGK to protect against that, but not with the expectation of making injury or damage impossible.

The XX/22 circuit

45. As I will explain below, the preferred embodiments of the Patent use binary, digital sensors, one to sense reverse polarity and one to sense that a battery is correctly connected. The skilled person would also be aware of arrangements which could detect a continuous voltage from e.g. -28V to +28V and convert it to a range from 0 to 5 V, which could be input into a logic circuit. This could serve the purpose of two digital sensors.
46. This sort of arrangement was described in Prof Mitcheson's written evidence and he drew it out during his oral evidence. This became XX/22 and a more formally drawn out version was prepared by agreement:



47. A technical name for this circuit is a “bi-polar voltage sensing amplifier” but I will refer to it as an XX/22 circuit for no other reason than that it may help to relate this judgment to the transcript. It was agreed to be part of the CGK.

THE PATENT

48. The undisputed priority date is 3 July 2014.
49. The Patent begins with a very general introduction:

‘BACKGROUND OF THE INVENTION

The present invention relates generally to apparatus for jump-starting a vehicle having a depleted or discharged battery. Prior art devices are known, which provide either a pair of electrical connector cables that connect a fully-charged battery of another vehicle to the engine start circuit of the dead battery vehicle, or portable booster devices which include a fully-charged battery which can be connected in circuit with the vehicle's engine starter through a pair of cables.

Problems with the prior art arose when either the jumper terminals or clamps of the cables were inadvertently brought into contact with each other while the other ends were connected to a charged battery, or when the positive and negative terminals were connected to the opposite polarity terminals in the vehicle to be jumped, thereby causing a short circuit resulting in sparking and potential damage to batteries and/or bodily injury.’

50. There follow acknowledgements of a number of pieces of prior art. Their only relevance to the arguments before me are that some of them are said to have solenoids/relays; Carku relies on that in relation to claim scope.
51. The acknowledgments are followed on page 4 by a general statement that the prior art solutions had shortcomings in terms of complexity, cost, or potential for malfunction.

52. There is then a consistory clause.
53. The third paragraph on page 6 says that the apparatus can have a visual indicator of reverse polarity detection.
54. The first sentence of the fifth paragraph on page 6 is the consistory clause corresponding to claim 19.
55. The detailed description follows from the bottom of page 7. Of particular importance are the second and third full paragraphs on page 8:

‘A car battery reverse sensor 10 monitors the polarity of the vehicle battery 72 when the handheld battery booster device is connected to the vehicle's electric system. As explained below, the booster device prevents the lithium battery pack from being connected to the vehicle battery 72 when the terminals of the battery 72 are connected to the wrong terminals of the booster device. A car battery isolation sensor 12 detects whether or not a vehicle battery 72 is connected to the booster device, and prevents the lithium battery pack from being connected to the output terminals of the booster device unless there is a good (e.g. chargeable) battery connected to the output terminals.

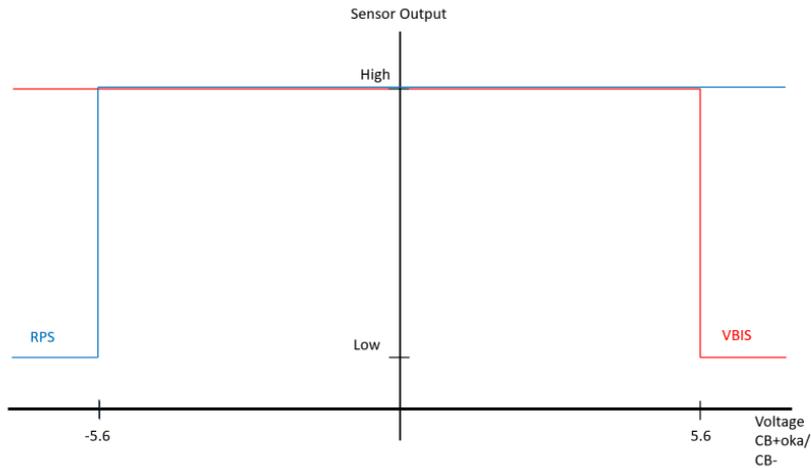
A smart switch FET circuit 15 electrically switches the handheld battery booster lithium battery to the vehicle's electric system only when the vehicle battery is determined by the MCU 1 to be present (in response to a detection signal provided by isolation sensor 12) and connected with the correct polarity (in response to a detection signal provided by reverse sensor 10).’

56. The two sensors referred to, items 10 and 12, were generally referred to before me as the “RPS” (reverse polarity sensor) and the “VBIS” (vehicle battery isolation sensor) respectively. Sometimes the latter was referred to simply as the “isolation sensor”.
57. And an override feature is described on page 9:

‘The manual button functions only when the booster device is powered on. This button allows the user to jump-start vehicles that have either a missing battery, or the battery voltage is so low that automatic detection by the MCU is not possible. When the user presses and holds the manual override button for a predetermined period time (such as three seconds) to prevent inadvertent actuation of the manual mode, the internal lithium ion battery power is switched to the vehicle battery connect port. The only exception to the manual override is if the car battery is connected in reverse. If the car battery is connected in reverse, the internal lithium battery power shall never be switched to the vehicle battery connect port.’

58. Details are given of the circuitry of the two sensors. I need not reproduce them here, but it is significant to the arguments to note that the two sensors are digital, binary sensors.

59. In normal (i.e. no override, no fault) operation, whether the battery can be connected can be determined only by the VBIS. When the VBIS is such (in fact a “low” signal) that it denotes a battery with proper polarity is present, then the battery can be connected without regard to the state of the RPS. This was shown in different ways by the parties in their skeletons.
60. Carku referred to a diagram that Prof Ricketts provided:



61. Along with the following explanation (I omit a footnote):

‘The ‘safe’ area is found on the right-hand side of the graph, where VBIS is LOW. That also *inevitably* coincides with RPS being HIGH. That is why Prof Ricketts explains that in normal operation, the RPS is irrelevant to the decision to close the switch (Ricketts 2, para 15), which is of course the subject of claim 1. Its only role is as redundancy protection against the malfunction of the VBIS.’

62. NOCO put in logic tables with its skeleton as follows:

	Output from VBIS	Output from RPS	Close the connection?
1. Battery attached with correct polarity	0 / low	1 / high	YES
2. Battery attached with incorrect polarity	1 / high	0 / low	NO
3. Battery disconnected	1 / high	1 / high	NO
4. Battery connected but voltage so low that it cannot be recognised	1 / high	1 / high	NO

And

	Output from VBIS	Output from RPS	Close the connection?
1. Battery attached with correct polarity	X	X	YES
2. Battery attached with incorrect polarity	Δ	Δ	NO
3. Battery disconnected	Δ	X	NO
4. Battery connected but voltage so low that it cannot be recognised	Δ	X	NO

63. These both show the same thing, but with “thumbs up” for safe connection and “thumbs down” for no-safe-connection instead of ones and zeroes in the second. I found the presentation a bit elaborate, but I need to mention it here because a lot of the cross-examination was by reference to it.
64. In any event, it is useful that one can see from the “thumbs” version that the “Close the connection?” column maps directly onto the VBIS output column. Thus, as I said already, the RPS output does not matter in normal use. It could matter if the VBIS became faulty: if the VBIS failed to a state where it was “thumbs up” but a battery was in fact connected with reverse polarity, the RPS could prevent the connection closing and this means that the RPS provides some redundancy, although this is not pointed out in the specification.
65. One can also see that the VBIS output does not allow one to tell the difference between the situation where a battery is connected with reverse polarity and a situation where there is no battery connected at all (or a battery with undetectably low voltage).
66. The RPS does allow this, and thus it permits the functionality mentioned at page 6 to which I have already referred, of a visual indication of reverse polarity connection.
67. The skilled person would also understand that the RPS must also come into play when the override to which I have referred is used to the full extent of the functionality described, i.e. to override to allow jump starting a car with no battery or a very depleted one, but not when there is reverse polarity. In such a situation the VBIS is overridden but the RPS is not.
68. In its written closing, Carku argued that in fact the logic to which I have been referring is that of the preferred embodiments, and that the claim is broader. It said that it would be possible to have a VBIS which denoted only connection of a battery and did not discriminate between one with proper polarity and one with

wrong polarity. In effect this would mean that there would be a “thumbs up” in row 2 of NOCO’s table in the “Output from VBIS” column. This, Carku said, meant that the Patent does not provide the advantage of redundancy across the scope of the claims. Carku built on this to argue that the claim feature of two separate sensors for the VBIS and RPS (see below) was an arbitrary one and that there was *Agrevo* obviousness even if it could not prove that it was obvious in the conventional sense to implement the prior art with two separate sensors but only with one, e.g. the XX/22 circuit.

69. This argument came too late in my view. It could certainly have been affected by evidence and it would be unfair to allow Carku to run it without NOCO having the chance to explore it with the experts.
70. Carku also stressed the repeated mention/depiction of FET switches for closing the connection. I accept this, and I also accept that the prior art acknowledgments refer to relay switches (or solenoids) but the disclosure of the invention and the claims do not.

Claims in issue

71. Claim 1 of the Patent (taken from NOCO’s opening skeleton Annex 1, there being no controversy over it) is:
 - (a) Apparatus for jump starting a vehicle engine, comprising:
 - (b) an internal power supply;
 - (c) an output port having positive and negative polarity outputs;
 - (d) a vehicle battery isolation sensor connected in circuit with said positive and negative polarity outputs, configured to detect presence of a vehicle battery connected between said positive and negative polarity outputs;
 - (e) a reverse polarity sensor connected in circuit with said positive and negative polarity outputs, configured to detect polarity of a vehicle battery connected between said positive and negative polarity outputs;
 - (f) a power FET switch connected between said internal power supply and said output port; and
 - (g) a microcontroller configured to receive input signals from said vehicle isolation sensor and said reverse polarity sensor,
 - (h) and to provide an output signal to said power FET switch, such that said power FET switch is turned on to connect said internal power supply to said output port in response to signals from said sensors indicating the presence of a vehicle battery at said output port and proper polarity connection of positive and negative terminals of said vehicle battery with said positive and negative polarity outputs.

72. I deal with disputed matters of claim scope below. This is however a convenient point to note two issues which are not disputed but which are of some significance to the arguments.

- i) First, it is not in dispute that claim 1 calls for two discrete sensors, by integer (d) and integer (e).
- ii) Second, it is not in dispute that claim 1 calls, by feature (h), for both sensors to be used as inputs into the decision to connect the power supply. It would not be within the claim for a product to have two sensors but for the decision to connect to depend only on the VBIS, with the RPS being used only to provide an alarm. NOCO points out in relation to obviousness that such a product would be viable, not least because Carku actually sells one.

73. Claim 19 is as follows:

The apparatus of claim 1, further comprising a manual override switch configured to activate a manual override mode to enable a user to connect jump start power to said output port when said vehicle battery isolation sensor is unable to detect presence of a vehicle battery.

