



BL O/ /04

5th January 2004

PATENTS ACT 1977

BETWEEN

J Maple & Son Limited

Claimant
(Opponent)

and

Colin Stephen Pownall

Defendant
(Applicant/
proprietor)

PROCEEDINGS

Opposition to an application under section 27
to amend patent number GB 2294744 B

HEARING OFFICER S N Dennehey

DECISION

Introduction

- 1 Patent Number GB 2294744 B (“the patent”) was filed under the Patents Act 1977 (“the Act”) on 5 October 1994 without claiming priority and was granted on 12 August 1998 to Colin Stephen Pownall, who is also named as the inventor. On 28 September 1999, through his patent agents, Craske & Co, Mr Pownall filed a request under section 27(1) to amend the specification of the patent, citing as his reason “to distinguish the invention from new prior art which has recently come to light”. Following preliminary consideration by the Patent Office, the amendments were advertised in the *Patents and Designs Journal* of 26 January 2000 and re-advertised in the *Patents and Designs Journal* of 19 April 2000 to correct printing errors.
- 2 On 19 June 2000, notice of opposition to the application to amend was given under section 27(5) by J. Maple & Son Limited (“Maple”) through their patent agents, Sanderson & Co. In due course, statements of case and the usual rounds of evidence were filed. Both parties agreed that the comptroller should decide the matter on the papers as filed, and skeleton arguments were filed in lieu of submissions at a hearing. I should make clear at this point that in coming to a decision in this case, I have carefully considered all the papers on file.

Evidence

- 3 Evidence filed on behalf of Maple comprises: two statutory declarations with exhibits by Mr Alan James Maple, a Director of Maple; two statutory declarations with exhibits by Mr Richard Wigmore, Engineering Director of Mead Fluid Dynamics Limited; a statutory declaration with exhibits by Mr Terence Orton, Managing Director of Maple Fleet Services Limited; and a statutory declaration with exhibit by Anthony S Peck, a consultant engineer working in the transport industry. Evidence filed on behalf of Mr Pownall comprises a statutory declaration with exhibits by Mr Pownall himself. (In referring to the statutory declarations of Mr Maple and Mr Wigmore, I shall adopt the “I” and “II” nomenclature used in the parties’ skeleton arguments.)

Preliminary Points

- 4 Before considering the substantive matter, I need first to deal with an evidential issue of admissibility raised by Mr Pownall. The issue arises in respect of “an independent assessment” made by Mr Peck, which was first submitted as an exhibit (RW-9) to Wigmore II, and was subsequently refiled as exhibit ASP-1 to the statutory declaration of Mr Peck himself.
- 5 In a letter dated 24 May 2001, the Office noted that exhibit RW-9 was a statement by Mr Peck and therefore hearsay, and that the Hearing Officer would give it appropriate weight when making his decision. Mr Pownall also objected that RW-9 may constitute new evidence beyond “evidence strictly in reply”. Subsequently, Maple filed Mr Peck’s statutory declaration exhibiting the same independent assessment from him. They commented that they did so to remove any doubt there can be consequent on Mr Peck’s previous statement (as exhibit RW-9) being hearsay. They also maintained that Mr Peck’s declaration is not new evidence but simple confirmation of the veracity of his previous statement since Mr. Peck has now sworn that his statement is true. They argue that Mr Pownall has not suggested that it is not true, but merely doubts its admissibility as being strictly in reply to his own evidence. On the other hand, Mr Pownall says that Mr. Peck’s statutory declaration is new evidence, but has not identified where that new evidence lies.
- 6 It is no longer the case that hearsay evidence is *per se* inadmissible; the issue is rather one of the weight to be given to it. In any event, the filing of Mr. Peck’s statutory declaration confirming his belief in the truth of his “independent assessment” would eliminate any hearsay issue. Arguably that filing might be objectionable on the grounds that it was late-filed, but Mr Pownall has not raised that point, and in any case that would be mitigated by the fact that it was being done to remedy a procedural infelicity.
- 7 This leaves the question of whether Mr. Peck’s statutory declaration is inadmissible on the grounds that it may go beyond evidence strictly in reply. Maple note that in Mr Pownall’s statutory declaration he states that “*Pilot operated and direct acting valves can have the same effect in some applications. In many applications such as the present one the effects are very different.*” They say that the evidence in reply (Wigmore II) refutes that statement of Mr Pownall and backs that up with Mr. Peck’s independent assessment. Mr Pownall has not identified in what respects he considers Mr. Peck’s statement to go beyond evidence strictly in reply and has submitted no arguments on this issue.

- 8 On reviewing the evidence, I note that Mr Pownall's evidence quoted above was in relation to point 3 of paragraph 6.0.1 of Wigmore I, where Mr Wigmore says "*Pilot operated and direct acting 3/2 valves have the same functional effect.*" Mr Pownall disagrees and says that this is not true in the case of brake line applications where the effects are very different. Wigmore II says that he believes the pilot operated or direct acting valves are interchangeable in the particular brake lock application and sought independent advice from Mr. Peck to support his belief. Given that the question that Mr Wigmore asked Mr. Peck concerns the same type of valve and the use of that valve in the same application that Mr Pownall refers to in his evidence, I am not persuaded that Mr. Peck's evidence goes beyond that "strictly in reply".
- 9 On the basis of these considerations, I admit Mr. Peck's evidence, along with all the other evidence which has been filed.

