Neutral Citation Number: [2009] EWHC 2691 (Pat)

Case No: HC08 C 00663

IN THE HIGH COURT OF JUSTICE
CHANCERY DIVISION
PATENTS COURT

Royal Courts of Justice
Strand, London, WC2A 2LL

Date: 03/11/2009

Before :

THE HON MR JUSTICE FLOYD

- -

Between :

GRIMME LANDMASCHINENFABRIK GmbH & Co. KG	**Claimant**
- and -	
DEREK SCOTT (T/A SCOTTS POTATO MACHINERY)	**Defendant**

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- -

Mark Chacksfield (instructed by **Simmons & Simmons**) for the **Claimant**
Giles Fernando (instructed by **Gordons Partnership**) for the **Defendant**

Hearing dates: 13th-16th and 19th October 2009

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Judgment

Mr Justice Floyd :

1. The claimant, Grimme Landmaschinenfabrik GmbH & Co. KG ("Grimme"), sues the defendant, Derek Scott (who trades as Scotts Potato Machinery) for infringement of European Patent (UK) No 730 399 and unregistered design right. Mr Scott denies infringement (save in respect of certain of the design right allegations which he admits) and contends that the Patent is invalid and that design right does not subsist. He counterclaims for revocation of the patent, unjustified threats of patent infringement and for declarations about certain allegedly untrue statements made in letters sent by Grimme's solicitors to his customers.

2. The Patent, and indeed the action as a whole, concerns machines for separating potatoes from weeds, earth, clods, stones and haulm (the word for the stalks or stems of the plants). Such machines have been known for many years before the priority date, and have taken a variety of forms.

3. One well known potato separator ("the Rollastar") used transverse rotating star wheels which rotated in the same direction ("co-rotated"), carrying the potatoes along the tips of the stars and allowing some earth to fall between them. After the star wheels came a clod roller rotating in the opposite direction to the star wheels ("counter-rotating"). This pair of counter-rotating rollers nipped the haulm and other material and dragged it down between them. The crop was passed over the clod roller for further treatment.

4. A second well known type of potato separator was the Dahlmann. In contrast to the Rollastar, this machine had rollers with their axes aligned with the direction of flow of the crop rather than transverse to it. The axial rollers were arranged in pairs alongside each other. Each pair of rollers was counter-rotating. One roller in each pair carried a spirally arranged ribbed structure which was designed to operate as a worm or screw and carry the crop axially towards the discharge end. Originally these roller tables were built with bearings at both ends, but this resulted in build up of materials near the bearings at the discharge end. So the tables were modified so that the axial rollers were cantilevered from the input end.

5. Rollastars tended to clog up in the wet, and were only moderately good at extracting haulm. Dahlmann rollers tables, were, by the priority date, viewed as superior in dealing with wet conditions. It was against this background that the invention of the patent in suit came to be made.

The patent in suit

6. The specification commences with a reference to French Patent Application No. 1 228 425 ("Spatz"). Spatz is one the citations relied on for obviousness by Mr Scott. The specification points out that, in Spatz, all the rollers are of cylindrical construction. They counter-rotate, but apply what is described as an "even forward feed". The invention is said to be based on the problem of finding an apparatus which involves minimum technical complication and makes optimum separation possible with a variety of mixtures of potatoes and other materials. There is no reference to the real state of the art of Rollastar and Dahlmann separators.

7. By contrast to the description of the Spatz machine, the specification points out at page 3 (bottom paragraph) that the first roller in line imparts what it calls a "temporarily amplified forward feed by which the separating action is enhanced and the rate of throughput increased". "Amplified forward feed" is a term which appears in claim 1 and has given rise to the principal dispute on construction.

8. The specification goes on to describe a machine in accordance with the invention in considerable detail, much of which is broadly irrelevant for present purposes. In short, a number of pairs of counter-rotating rollers are orientated transversely to the path of the crop. The first roller met by the potatoes carries "extension parts which extend beyond the cylindrical shell part and which are constructed as conveyor lips". This is shown in enlarged form in Figure 12 as follows:

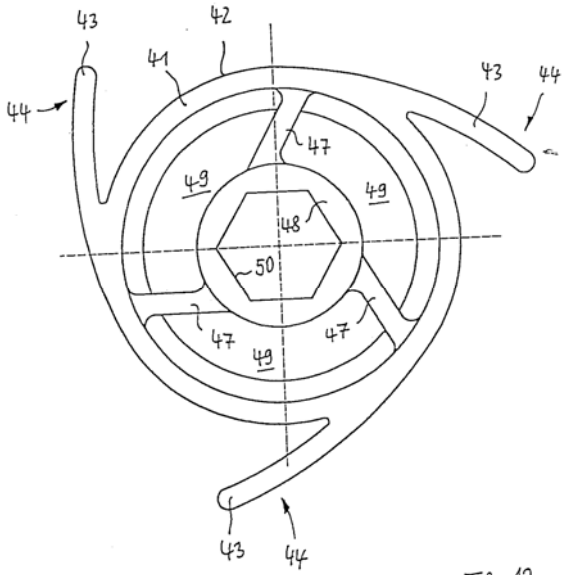


Fig. 12

9. In the embodiment of Figure 12, the shell part 42 is elastically deformable, and is also connected to the hexagonal hub through resilient spokes 47 (in fact the spokes are more like walls as they have axial length, but the specification calls them spokes). This creates what are described as deformation chambers 49, which can be compressed during operation of the rollers. Some of these features are the subject of a subsidiary claim which is in issue.

