

**IN THE COURT OF APPEAL (CIVIL DIVISION)**  
**ON APPEAL FROM THE PATENTS COUNTY COURT**  
**HIS HONOUR JUDGE BIRSS QC**  
**[2013] EWPC 3**

Royal Courts of Justice  
Strand, London, WC2A 2LL

Date: 28/01/2014

**Before :**

**LORD JUSTICE LONGMORE**  
**LORD JUSTICE LEWISON**  
and  
**LORD JUSTICE FLOYD**

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**Between :**

**AP RACING LIMITED**

**Claimant/  
Appellant**

**- and -**

**ALCON COMPONENTS LIMITED**

**Defendant/  
Respondent**

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**Hugo Cuddigan** (instructed by **Kempner & Partners LLP**) for the **Appellant**  
**Douglas Campbell** (instructed by **Withers & Rogers LLP**) for the **Respondent**

Hearing date: 17 December 2013  
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**Judgment**

## **Lord Justice Floyd :**

### **Introduction and background**

1. This appeal raises an issue about what patent lawyers call “added matter”. Added matter refers to the rule that a patent application or patent may not be amended in such a way that it contains subject matter which extends beyond the content of the application as filed. If it has been so amended, and the added matter is not or cannot be removed, the patent will be invalid. By an order dated 5 February 2013 HHJ Birss QC (as he was then), sitting in the Patents County Court (as it was then) revoked UK Patent No 2 451 690 (“the patent”) in the name of the appellant, AP Racing Limited, on the ground that a particular feature of claim 1 of the patent disclosed added matter. Other attacks on the patent, namely insufficiency and obviousness were rejected by the judge. Had the patent been valid he would have found four out of the five products sold by the respondent, Alcon Components Limited, to be infringements of the patent. Kitchin LJ granted permission to appeal on the added matter issue. By a respondent’s notice, the respondent challenges, if necessary, one of the judge’s findings on obviousness.
2. The patent relates to disc brake calipers for motor vehicles. Although the claims of the granted patent are not so limited, the invention is particularly directed to brake calipers for racing cars. The parties are involved in designing and making calipers for racing cars.
3. Disc brakes are so called because they operate on a disc which rotates with the road wheels of the vehicle on a hub carried by the vehicle chassis. The caliper is the body into which brake pads are fitted and in which the brake pads can be actuated to make contact with the disc. When so actuated the pads slow down the disc and, with it, the road wheels. The caliper body straddles the disc at its periphery and can be thought of as comprising two limbs, one on each side of the disc. In the type of caliper with which this case is concerned the limbs are rigidly connected or of “monobloc” construction. The parts which straddle the disc are called the bridging members. At least one piston is mounted within the caliper body and, when actuated, squeezes the pad against the disc.
4. Calipers are mounted on the fixed uprights. For ease of description, they have a mounting side and a non-mounting side which are on opposite sides of the disc. Rather than describe the forward and rearward parts of the caliper as such, it is conventional to refer to a leading and trailing edge of the caliper by reference to the edges where the disc enters and exits the caliper body respectively when the vehicle is moving forward.
5. When the brakes are actuated, the pistons apply pressure from each side via the pads onto the disc. When the vehicle is stationary this results in a reaction force which splay the two limbs of the caliper outwardly and away from each other. This is referred to as the “static” or “pressure” load case. It can be thought of as splaying the limbs from a “U” shape into a “V” shape. There is also a “dynamic” or “torque” load case which arises when the vehicle is moving. Because the caliper is mounted on only one side, braking makes the non-mounting side limb of the caliper turn or twist relative to the mounting side limb. If, looking from above, the caliper is seen as a rectangle, the torque or dynamic load will tend to deform it out of its rectangular

shape. All this was well known to a disc brake designer at the priority date of the patent.

6. High performance brake calipers such as those used in motor racing need to be stiff and light. If the caliper is not stiff enough it will flex under load, and if it is heavy the performance of the car will suffer. The forces experienced by calipers in motor racing are particularly high.

### **Added Matter**

#### *The legal framework*

7. Section 72(1) of the Patents Act 1977 provides:

“(1) Subject to the following provisions of this Act, the court or the comptroller may on the application of any person by order revoke a patent for an invention on (but only on) any of the following grounds, that is to say—

...

