Spare Set of Claims

CLAIMS

1. A method of heat treating a steel component, comprising:

heating the steel component in a treatment atmosphere to an elevated temperature for a period of time sufficient to form a modified layer on the surface of the steel component;

wherein the treatment atmosphere comprises:

a carbon-containing gas suitable for creating a carbon-enriched layer on the surface of the steel component; and

a nitrogen-containing gas suitable for creating a nitrogen-enriched layer on the surface of the steel component.

2. A method as claimed in claim 1, wherein the elevated temperature is no more than 900 Celsius.

3. A method as claimed in claim 1 or 2, wherein the carbon-containing gas is endothermic gas, and the nitrogen-containing gas is ammonia.

4. A method as claimed in claim 3, wherein the treatment atmosphere contains up to 11% by volume ammonia, the balance being endothermic gas.

5. A method as claimed in any preceding claim comprising:

heating the steel component in the carbon-containing gas at a temperature of 900–955 Celsius for a first period;

introducing the nitrogen-containing gas; and

heating the steel component in the treatment atmosphere including the nitrogen-containing gas at a temperature of about 850 Celsius for a second period.

Start typing here ….

Construction

	Integer	Construction (brief conclusion is in **bold**)	
1.1	A method of heat treating a steel component, comprising	Involves heat treating the component in a controlled atmosphere so as to modify the surface properties of the component – p4 l1-3. Modifying physical or chemical properties – p4 l11 Steel = an alloy of iron – p4 l4. Steel also includes alloy steel – p4 l5. Also includes low-carbon steel p4 l18. **A method of heating a steel component so as to modify its surface properties**	1 1
1.2	heating the steel component in a treatment atmosphere to an elevated temperature	Treatment atmosphere = controlled atmosphere – p4 l2. Gases present are defined later in the claim. What is an elevated temperature? Does the elevated temperature change during the process? "an" can include plural different temperatures.	

		Claim 2 defines elevated temperature being no more than 900 Celsius. Thus "elevated temperature" in claim 1 includes temperatures above 900 Celsius. Must cover ranges 900–955 Celsius and 815–900 Celsius – p5 final paragraph. But claim not limited to these examples. P7 l8-10 states "temperature/time profiles can be adjusted according to the type of component to be treated, the type of steel used, and the amount of case hardening required." Function of elevated temperature = "sufficient to produce a carburized case layer" and "to produce a layer of adsorbed carbon" **Heating the steel component, which is in a controlled atmosphere, to one or more temperatures suitable for causing carbon or nitrogen atoms to adsorb on the component surface**	1
1.3	for a period of time sufficient to form a modified layer on the	"sufficient to" – does the claim wording require that the modified layer is actually formed? Yes – see 1.1. "a modified layer" = can be one layer, or can be multiple separate layers. Therefore, at a minimum,	

	surface of the steel component	the component must be heated long enough for one layer to be formed. The component is required to be heated to a temperature sufficient to cause carbon and nitrogen to adsorb on the surface. This could be a single temperature or multiple temperatures at different times. P6 l30 "first period" of 2 hours; P6 l35 "second period" of 3 hours. Claim not limited to these examples. **For a period of time in which at least one modified layer is formed on the component**
1.4	wherein the treatment atmosphere comprises: a carbon-containing gas suitable for creating a carbon-enriched layer on the surface of the steel component;	Endothermic gas is suitable for creating a carbon-enriched layer on a steel component (= carburizing, p4 l22-23) – p4 l28. Other gases can be used – p4 l26-27. Not limited to endothermic gas because dependent claim 3 specifies endothermic gas as the carbon-containing gas. a gas that dissociates to provide carbon atoms = p4 l25-26 Comprises = includes but not limited to.

