



BL O/029/04

30th January 2004

PATENTS ACT 1977

BETWEEN

Siemens Schwiez AG

Claimant

and

Schwihag Gesellschaft
für Eisenbahnoberbau mbH

Defendant

PROCEEDINGS

Application under section 72 for the revocation
of patent number GB 2278383 B

HEARING OFFICER

S N Dennehey

DECISION

Introduction

- 1 On 6 May 1994, Schwihag Gesellschaft für Eisenbahnoberbau mbH filed an application under the Patents Act 1997 (“the Act”) for a patent concerning sleepers for railway track systems. The application claimed priority from an earlier German patent application number DE4315200 dated 7 May 1993. It was given the application number GB9409072.7 and was published on 30 November 1994 as GB 2278383 A. A patent was granted on the application with effect from 23 October 1996.
- 2 An application for (partial) revocation of the patent under section 72(1) of the Act was filed on 6 February 2001 by Siemens Schwiez AG (“the applicants”). The grounds relied on by the applicants in their statement of case are that the claimed subject matter does not define a patentable invention. In particular, they allege that the subject matter of claims 1 and 3 is not novel and does not involve an inventive step, and that the subject matter of claim 2, and of claim 12 when dependent on claims 1 to 3, lacks inventive step. As I shall come to, their case is supported by six items of prior art.
- 3 The proprietor filed a counter-statement on 10 April 2001 denying that the patent is invalid. The counter-statement requested that the application for revocation should be rejected, and that a certificate of contested validity should be granted to the proprietor.

The applicants filed evidence-in-chief and the proprietor subsequently filed an amended counter-statement containing further explanation of their case, but did not file any evidence-in-chief.

- 4 The matter came before me at a hearing at which Mr Clive French appeared as patent attorney for the applicants and Mr Simon Greene appeared as patent attorney for the proprietor. At the hearing I had the benefit of skeleton arguments filed in advance by both Mr French and Mr Greene.

The patent

- 5 The patent relates to a railway sleeper suitable for incorporation in the track near points, and more particularly near the drives and the associated tip fastenings for the so-called points tongues, which are adjustable via slide rods. (I should say that the term “points tongues” is used in the specification to describe the movable rail sections which form the working parts of the points.) Conventionally, sleepers are either mainly of wood or concrete, laid at appropriate intervals on tamped gravel to support the rails themselves. Near to points, particularly near the drives and associated tip fastenings, it has been necessary to form “sleeper compartments”, in which the spacing between adjacent sleepers is greater than normal so that the compartment can contain all the components for driving and fastening the points (together with a heating plate).
- 6 According to the specification, these sleeper compartments create problems, especially in high-speed sections of track. For example, automatic tamping is not possible near sleeper compartments, and manual tamping is restricted by the heating plate and other components within it. The sleepers may as a result become unsteady after a short time, requiring frequent retamping. Also, the track resilience is disturbed by the sleeper compartment, and the compartment can become very dirty. The aim of the invention of the patent is said to be to obviate the need to construct sleeper compartments near points, and allow automatic tamping to be done there.
- 7 The sleeper which is the subject of the patent is formed as a hollow steel trough which serves the usual purpose of supporting the rails but which can also house a points driving mechanism and other components for operating and fastening the points. It is the same size as a conventional wooden or concrete sleeper and takes the place of one such sleeper in the region where the points drive is required. It is said to eliminate the need for, and hence disadvantages of, sleeper compartments.
- 8 The specifically contested claims read as follows:

“1. A sleeper for railway track systems, suitable for incorporation in the track near points, more particularly near the drives and the associated tip fastenings for the points tongues which are adjustable via slide rods, characterised by an upwardly open steel trough or box-like sleeper section member which has a cross-sectional width and a cross sectional height substantially matching that of a normal concrete or wooden sleeper and which has laterally projecting bearing flanges at least for points-tongue slide chairs and/or associated operating components of tip fastenings, and the trough or box-like sleeper section member is associated with tip fastenings in the form of “latch fastenings” or the like, comprising stationary guides and movable

operating parts, such as latches, cam rods and cam-rod guides, all of which project into the upper part or open part of the trough or box-like sleeper section member, whereas the bottom part houses the points-tongue slide rods, the tongue-monitoring linkage, the points drive, heating rods if any, and shock-absorbing elements.

2. A sleeper according to claim 1, wherein the open part of the trough or box-like sleeper section member is closable on top by releasably mounted covers securable e.g. to the bearing flanges, the trough or box-like sleeper section member and transverse plates forming a closed box sleeper.

3. A sleeper according to claim 1 or 2, wherein a prolongation on one end of the trough or box-like sleeper section member holds the electric drive for the points-tongue slide rod.

...

12. A sleeper according to any of claims 1 to 11, wherein the heating rods are disposed in the trough or box-like sleeper section member of box sleeper so as to be replaceable via their terminal box and a transverse plate.”

9 The remaining claims, numbered 4 to 11 and 13, are not specifically challenged by the applicants. Claims 4 to 11 are all dependent ultimately on claim 1. Claim 4 provides for shock absorbing elements; claims 5 and 6 specify that the sleeper has an outer coating of, for example, concrete; claim 7 requires steel members for protecting the outer coating; claim 8 provides for cable ducts extending under the bearing flanges; claim 9 requires bracing strips for the bearing flanges; claim 10 provides water outlet openings in the sleeper; and claim 11 specifies openings in the covers of claim 2 with plastics bellows. Claim 13 is an independent omnibus claim.

