

Neutral Citation Number: [2009] EWHC 1929 (Pat)

Case No: HC 08 C00958

IN THE HIGH COURT OF JUSTICE
CHANCERY DIVISION
PATENTS COURT

Royal Courts of Justice
Strand, London, WC2A 2LL
31st July 2009

Before :

THE HON MR JUSTICE FLOYD

Between :

FABIO PERINI SPA	<u>Claimant</u>
- and -	
(1) LPC GROUP PLC	
(2) PAPER CONVERTING MACHINE COMPANY ITALIA	
(3) PAPER CONVERTING MACHINE COMPANY LIMITED	
(4) LPC (UK) LIMITED	<u>Defendant</u>

Colin Birss QC and Miles Copeland (instructed by **Collyer Bristow LLP**) for the **Claimant**
Antony Watson QC and Thomas Hinchliffe (instructed by **Harvey Ingram LLP** and **SJ**
Berwin LLP) for the **1st & 4th Defendants** and **2nd & 3rd Defendants** respectively

Hearing dates: July 14th-17th, 20th and 21st 2009

Approved Judgment

I direct that pursuant to CPR PD 39A para 6.1 no official shorthand note shall be taken of this Judgment and that copies of this version as handed down may be treated as authentic.

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THE HON MR JUSTICE FLOYD

Mr Justice Floyd :

Introduction and parties

1. This judgment is divided as follows:

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2. In this action Fabio Perini SPA (“Perini”) sue the four defendants for infringement of two European Patents (UK). The two patents are numbers 0481929 and 0699168. I shall refer to them by the last three numbers: “929” and “168”. The patents are for machinery and methods for sealing the tail ends of rolls of paper (such as toilet tissue or kitchen towel), so that they stay rolled up. Perini are one of the two major players in the field of paper converting machinery of this type.
3. The second and third defendants, Paper Converting Machine Company Italia and Paper Converting Machine Company Limited are the Italian and UK arms of the other

major player in the field. I will refer to them as PCMC Italia and PCMC (UK) respectively. PCMC Italia manufacture the machinery alleged to infringe the Perini patents, called the Rotoseal.

4. LPC Group PLC and LPC (UK) Limited are sued as a customer of PCMC for the Rotoseal. I will call them LPC Group and LPC Limited respectively.
5. Except where it is necessary to distinguish between the defendants, I will refer to them collectively as PCMC. Mr Antony Watson QC and Mr Thomas Hinchliffe argued the case for PCMC. Mr Colin Birss QC and Mr Miles Copeland argued the case for Perini.
6. PCMC deny infringement and contend that the Perini patents are invalid. They counterclaim for revocation on the grounds of lack of novelty, obviousness and insufficiency. There are also issues about the liability of PCMC Italia, PCMC (UK) and LPC Group for infringement if infringement is established against LPC Limited.

Technical background

7. The tissue paper with which this case is concerned is supplied to a paper converting plant in the form of very large “parent” rolls, some 2.5-3 metres in length and about the same in diameter. The rolls are passed to an unwind stand at the beginning of a converting line, from whence they are rewound (by a rewinder) onto a cardboard tube to produce smaller diameter rolls called “logs”. Logs have the same diameter as the finished product – about 100mm in the case of toilet rolls - but still have the same axial length as the parent roll.
8. The logs have loose ends or tails where the tissue has been cut. If steps are not taken to seal this end to the roll, the end could unwind and so interfere with subsequent converting steps. Thus the logs are passed to a tail sealer. The tail sealer must be designed to keep pace with the flow of logs from the rewinder, or it will hold up the overall speed of the plant.
9. After the tail has been sealed, the log is cut into smaller axial lengths by a log saw, and the individual pieces are packaged.

The witnesses

Expert witnesses

10. Perini called Mr Edward Ward. Mr Ward is a consulting electrical and mechanical engineer. Although he had considerable experience in the paper industry, he had no specific or “hands-on” experience of tail sealer machinery or its use. He very fairly accepted that he was not in a good position to assist me as to the common general knowledge of a person or team seeking to design tail sealing machinery. Such knowledge as he had acquired had been acquired in reading up for this case. This consisted largely of reading some patent specifications with which he had been supplied, and a rather limited collection of them at that.
11. Whilst Mr Ward was a very thorough and careful witness, I did feel that his concession as to the common general knowledge placed him in a difficult position.

One of the main functions of an expert in a patent case is to put the judge in possession of the common general knowledge. But Mr Ward's difficulty went further than that. If the expert is not himself in possession of the common general knowledge, then his expert views on what steps might or might not be obvious are likely to be of little value. Sometimes an expert in a related field may read in to the field in question, so as to be better able to apply his or her general knowledge to the field in question. Mr Ward's difficulty is illustrated by the following passage from the transcript;

- 2 Q. So you are quite frankly telling my Lord that you cannot help
3 as to common general knowledge in 1990 or 1993. All you can
4 do is read the patents which indeed my Lord can do without
5 your assistance. Do you have a comment?
6 A. I think that is a fair comment, yes.
7 Q. You said you did some reading around. Can you be a little
8 more specific as to that, please.
9 A. I am afraid I cannot identify particular references.
10 Obviously I read trade literature provided to me and I have
11 done my own reading around as far as I am able through public
12 sources. I have to say, there is not a great deal that I have
13 found in the public sphere that concerns tailsealers, which is
14 a very specialised matter.

12. I have had these difficulties in mind when deciding what weight to attach to Mr Ward's evidence. For example I have not had regard to his statement that the invention of 929 required "exceptional originality". Nevertheless, something less than this is often sufficient to amount to an inventive step.
13. PCMC and LPC called Mr Gerald Buxton. Mr Buxton worked for PCMC in two periods. From 1967 to 1979 he was employed at PCMC in Plymouth, England, rising to Production Manager. Between 1979 and 1994 he worked for another paper converting company in New Zealand, returning to work for PCMC in the United States between 1984 and 1997.
14. Mr Buxton was obviously highly experienced with machinery of the kind with which this action was concerned, fully aware of the practical difficulties with which the skilled team would be alive to, and the available equipment and techniques for overcoming them. Although Mr Birss suggested that he must have formed his views about infringement of 929 when he was still employed by PCMC, I did not think this undermined his evidence. In any case, infringement in this case turns largely on construction, which is ultimately a matter for the court.
15. Mr Birss also said that Mr Buxton had not been frank about one aspect of his evidence concerning obviousness. I shall return to this in the appropriate place. Subject to this one point, Mr Buxton was a very fair and entirely non-combative witness.

Fact witnesses

16. Perini called Mr Guglielmo Biagiotti, Mr Guy Goldstein and Mr Angelo Benvenuti. Mr Biagiotti is the inventor of 929 and 168. He worked for Perini from 1973 to 2003. He gave historical evidence about the development of Perini's tail sealers which touched, amongst other things, on an issue of prior disclosure. Mr Goldstein joined the tissue division of Societe F. Beghin in 1969 in its research and development

department, which by then was part of the Kaysersberg Group who were customers for the type of machinery in issue. He gave evidence about developments in the industry. Mr Benvenuti is Patent and Machine Safety manager at Perini who gave evidence about some drawings of Perini machines. Mr Watson did not make any criticism of the way these witnesses gave their evidence.

17. PCMC called Mr Luca Tagliasacchi to confirm their Product and Process Descriptions and Mr Sigmund Casper to establish the alleged prior disclosure. LPC called Mr Majid Jamie to give evidence about LPC's purchase of the allegedly infringing machine. Again, there was no serious relevant criticism of the way they gave their evidence.

The person skilled in the art

18. The skilled addressee is a person with practical knowledge and experience of the field in which the invention is to be applied: see *Catnic Components v Hill & Smith* [1982] RPC 183 at 242-243.
19. Both patents are addressed to a design engineer of degree standard or equivalent with some 5 or so years of practical experience. Such an engineer (or possibly team of engineers) would have skills in mechanics and hydraulics. The engineer or team will be working for a manufacturer of paper converting machinery and concerned with making a tail sealer as part of a tissue converting line.

Common general knowledge

20. As Aldous L.J. explained in *Beloit v Valmet (No.2)* [1997] RPC 489 at 494:

“It has never been easy to differentiate between common general knowledge and that which is known by some. It has become particularly difficult with the modern ability to circulate and retrieve information. Employees of some companies, with the use of libraries and patent departments, will become aware of information soon after it is published in a whole variety of documents; whereas others, without such advantages, may never do so until that information is accepted generally and put into practice. The notional skilled addressee is the ordinary man who may not have the advantages that some employees of large companies may have. The information in a patent specification is addressed to such a man and must contain sufficient details for him to understand and apply the invention. It will only lack an inventive step if it is obvious to such a man.

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.”