1

1

Page sub-total

2

		Claim provides no indication of at what stage in the process the atmosphere comprises said carbon-containing gas. Claim must cover embodiment in which carbon-containing gas present through whole process – see p5 l19-22. But claim not limited to this example. **The controlled atmosphere includes (but is not limited to) a gas that dissociates to provide carbon atoms, at temperatures suitable for treating steel, for at least some period of time during the process.**
1.5	a nitrogen-containing gas suitable for creating a nitrogen-enriched layer on the surface of the steel component	"The nitrogen-rich gas is a gas that dissociates to provide nitrogen atoms at the surface of the component" – p5 l25-26 E.g. ammonia – p5 l26 but not limited to ammonia. Nitrogen gas N2 not suitable – p5 l27-29 Are the carbon-rich layer and nitrogen-rich layer the same layer? Embodiment includes two layers of different depths – p6 l4-6, so claim must cover this option. No wording in the claim to require that the layers are separate. **The controlled atmosphere includes (but is not limited to) a gas that dissociates to provide**

1

		Nitrogen atoms, at temperatures suitable for treating steel, for at least some period of time during the process.
2.1	A method as claimed in claim 1,	A method including all of the steps of claim 1
2.2	wherein the elevated temperature is no more than 900 Celsius	in one embodiment, the steel component is heated … at a temperature of 900–955 Celsius for a first period, …while heating the component at a temperature of about 815–900 Celsius for a second period – p6 l34-38 in the example – "the temperature raised to 950 Celsius" … and "lowered to 850 Celsius". See also dependent claim 5. The embodiment and example include temperatures over 900 which seem to be necessary for the carburizing part of the process. Therefore construe claim to mean that the temperature is no more than 900 Celsius for at least part of the duration of the process, so as to cover embodiment and example.

		At least one of the temperatures to which the component is heated is not more than 900 Celsius
3.1	A method as claimed in claim 1 or 2,	**A method including all of the steps of claim 1, and optionally all of the steps of claim 2.**
3.2	wherein the carbon-containing gas is endothermic gas	Endothermic gas = gas produced by incomplete combustion of hydrocarbons in air – p4 l28-29 **The gas that dissociates to provide carbon atoms is gas produced by incomplete combustion of hydrocarbons in air**
3.3	and the nitrogen-containing gas is ammonia.	Other gases may still be present – see "comprises" in claim 1. **The gas that dissociates to provide nitrogen atoms is ammonia**
4.1	A method as claimed in claim 3	**A method including all of the steps of claims 1 and 3, and optionally all of the steps of claim 2**
4.2	wherein the treatment atmosphere contains up to	Ammonia only present during second part of process in embodiment. – see example and embodiment (lines numbers provided above)

–

1

	11% by volume ammonia, the balance being endothermic gas	Purpose =avoid the carburizing atmosphere becomes too diluted – p5 l31-32 **The controlled atmosphere has not more than 11% by vol ammonia, the remainder being endothermic gas, during at least part of the duration of the process.**
5.1	A method as claimed in any preceding claim comprising	**A method including all of the steps of claims 1, OR all of the steps of claims 1 and 2, OR all of the steps of claims 1 and 3, OR all of the steps of claims 1-3, OR all of the steps of claims 1-4, OR all of the steps of claims 1, 3 and 4**
5.2	heating the steel component in the carbon-containing gas at a temperature of 900–955 Celsius for a first period	"in the carbon-containing gas" not necessarily limited to only the carbon-containing gas Does first period mean before a second period? "The first period is selected to provide a predetermined carburized case depth, e.g. up to 2.5mm. This is followed by a second period to give a nitrogen-rich case depth of 0.07mm–0.75mm" p 6 l4-6 How does the first period relate to the "period of time" in claim 1? **Heating the steel component in the gas that dissociates to provide carbon atoms at a temperature of 900–955 Celsius for a first period**