10. The second roller is shown as not having any projections or lips. It is said, in a passage bridging pages 8-9, that it may be provided with an even layer of elastomer. The operation of the pairs of smooth and lipped rollers is shown in Figure 15:

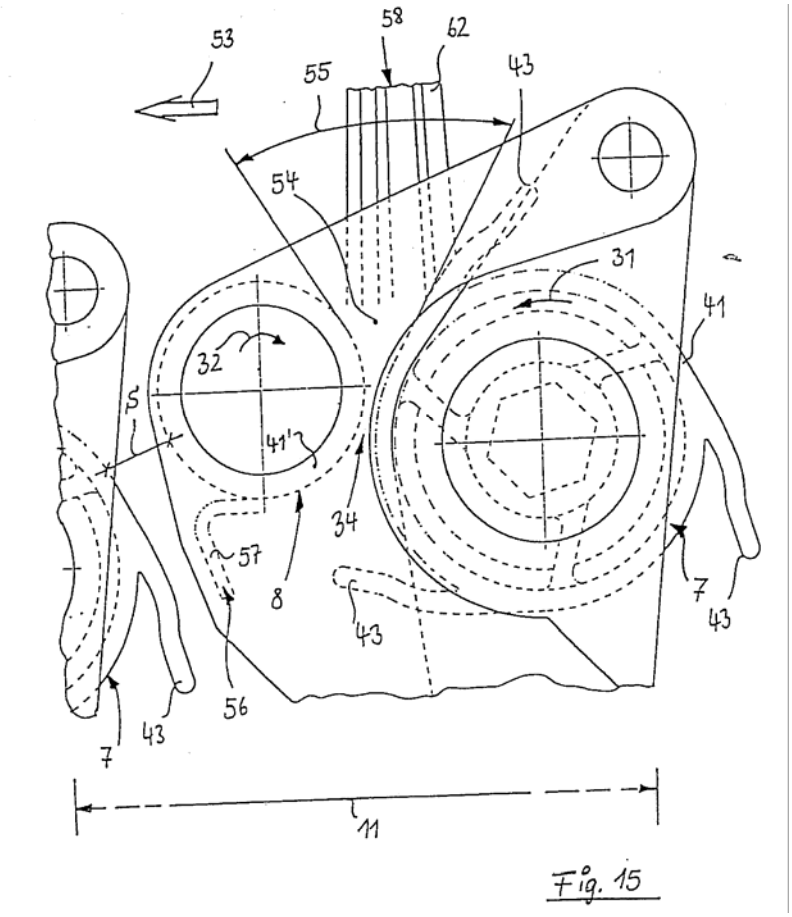


Fig. 15

11. The specification describes the nip between the rollers, generally indicated at 34, as the "working gap", and the V-shaped gap above this, indicated as 54, as the "gusset". In this gusset, a passage at the top of page 8 explains that the lipped roller imparts an "enhanced delivery feed movement to the potatoes disposed in the gusset" during each rotation. It is also said that the conveyor lips narrow the angle of the V-shaped gusset, and so "exert the intended conveyor pulse on the potatoes in the direction of conveyance". Accompanying clods and haulm are caught in the working gap 34 and ejected downwardly.

12. The extent to which a separator carries out its task is called its aggressiveness. Too much aggression may cause the potato to be damaged; too little may not clean and separate the potatoes sufficiently. The patent explains at page 9 that the groups of rollers can be varied in their aggressiveness by varying their rotational speeds, either individually or collectively.

The claims

13. Claim 1 is in the following form, except that I have omitted the reference numerals, corrected a grammatical inconsistency about which there was no dispute, and added paragraph lettering of my own:

> (a) An apparatus for separating potatoes from other materials such as earth, clods, stones, weeds or the like, particularly for potato harvesting machines,

(b) with a number of rolling bodies disposed beside one another on parallel axes,

(c) [forming] rotating groups driven in opposite directions in pairs and which jointly occupy a separating path extending from a material input end to a potato delivery end,

(d) characterised in that whichever is in the direction of the separating path the first rolling body of each group has a cross-sectional form which during each rotation exerts an amplified forward feed at least once on potatoes disposed at the area of intersection between the roller bodies of the group,

(e) and further characterised in that the roller bodies comprise an elastically deformable shell part,

(f) the first roller body of each group is provided on the periphery with at least one conveyor lip, rib or like extension part projecting beyond the contours of the cylindrical shell part.