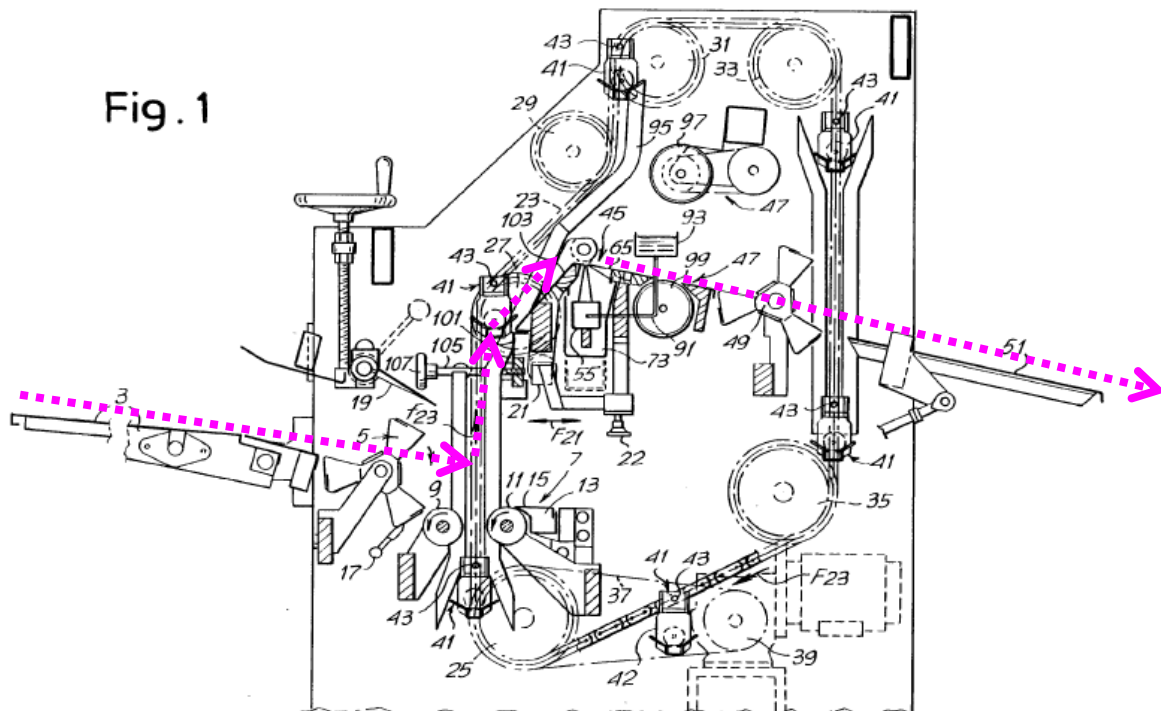
21. It became increasingly plain in the course of the evidence that paper converting in general and tail sealing in particular is an art in which the patent specifications of the leading players are carefully scrutinised by competitors as soon as they are published. In *General Tire v Firestone* [1972] RPC 457 at 482 the Court of Appeal was concerned with whether individual patent specifications could form part of the common general knowledge. They said this:
- “It is clear that individual patent specifications and their contents do not form part of the relevant *common general* knowledge, though there may be specifications which are so well known amongst those versed in the art that upon evidence of that state of affairs they form part of such knowledge, and also there may occasionally be particular industries (such as that of colour photography) in which the evidence may show that all specifications form part of the common general knowledge.”
22. The issue is of importance in this case as PCMC argue that a particular Japanese Patent Specification JP 50-35562 (“JP 562”), which they also cite as prior art against both Perini patents, was part of the common general knowledge in 1990 and 1993. JP 562 was a proposal for a tail sealing device published in 1975, but it was never, so far as the evidence goes, made or sold. I think that, even in an industry where close attention is given to patent specifications, one must treat with caution an allegation that a proposal made at that distance of time, emanating from a company which does not appear to have had a large position in the market, and never implemented was part of the common general knowledge 15 years later. I think this is particularly so where it is relied upon, as it is here, for a single sentence somewhere in its text. One must bear in mind that the common general knowledge is that possessed by all skilled addressees. I view with suspicion the suggestion that all graduate engineers with the requisite experience would have at their fingertips the entire contents of every patent proposal for a tail sealing machine ever made. Mr Buxton said he believed PCMC would have had the Japanese specification as part of their library of patents. He believed it would have been turned up as part of a process of information gathering in the course of a project. Nevertheless, I was not persuaded, on the evidence, that the contents of JP 562 formed part of the common general knowledge.
23. The main additional sources of common general knowledge in this field would be the machines that were on the market, about which the skilled person would be aware shortly after launch. The sources would also include trade literature about machines.
24. It was established that the common general knowledge in 1990 would include knowledge of at least the following:
- i) the basic layout of a rewinder line, including (a) the unwind stands for the parent roll, (b) the rewinder unit which rolls the web from the parent roll onto the smaller rolls that make the logs, (c) the tailseal unit;
 - ii) the need for culling of logs from the line when they do not meet production standards, preferably before they are sealed;

- iii) the steps subsequent to sealing, such as accumulation of logs, sawing and packaging;
 - iv) the importance of the speed of the tailsealer being able to meet the speed of production of logs from the unwinder, so as to avoid a bottleneck occurring between the two, or the tailsealer slowing the rate at which the unwinder can operate;
 - v) the three-stage conventional approach to tail sealing: (1) the tail is separated from the log, and unwound to a sufficient extent that glue can be applied in the correct position, either to the tail or to the log; (2) application of the glue and (3) winding up the tail to seal the tail to the log;
 - vi) the fact that the above processes would normally be carried out at separate stations in order to improve throughput;
 - vii) the use of air blast nozzles to find and locate the tail;
 - viii) the use of photo-eye detectors to detect the end of the tail in the unwinding and rewinding stages;
 - ix) the use of glue spray-nozzles, glue wheel applicators, glue injectors and glue flow nozzles for tail sealing. The most commonly known method of applying glue was to spray glue directly onto the tail.
25. A question arises as to whether the use of a transverse glue bar to apply glue to a log for tailsealing was common general knowledge in 1990 and 1993. PCMC relied on the following to show that this was the case:
- i) San Ei Regulator Ltd sold a coreless rewinder which included a wire glue applicator that would pivot from the glue fountain to apply glue to the log or the tail. I was not persuaded that this was common general knowledge in 1990 or 1993: the dates of its sales outside the San-Ei group were not sufficiently clearly established;
 - ii) The Burt Overwrap Labeller was a Victorian machine used for sticking overwrapped labels onto cans or rolls of tissue. Again, I was not satisfied that this formed part of the common general knowledge in 1990 or 1993. It was not known to Mr Buxton – the first time he had seen anything like this was in the context of this case; and
 - iii) A sentence in JP 562 concerning the use of glue wires or bars as an alternative to a spray. I have already indicated that I do not consider that the contents of JP 562 formed part of the common general knowledge.
26. It is not established that the use of a transverse glue bar was part of the common general knowledge of the skilled person in 1990 or 1993.
27. By 1993 Perini had made sales of the 560C machine incorporating an overflowing glue nozzle applying glue from beneath. The operational detail of this machine would have been part of the common general knowledge by the 1993 priority date.

28. I deal with a further question concerning the use of reversing rollers to adjust tail length at a later point in this judgment, in its context.

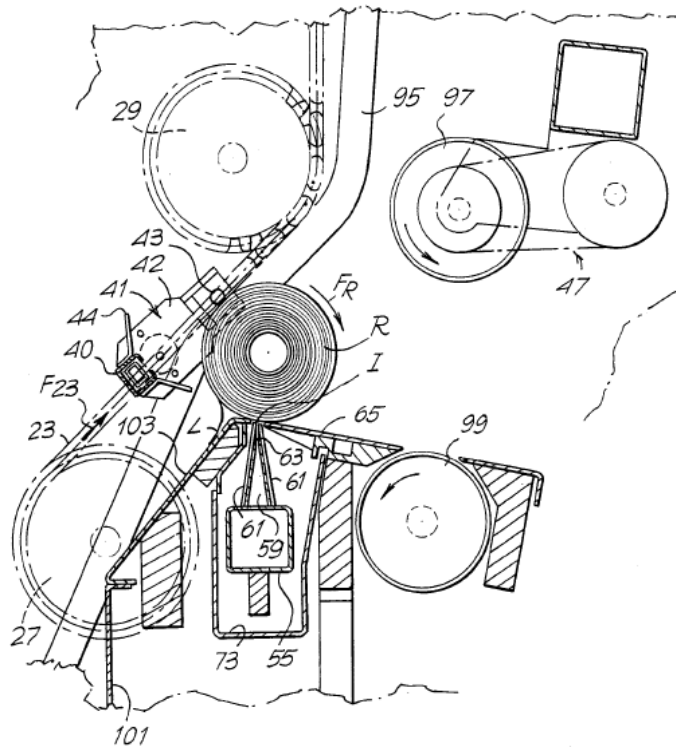
The 929 Patent

29. The 929 patent has a priority date of 17th October 1990. The specification is entitled “Apparatus for glueing the tail of a web to a log formed of the web material”. It has both apparatus and method claims.
30. The specification acknowledges that apparatus “of this general type” is known from US 4, 475, 974 and FR-A-2, 284, 548, the latter being the equivalent of one of the items of prior art in this case (GB 445). US 974 describes a machine in which the logs are moved by a chain system between three stations on pairs of bearing rollers supported on a chain conveyor. At a first station the tail is unwound and laid onto a flat surface; at a second station glue is applied to the tail by a nozzle that moves longitudinally along the axis of the log; and at a third station the log is rotated to wind the tail back up. The 929 patent asserts that, it is possible to achieve high outputs with this system. However, the type of glue applicator is described as having “a rather complex and costly structure” (column 1, lines 28-33). An object of the 929 patent is said to be “to reach high outputs per hour with an extremely simple construction and with a limited number of moveable parts” (column 1, lines 34-38).
31. Mr Buxton accepted, in my judgment correctly, that this passage was comparing the overall complexity of arrangements such as US 974 with the invention. Its effect is not limited to the travelling nozzle arrangement.
32. Figure 1 of the patent is shown below with the approximate path of the log marked with a dashed line and arrows:



33. In operation, the log is delivered onto rolls 9 and 11. The tail is then unwound onto surface 15, and then conveyed to the gluing area (region 45) where it is discharged from the vertical conveyor and rolls across a guide surface. During rolling, the log passes over a slit from which glue is supplied from underneath. As the log continues to roll, the tail is automatically rewound over the log and pressed against the log where the glue has been applied (column 1, line 54 – column 2, line 4). A more detailed view of the gluing area is shown in Figure 3, where the tail is marked with the letter L:

Fig.3



34. The slit (63) is formed by the pair of inclined plates (61). Glue overflows from the nozzle and returns to the tank below. The type of supply disclosed is described as having advantages as follows:

“This type of supply has the advantage of not requiring a controlled dispensing means, such as a pump and nozzle and, moreover, it allows a continuous and easily adjustable flow for glue from the reservoir to the slit, while the excess of glue overflowing from the slit, which is not picked up by the logs rolling over the same slit, is collected in the underlying tank from which it can be easily recovered and made to flow back into the upper reservoir. This avoids the drawbacks exhibited by the nozzle-type dispensing means which, when the apparatus is stopped even for short periods, are clogged up by the drying of the glue, thus making it difficult to re-start the apparatus.” (column 2 line 53 to column 3 line 10).

35. The patent indicates that in operation of the apparatus:

“The glueing occurs therefore extremely swiftly and without the need for dispensing nozzles moving longitudinally along the log as in prior art machines. In fact by the simple rolling of the log over the slit, the glue is applied along the entire length of the log. Gravity, which causes the rolling of the log, causes the subsequent re-wrapping of the tail.” (column 2 lines 4-11).

The claims of 929

36. Claims 16 and 17 are those alleged to be infringed.

37. Claim 16 reads as follows:

“Method for glueing the outer end (L) of a web material to a log formed of said material (R), wherein:

the outer end (L) is unwound by a predetermined extent;

the glue is applied on a region of the web material which is still wound up on the log (R);

and the outer end is rewound on the log and glued thereon;

characterized in that

the glue is applied by rolling said log, with the outer end (L) being unwound therefrom, over a slit (63) from which the glue is dispensed.”

38. Claim 17 reads:

“Method according to claim 16, characterised in that:

the log (R) is made to roll over a surface (65) along which said slit (63) is disposed, by such an extent as to allow the application of the glue and the rewinding of the outer end (L) around the log (R).”

39. These method claims are much wider in scope than the broadest apparatus claim, claim 1. It is not necessary to set claim 1 out here. It is sufficient to record that it has limitations to a slit from which glue is dispensed “by overflowing”, as well as to the conveyor upstream of the glue applicator.