Collocation

74. Carku argued that the addition of claim 19 to claim 1 was a mere collocation. The importance of the argument was to legitimise adding the manual override of Projecta to Krieger.

75. Carku's argument was that claim 19 was a mere collocation only on the broad construction explained below (i.e. override of both sensors). Even so, I think it is obviously wrong, since claim 19 requires the device to act on the output of at least one of the sensors of claim 1. There is an obvious relationship between the features. This conclusion is so clear that I do not consider it necessary to go into the nuances of the authorities that Carku cited. The point just does not work.

76. Furthermore, on the broad meaning of claim 19, Carku had the much easier route to that claim from claim 1 in relation to Krieger that it was obvious from the CGK to add a manual override of all sensors. So I cannot see how the collocation argument was useful and this was an example of a point, quite a complex one at that, which burdened the case but lacked practical utility.

77. Finally, I reject the proposition that it was obvious to get to claim 1 from Krieger, so the collocation argument would not arise.

“Ideas patent”

78. Relying on the decision of Henry Carr J in *Garmin v Koninklijke Philips* [2019] EWHC 107 (Ch) Mr Cuddigan submitted that the Patent was an “ideas patent”. In oral opening submissions I understood him to argue that this meant that it did not have to be obvious to make something within the claim, only to have the idea. I would not have accepted such a broad proposition but by closing submissions Carku's case was that (i) NOCO could not rely on any difficulty of implementing

the idea of claim 1 once the relevant idea was in the skilled person's mind by obvious means, and (ii) that obviousness should be addressed at the level of generality of the claims. As to (i) NOCO was not relying on any perceived or actual difficulty of implementation, and as to (ii) I agree.

CLAIM SCOPE

79. There are three issues which are of the "normal interpretation" of the claims and two issues which are about what the claims extend to having regard to arguments of equivalence. I have gathered them here under the overall heading of "claim scope".

Legal principles

80. The principles applicable to normal interpretation were not materially in dispute. The result of normal interpretation is the starting point for analysing equivalence.
81. In relation to equivalence, the parties agreed that the key decision is that of the Supreme Court in *Actavis v Lilly* [2017] UKSC 48. The key passage is in the speech of Lord Neuberger at [65]. NOCO provided this in a version which helpfully inserts paragraph breaks and underlining of the numbering of the steps in the analysis (and so does not change the meaning, but just helps with readability):

'The third *Improver* question as expressed by Hoffmann J is whether the notional addressee would have understood from the language of the claim that the patentee intended that strict compliance with the primary meaning was an essential requirement of the invention. That is in my view an acceptable test, provided that it is properly applied. In that connection, I would make four points.

First, although "the language of the claim" is important, consideration of the third question certainly does not exclude the specification of the patent and all the knowledge and expertise which the notional addressee is assumed to have.

Secondly, the fact that the language of the claim does not on any sensible reading cover the variant is certainly not enough to justify holding that the patentee does not satisfy the third question. Hence, the fact that the rubber rod in *Improver* [1990] FSR 181 could not possibly be said to be "an approximation to a helical spring" (to quote from p197) was not the end of the infringement issue even in Hoffmann J's view: indeed, as I have already pointed out, it was because the rubber rod could not possibly be said to be a helical spring that the allegedly infringing product was a variant and the patentee needed to invoke the three *Improver* questions.

Thirdly, when considering the third question, it is appropriate to ask whether the component at issue is an "essential" part of the invention, but that is not the same thing as asking if it is an "essential" part of the overall product or process of which the inventive concept is part. So, in *Improver*

[1990] FSR 181, 197, Hoffmann J may have been (and I mean “may have been”) wrong to reject the notion that “the spring could be regarded as an ‘inessential’”: while it was undoubtedly essential to the functioning of the “Epilady”, the correct question was whether the spring would have been regarded by the addressee as essential to the inventive concept, or inventive core, of the patent in suit.

Fourthly, when one is considering a variant which would have been obvious at the date of infringement rather than at the priority date, it is, as explained in para 63 above, necessary to imbue the notional addressee with rather more information than he might have had at the priority date.’

82. NOCO also relied significantly on the decision of the Court of Appeal in *Icescape v Ice-World* [2018] EWCA Civ 2219. NOCO stressed the importance that the Court of Appeal attached to identifying the inventive core of the claim in issue, and to the Court’s having found that there was equivalence when the normally-described component and the variant were just CGK ways of achieving the same thing, despite having their own pros and cons. I accept the submission that identifying the inventive concept is very important and I have sought to do so. I also agree with NOCO’s characterisation of the Court of Appeal’s decision in that case, but NOCO’s analysis veered close to comparing facts rather than identifying principles. I think *Icescape* is a very different case because the textual factors relied on by Carku in this trial were not present there.
83. I deal with some other decisions relevant to Actavis question 3 when I come to it, below.

“Reverse polarity sensor”

84. This is the first point on normal interpretation. Carku argued that the requirement is satisfied by any sensor which can confirm that the battery being jump started has the *correct* polarity. The VBIS in the preferred embodiment would satisfy this, but it cannot discriminate between reverse polarity and no/severely depleted battery.
85. NOCO argued that a reverse polarity sensor must be able to tell that there is in fact a battery connected with *incorrect* polarity, so that the purposes of a reverse polarity warning light and the full-featured override referred to above can be achieved.
86. I find that NOCO is clearly correct about this. A VBIS cannot sense reverse polarity, as just explained. So it is not a reverse polarity sensor. Carku’s approach makes no sense in the context of the specification.
87. The relevance of this point lies primarily in the Krieger prior art, in relation to which Carku needed to make this argument for the purposes of one of its routes to anticipation. Had that litigation-spurred need not been present, I do not think it would even have occurred to anyone that the VBIS was also an RPS.

Features (g) and (h) timing point

88. NOCO argued, at least as I initially understood it, that the checks of the sensors must take place at the moment of (or in the instant before) closing the connection. It said that if there is a delay between the sensor checks and closing the connection, the claim is not met. The first sentence of its opening written submissions on this topic said “The issue here is about timing”.
89. The purposive reason for this was said to be that if a delay were present, it would be possible for the sensors to be checked at a time when a connection could safely be made, only for the physical situation to change to a dangerous one before the connection was closed. Examples given were of clips falling off during such a delay, or a user foolishly changing which clips were on which terminals during the delay, creating a reverse polarity situation.
90. I reject this argument for the following main reasons:
- i) First, it is not a process of interpretation at all. NOCO made no real attempt to tie the argument to the words of the claim. If anything, I suppose it might be said to be rooted in the words “in response to”, but that does not convey immediacy, it just means “as a result of”.
 - ii) Second, the purposive reason relied on is not referred to at all in the specification.
 - iii) Third, on the evidence I find that closing the connection (virtually) instantly after the checks does not avoid this sort of problem. Users can still knock off clips or reconnect them in a reverse sense. Obversely, closing the connection too quickly can actually be a problem because it could mean the connection is closed during the period when the user is still adjusting the clips, leading to sparking. So it is positively a good thing to have at least a short delay in such a situation to allow the connection to be made securely and to settle.
 - iv) Fourth, it would not be rational for the patentee to exclude from protection a device which used the idea of claim 1 but added some other checks or functions which meant that there were inputs on top of the VBIS and RPS and/or which took some time.
91. Carku also said that NOCO’s approach would lead to undesirable uncertainty because although it (NOCO) has to accept that some delay would be within the claim given that the steps in the process will happen sequentially, NOCO could not say where the dividing line was. This was only a minor point and it faded away by closing submissions.
92. The relevance of this point is that NOCO needed the distinction to avoid the Richardson prior art. As with the “reverse polarity sensor” issue above, without the pressure from the prior art arguments, I do not think a reader of the Patent would ever have thought of the notion.

93. In closing, NOCO modified its argument to say that there was no requirement for the connection to close immediately after the first check of the sensors, but that if there was a delay thereafter, then the sensors would have to be *rechecked* just before making the connection. So this is still a point about timing and a requirement about immediacy, but building in the possibility of two checks. NOCO really had to make some change to its position to deal with the fact that some delay for the connection to be made properly was beneficial, but its new position is even more elaborate, the elaboration having no support in the specification. I reject it.

Claim 19 manual override

94. This is also a point on normal interpretation. I have set out claim 19 above. It requires an override of the VBIS, to which it refers expressly. NOCO says that it also requires that the RPS is *not* overridden.

95. NOCO's argument at a textual level is in the following steps (taken from its closing skeleton, paragraph 62):

‘62. The requirement that the RPS continues to fulfil its function follows from the wording and structure of claim 19:

(a) The device of claim 19 is a device “of claim 1” (i.e. the connection is only closed if the VBIS and the RPS both permit).

(b) It has a button to permit the connection to be made “when said vehicle battery isolation sensor [i.e. the VBIS, and only the VBIS] is unable to detect the presence of a vehicle battery”.

(c) But claim 19 says nothing about changing the functionality of the RPS. Therefore the RPS must continue to fulfil its function (as defined in claim 1) of preventing the connection being made when the vehicle battery is connected with reverse polarity.’

96. NOCO also relies on the passage in the specification at page 9 quoted above, “The only exception ... power shall never be switched to the vehicle battery connect port.”

97. My analysis is as follows:

- i) The claim language just says that a manual override is possible if the VBIS cannot detect a battery (which means it is “thumbs down”).
- ii) This is permissive, and says and implies nothing about the state of the RPS.
- iii) The teaching of the manual override at page 9 is in several parts with differing and increasing functionality. The first part is just that there is an override provided for the no-battery-connected state. The second is for a predetermined period of pressing, to prevent inadvertent actuation (this is the subject of a dependent claim). The third is for an exception to the override so that it is not available in the event of reverse polarity connection; this would plainly require use of the RPS signal, although that

is not expressly said. The skilled person would understand that claim 19 is directed to the first and broadest function, and that the second and third are possibilities but not required by the claim.

- iv) It would be notable to the skilled person that the language used in the specification to require the RPS's effect is not in the claim.
- v) The skilled person would realise that if claim 19 had the scope for which Carku contends, the situation which was thereby within the claim – overriding all the automated logic – would be useful because it would allow the device to be used even when its MCU had burned out or its firmware had crashed.
- vi) NOCO's argument that claim 19 is dependent on claim 1 and hence that the RPS must do the same in claim 19 as in claim 1 neglects the fact that claim 19 is not an "and" dependent claim, it is a "but" dependent claim. It requires the same physical components but different behaviour. It countermands claim 1, at least to some extent.

98. For all the above reasons I conclude that Carku is right about this point. Its potential significance is that NOCO says that none of the cited prior art has an override of the VBIS and not the RPS.