14. Feature (d) uses what Mr Chacksfield described as "clunky language" as a result, probably, of translation from German. There is not suggested to be any difference between a "rolling body" or "roller body" and a "roller". The sense is perhaps clearer from the following rearrangement:

> characterised in that ~~whichever is~~ the first ~~rolling body~~ roller of each group in the direction of the separating path ~~the first rolling body of each group~~ has a cross-sectional form which, at least once during each rotation, exerts an amplified forward feed ~~at least once~~ on potatoes disposed at the area of intersection between the rollers of the group

15. At the start of the trial Grimme also asserted independent validity in respect of claims 5-8, 15, 17-19 and 24. By the time of closing speeches, in a sensible response to encouragement from me, this had reduced to the following additional claims:

Claim 17:

> "An apparatus according to one of claims 1 or 14 to 16 characterised in that the shell part of the first and/or second roller body of each group is connected to an inner hub part via supporting spokes."

Claim 24:

> "An apparatus according to one of claims 1 to 23, characterised in that the rotary speeds of the roller bodies can be adjusted individually and/or in each group."

The skilled addressee

16. There is little room for debate about the identity of the skilled addressee. He or she would be a designer of agricultural machinery, with experience of potatoes and other root crops. The skilled addressee would not necessarily be a potato specialist, although he would be familiar with the generally known existing machines for harvesting and separating potatoes.

Common general knowledge

17. The skilled person would in my judgment have known the following in 1993:

    i) The details of the operation of the Rollastar machine. These would typically have two rows of stars followed by a clod roller, followed by a repetition of that series. The star wheels co-rotate and the clod roller counter-rotates. The axes of the two star rollers are in the same horizontal plane, whilst the clod roller is normally positioned below that plane. The position of the clod roller is highly adjustable to alter aggressiveness. The intention is that, in normal use, most of the crop will pass over the clod roller, typically glancing it on the way through. Raising the clod roller will increase aggressiveness, but crop landing in the space between the last star wheel and the clod roller, may be pulled through and therefore lost.

    ii) The details of operation of the Dahlmann machines. The predominant action of the Dahlmann roller was to convey material in the axial direction by the screw action of the ribbed roller. There would be some sideways movement as well. Dahlmann machines incorporated a device which temporarily reversed the direction of the rollers when a large stone was trapped between them in order to expel it and allow it to move on down the crop path. I shall call this the "Dahlmann reverser mechanism."

    iii) The haulm roller. This was a plain cylindrical roller positioned at the end of a web, usually close to and below the end of the web. It was known that if they were placed too high, and in the path of the crop, they would tend to pull the crop through in addition to the haulm: in other words they would be very aggressive.

    iv) A variety of devices were in use for sugar beet (as opposed to potatoes) featuring tables of contra-rotating rollers and spiral rollers of more or less even size. The skilled person would be aware of these machines, but would understand that they are designed for more robust types of crop than potatoes.

    v) The fact that the rollers in separating tables can be adjusted in their construction, position and speed of operation in a wide variety of different ways.

18. Mr Scott also suggests that a machine called the Kverneland UN 1741 was part of the common general knowledge. This was at one point cited as one of the starting points for the obviousness attack, a position which did not survive to the end of the trial. Mr Scott maintains that it is common general knowledge. I do not think that it was established that this machine formed part of the common general knowledge. Some witnesses had not heard of it, even though I do not place much weight on Mr Kalverkamp's evidence to this effect, or Mr Fox's ignorance of it, for reasons I

explain later. But, quite apart from this, given the fact that the issue was hotly contested, I would have expected to see far more positive evidence of awareness of this machine than I did. Instead there was very little beyond Mr Mitchell's (Mr Scott's expert) assertion to support the contention. I am sure Mr Mitchell had searched the extensive collection of journals to which he had access for this purpose, as he was not able to suggest that Grimme's lawyers had missed anything when they asserted that there were no references to these machines in the trade literature or advertisements in the period 1991-1994. I suspect the reason is that the machine is of a specialised kind, designed as a single row machine for market gardens and the like. It was more widely sold in the 1980s than the 1990s. I think by 1993 a substantial proportion of the relevant body of addressees would not have heard of its existence or know where they could find out about it. It is therefore not part of the common general knowledge.

19. Likewise, an assertion that a Hassia machine was part of the common general knowledge in 1993 was not made out.

Construction – claim 1

20. 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 those observations. I apply those principles here.

Transverse rollers

21. A preliminary question is whether the claim is limited to rollers which are transverse to the direction of the crop path, or at least excludes axial ones. Mr Fernando, who appeared on behalf of Mr Scott, lightly suggested that this might not be so. I think it is absolutely clear from the fact that the claim speaks of "whichever is in the direction of the separating path the *first* rolling body of each group" that the claim requires substantially transverse rollers: otherwise how does one work out which is the first in the direction of separating path?

"beside one another"

22. The first real issue of construction concerns features (b) and (c). Grimme contends that these features require at least four rollers in two pairs, with no gaps in between, beyond minimal ones. Certainly, Grimme submits, there should be no functional equipment, such as co-rotating rollers, between the pairs of rollers, because all four rollers are required to be "beside one another".