Principles of construction

40. The correct approach to the construction of a patent specification and its claims is now well settled. The task for the court is to determine what the person skilled in the art would have understood the patentee to have been using the language of the claim to mean: see *Kirin Amgen v TKT* [2005] RPC 9 [30]-[35]. In that case the list of principles to be found in the judgment of Jacob LJ in *Technip France SA's Patent* [2004] RPC 46 was approved subject to some minor observations. Pumfrey J in *Halliburton v Smith* [2006] RPC 2; [2005] EWHC 1623 at [69] to [69] listed those

principles, revised to take into account the comments, and added some observations of his own. I apply those principles here.

41. It is for the court and not the witnesses to come to conclusions about what the claim means. Subject to the well-known exception about technical terms with a special meaning, the construction of a patent is a question of law: see e.g. per Hoffman LJ (as he then was) in *S.T.E.P. v Emson* [1993] RPC 517 at 522.
42. Although a court does not construe a patent specification with one eye on the prior art, it will nevertheless endeavour to reach a construction which does not read on to matter which the patentee describes as old in the specification: see *Beloit v Valmet* [1995] RPC 705 at 720 lines 29-33. Like other canons of construction, however, this is not an inflexible rule.

Claim 16: the characterising portion

43. The pre-characterising portion of claim 16 merely recites the three stages of the sealing process: unwinding, placing glue onto the still-wound portion of the log and re-winding. The characterising portion imposes further requirements so far as the glueing operation is concerned. These are:
 - i) that the glue is applied by rolling over a slit from which the glue is dispensed
 - ii) that the tail is unwound while the glue is so applied.
44. Claim 16 does not specify how the tail is rewound. Claim 17 requires that this is effected by rolling over a surface (65), being the surface along which the slit is disposed.
45. PCMC contend that claim 16 requires (a) that the log must be rolling as the glue is applied, and (b) that it must be “the act of rolling that applies the glue” (opening skeleton paragraph 51).
46. Perini submit, on the other hand, that the claim is satisfied if the log rolls onto the slit, stops, and then glue is applied through the slit by means other than the rolling of the log.
47. I am unable to accept PCMC’s submission in its entirety. I reject Perini’s. In my judgment the requirement that the log rolls over the slit may be satisfied by an arrangement where the log rolls onto the slit and rolls off it, even if it pauses on the slit. This is not, however, sufficient for infringement. The critical requirement is that it is a rolling movement which picks up the glue: if this is not the case, then the glue is not “applied by rolling”. An arrangement in which the log rolls onto glue present in the slit, pauses, and rolls off is an infringement, but one in which it rolls onto the slit with no glue present, stops and waits for glue to be applied by an active member coming through the slit is not. In the latter case, the glue, in my judgment, is not applied by rolling.
48. Both sides relied on passages in the specification to support their position. Because the majority of the description concerns the specific apparatus described and its manner of operation, there is no passage which throws much light on how method

claims 16 and 17 should be construed. Nevertheless, it is, I think, legitimate to say that the skilled person reading those claims would have in mind the method of operation of the apparatus described and claimed, in which the glue is clearly “applied by rolling” in the sense I have described.

49. There is also, as the evidence showed, a clear functional distinction between glue application where the log is merely a passive recipient of glue, and glue application where the log plays an active part in that application of glue. I think the skilled person would understand that it was the latter which is meant here.
50. PCMC went further and submitted that the word “slit” had a very narrow meaning. They contended that the phrase does not extend to all openings from which glue is dispensed. Rather they contended that it is limited to the slit formed by the inclined plates 61 in Figure 3, and through which the glue flows.
51. PCMC argue that their construction is supported by the passage at column 1 lines 42-45 which appears in a general description of the apparatus of the invention and assumes an overflowing type device:

“In the apparatus of the present invention, the means for applying the glue includes a dispenser device having means forming an upwardly oriented slit from which the glue is delivered by overflowing.”

52. Next they rely on the passage at column 1 line 54 to column 2 line 2:

“With such arrangement when the log is discharged, it rolls across a guide surface and, during rolling, it passes over the slit from which the glue is continuously (or discontinuously) supplied, so that, at a predetermined location of the log surface, a strip of glue having a pattern the same as the dispensing slit is applied thereon.”

53. The slit cannot therefore be any opening through which glue comes by some other means than overflowing, they argue, because that would not result in the pattern of glue being determined by the slit.
54. PCMC also rely on passages in the specification which make it clear that the opening in the table in the apparatus described is not the same thing as the slit.
55. I was not persuaded by any of this. It is entirely correct that the apparatus described assumes the presence of an overflowing type of slit. The apparatus claimed in claim 1 requires one as well:

“said means for applying the glue comprise a dispenser device (55-63) which form at least an upwardly orientated slit (63) from which the glue is dispensed by overflowing”.

56. That requirement is very much more specific than the requirement of claim 16 which I have to construe. The specification makes it quite clear at column 3 lines 25 to 27 that the method claims form a separate aspect of the invention. There is no reason

why the method claims should incorporate all the physical features of the apparatus claim, particularly where different language is used.

57. I should add that it is not just PCMC who are arguing for a narrowing of the claims in certain respects. Perini contend that the requirement of “rolling ... over a slit” brings in further limitations. I will deal with those in their context, which is validity in the light of GB 445.

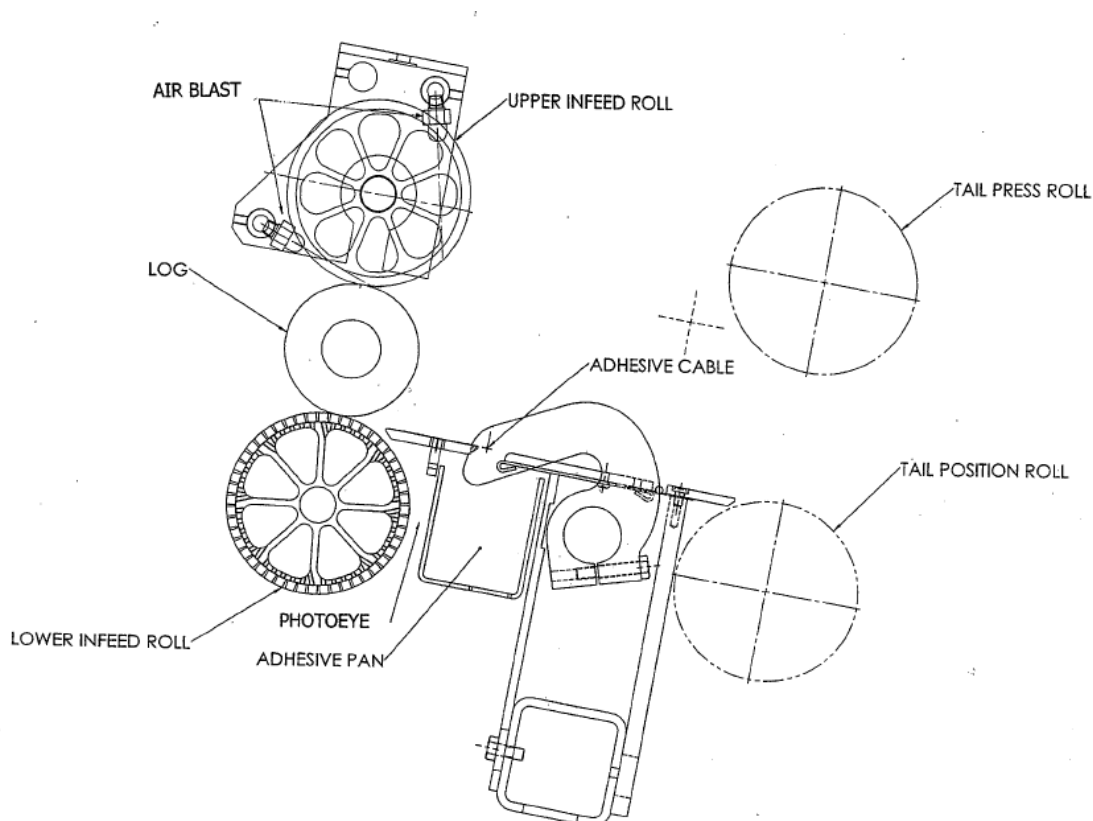
Infringement of 929

58. There are three models of Rotoseal to consider:

- i) The Original Rotoseal;
- ii) The Modified Rotoseal;
- iii) The Proposed Rotoseal.

The Original Rotoseal

59. According to the PPD the Original Rotoseal looks like this:



60. The log is introduced between the upper and lower infeed rolls, which can rotate independently in the same or different directions at the same or different speeds. These rolls are used in combination with air jets and suction to manipulate the tail onto the lower infeed roll, so that it is unwound from the roll.

61. When the desired length of tail is on the lower infeed roll, rotation of the lower infeed roll is stopped, and rotation of the upper infeed roll is used to roll the log down the inclined table.
62. The inclined table has a width of approximately 2.0 to 3.5m and an inclined length of approximately 500 mm. The inclined table has a 25 mm gap across its width over which the log rolls. The gap is located approximately 175 mm from the lower infeed roll. Spaced below the gap in the inclined table is an adhesive pan of depth approximately 70mm. The front and rear edges of the pan are approximately 16mm and 3mm respectively below the underside of the inclined table. The PPD does not show how close the sides are. The pan is secured to the frame of the machine.
63. An adhesive cable, which is as long as the width of the inclined table, is connected at each end to a pair of rotatable arms. The arms move the adhesive cable from the adhesive in the adhesive pan up through the gap in the inclined table to place glue on the log as it rolls over the gap in the inclined table. The adhesive wire moves when it receives a signal from the control software.
64. As the log continues to roll down the inclined table the line of glue on the body of the log rotates clockwise and meets the tail, thereby sealing the tail to the log.
65. PCMC's grounds of non-infringement are:
 - i) that the gap formed in the table through which the adhesive wire moves is not a "slit";
 - ii) that the gap is not a "slit from which glue is dispensed";
 - iii) that the glue is not applied "by rolling" the log over a slit.
66. The first point has been dealt with under the heading of construction. The claim is not limited in the way contended for by PCMC.
67. PCMC expand the second point by pointing out that in the Original Rotoseal the glue is dispensed from the glue wire, and not from the slit. In my judgment it is dispensed from both. As the claim does not exclude additional means, I reject this ground.
68. PCMC submit in support of the third point that it is not the action of rolling which applies glue to the log: if the wire did not move, no glue would be applied. I reject this ground also. The relevant moment in time is when the log is over the slit. The position of the glue wire at earlier points in time is of no importance. At the moment the log rolls over the slit the wire is in the uppermost position, so that there is glue present in the slit. All the log has to do to pick up its glue is roll over the slit.
69. Accordingly the Original Rotoseal infringes claim 16. No additional point is taken on claim 17, so that claim is infringed as well.