The patent

- 10 The patent relates to a valve, in particular a solenoid valve, for fitting in the fluid pressure operated braking system of a vehicle to immobilise the vehicle and resist its theft. In use, the valve is fitted in the spring brake line which supplies air under pressure to the actuator(s) of the parking brake. When the parking brake is applied, the brake line is depressurised and the brakes cannot be released except by re-energising the valve, thus preventing unauthorised attempts to drive away the vehicle.
- 11 The patent specification as granted contains 11 claims which read:
- “1. A valve for association with a spring brake line of a vehicle, the valve being operable between a first condition in which it is adapted to retain air under pressure within the spring brake line and a second condition in which it releases air under pressure from the spring brake line; the valve being arranged to be energised to bring it to its first condition from its second condition and to return to its second condition when not energised, and further being arranged to remain in its first condition as long as the spring brake line contains air under pressure.
 2. A valve according to claim 1 comprising an actuator which is electrically energised to bring the valve to its first condition, and spring means for bringing the valve to its second condition when the actuator is not electrically energised.
 3. A valve according to claim 2 wherein the actuator is a solenoid.
 4. A valve according to any one of the preceding claims comprising a body; first, second and third ports; a first valve member moveable between a first position wherein it provides communication between the first and second ports and a second position wherein it prevents said communication; a second valve member moveable between a first position wherein it prevents communication between the first and third ports and a second position wherein it provides for said communication; said valve members being connected together for movement with one another between their first and second positions.

5. A valve according to claim 4 as appendant to claim 2 or claim 3 wherein said actuator is arranged, when energised, to bring the valve members to their first position.

6. A valve according to claim 4 or claim 5 wherein the valve members co-operate with seatings in the valve body to provide for and prevent said communication, and the dimensions of the valve members and seatings are selected so that when air under pressure is present at the first port of the valve it overcomes the spring means to retain the valve members in their first positions even if the solenoid of the valve has been de-energised.

7. A vehicle having spring brakes and a valve according to any one of the preceding claims connected in the spring brake line.

8. A vehicle according to claim 7 wherein the valve is as claimed in claim 4 and the first port thereof is connected to a driver's control valve, the second port is connected to a parking brake actuator or actuators, and the third port connected directly or indirectly to atmosphere for releasing air from the spring brake line.

9. A vehicle according to claim 7 and including means for automatically changing over to an auxiliary spring brake line in the event of failure of the spring brake line, and wherein the valve is as claimed in claim 4, with its first port connected to a driver's control valve, the second port connected to a parking brake actuator or actuators, and the third port is closed or connected to atmosphere by way of a restriction.

10. A valve substantially as hereinbefore described with reference to the accompanying drawings.

11. A vehicle having a valve according to any one of claims 1 to 6 or claim 10, and substantially as hereinbefore described.”

The proposed amendments

12 The request for amendment proposes a new set of four claims and consequential amendments to pages 1 to 3 of the description. The principal amendment might be said to be the amalgamation of claims 1 to 7 as granted to create proposed claim 1. The proposed amended claims read:

“1. A valve in association with a spring brake line which supplies air under pressure to a park break actuator or park brake actuators of a vehicle, the valve being operable between a first condition in which it is adapted to retain air under pressure within the spring brake line and a second condition in which it releases air under pressure from the spring brake line; the valve comprising

a body;

first, second and third ports, said first and second ports being connected in said spring brake line such that said first port receives air under pressure and said second port supplies said air under pressure to said park brake actuator or actuators;

a first valve member movable between a first position wherein it provides communication between the first and second ports and a second position wherein it prevents said communication;

a second valve member moveable between a first position wherein it prevents communication between the first and third ports and a second position wherein it provides for said communication, said valve members being connected together for movement with one another between their first and second position;

a solenoid actuator which is electrically energised to electromagnetically move the valve members to their first positions from their second positions; and

spring means for bringing the valve members to their second positions when the solenoid actuator is not electrically energised;

wherein the valve members co-operate with seatings in the valve body to provide for and prevent said communication, and the dimensions of the valve members and seatings are selected so that when air under pressure is present at the first port of the valve it overcomes the spring means to retain the valve members in their first positions even if the solenoid actuator has been de-energised.

2. A valve according to claim 1 wherein the first port thereof is connected to a driver's control valve, and the third port is connected directly or indirectly to atmosphere for releasing air from the spring brake line.

3. A valve according to claim 1 wherein the vehicle includes means for automatically changing over to an auxiliary spring brake line in the event of failure of the spring brake line, the first port of the valve is connected to a driver's control valve, and the third port is closed or connected to atmosphere by way of a restriction.

4. A valve in association with a spring brake line which supplies air under pressure to a park brake actuator or park brake actuators of a vehicle substantially as hereinbefore described with reference to the accompanying drawings."