23. Mr Scott contends that the language of the claim allows intervening rollers (or indeed anything else) between the pairs of counter-rotating rollers.

24. On this issue I prefer Mr Scott's submissions. The skilled person would understand that the important interaction was between the rollers of a given pair. There is nothing in the specification to indicate that the patentee regarded it as important that the second roller of the first pair should have any particular functional relationship with the first roller of the second pair, beyond forming part of the same separating path. It is true, as a number of witnesses pointed out, that an advantage of having no intervening equipment between pairs is that one can fit more haulm extraction points into a given length: but even if the skilled person were to spot this point, I do not think he would understand the claim as ruling out intervening rollers. I see no technical reason why the patentee would have wanted to exclude the placing of a roller, or indeed a chain of rollers, between the counter-rotating pairs, provided that they continue jointly to occupy a separating path, as the claim requires. This would still take the main point of the invention, albeit not obtaining that particular advantage.

25. I also think that Grimme's construction may be placing reliance on the numerals in brackets (7,7',8,8') which appear in brackets after the words "a number of rolling bodies" in feature (b). These numerals should not be construed as limiting. Reference to the drawing does show that the pairs do not have any intervening rollers. Absent this reference one would simply ask firstly "does the separator have a number of rollers beside one another?" and secondly "does this number of rollers have rotating pairs driven in opposite directions and forming part of the separating path?" Both questions can be answered in the affirmative even if there are co-rotating rolling bodies between the pairs.

"amplified forward feed"

26. The second issue concerns the meaning of feature (d), and in particular what is required by "amplified forward feed". Much time was taken up with argument as to what comparison the claim is trying to make: amplified with respect to what?

27. Grimme contends that this feature as a whole means that the cross-section is such that it is capable of giving to the potatoes an extra forward push at least once in each rotation. This requires that the cross-section has parts which do not give the extra push and parts which do. This, it contends, is supported by the passages in the specification which speak of a "temporarily" amplified forward feed (page 1 penultimate line), and of exerting an "intended conveyor pulse" (page 7 first paragraph). At times Grimme sought to bring in a stricter requirement, whereby there must be a part of the cross section where the potato contacts a cylindrical surface, as well as a part which delivers the amplified forward feed.

28. Mr Scott contends that this feature refers to the type of cross sectional form described in the specification, for essentially the following reasons. Firstly, he submits that the term does not mean anything unless described. Accordingly the skilled person would be obliged to read in the details of the specific embodiment described, including the shape of lip. Secondly he submits that the specification describes temporary amplification, which is therefore uneven and which would indicate a lip which can change its position relative to the roller. Thirdly he contends that, at the time, Grimme described their Paddlestar machine, which had springing conveyor lips, as patented.

29. I do not accept Mr Scott's first and third submissions. It seems to me that the effect of the first submission is to limit the claim to the specific embodiment, when this is not in any way justified by the language of the claim. The third submission cannot possibly be relevant to construction for a host of reasons, not least that the document in question, an article in Potato Review for November/December 1996, cannot be assumed to have been read by the skilled addressee and in any case does not identify the patent which is referred to. As to the second submission, I agree that the specification describes a temporary amplification, but this, it seems to me, is a neutral factor, as Grimme's construction relies on it as well.

30. I also do not accept Grimme's construction in its entirety. I do not think that the claim is calling for a comparison with anything other than an even forward feed. I do not think there has to be a cylindrical potato-contacting surface – that feature is simply not present in the language. The cross sectional form must simply be such that it delivers discontinuous pushes to the potato, at least once in each revolution of the roller. It also seems to me that the claim is clear that the machine must be capable of delivering the extra forward push to a potato *in the gusset*. If potatoes in the gusset are not given a forward feeding push, either because the cross section of the roller does not touch them or because potatoes in that position will all be pushed or pulled through the working gap, there will be no infringement. In the rest of this judgment, when I refer to "amplified forward feed", I am referring to the whole of feature (d) as I have construed it.

"the roller bodies comprise an elastically deformable part"

31. The third issue concerns feature (e). Does this require that every roller in the minimum requirement of four rollers comprises an elastically deformable part? Or may some of the rollers, in particular the second rollers, be rigid, provided one has at least one deformable roller? The claim is not absolutely clear as a matter of language as to whether what is meant is that *each* roller of the minimum requirement of two pairs of rollers should be elastically deformable, or *at least one* of them should be.

32. Grimme rely on the use of the word "*comprise*", traditionally used in patent law to set a minimum, coupled with the use of the singular; "*an* elastically deformable shell part". They also refer to a passage bridging pages 8 and 9 which says that the second rolling body "may" be provided with an even layer of elastomer.

33. Mr Scott relies on the words "roller bodies" and the deletion from the specification of words indicating that rigid rollers are permitted. I ignore the latter half of the submission, as it seems to me, at least arguably, to be an impermissible use of the prosecution history for the purposes of construction.