The Modified Rotoseal

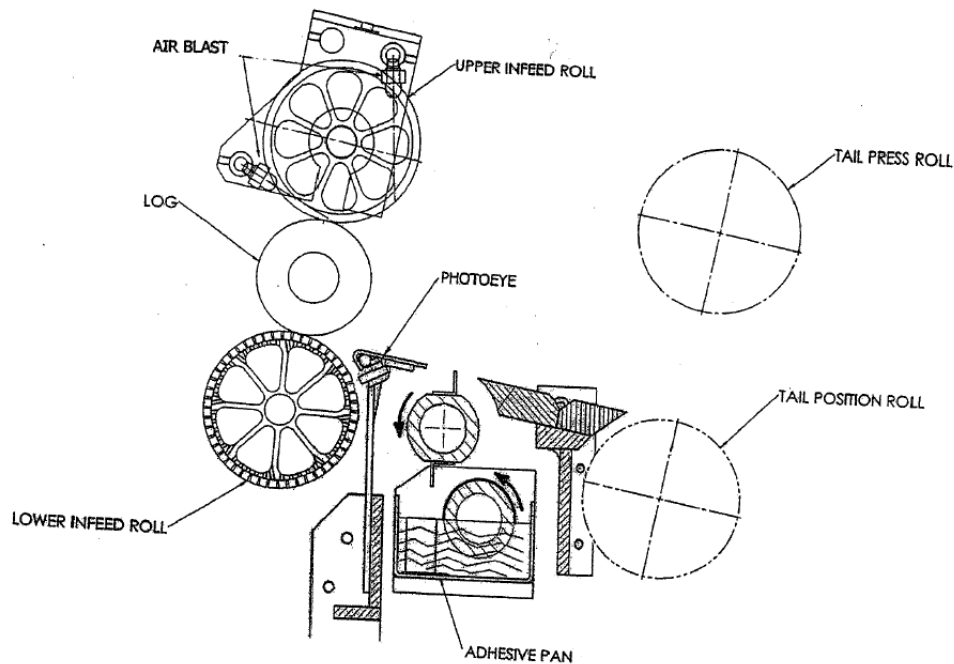
70. The Modified Rotoseal differs from the Original Rotoseal in the following respects. When the log is released by the upper and lower infeed rolls, the log rolls down the inclined table as far as the compression roll, which stops the log. The control

software then makes the adhesive cable move up to apply glue to the stationary log. The adhesive cable is then moved back down toward the open-topped glue pan. After the glue wire leaves contact with the log, the compression roll rotates anticlockwise to release and roll the log down the remainder of the inclined table to the tail press roll and tail position roll.

71. PCMC submit that this arrangement gives rise to an additional non-infringement point. They say that whatever else “the glue is applied by rolling said log ... over a slit” may cover, it cannot cover the application of glue by a glue wire to a stationary log. In such an arrangement the glue is applied by the glue wire, and rolling plays no part in the application of the glue.
72. I have held that the proper construction of the claims does not exclude the log pausing over the slit. Thus one would not avoid infringement by the use of the arrangement actually described in 929, with the sole difference that the log pauses over the overflowing slit in order to absorb more glue, for instance. The glue is still applied by rolling over the slit. But the arrangement in the Modified Rotoseal is more remote from the claim than that. The glue is no longer applied “by rolling ... over the slit”. The glue is applied entirely by the positive action of the glue wire. This is quite different from the Original Rotoseal, where the glue bar is already in the gap when the log arrives, and quite different from the idea disclosed in the 929 patent. Moreover this is not just a matter of words, there is a quite fundamental functional difference between the application of glue by rolling, where the log plays an active part, and its application by the glue wire in the Modified Rotoseal where the log is the passive recipient of glue.
73. Perini submitted that the log still rolls over the slit in the modified machine. They are correct, but in my judgment that is not enough. For infringement to occur the glue must be applied by rolling over the slit. In the modified Rotoseal this is not the case.
74. Accordingly the Modified Rotoseal does not infringe claims 16 or 17 of 929.

The Proposed Rotoseal

75. The Proposed Rotoseal looks like this:



76. The log no longer stops: so in this respect the machine is like the Original Rotoseal. The glue container is now equipped with a glue pick-up roll and a paddle applicator. Both rotate about a transverse axis, and are synchronised to apply glue at the point the log passes over the opening in the table. The gap in the table is not specified, but may be as little as 32mm.
77. The relevance of this modification is to the other patent, 168, not 929. There is some suggestion in the evidence that the dimensions of the gap in the table in the Proposed Rotoseal prevented the gap from being a “slit”. I reject that contention, although I accept that there are limits to how wide a slit can be. Given the width of the log, a 32mm gap is certainly a slit.
78. The Proposed Rotoseal would infringe claims 16 and 17 of 929.

Validity of 929

79. The validity of 929 is attacked on the grounds of:
- i) Lack of novelty and obviousness over JP 562 and GB 445;
 - ii) Insufficiency.

Lack of novelty of 929

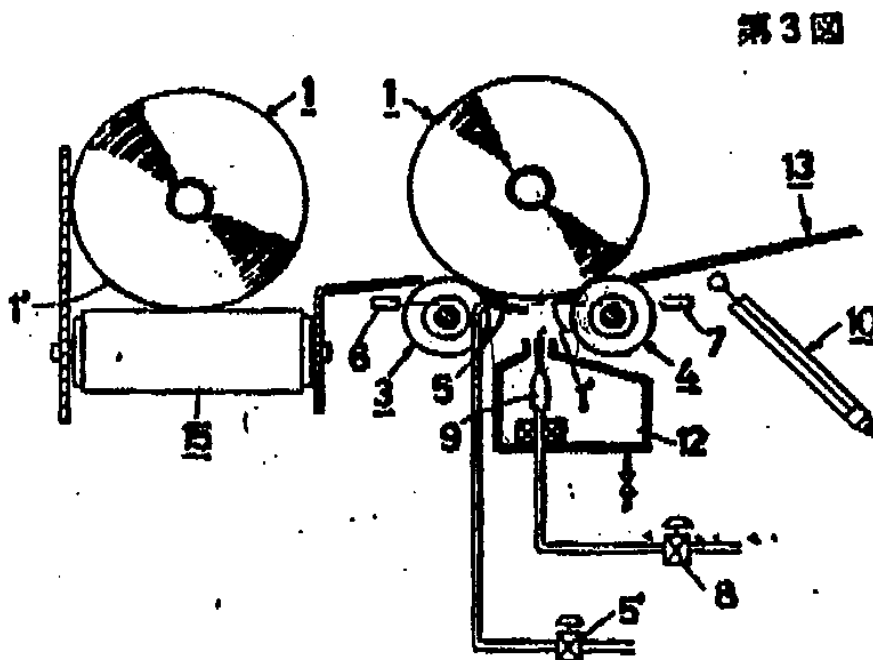
80. A patent will be invalid for lack of novelty if the invention claimed in it is not new in the light of the state of the art at its correct priority date. The state of the art is everything made available to the public by written or oral description or by use or in any other way (see s. 2(2) 1977 Act).
81. In *Synthon BV v SmithKline Beecham plc* [2005] UKHL 59 Lord Hoffmann explained the dual requirements for the objection of lack of novelty to succeed: disclosure and

enablement. After quoting from the judgments of Lord Westbury LC in *Hills v Evans* (1862) 31 LJ(NS) 457, 463 and of the Court of Appeal (Sachs, Buckley and Orr LJJ) in *General Tire and Rubber Co v Firestone Tyre and Rubber Co Ltd* [1972] RPC 457, 485-486, Lord Hoffmann said this at paragraph 22:

“If I may summarise the effect of these two well-known statements, the matter relied upon as prior art must disclose subject-matter which, if performed, would necessarily result in an infringement of the patent.”

Novelty over JP 50-35562 (“JP562”)

82. JP 562 was published in 1975. The patentee is Kataoka Machine Co: the inventor Akira Kataoka. It describes a tail sealer. Figure 3 shows nearly everything one needs to know:



83. The rolls (1) are, if one takes the other figures literally, of the order of the dimensions of a kitchen roll. They are not 2-3 metre long logs. The direction of travel of the rolls is right to left. At the end of the inclined surface (13) are two rollers (3) and (4) between which there is a gap described as a “valley”. When a roll arrives on the rollers (3) and (4) it is rotated in an anticlockwise direction. As the end of the tail is rotated past the roller (3), an air nozzle (5) blows the tail downwards and towards roller 4. This tail is detected by a photoeye. Glue is then applied through nozzles (9) “to one or both of the terminal 1’ hanging down into the valley and of the peripheral position of the sheet roll on which the terminal 1’ is to be superposed.”
84. The glue dispenser extends the whole way across the width of the roll. It is described in the following way:

“the nozzles 9 are housed in a chamber 12 having a slit 11 elongated in the sheet width direction of the sheet roll so as to

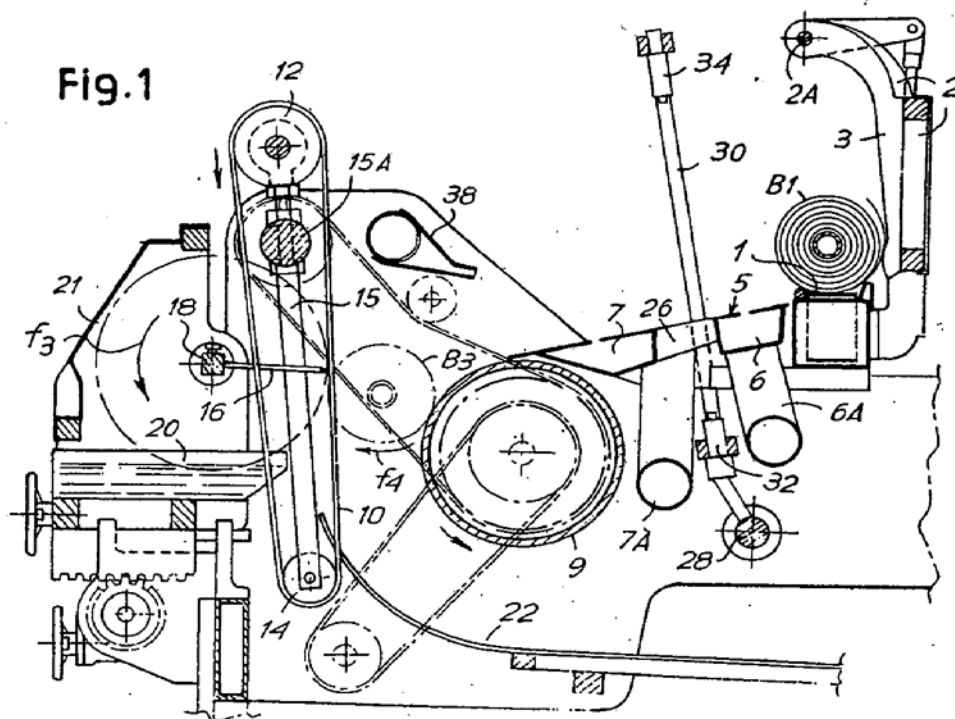
allow the glue liquid to spray out through the slit 11 to lessen the spray width of the glue liquid, thereby preventing the glue liquid to adhere to additional place”