Equivalence – relay v FET

- 99. Claim 1 feature (f) requires that the connection is closed by a power FET switch. Most (or at least many) of the Carku products in issue use a relay instead.
- 100. NOCO concedes that as a matter of normal interpretation a relay is not a power FET. It relies on equivalence.

Analysis

101. There is no issue over Actavis question 2, because whatever the result of question 1, the skilled person would immediately understand what was going on. So the issue is over questions 1 and 3.

102. The first, key task is to identify the inventive concept. NOCO says it is:

‘The inventive concept embodied in claim 1 is an apparatus for jump starting a vehicle including a VBIS and an RPS to control the connection of the internal power supply to the vehicle battery, in which a microcontroller signals to the switching means such that a connection is made when there are signals from both sensors indicating a vehicle battery present and connected with proper polarity.’

103. This might be said to be a little bit conclusory of the equivalence question since it just leaves out the reference to e.g. the power FET switch and so assumes that the inventive concept is at a functional level and not at the level of detailed circuitry. In general however I think that it is a fair reflection of how the skilled person would assess the invention – as being about function and logic not detailed circuitry. If anything, I think it is too specific because it refers to there being two

sensors, an implementation detail which I doubt if the skilled person would think mattered; I return to this below.

104. All that being so, I think NOCO is right about Actavis question 1. The result to be achieved is closing the connection and the relevant “way” is by electronic circuitry which closes the connection in response to isolation and polarity signals.
105. However, Actavis question 3 remains.
106. The position here is that both relays and power FETs are mentioned in the specification. This gives some support to the view that relays were deliberately not claimed. It is different from the situation that I dealt with in *Optis v Apple* [2021] EWHC 1739 (Pat) where the two options were mentioned in the general teaching of the invention, whereas here relays are only mentioned in relation to the prior art. But I still think it is relevant; it would be rational for the patentee to distance the claims from the acknowledged prior art.
107. Furthermore, the effect of NOCO’s argument is that “power FET switch” in claim 1 has the same scope as if simply the broader and more functional “switch” had been said. But “switch” and “switched” are expressions used in the specification, not least in claim 19 and the description supporting it at page 9. The argument that broader language was available in the specification but narrower words used in the claim is also relevant in my view: see *Actavis* at [72] (pointing out that the argument was not available on the facts in that case because there was not wording in the specification corresponding to the scope argued for by the patentee, but the implication is clear that had there been, it would have been relevant).
108. Finally, the claim itself is relevant, although *Actavis* at [65] makes clear that it is not enough in itself on question 3. I think it is relevant that the claim uses functional language in some instances (“sensor”) and yet descends to physical detail in relation to the power FET switch.
109. Mr Abrahams accepted that the last three points (mentioned but not claimed, general language available, the claim itself) are relevant, but said that they do not outweigh other factors. The main factor he relied on was the fact that power FETs and relays were both within the CGK and would be recognised as interchangeable in the present context; that such differences as there were (minor practical things like size) were not material to the invention at the level of the inventive concept. I did not think he presented any reason to undermine the point that simply “switch” or “switched” was used elsewhere but not in claim 1, other than to say that it was outweighed by other factors.
110. Mr Abrahams also relied on the fact that the skilled person would not be able to think of any reason for the patentee to have wanted to limit themselves. He said that the references in the specification to relays were in the context of the prior art and not the invention. I think that last point cuts both ways and I do not think it is unrealistic that the skilled person might think there could be a patentability reason for limiting the claim to power FETs, as I have already noted.

111. NOCO's arguments were very generic. They could always be invoked in any case where a CGK alternative to the "normal" interpretation requirement of the claim is used. In such a situation the patentee will frequently get to *Actavis* question 3 and will have a sound footing for the question (as in *Icescape*), but there are features of the present case that take it out of that general situation.
112. Taking these matters together, I accept Carku's argument. Relays are not within the scope of the claim by virtue of equivalence. I have answered this by reference to *Actavis* question 3, but I agree with the analysis of the Birss J, as he then was, in *Facebook v Voxer* [2021] EWHC 1377 (Pat) at [201] that question 3 may be thought of along with question 1. If question 1 is answered in the patentee's favour on the basis that two known alternatives are not materially different, focusing on their similarity, it may make it all the more significant that the patentee, knowing of both, only mentioned one of them in the claim.
113. I think there is a further point here. The parties agree that claim 1 requires two separate sensors (NOCO actively relies on this to defeat Projecta). This is an implementation detail. But it does not provide any function or advantage to which the Patent is directed (it could provide a modest degree of redundancy but the Patent is not addressed to that). At the level of generality of inventive concept chosen by NOCO to make its equivalence case, which is all about function and logic, the reality is that two *signals* are needed, but not two separate *sensors*. The CGK XX/22 circuit could be used, for example, for the relevant practical purposes, but it is a single sensor. The point is simply that the claim is limited to a specific but not materially advantageous implementation detail in one respect (two sensors), so why not in another (FETs)? I should say that this is a point that I raised; it did not come from Carku. I think I should be careful about getting carried away with it for that reason. It supports my conclusion but is not central or essential to it. I would have reached the same conclusion without it.

File wrapper

114. In the light of that finding I do not need to go into Carku's additional argument based on the file wrapper. The facts are not in dispute so I do not need to make any findings against the possibility that my decision on equivalence is later appealed successfully; the Court of Appeal would be able to address it then.

The Family C microcontroller connection point

115. In what are referred to as the "Family C products", the RPS does not send a signal to the microcontroller, but is hardwired to the connecting component. The logic as to when to close the switch is all the same. This is another equivalence point.
116. Again, nothing arises on *Actavis* question 2; what is going on and how it works is obvious once one knows about it.
117. On question 1, my reasoning above applies to this question *mutatis mutandis*.
118. On question 3, the factors that helped Carku on the power FET point are mostly if not entirely absent. One is dealing with a variant not flagged in the specification in any way, and the claim features engaged are more conceptual, functional ones

concerning the logic to be applied than was the case with “power FET”. The Family C products do *have* a microcontroller, and if the components that are outside it in Family C for the RPS signal to control the switching were in hardware inside the microcontroller there would be infringement on normal interpretation. It would be irrational, in the absence of some positive reason being spelled out, to allow the claim to be escaped just by putting a few components outside the microcontroller.

119. I therefore agree with NOCO on this point. Carku made little effort to defend its position in oral submissions.

Conclusion on the infringement questions

120. Carku products with relays do not infringe. For products where there would otherwise be infringement, it is not avoided by the Family C microcontroller connection point (some Family C products use power FETs; the ones with relays do not infringe).
121. Of course, none of my analysis affects the position for products that were already accepted by NOCO not to infringe, notably including Family D, Family A+D and the Second Proposed Product.
122. As I said above, the parties said that they could work out together the result for all the products in detail given my decision on the claim scope points.

VALIDITY

123. As I have mentioned, there are three citations.
124. Only Krieger is relied on for anticipation. The legal standard for anticipation is clear and unambiguous disclosure. Krieger fails hopelessly on that test for reasons given below, and Carku barely ran anticipation in closing. I will say no more about it – this is an obviousness case.

Obviousness – the law

125. There was no dispute about the basic principles: I will apply the approach in the decision of the Supreme Court in *Actavis v. ICOS* [2019] UKSC at [52] – [73], with its endorsement at [62] of the statement of Kitchin J as he then was in *Generics v. Lundbeck* [2007] EWHC 1040 (Pat) at [72].
126. Carku also relied on *Brugger v. Medicaid* [1996] RPC 635 at 661, approved by the Supreme Court in *Actavis v. ICOS*, to the effect that an obvious route is not made less obvious by the existence of other obvious routes. As I have said in a number of recent decisions, this is a factor but must not be taken too far. It has only a modest role in this case in any event.

Projecta

127. Projecta is a user manual for an actual device. This differentiates it from Krieger and Richardson which are patent applications. In itself that is not important, but

a consequence of its being a manual is that it describes functionality, ways of using the device, warnings and so on, but does not describe the circuitry inside. There is therefore no possibility of an anticipation (none is alleged) and the argument between the parties is whether the skilled person would find it obvious to build a device within the claims of the Patent based on inference on how Projecta might work, and obvious steps from there.

Teaching

128. Projecta depicts a conventional-looking jump-starter, which can be used with 12V vehicles in one model (HP2012) and with both 12V and 24V vehicles in another (HP2200) – see page 3.
129. Polarity connection is mentioned in a number of places (I have not reproduced the formatting):
- i) Warnings on page 2, “Ensure correct polarity when connecting to vehicle”
 - ii) Features on page 3, “Total Safeguard Protection, Polarity & Surge Protection, Prevents sparking from accidental reverse connection, as well as protecting your vehicle from spikes in voltage levels.”
 - iii) Features on page 4 “Reverse Polarity Protection & Alarm, Prevents sparking from accidental reverse connection. The alarm sounds when the jumpstarter clamps are connected incorrectly.”
 - iv) Specifications on page 5 “Polarity Protection, MCU controlled solenoid” (same for both models).
 - v) Product Overview on page 6 – “Reverse Polarity Protection & Alarm”
 - vi) Vehicle Jumpstarting Instructions on page 7 “Connect the Red Positive (+) clamp to the positive (+) terminal of the battery in the vehicle and the Black Negative (-) clamp to any non-moving metal part of the engine block. DO NOT CONNECT TO FUEL LINE. Always double check that you have the proper connections.

If the jumpstarter fails to start your vehicle refer to the LCD screen for any error it may indicate & check that the clamps are correctly connected with good contact. If the vehicle’s battery is below 1.2V ensure all connections are correct and then press the OVER RIDE button to manually engage the jumpstarter.”

130. Override is mentioned in a number of places:
- i) Specifications on page 5 “Override 0V-1.2V” (same for both models).
 - ii) Product Overview on page 6 “Override Button”.
 - iii) The same section on page 7 as referenced above in relation to polarity.

131. The evidence and argument also touched on the passage on page 3 “Under & Over Voltage Protection, The jumpstarter will deactivate and sound an alarm if connected to a battery of a different voltage to the setting of the jumpstarter, preventing reverse charge and damage to the jumpstarter battery. This feature will also disconnect the jumpstarter if the vehicles [sic] alternator is malfunctioning with high voltage.” In closing, Mr Abrahams drew my attention to the small inset photograph at the bottom left of page 6 which has a 12V/24V selector switch “(HP2200 Only)”.
132. I was also referred to paragraphs 5a and 5b on page 7 which tie in with the absence on the HP2012 of the 12V/24V selector switch.
133. Finally, reference was made to some of the status indications on the LED display, as shown on page 8, in particular those for Reverse Connection, Positive (Red) Clamp Connected, Negative (Black) Clamp Connected, and Jumpstarter Connected.