34. As Mr Chacksfield, who appeared on behalf of Grimme, fairly pointed out, the next feature, feature (f), indicates that the first roller body of *each* group is assumed to have a cylindrical shell part, which refers back to the deformable one in feature (e). He argued nevertheless that this was as far as the claim went, leaving it open for the second of each pair to be rigid. He also relied on some evidence given by Mr Fox, his expert, to the effect that he would understand that having only one roller elastically deformable would be the minimum required.

35. In my judgment the more natural reading of the claim is that each roller is provided with an elastically deformable shell. Once one sees (from feature (f)) that the claim in fact assumes the presence of at least two elastically deformable shells, there cannot be anything in Mr Chacksfield's grammatical points about "*comprise*" and "*an*". I cannot see any basis for an intermediate construction of the type proposed. The stray word "may" at pages 8-9 is literally that, referring to a particular embodiment with an even elastomeric layer. It is too much to read in to this that the deformable roller can be done away with altogether.

"*Lip, rib or like extension"*

36. Finally there is the question of what is meant by "lip, rib, or like extension". This is relevant to the validity attack over Pearson and Rollastar, dealt with below. The Patent does not give much help on what this means, beyond figures like Figure 12, which I have reproduced above, and the description of the function of the extensions. Grimme contends that the phrase requires features to be substantially elongated in the axial direction, and excludes axially short stars, fingers or paddles.

37. I reject Grimme's submission. I can see no reason why the projections in the Patent should not be a series of axially short projections, although obviously one would want the series to extend the length of the roller, so as not to miss any potatoes. Mr Chacksfield relied on some evidence given by Mr Fox: but there is no suggestion that these are technical terms which an expert would be better placed to understand than me.

Construction – claim 17

38. This is a very short point. Claim 17 calls for a resilient spoke. The specification describes resiliently deformable spokes by reference to Figures 12 to 14. In Figure 14, which is a cross sectional view, the spoke 47 appears to have significant axial length. It is clear that the author of the specification is using the term "spoke" to include walls of significant axial length.

The witnesses

39. Grimme called Mr Klemens Kalverkamp. He joined Grimme in October 1992, and worked in a number of technical positions in research and development. He is now its Managing Director.

40. Mr Kalverkamp is a native German speaker. He chose to give evidence in English without the aid of an interpreter, and suffered to some degree from a hearing difficulty as well. At times he seemed to have difficulty understanding questions put to him by counsel. I have to make very substantial allowances for all this. Nevertheless I did not form a favourable view of Mr Kalverkamp as a witness. His approach seemed to me to be entirely partisan, saying whatever would most help his company, and declining to assist when he thought the answer would not. An example was his approach to identifying a photograph of a machine in an article about Grimme separators. It is for this reason that I felt unable to place any weight on his denial that he had heard of the Kverneland machine, amongst other matters.

41. Grimme's expert was John Fox. He is a general agricultural engineer. He joined Bomford & Evershed in 1957 as a Technical and Production Manager. He rose to the position of Managing Director in 1963, and became Company Chairman in 1981, in which post he remained until 1992, when he retired to become an independent consultant. He had a wealth of experience in agricultural machinery of many kinds. Mr Fernando drew attention to his lack of experience in the field of potato harvesters and separators. He had, for example, never seen a Rollastar in operation before this case. To the limited extent that the issues in this case require specialist understanding of the behaviour of potato harvesters I think this criticism is valid and I have taken it into account, for example in placing little weight on the fact that he had not heard of the Kverneland machine. On the whole, however, I found Mr Fox to be a knowledgeable and fair witness, and was assisted by what he had to say.

42. Mr Scott called James Mitchell as his expert. Mr Mitchell joined Reekie Engineering, a reasonably substantial UK potato machinery company, in 1973 and plainly also had a wealth of practical experience, not only in agricultural machinery generally, but also specifically in relation to potato harvesting machinery. Mr Chacksfield criticised his approach to the content of common general knowledge and obviousness. I shall consider these questions when I come to the evidence on those topics.

43. Mr Scott also gave evidence himself. He was a very fair and entirely frank witness. He answered questions straightforwardly, without regard to the consequences for his business.

Infringement

44. The alleged infringement is Mr Scott's Evolution separator. It is described in a Product Description. Very little of the detail in that document matters for present purposes.

45. The operative part of the Evolution separator consists of a number of pairs of shafts (2, 4, 6 or 8 pairs). In a pair of rollers there are (a) a fluted roller consisting of a number of deformable polyurethane segments with spiral projections on a shaft and (b) a plain roller with an outer surface of stainless steel or rubber.

46. Grimme's case is as follows. Firstly, it is alleged that the separator as a whole directly infringes the Patent under Section 60(1) of the Patents Act 1977. Secondly it is alleged that the sale of individual replacement rollers infringes the Patent under Section 60(2). Thirdly it is alleged that, if Grimme is wrong and the sale of steel-rollered machines does not infringe under section 60(1), then the sale of those machines infringes under section 60(2) because the steel rollers can be replaced with rubber ones.