Grounds for revocation

10 As set out in their statement, the applicants seek partial revocation of the patent under section 72(1)(a) of the Act on the grounds that claims 1 to 3, and claim 12 when dependent on any of claims 1 to 3, do not define a patentable invention. They cite the following prior art:

i) US patent number 4093163 (D1) (CF2), published in June 1978;

ii) A technical publication entitled “Die Grundsätze der Sicherungsanlagen für den Eisenbahnbetrieb” by R Hämmerli (D2) with a translation of relevant extracts (D2A) (CF3), published in June 1982;

iii) A journal of Integra Signum AG (D3) with a translation of the relevant article (D3A) (CF4), published in December 1992;

iv) An information brochure of Integra Signum AG (D4) (CF5), published in February 1998;

v) US patent number 773666 (D5), published in 1904;

vi) US patent number 2704517 (D6) (CF8), published in 1955.

11 References D1, D2 etc refer to the designation in the statement, and I have added the exhibit numbers (CF2 etc) where the same documents have been exhibited to Mr French's witness statement, which I shall come to below. The applicants say in their statement that the invention of claim 1 is not novel in the light of the disclosure of D1. Alternatively they say the invention of claim 1 does not involve an inventive step over the disclosure of D1 when considered in the light of common general knowledge at the application date, or over D1 in combination with either D2 or D4. They say claim 2 lacks inventive step over the disclosure of D1 in combination with either D2 or D3 or common general knowledge. They also say that the invention claimed in claim 3 is disclosed in D1, so that it too is anticipated or lacks inventive step over the same documents or combinations of documents and for the same reasons as claim 1. They say the subject matter of claim 12, when dependent on any of claims 1 to 3, is obvious in the light of D1 and D6.

Evidence

12 The applicants' evidence-in-chief comprises a witness statement by Mr Clive Harry French, who is their patent attorney. Mr French's witness statement largely consists of his own argument as to why he considers claims 1, 2, 3 and 12 of the patent are invalid. He exhibits the same items of prior art as were filed with the statement, apart from D5, and in addition:

i) UK patent number GB2278383 B (CF1)

ii) German patent number DE4014248 A1 (CF6)

iii) German patent number DE4014249 A1 (CF7)

iv) An affidavit of a Mr Windish (CF9) to show that the D3 and D4 documents were made available to the public before the priority date, and

v) A letter of a Dr Neubauer (CF10) to show the D3 and D4 documents were made available to the public before the priority date.

13 In a letter of 29 August 2001, Mr Greene argued that Mr French's witness statement was inadmissible because Mr French is the applicant's legal adviser and not an independent expert. The Patent Office wrote in December 2001 with a preliminary view that the witness statement may be admissible but that the hearing officer would decide what weight to attach to it in the light of submissions to be made at the hearing. I confirmed at the hearing a preparedness to allow Mr French's witness statement to stand as his argument in support of the applicants' case. Since this is simply argument from a person who as Mr Greene rightly observed is not an expert, the need to consider its weight in the sense of assessing its probative value as "evidence" does not arise in any meaningful way. I have rather accepted Mr French's arguments or rejected them on their merits, as is usual where argument is concerned.

14 The proprietor's amended counter-statement contained further clarification of the points of difference between the applicants' and the proprietor's arguments. The Patent Office

indicated also in December 2001 that the amended counter-statement could be admitted, but in recognition of the applicants' concern that consideration of new grounds raised for the first time at a late date by the proprietor might cause them additional work, the question of costs was left open. I will consequently consider this point later.

- 15 On 20 December 2001, Mr French wrote to the Patent Office enclosing a document which he explained was a translation of the decision of the opposition division of the Netherlands patent office in respect of a Netherlands patent application corresponding to the patent in suit. I invited Mr French and Mr Greene to say at the hearing what relevance this document had, dealing as it might with different evidence and arguments from the present action, and I explained that I had not looked at it. Mr French said that it was for information and he did not wish to rely on it. Mr Greene was content with that position and I have therefore disregarded the document unread and in its entirety.

Lack of expert evidence

- 16 The arguments put forward at the hearing not surprisingly related among other things to construction of the claims and to assessment of the relevance of the prior art in relation to inventive step. It is common in such cases for parties to produce evidence from expert witnesses. Such properly qualified expert evidence will tend to be of primary assistance in assessing issues of claim construction and obviousness.
- 17 In the present case, neither side produced expert evidence. I do not consider the arguments put forward by Mr French and Mr Greene constitute expert evidence in the proper sense, nor did I understand they were suggesting they were. Mr French's witness statement as I have already decided comprises the arguments put by the legal representative. I take the same view of Mr Greene's submissions. Their opinions are not founded on relevant technical experience and they cannot be considered in any degree to provide me with expert evidence. That neither side put forward any evidence from a suitably qualified independent expert is thus a disadvantage to me. I note that in correspondence Mr French said that "in view of the nature of the action before the Comptroller, it would appear that to instruct an expert witness would be disproportionate and unnecessarily expensive". I take that point entirely, and welcome his responsible attitude to keeping costs down. But equally I cannot ignore the effect that the lack of expert evidence must have. I will rely, as I must, on my own assessment of the prior art in the light of the arguments advanced, while remaining alert to the limitations that must necessarily be attendant on doing so.

Construction of claim 1

- 18 The wording of claim 1 needs careful consideration in order to determine its scope. It is framed in such a way that it is not immediately clear how far the different elements set out in the claim impose real or effective limitations on the scope of the monopoly. Put bluntly, are all the named parts actually present or essential, or must they simply be capable of being present or accommodated? At the hearing, I questioned Mr French and Mr Greene closely on this point, as I felt a clear understanding of the claim and its scope must underpin the whole of this decision.
- 19 It is convenient to repeat the claim here, subdivided into sections:

1. A sleeper for railway track systems:

- (a) suitable for incorporation in the track near points, more particularly near the drives and the associated tip fastenings for the points tongues which are adjustable via slide rods,
- (b) characterised by an upwardly open steel trough or box-like sleeper section member which has a cross-sectional width and a cross sectional height substantially matching that of a normal concrete or wooden sleeper
- (c) and which has laterally projecting bearing flanges at least for points-tongue slide chairs and/or associated operating components of tip fastenings,
- (d) and the trough or box-like sleeper section member is associated with tip fastenings in the form of “latch fastenings” or the like, comprising stationary guides and movable operating parts, such as latches, cam rods and cam-rod guides,
- (e) all of which project into the upper part or open part of the trough or box-like sleeper section member,
- (f) whereas the bottom part houses the points-tongue slide rods, the tongue-monitoring linkage, the points drive, heating rods if any, and shock-absorbing elements.