(d) the matter disclosed in the specification of the patent extends beyond that disclosed in the application for the patent, as filed, ...”

This provision is based on Article 138(1)(c) of the European Patent Convention, which provides so far as material:

“(1) Subject to Article 139, a European patent may be revoked with effect for a Contracting State only on the grounds that:

...

(c) the subject-matter of the European patent extends beyond the content of the application as filed ...;

8. The issue of added matter falls to be determined by reference to a comparison of the application for the patent as filed and the granted patent. As Aldous LJ said in *Bonzel v Intervention (No 3)* [1991] RPC 553 at 574:

“The task of the Court is threefold:

(1) To ascertain through the eyes of the skilled addressee what is disclosed, both explicitly and implicitly in the application.

(2) To do the same in respect of the patent as granted.

(3) To compare the two disclosures and decide whether any subject matter relevant to the invention has been added whether by deletion or addition. The comparison is strict in the sense that subject matter will be added unless such matter is clearly

and unambiguously disclosed in the application either explicitly or implicitly.”

9. In the end the question is the simple one posed by Jacob J (as he then was) in *Richardson Vick's Patent* [1995] RPC 568 at 576 (approved by him as Jacob LJ in *Vector Corporation v Glatt Air Techniques Ltd* [2007] EWCA Civ 805; [2008] RPC 10 at [4]):

“I think the test of added matter is whether a skilled man would, upon looking at the amended specification, learn anything about the invention which he could not learn from the unamended specification.”

10. The policy behind the rule against adding matter was also examined in *Vector v Glatt* at [5] to [6]. One of the reasons for the rule which was identified is that third parties should be able to look at the application and draw a conclusion as to the subject matter which is available for supporting a claimed monopoly. If subject matter is added subsequently the patentee could obtain a different monopoly to that which the application originally justified.
11. The parties were agreed that, in all material respects, the published application for the patent was identical to the application as filed and could be used in place thereof. With that introduction I will first summarise the disclosure of the application and the patent.

#### *The application*

12. After some basic introduction about the configuration of brake calipers (along the lines of that which I have set out above) and a description of a known caliper by reference to Figure 1 (reproduced below), the application explains the problem facing the designer in the following terms:

“When the disc brakes are applied, the clamping force applied by the disc pads to the disc is reacted against by the body and results in the limbs ... being deflected outwardly away from the disc. This can result in an increased travel of the pistons and hence increased travel of the brake pedal. The caliper body ... must have sufficient structural rigidity that these deflections are kept within acceptable tolerances. However, there is also a need to keep the weight of the caliper to a minimum. This is particularly so where the caliper is to be used on a high performance motor vehicle in which weight considerations are of great importance and where the braking forces are particularly high.

There is a need, therefore, for an improved disc brake caliper body which has an increased structural rigidity or which can provide equivalent structural rigidity to that of conventional caliper bodies but using less material.”

13. The application then introduces the notion of a peripheral stiffening band (“PSB”). It explains that there may be at least one PSB extending about an outer lateral surface of the mounting side limb, or there may be two PSBs, one extending about each lateral surface. The initial description of the PSB focuses on the band’s relationship with the outer lateral surfaces, but at page 4 lines 23-30 the application explains:

“... the body may comprise a peripheral stiffening band on the mounting side limb which band extends around the leading end of the limb and is connected with a leading one of the bridging members.

.. the body may comprise a peripheral stiffening band on the non-mounting side limb which band extends around the trailing end of the limb and is connected with a trailing one of the bridging members.”

14. What is being described here is, in plan view, a band which is shaped to follow the lateral edges and turn around the corner of the body to follow the leading or trailing edge. This is made clearer by reference to the figures later in the application. Although there was some argument about whether the PSB could, following this description, continue along the periphery beyond the leading edge to the opposite lateral edge to create a C-shaped PSB, this is not described. The application does not say so in terms, but this shape of PSB is necessarily going to be asymmetric about a lateral axis of the caliper body when seen in plan.

15. The application then goes on to describe embodiments of the invention. In relation to the first embodiment, the application explains at pages 10-11 that a first PSB extends about the outer lateral surface of the mounting side limb and has a portion which “extends around the leading end of the limb to connect to the leading bridging member”. A second PSB is provided about the lateral outer surface of the non-mounting limb with a portion which “extends around the trailing end of the non-mounting limb”. This description is all in accordance with the general passage at page 4 which I have set out above. The illustrated embodiment has been described as “J” or hockey stick shaped.