		of time suitable for forming a carbon-enriched layer	1
5.3	introducing the nitrogen-containing gas;	When is the nitrogen-containing gas introduced? After the component is heated? "after which the nitrogen-containing gas is introduced into the treatment atmosphere" – p5 l36-37 In what order is the temperature cooled and the ammonia introduced? This is ambiguous. Could be part way through first period of time, or part way through second period of time, or in a transition period in between in which the temperature is lowered. **Introducing the gas that dissociates to provide nitrogen atoms between the first period and a second period of time**	
5.4	heating the steel component in the treatment atmosphere including the nitrogen-	"second period" = subsequent to the first period? 850 is outside the range 900-950 so the first and second periods must be separate periods. Second period must occur after the first period.	1

	containing gas at a temperature of about 850 Celsius for a second period	"first period" and "second period" are parts of the "period of time" referred to in claim 1 **Heating the component to a temperature of about 850 Celsius for a period of time, after the gas that dissociates to provide nitrogen atoms has been introduced**

dependency 1

MARKS AWARDED: 10

10

Page sub-total

Infringement

Potential infringements

- Patent in force since 31 January 2022. Patent published 30 September 2020.
- Doc B modified process (Nitrocarburising/Gastride plus) is potential infringement. Ferrocase is intending to use the process for at least the next five years – p11 l15.
- Nitrocarburising has 2 embodiments – different gas mixtures.
- Is Doc B standard process (nitriding/Gastride) a potential infringement? Clearly does not infringe any claims of Doc A because nitriding uses Nitrogen only and not Carbon – see novelty analysis of Doc B nitriding/Gastride below. Client not concerned about it. Therefore no need to consider.

1

	Integer	Nitrocarburising/Gastride plus (Doc B)
1.1	**A method of heating a steel component so as to modify its surface properties**	Y – crankshaft made of steel - p11 l6 "enrichment of the surface with both nitrogen and carbon to impart a thin carbonitride layer" – p10 l19-20 – and "560°C–720°C" =heating so as to achieve this

1

1.2	**Heating the steel component, which is in a controlled atmosphere, to a temperature suitable for causing carbon or nitrogen atoms to adsorb on the component surface**	**Y –** heating to ""560°C–720°C"" p10 l21; controlled atmosphere = "ammonia and endothermic gas feed" p10 l17-18; "enrichment of the surface with both nitrogen and carbon to impart a thin carbonitride layer" – p10 l19-20	1
1.3	**For a period of time in which at least one modified layer is formed on the component**	**Y – "**30 minutes–5 hours" – at least one layer is formed – "a thin carbonitride layer" p10 l20	

1.4	**The controlled atmosphere includes (but is not limited to) a gas that dissociates to provide carbon atoms, at temperatures suitable for treating steel, for at least some period of time during the process.**	**Y** - endothermic gas feed (p10l18) provided throughout, which is "at least some period of time"	1
1.5	**The controlled atmosphere includes (but is not limited to) a gas that dissociates to provide Nitrogen atoms, at temperatures suitable for treating steel,**	**Y** - ammonia feed (p10 l17) provided throughout, which is "at least some period of time". Ammonia is suitable – see discussion in construction section. Construction does not require 2 separate layers (see construction section).	1

Page sub-total 2

	for at least some period of time during the process.	
	Claim 1 conclusion	**Claim 1 infringed**
2.1	A method including all of the steps of claim 1	Y
2.2	**At least one of the temperatures to which the component is heated is not more than 900 Celsius**	Y - 560°C–720°C throughout the process – p10 l21
		Claim 2 infringed
3.1	**A method including all**	**Y**

1

	of the steps of claim 1, and optionally all of the steps of claim 2.	
3.2	**The gas that dissociates to provide carbon atoms is gas produced by incomplete combustion of hydrocarbons in air**	Y – "endothermic gas" p10 l18
3.3	**The gas that dissociates to provide nitrogen atoms is ammonia**	Y – "ammonia" p10 l17
		Claim 3 infringed (regardless of dependency)