Technical background

13 At this point, it may be helpful to amplify a little the technical background to put the patent in context. Wigmore I gives a succinct explanation which, at least in these respects, is not disputed, and I quote:

"The patent refers to pneumatic braking systems of vehicles having a handbrake that provides an air signal to a "relay valve" which in turn applies high volumes of air to the actual brake cylinders. When air is applied the brakes are released and when air is removed or lost the brakes are engaged. The handbrake mechanism is supplied with pressurised air and when the handbrake is released, air passes to a brake relay

valve. This connection uses small volumes of air and acts as a signal to operate the relay valve and the relay valve, in turn, supplies a large volume of air to disengage the brakes. When the handbrake is applied this signal air is exhausted to atmosphere and the supply feed blocked. This causes the relay valve to exhaust the brake line air and allows the brakes to apply. Therefore, if no pressurised air can reach the brake relay valve then the brakes cannot be released. This fact is the means by which a vehicle security or anti-theft device can be employed. However, if devices are added into the vehicle handbrake line to achieve theft security by locking the brakes, then such a device has to be designed to prevent sudden, uncontrolled, application of brakes whilst the vehicle is travelling. This requirement is an essential qualification to avoid the risk of accident.”

14 Wigmore I goes on:

“To prevent pressurised air reaching the handbrake relay valve, a shutoff device can be placed in the supply line to the handbrake or in the line between the handbrake and relay valve. The installation position is a question of personal choice, but each location requires a different valve construction to achieve security and safety. 2/2 and 3/2 valves may be used and likewise direct acting or pilot operated valves may be selected.”

15 He then provides the following definitions:

“2/2 valves have two ports, an inlet port and an outlet port. When the internal mechanism opens the valve, air flows from the inlet to the outlet port. When the mechanism closes the valve, air does not flow and the outlet port will retain pressure if the line is blocked. The valve is therefore said to be a two port, two position valve.”

“3/2 valves have three ports, an inlet port, an outlet and usually an exhaust port. When the internal mechanism opens the valve, air flows from the inlet port to the outlet port (as with the 2/2 valve) and the exhaust port is blocked. When the mechanism closes the valve, air does not flow from the inlet port and the outlet port is connected internally to the exhaust port. The outlet line decompresses to atmosphere. The valve is therefore said to be a three port, two position valve.”

“Solenoid valves have internal components that are operated by an electrical current connected to a coil and armature assembly.”

“Direct acting valves are operated directly from the primary electrical input signal, and require no other energy source to complete the valve operation.”

“Pilot operated valves use a small amount of internal air pressure to complete actuation of the valve assembly. The air is normally controlled by an in-built 3/2 solenoid valve and allows amplification of actuation forces.”

16 Wigmore I also says that if it is decided to instal the security valve after the handbrake to prevent air reaching the relay valve:

“3/2 valves ensure any air leakage cannot pressurise the brake relay valve and allows the brake line to fully decompress in the security mode. If a 2/2 valve is used, then the brake relay line would not decompress in the security mode if the handbrake had not been engaged. To overcome this problem, a 2/2 valve should be “Tee’d” into the line and held open in the security mode.”

- 17 Finally, Wigmore I states that there is a further problem with the use of electrically operated solenoid brake valves.

“In the event of a fault occurring with the electronics, the electrical signal to the brake valves could be lost instantaneously and as a result the brakes could suddenly be applied when the vehicle is moving at high speed. To prevent this happening, a non-electrical safety feature is used which keeps the operating mechanism engaged all the while air pressure is present, even when the electrical signal is removed deliberately or by fault. This latching mechanism is only disengaged when the air signal is removed by applying the handbrake or by other external means such as a pipe being deliberately cut.”

The reason for the amendment request

- 18 The reason given on Form 11/77 for the request is “*to distinguish the invention from new prior art which has recently come to light.*” The Office deemed this reason insufficient: since it did not identify the prior art, it was not possible to determine whether the proposed amendments effected a proper cure for any defects they were intended to cure. The Office also reminded Mr Pownall that the allowance of amendments under section 27 was a matter for the discretion of the comptroller and the onus was on him to make full disclosure of all material matters. Mr Pownall responded by filing, under cover of a letter dated 20 October 1999, further documents which he requested and the comptroller directed should be treated as confidential under Rule 94. Rather unusually then, the detailing of the prior art from which Mr Pownall seeks to distinguish by the proposed amendment is not open to public inspection. There has though been further matter filed, especially in evidence, which it has not been requested be treated as confidential.
- 19 The background to the request is given in Mr Pownall’s statement of case, and more especially in Mr Pownall’s statutory declaration. He explains that following a meeting with representatives of Maple, he received a letter dated 6 April 1999 from Maple’s patent agent (Exhibit CSP.5) saying that all of the claims of the patent were either wholly anticipated by Maple’s activities prior to the earliest date of his patent, or (at his choice) were anticipated or were not infringed by those activities. Specifically, and with reference to certain documents enclosed with the letter (but not exhibited), the letter in essence contends that claims 1-3 of the patent were not valid on account of prior publication and prior use in the United Kingdom by Maple of a pilot-operated spool valve. Mr Pownall admits that he was aware of the Maple valve prior to taking out his patent but did not consider it relevant to his invention. However, having consulted his patent agent, he says he now recognises that his original claim is broad enough to encompass the Maple valve and the amendment requested seeks to narrow the claim to exclude that prior art.