16. Having described this and other features of the physical configuration of the caliper body and PSBs, at page 12 the application explains that the caliper body of the invention is designed to take into account not only the pressure load but also the torque load which is generated by dynamic braking loads. It then says this:

“... the peripheral stiffening bands 45,55 are configured to resist the bending moment generated during braking.”

17. This is a clear statement that the configuration of the PSBs is such that they are designed to resist the torque loads or bending moments generated during braking, i.e. the dynamic or torque cases discussed above. The application then goes on to explain that, as a result of the stiffening introduced by the PSBs, less material is needed elsewhere in the caliper body. Thus, it explains, less material is needed at the intersection between the mounting side limb and the trailing bridging member and the non-mounting side limb and the leading edge. This, again referring to the plan view,

is telling the skilled reader that material can be shed from the remaining corners, i.e. those corners which do not have a PSB surrounding them.

18. At page 13 lines 9 to 15 the application contrasts the appearance in plan of the caliper bodies of the invention with the “generally symmetrical outer profile” or “largely symmetrical profile” of conventional caliper bodies. It concludes that passage by saying:

“It will be noted that use of peripheral stiffening bands 45, 55 in the caliper body 30 and the removal of material elsewhere gives the body 30 a distinctly asymmetrical appearance when viewed in plan.”

19. This passage, of course, relates to the asymmetry of the caliper body of the invention as a whole, not the asymmetry of any individual component such as a PSB. There is a further passage in relation to another embodiment at page 17 which reads as follows:

“As discussed in relation to the first embodiment, the peripheral stiffening bands 145, 155 increase the stiffness of the caliper body, particularly when the body is subject to a bending moment as the brakes are applied with the disc rotating in a forward direction. The presence of the peripheral bands 145, 155 enables material elsewhere in the caliper body to be reduced to a minimum, particularly in the limbs where much of the material present in conventional caliper bodies is reduced to form distinct, partially domed cylinder housings 142. The material at the intersection between the leading bridging member 133 and the non-mounting side limb 132 and between the trailing bridging member 134 and the mounting side limb 131 is also reduced to a minimum. *These arrangements result in a caliper profile that is highly asymmetrical when viewed in plan.*” (emphasis added)

20. This passage, like the earlier passage at page 13, is describing the asymmetry of the caliper body as a whole.
21. Overall, the application as filed is telling the skilled reader that the PSBs, configured as they are, each along a lateral and leading edge, have a stiffening function which allows material to be removed from other parts of the body. Although not expressly stated, it would be abundantly clear to the skilled reader that the PSBs were, individually, asymmetric about a lateral axis of the body. The presence of the PSBs and the removal of the material gives the overall shape of the caliper body an asymmetric appearance.

### *The granted patent*

22. There is no material difference between the technical disclosure I have summarised above from the application and that contained in the body of the granted patent (other than the consistory clauses). The additional disclosure relied on by the respondent at trial was said to be in the claim. Claim 1 is set out below. It is broken down, as the judge broke it down, into numbered features for convenience:

- “(1) A body for a fixed type disc brake caliper,
- (2) the body comprising a mounting side limb and a non-mounting side limb,
- (3) each limb having two or more hydraulic brake cylinders suitable for receiving corresponding hydraulic brake pistons,
- (4) the limbs being rigidly inter-connected at either end by spaced bridging members and profiled to define a shaped housing portion about each cylinder,
- (5) each of the limbs having a peripheral stiffening band extending in a longitudinal direction about and interconnecting outer lateral end regions of the housing portions,
- (6) in which each of the stiffening bands has a profile that is asymmetric about a lateral axis of the body when viewed in plan.”

23. The respondent’s case on added matter was that there was no disclosure in the application of feature (6).

*The judgment of HHJ Birss QC on added matter*

24. The judge summarised the disclosure of the two documents much as I have done above. At [84] he recognised that it was undeniable that the peripheral stiffening bands disclosed in the application were necessarily asymmetrical. He continued:

“A disclosure that something is asymmetric is a much broader concept than a teaching that a thing has a particular shape. The fact the shape is in fact asymmetric is necessary but is not sufficient to support the generalisation. The argument based on the figures suffers from the same difficulty.”