I shall now consider each section in turn.

- 20 Mr Greene said of the passage I have called section (a) that it did not in itself impose any limitation on the invention, other than the requirement that the sleeper must be suitable for the stated purpose. Mr French said this passage set out a characteristic of the sleeper. In effect I think they were saying the same thing, and I agree with them: this passage merely requires the sleeper to be suitable for incorporation in the track at appropriate locations near points, drives, tip fastenings and slide rods, but does not make those elements part of the claimed device.
- 21 Section (b) is easily dealt with. The claim undoubtedly includes an upwardly open steel trough or box-like member with height and width matching that of a normal concrete or wooden sleeper.
- 22 Section (c) clearly requires laterally projecting flanges. Mr Greene’s view was that this passage characterised the nature of the bearing flanges in that they must be suitable for bearing things such as points tongues slide chairs. Mr French did not deal directly with this point of construction but in discussing the prior art he asserted there were flanges in D1 that also “support a slide chair which itself supports the slide rail”; he was there implicitly applying the same construction as Mr Greene. I tend to the view that section (c) requires the sleeper to have lateral flanges that are capable of bearing something. More than that, they must be suitable for bearing one or other or both of points tongue slide chairs and operating components of tip fastenings. Since the claim says “at least”, the flanges may also bear other things as well.

- 23 According to Mr Greene, the passage I have called section (d) requires the sleeper to incorporate “latch fastenings or the like” which fasten the tips of the points tongues. He took the passage “stationary guides and movable operating parts” to qualify “tip fastenings”, so in his view the latch fastenings must comprise stationary guides and movable operating parts but they do not necessarily involve “latches, cam-rods or cam-rod guides”. Taking this last part first, I agree that the qualifier “such as” must mean that latches, cam rods and cam-rod guides are only examples, and as such are not limiting on the scope of the claim. I have more difficulty with what “associated with” means: are the “tip fastenings ... comprising stationary guides and movable operating parts” part of the claimed invention or not? On the one hand, the claim is directed to a “sleeper”, not to a “sleeper and track assembly”, for example. This would lead to the conclusion that “associated with” connotes a mere juxtaposition in use, not that the tip fastenings are part of the “sleeper” claim. On the other hand, Mr Greene said “associated with” meant that the sleeper must include tip fastenings and Mr French’s arguments contained the implicit assumption that the claim was indeed limited by these elements. I can see the sense in what they are saying. Despite the equivocal wording of the claim, I am driven to the conclusion that claim 1 must be construed, as the parties have done, to include the “tip fastenings ... comprising stationary guides and movable operating parts”.
- 24 This view is strengthened by looking at section (e), which specifies that all of these elements project into the upper part of the trough or sleeper section. This makes rather more sense if the elements in section (d) are actually present.
- 25 Sections (e) and (f) respectively refer to “upper” and “bottom” parts of the sleeper. Certain items, as I have noted, are said to “project into the upper or open part” while “the bottom part houses” others. Mr Greene thought they were discrete parts of the sleeper, though not particularly well defined, and not critical to construction of the claim. Mr French said one could choose an arbitrary definition, such as the top 50% being the upper part and the bottom 50% being the bottom part. But he also argued that at the extreme, the upper part could be anything except the bottom surface and the bottom part anything but the upper surface, and the parts could overlap to any extent.
- 26 I agree that the definition imposed by the references to upper and bottom parts is not precise. My own view is that “upper” is used in defining the location of the “stationary guides and movable operating parts” of the tip fastening elements to indicate that they extend at or about the uppermost surface of the sleeper box section. This is necessary if they are to interact with the points tongues (which are necessarily located above the upper surface of the sleeper) in the way described in the specification. This view is reinforced by the requirement in claim 1 that these elements “project” into the upper part and by the use of the expression “open part” as an alternative to “upper part”. I therefore consider that elements required to be in the upper part must be located at or around the level of the top surface of the box section of the sleeper. It also seems to me that the claim uses “bottom part” to place elements substantially within the box section. I do not think that overlap is precluded but I would expect an element said to be in the upper part to lie substantially above an element in the bottom part. This, it seems to me, provides a working basis to construe this part of the claim.
- 27 Regarding section (f), Mr Greene and Mr French agreed that the sleeper must incorporate points-tongues slide rods, a tongue-monitoring linkage, a points drive and shock-

absorbing elements. I confess I am a little more sceptical, largely because, as I have already noted, the claim is directed to a “sleeper”, not to a “sleeper and track assembly”. This would lead to the conclusion that these other elements in section (f) are not part of the “sleeper”. But section (f) does positively say the bottom part “houses” these elements, and that is not in qualified terms such as “in use” or “suitable for”. I conclude on balance therefore that they should be read as actually being part of the claimed device, and located in the bottom part of the sleeper. The implications of this conclusion may be quite significant, since it imports a number of limiting factors into the claim. That of course has effects both on the relevance of the prior art, but also breadth of the monopoly the patent holder may enjoy.