85. The depicted spraying device “*may be substituted by a roller, or a wire or bar which can be raised from within a glue tank*”. This is the sentence relied on for the proposition, which I have rejected, that glue bars or wires were part of the common general knowledge.
86. The specification says that:

“It is expedient to bring the rotation of the roll to a stop during the operation of the gluing device”.
87. It is common ground that this would be taken by the skilled person to indicate that it is preferable to stop the rolls, although both that mode of operation and one in which the roll is rotating on its own axis are disclosed.
88. Once the log has been glued the tail can be stuck down by spinning rolls (3) and (4). Alternatively, the tail can be stuck down as the roll rolls out of the valley under the influence of “roll out device 10”, which is, in any case, the means for getting the roll out of the valley.
89. Whichever way the device of JP 562 is operated, it does not in my judgment anticipate claim 16 of 929. Claim 16 requires “rolling said log, with the outer end being unwound therefrom, over a slit”. Whilst the roll in JP 562 may be rolled off the slit with the outer end unwound, it is not in that condition when it is rolled onto or over the valley.
90. That is enough to prevent anticipation. There is a more difficult point about whether the glue is applied “by rolling over the slit”. In the case where the log stops rotating in the valley, then this feature is not present, as the log is the mere passive recipient of the glue. Where the log continues to rotate on its axis while glue is being applied, the less preferred embodiment, then the matter is less certain. I would incline to the view that the glue must be applied by the rotational and translational movement of the log, which is not the case with JP 562, but the point is not important.

Novelty over GB 1 495 445 (“GB 445”)

91. GB 445 was published in 1977. Figure 1 shows the machine as a whole:



92. The direction of travel is from right to left. The log is first conveyed longitudinally to the position B1. From there it is pushed off and rolled down the slope over surface (5), leaving a tail behind it on the surface. As it rolls it is rotating anti-clockwise. At the end of the surface 5 the log engages at position B3 with a roller (9) rotating in a clockwise direction, and an assembly of belts (10) moving upwardly at the point of contact. At position B3, the direction of rotation of the log is therefore reversed, so as to cause it to rotate clockwise, as shown by arrow f4. This causes the log to wind in the tail which it has left behind as it rolled down the surface, until the end is detected by a photoelectric system. The log however continues to move, due to the differential speed of the pulley (9) and the belts, around the outside of the pulley (9). While the winding in of the tail is going on, and the log is continuing to roll, rotor (18) with a set of brushes (16) applies glue to the outside of the log. As the brushes are spaced out along the length of the log, contacting the log through gaps between the belts, the glue line applied is not continuous along the length of the log. The specification explains that the brushes each deposit strips of glue, 3-4 cm long.
93. Figure 5 shows the position at which the brushes apply glue to the log:

98. PCMC, on whom the burden lies, have adduced no evidence as to what the relative dimensions of the opening between the belts in 445 would necessarily be. It is true that Mr Buxton said this in his first report:

“... the brushes pass through gaps between adjacent belts. I would not normally refer to these spaces as slits or slots, but if “slits” is given a broad enough meaning to cover any gap in a support surface through which glue is dispensed by any means, then GB 445 also discloses all the features of claims 16 and 17”

99. Mr Ward agreed that one would not normally regard the gaps between belts as slits or slots. I have not construed “slit” as widely as Mr Buxton supposed. A slit must still be a long narrow opening. I have no basis on which to conclude that carrying out the disclosure of 445 would necessarily result in long narrow openings between the belts.

100. The other points can be dealt with quite shortly. The claims are not limited expressly or impliedly to transverse slits. A passage at column 1 line 51 and apparatus claim 2 (which has no counterpart in the method claims) make this particularly clear. There is no requirement for the log to be above the slit. The surface on which the log rolls is inclined: and in any case something can roll over a vertical surface. There is nothing in the claim to prevent some relative movement between the log and an applicator such as a brush, so smearing is not excluded by the claim, either. I see nothing in the features of claim 17 which provides any further distinction.

101. Nevertheless, whilst 445 comes close, it is not an anticipation of the method claims 16 and 17.

Obviousness of 929

102. It is convenient to address the question of obviousness by using the structured approach explained by the Court of Appeal in *Pozzoli v BDMO* [2007] EWCA Civ 588; [2007] FSR 37. This involves the following steps:

“(1)(a) Identify the notional ‘person skilled in the art’.

(b) Identify the relevant common general knowledge of that person.

(2) Identify the inventive concept of the claim in question or, if that cannot readily be done, construe it.

(3) Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed.

(4) Ask whether, when viewed without any knowledge of the alleged invention as claimed: do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?”

103. In *Conor v Angiotech* [2007] UKHL 49; [2008] RPC 28 at [42] Lord Hoffmann approved the following statement by Kitchin J in *Generics (UK) Ltd v H Lundbeck A/S* [2007] RPC 32 at [72]:

“The question of obviousness must be considered on the facts of each case. The court must consider the weight to be attached to any particular factor in the light of all the relevant circumstances. These may include such matters as the motive to find a solution to the problem the patent addresses, the number and extent of the possible avenues of research, the effort involved in pursuing them and the expectation of success.”

104. I have considered the person skilled in the art and the common general knowledge above. I believe this is a case (as is 168) where the inventive concept is sufficiently explained by construing the claims.
105. Before going to the individual citations it is worth pointing out that tailsealing was in fact carried out by arrangements such as that shown in US 974. This was clearly more complex than the simple rolling motion of the invention. If that basic motion of rolling the log over a slit to apply the glue were obvious, it is surprising that such complex machines were designed at all.

Obviousness over JP 562

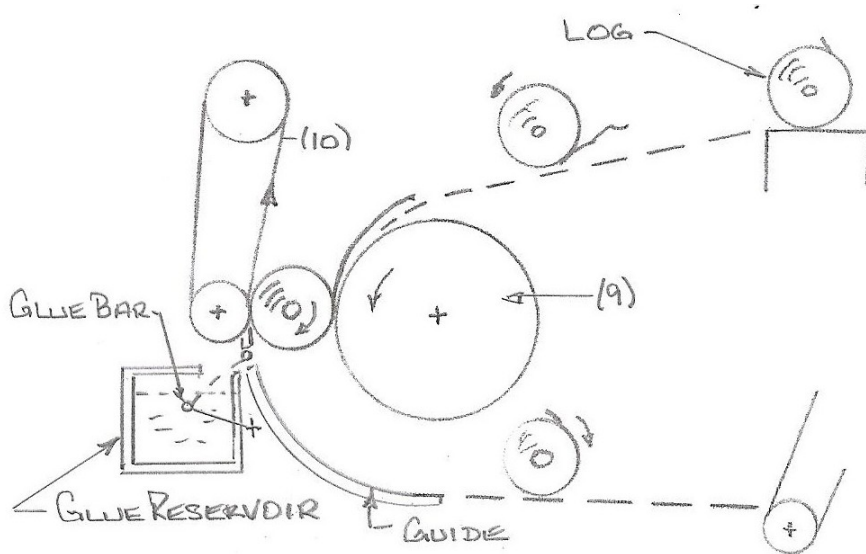
106. The most significant difference between the disclosure of JP 562 and the claims of the 929 patent is that identified in relation to lack of novelty, namely that when the log rolls onto the gap, the tail is not unwound. For this purpose I assume in PCMC's favour that there is no difference based on the fact that JP 562 is not really for a log at all, but for a pre-cut roll.
107. In his report, Mr Buxton put forward two reasons why the skilled person would seek to make modifications to the JP 562 design. One was that the fact that performing unwinding and gluing at the same station would be slow, and speed increases could be obtained by unwinding at the one station and gluing at another, downstream station. The second reason was that the region under the rollers was congested, a problem recognised by both experts, and that this again could be alleviated by separating the unwinding and gluing operations.
108. The first of these points led to a battle over the precise time savings involved. In the end I took Mr Buxton to accept that his calculations were not a fair comparison as between the original JP 562 concept and his split station proposal. I do not think that increasing speed would have led the skilled person to take the steps Mr Buxton proposed.
109. The motivation to remove the congestion, would, however, have led the skilled person at least to consider separating the unwinding and gluing functions. Mr Buxton explained this in his first report in this way:

“If the glue station was moved downstream of the unwinding station, it would be preferable to keep the rollers 3 and 4 continuously rotating to locate the tail. The log pusher would

then roll the log out of the rollers and down the inclined table as glue is applied through the slot or gap in the table. Glue could then be applied by spray, wire, bar or roller since the log is rolling over the glue applicator, the simplest method being a glue bar applying glue from a glue reservoir.”

110. Mr Ward pointed out in his report that, if this was done, then the log would already be wound up, and unglued when it emerged from the valley. In his third report Mr Buxton explained that the tail would have to be lengthened in the “valley” by reversing the rollers.
111. Mr Buxton was taken to task in cross-examination by Mr Birss over the way he had described his idea for improving JP 562 in simple terms in his first report, without explaining that, far from the rollers rotating continuously, they would have to be stopped and reversed in order to achieve an adequate tail length. Mr Buxton said that he had thought of the necessity of having the correct length of tail. I accept that evidence. I cannot believe that a machine designer would not have been alert to such a consideration. I have to say, however, that he did not have a satisfactory explanation of why he had said that the rollers were rotating continuously if he had thought through precisely how it was that he was going to solve the problem of having enough tail. I think that when Mr Buxton wrote his first report he had mentally shelved consideration of how to solve that problem.
112. There was an attempt to suggest that a Crown Zellerbach patent made the reversal of the rollers a common general knowledge approach to adjusting the length of the tail. Mr Buxton’s evidence did not establish that this document or technique formed part of the common general knowledge
113. I think it would take a little more ingenuity than can be expected of the skilled person to see how JP 562 could be modified in the way that Mr Buxton suggests. This is an area where there is a real danger of hindsight creeping in. Firstly, JP 562 is a compact design. The decision to elongate it by the addition of a downstream gluing station involves a rejection of that purpose. Secondly, deprived of the glue applicator, and without further adjustment the valley arrangement becomes an unwinding and winding up station. It delivers a completed wound up roll to the output conveyor. To turn it into an unwinding station alone is quite a major change to its function. Thirdly, the skilled person has to be able to see that a slit in the rolling surface, downstream of the unwinding station can be made to apply glue and seal the log when the log and its trailing tail are in a different configuration from that shown in the unmodified diagrams. Fourthly, the skilled person has to appreciate how to get a much longer tail than that shown in those diagrams. Finally, even then the skilled person would not necessarily come within the claims, because the downstream glue applicator that is designed would be more likely to stop the log before glue is applied, just as in the original proposal. A glue applicator which applied the glue “by rolling... over the slit” would not necessarily result.
114. Individually some of these steps may be obvious, but the overall redesign is not, in my judgment, obvious. I reject the allegation of obviousness of claims 16 and 17 based on JP 562. It follows that claim 1 is not invalid for this reason either.