25. The judge concluded that when the patent was discussing asymmetry it was discussing the asymmetry of the body as a whole. It was not saying anything about the asymmetry of the individual PSBs. He doubted that the skilled person would analyse the document in the detail propounded by Mr Cuddigan, who appeared then, as he does now, for the appellant, or conclude that the application clearly and unambiguously described, at page 13, an asymmetric PSB. He concluded that without reading the patent the skilled person would not have derived from the application “a concept at the same level of generality as” the feature of claim 1.

*The arguments on appeal*

26. Mr Cuddigan took two points on behalf of the appellant. First he submitted that there was a clear and unambiguous disclosure in the application of asymmetric PSBs. Secondly he submitted that, even if the judge was right, and all that was disclosed in the application was a class of generally hockey stick shaped PSBs, the granted patent still did not contain any added matter.

27. Mr Campbell for the respondent submitted that the judge was right for the reasons he gave. The judge should be understood as having decided that the granted patent laid claim to an impermissible intermediate generalisation. In other words the granted patent disclosed a combination which was neither as specific as the embodiments described, nor as general as the general teaching of the specification.

*Discussion and conclusion on added matter*

28. The passage on page 4 of the application is, to my mind, a clear disclosure of a class of configurations of PSB which are in fact asymmetric about a lateral axis. The teaching of the document is that the PSB follows the outer lateral edge of the limb and turns around the corner to follow the leading or trailing edge as appropriate. The application thus contains a clear and unambiguous disclosure of a class of PSBs which would fall within claim 1 of the granted patent because they would necessarily possess all the features of that claim, including feature 6.

29. Is the patent nevertheless bad for added matter because it claims a wider class of asymmetric PSBs than are disclosed in the application? The judge thought it did because it claimed all asymmetric PSBs and not just hockey stick shaped ones. Whether he was right depends on an analysis of the extent to which it is legitimate to add features to a claim which describe the invention in more general terms than a specific embodiment.

30. There is no doubt that the claims of the patent form part of the disclosure for the purposes of assessing whether there is added matter. However the claims perform a different function from the disclosure in the body of the specification. The primary function of the claims is to delimit the area of the patentee's monopoly. Thus in *Texas Iron Works Inc's Patent* [2000] RPC 207 the patentee had disclosed "slips and cones" which acted as hanger units in an oil well hanger. In the granted patent the patentee coined the phrase "liner hanger unit" to define his monopoly, although the phrase was apt to cover units other than slips and cones. Aldous LJ (with whom Simon Brown and Mantell LJ agreed) said this at page 245:

"... the purpose of the claims in a patent is the identification of the ambit of the protection and disclosures are normally a matter for the specification. The application before the amendment clearly and ambiguously disclosed slips and cones which acted as hanger units. The amendment did not alter that disclosure. By using the phrase "liner hanger unit" in the claim the patentee did not disclose any other construction of liner hanger: the term was used to widen the ambit of the monopoly."

31. In *A.C. Edwards Ltd v Acme Signs & Displays Ltd* [1992] RPC 131 it was argued that three features of a claim of the granted patent were stated in more general terms than the disclosure of the specific embodiment. Thus, for example, the application disclosed the use of a coil spring and cotter arrangement as a retaining means, but the relevant added feature simply specified a "spring means". Fox LJ (with whom Staughton LJ and Sir Michael Kerr agreed) concluded that this did not add matter. Fox LJ said:



“... claims, as a source of disclosure, have no greater force than the other admissible documents... Mr Whittle is, I think, correct when he says that the claim *covers* those matters because the patentee chose to limit its claim by reference to features other than the three in question. In practical terms I do not think there is anything very surprising about that result since the purpose of the claims is the identification of the ambit of protection. Disclosures are normally a matter for the specification. One looks, no doubt, at the whole of the issued patent specification in determining what it discloses, but even so, I find no disclosure in claim 1.”