20 On this basis, it seems that the prior art from which the proposed amendment seeks to distinguish can be described as the Maple pilot-operated spool valve. Whether it is clear precisely what construction of valve that requires I shall return to.

Opposition by Maple

21 The grounds of opposition to the proposed amendments set out in Maple's statement of case are that: (a) the application to amend fails to comply with the requirements of section 76 in that the specification as amended discloses matter which extends beyond that disclosed in the specification as first filed; (b) the amendments do not cure the defect stated by the proprietor, specifically the amended claims lack novelty and inventive step; and (c) Mr Pownall has demonstrated bad faith, specifically in the timing of the application to amend and in that he did not make a full and complete disclosure of all the relevant facts. Accordingly, they ask that the application to amend be refused.

The law

22 The application to amend is made under section 27 of the Act, the relevant subsections of which are:

“(1) Subject to the following provisions of this section and to section 76 below, the comptroller may, on an application made by the proprietor of a patent, allow the specification of the patent to be amended subject to such conditions, if any, as he thinks fit.

...

(5) A person may give notice to the comptroller of his opposition to an application under this section by the proprietor of a patent, and if he does so the comptroller shall notify the proprietor and consider the opposition in deciding whether to grant the application.”

23 Section 76 prohibits the addition of matter when amending a patent specification. The subsection relevant to these proceedings reads as follows:

“(3) No amendment of the specification of a patent shall be allowed under section 27(1), 73 or 75 if it -

- (a) results in the specification disclosing additional matter, or
- (b) extends the protection conferred by the patent.”

24 It is settled law that an amendment put forward under section 27 must, if it is to be allowable, cure the defect identified by the patent proprietor as the reason for requesting amendment. Where the reason is to distinguish from specified prior art, this means that the amended claims must be novel and involve an inventive step when considered in the light of that prior art. However, the law is also clear that opposed amendment proceedings should not descend into a roving inquiry into the validity of the patent. This means, I believe, that in considering the novelty and inventive step of the amended claims I must do so in the light of the prior art identified by the proprietor as the reason for the amendment, and not rely on anything else.

25 It is also settled law that in making an application to amend under section 27 the proprietor is under an obligation to make a full disclosure of the circumstances leading him to do so, and to demonstrate that he has acted in good faith. The comptroller is obliged to take these matters into account in deciding whether to exercise discretion to allow an amendment requested under section 27.

26 I shall now turn to the facts of the present case, applying these legal principles in the light of the evidence before me. I shall consider each of the three grounds of opposition in turn.

Do the proposed amendments add new subject matter?

27 In their statement, Maple make a general allegation that the requested amendment adds matter, but go on to allege specifically that the proposed amendment to claim 1 fails to comply with section 76 in that it discloses matter which extends beyond that disclosed in the specification as first filed. Their argument appears to be that the word “*electromagnetically*” in the proposed amendment to claim 1 which requires the solenoid actuator “*to electromagnetically move the valve members to their first positions from their second positions*” has no support in the specification as filed. In his counterstatement, Mr Pownall denies that the proposed amendment extends beyond the specification prior to amendment. He argues that it is common knowledge that a solenoid operates by electromagnetism and, by way of example, points out that it is clearly stated in the patent specification on page 5, lines 14 to 16 that “the valve has been brought to the condition shown in Figure 1 by energisation of the solenoid coil 20”. However, if the word “*electromagnetically*” is considered to offend against section 76, Mr Pownall asks the Comptroller to exercise discretion and allow the word to be deleted.

28 This ground of opposition of added matter is not clearly argued in Maple’s skeleton argument, nor has any evidence been filed which backs it up. I note though that in his evidence on behalf of Maple, Mr. Peck states “*In any pneumatic solenoid valve, **an electro-magnetic force** [my emphasis] is used to open or close orifices to admit air to, or vent it from, the output*”. Furthermore, Wigmore I at paragraph 6.3.1 says that “*Both direct acting and pilot operated solenoid valve are brought into their operating state **by the action of electromagnetic force produced** [my emphasis] when electrical energy is applied to the integral coil.*” This evidence tends to support my own view that the presence of the word “electromagnetic” in amended claim 1 in the context of movement provided by a solenoid actuator does not add matter in view of the disclosure of the specification as filed. Hence I do not find that in this respect, or I should make clear in any other, do the proposed amendments offend against section 76.

Do the amendments cure the defect stated by the proprietor?

29 As I have already indicated, to be allowable the proposed amendment must cure the stated defect. This means in the present case that the claimed invention needs to be distinguished from the prior art identified by Mr Pownall as the reason for making the request, both for novelty and inventive step. Maple argue that the amended claim would

not be so distinguished from the prior art, and in particular from Maple's own brake lock valves marketed before the priority date of the patent.