1

4.1	**A method including all of the steps of claims 1 and 3, and optionally all of the steps of claim 2**	**Y**	
4.2	**The controlled atmosphere has not more than 11% by vol ammonia, the remainder being endothermic gas, during at least part of the duration of the process.**	**N** - First embodiment "Endothermic gas 50% vol., Ammonia 50% vol." p10 l25. More than 11% ammonia Second embodiment "Endothermic gas 40% vol., Ammonia 50% vol., Air 10% vol" p 10 l26 – more than 11% ammonia; mixture does not consist of endothermic gas and ammonia	1
		Claim 4 <u>not</u> infringed	

5.1	**A method including all of the steps of claims 1, OR all of the steps of claims 1 and 2, OR all of the steps of claims 1 and 3, OR all of the steps of claims 1-3, OR all of the steps of claims 1-4, OR all of the steps of claims 1, 3 and 4**	**Y when dependent on any one of claims 1-3**
5.2	**Heating the steel component in the gas that**	**N –** "560°C–720°C" p10 l21, does not overlap with claimed range

	dissociates to provide carbon atoms at a temperature of 900–955 Celsius for a first period of time suitable for forming a carbon-enriched layer		
5.3	**Introducing the gas that dissociates to provide nitrogen atoms between the first period and a second period of time**	**N** – gas not introduced after a period of heating to 900-955 degrees – see 5.2.	1

Page sub-total 1

5.4	**Heating the component to a temperature of about 850 Celsius for a period of time, after the gas that dissociates to provide nitrogen atoms has been introduced**	**N** – this temperature is not disclosed – only 560°C–720°C disclosed – p10 l21
		Claim 5 <u>not</u> infringed (regardless of dependency)

1

<u>Infringement conclusions</u>

- Ferrocase's Gastride Plus process is within the scope of claims 1 to 3 of client's patent
- Ferrocase is using the process for at least the next five years (from March 2022). They are also offering said process for use.

Page sub-total

1

- Using/offering for use a patented process is a directly infringing act.
- Patent is in force as of date of grant (31 Dec 2022). First renewal fee due 4 years after filing date = 31 March 2023. Thus A is in force as no renewal fees have fallen due yet.
- Ferrocase is carrying out their activities in the UK
- Therefore, Ferrocase is infringing claims 1-3.
- It is also a directly infringing act of a patented process to do any of the following in the UK in relation to a product directly obtained as a result of the process: Make, Offer to dispose of; Dispose of (e.g. sell); Use; Import; Keep.
- A product can be a direct result of a patent process if it is an existing product which is materially changed as a result of the process. The process increases the crankshaft strength by 150% (p11 l13), which means that the crankshaft or the engine as a whole has been materially changed.
- Ferrocase's customer is an engine manufacturer who is almost certainly selling and offering to sell engines including crankshafts that have undergone the patented process. Therefore this infringes the patent.
- Engine manufacturers do <u>not</u> have private non-commercial use defence
- However, client likely does not want to sue engine manufacturers because they are the main customers of my client – p2 l12

10

MARKS AWARDED: 10

Page sub-total

–

Examiner's use only

Novelty

Prior art

- Doc C is full prior art (C published 1980; A filed 2019)
- Gas carburization is full prior art (discussed p4 l14 – p5 l11) "widely available in the UK for nearly 100 years" – p2 l5-6 1
- Is Doc B standard process (nitriding) prior art? No evidence of disclosure to the public before March 2022, but used for over 10 years – p11 l10. The process itself was likely used in secret. Would using this process provide an enabling disclosure to their customers? Not clear from facts available. Conclusion: possibly prior art.
- Is Doc B modified process prior art? Developed since early 2019 – see p10 l34 and p11 l11 "began to develop"; A filed 6 March 2019. "Ferrocase Ltd has recently introduced a new steel nitriding furnace" in B, published March 2022, suggests that this process was not publicly available until after filing date of A. Conclusion: not prior art

	Integer	Gas carburization (Doc A)	Doc C	Doc B standard process
1.1	**A method of heating a steel component so as to modify its**	Y – "addition of carbon to the surface of the steel component is	Y – "Carbonitriding is used primarily to impart a … case layer" p12 l13	Y