32. In Decision T 065/03 *Toyota Jidosha KK* the Technical Board of Appeal of the European Patent Office concluded that the replacement of the term “diesel engine” by the term “combustion engine” in a claim to a method of purifying exhaust gas constituted added matter. The Board concluded that the disclosure of the granted patent would be understood to mean that the method of the invention was suitable for any type of engine, not merely diesel engines, and that such a teaching could not be derived from the application as filed.
33. It is clear from these decisions that the law does not prohibit the addition of claim features which state in more general terms that which is described in the specification. What the law prohibits is the disclosure of new information about the invention. In the *Toyota* case there was such a disclosure of new information, namely the new information that the invention was suitable for engines other than diesel engines. However in *Texas Iron Works* and *A.C. Edwards* the specification and claims when read together did not disclose any new technical information, despite the generalisation involved in the added claim feature.
34. Mr Campbell placed some reliance on the decision of Pumfrey J (as he was then) in *Palmaz’s European Patents (UK)* [1999] RPC 47. In that case Palmaz had amended the main claim of their coronary stent patent by adding two features of limitation derived from an illustrated stent described as a specific embodiment of the invention. The stent in question was of a tubular construction made up of circumferential and longitudinal bars. One of the features sought to be introduced was directed specifically to circumferential bars but was silent as to alignment of the second category of bars. Pumfrey J held that there was no disclosure of the circumferential bars other than in combination with longitudinal bars. The amendment, he held:

“represents the selection of a particular feature, whose significance is nowhere disclosed, and its incorporation into the inventive concept shorn of its original context.”
35. Mr Campbell submitted that the same could be said of the amendment in the present case. The PSBs were only disclosed in combination with the idea of saving material at other points in the construction.
36. I do not agree. The skilled person would understand from the application as filed that the design of the PSBs, in particular the fact that they wrapped around the corners of the caliper, was technically significant in imparting stiffness to the caliper. It is true to say that one advantage of adopting this configuration would be understood to be the

saving of material elsewhere, but the skilled person would not understand that taking that step would be necessary. As the application explains at page 12, “the PSBs ... are configured to resist the bending moment generated during braking”. That is a clear and independent disclosure of the technical significance of the configuration of the PSB.

37. It is true, as Mr Campbell submitted and as I have already recognised, that the asymmetry expressly discussed in the application is asymmetry of the caliper body as a whole. The disclosure of this form of asymmetry does not, as it seems to me, preclude the patentee from amending to claim the asymmetry of the individual PSBs, provided that form of asymmetry is, as I consider it to be, clearly disclosed.
38. Mr Campbell also drew our attention to the facts of *Vector v Glatt* (cited above) as an example of a case where matter can be added by a claim. In that case the patentee had included a claim to a fluidised bed in which it was only the gas stream which shielded the initial spray pattern. This was disclosed in general terms in the application and so did not constitute added matter. However the claim required the means for producing the gas stream to be “within the upbed”. Although this was disclosed for a physical shield, it was not disclosed in combination with a “gas only” arrangement. Jacob LJ (with whom Wall and Smith LJJ agreed) held at [34] that this constituted added matter: it was a claim to a combination which was not disclosed.
39. I can see nothing in this case to assist Mr Campbell’s argument. The claim in *Vector v Glatt* made an express combination of features which was not disclosed in the application as filed. In the present case there is no such undisclosed combination made by the claim.
40. In my judgment, the judge’s conclusion on this issue was wrong. Having correctly concluded that the description in the application of the hockey stick shaped PSBs was of something “necessarily asymmetrical” he should have gone on to ask himself whether there was any added disclosure in the granted specification. The description of the PSBs in claim 1 as “asymmetric” has to be read as part of the disclosure of the specification of the granted patent as a whole, taking account of the different function of the claims and the specification. When this is done the skilled person would understand that the patentee has drafted his claim so that it *covers* asymmetric PSBs generally. However I am not persuaded that the specification read as a whole discloses any configuration of PSB which is not disclosed in the application. The skilled person would understand from the granted patent, just as in the case of the application, that the PSBs disclosed include those which follow a lateral and leading edge (and therefore are asymmetrical about the lateral axis). The skilled person would also understand that the PSBs are exemplified by the hockey stick shapes described in the specific embodiments. He or she would not, therefore, learn any new information about the invention.
41. I would add only that it is clear that the argument we have heard on this appeal has been far more extensive than that addressed to the Judge, who was faced at trial with a large number of other points, all of which had to be dealt with under the stringent time constraints of what was then the Patents County Court.