115. The case of obviousness over 445 was again based on suggested modifications by Mr Buxton, the effect of which was to create a slit downstream of the gluing station and running across the direction of travel of the roll. The sketch in his report looks like this:



116. The suggested motivation for making this alteration to 445 was that the brushes would contaminate the belts. As Mr Birss fairly pointed out, if the skilled person were concerned about brushes, then 445 itself provides the answer, namely the Figure 7 arrangement which does not have brushes at all.
117. To arrive at Mr Buxton's arrangement the skilled person would have had to have the idea of a glue bar. Glue bars were not part of the common general knowledge in 1990. The arrangement proposed also has contamination problems of its own, namely the fact that the glue will run down the surface of the guide. Moreover the description of 445 suggests that the log is not rolling but falling at this point, which would prevent the log applying glue "by rolling over the slit".
118. I was unimpressed by the obviousness argument against claims 16 and 17 over 445. It follows that claim 1 is not invalid for this reason either.

Insufficiency of 929

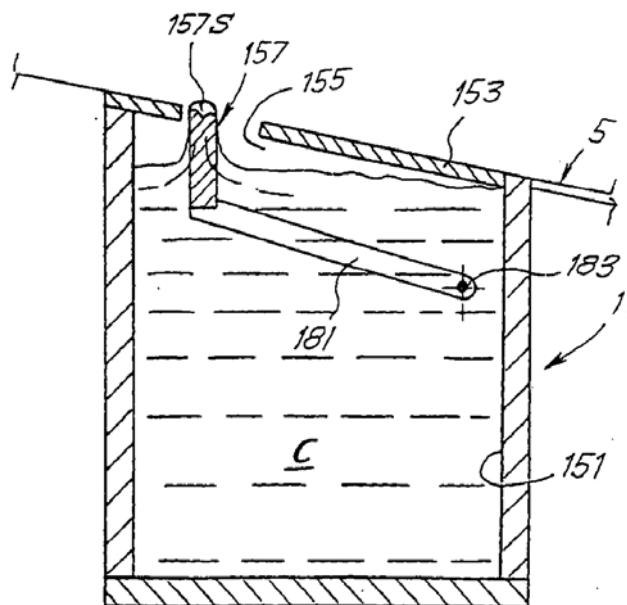
119. PCMC allege that claims 16 and 17 are too broad if on their proper construction they encompass methods of tailsealing logs by any means "other than by rolling said log over a slit from which glue is continuously or discontinuously delivered by overflowing".
120. I have held that method claims 16 and 17 do cover methods other than overflowing. But I have also held that the key element of the invention as defined by the claims is that the glue must be applied by rolling over the slit. In practical terms this means that the glue must be present in the slit when the log rolls over it, otherwise the glue will have to be applied by some action other than the rolling of the log. To my mind this is a principle of general application, as explained by the House of Lords in *Biogen v Medeva* [1997] RPC 1 at 47 and *Kirin Amgen v Hoechst Marion Roussel* [2005] RPC 9 at [112] to [113]. The skilled person would understand that it is irrelevant to

the method of the invention, so understood, precisely by what means the glue is made to be present in the slit when the log rolls over it. On that basis I do not think there is anything in the plea of insufficiency.

The 168 Patent

121. The 168 patent relates to an improvement over the invention of 929. It has a priority date of 10th December 1993. It too has apparatus and method claims. The improvement is a modified glue dispenser. Although there is a more complicated one, the simplest form described is that shown in Figure 4:

FIG. 4



122. The rolling surface has a glue container disposed below it. The upper wall of the container has a slit in it through which glue is dispensed by means of a moving member (181). The member (181) moves from a position where it is immersed in glue to a position where its extremity 157 emerges through the slit in the upper wall, which also forms the rolling surface for the logs. The motion is arranged in such a way that the member is in the upper position when the log rolls across the slit, so that the glue adhering to the member is picked up by the log.

The claims of 168

123. Claim 1 reads:

“Device for gluing the tail end (LF) of a reel (L) of wound web material, comprising:

conveying means (5, 21) for moving the reel;

unwinding means (7, 9) for unwinding the tail end (LF) of the web material when said reel is in an unwinding position;

a dispenser (11) of glue (C) for applying the glue to the reel (L), arranged downstream of said unwinding position; and

means (21) for rewinding the tail end after the glue (C) has been applied;

said dispenser (11) including an upwardly oriented slit (155) from which the glue is dispensed;

characterized in that

said dispenser (11) includes a container (151) for the glue with said upwardly oriented slit

and a moving member (157) positioned inside said container, which is immersed in the glue contained in the container (151)

and moved towards said upwardly oriented slit (155) in order to dispense the glue to the reel as it rolls over said slit.”

124. Claim 7 reads as follows:

“ Method for gluing the tail end (LF) of a web material wound to form a reel (L),

in which the tail end (LF) is detached from the surface of the reel and unwound from it to a predetermined length;

the reel is rolled with the tail end unwound therefrom over a slit (155) from which glue (C) is dispensed,

to apply said glue to a portion of the web material which is still wound up on the reel (L);

and the tail end is rewound onto the reel;

characterized in that

said glue is contained in a container (151) arranged under said slit

and is cyclically picked up by a moving member arranged in said container,

said moving member bringing said glue (C) in correspondence of said dispensing slit (155)

and being in its upper position when the reel (L) is made to roll over said slit (155).”

125. The subsidiary claims alleged to be infringed are:

“2. Device according to claim 1, wherein said container (151) is upwardly closed by a wall (153) forming a rolling surface (5) for said reel (L), said wall being provided with said upwardly oriented slit (155).

4. Device according to one or more of the preceding claims, wherein said moving member (157) is formed by a transversal and substantially rectilinear bar (159).

5. Device according to one or more of the preceding claims, wherein said moving member (157) is supported by a set of rockers (165, 167) which are linked to a fixed structure (151) and controlled with an oscillating motion.

6. Device according to one or more of claims 1 to 4, wherein said moving member (157) rotates about a fixed transversal axis (183).”

Construction of 168

Claim 1: “*said dispenser (11) including an upwardly oriented slit (155) from which the glue is dispensed characterized in that said dispenser (11) includes a container (151) for the glue with said upwardly oriented slit*”

126. PCMC submit that the glue dispenser is a “complete unit” which is inserted into a larger gap in the inclined table. The slit, on this argument must be in the glue dispenser: an open-topped glue dispenser hanging below the table, in which the slit is disposed is not within the claim.

127. I have no hesitation in rejecting this argument. The claim is not concerned with whether the glue dispenser is a drop in integral unit, or a combination of a slit in the table with an open pan.

Claim 1 “*and a moving member (157) positioned inside said container, which is immersed in the glue contained in the container (151) and moved towards said upwardly orientated slit (155) in order to dispense the glue to the reel as it rolls over said slit.*”

128. This feature raises similar questions to those raised in connection with 929. Neither side seriously contended for a different meaning. My conclusions are the same. The moving member must be in position when the log rolls over the slit. This is also clear in claim 7 which requires that the moving member be “in its upper position when the reel (L) is made to roll over said slit”.

Infringement of 168

129. This has, again, to be considered in relation to all three Rotoseal machines.

The Original Rotoseal

130. I have described the Original Rotoseal above. PCMC maintain that the Original Rotoseal does not infringe claim 1 or 7 because it uses an open topped glue pan which sits below the inclined table. The claim requirement that the glue dispenser, which includes the container, should have an upwardly orientated slit is therefore not met.
131. In my judgment and in the light of the view I have come to on construction, the arrangement of the glue pan in the Original Rotoseal does not avoid infringement of claim 1 or 7.

The Modified Rotoseal

132. It is common ground that the Modified Rotoseal does not infringe claim 7. This is because the claim specifically requires the member to be in the upper position when the log rolls over the slit. In the Modified Rotoseal the glue wire does not reach that position until the log has arrived on, and is stationary at the slit.
133. In my judgment the Modified Rotoseal does not infringe claim 1 either. The glue wire does not dispense glue to the log as it rolls over the slit.

The Proposed Rotoseal

134. In addition to the points which I have rejected when dealing with the Original Rotoseal, PCMC run two further points on this machine.
135. First, they maintain that the gap (at least 32 mm to accommodate the moving paddle) is too wide to constitute a “slit”. I think the opening, which is presumably simply wide enough to accommodate the glue paddles, can be regarded as a slit: In the context of a wide log, a 32mm wide gap is in my judgment a slit.
136. Second, PCMC say that the glue dispenser mechanism does not meet the requirements of the claims either. It will be recalled that the claims require:

“a moving member positioned inside said container, which is immersed in the glue contained in the container and moved towards said upwardly oriented slit in order to dispense glue to the reel”

137. The Proposed Machine has a glue pick up roll and a glue distributor roll as shown in the drawing which I have already reproduced above. PCMC contend that the glue pick up roll, which is immersed in the glue, does not dispense the glue to the log as it rolls over the gap in the table. So it does not fulfil the requirements of the “moving member” of the claim. Further, the glue distributor roll, although it applies glue to the log as it rolls over the gap in the table, is not immersed in the glue - it picks up its load of glue from the glue pick up roll.
138. Ingenious though this argument is, I am compelled to reject it. I think it is legitimate to look at the combination of glue pick up and distributor and to regard that as the moving member of the claim. The skilled person would not think there was any reason why the patentee would have meant “member” to be construed in the excessively literal sense contended for by PCMC.

Validity of 168

139. PCMC say that 168 is obvious in the light of the documents cited against 929, that is to say JP 562 and GB 445. By the later priority date the application for 929 (“929A”) had been published, and a further US Specification US 5 242 525 (“US 525”). PCMC also rely on an alleged oral disclosure by Kaysersberg to Mr Casper.