1 1

Page sub-total 3

	surface properties	known as carburizing" – p4 l22-23 The component is heated – p5 l1-2	"steel" – mentioned throughout doc C "heating" – furnace mentioned at p12 l6	
1.2	**Heating the steel component, which is in a controlled atmosphere, to a temperature suitable for causing carbon or nitrogen atoms to adsorb on the component surface**	Y – "heating the component in a furnace to 900–950 Celsius" p5 l1-2; "Carbon atoms, mainly from the breakdown of carbon monoxide, diffuse and adsorb onto the metal near	Y – implicit - carbonitrided case layer contains both nitrogen and carbon (p12 l10-12) thus must be heated to suitable temperature	Y - carbon

1 1

		the surface" – p5 l3-4			
1.3	**For a period of time in which at least one modified layer is formed on the component**	Y – "continued for up to six hours and results in a modified surface layer" p5 l5-6	Y - "Carbonitriding is used primarily to impart a … case layer" (p12 l13) a case layer is a modified layer	Y	
1.4	**The controlled atmosphere includes (but is not limited to) a gas that dissociates to provide carbon atoms, at temperatures suitable for treating steel, for at least some period of time during the process.**	Y – "endothermic gas from a gas generator to provide a carbon-rich atmosphere."	Y – "gas carburizing atmosphere" p12 l4. By definition carburizing atmosphere includes carbon suitable for carburizing.	N – only ammonia mentioned	1 1
1.5	**The controlled atmosphere includes (but is not limited to) a gas that**	N – no mention of a gas that dissociates to provide Nitrogen	Y – "modification consists of introducing ammonia into the gas	Y – "ammonia" p10 l11	1 1

	dissociates to provide Nitrogen atoms, at temperatures suitable for treating steel, for at least some period of time during the process.	atoms, <u>at temperatures suitable for treating steel</u> – N2 is unsuitable.	carburizing atmosphere to add nitrogen to the carburized surface case layer as it is being produced" – p12 l 3-5. Ammonia dissociates to provide N atoms – see construction section.	
	Claim 1 conclusion	**Claim 1 Novel**	**Claim 1 <u>not</u> novel**	**Claim 1 Novel**
2.1	A method including all of the steps of claim 1	N	Y	N
2.2	**At least one of the temperatures to**	Y – "900-950" – p5 l2. The end point of	Y – "carbonitriding can be carried	Y – p10 l11

✓

1 –

	which the component is heated is not more than 900 Celsius	the range is disclosed.	out at a lower temperature and for a shorter time than regular gas carburizing" p 12 l7-8. Carburizing temperatures "900–950 Celsius" – p5 l2.	
		Claim 2 novel only by dependency on claim 1	**Claim 2 <u>not</u> novel**	**Claim 2 novel only by dependency on claim 1**
3.1	**A method including all of the steps of claim 1, and optionally all of the steps of claim 2.**	**N**	**Y**	**N**
3.2	**The gas that dissociates to provide carbon**	Y – endothermic gas – p4 l28	N – not explicitly mentioned that	N – no carbon-providing gas

1 1

	atoms is gas produced by incomplete combustion of hydrocarbons in air		the gas is endothermic gas	
3.3	**The gas that dissociates to provide nitrogen atoms is ammonia**	N – no gas dissociating to provide nitrogen	Y – p12 l3	Y - "ammonia" p10 l11
		Claim 3 Novel	**Claim 3 novel**	**Claim 3 novel**
4.1	**A method including all of the steps of claims 1 and 3, and optionally all of the steps of claim 2**	**N**	**N**	**N**
4.2	**The controlled atmosphere has not more than 11% by vol ammonia, the**	N – no ammonia	N – silent on % ammonia	N – only ammonia