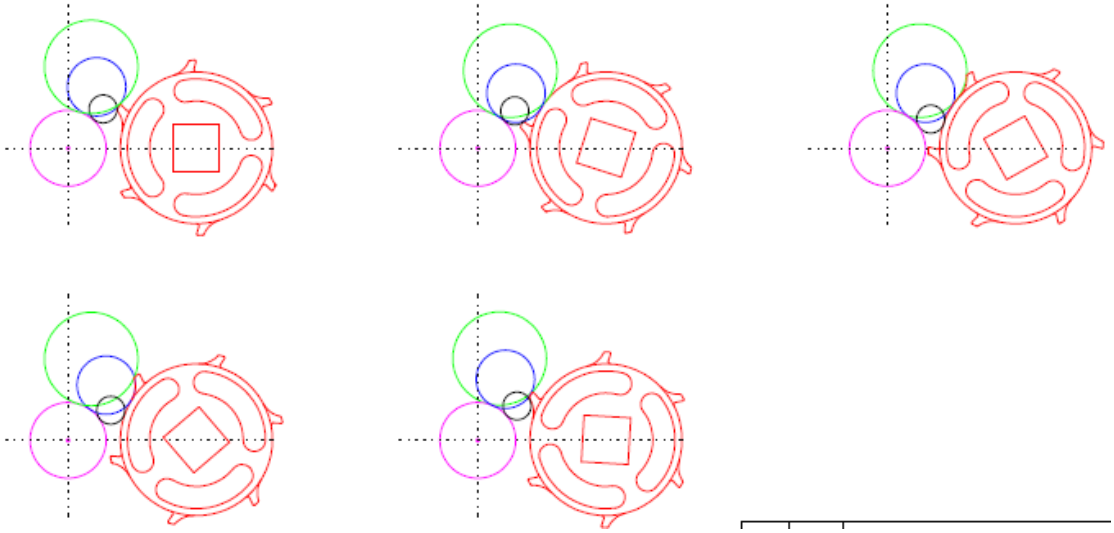
47. As to the second point, during the trial it became common ground that if the sale of the whole machine fell within the claims, then the sale of spiral rollers infringes under section 60(2).

48. In relation to the third point, the only issue is whether Mr Scott knew, or it was obvious to a reasonable person in the circumstances, that users might swap the steel rollers for the rubber ones.

49. I turn first to consider whether the Evolution separator infringes. Two points were taken, namely whether the Evolution has amplified forward feed, and secondly whether the machine with some steel rollers infringes.

"Amplified forward feed"

50. There is no real dispute as to how the Evolution separator works. Mr Mitchell prepared some diagrams as follows:



51. The diagrams show successive positions of a rotating roller in relation to three different sizes of potato. As anyone who has seen a potato knows, the diagrams are highly idealised. Both experts recognised this, but, as Mr Mitchell said, they are better than nothing. They establish that the ribs on the roller will in general give a potato located in the "gusset" a push in the feed direction at some stage during the rotation of the roller. Although the diagrams show the potato falling back into the gusset, Mr Mitchell accepted that in practice the result would be that the potatoes would frequently clear the plain roller and pass on down the table.

52. I think this evidence clearly establishes infringement on the construction which I have adopted. The cross-section is such that it is capable of giving to potatoes in the gusset an extra forward push at least once in each rotation. The cross-section has parts which do not push at all and parts which do. The push can be delivered to the potato when it is situated in the gusset between the rollers.

53. For completeness I should add that Grimme sought to rely on a Notice of Experiments. In the experiment they showed that if the ribs of the Evolution roller were shaved off, potatoes would remain in the gusset, whilst, if the ribs were present, potatoes were knocked from one gusset to the next. Mr Scott was offered a repetition of the experiment, but declined it. Instead it was agreed that a DVD showing what occurred when the protocol was carried out by Grimme would be admissible at the trial. A Mr Smith, who carried out the experiments, was called for cross examination. Mr Smith accepted that the plain roller was likely to be higher in the case where there was no rib, because when the rollers were moved together to account for the absence of the rib, its bearing supports would move higher round a curved surface. The

experiment was therefore not at all a fair comparison between what happens with a plain roller and a ribbed one, with all other factors kept the same.

54. I think the attempted experiment was a waste of everyone's time. Before tendering experimental evidence in a case where a relevant expert is retained, a party should ensure that the protocol and its realisation are approved by its expert. This was not done here.

55. Nevertheless, what the claim requires is a cross section which sometimes delivers an extra forward push. One can see that it is capable of doing that by inspection of the machine and from Mr Mitchell's drawing. This feature is therefore present.

56. Accordingly the amplified forward feed point is not an answer to infringement of claim 1.

Non-elastomeric rollers

57. On the construction of the claim I have arrived at, machines which do not have at, some point in the crop path, two pairs of elastomeric rollers do not infringe claim 1 under section 60(1).

Infringement – claim 17

58. On the construction I have adopted, the Evolution has resilient spokes.

Infringement claim 24

59. This claim calls for the rotary speeds to be adjustable individually or in each group (i.e. each counter-rotating pair).

60. In the Evolution, all the plain rollers are driven together and all the ribbed rollers are driven together. I do not think this complies with either limb of claim 24 – the rollers are neither adjustable individually nor in counter-rotating pairs.