Assessment

134. I will use the *Pozzoli* analysis. I have dealt with the skilled person and the CGK above and so that addresses *Pozzoli* questions 1 and 2.
135. In relation to *Pozzoli* question 3, the steps in relation to claim 1 are that Projecta does not say whether there are two sensors or only one, and if, there were two, whether they both would be inputs to the logic for closing the connection. In relation to claim 19, the manual is silent as to whether the override allows a connection when a battery is connected with reverse polarity; it expressly does allow a connection when the battery is severely depleted.
136. In closing, Mr Cuddigan organised his submissions by dealing with claim 19 first. NOCO’s written closing dealt with claim 1 first, but in his oral submissions Mr Abrahams was content to switch the order. I think it is more logical to deal with the features of claim 19 first in this way. The reason is that it corresponds to the skilled person first working out what functionality Projecta disclosed or rendered obvious, and then thinking about how to implement it in circuitry. But whether or not I am right about that, it was not suggested by NOCO that it gave Carku an unfair advantage or injected hindsight or anything like that.

Claim 19 features

137. Projecta clearly says that there is override. It is also plainly a manual one – there is a button to implement it.
138. The override is taught to be for use where the vehicle battery is between 0 and 1.2V (see pages 5 and 7). It is plain that this is a “thumbs down”, so it must be overridden. I do not think there was any real dispute about this reasoning.
139. On Carku’s interpretation of claim 19, which I have accepted, that is enough to make claim 19 obvious if claim 1 is.

140. However, the question remains of what should happen if the battery is connected with reverse polarity and then the override is used. I need to determine this in case I am wrong about construction.
141. Carku submitted and put to Prof Mitcheson that given the many warnings in Projecta about reverse polarity and the assurance that sparking in the event of reverse polarity is avoided, it would be irrational for the override not to prevent the connection closing in the event of reverse polarity. He eventually said “yes” to the question “So, much the better interpretation of the document as a whole is that the Projecta has an override of only the isolation sensor?”.
142. Prof Ricketts supported Carku’s case, but he did not appreciate significant parts of the Projecta manual said to support it until very late in the day, critically in an amendment to his written evidence made in oral evidence in chief, after he had heard Prof Mitcheson’s oral evidence.
143. The lateness with which some of Prof Ricketts’ reasons came does undermine them, but it does not justify dismissing them out of hand without assessing them.
144. In my view, it would be obvious for the skilled person to seek to implement the override in a way consistent with the teaching and objectives of the Projecta manual as a whole, and overall I think it was made out that the emphasis on safety and avoiding reverse polarity problems would lead the skilled person who put an override in place to design the product not to permit the connection to close in a reverse polarity situation. Looking ahead to the language of claim 1, that would mean that if there were two sensors (something I am yet to consider) it would be obvious to override the VBIS and not the RPS.
145. In reaching this conclusion, I am accepting the eventual view of both experts. The exercise is not purely one of what the words in the manual mean, but of what would be considered technically sensible. So evidence is admissible and I find it very relevant. It is a curious and unusual feature of the case that both experts initially thought the override was a total one and changed their minds to the view that it was partial. But I think I would need extremely powerful reasons to differ from the view that they both expressed to me in their oral evidence. I also acknowledge that their earlier views were not irrational, in the light of their thinking that there were CGK devices with total overrides, but that does not mean that every device had to be of that kind and there was nowhere near a mindset that every device had to have a total override.
146. I also note, and have considered, Mr Abrahams’ submission that the cross-examination of Prof Mitcheson on this point was informed by hindsight. I do not think it was. It was a fairly straightforward review of what the Projecta manual said, an eliciting from Prof Mitcheson that reverse polarity connection would be very dangerous and seen as such, and then putting to him that in that light it would not be expected that the connection would be able to be closed if there was reverse polarity.
147. My view is fortified by the fact that the device is not a very complicated one. There are only a limited number of sensors and only a few important conditions. I do not really see how a skilled person implementing an override could fail to

address themselves, if they were being systematic but uninventive, from thinking “override what”? And “what is the impact if there is a reverse polarity connection”? Thinking about these questions carefully but without invention would lead to their thinking of overriding for a severely depleted battery but not for a reverse polarity connection. There would be no difficulty in doing it.

148. As I have touched on, I recognise that it would be possible to put Projecta into practice with a total override; it could even have some advantages in terms of extreme simplicity, and possibly being usable when, for example, the MCU was stuck or broken. But it would be much less consistent with the thrust of Projecta with its emphasis on safety. The fact of a total override being possible does mean that the analysis is not an absolute one way street leading to Carku’s view of the override in Projecta, but at most it means there was another obvious option and does not cause me to doubt my conclusion.
149. I turn to the features of claim 1. My conclusion as to the obvious way to implement the override functionality in Projecta necessarily means that a signal indicating whether there was reverse polarity and a signal indicating whether an adequately charged battery was present would both have to be inputs to the microcontroller to determine whether to close the connection. That is the reason why considering claim 19 first was logical.
150. There remains the question of whether it was obvious to use two discrete sensors. Projecta is silent on this.
151. On this issue Prof Mitcheson maintained his oral evidence, that having two sensors was not obvious, and Prof Ricketts stuck to his position that it was. Of the two of them, Prof Ricketts gave much fuller reasons. Indeed, there were essentially no reasons given in Prof Mitcheson’s written reports. This leads me to have more confidence in Prof Rickett’s evidence as I move on to the specific points taken.
152. NOCO pushed very heavily the proposition that an XX/22 type of circuit could be used to provide a single sensor giving a continual signal from 0 to 5 V and which would convey both a VBIS signal and an RPS signal. I accept that that would work, and Prof Ricketts did not really disagree.
153. It was also pointed out to Prof Ricketts that the need to detect a battery of a voltage that did not match the setting on the charger would positively need such an XX/22 type sensor, or at least could not be achieved with two binary sensors. It was a well made point and I do not think Prof Ricketts had factored it in prior to his oral evidence. In oral closing submissions Mr Cuddigan sought to say that the functionality was not present in the simpler 12V-only HP2012 product because the voltage of the charger is not settable in that: see the references to pages 3, 6 and 7 above. That was not clearcut, though: the HP2012 could be connected to a 24V battery in which case a warning would be desirable, and it could be said that the HP2012 has a permanent 12V “setting”.
154. So this is a point in NOCO’s favour, and perhaps the best one, but it is by no means decisive.

155. For its part, Carku said that:
- i) Having two sensors to sense two conditions was an entirely natural thing to do.
 - ii) The Projecta device has a lot of sensors to indicate conditions such as which clamps are properly attached. This is true; it does not positively or necessarily mean two separate sensors for isolation and reverse polarity would be used, but it does negative any suggestion that the Projecta designers were scrupulously minimising sensors at all costs. It also means that an XX/22 circuit could not be a complete solution on its own.
 - iii) Two sensors would provide some redundancy.
 - iv) Fault analysis would support using two sensors.
 - v) The 1.2V lower limit for the automatic mode was consistent with its being an artefact of the limit of detection of an isolation sensor.
 - vi) Two binary sensors would avoid the need for an analogue-to-digital converter, giving a small saving.
 - vii) Digital sensors would be more resistant to noise.
156. Prof Mitcheson accepted the force of most of these points to at least some degree, although he rejected others (such as the noise point).
157. My strong impression from the written and oral evidence was that the choice of whether to have one sensor or two for the isolation and reverse polarity signals was a matter of routine implementation. There were pros and cons of both, but the choice was not an inventive one. It is entirely possible that using two binary sensors would end up with the device having more sensors in total (once provision was made for dealing with the voltage mismatch issue) compared with having an XX/22 type circuit and maximising its function, but there would be countervailing benefits. None of the factors that I have identified above would be particularly strong, and nor would it be anything out of the ordinary to balance them up.
158. I have mentioned above that Prof Mitcheson's written evidence was light on reasons. When pressed for a reason why choosing to have two sensors would be inventive, he referred to his evidence on the Richardson prior art, which I am coming to next, where his view was that going from two sensors to one would be an obvious thing to consider. Of course, that is a move in the opposite direction and one cannot use Richardson to decide what was obvious over Projecta, but I accept Mr Cuddigan's general submission that Prof Mitcheson's evidence in this respect fortified the impression that this is all routine design work.
159. So I conclude that the use of two sensors was obvious. I would finally say that one has to be careful about obviousness attacks that something is "just a design choice" or "only implementation, not invention". Sometimes it conceals that the party making the obviousness attack does not have anything positive to say. But in the present case Carku and Prof Ricketts went into the detail more than enough

to satisfy me that this is a situation of non-inventive choice at the implementation level.

Richardson

160. Richardson is a US Patent application published in 2013.

Teaching

161. Richardson discloses a very fully featured and accordingly relatively complex “supplemental power” apparatus for engine batteries. One feature of significance that it offers is the ability to deal with batteries of different voltages. This means that it needs to be able to deal with the situation where the user sets the device to one voltage and then applies it to a battery of a different voltage.

162. I can explain the relevant teaching and operation by reference to the flow diagrams of the preferred embodiment (Figures 3, 4, 5, 6, 7 and 8 are relevant, but given the large amount of extraneous detail in them I do not reproduce them here). This is described in NOCO’s skeleton:

- i) Power on (figure 3, box 200) leads to a main process loop (figure 3, box 210).
- ii) The main process loop feeds into circle A, which leads to the calibration checks in figure 4 and to circle B in figure 3.
- iii) The RPS is checked at box 214 in figure 3, which leads to circle C only if the check is passed.
- iv) Circle C is shown in figure 5 and leads to a number of further checks, including a check that the MANUAL or AUTO button has been pressed and a VBIS check at box 252. If that check is passed, the flow continues to circle E.
- v) Circle E is shown in figure 6 and branches, depending on whether the device is configured in manual or automatic mode.
 - a) In automatic mode, there is a branch to box 260, after which the device waits for an ignition key turn to be detected by a drop in the vehicle battery voltage (boxes 262, 264) before closing the connection (box 268) and proceeding to circle F.
 - b) In manual mode, there is a branch to box 332, after which the device waits for the MANUAL button to be pressed a second time (box 334) before closing the connection (box 268) and proceeding to circle F.
- vi) There is then a sequence of post-connection closing safety checks, which are depicted below circle F (figure 7) and circle G (figure 8). If temperatures or currents rise inappropriately (thereby indicating a problem) the relay connection is opened and a fault is reported (boxes 278, 290 and 346).