✓

1 1

	remainder being endothermic gas, during at least part of the duration of the process.			
		Claim 4 novel	**Claim 4 novel**	**Claim 4 novel**
5.1	**A method including all of the steps of claims 1, OR all of the steps of claims 1 and 2, OR all of the steps of claims 1 and 3, OR all of the steps of claims 1-3, OR all of the steps of claims 1-4, OR all of the steps of claims 1, 3 and 4**	**N**	**Y – when dependent on claim 1 or 2**	**N**

5.2	**Heating the steel component in the gas that dissociates to provide carbon atoms at a temperature of 900–955 Celsius for a first period of time suitable for forming a carbon-enriched layer**	Y - 900–950 Celsius (p5 l2) substantially overlaps with claimed range. "The treatment is continued for up to six hours and results in a modified surface layer" – using carbon – p5 l3-5	N – "lower temperature than regular gas carburizing" – p12 l8, therefore lower than 900-955	N – no carbon-providing gas	1 1
5.3	**Introducing the gas that dissociates to provide nitrogen atoms between the first period and a second period of time**	N – no gas suitable to provide nitrogen layer – see claim 1	N – ammonia introduced "to the carburized surface case layer as it is being produced" p 12 l4-5	N – no first period of time as defined above	1

5.4	**Heating the component to a temperature of about 850 Celsius for a period of time, after the gas that dissociates to provide nitrogen atoms has been introduced**	N – only 900-950 (see above)	N - no mention of temperatures around 850. No heating at different temperatures before and after adding the Nitrogen	N – 490-560 C – p10 l11
		Claim 5 novel	**Claim 5 novel**	**Claim 5 novel**

1

MARKS AWARDED: 18

18

Page sub-total 1

Examiner's use only

Inventive step

All prior art is citable for IS (no novelty-only docs) – see Novelty section

Applying Pozzoli

PSA = person who deigns methods for heat treating steel

1

CGK = p4 l4 - p5 l11:

- It is well known to modify the physical or chemical properties of steel components by heat treatment. By submitting the component to heating and cooling, the crystal structure of the steel can be changed into forms that are stronger or tougher.
- Types of steel
- case hardening and gas carburization
- endothermic gas composition
- quenching and associated problems of distortion

1

Claim 1

- Inventive concept – using nitrogen and carbon to form a shallower but harder case to be produced using lower temperatures and for shorter times, thus avoiding the distortion found in previous gas carburization processes, particularly during quenching – p5 p16-18

1

- State of the art = Doc C, also uses carbon and nitrogen
- Difference = no difference
- Obviousness = Doc C discloses same concept "a shallower but harder case" p12 l8-9. No further technical effect achieved by claim 1. Claim 1 obvious/not novel.

1

Page sub-total

4

Claim 2

- Inventive concept = temperatures "allows a shallower but harder case to be produced using lower temperatures and for shorter times, thus avoiding the distortion found in previous gas carburization processes, particularly during quenching" p5 l16-18
- State of the art = Doc C, also uses carbon and nitrogen for same purpose
- Difference = no difference
- Obviousness = "Because of lower processing temperatures and/or the use of less severe quenches, carbonitriding may produce less part distortion and better control of dimensions than carburizing" p12 l30-32 – same concept disclosed by Doc C. No additional effect provided by claim 2 relative to Doc C. Claim 2 obvious/not novel.

–

0.5

Claim 3

- Inventive concept = No particular advantages identified in patent
- State of the art = Doc C, also uses carbon and nitrogen for same purpose
- Difference = endothermic gas is used
- Obviousness = although not explicitly mentioned in doc C, endothermic gas is "typically" used in carburization – Doc A p5 l23-24 – which is part of CGK. Would be an obvious choice for PSA based on CGK. Claim 3 obvious.