Section 60(2): steel-rollered machine sales

61. It is clear that the steel rollers in Evolution machines could be replaced with rubber rollers. This would alter the aggressiveness of the machine. Mr Scott accepted that the machine and its rollers were designed with this in mind. This was one of the things which gave the machine the flexibility which he was striving for. I have no difficulty in finding on the evidence that Mr Scott knew, and that it was obvious to a reasonable person in the circumstances that the machines were both suitable for running with at least two pairs of rubber rollers, and so intended. Infringement is therefore established on this basis.

Validity

62. Mr Scott attacks the validity of the Patent on the grounds of lack of novelty, obviousness, insufficiency and added matter.

Lack of Novelty

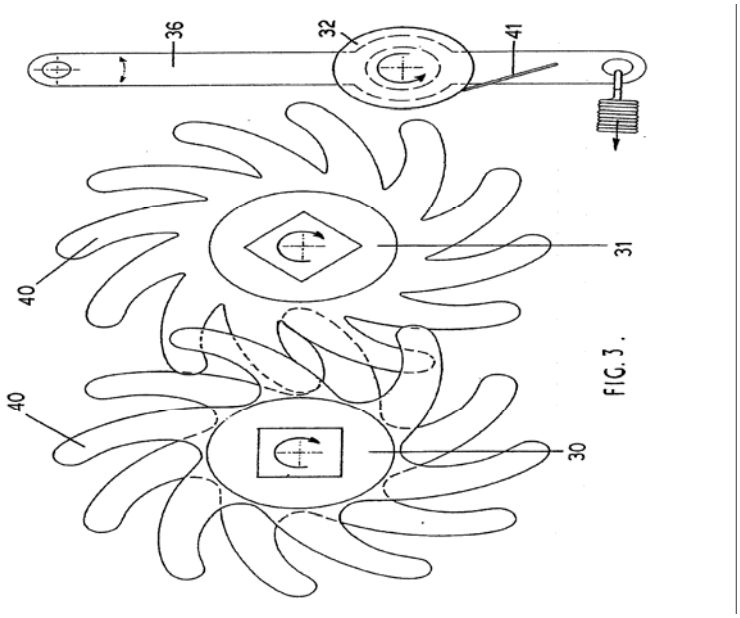
63. A patent will be invalid for lack of novelty if the invention claimed in it is not new in the light of the state of the art at its priority date. The state of the art is everything made available to the public by written or oral description or by use or in any other way (see s. 2(2) 1977 Act). The test is a strict one. If a prior art machine will not inevitably be capable of being arranged in a manner which would fall within the claims, there is no lack of novelty.

64. Mr Scott relies on lack of novelty over UK Patent Application 2 145 612 A ("Pearson"). This is the patent for the Rollastar machine, which was part of the common general knowledge.

UK Patent Application 2 145 612 A ("Pearson") and Rollastar

Disclosure of Pearson/Rollastar

65. Pearson describes a star wheel arrangement. Figure 3 looks like this:



66. The device includes two counter-rotating rollers 31 and 32, which are respectively a star wheel and a clod roller. It should be observed that the clod roller has its axis positioned below the axis of the star roller, so that crop passing over the clod roller is moving forward and down. The clod roller is shown as being movable against a spring to allow it to move away from the star wheel to allow large stones to go down the nip. In the general introduction at page 1 lines 32-44 it says this:

> "In a preferred aspect, the invention provides a device for separating clod and/or stones from root vegetables or bulbs, comprising two rotatable members mounted for rotation in opposite angular directions about parallel spaced axes, one of the rotatable members being in the form of a roller and the other having a plurality of radially outwardly extending resiliently deformable projections, the arrangement being such that in use clod and/or stones is drawn down between the two

> rotatable members, whilst root vegetables or bulbs pass thereover."

67. The specific embodiment includes a second star roller shown as 30 in Figure 3. The reason for the second star wheel roller is explained by the specification to be that the fingers of one star wheel will pass between those of the other and produce a self-cleaning effect. The second roller is also said to give the clod and potatoes time to settle before they reach the clod roller 32.

68. The specification describes the operation of the embodiment thus at page 2 lines 49-68:

> "In operation potatoes, clod and stones are discharged from the second open web 14 of the harvester onto the separating device, the haulm roller 24 having first taken out most if not all of the haulm and weeds not taken out by the haulm roller 23. The star wheels 33, 34 of the rotatable members 30, 31 serve to loosen the clod and small pieces of clod are indeed wound therebetween. The potatoes, remaining clod and stones are then fed to the clod roller 32 and owing to the resilient deformability of the fingers 40 most of the remaining clod and smaller stones are drawn between the contrarotating rotatable member 31 and clod roller 32 without any movement of the clod roller 32 against its spring loading. The potatoes and any clod or stones not removed by the separating device will then be fed to the elevator of the harvester either directly or via one or more downwardly inclined webs or a further similar separating device series mounted with the separating device described above."