- 28 Section (f) also mentions heating rods but since it says “if any”, they are clearly not obligatory and therefore impose no limitation on the claim.
- 29 I should add that I have also reviewed the description of the patent specification in the light of this construction of the claim. Having done so, I find no inconsistency between the two. There are no suggestions in the description that elements I have read from claim 1 as being essential may in fact not be. I have also found passages reinforcing my interpretation of the claim. For example, on page 10 of the specification, it is said that the box sleeper “has a special feature” in the shock absorbing elements.
- 30 Even so, I cannot pretend that I have found construing claim 1 easy, or that my finding is wholly secure. The language of the claim is vague and unclear. However, I have approached it with a view to making the best sense of it in the light of the description which precedes it. It is against this construction that the prior art and the applicants’ allegations of invalidity must be measured.

Novelty

- 31 An invention defined in a claim lacks novelty if the specified combination of features has already been disclosed. Thus, as found under the Patents Act 1949 in *General Tire & Rubber Company v Firestone Tyre & Rubber Company Limited* [1972] RPC 457 at pages 485-6:

"If the prior inventor's publication contains a clear description of, or clear instructions to do or make, something that would infringe the patentee's claim if carried out after the grant of the patentee's patent, the patentee's claim will have been shown to lack the necessary novelty, that is to say, it will have been anticipated."

This judgment continues:

“To anticipate the patentee's claim the prior publication must contain clear and unmistakable directions to do what the patentee claims to have invented: *Flour Oxidizing Co Ltd v Carr & Co Ltd*, ((1908) 25 RPC 428 at p457, line 34, approved in *B T H Co Ltd v Metropolitan Vickers Electrical Co Ltd*, (1928) 45 RPC 1 at p24, line 1). A signpost, however clear, upon the road to the patentee's invention will not suffice. The prior inventor must be clearly shown to have planted his flag at the precise destination before the patentee.”

These considerations still apply under the Act.

- 32 Mr French asserts that the present claim is anticipated by US patent number 4093163 referred to as “D1” or “the Larsson Patent” in the statement and as “CF2” in Mr French’s witness statement. D1 is indeed relevant prior art which provides in many respects a similar sleeper arrangement to that claimed in the patent in suit.
- 33 Bearing in mind the features of claim 1 as construed above, D1 discloses a sleeper for a railway track system which is suitable for incorporation near points drive and tip fastening locations. It uses an upwardly open trough or box-like section member. D1 does not say that the sleeper is made of steel as required in claim 1. It does say it is a “box girder” which implies that it would be made of steel, but I do not consider this quite amounts to an unequivocal disclosure. Neither Mr French nor Mr Greene raised this point, but it seems to me that other materials such as another metal or reinforced concrete might also be feasible in this context. Moving on, it is said to be of the same configuration and dimensions as a conventional sleeper, which I consider discloses the requirement in claim 1 that it should have a cross sectional width and a cross sectional height matching that of a normal sleeper.
- 34 Claim 1 requires bearing flanges. Mr Greene said initially at the hearing that “laterally projecting” meant the flanges must project outwardly from the sleeper. An alternative, wider construction though is that they might either extend outwardly or turn back in over the box section. Mr Greene later accepted what I think is the right interpretation that “laterally projecting” can include both inwardly or outwardly extending arrangements. Mr French argued that D1 shows flanges turned back over the box section, and hence meets that requirement of claim 1. He contended that the area indicated by reference 12 in figure 2 showed such a flange and although this is not immediately obvious, I think he is right. He suggested one should compare the thickness of the material from which the box girder is made in figure 4 with the area indicated by numeral 12 in figure 2. The width of the surface 12 is greater than the thickness of the material and the natural interpretation is that it is shown wider because it is flanged. Figure 4 also shows the outer envelope of the box girder to be turned in as a flange, although this is less persuasive as the section shown is in the region of the drive motor at IV-IV in figure 3 and does not necessarily correspond to the section in the rail bearing region. I am also persuaded by the illustration of the monitoring linkages in figure 2. These are shown partially in phantom and therefore evidently extending under what can only be a flange. The flange corresponds in width to the putative flange in the area 12, and I therefore consider that the area 12 does also constitute a flange.
- 35 I believe it is also clear that the flanges in D1 serve a bearing function. Mr Greene had some difficulty with this aspect of the disclosure but it seems to me that figures 2 and 3 show plates mounted on the upper surface of the sleeper and extending at least partially onto the flanged area. These plates support the fixed rails and also slide chairs which in turn support the points tongues. I therefore consider that these features of claim 1 are disclosed in D1.
- 36 The claim next requires “tip fastenings in the form of latch fastenings or the like comprising stationary guides and movable operating parts ... all of which project into the upper or open part of the trough or box-like sleeper”. A tip fastening function in the D1

disclosure is carried out by a feature of the drive which acts to lock the points drive at the ends of its travel. The drive mechanism consists of a spiral cam slot formed in a cylindrical sleeve that is rotated by the drive motor. A cam follower converts the cam motion into a linear drive for the points tongues. When the points tongues reach the end of their travel against one of the static rails, the cam profile changes from a spiral into a straight section. The travel of the points tongues ceases but as the drive motor continues to rotate, the cam moves into the straight section. This has the effect of preventing sideways movement of the cam so that the points tongues cannot easily be displaced. *Prima facie* this arrangement does not involve tip fastening elements which project into the upper or open part of the sleeper as required by the claim. Mr French argued that the entire drive linkage including the slide rods constituted both the tip fastening elements and the drive elements and that the tip fastening elements consequently do project into the upper part.

37 Mr Greene said that the tip fastenings must be something different from the points drive. Since tip fastenings are specified separately from the other components, in his view they must be a separate mechanism. Mr French argued in relation to the prior art specification D1 that the combined points drive and the tip fastening arrangement therein anticipated these features of claim 1. Mr French's argument requires claim 1 to be construed to encompass a combined points drive and tip fastening mechanism. I agree with Mr French's view of this up to a point. The claim requires drive means and tip fastenings, but does not specify separate drive and tip fastening mechanisms so they could be provided by a common mechanism. However, the requirement in claim 1 that the tip fastenings project into the upper or open part of the sleeper and the slide rods and drive are housed in the bottom part, while not precluding a combined arrangement, does require those elements to be located in the positions specified and therefore imposes a degree of separation between the elements that perform these functions.