1

Claim 4

Examiner's use only

- Inventive concept = avoid the carburizing atmosphere become too diluted and the modification of surface properties become inconsistent – p5 l31-32 — 1
- State of the art = Doc C, also uses carbon and nitrogen for same purpose
- Difference = up to 11% ammonia
- Obviousness = no mention of what % of ammonia to use in Doc C. This is not part of the CGK. Therefore Claim 4 involves inventive step. — 0·5

Claim 5

- Inventive concept = 2 stage process which provides a case layer which is then further hardened by carbonitriding; particularly useful for low-carbon steels with low natural hardenability — 1
- State of the art = Doc C, also uses carbon and nitrogen for same purpose
- Difference = two separate heating stages with different temperatures; nitrogen added between stages. — 1
- Obviousness = no hint in doc C that two separate stages could produce advantage. CGK only knows one-stage process. Doc C teaches away – "shorter time" is an advantage – two stage process therefore no obvious because goes against this teaching. Claim 5 involves inventive step. — 1

MARKS AWARDED: 10

10

Page sub-total 4.5

Examiner's use only

Sufficiency

- Client states that, when the process is used for crankshafts, the temperature in the second stage of the process must be between 800 and 850 celsius, otherwise the process is very unreliable – p2 l17-24
- Also, the component needs to be at the lower temperature when the second stage starts, which is critical for achieving a consistent result.
- The claims presently encompass using the process for heat treating crankshafts. Therefore, for sufficiency, the description must include the above essential details for crankshafts.
- The description only states that "the treatment times in each of the stages is usually about 50% longer".
- It does not disclose that the temperature needs to be cooled for 30 mins before adding nitrogen. Nor does it teach that the temperature must be within the range 800-850 – p5 l36 discloses temperature range of 815-900.
- If someone applied the process to a crankshaft, using a temperature of 900 in the second stage, then the process would not work. Therefore the claims are not sufficient across their entire breadth.
- This could be resolved by limiting the claims to a method applied to valve seat inserts – however this is very undesirable as it would not cover the infringement.

1

MARKS AWARDED: 1

1

Page sub-total

1

Examiner's use only

Amendment

- No amendments were identified which improve novelty/inventive step, whilst still covering the infringement.
- Sufficiency could be partially remedied by limiting the claims to heat the component to a temperature in the range 815-850. The disclosure of the range 815-900 and the individual value 850 provides basis for limiting the range to 815-850

0.5

MARKS AWARDED: 0.5

0.5

Page sub-total

0.5

Examiner's use only

Advice

- Please also see Infringement Conclusions above.
- Ferrocase is presently infringing claims 1 to 3 of the patent.
- They also infringed rights conferred by publication by using/offering for use the process between publication and grant – March 2022 is between 30 September 2020 and 31 Dec 2022.
- However, claims 1 and 2 are not novel, and claim 3 is obvious. Also, all of the claims lack sufficiency.
- Does Ferrocase have prior user rights? Ferrocase developed their process since early 2019 – see p10 l34 and p11 l11 "began to develop"; A was filed 6 March 2019. Therefore it is possible that Ferrocase was using the process before the filing date of A. If Ferrocase has been using the method, in good faith, since before the filing date of A, then they are entitled to continue to do so. However, Ferrocase has only recently (around March 2022) launched their new process – p10 l2. It is uncertain whether Ferrocase had used the process before the filing date of A. Therefore there is a risk that they have prior user rights. 1
- Because the patent is invalid, we should not put Ferrocase on notice until validity has been restored.
- I was unable to identify amendments to restore validity while covering the infringement – if amendment identified after further review, suggest s27 post-grant amendment, as soon as possible (damages limited when the patent was amended).

Page sub-total 1

Examiner's use only

- Innocent infringement likely does not apply because Ferrocase ought to be aware of IP in their field.
- Preferably after we have restored validity of the patent, we can bring infringement proceedings.
- If we bring infringement proceedings, risk of counterclaim for invalidity.
- Loss of business is damaging – p3 l1 – suggest requesting damages in infringement proceedings to recover losses.
- Offering licence seems less suitable, because this does not address the loss of business.

MARKS AWARDED: 1

1

Page sub-total

–