30 This necessarily brings me back to the question I flagged earlier, namely what precisely is the construction of the prior art that Mr Pownall is seeking to distinguish from? Both parties seem content to refer to it as Maple's pilot-operated spool valve, but to determine novelty and obviousness in relation to the amended claims I need to be quite clear about its constructional features. Although the evidence put in by both sides gives considerable background to valves of different sorts used before, and indeed in some cases since, the priority date of the patent, it does not to my mind absolutely pin down the prior art valve construction Mr Pownall is seeking to distinguish over. As I have said earlier, it is this prior art, and only this prior art, which falls for consideration in these proceedings.

31 It seems to me that the primary information about the prior art relevant in these proceedings lies in the documents filed on 21 October 1999 and which are the subject of confidentiality directions. In addition, paragraph 6 of Mr Pownall's skeleton argument is helpful. It reads:

“6. A clear distinction should be made between:

“(i) The solenoid operated pilot latching 3/2 spool valve shown in Doc. 7 appended to Sanderson & Co.'s letter of 6 April 1999 submitted in the course of the Application to Amend (“The Maple spool valve”). This is admitted to be prior art.

(ii) The solenoid operated direct acting 3/2 valve shown in Exhibit RW-7, which was not disclosed until August 1995. [Pownall §11.]”

32 Looking at the (confidential) documents, of which “Doc. 7” is one, I believe it is possible to form a view of the Maple spool valve from which Mr Pownall is seeking to distinguish. However, as will emerge later in this decision, I do not regard those documents as giving detailed information about the construction, installation and operation of the Maple spool valve of sufficient precision or clarity as will necessarily enable me to reach clear conclusions.

Novelty

33 Mr Pownall admits that claim 1 as granted is anticipated by Maple's pilot-operated spool valve. However, in their statement, Maple say that even if claim 1 were limited as proposed in the application, the claim would not define subject matter which is new. Although Mr Pownall admits that the combination of an indirect pilot operated 3/2 solenoid valve (in effect the Maple spool valve) fitted in a brake line was known prior to the priority date of the patent, Maple have submitted no evidence that the prior art relevant in the present proceedings shows that a direct-acting 3/2 solenoid valve (as defined in amended claim 1) in association with a spring brake line was known before the priority date. I therefore find that amended claim 1 is novel over the Maple spool valve from which Mr Pownall seeks to distinguish.

34 I should add that Maple have also alleged that the Ultra valve (which appears from the evidence to be the name by which the valve of the patent is commercially known) was made available to the public before the priority date of the patent, and hence that the proposed claims are anticipated. Mr Pownall denies in his statutory declaration that the Ultra valve was in the public domain before the priority date of the patent, and Maple have put forward no evidence to support their allegation. The allegation is on the evidence before me therefore refuted. In any event, this is not a matter which I believe properly falls for consideration in opposition proceedings, where the issue is whether the proposed amendments overcome the defect identified by the proprietor. More general issues of anticipation can and should be raised in revocation proceedings.

Inventive step

Development of the Ultra valve

35 Before considering whether amended claim 1 involves an inventive step, it is convenient to outline the development of the Ultra valve as it appears from the evidence on file.

36 In 1992, Mr Pownall produced a manually-operated valve that could be fitted after the standard driver's park brake control valve. It was a 2/2 latching valve which was held open or shut by a permanent magnet. When the valve was in the lock position, it prevented air from flowing to the spring brakes preventing their release. The Vehicle Inspectorate accepted the valve in October 1993 and sales of the valve began in November 1993. In 1994, the valve won the Road Haulage Association TipCon 94 trophy for its contribution to truck security and the valve was exhibited at the TipCon 94 exhibition.

37 During the winter of 1993/94, there were a few instances where the valve would not release when the security system was disarmed, and on investigation it was found that some vehicles, usually older ones, had problems with excessive oil in the vehicles' air system. In cold weather this oil turned waxy like thick grease and jammed the valve core, which was not acceptable. Mr Pownall then began to search for an alternative. He admits he had been aware of 2/2 and 3/2 valves for many years, both pilot-operated and direct-acting electromagnetically-operated valves, but was not aware of any off-the-shelf valve which would function as required. He says he spent a great deal of time looking for a suitable valve but none was available at that time.

38 Following several months of in-house experimentation and testing he eventually hit upon the idea of a valve which was electromagnetically operated but remained held in position by the difference in air pressure between the air pressure it was switching and atmospheric pressure. He had a valve manufactured to his requirements which he tested with good results. The valve only required a low power solenoid to change state before air pressure was applied but in the event of an electrical power loss it remained held-in down to a very low pressure, well below the threshold at which most vehicle spring brakes would start to apply if an air fault developed. He was so pleased with the valve that he instructed a firm of patent attorneys to commence a patent application for the valve which was filed on 5 October 1994. Sales of the valve started a few weeks later in November 1994.

39 Maple introduced their spool valve at around the same time Mr Pownall was developing the Ultra valve. He admits he was aware of the Maple valve but he thought it was too

complicated because it was essentially two valves in one. A pilot valve operated a spool valve which was made fail-safe by a second air supply taken from the spool valve outlet to keep the spool in position while air was present. He felt the bores were narrow so that the pilot air feed could easily be blocked by contamination in the air system, which is what he wanted to avoid. Although the solenoid of the pilot valve remained energised in normal use, the spool valve would only move to the operating position when the driver's park brake was released to provide the necessary air pressure. This meant that every time the driver applied and released the park brake the spool moved back and forth. Although this was not usually an operational problem, Mr Pownall thought it would reduce the life of the valve.