163. As I say, much of the detail in the figures is unimportant. NOCO's above account is uncontroversial, and I will just stress a couple of points and add some explanation relevant to the claim features.
164. For assessing the validity of claim 1, the key points are that after "Power On" and entry into the Main Process Loop, there is a check at 214 of whether there is a reverse polarity connection, and this involves an RPS satisfying claim 1, feature (e) and the relevant part of feature (h) of the Patent. If not (i.e. no reverse polarity), the processing goes to the top of figure 5 and after some checks to 248.
165. 248 is a logical-or check. In other words, the check is for whether either MANUAL or AUTO button has been pushed. It does not matter which at this stage of the processing, although NOCO accepts that a register would be set storing the decision.
166. At 252 there is then a check for whether the vehicle battery voltage is in the correct range. There is no dispute that in automatic mode this is a VBIS for the purposes of claim 1. There is a dispute about what happens in manual mode, but I will come back to that when I deal with claim 19.
167. Processing then passes to Figure 6 and thence to Figures 7 and 8, and what happens there needs no elaboration or emphasis beyond NOCO's account above.
168. [0049] and [0050] are relevant to claim 19 and I deal with them further below.

Claim 1

169. Richardson has all the structural features of claim 1 and uses outputs from both an RPS and a VBIS to determine whether to close the connection.
170. There can be no anticipation of claim 1 because Richardson uses a relay instead of a FET to close the connection. I have also rejected the argument that the two are equivalent for the purposes of claim 1. However, NOCO accepted that the change from a relay to a FET would be obvious.
171. I will therefore move to obviousness and will again use the *Pozzoli* analysis.
172. As stated above, I have identified the skilled person and CGK, so have addressed *Pozzoli* questions 1 and 2.
173. For the purposes of *Pozzoli* question 3, I have noted that the relay/FET difference is not relied on by NOCO. The other difference NOCO relied on was that in both modes there is a delay after the VBIS is checked, and before the connection is closed. NOCO draws attention to the fact that Richardson has numerous post-connection checks shown in figure 7 and argues that it is accordingly a very different philosophy from the Patent, where the connection cannot be made (NOCO says) unless the RPS and VBIS are checked at the instant of connection (or momentarily before).
174. In dealing with the scope of claim 1 I found that a delay in connection after the checks of the RPS and VBIS does not take a product outside the claims, so this point cannot help NOCO and claim 1 is obvious over Richardson.

175. Lest I am wrong about that point on claim interpretation, I will go on to assess whether it would be obvious to change Richardson to remove the delay in automatic mode as Carku argues, i.e. I will assume that that is a relevant *Pozzoli* difference. There is no interaction between the relay/FET point and this one.
176. What the delay achieves in automatic mode is that the connection is not made until the user turns the ignition (causing the voltage drop that is tested for at 264). There is also a time-out after a specified period without the ignition being turned. The benefit of this is that it avoids a period between connection and ignition during which the device's battery would be being drained by charging the vehicle battery.
177. Prof Ricketts' evidence was that the delay had only the modest advantage identified in the preceding paragraph (which he admitted would be of some relevance if a user was jump starting numerous vehicles in sequence), that this came at the price of some complexity, and that it would be uninventive to implement the device in a simpler but functional way by doing away with the 262/264/265/267 loop. Carku characterised this merely as a commercial decision and hence uninventive.
178. I think one has to be careful about accepting too broadly as a proposition that any simplification must be obvious because the saving balanced against the loss of function is merely "commercial". It might be that removing a feature has knock on effects, or is inconsistent with some other aspect of a device.
179. In the present case, however, it was common ground between the experts that some simplification to Richardson would be considered by the skilled person. They differed on what.
180. Prof Mitcheson thus said that it would be obvious to remove the jump starter capacitors (Prof Ricketts agreed about this) or one of the reverse voltage or vehicle voltage sensors (the RPS or VBIS in the Patent's terms).
181. Prof Mitcheson did accept that it would be merely a commercial decision to remove the ignition voltage drop feature from Richardson if developing a simple 12V-only consumer type product from it. But he would not go further than that. This provides some support for the notion that at least the feature would be regarded as separable from the rest of the device's functionality.
182. I prefer the evidence of Prof Ricketts and his reasons. The delay followed by ignition voltage drop check is, I consider, very much in the "bells and whistles" category of feature. It is self-contained and provides a modest benefit at the price of some complexity. The skilled person would think it could be removed without any knock-on effect, and it would be an obvious thing to do to reduce complexity and cost.

Claim 19

183. I turn to claim 19.

184. The main argument on this claim turns on the interpretation of decision box 252 in Figure 5 (“Vehicle w/in Correct Range”) and of the first paragraph of [0049]: “If in manual mode, the jump starter **10** may be used when the battery voltage of the vehicle is below **10** volts, or if the vehicle’s battery is not connected.”
185. Carku also relied on the statement in [0050] that “If the battery does not hold the charge or if no battery is present, the system waits until the vehicle’s starter motor is engaged.” although I did not think it added all that much.
186. It should be noted, and as NOCO pointed out, that merely having a manual mode is not the same as having a manual override. Pushing the manual button in Richardson does not, as shown, override the vehicle voltage sensor (VBIS) signal. It appears that Prof Ricketts may have misunderstood this in his first report.
187. Carku’s case at trial, and based on Prof Ricketts’ later evidence was that upon reading [0049] and [0050] and the description of the 252 logic at [0034], the skilled person would immediately understand that when in manual mode the “Correct Range” would have a different lower limit than in automatic mode, to allow a jump start with a severely depleted or missing battery.
188. It will be recalled that Richardson is intended to work with different battery voltages. The experts were agreed that it would be important not to e.g. put the jump starter in 24V and then close a connection to a 12V battery, and that the test at 252 was directed to this. Prof Ricketts provided some possible numbers for different situations. The details are rather complicated because of the range of permitted actual voltages possible for a given nominal voltage, and because of the possibility of overlaps in ranges. Prof Ricketts accepted some shortcomings with the details of his numbers which I do not think are important; he was clear that he was seeking to illustrate thinking and not to cover all possible details.
189. What is important, however, is that in normal operation the lower limit of the permitted ranges would be well above 0 volts, and that would mean that if a severely depleted battery was present, or there was no battery at all, test 252 would return “No” and the connection could not be closed. Thus in the light of [0049] and [0050] Prof Ricketts said that Richardson must have meant that the lower limit of the Correct Range in manual mode must be different from that in automatic mode, allowing jump starting in manual mode with a severely depleted battery, or no battery.
190. There is clearly a poor fit between [0049]-[0050] and the processing shown in the flow diagrams. There is no way that the document as a whole can be described as clear and unambiguous and it does not set out what Prof Ricketts proposed. So Richardson does not expressly disclose the additional feature of claim 19 in the way Carku says. The question can only be one of obviousness.
191. In my view, the test at 252 and its associated explanation itself only actually teaches the use of a single range, the same range for manual and automatic mode. The skilled person would understand that that meant that the test at 252 would be failed with a severely depleted or absent battery. They would then see that at [0049] and [0050] they were told that the jump starter could be operated, in manual mode, with a severely depleted or absent battery. I do not think that the

skilled person would be thrown by this; they would understand that 252 made sense in general, and that [0049]-[0050] was not describing exactly how the Figures worked, but something additional or slightly different. The idea of an override would be one they were familiar with from the CGK and they would think it was attractive and desirable.

192. In this situation, the skilled person would think about how to implement an override in manual mode. I accept Prof Ricketts' evidence and Carku's case to the extent that once the skilled person realised that there was not an override at 252 as shown, but that one should be implemented in the product following the guidance of [0049]-[0050], a natural and easy way to do it would be to have a different, smaller, lower limit for each range in manual mode. There would no doubt be other ways to do it too and I am confident the skilled person could find one by routine means, but this one would just involve a software change and no additional hardware or sensing steps. I note that this also involves using information about which mode the jump starter is in at an earlier time point (252 rather than 258) but I think it is inconsequential to the argument and as I have said above, NOCO accepts that at 252 the mode has to be stored in a register.
193. This reasoning means that the RPS is not overridden; the test at 214 would still take place at an early stage.
194. I should also mention that NOCO had no answer to how an override as taught in [0049]-[0050] could be implemented without satisfying claim 19. During the cross-examination of Prof Ricketts I was surprised to observe that no case was put to him that it could and I went so far as to ask Mr Abrahams if he wanted to do so. He said he would deal with it in closing oral submissions. He did so, and his argument was that it was enough for NOCO to demonstrate that Prof Ricketts' positive proposal was deficient, and it did not need to go any further. I do not accept this. It is unrealistic to suppose that the skilled person could not implement the override at all (and that was not put), and if they could then picking holes in Prof Ricketts' evidence on the flow diagram does not help unless there could be a sensible option not leading to claim 19.
195. So claim 19 is also obvious over Richardson, including on NOCO's narrow interpretation.

Krieger

196. Since I have found the Patent invalid over Projecta and over Richardson, the attack over Krieger, which I reject, does not matter to the result and I will give my reasons only briefly.
197. Krieger is a jump starter so it is in the right field of technology. Key to Carku's case is Figure 5:

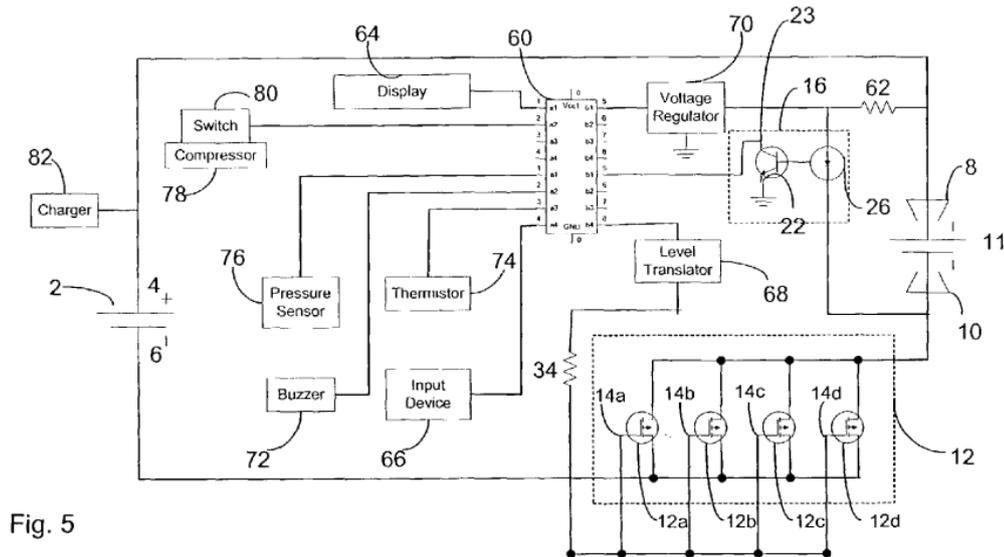


Fig. 5

198. This has an opto-isolator at 16. It is a binary sensor. The battery of the vehicle to be jump started is at 11, and the connection to allow jump starting is controlled by switch 12, an array of FETs.
199. Carku made various attacks based on the opto-isolator in combination with the feedback circuit referred to in paragraph [0044], with particular weight on the resistive divider described there.
200. [0044] also refers to faults being described on a scrolling message. At the end of [0045] there is then a reference to the jump starting being terminated in the event of a fault being detected.
201. [0047] refers to the switch 12 remaining off if the clamps are in place with the wrong polarity and refers again to a message (or an alarm).
202. [0048] refers to the detection of a disconnection; this requires deactivating the switch into a non-conducting state, and that reflects the fact that Krieger is generally describing a situation where the jump starter latches open once a connection is made.
203. Carku's case as developed through Prof Ricketts went through significant changes. It started off by designating the opto-isolator as an RPS and the "feedback circuit" of [0044] as the VBIS. By closing it was putting the case the other way around and saying that the opto-isolator was the VBIS and the feedback circuit was the RPS, or at least could be. A problem with this, though not the only one, was that the opto-isolator would prevent the switch closing, as is stated at the start of [0047]. Carku suggested that that was discussing what the feedback circuit did, but I understood Prof Ricketts to accept what NOCO said. More generally, the impression one gets is that the document promises no more than an alert or a message from the feedback circuit in the event of reverse polarity.
204. Leaving aside those specific problems, the difficulty with Krieger is that while it contains bits of teaching which might conceivably be understood to be

components that individually could make up that which claim 1 of the Patent requires, their relationship to one another is obscure. The feedback circuit, of course, is not even shown in Figure 5.