## Obviousness

42. At trial, the respondent ran three independent obviousness attacks based on two Japanese patent publications, referred to as Hatagoshi and Baba, and on common general knowledge alone. Only the attack based on Baba is pursued by the respondent's notice.
43. There was no dispute as to the correct approach to an issue of obviousness. The judge referred to the well known passages in *Windsurfing v Tabur Marine* [1985] RPC 59; *Pozzoli v BDMO* [2007] EWCA Civ 588, [2007] FSR 37 and *Conor v Angiotech* [2008] UKHL 49, [2008] RPC 28. The task for the court in practical terms is set out in *Pozzoli*:

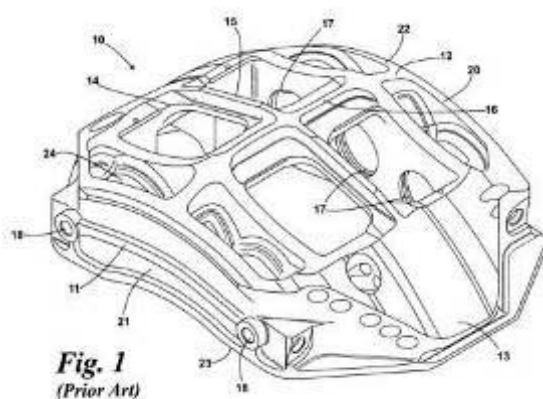
- “(1) (a) Identify the notional person skilled in the art;
- (b) Identify the relevant common general knowledge of that person;
- (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
- (3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;
- (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?”

### *The inventive concept*

44. The judge said at [94] of his judgment:
- “The concept underlying the invention in this case is the idea of using, in a brake caliper, the asymmetrical peripheral stiffening bands which are called for in the claim. Nonetheless care needs to be taken with this observation. What matters is the claim, not a paraphrase.”
45. The question of what precisely was meant by “the asymmetrical peripheral stiffening bands which are called for by the claim” was in issue at the trial and is in issue on this appeal. The judge decided what this phrase meant at [55] to [58], referring to the construction advanced in the expert report of the respondent's expert engineer, Mr Smith:
- “55. Mr Smith's view was that a peripheral stiffening band had to be some material axially outboard of the end of the cylinder housings which reduces the tendency of the parts it joins to deflect relative to each other. The expression “peripheral stiffening band” is not a term of art. I do not accept Mr Smith's words as a definition of “peripheral stiffening band”. The

skilled reader would know that the limbs will always have material at the ends of the cylinders. Otherwise the holes would be open. The material in the limbs at the ends of the cylinders will obviously have a thickness and in a conventional caliper no doubt that material, being part of the limb, will contribute to a reduction in a tendency to deflect.

56. Mr Cuddigan submitted that the skilled reader would understand from figure 1 of the patent that the patentee recognised that conventional calipers have some limb material which could be described as “outboard” the ends of the cylinders. The patent describes figure 1 as a prior art caliper. It is:



57. Numeral 11 is referring simply to the left hand limb but Mr Cuddigan pointed out that the part of the limb which numeral 11 happens to point to is a small rib of material “outboard” the ends of the cylinders. He said that the skilled reader, seeking to understand what the patentee was using the words to mean, would not think that this rib was what the patentee meant by “peripheral stiffening band” even if the rib could be said at some level to contribute a degree of stiffness to the structure. I do not think a skilled person would analyse figure 1 of the patent in this sort of detail but I do accept the general point Mr Cuddigan is making. The rib in figure 1 is a useful illustration of the argument. It has material which is probably within Mr Smith’s definition but that material is not what the reader would understand the patentee to be talking about.

58. A skilled person would understand “peripheral stiffening band” in the patent in the following way. A peripheral stiffening band is plainly supposed to stiffen the caliper. It is a band of material and it is meant to be appreciably beyond and distinct from the limb material at the ends of cylinders. That is what the word “peripheral” is getting at. I do not think a skilled person would understand the patent to be trying to include within this expression some relatively arbitrary outer portion of

the thickness of the limb material on the ends of the cylinders simply because it contributes to stiffening.”