- 40 Mr Pownall says that his Ultra valve provides a technical advance over known valves used for any similar purpose. It is a simple directly operated solenoid valve which, when fitted to a vehicle park brake system, is directly held in a safe condition by air pressure within the braking system which holds the valve members against seatings without using pilot ports. The valve has few components, especially moving components and seals, so that it is very reliable. In addition, the arrangement of passages within the valve can be simple and of wide bore so that it is unlikely to become blocked by any contamination present in the air system.

Maple's arguments

- 41 Maple say that in an air control system, the use of a directly operated control valve or of an indirectly operated control valve (a so-called pilot control valve) is no more than a matter of design choice, with the appropriate selection being made on the basis of the air flow requirements downstream of the valve. They argue that the functionality of a direct-acting solenoid valve and an indirectly acting solenoid valve cannot in general be distinguished in a given application provided that the valves are properly specified for the intended application.
- 42 They submit that Mr Pownall knew about the Maple electrically operated brake lock valve and would have recognised that it solved the problems that he was having with his own earlier design of brake lock valves. They argue that it is surprising that the patent application makes no mention of the advantages of the Ultra valve over the Maple valve. They suggest that, if Mr Pownall had had such trouble finding a suitable valve, it would be expected that the patent would say why no off-the-shelf valve could be used and what was special about the Ultra valve. They argue that it was within the competence of a pneumatics engineer at the priority date of the patent to select a suitable valve for a given application and to specify suitable orifice sizes for that valve, and that claim 1 as amended is a mere selection and involves no inventive activity. They also argue that the Ultra valve is a wholly conventional valve in construction and operation, but is just properly specified for the intended application. They submit that the drawings of the patent show a crude representation of a wholly conventional solenoid operated direct acting 3/2 valve of the kind known to Mr Pownall and all other competent pneumatic engineers.

Mr Pownall's arguments

- 43 Mr Pownall denies that the use of a directly operated or indirectly operated valve is a matter of design choice. He points out that a spool valve does not have valve members

which co-operate with seatings as required by amended claim 1. He says that the pilot orifices and cross drillings in a pilot operated valve can easily be blocked by dirt in a vehicle's air system causing potentially catastrophic failure. He also says that a normal direct operating valve could not be used as it would not provide any fail safe feature. He states that he was unable to purchase any off-the-shelf valve that was suitable for the purpose which is why he designed the valve.

44 Mr Pownall also disputes that the features of the Ultra valve are just a simple matter of design choice or mere design detail. He denies that the decision on which type of valve to use in this application is determined solely by considering the operating parameters such as required flow rate, available space and current consumption. He argues that in the real world, operating parameters are not the only consideration and highlights a number of respects in which the direct-acting valve of the patent is superior to the Maple spool valve, namely (i) reduced risk of failure due to contamination in the vehicle's air system, (ii) small number of components and hence lower manufacturing and assembly costs, and (iii) reduced wear and increased reliability. He also argues that the evidence points away from the obviousness of his valve as defined in the amended claim since the "obvious" route of a solenoid pilot latched spool valve was initially followed by Maple and other manufacturers. He says that although solenoid 3/2 valves were available they could not be used without modification of the internal spring and/or valve orifice size to provide the necessary safety latch. He also argues that although Maple contend that his valve is a direct equivalent of their spool valve with no advantages, they have replaced their original spool valve with a direct acting valve. He notes that Maple say that their direct acting valve could be assembled from known components supplied by Mead Fluid Dynamics which makes it all the more surprising that they did not follow this route at the outset.

45 Mr Pownall argues that Mr Peck's evidence is of dubious value because it does not compare the Ultra valve with the relevant prior art, namely Maple's solenoid operated pilot latching 3/2 spool valve. He says that Mr Peck's assessment merely compares a 3/2 direct acting valve with a 3/2 pilot operated valve which is not the correct starting point. He also says that drawings 5a, 5b, 6a and 6b are presented in such a way to suggest there is little difference between a 3/2 direct acting valve and a 3/2 pilot operated valve, but the comparison would only be valid if drawing 6a and 6b showed a spool valve. He argues that, as presented, these drawings show valves with orifices and seals which Maple have not shown to have been used in a spring brake line prior to the date of the patent. He also argues that Mr Peck's statement does not take into account the full practical and commercial considerations which led Mr Peck to conclude, with regard to the risk of blockage in the prior art valves, that "*this is not attributable to its being a pilot-operated system rather than direct-acting - only to the particular way in which it has been connected in this instance.*"

46 Mr Pownall also draws attention to the following paragraph in Mr. Peck's statement:

"The valves used by the parties in this matter have been connected in different ways. The Mead valves are connected in the conventional manner, in which the supply is isolated and output is vented to exhaust when de-energised, and output connected to the supply when energised. The valve described in the Pownall patent specification is arranged so that when the valve is energised the supply air is delivered to the outlet, but when de-energised the supply air is vented to atmosphere."