38 This clear sense in the claim is that there is a degree of separation between the tip fastening and drive elements to the extent that the tip fastening elements project into the upper or open part of the sleeper while the drive elements are housed in the bottom part. There is no such separation in the disclosure of D1 and I therefore consider that it does not anticipate this aspect of claim 1.

39 D1 does disclose a bottom part of the sleeper housing slide rods, tongue monitoring linkage and points drive, but it does not disclose shock absorbing elements. Mr French said that one would nevertheless be led by the disclosure to provide shock absorbing elements. He referred to lines 45 to 49 of column 1 of D1 which describe the operation of the locking section of the drive cam. This reads as follows (the points tongues are here called "switch blades"):

“...whereby it is ensured that the switch blade is locked in its end positions, eliminating the risk that the switch blade be dislocated from its end positions as a result of vibrations of the rails, caused e.g. by very rapid trains passing thereon.”

40 This passage highlights a problem of vibration potentially causing the points to disengage. Mr French said one would naturally include some form of damping to relieve the problems of vibrations, or at least that it would not be inventive to include them. I do not, however, see any clear and unmistakable directions in this disclosure that the arrangement

described must include shock absorbing elements. The passage I was directed to indicates that there is a potential problem with vibration, but it does not offer shock absorbing elements as a way to mitigate it. On the contrary it states that providing a locking mechanism for the switch blades (points tongues) solves the problem.

41 On this basis, D1 does not in my view disclose all the features which are required by claim 1, and hence does not demonstrate that it lacks novelty. Since claims 2, 3 and 12 are dependent on claim 1, their novelty is not impugned by D1 either.

Inventive Step

42 The approach to be taken when considering whether a claimed invention involves an inventive step is that set out by the Court of Appeal in *Windsurfing International Inc. v. Tabur Marine (Great Britain) Ltd.* [1985] RPC 59 to which both Mr French and Mr Greene referred me. This requires a four-step process to be followed, namely:

i) to identify the inventive concept embodied in the patent in suit;

ii) to assume the mantle of the normally skilled but unimaginative addressee in the art at the priority date and to impute to him what was at that date, common general knowledge in the art in question;

iii) to identify what if any differences exist between the matter cited as being known or used and the alleged invention; and

iv) to decide whether, viewed without any knowledge of the alleged invention, those differences constitute steps which would have been obvious to the skilled man or whether they require any degree of invention.

43 Adopting this approach, it is first necessary to identify the inventive concept. Mr French took the view that the starting point for the invention, as set out in claim 1 of the patent in suit, was the prior art disclosure in D1 which had been modified according to the invention by adding to it, or combining with it, common general knowledge or the disclosure in either of the documents D2 and D4 referred to above.

44 I must immediately digress to deal with the disclosures in D2, D3 and D4. Mr French said that they all relate to the same mechanism. Mr Greene did not entirely agree. He said that they all describe something fairly similar save that some describe what is called the CKA 6 latch and some the CKA 9 latch, so they are not exactly the same thing.

45 Looking at the disclosures in detail, D2 (or CF3) is referred to by Mr French as “the Hämmerli article”. Five of the 13 pages are translated into English from the original German. There is a further page of translation included with CF3 which appears misplaced since it obviously relates to the title page of the article in CF4. The substantive content of the five translated pages is the text relating to figure 22 which shows a photograph of the tips of a set of points tongues and what is evidently a drive mechanism in place between them. No detail of the working parts of the latch can be seen in the photograph but figure 22 also shows four diagrams of a latch mechanism in different positions of its operation. The Hämmerli article says of figure 22 that it is a “new latching

lock project by INTEGRA” and that it is “The CKA latching lock”. This was published in June 1982, before the priority date of the patent in suit.

- 46 D3 (or CF4) is referred to by Mr French as “the Integra Signum article”. It consists of the title page and pages 13 to 16 of an Integra Signum house journal dated December 1992 with a translation into English of pages 13 to 16. The article is entitled “The redesign of the CKA 6 latching lock into the new type CKA 9”. It shows in the various diagrams a similar latch to that in D2, and refers to it as the “CKA 6/CKA 9 latching lock”. The developments involve making the locking rod adjustable in length to accommodate different rail gauges, detailed changes in geometry of the working parts, and rustproof surface treatment. Based on this document, I think Mr Greene’s reservation that the CKA 6 and CKA 9 latches are different does not carry much weight. The mechanism and operation of the CKA 6 and CKA 9 latches is entirely equivalent as far as it is relevant to the present determination.
- 47 D4 (or CF5) is referred to by Mr French as “the Integra Signum brochure”. Mr French helpfully handed up at the hearing an original copy of this brochure in which the photographs were clearer than in the photocopy exhibited. This brochure is in English, is entitled “Pawl Point Lock” and shows a number of photographs and diagrams of a latch mechanism the same in its configuration and operation as those shown in documents D2 and D3. The four diagrams “Functional diagram of locking” are virtually identical to those in D2. This brochure does not refer to the latch by the code CKA. It was issued in February 1988.
- 48 I think D2, D3 and D4 all relate to the same Integra Signum latch mechanism, in addition to which D3 explains the relationship between the CKA 6 and CKA 9 versions. They all relate to and are therefore partial descriptions of the same thing, and it is reasonable I believe to read them together as far as the sense of their respective disclosures permit.
- 49 Returning to the determination of the inventive concept, Mr French’s position looks attractive. The present patent describes the use of the CKA latch in the hollow sleeper. As described the sleeper of the patent in suit does not have to use the CKA latch but the specification does say, “The tip fastenings are preferably latch fastenings 2, known under the SBB/ISAG designation CKA 9”, and also “the fastener can be a latch fastener 33, e.g. type CKA 9”. Thus it is Mr French’s proposition that the inventor has taken the idea of a hollow sleeper in the Larsson patent D1 and modified it by using the CKA or equivalent latch.
- 50 Mr Greene took a different view of the inventive concept. He said that the inventor in fact had started from the position that he wanted to house a relatively large latch mechanism such as the CKA 6 or CKA 9 in such a way as to allow automatic tamping of the track. He was not aware of the existence of prior hollow sleepers such as that in the Larsson patent D1 so the inventive concept is the idea of housing the latch in such a way as to allow automatic tamping, and that happens to be in a hollow sleeper. This may indeed be the route by which the inventor arrived at the present invention, but if that was in ignorance of a closely relevant prior disclosure, it does not necessarily provide an accurate view of the invention’s true relationship to the prior art. In this case D1 is highly relevant and it is common ground that the inventor was well aware of the CKA latch mechanism. In my view the inventive concept should be objectively assessed as a combination of a