205. I formed the very clear impression that it was only with the benefit of hindsight that one could begin to assemble the individual bits of teaching the way for which Carku contended. The whole attack was unconvincing.
206. As to claim 19, that does not arise since Krieger does not make claim 1 obvious; however, had it been obvious to implement Krieger as Carku suggested so as to fall within claim 1, it would also have been obvious to have some sort of override so as to be able to use it with a severely depleted battery and that would have hit claim 19 on Carku's construction, which I accepted. But it would not have been obvious to combine Krieger with Projecta's override since that was not CGK itself and since I rejected the collocation case.

THREATS

207. Carku says that NOCO's use of the Amazon UK IPR complaints procedure amounted to unjustified threats of infringement proceedings. NOCO admits using the procedure in respect of the products listed in Annex A to the Re-Re-Amended Particulars of Claim, but it defends the claim on the following basis:
- i) The notifications sent to Amazon UK do not amount to 'threats of infringement proceedings'; or
 - ii) In the alternative, the threats were justified because the Patent is valid and infringed by the products in question.
208. I have addressed ii) above and found that the Patent is invalid and for the most part not infringed. Accordingly, in this section I only have to consider whether the notifications submitted under the Amazon UK IPR complaints procedure by NOCO amounted to a threat of infringement proceedings.

The law of unjustified threats of patent infringement proceedings

Statutory provisions

209. The relevant statutory provisions are sections 70, 70A, 70B and 70C of the Act, as amended by the Intellectual Property (Unjustified Threats) Act 2017.
210. S. 70 defines "threat of infringement proceedings" as follows:
- '(1) A communication contains a "threat of infringement proceedings" if a reasonable person in the position of a recipient would understand from the communication that—
- (a) a patent exists, and
 - (b) a person intends to bring proceedings (whether in a court in the United Kingdom or elsewhere) against another person for infringement of the patent by

- (i) an act done in the United Kingdom, or
- (ii) an act which, if done, would be done in the United Kingdom.

(2) References in this section and in section 70C to a “recipient” include, in the case of a communication directed to the public or a section of the public, references to a person to whom the communication is directed.’

211. S. 70A(1) explains who can bring proceedings and provides an exception for permitted communications:

‘(1) Subject to subsections (2) to (5), a threat of infringement proceedings made by any person is actionable by any person aggrieved by the threat.

[...]

(5) A threat of infringement proceedings which is not an express threat is not actionable if it is contained in a permitted communication.

(6) In sections 70C and 70D “an actionable threat” means a threat of infringement proceedings that is actionable in accordance with this section.’

212. S. 70B defines permitted communications:

‘(1) For the purpose of section 70A(5), a communication containing a threat of infringement proceedings is a “permitted communication” if:

- (a) the communication, so far as it contains information that relates to the threat, is made for a permitted purpose;
- (b) all of the information that relates to the threat is information that:
 - (i) is necessary for that purpose (see subsection 5(a) to (c) for some examples of necessary information, and
 - (ii) the person making the communication reasonably believes is true.

(2) Each of the following is a permitted purpose:

- (a) giving notice that a patent exists;
- (b) discovering whether, or by whom, a patent has been infringed by an act mentioned in section 70A(2)(a); or
- (c) giving notice that a person has a right in or under a patent, where another person’s awareness of the right is relevant to any proceedings that may be brought in respect of the patent.

(3) The court may, having regard to the nature of the purposes listed in subsection 2(a) to (c), treat any other purpose as a “permitted purpose” if it considers that it is in the interest of justice to do so.

(4) But the following may not be treated as a “permitted purpose”:

- (a) requesting a person to cease doing, for commercial purposes, anything in relation to a product or process,
- (b) requesting a person to deliver up or destroy a product, or
- (c) requesting a person to give an undertaking relating to a product or process.

(5) If any of the following information is included in a communication made for a permitted purpose, it is information that is “necessary for that purpose” (see subsection (1)(b)(i));

- (a) a statement that a patent exists and is in force or that an application for a patent has been made;
- (b) details of the patent, or of a right in or under the patent, which:
 - (i) are accurate in all material respects, and
 - (ii) are not misleading in any material respect; and
- (c) information enabling the identification of the products or processes in respect of which it is alleged that acts infringing the patent have been carried out.’

213. S. 70C provides the remedies and defences:

‘(1) Proceedings in respect of an actionable threat may be brought against the person who made the threat for:

- (a) a declaration that the threat is unjustified;
- (b) an injunction against the continuance of the threat;
- (c) damages in respect of any loss sustained by the aggrieved person by reason of the threat.

[...]

(3) It is a defence for the person who made the threat to show that the act in respect of which proceedings were threatened constitutes (or if done would constitute) an infringement of the patent.

[...]

214. It is necessary to consider the validity of a patent in order to assess whether the defence in s. 70C(3) is made out. An invalid right cannot be infringed; therefore a threat made in respect of it cannot be justified (*Organon Teknika v Hoffman – La Roche* [1996] FSR 383, at 386).

The definition of a “threat”

215. The question of whether a communication is a threat must be considered objectively: *Best Buy v Worldwide Sales Corp España* [2011] EWCA Civ 618 and *Generics (t/a Mylan) v Warner-Lambert* [2015] EWHC 2548 (Pat). Both *Best Buy* and *Mylan* were decided before the 2017 amendments to the Act came into force, and *Best Buy* is a trade mark case, but it was common ground before me (and I agree) that they are applicable generally to the question of whether a communication is a threat in the relevant sense.

216. In *Best Buy*, the issue was whether inter-solicitor correspondence seeking undertakings to refrain from using a trade mark during a period of negotiation contained a threat of infringement proceedings within the meaning of s. 21(1) of the Trade Marks Act 1994. The judge at first instance had held that while the

letter (referred to in the proceedings as the “September letter”) contained a threat of infringement proceedings, it could not be relied upon as it fell within the protection of the “without prejudice” rule by virtue of containing settlement proposals. On appeal to the Court of Appeal, one of the issues was whether the judge had been right to hold that the September letter contained a threat of infringement proceedings.

217. In considering the claim, Lord Neuberger of Abbotsbury MR, with whom Etherton and Patten LJ agreed, held that this question was to be answered by reference to the reasonable person in the position of the recipient:

‘18. In my view, insofar as such question turns on the meaning of any particular passage in the September letter, it is to be answered by reference to what a reasonable person, in the position of the recipient of the letter, with its knowledge of all the relevant circumstances as at the date the letter was written, would have understood the writer of the passage to have intended, when read in the context of the letter as a whole. That approach is consistent with principle in the light of the recent authoritative decisions on the interpretation of contracts and unilateral documents— *Mannai Investment Co Ltd v Eagle Star Assurance Co Ltd* [1997] A.C. 749, 775–780; *Investors Compensation Scheme v West Bromwich Building Society (No.1)* [1998] 1 W.L.R. 896, 912–913; *Kirin-Amgen Inc v Transkaryotic Therapies Inc (No.2)* [2005] 1 All E.R. 667; [2005] R.P.C. 9 at [27]–[34]; and *Chartbrook Ltd v Persimmon Homes Ltd* [2009] 1 A.C. 1101 at [14].’

218. Lord Neuberger then went on to hold that threats do not need to be express:

‘20. It is well established that it is unnecessary for a claimant in a case such as this

“to prove that the defendant has in so many words said: ‘I intend to issue a writ against you for infringement ...’. The terms of the Act are satisfied if the defendant in the action is proved to have asserted that he has legal rights in respect of the [intellectual property] and that he intends as against the [claimant] to enforce those rights” – per Romer J in *John Summers & Sons Ltd v Cold Metal Process Co* (1948) 65 R.P.C. 75, 95, quoting in turn from Bennett J. in *Wilson & Bates Ltd v Tilley Lamp Co* (1944) 61 R.P.C. 8 at [11].

The notion that s.21 does not require an intimation to be highly specific before it can constitute a threat is to my mind supported by the inclusion of subs.(4): if a threat was envisaged as having to be clear and express, there would have been no need for such a provision.

21. I also agree with the judge that the guidance given in *L’Oréal (UK) Ltd v Johnson & Johnson* [2000] F.S.R. 686 at [12], by Lightman J. is helpful as to what constitutes a “threat” in this context:

“The policy represented by the first statutory threats provision ... was clearly to stop patentees who were (in Pope’s words about Addison) ‘willing to wound but afraid to strike’ from holding the

sword of Damocles above another's head: see Simon Brown LJ in *Unilever Plc v Procter & Gamble Co* [2000] 1 W.L.R. 2436, [2000] F.S.R. 344 . . . In summary, the term 'threat' covers any information that would convey to a reasonable man that some person has trademark rights and intends to enforce them against another. It matters not that the threat may be veiled or covert, conditional or future. Nor does it matter that the threat is made in response to an enquiry from the party threatened. . . . ' .'

219. A clear summary of the law was provided by Arnold J, as he then was, in *Mylan*:

'693. Whether a communication amounts to a threat depends on how it would be understood by an ordinary reasonable person in the position of the actual recipient: see *Terrell on the Law of Patents* (17th ed) at §§22–11 and 22–12 and the cases cited. The ordinary reader will take into account all of the relevant circumstances known to the parties at the date of the communication: see *Best Buy Co Inc v Worldwide Sales Corp Espana SL* [2011] EWCA Civ 618, [2011] FSR 30 at [18] (Lord Neuberger of Abbotsbury MR). A communication may amount to a threat even if it is veiled, covert, conditional or future: see *L'Oreal (UK) Ltd v Johnson & Johnson* [2000] FSR 686 at [12] (Lightman J). A general warning not to infringe a patent is not a threat, but it is otherwise if the warning would be understood to refer to the products of a specific manufacturer, importer or vendor: see *Terrell* at §22–20.