47 Mr Pownall argues that this passage is a tacit admission that the invention claimed in the patent (as amended) does not merely involve substituting one valve for another.

The proper approach to obviousness

48 Although both sides in their statements of case and skeleton arguments have addressed the issue of inventive step, neither has commented on the approach I should take to deciding the matter. I believe I should follow the well-known stepwise approach laid down in the case of *Windsurfing International Inc v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 and since adopted by the courts in many other cases. Indeed it may be that because the *Windsurfing* approach is so well known that the parties did not refer me to it.

49 The *Windsurfing* process is set out by Oliver LJ at page 73 as follows:

“There are, we think, four steps which require to be taken in answering the jury question. The first is to identify the inventive concept embodied in the patent in suit. Thereafter, the court has 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, as that date, common general knowledge in the art in question. The third step is to identify what, if any, differences exist between the matter cited as being “known or used” and the alleged invention. Finally, the court has to ask itself whether, viewed without any knowledge of the alleged invention, those differences constitute steps which would have been obvious to a skilled man or whether they require any degree of invention.”

50 The first step for me therefore is to identify the inventive concept embodied in the patent. In the present case, I think it is fair to regard this as being contained in the features of claim 1 as proposed to be amended. In particular, it appears to reside in a 3/2 directly-operated solenoid valve connected in a spring brake line in such a way that when the valve is energised the supply air is diverted to the outlet, but when de-energised the supply air is vented to atmosphere.

51 The next step is to assume the mantle of the skilled but unimaginative addressee at the priority date, imputing to him the relevant common general knowledge. It is generally the case that expert evidence is helpful, if not absolutely essential, to negotiate this step with confidence. The evidence before me comes from a number of witnesses in what I might call the road transport industry. The extent to which they are variously independent or unimaginative experts varies. Mr Pownall’s position as the proprietor and inventor can hardly qualify him as either independent or unimaginative. However, I am prepared to regard the evidence of all the witnesses as contributing to the picture I must form of what would be in the skilled man’s mind at the priority date.

52 The next step is to identify what, if any, differences exist between the matter cited as being “known or used” and the alleged invention. In the present case, this means comparing the Maple spool valve (as previously discussed) with the valve of claim 1 as proposed to be amended. And finally I must consider whether those differences would have been obvious to the notional skilled man. There are a number of points I believe it will be helpful to consider in reaching a conclusion on obviousness.

- 53 First, I should say I am not persuaded that the evidence wholly supports Maple's argument that, at the priority date, a 3/2 directly operated solenoid valve and a 3/2 pilot operated solenoid valve were functionally equivalent in a given application provided that the valves are properly specified for the intended application. Certainly Maple's witnesses say as much, but the evidence of Mr Pownall goes in the opposite direction. In taking a decision on the papers, I am unable to resolve this conflict of evidence.
- 54 Secondly, I note that Mr Pownall says that although solenoid 3/2 valves were available they could not be used without modification of the internal spring and/or valve orifice size to provide the necessary safety latch. It may have been within the competence of a pneumatics engineer at the priority date of the patent, as Maple's evidence suggests, to select a suitable valve for a given application and to specify suitable orifice sizes for that valve. However, I am not confident in concluding that the use of a 3/2 direct acting solenoid valve in place of the 3/2 indirect pilot-operated solenoid valve in brake lock applications would be obvious.
- 55 Thirdly, Maple argue that the Ultra valve is a wholly conventional solenoid-operated direct-acting 3/2 valve in construction and operation, but is just properly specified for the intended application. On the other hand, Mr Pownall argues that in the real world, operating parameters are not the only consideration and that the Ultra valve is technically superior to the Maple spool valve, for example because of (i) reduced risk of failure due to contamination in the vehicle's air system, (ii) small number of components and hence lower manufacturing and assembly costs, and (iii) reduced wear and increased reliability. Which view is the correct one depends crucially on the view a skilled man would take. Absent independent expert evidence, or cross-examination of the witnesses whose evidence conflicts, I do not feel able to reconcile this conflict of view.
- 56 Fourthly, Maple argue that the way the Ultra valve is connected into the brake line is mere selection and involves no inventive activity. However, I note from Wigmore I and Mr. Peck's statement that the valves used by the parties have been connected in different ways. The Maple valve and the valves exhibited at RW-2, RW-3 and RW-5 are connected in what Mr Peck calls the conventional manner, in which the supply is isolated and the output is vented to exhaust when de-energised, and the output is connected to the supply when energised. However, in the amended claims, the valve is connected in a diverting mode so that when the valve is energised the supply air is delivered to the outlet, but when de-energised the supply air is vented to atmosphere. I also note Mr Peck's statement that the latter arrangement provides a safer system as it vents air from the hand brake lever directly to atmosphere so that it cannot release the brake. In the former arrangement, he says there is a risk of the vehicle rolling if there is spurious activation of the solenoid. It appears to me on the evidence that the way the valve is connected in the brake line according to the amended claim does confer a technical advantage which would not be obvious to the skilled man at the priority date.
- 57 On the basis of these considerations, I am not persuaded that Maple has shown, on the balance of probabilities, that the inventive concept embodied in claim 1 as proposed to be amended would have been obvious to the skilled man at the priority date.