hollow sleeper with an integrated points driving mechanism as disclosed in D1 together with a latch of the CKA type so far as that type of latch is specified by the terms of claim 1 of the present patent. Claim 1 is further elaborated, however, and includes a certain configuration of its elements in the upper or open part and the bottom part of the sleeper as I have discussed, and shock-absorbing elements in the bottom part. In considering the inventive concept proposed in the patent, one needs to have in mind these further elaborations.

51 The second *Windsurfing* step is to assume the mantle of the normally skilled but unimaginative addressee in the art at the priority date and to impute to him what was at that date common general knowledge in the art in question. Mr French proposed in his skeleton argument that the appropriate addressee in the present case was a person skilled in the art of railway points mechanisms whose relevant common general knowledge would include a basic awareness of mechanics and an awareness of the types of points drive and locking mechanisms commercially available at the time. I think it is true that the skilled addressee would have those characteristics, but to emphasise knowledge of points drive and locking mechanisms as Mr French has done is to give an unbalanced picture of the range of knowledge to be expected. I think it would be more appropriate to specify instead an awareness of the various systems and mechanisms relevant to installing, operating and maintaining railway tracks and points.

52 Mr Greene referred to the discussion in *Wheatley (Davina) v Drillsafe Ltd* [2001] RPC 7 as to what constitutes common general knowledge. Aldous LJ said in *Wheatley* at page 146, quoting his judgment in *Beloit Technologies Inc v Valmet Paper Machinery Inc* [1997] RPC 489:

“It follows that evidence that a fact is known or even well-known to a witness does not establish that that fact forms part of the common general knowledge. Neither does it follow that it will form part of the common general knowledge if it is recorded in a document.”

He then quoted Luxmoore J in *British Acoustic Films* (53 RPC 221 at page 250) as follows:

“A piece of particular knowledge as disclosed in a scientific paper does not become common general knowledge merely because it is widely read, and still less because it is widely circulated. Such a piece of knowledge only becomes general knowledge when it is generally known and accepted without question [or in Aldous LJ’s reformulation for the purpose of the case in hand, “when it is generally regarded as a good basis for further action”] by the bulk of those who are engaged in the particular art; ...”

53 Mr Greene also referred to *Dyson Appliances Ltd v Hoover Ltd* [2001] RPC 26 where at page 525 the Deputy Judge indicated, and I paraphrase, that the onus is on the applicant for revocation to provide evidence of the common general knowledge and that it will damage his case if he fails to do so. This proposition was upheld on appeal.

54 It is clear that for an item of information to form part of the common general knowledge it must meet these criteria, and that the onus is on the applicant for revocation to provide

evidence of that if they wish to rely on it. No expert evidence was provided by either side as to what would have been in the mind of the skilled addressee at the relevant time in relation to the matters raised by the present invention. As I have explained earlier, I think that puts me at a disadvantage in deciding this case. I will have to rely on inference from the information that has been submitted by the parties and my own judgment, which provide a view which is at some remove from the first-hand evidence available from an expert and therefore likely to be less reliable. I will consequently need to have regard to the degree of certainty with which I am able to draw conclusions and balance that against the standard of proof which the applicants need to reach given that the onus is on them to make out their case.

- 55 One specific issue that arose in considering the second *Windsurfing* step concerns whether knowledge of the D2, D3 and D4 articles would have been part of the common general knowledge of the skilled addressee in the present case. In fact I do not think it is appropriate to inquire into whether the CKA latch specifically was part of the common general knowledge, but that the relevant question is whether latches of that general type form part of it. I say that since the claim does not require the use of a CKA latch as such but it is clear that any suitable latch may be used.
- 56 In the absence of expert evidence I must draw, cautiously, on the documents and representations I have received. The patent specification itself gives an insight into what the author expected the addressee would be aware of in relation to latch mechanisms. The first reference to the CKA latch on page 6 states: “The tip fastenings are preferably latch fastenings 2, known under the SBB/ISAG designation CKA 9.” The specification then directs the reader to consider “alternative points-tongue locking devices of the kind proposed in DE4014248A1 and DE4014249A1.” These are both in the name of Butzbacher Weichenbau GmbH (“BWG”). They set out latch mechanisms similar in their general manner of operation to the CKA type, differing principally in the precise action of the cam rods and latches. The specification then goes on to describe how the CKA latch operates. There are drawings of the important parts in different positions but the description is cursory and there are some parts such as the slide rods and the points tongue monitoring linkage which are scarcely mentioned. These references seem to assume the reader knows what a latch fastening is and can refer to the source “SBB/ISAG” to find out more about the CKA 9 or to the specifications describing the BWG latches if necessary. However, this is an inference and I do not think it should overly be relied on as indicative of the state of the notional skilled addressee’s knowledge.
- 57 Mr French asserted that the CKA latches were approved by the Swiss railways and used by them, and that a skilled person working in the art ought to have knowledge of that. However, I was not shown any evidence of that, and the date and extent of such use and the degree to which the notional skilled person should be aware of it were not established either by Mr French’s comments or more importantly by the evidence.
- 58 Returning to the documents themselves, I note the sequence of dates, languages and types of publication. D2 was published in 1982 and is a Swiss Railways publication providing technical explanation of the CKA latch as a pilot. D4 was published in 1988 and is a sales or technical information brochure in English. D3 was published in 1992 and is an article in a house magazine describing development of the CKA 6 into the CKA 9, in German. This covers a reasonable period of time and suggests the manufacturer was