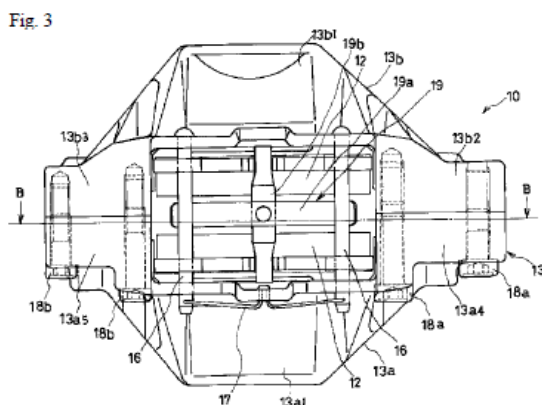
46. Mr Campbell attacked the Judge’s construction as being of uncertain scope, as failing to identify any criterion as to what is meant by “appreciably beyond”, as being unsupported by the description and as placing excessive reliance on Figure 1. He invited us to accept the alternative construction put forward by Mr Smith.
47. I was not persuaded by Mr Campbell’s argument that the judge’s approach to the meaning of “PSB” was incorrect. According to the specification, Figure 1 is representative of the prior art. The patentee is proposing the addition of a peripheral stiffening band to the known construction. The judge was correct that the skilled person would not expect the patentee to be using the term to cover just the material at the margin of the ends of the pistons. The arguments as to the precise scope of what the judge meant by appreciably beyond do not seem to me to be material to the outcome of the appeal.

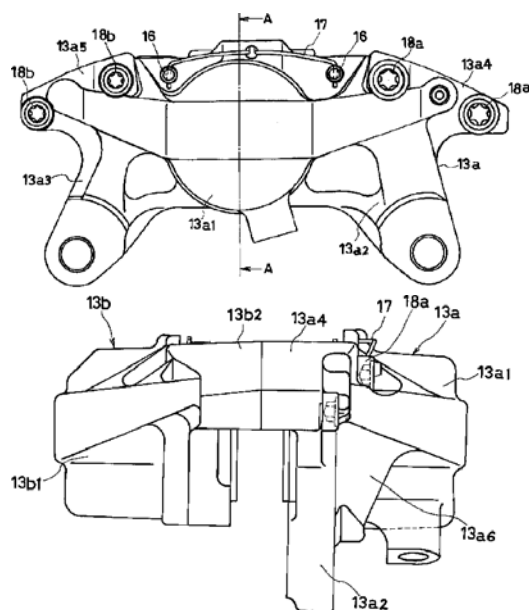
#### *The disclosure of Baba*

48. The Judge described the disclosure of Baba in this way:

“104. Baba discloses a brake caliper with opposed cylinders, of the same general kind as claimed in the AP Racing patent. The caliper has been designed as a result of analysing the dynamic deformation of a caliper in the torque load case using FEM. Baba explains that it was found that the caliper deforms in the shape of a parallelogram to the outer rotation side of the disc rotor as a result of the brake torque applied. As with Hatagoshi this falsifies the assertion in the 690 patent that calipers had not been designed hitherto taking the torque load into account.

105. The Baba caliper is a typical low performance road car caliper. It has axial attachment points. Figures 3, 1 and 5 of Baba are as follows:





106. The caliper is made in two parts. The bolts holding the two limbs together can be seen in fig 3 above. There is a single pair of cylinders, which are displaced towards the trailing side. Mr Cantoni said this was a known method of combating pad taper because it moves the load towards the trailing side. The Baba caliper uses what are referred to as “joining parts”. They are 13a4 and 13a5 and their corresponding parts 13b2 and 13b3. The caliper also has “stabilisation legs” (e.g. marked 13a2 in fig 5) and reinforcing ribs 13a6 and 13a7, said to be in figure 1 but not marked as such in that figure.

107. It is clear that the Baba caliper is not strictly symmetrical about a lateral axis. This can be seen in fig 3 (above). For example the bolts on the left are thinner than the bolts on the right. Also the angles made by the left hand diagonal faces are not the same as the corresponding angles made by the right hand diagonal faces.”

### *The difference*

49. One difference between Baba and the claim is that it only discloses a single piston whereas feature (3) of the claim calls for two. However, the appellant’s principal contention was that Baba did not disclose the PSBs called for by the claim at all.
50. The feature said to be a PSB in Baba was the element in Figure 5 which protrudes a little at the left and right hand ends, and is to be seen in Figure 1 as a part running side to side which forms a parallel band across the middle of the circle representing the cylinder housing. It is not identified (whether by a reference numeral or in any other way). It does not feature in the description. Baba does disclose reinforcement ribs, but these are, as Mr Smith accepted in cross-examination, internal and not peripheral. This is, already, a rather unpromising starting point for a suggestion that the skilled person would appreciate that relevant stiffening was to be discovered elsewhere in the structure.