694. In order to be a person aggrieved by a threat, the claimant must show that its commercial interests have been, or are likely to be, adversely affected in a real, as opposed to a fanciful or minimal, way: see *Brain v Ingledew Brown Bennison Garrett (No 3)* [1997] FSR 511 at 520 (Laddie J). Where the threat was made against the claimant, this will normally be inferred: see *Best Buy* at [46], [51].'

220. Carku also relied on the decision of Lewison J, as he then was, in *Zeno v. BSM-Bionic Solutions* [2009] EWHC 1829 (Pat). Lewison J made (at [95]) a similar point to that made in *Best Buy* about the carve-outs from the main provision suggesting a broad definition of "threat". I accept that. I also accept that while he was dealing with the pre-2017 version of s. 70, the logic applies with at least as much force post-amendment. Carku suggested that *Zeno* was also authority for the proposition that a request to stop selling a product is a threat. I do not accept there is any black and white rule about that; the question is whether there is a threat. Such a request may well be a threat and the communication in *Zeno* plainly was.

221. It was common ground between the parties that if the other elements of the threats claim were made out, then Carku would be a "person aggrieved". So there was no relevant dispute about the law on that.

Case law on alleged threats made via an online IP complaints portal

222. As mentioned above, NOCO admits using the Amazon UK IPR procedure in respect of the relevant Carku products, but contends that notifications sent to Amazon UK do not amount to ‘threats of infringement proceedings’.
223. There have been not yet been any cases in England & Wales relating to the Amazon IPR procedure. However, similar issues have arisen at an interim stage in relation to eBay’s VeRO (Verified Rights Owner) programme.
224. The issue was first considered by Pumfrey J, as he then was, in *Quads 4 Kids v Campbell* [2006] EWHC 2482 (CD).
225. *Quads 4 Kids* concerned an application to restrain the making of threats of proceedings for infringement of Community design rights. The defendant in that case, Dr Campbell, had notified eBay that he was the registered proprietor of certain registered Community designs, with the result that some of the Claimant’s eBay listings were removed. This was explained by Pumfrey J as follows:

‘11. The way in which it happens is like this. eBay provides something called VeRO, which is a programme intended to assist the owners of intellectual property rights in policing their rights. It is described in a page or two on the eBay website, which reveals that VeRO stands for Verified Rights Owner, and also reveals that the scheme, apparently, counts amongst its participants over 10,000 companies and individuals representing every type of intellectual property. What VeRO is said to do in particular is to provide rapid response by eBay in ending listings reported by the right owner, as allegedly infringing pursuant to the VeRO programme notice of infringement.’

and

‘14. eBay and VeRo do not check allegations of infringement. They are not in any position to do so, nor are they a judicial body. The effect is, therefore, that this notification to VeRO has the effect, and did have the effect, of causing a listing to be removed. The listings, as I have indicated, all have numbers, so Dr Campbell is enabled to give the number of the claimant’s listings. In due course, the claimants received a notification from eBay – in not entirely friendly terms – telling them that the specified items had indeed been removed from the listing:

“Dear Quads4Kids, thank you for your recent listing on eBay. Unfortunately, we removed the following items”,

and they are listed. Then underneath that,

“The rights owner, Dr Colin Campbell, notified eBay that this listing violates intellectual property rights. When eBay receives a report of this type of violation, we remove the listing to comply with the law. The following information may help explain the reason for your listings removal”,

and there is no such information provided, but at the bottom it says

“We encourage you to contact Dr Colin Campbell directly if you have any questions.

You can send an email to [a given address].”

226. The issue before Pumfrey J was limited to whether it was *arguable* that there was a threat in the notification to eBay. In this regard, he considered how the notifications would be perceived by (it can be inferred, the reasonable person in the position of) eBay:

‘26. The representation that was made to eBay is, it might be said, consensual in this sense, that eBay offer a service whose purpose is to avoid eBay being involved in disputes with right owners. eBay take the line of least resistance. They insist upon a proper notification but, once the proper notification is made, they remove the listing. They do not themselves check the bona fides or accuracy of the notification. They rely upon the notifying person for that, but they say if we get a well-constituted notification, then we will remove the listing.

27. Mr St Ville argues, I believe with considerable force, that what can be described as an institutionalised avoidance of litigation is a response in fact to a threat. After all, he says, if there were no threat implicit in the statement that was made to eBay, why would they withdraw the listing even by way of a standard response to any notification of this description. On the other hand, it might well be argued, if you went to eBay and said ‘do you really fear being sued in relation to all these notifications?’, they would have to say no.’

227. In the circumstances, Pumfrey J was satisfied that there was arguably a threat in the notification to eBay. However, it is clear that Pumfrey J found this, in his words, “*a remarkably difficult question*” (at [28]).

228. Notifications made under eBay’s VeRO programme were considered again by Mr Richard Spearman QC (sitting as a Deputy Judge of the High Court) in *Cassie Creations v Blackmore & Mirrorkool Limited* [2014] EWHC 2941 (CH).

229. One of the issues before Mr Spearman QC was whether certain notifications sent to eBay pursuant to the VeRO programme amounted to a threat in accordance with s. 26 of the Registered Designs Act 1949 (as amended) and s. 253 of the Copyright, Designs and Patents Act 1988. The issue arose in the context of a summary judgment application, so again the court only considered whether the issue was one which needed to be tried.

230. Mr Spearman QC considered the submissions that the notifications to eBay constituted a threat “*much more persuasive*” (at [30]), but did not order summary judgment on behalf of the claimants. He reached the view that the issue was triable “*not without some hesitation*”, partly because of the cautiousness in Pumfrey J’s judgment in *Quads 4 Kids* (as cited above) and partly because he was

not persuaded he had all the necessary evidence before him to make an assessment of how the VeRO programme operated in fact (at [31]).

231. The final authority on eBay's VeRO programme is *T & A v Hala* [2015] EWHC 2888 (IPEC), a case before Mr Douglas Campbell (sitting as an IPEC Judge). This was also a case under s. 26 of the Registered Designs Act 1949 (as amended). In that case, Mr Douglas Campbell did not need to make a final determination on whether notifications under the VeRO programme constituted a threat and declined to do so, holding only that his provisional view was the same as that of Mr Spearman QC in *Cassie Creations* (at [81]).
232. These decisions are obviously of interest because of the similarity of the factual situations there to the present case. But in terms of legal principle the conclusion I draw from them is no more than that the question is whether, objectively speaking, there is a threat of legal proceedings, and that that depends on all the facts. Pumfrey J's intuitive sense that it was very likely that there was a threat deserves a great deal of respect coming from such an experienced judge, and it is entirely understandable given the policy behind the threats provisions and the broad notion of "threat" referred to above. At the same time, he clearly recognised that it was *possible* that in the right factual context a consensual request to remove a product from sale might be no more than that, and not a threat, if the recipient was confident there was no chance of being sued.
233. I would also note that I am unable to determine whether Amazon's policy and approach is materially the same as that of eBay. I strongly suspect there are real differences. In any event I think it would be impractical and wrong in principle to assess the case before me by comparison with the facts in the eBay cases. I need to work on the facts before me.

Amazon's IPR procedure

234. The facts can be summarised as follows:
- i) Amazon has an "Amazon Intellectual Property Policy" which states that it provides protection and safeguarding measures for intellectual property rights holders. Under this policy, any proprietor of intellectual property rights is able to file complaints with Amazon via its website using an "Infringement Form".
 - ii) Amazon also operates what is called a "Brand Registry", which companies have to register to use (i.e. it cannot be accessed by all rights owners as a matter of course).
 - iii) NOCO has a first party ("1P") relationship with Amazon (meaning that Amazon buys products directly from NOCO to sell on Amazon's own account) and is registered with the Brand Registry. NOCO's status as a 1P partner also means that NOCO has been allocated a contact person at Amazon, referred to in NOCO's evidence as a category manager.

- iv) Despite the fact that Amazon’s Brand Protection Report appears particularly focused on “brands” and “counterfeits”, Amazon’s Brand Registry covers all IPR, including patents.
- v) Between January and July 2020, NOCO made a number of complaints via the “Infringement Form” in respect of the relevant Carku products, providing the following information:
 - a) The Type of IPRs, e.g. ‘patent infringement’;
 - b) The marketplace (i.e. country);
 - c) The infringing ASINs (Amazon Standard Identification Number);
 - d) The patent number;
 - e) The patent type (i.e. for those countries which have both design and utility patents); and
 - f) The brand name.
- vi) The form also has an ‘Additional Information’ field of up to 3000 characters.
- vii) NOCO did not retain a copy of the complaints it made. However, during the course of the proceedings, they obtained a document from Amazon containing the words which had been provided in the “Additional Information” field. For the majority of the complaints, this wording was a version of:

“These ASINs infringe on our utility patent, number GB2527858.

Please remove these ASINs.”

or

“The registration number for our utility patent is GB2527858. Please remove these ASINs.”

- viii) However, in relation to complaints made in July 2020, the wording was a version of:

“These ASINs infringe on our patent. We have a legal letter from Amazon's legal team stating the legitimacy of this claim. I will escalate [sic] this case to provide that letter. Please remove these ASINs.”

- ix) The reference to a letter from “Amazon’s legal team” is a reference to a letter dated 12 May 2020 sent by Hogan Lovells (solicitors for Amazon) to Carku’s solicitors, Powell Gilbert. This was sent following correspondence between Amazon and Carku (not all of which was shown to me, I think), in relation to Amazon’s decision to delist following the notifications made by NOCO. In this letter, Amazon indicated that it had “*assessed the patent infringement and the other allegations presented by each party*” and “*concluded that those made by NOCO regarding the infringement of its*

patent (and the non-infringement of Car-ku's [sic]) are sufficiently grounded...".

- x) As a result of the notifications made by NOCO, Amazon delisted a number of Carku products (as listed in Annex A to the Re-Re-Amended Particulars of Claim).
235. It should be noted that Carku also complained about infringement by NOCO's products of its patents, with much less success. One point heavily relied on by Carku was that NOCO was able to get its products back on sale through Amazon only by giving Amazon an indemnity.
236. There was also communication between NOCO and Amazon about NOCO's having sued third parties. In particular, Carku referred me to the following email from Mr Nook of NOCO to Amazon in February 2020:

From: Jonathan Nook <[REDACTED]>
Sent: Monday, February 3, 2020 1:22 PM
To: Aksoy, Ugurcan <[REDACTED]>
Cc: Bovaro, Pier Carlo <[REDACTED]>
Subject: Re: NOCO - Patent Issue

Carku has never brought a case against NOCO for these patents as they are not relevant to our products. We do continue to file lawsuits against companies that infringe on our safety patent. Some of those companies are [REDACTED] Gooloo, [REDACTED] Audew with new lawsuits being filed against [REDACTED], Autown and many others. We have won cases against [REDACTED] and eached a settlement agreement with [REDACTED], which is why we do not include them on the utility patent takedown.