marketing in English speaking countries as well as German speaking ones. In addition to the evidence Mr French provided about distribution of these publications, this suggests to me a reasonable level of availability of information about the latches, but again I do not think this can be conclusive as to the matter of what was common general knowledge.

59 Summing this up, given the prior publications of the CKA latches, and the implication from the discussion of the CKA and similar latches in the patent in suit, although there are suggestions in the documentation before me that the skilled person may have been aware of such latches, I am not able to conclude with any confidence that he would in fact have been, and even less so that they would have been part of his common stock of knowledge. Consequently, I do not think I can say on the evidence before me that such latches formed part of the common general knowledge of the appropriate skilled person at the relevant time.

60 The third step is to identify what if any differences exist between the matter cited as being known or used and the alleged invention. I have set out the elements of the invention above in relation to the discussion of novelty and have found that they are to a great extent disclosed in D1. The present invention differs from the disclosure of D1 firstly in respect of the requirement that the sleeper be made of steel; secondly in that it requires a degree of separation between the tip fastenings and the drive elements; and thirdly in that it requires shock absorbing elements in the bottom part of the sleeper.

61 Considering whether these differences constitute steps which would have been obvious to the skilled person, I have little trouble with the sleeper being made of steel. Steel would have been a logical material to use, and given the description “box-girder”, and the dimensions shown in the drawing, steel is strongly implied as being a likely material to occur to the addressee.

62 I have greater difficulty with the question whether the provision of a degree of separation between the drive and the tip fastenings involves an inventive step. This requirement emerges from a somewhat mechanical analysis of the wording of the claim, but does reflect what appears to be a significant feature of the invention not found in the D1 disclosure, that all the tip fastenings described include latch elements acting directly on the points tongues, and do not merely rely on locking the drive in place at the end of its travel. The fourth *Windsurfing* question can be addressed effectively by asking whether it would be obvious to adopt this type of latch into the known D1 type sleeper. I have been unable to determine that such latches would have formed part of the common general knowledge of the skilled person. On one extreme view, this would militate against a finding that the use of such a feature in the sleeper of claim 1 was obvious, in that the skilled man would not look at D1 and modify it in his mind in this way to include this type of latch.

63 However, this is to my mind too strict a view. There is a clear direction in D1 to consider other types of drive than the particular one it discloses, and information about the present type of drive was readily available in the prior art of D2, D3, D4. D1 says in the paragraph bridging columns 3 and 4:

“The embodiment as described and illustrated is to be regarded as an example only and the various parts of the rail point switch may be constructively altered in a

variety of ways within the scope of the appended claims. This is true both as concerns the mechanism 32 to shift the switch blade 7, 8 to the two end positions thereof and the mechanism 31 to indicate the correctly shifted positions.”

- 64 Given this direction, I do not think it would have been inventive for the skilled person to inquire into placing any other suitable sort of known drive or latch mechanism into the hollow sleeper. The CKA latch and the similar BWG latches were in the public domain; CKA in house literature and BWG in published patents, all within the precise technical area of interest to the inventor, that of points driving mechanisms. There seems to be no fundamental difference between the ways the D1 system and the present system work which would have required inventive ingenuity to substitute one for the other, in particular in the way they interact with the hollow sleeper and rail system. D1 shows that one drive mechanism can be placed into a hollow sleeper and invites the addressee to try others. Given these considerations, I do not think it would have required any inventive ingenuity for the skilled person to use a drive with a directly acting latch type mechanism instead of the D1 type, and following directly from that, I do not think the provision of separation between the drive and the tip fastenings as required by claim 1 constitutes an inventive distinction.
- 65 The remaining feature consists of the shock-absorbing elements in the bottom part of the sleeper. Mr French pointed out that since claim 4 particularised those elements, the meaning of shock-absorbing elements in claim 1 was consequently broader than the particular arrangement in claim 4, and he said that any form of shock-absorbing means in the mechanism would therefore satisfy the requirement of claim 1. Mr Greene pointed out that the claim required the shock-absorbing elements to be in the bottom part of the sleeper. I gave my view of the separation of elements between the upper and bottom parts of the sleeper earlier, and I think it is clear that the shock-absorbing elements must consequently be distinct from the latch and must carry out some function appropriate to their separate location.
- 66 Mr French said that the Integra Signum Brochure D4 specifies an elastic bearing bush for mounting the “pawl pivot”, that is the element referred to as the latch 34 in the patent in suit. The bush is said in the brochure to absorb shocks in the event of high thrust forces. Since the present invention uses the CKA latch as an embodiment it already incorporates this resilient bush in that embodiment. Indeed, figures 1a, 1b and 5, and particularly figure 7 of the patent in suit seem to show such a bush. I do not think this can constitute the “shock-absorbing elements” of claim 1, however, because it is a different element to the shock absorber referred to in the claim and because it is in the wrong position - not in the bottom part of the sleeper.
- 67 Mr French’s view was that the skilled addressee would appreciate the need for eliminating vibrations, based on his general knowledge of mechanical applications, and that he would also be directed by D1 as already discussed above to take steps to avoid vibration. He would consequently include shock absorbing or damping means. I do not accept this argument. The skilled person may well be aware of vibration being a problem and the use of shock absorbers to provide damping as a possible solution to it, but that is a long way from saying it is obvious to incorporate shock absorbers into the present arrangement. It may not be necessary to address vibration at all; I have no evidence to show whether it is or is not. Even if it is, D1 for example provides another solution - of locking the drive,