Obviousness over JP 562 and GB 445

140. Given that the relevant claims are narrower, the obviousness attacks over these two citations cannot succeed against 168 unless there has been some significant change in the common general knowledge by this date.
141. Mr Watson submitted, and I agree, that by 1993 it was legitimate to treat the Perini 560C machine, which embodies the principles of 929, as common general knowledge. Because of the overflowing glue slit, that machine has a problem when it comes to culling logs before gluing: it is not possible to avoid gluing a log. He then asks me to postulate a skilled person, aware of that problem, who is handed JP 562. He says that the skilled person would read it and appreciate that a glue wire or bar would be an alternative to the overflowing slit of 929, which would solve his problem.
142. I think the fallacy in this argument is that it makes an illegitimate mosaic between two very specific machines. In essence, what Mr Watson is doing is to pluck the single sentence about glue wires or bars from JP 562 and graft it onto the 560C machine. JP 562 has no general teaching about the ability of glue wires or bars to overcome a culling problem: the method of JP 562 neither suffers from that problem nor draws attention to it. It was also not how he put it to Mr Ward. That cross-examination went like this:

20 Q. You agreed that the idea of using the glue bar in the Japanese
21 patent was an interesting one, or you believe it would be an
22 interesting one, to somebody designing tailsealers because it
23 was an alternative to the unattractive spray nozzles which
24 were then current.

25 A. Yes, I have agreed that.

2 Q. Take it as an assumption that the skilled man would have in
3 his armoury, technical armoury, the basic construction of the
4 560 machine. Would it not be apparent to such a person that
5 an easy way to carry out the Japanese idea of the glue bar
6 would be to use it in place of the fountain in the 560C
7 machine?

8 A. If the person had in mind the Japanese application, then he
9 might give thought to how he might adapt it to work in the 560
10 type machine.

11 Q. It would have the advantage that it would meet the culling
12 problem. Assume for the moment the 560 did not drop the
13 fountain or provide a shutter, just take that as an
14 assumption, that would meet that problem, would it not?

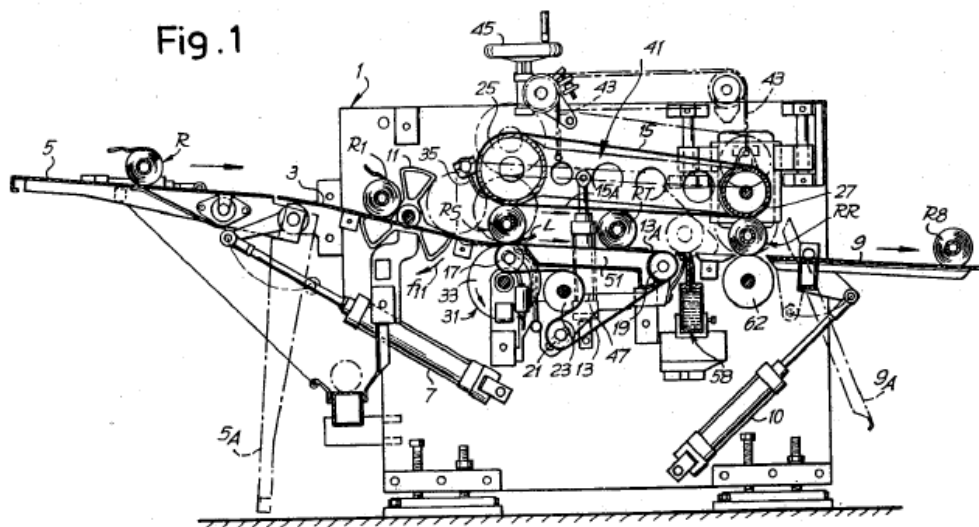
15 A. It would, yes.

143. That is putting the matter the other way round: looking for ways to export one of the ideas in JP 562 onto other machines of which the skilled person was aware, because the glue bar is preferable to a spray nozzle. But the 560C machine does not have a spray nozzle. The overflowing slit is itself supposed to be an improvement on the spray nozzle. I was not persuaded by this short exchange that Mr Ward accepted that

the skilled person would have seen the value of substituting a glue bar for the glue fountain.

Obviousness over 929A and US 525

144. PCMC also allege that 168 is invalid for obviousness over the application for 929 (“929A”), and United States Patent No 5 242 525 (“525”). It is not necessary to rehearse the disclosure of 929A, because it is common ground that the disclosure is, so far as material, the same as the disclosure of the granted patent, which I have summarised above. 525 is a different version of the same basic idea, but without the elevator section, so that the path through the machine is closer to the horizontal. The main figure looks like this:



145. It can be seen that this disclosure also adopts the overflowing glue-dispenser of 929.
146. The obviousness argument hangs heavily on the proposition that glue bars were part of the common general knowledge. I have held that they were not.
147. If the skilled person were to appreciate the problem concerning culling of logs that arises with this design of machine, there were at least two very obvious things that could be done: to include a shutter over the dispenser and to allow the fountain itself to be lowered. As compared with this, I regard the incorporation of a glue bar as a more significant departure.
148. I reject this obviousness attack as well.

Obviousness over Casper disclosure

149. This ground of invalidity stems almost entirely from a report written by Mr Sigmund Casper, a PCMC UK employee, concerning a visit he made to Kaysersberg Kundheim SA, a paper product manufacturer located in France in 1992.
150. The most relevant part of his report is as follows:

“Perini has also developed two new tail sealing systems which are known as models 4630 and 4640.

Model 4630 is guaranteed at 30 logs per minute but to date, has only run in production at 28 logs per minute. However, model 4640 has been demonstrated at 40 logs per minute but it is unknown at this time how it is performing under production conditions.

This new type of tail sealer is reported not to have any moving parts and by that I believe is meant no traversing glue nozzle.

The basic operation of this unit is through the use of a glue bar which is equal to the log length. The glue bar sits underneath the log roll-off table which is slotted. When the log rolls down the table, it is momentarily halted over the slot at which time the glue bar moves up through the slot to deposit a line of adhesive along the whole log length in one small upward movement. The price for this latest tail sealing system is approximately £70,000.”

151. A subsequent PCMC internal memorandum also refers to "Recent Perini Demonstrations". After referring to some demonstrations of other equipment the memorandum records:

"They are demonstrating a new tail seal unit which they claim to be capable of running 50 logs per minute. This is described to us as being a system in which there is some type of full width bar located under the roll. Adhesive is either applied to or through the bar, and the bar simply pivots upward to touch the roll, thus applying a full width dab of adhesive."

152. By the time of these memoranda the Perini 65.50 and 560C machines were on the market. Perini did not have a machine called the 4630 or 4640, which would not have been appropriate numbers for a tailsealing machine. Tail sealing machines should have 5 as their second number in the old numbering system used. In addition, according to Perini's witness Mr Biagiotti, there was no machine which stopped in the course of glue application. Finally, Perini's witnesses considered that the idea of the moving bar was not conceived at Perini until later, some months before the priority date in 1993.

153. In the course of their cross-examination it became clear that the rather emphatic statements made by the Perini witnesses about when particular ideas were conceived, and when machines incorporating them were first made, were not based on contemporary records, and were largely based on making assumptions about when things would have happened having regard to when the patent was applied for. In the end, however, none of this matters because I am entirely satisfied that the only possible conclusion is that the memorandum is a genuine record of what Mr Casper must have been told. Mr Casper made his notes very shortly after his visit by dictating them in his hotel room. It is most unlikely that the basic technical details he recorded are anything other than those he was given.

154. Mr Birss suggested that the disclosure was on a confidential basis, having regard to statements earlier in the memorandum that Mr Casper had “managed to obtain” the information and that Perini were keeping it “away from prying eyes”. However Mr Casper was very clear that he was never given confidential information by Kaysersberg. Other witnesses explained that Perini did not let anyone see anything confidential without a secrecy agreement. Mr Casper, in my judgment, received the information in circumstances where he was free to deal with it as he chose. He told me that he believed he was given the information so that he might act on it, which is exactly what he did. He chose to disclose it to his employers.
155. The memorandum clearly discloses the use of a moving glue bar applying glue through a gap in the table to a log as it rolls down a roll off table. The evidence established that the clear expectation would be that the tail would have to be separated before this could be done. It was well known how to do this as matter of common general knowledge e.g. by using air blasts.
156. Mr Birss warned me against reading the memorandum with hindsight, and reading in more than was present. He made a number of suggestions to Mr Buxton as to how the memorandum would be understood, but none of them was accepted by Mr Buxton as being very likely.
157. Moreover the way in which the tail was separated from the log and positioned prior to rolling it down a table in the embodiments of the 929 patent that were on the market would have been common general knowledge. In my judgment, subject to the reservation I mention below, the information in Mr Casper’s memorandum would lead the skilled person to produce a device falling within the claims of the 168 Patent by replacing the overflowing glue nozzle of the 65.50 and 560C devices with the moving glue bar described in Mr Casper’s note.
158. The one reservation is this. It is to be noted that what is actually disclosed is a system in which the log stops: rather like the Modified Rotoseal. I have held that machine to be outside the claims because the glue is not applied as the log rolls over the slit.
159. Mr Ward did not put up much defence to the proposition that it would be obvious to see if you needed to stop the machine:

“Q. The report was that the log was stopped when the bar came up.

A. I believe it was, yes.

Q. It would be something which the skilled man would consider as to whether if the timing was correct, you could avoid stopping the log because, as I think you said yesterday, as long as you make sure that the gluing member is in the up position when the log passes over, there is no need to stop the log and that would be apparent too.

A. Yes, my Lord, I think that is true. Whether that is something that the merely skilled person would think of, I am not so sure....

Q. If you were familiar with the 560C, that is a system where it just rolled through the glue ----

A. Yes.

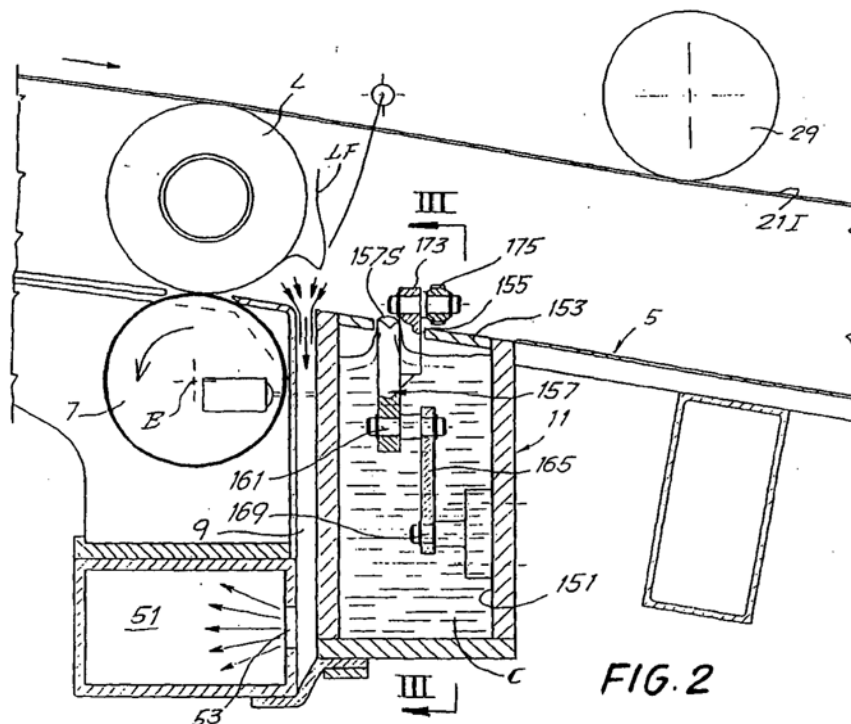
Q. ---- would it not be apparent that you should at least consider whether it was necessary to stop the glue or whether simply with timing, by ensuring that the gluing member was in the up position, the gluing could be achieved simply by rolling it without stopping? Where is the difficulty?