237. This was a few days before another batch of notifications from NOCO to Amazon. The context was Mr Nook seeking to persuade Amazon that Carku's allegations that NOCO's products infringed Carku's patents were not to be taken seriously, but that NOCO was serious about its patents. The emphasis on continuing to file lawsuits against named companies "and many others" is strong and striking.

Submissions made by the parties

238. Because the notifications must be understood according to how they would have been perceived by the reasonable person in Amazon's position, neither party adduced evidence as to Amazon's subjective views. I have understood submissions as to what Amazon considered or perceived to be references to what the parties submit that a reasonable person in Amazon's position would have considered or perceived; likewise in this judgment.
239. Carku went further and submitted (relying on *Zeno*) that because the communications have to be interpreted according to what a reasonable retailer would understand by them, Amazon's particular set-up, and in particular its IP policies, are irrelevant. I reject this. What is left out of consideration is the subjective thoughts of the recipient, but their commercial arrangements and procedures are objective matters and relevant if they would condition how the communication would be understood.

240. Carku's case is that the notifications made by NOCO were threats of patent infringement against Amazon itself, and if not against Amazon then at least against the distributors of Carku's products. Carku submitted that the whole purpose of NOCO's patent is to control competition by third parties, which evidences a *prima facie* intention to exercise its patent rights. Carku also pointed to NOCO's and Carku's status as competitors, both with products for sale via Amazon's UK website (although by different arrangements). When Carku's products were removed from sale, NOCO benefitted.
241. Both parties sought to address the question of Amazon's reasons for choosing to de-list the notified products. Carku submitted that the starting point for answering that question was to consider Amazon's default position, which it said was to give customers an enormously broad product offering via its website (driven by obvious economic incentives). Amazon's decision to deviate from its preference for this broad product offering can only be explained, it was submitted, if Amazon was seeking to protect itself from the possible consequences of dealing in impugned products. Carku submitted that if the patent were valid, then Amazon itself would have carried out infringing acts by disposing of and offering to dispose of the products that fell within the scope of the Patent's claim. Accordingly, by de-listing the notified products, Amazon was mitigating against its own liability and cooperating with patentees in order to reduce the chances of itself being sued. Carku submitted that this was consistent with Amazon perceiving the notifications as threats of patent infringement proceedings.
242. Carku sought to strengthen this argument by pointing to events that occurred when Carku notified Amazon that some of NOCO's products were infringing. I have touched on this above. Apparently, on that occasion, Amazon chose to de-list some of the relevant products, but offered NOCO a route to reinstatement if NOCO provided an indemnity to Amazon. Carku says that the terms of that indemnity only made sense if Amazon perceived the notifications from Carku as threats of infringement proceedings. However, I note that I did not have before me the wording of the notifications made by Carku in that case, which are likely to have informed Amazon's reaction.
243. Finally, Carku made a "floodgates" argument. It said that if notifications via online IP complaints portals were not caught by the law against unjustified threats of patent infringement, then there would be no downside to excessive notifications by rights holders, and there would be no basis upon which an aggrieved party could recover its losses where the notifications were misconceived.
244. NOCO also addressed Amazon's reasons for choosing to de-list the notified products. In NOCO's submission, the starting point to answer this question should be Amazon's customer-centric approach to intellectual property rights infringement. It pointed to several quotes from Amazon's Intellectual Property Rights Policy (e.g. "*Amazon is dedicated to providing customers with the widest selection of goods on Earth and creating an amazing customer experience. Amazon does not allow listings that violate the intellectual property rights of brands or other rights owners*") and Amazon's "Brand Protection Report", setting out Amazon's anti-counterfeiting efforts. NOCO submitted that Amazon's approach is customer-centric and the purpose of its IPR procedure is to protect

consumers from infringing products. Therefore, notifications made via the Infringement Form are not perceived as threats, but “*a welcome bit of assistance in its customer-centric goal to achieve zero IPR infringements on its website*”.

245. Accordingly, NOCO submitted, Amazon sees itself as an arbiter and enforcer of intellectual property rights, not as a potential infringer and defendant itself to a complaint. Among other things, NOCO pointed to the fact that sellers may submit “appeals” against warnings or notices of infringements. Amazon also operates a scheme called “IP Accelerator”, which is aimed at helping entrepreneurs obtain professional legal assistance to enforce their intellectual property rights, which NOCO submitted is inconsistent with the suggestion that Amazon would be concerned that it would be sued itself. NOCO also pointed to a “Patent Neutral Evaluation Procedure” scheme offered by Amazon in respect of US patents. These factors, NOCO submitted, are consistent with its submission that Amazon does not perceive itself as the target of the complaints submitted through the IPR procedure, but as an enforcer of intellectual property rights.
246. NOCO also submitted that, in any event, the notifications needed to be perceived within the context of the IPR procedure as a whole. It said that the notifications are only the first step. There is also a further form which allows rights owners to “escalate” an infringement issue. This allows further documents to be submitted, which I understand is in fact what NOCO did in respect of the notifications made in July 2020, in order to provide a copy of the Hogan Lovells letter dated 12 May 2020. Amazon also has the power to request further information from the rights owner in respect of the notification. NOCO submitted that Amazon would at least expect a letter from a lawyer before it considered that there was any danger of infringement proceedings. In the specific case of notifications made by NOCO, it was submitted that Amazon would not understand there to be any danger of infringement proceedings unless this was communicated through the category manager and followed by solicitor correspondence, in particular having regard to how important the Amazon relationship is to NOCO commercially.
247. NOCO also sought to rely on the fact that, prior to the notifications which are the subject of these proceedings, Amazon had rejected circa 30% of NOCO’s notifications. I did not have copies of those rejected notifications before me. It was said that because those previous rejections had not resulted in any infringement proceedings against Amazon, this meant that Amazon would have known that when NOCO made its request for Carku’s products to be removed, it was not implying that Amazon would be sued if they did not comply with that request.
248. NOCO’s submissions were focused on whether the reasonable person in the position of Amazon would have perceived the notifications as a threat of infringement proceedings against *Amazon*. However, it was common ground before me that s. 70 does not require that the threat of infringement proceedings be a threat of proceedings against the *recipient*. In other words, it is sufficient that the reasonable person in the position of the recipient of the threat understands from the communication that proceedings are intended against “another person”. In response to this, NOCO submitted that Amazon would not turn its mind to or care whether NOCO was going to sue the sellers of the notified products or not.

NOCO went so far as to submit that if Amazon thought about the matter, it would conclude that NOCO was using the IPR policy as an alternative to litigation.

249. In a nutshell, and drawing these points together, NOCO's central point was that its communications with Amazon did not amount to the threat of *legal proceedings*.

Analysis

250. The relevant communications assert the existence of patent rights, assert infringement of those rights, and call for action to be taken to end the alleged infringement. In most contexts they would be classic threats. I have to consider the present context.
251. The high point of NOCO's case is Amazon's IPR policy, but for it to work as a defence to threats, it seems to me that it would have to be shown that Amazon delists automatically in response to any patent infringement assertion without regard to its own legal position. Then NOCO could argue that Amazon does not feel threatened with legal proceedings because its response is pre-ordained by its own policy.
252. I do not accept that that is how Amazon's policy works; at least it is not so black and white. I observe that the Amazon documents put in by NOCO are outward-facing. They seek to portray Amazon in the best light. There is nothing wrong with this of course, but it benefits Amazon to stress its desire for zero "counterfeits" and not to go into its own self-interest. I also accept Carku's submission that patent complaints are not the same as complaints about "true" counterfeits in the sense of forgeries. The latter defraud Amazon's customers and the former do not.
253. Furthermore, the fact that Amazon sometimes does allow products to remain on its market following a patent complaint (the 30% of NOCO's complaints against Carku rejected, the allowing of NOCO to keep selling with the provision of an indemnity) strongly suggests that it is not all-or-nothing and that the patent risk to Amazon, weighed against its desire to sell all that it can, enters the frame. I do not know the full details of the 30% rejected complaints – perhaps they were obviously absurd – or the context of the indemnity offer, in particular what had Carku said on that occasion, but there is more than enough there to divine that Amazon makes a judgment in its own self-interest (and hence the policy is not just to delist blindly). That is no more than one would expect from a tough, powerful, profit-driven organisation like Amazon.
254. I recognise that NOCO's evidence is that it would never sue Amazon. That may well be true, but Amazon does not know that. Amazon might well make a judgment that it is *unlikely* to be sued by any 1P vendor. But if it sold enough of an alleged infringing product then how is it to know that NOCO might not give in to greed or commercial necessity and sue? Certainly, I was not pointed to any reassurance by NOCO to Amazon that it would never sue. And from quite an early stage the whole situation was freighted with legal positions being taken: Amazon had instructed Hogan Lovells who were communicating with Powell Gilbert for Carku. I am not sure if any of NOCO's considerable array of lawyers

were identified by name, but NOCO did provide claim charts to Amazon, which has the strong flavour of lawyers being in the background at least.

255. Taking these matters together, I have little or no hesitation in concluding that the communications to Amazon were threats of patent infringement proceedings against Amazon in the event that it did not delist Carku's products.
256. That deals with threats against Amazon itself. Even if I were wrong about that, the position in relation to third parties is absolutely clear given the communication of February 2020 quoted above. NOCO had no rational answer to it. Amazon would understand that if it carried on selling, NOCO would be ready willing and able to sue the relevant third party distributors.
257. NOCO accepted that if I found that the communications were threats within the meaning of s 70 then I should order an inquiry as to damages which I will do. At the PTR it was apparent that there was likely to be a dispute about the proper scope of injunctive relief and I will hear argument on that in due course – see the last paragraph below.
258. For the reasons given above, this is a finding based on the facts before me. It is not a general finding about online markets. Carku's floodgates argument does not arise.

CONCLUSIONS

259. My conclusions are:
 - i) The Patent is invalid for obviousness over Projecta and Richardson.
 - ii) The attack over Krieger fails.
 - iii) Had it been valid the Patent would have been infringed by some of Carku's products but most are non-infringing.
 - iv) NOCO's communications to Amazon were actionable threats and were not justified.
260. I will hear Counsel as to the form of Order if it cannot be agreed. I direct that time for seeking permission to appeal shall not run until after the hearing on the form of Order (or the making of such Order if it is agreed). I draw attention to paragraph 19.1 of the Patents Court Guide, which says that a hearing on the form of Order should take place within 28 days of hand down. Since I am giving this judgment in August that may not be met but the argument can, I hope, take place in September (when I am sitting). I ask the parties please to liaise straight away to find a suitable time within that period. If there are any difficulties with this they should be communicated via my clerk promptly.