so provision of shock absorbers is not the only answer. Furthermore, a locking mechanism is already incorporated in the present arrangement so it might be thought there is no need to do anything else. Although Mr French did not raise the point, perhaps the presence of the elastic bush in the CKA latch might prompt the designer to incorporate more shock-absorbers elsewhere, but this argument suffers from the same problem; if a resilient bush has already been provided there might be no need for further measures.

68 There is an underlying problem with Mr French's argument which is that a connection between the proposition that the sleeper is subject to vibration and that shock absorbers will somehow improve matters, is only created when someone devises a particular arrangement for applying shock absorbers to the mechanism. For the provision of shock absorbing elements to be an obvious step, it would need to be readily apparent how they should be used. In my view there is no such readily apparent configuration in this case. It is not enough to say a) there is vibration and b) shock absorbers are sometimes used where there is vibration, therefore it is obvious to use shock absorbers here. It is only when the inventor has designed a particular system with shock-absorbers performing a particular role that it is possible to appreciate the point of incorporating them in the sleeper system. In the present case, the shock absorbers have the very particular job of biasing the points tongues down onto the slide chairs when the points tongues are at each end of their travel. This arrangement is not particularised in claim 1 as Mr French pointed out, but I do not think it is necessary for it to be particularised for claim 1 to be inventively distinguished from the cited prior art. There is no indication that any relevant particular arrangement involving shock absorbers has been proposed or suggested in the prior art or would have been obvious to the skilled man.

69 In summary, I do not think Mr French has shown that it would have been obvious for the skilled person to incorporate shock-absorbing elements in the bottom part of the sleeper as a matter of engineering practice or as a result of consideration of what was already in the prior art. I consequently conclude that the inclusion of this element in claim 1 involves an inventive step.

Claims 2, 3 and 12

70 Since I have found claim 1 to be novel and inventive, and since the other claims that are challenged, that is claims 2, 3 and 12, are dependent on claim 1, there is strictly no need for me to go on to consider them in detail. In case my decision as regards claim 1 is wrong, however, it may be useful for me to comment briefly on them. The first thing to say is that Mr Greene did not assert the independent validity of claims 2 and 3, so they would stand or fall with claim 1. However, he did assert the independent validity of claim 12, which reads as follows:

“12. A sleeper according to any of claims 1 to 11, wherein the heating rods are disposed in the trough or box-like sleeper section member of box sleeper so as to be replaceable via their terminal box and a transverse plate.”

71 The patent in suit acknowledges the use of a heating plate placed beneath the prior type of points mechanisms which were fitted between sleepers, and cited prior art reference D5 shows a hot water heating pipe passing through hollow sleepers. Mr French said that in the light of this it was obvious to incorporate heating rods into the hollow sleeper. He said

it would also be necessary to have access to them for replacement, and that the only feasible method of access was via a transverse plate on the end of the sleeper. I do not agree. No doubt heating is desirable but it could be provided by other means than rods - by the plate of the prior art incorporated into the box sleeper for example. I do not agree that a removable transverse plate is the only option for replacement either. Even the patent in suit allows the heating rods to be replaced through the covers on top of the box sleeper, as set out in the paragraph bridging pages 12 and 13. The cited prior art really only supports the general proposition that heating is desirable, while claim 12 sets out details of a very particular arrangement for including particular heating elements in the sleeper and providing access to them. I do not think that the combination of elements set out in claim 12 is obvious in the light of the cited prior art and my view is that it should stand even if my primary conclusion as to the validity of claim 1 were wrong.

Summary

- 72 After carefully considering all the evidence and arguments before me, I have found that claim 1 is not invalidated by the prior art that has been cited in this action, either in respect of novelty or inventive step. The remaining claims are dependent on claim 1 and are likewise therefore not invalidated by this prior art. In addition, claim 12 contains a combination of features which confer independent validity over the cited prior art.

Certificate of contested validity

- 73 The proprietor requested that in the event it succeeded in this action it should be granted a certificate of contested validity. Accordingly, under section 65(1) I hereby certify that the validity of Patent Number GB2278383 B has been contested and found to be valid in respect of claims 1, 2, 3 and 12 in relation to the prior art cited in these revocation proceedings.

Costs

- 74 Costs in proceedings before the comptroller are usually awarded to the successful party on a contributory basis derived from a published scale. I mentioned above that I would consider whether there were any new grounds raised in the proprietor's amended counter-statement that might have created additional work for the applicants. I have done so and find there are none but that the amendments merely clarified issues already raised. Consequently I do not think an adjustment in costs is necessary for that reason. I see no reason in the present case to depart from the comptroller's standard practice on costs.
- 75 Applying the scale of costs set out in Annex A of Tribunal Practice Notice 2/2000, I therefore order the applicants to pay to the proprietor £900 as a contribution towards its costs. This sum should be paid within seven days after the expiry of the period for appeal against this decision, except that if an appeal is lodged, payment is suspended pending the outcome of the appeal.

Appeal

- 76 Under the Practice Direction to Part 52 of the Civil Procedure Rules, any appeal against this decision must be filed within 28 days after the date of this decision.

S N DENNEHEY

Divisional Director acting for the Comptroller