51. The Judge accepted the evidence of Mr Cantoni, the appellant's expert, that there were no PSBs in Baba. The judge expressed his conclusion as follows:

“None of the various possible structures are peripheral at all. The mere fact that the element relied on by Alcon can be said to have metal “outboard” of the ends of the cylinders is not enough to fairly describe that structure as a peripheral stiffening band. No objective skilled person who read the patent fairly would call it that.”

*Discussion and conclusion on obviousness*

52. Mr Campbell submitted that the judge should have concluded that Baba disclosed PSBs, whichever construction of that term was adopted, that Baba's elements were themselves asymmetric and that it would have been obvious to modify Baba to include two cylinders whilst retaining the asymmetric structure.
53. Given that I have accepted the Judge's construction of the term PSB, the critical question for the purposes of this aspect of the case is whether, on that construction, the judge was wrong to hold that Baba did not disclose a PSB. Mr Campbell argued that the parts identified by Mr Smith must be PSBs within the patent because they were indistinguishable from the PSB described by reference to Figure 4 of the patent itself.
54. The PSBs in Figure 4 are plainly described as bands having a stiffening function and clearly do extend appreciably beyond and are distinct from the material at the end of the cylinders. The question is whether the same feature having the same function can be detected in Baba.
55. Mr Cantoni did accept in cross-examination that the identified feature was a mechanical structure around the periphery which increased stiffness. This did not go as far as the respondent needed, however. The judge had the task of weighing this evidence against the evidence of Mr Smith, who had accepted that the component he had identified was not one that the skilled person would have found in Baba unless he was looking for it. I am not persuaded that there is any basis for this court to interfere with the judge's overall conclusion that Baba's component would not have been recognised by the skilled person as a peripheral stiffening band as that term is used in the patent.
56. Even if I had come to the conclusion that the judge's conclusion as to the skilled person's understanding of Baba was somehow flawed, Mr Campbell would face another hurdle. The judge appears to me to have accepted Mr Cantoni's evidence that, had he been motivated to redesign Baba to include a second cylinder, he would have reverted to a symmetric design. However my conclusion on the first point is adequate to dispose of the respondent's notice.

**Conclusion**

57. It follows that I would allow the appeal and set aside the judge's order revoking the patent.

**Lord Justice Lewison:**

58. I agree. The critical parts of the specification are the statements that:

“... the body may comprise a peripheral stiffening band on the mounting side limb which band extends around the leading end of the limb and is connected with a leading one of the bridging members.

.. the body may comprise a peripheral stiffening band on the non-mounting side limb which band extends around the trailing end of the limb and is connected with a trailing one of the bridging members.”

59. Once one appreciates that the PSB turns the corner it must follow that it is necessarily asymmetrical about the *lateral* axis. Mr Cuddigan demonstrated this by a simple example which, as a non-specialist, I found very helpful. Imagine an unstiffened rectangular box. The application of a twisting force will force it into a rhomboid shape. Now imagine that the box is stiffened by right-angled angle irons at two corners, one at the top and one at the bottom, each with a horizontal limb and a vertical limb. Those angle irons will stop the box from being forced into a rhomboid shape. Even if the angle irons have limbs of equal length, they will not be symmetrical about the *lateral* axis.

60. The relevant parts of the specification in our case do not prescribe the length of the part of the PSB on any part of the caliper. They may or may not be of equal lengths. Thus although the illustrated embodiment shows a J-shaped PSB, that limitation is not present in the text of the specification.

61. Mr Campbell argued that integer (6) in the granted claim was an impermissible generalisation. That, to my mind, depends on whether the technical reason why the PSB turned the corner was explained by the specification. In our case it was. The reason why the PSB turned the corner was “to resist the bending moment generated during braking”. In other words, it acted as the angle iron in Mr Cuddigan’s simple illustration.

62. I therefore agree with Floyd LJ, for the reasons that he gives, that the judge was wrong in holding that the patent was invalid for added matter. I agree also with his reasoning and conclusion on the obviousness attack. I, too, would allow the appeal.

**Lord Justice Longmore:**

63. I agree with both judgments.