Has there been bad faith?

58 I turn now to the submission by Maple in their statement that Mr Pownall “has displayed bad faith”. This allegation is made on two grounds. The is first based on the seeking of the amendment of the patent only as recently as 28 September 1999. Maple allege that Mr Pownall was aware of matter available to the public before the priority date of the application which anticipated claim 1 (at least) of the patent as granted. Specifically, they submit that the prior art had not “recently come to light” as stated on the Form 11/77. Maple say that Mr Pownall and themselves, as well as their associated organisation Maple Fleet Technology, are in business in the same area of industry, marketing directly competing products into the same marketplace. They say that Mr Pownall could not reasonably be presumed not to have known about the prior art identified in Sanderson & Co.’s letter (exhibited as CSP.5) prior to those matters expressly being stated in that letter. Maple assert that Mr Pownall beyond all doubt knew of their own products before being notified in some detail of those products by Sanderson & Co. The second ground is that Maple say that Mr Pownall’s failure at the outset to identify the prior art on Form 11/77 showed a lack of candour. Consequently they submit that, in making the application to amend, Mr Pownall did not make a full and complete disclosure of all relevant facts which would have enabled the comptroller properly to exercise discretion in allowing (or not allowing) amendment of the patent as requested in the application.

59 In his counterstatement, Mr Pownall does not dispute that he was aware of Maple’s pilot operated spool valves but says he did not consider them to be relevant to his invention. He says that the relevance of the Maple valve only came to light when explained to him in the letter sent to him on behalf of Maple by Sanderson & Co. dated 6 April 1999. In his evidence, he says that since Sanderson & Co explained to him, and his present patent attorneys Craske & Co confirmed, that his original claim was broad enough to encompass the original Maple pilot valve, he now appreciates that should have drawn the Maple valve to the attention of the attorneys who prosecuted the patent application. He did not do so earlier simply because he felt it was not relevant. He says that, from his point of view, he had asked them to patent his Ultra valve and that was what he thought his patent covered, nothing more and nothing less. He submits that “bad faith” cannot exist in relation to prior art which is honestly and sincerely believed to be irrelevant.

60 Maple in their skeleton argument draw my attention to *Kimberly-Clark Worldwide Inc v Procter & Gamble Ltd (No. 2)* [2001] FSR 22. In this case, which concerns the amendment of a patent after grant, but in the course of infringement proceedings, Pumfrey J said at page 343:

“It is not a matter of criticism that the broadest claim formulated has bare novelty if the Patent Agent considers that it could be successfully prosecuted through the Patent Office. That is his job. What is blameworthy is to formulate a claim which covers that which is old, to the knowledge of the applicant.”

61 Maple argue that the failure of Mr Pownall to tell his patent agent about the Maple valve is blameworthy conduct and that I should exercise the comptroller’s discretion to refuse to allow the amendments. They contend that one must presume Mr Pownall read the specification prepared by his patent agent and if so, he cannot honestly say that he thought his patent covered his Ultra valve, nothing more and nothing less.

62 Although Mr Pownall admits that he was aware of the Maple valve before his patent was filed, it seems to me, in the light of the *Kimberly-Clark* judgment, that if I am to find his conduct blameworthy, then I must be satisfied that he would have realised that the claims of the specification prepared by his patent agent covered the Maple valve. Although on one view it may have been surprising that Mr Pownall did not tell his patent agent about the Maple valve, on the basis of the papers before me, I do not think I can necessarily and soundly infer that Mr Pownall would have understood the claims, or even that he had read the specification. I recognise this rejects Maple's submission that "one must presume Mr Pownall read the specification", but I cannot work on mere presumption, only on the balance of probabilities based on the evidence before me. In this case, I am not persuaded, on the balance of probabilities, that it is safe to conclude that Mr Pownall did read the specification before filing, or if he did what he thought of it. I do not therefore accept that he showed bad faith at the time of filing the patent application or up to the point when the application to amend the patent was filed.

63 The other ground Maple put forward is a lack of full and frank disclosure in making the application to amend, in particular because Form 11/7 is unspecific about the prior art sought to be distinguished from. However, it is clear from the papers that Mr Pownall's initial lack of specificity was motivated by a desire not to release confidential information into the public domain, and he was quick to provide the necessary information when requested by the Patent Office to do so. I can see no bad faith on this ground either.

Conclusions

64 In summary, having considered all the evidence and argument before me, I am not persuaded that the proposed amendment adds matter contrary to section 76 or fails to distinguish from the prior art which motivated the application to amend, or that Mr Pownall has acted in bad faith such that the proposal to amend should be refused as an exercise of discretion. I therefore allow the request to amend the patent.

Costs

65 In their statements, both parties have asked for an award of costs. Costs in proceedings before the comptroller are usually awarded to the successful party on a contributory basis derived from a published scale. I see no reason in the present case to depart from that standard practice. Applying the scale of costs set out in Annex A of Tribunal Practice Notice 2/2000, I therefore order Maple to pay to Mr Pownall £800 as a contribution towards his 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

66 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