A. The difficulty is in the question of control and understanding whether the skilled person would have sufficient command of control systems in order to design that without invention. In 1990 the control systems were very well advanced. We had been to the moon by then, after all. Sophisticated control systems were available at that time.”

160. If there is some difficulty in arranging the control system, that is not something the 168 patent gives any help on: rather it assumes that the skilled person has the necessary skills, as I am sure he or she would.
161. In my judgment the Casper memorandum renders claims 1 and 7 obvious. Mr Birss did not seriously contend that if I reached that conclusion there was anything in the subsidiary claims that could save the 168 patent. They all relate to implementation details, and are obvious if the main claims fall.

Insufficiency of 168

162. The specification also describes a method of separating the tail for unwinding, upstream of the gluing position, by reference to Figure 2:



163. The tail is sucked into the space 9 under the action of vacuum box 51.
164. As explained at [0025], however, the glue dispenser described can be used with other methods of tail end unwinding, than that specifically described.
165. PCMC allege, by amendment, that the specification is insufficient because this method cannot be made to work. In particular:
- i) The method would not detach the tail effectively or at all from the reel across the entire width;
 - ii) There is no teaching of how a sufficient length can be detached across the entire width such that the glue dispenser can subsequently apply glue to the right location;
 - iii) There is no teaching of how to ensure that the web material is aligned along the axis of the vacuum space;
 - iv) There is no teaching of how to ensure this without creasing or doubling up in the vacuum space.
166. Mr Buxton accepted that there were two separate matters to consider: the first was getting the tail off the roll and the second was causing the tail to go down in the vacuum chamber in an orderly way. The first of these points died in cross-examination like this

“Q. You agree that every, I will not say every schoolboy in this art, obviously it is not an art that is practised by

schoolboys, but any metaphorical schoolboy tailsealer man knows about air nozzles?

A. Yes.

Q. Probably even before he builds the machine, the first thing you would do looking at that is say, "I have to put in an air nozzle".

A. Absolutely.

Q. You have not drawn one but I am going to put one in.

A. Yes.

Q. And if you tried it without an air nozzle and it did not work, as you say it would not, he would say, "Told you, put in an air nozzle".

A. Correct, yes.

Q. There is no magic, let's say, in the idea of using an airnozzle. That is pretty much an inevitability

A. Yes.

Q. But the point you are making, in fairness to you, you say but it is not described in this specification?

A. No, it is common general knowledge; so I would accept that.

Q. Now, would you accept this, that once you have an air nozzle in there, getting the tail off should not be a problem. The problem is then, can you get it to go down the hole.

12 A. Yes."

167. So far as the second point is concerned, Mr Buxton was prepared to accept that, with some modest adjustment of the entrance to the vacuum chamber as shown in the drawing, the skilled person would be able to get a narrow web down the into the chamber. Where he considered there might be difficulties is in relation to a full-width log. It emerged that his concern was the width of the gap as shown in the figure. He accepted, however, that the skilled person seeking to make this embodiment work would realise that the width of the gap was a crucial thing to be worked on.

168. The allegation of insufficiency is not made out.

Liability for infringing acts

169. The alleged infringing Rotoseal machines were purchased from PCMC Italia. The sale contract provided for delivery *ex works* of the PCMC Italia factory in Italy. The

importation of the machines into the UK was by LPC Limited. The machines were installed in LPC Limited's premises by PCMC Italia representatives. LPC Limited operates the machines and therefore clearly uses the method.

170. PCMC's case is that only LPC Limited has committed any infringing act. It is necessary to consider the position of each of PCMC (UK), PCMC Italia and LPC Group against the allegations made against them.

PCMC (UK)

171. Perini alleges that PCMC (UK) was involved in the offer for sale or supply of the machine in the UK. They point to the fact that PCMC UK's details appear on the PCMC website material for the Rotoseal machines annexed to their Particulars of Claim. They also point to the fact that the name of Trefor Hughes, a PCMC (UK) employee, appears on the contract of sale, as well as his initials indicating that he was responsible for the 5th revision of the document. The LPC Limited witness Mr Jamie was not involved at the relevant time, and fairly accepted that he could not assist on what took place. He explained that the norm was that negotiations took place in Italy with PCMC Italia. That, of course, does not explain how the initial offer occurred.
172. Mr Birss suggested that the material was enough to shift the burden to PCMC to explain what did happen, and that they have not given any disclosure or tendered any evidence to explain what did occur.
173. In my judgment, this material is inadequate to establish an offer for sale or supply by PCMC (UK). Such an offer would have to be an offer by PCMC (UK) made in the UK to supply in the UK: see *Kalman v PCL Packaging (UK)* [1982] FSR at 406 at 419-420. There is really nothing to suggest such an offer was made. At most there is evidence that PCMC (UK) assisted PCMC Italia to conclude the contract to supply the machine in Italy. That is not enough.

PCMC Italia

174. Pursuant to the 30th November 2005 contract, PCMC Italia representatives installed the machine at LPC Limited's premises in England. The machine arrived in the UK in what Mr Jamie described as big chunks. Nevertheless, this would be adequate, in my judgment to amount to the making of the machine by PCMC Italia.
175. The claims which I have found to be infringed are, however, method claims. There is no particularised allegation that PCMC Italia used the machine, and therefore used the method of the relevant claims. For that reason I am not prepared to hold that Perini have established primary liability for infringement by use by PCMC Italia. However the contract provides by clause 3.4 that it is PCMC Italia's technicians who perform installation and start-up, and by 3.6 that if machine start-up at LPC Limited's plant is not effected by PCMC technical personnel, the guarantee is automatically rendered null. It is a reasonable inference that there was use of the Rotoseal machine at start up under the close supervision of PCMC Italia's employees.
176. Perini alleges that the various acts complained of were committed pursuant to a common design between all the defendants. This allegation comprehends the

allegation that PCMC Italia are jointly liable with LPC Limited for LPC's use of the method of claims 16 and 17 of 929 on their Rotoseal machine.

177. The principles on which the court will find parties liable as joint tortfeasors for an act of primary infringement committed by one of them are well settled. An extensive review of the authorities was undertaken by Mustill LJ (as he then was) in *Unilever v Gillette* [1989] RPC 583. Mustill LJ said this at 608-9 when considering whether to give permission to serve out of the jurisdiction on an alleged joint tortfeasor:

“For my part I prefer to take the relevant part of the amendment as a whole, and to ask whether, if the allegations are proved to be true (and there seems no dispute that they will be), and if they are set in the context of the relationship between the companies in the Gillette Group, when that has emerged at the trial, a judge directing himself correctly could reasonably come to the conclusion that - (a) there was a common design between Boston and G.U.K. to do acts which, if the patent is upheld, amounted to infringement, and (b) Boston has acted in furtherance of that design. I use the words "common design" because they are readily to hand, but there are other expressions in the cases, such as "concerted action" or "agreed on common action" which will serve just as well. The words are not to be construed as if they form part of a statute. They all convey the same idea. This idea does not, as it seems to me, call for any finding that the secondary party has explicitly mapped out a plan with the primary offender. Their tacit agreement will be sufficient. Nor, as it seems to me, is there any need for a common design to infringe. It is enough if the parties combined to secure the doing of acts which in the event prove to be infringements.”

178. In *Sabaf SPA v Meneghetti SPA* [2002] EWCA Civ 976; [2003] RPC 14, Meneghetti arranged importation of goods which had been purchased by MFI ex works in Italy. It was common ground that the mere supply of infringing goods is not enough to make the supplier a joint tortfeasor. Peter Gibson LJ, in a passage which was not the subject of the later appeal to the House of Lords, said at [59] that:

“The underlying concept for joint tortfeasance must be that the joint tortfeasor has been so involved in the commission of the tort as to make himself liable for the tort. Unless he has made the infringing act his own, he has not himself committed the tort. That notion seems to us what underlies all the decisions to which we were referred. If there is a common design or concerted action or otherwise a combination to secure the doing of the infringing acts, then each of the combinants has made the act his own and will be liable. Like the judge, we do not think that what was done by Meneghetti was sufficient. It was merely acting as a supplier of goods to a purchaser which was free to do what it wanted with the goods. Meneghetti did not thereby make MFI's infringing acts its own.”

179. It seems to me that the facts of the present case go much further than the mere supply of infringing goods for the purchaser to do what it wishes with them. Firstly, it is clear from the contract that the machine supplied was to be one which operated in accordance with the patented method. This is not a case where the supplier could be said to be ignorant or indifferent as to how the machine supplied was to be used: it was clearly to be used in a way that would infringe the claims in question. Secondly PCMC Italia have built the machine on LPC Limited's premises and caused it to work in accordance with the method claims. It is beyond argument that this was done pursuant to a common design, evidenced by the contract between the parties. It seems to me to be entirely fair to say that by installing the Rotoseal and causing it to operate according to the patentee's method in LPC Limited's premises, PCMC Italia have acted in furtherance of that design by building the machine on LPC Limited's premises and ensuring that it runs in accordance with the method. PCMC Italia are jointly liable with LPC Limited for infringement of the 929 patent.

LPC Group

180. LPC Group is a holding company. The case against them is based on the fact that Perini's letter before action dated 16th October 2007 addressed to LPC Limited elicited a response on LPC Group's notepaper stating "We purchased the equipment from PCMC".

181. I do not think this is enough to cause LPC Group to infringe on any basis. The method is operated by LPC Limited, not the parent holding company, although I can understand why Perini may have been sufficiently uncertain so as to sue. I doubt the point has any real significance.

Conclusions

182. My conclusions are as follows:

929

- i) 929 is valid;
- ii) LPC Limited have infringed claims 16 and 17 by using the Original and Rotoseal;
- iii) The Proposed Rotoseal would infringe claims 16 and 17 if implemented;
- iv) PCMC Italia is jointly liable with LPC Limited for infringement of those claims, but PCMC UK and LPC Group are not;
- v) Claims 16 and 17 are not infringed by the Modified Rotoseal;

168

- i) 168 is invalid for obviousness in the light of the Casper memorandum;
- ii) had it been valid, claims 1 and 7 would have been infringed by the Original (and the Proposed Rotoseal if implemented), but not by the Modified Rotoseal.