69. Thus there may be two of the devices mounted in series.

70. The specification goes on at page 2 lines 82-83 to explain that the separating device does not necessarily have to have both star wheel rollers 30 and 31, but explains that there are advantages in doing so.

71. I think, as a matter of disclosure, Pearson discloses repeating patterns of a single star roller and a clod roller. Although a preference is expressed for the additional star roller, this is expressly taught not to be essential.

72. The Rollastar machine typically embodied two sets of two co-rotating star wheels and a counter rotating clod roller.

Novelty over Pearson

73. I consider first the Pearson patent application alone. Grimme argued that there were four reasons why Pearson did not deprive claim 1 of novelty.

74. Firstly Grimme contends that it is not legitimate to combine various parts of the Pearson document so as to create a disclosure of two pairs of deformable rollers. It contends that the passage which refers to repeating the mechanism applies only to a

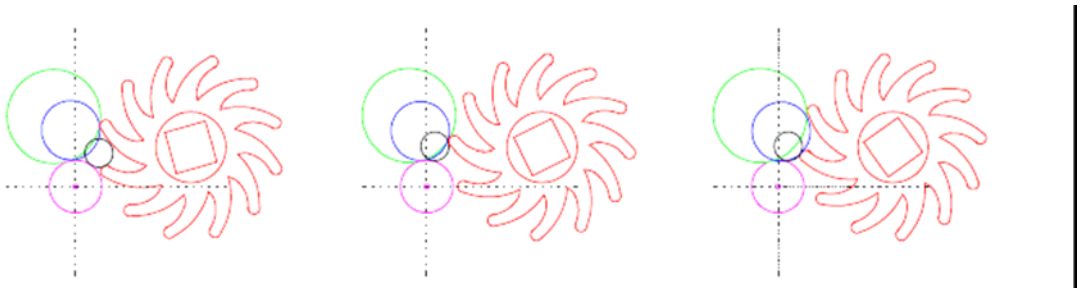
two star/one clod arrangement, so one would arrive at an arrangement where the pairs of rollers had an extra star roller between them. In the light of the view I have come to on construction, that is not a relevant distinction from claim 1. But even if I am wrong on construction, I do consider that repeating patterns of one star roller and one clod roller are clearly disclosed by Pearson, albeit as unpreferred embodiments. This is therefore not a relevant distinction over Pearson on either construction.

75. Secondly Grimme contends that the star rollers do not have lips, ribs or like extensions as required by claim 1. In my judgment the star fingers fall within this very general description. I have held that the fact that, individually, the lips have restricted axial length does not matter. Collectively, on a star roller, it seems to me that lips, ribs or like extensions are provided.

76. Thirdly Grimme contends that the device disclosed in Pearson does not have feature (d): amplified forward feed. Clearly there is no description of this feature. So lack of novelty has to be established on the basis that the machine will inevitably have this feature.

77. There is perhaps scope for confusion here. The claim in question is not a process, but an apparatus. The apparatus will be within the claims if it has the capability to deliver amplified forward feed, even if it does not do so on all possible settings of roller height, spacing and speed. The question is not whether Pearson teaches an apparatus which will *necessarily be operated* in that way, but whether it teaches one which is *necessarily capable of operating* in that way. There was no dispute that I detected that this was the correct approach.

78. Mr Mitchell again produced some helpful but idealised drawings of how he envisaged the Pearson machine working, at least in one setting:



79. The clod roller is set at a height roughly as shown in the Pearson patent. Larger potatoes will not be in need of any forward feed provided by the projections of the Rollastar, as they will land beyond the vertical centreline of the clod roller. Mr Mitchell said that a smaller potato:

> "might be moved forward over the plain roller. Either that or it would get pulled through along with stones and clods and be lost"

80. Mr Fox was asked what would happen to a potato in the nip of the Pearson machine if the clod roller was set higher:

"Q. Obviously when I say in the nip I do not mean for ever. These machines are not designed to work like that, the crop has to flow cross them.

A. Of course it does, yes.

Q. For the moment that the potato is in that nip and the contra-rotation is working to pull the dirt and clod and haulm off that potato ----

A. Right.

Q. ---- the star fingers of the Pearson are going to give the potato a forward feed in the direction of the crop path.

A. That is the general idea, I agree.

Q. I could not see how you were distinguishing then between the Grimme spiral and the Pearson star finger.

A. I see. I think there is a very distinct difference there. The fact that the Grimme is on spiral is not material to this particular part of the exercise.

Q. Assume it had a rib and that would be covered going straight across?

A. It does not matter for this purpose whether it is spiral or parallel to the axis. As it comes down because it is inclined back from the direction of rotation that is why it is sort of squeezes the potato against the roller and then the potato jumps up. You can see it happen, you only have to look at it.

Q. The Pearson are inclined backwards too.

A. Yes, they are but not in the same way. I think they probably do have a similar -- they must have a similar effect otherwise the Pearson would all block up, I agree with you."

81. Mr Chacksfield submitted that this concession was obtained on the basis of an unrealistic assumption, put earlier in the cross examination, namely that there would be potatoes resting in the nip between the rollers, and that the witness did not agree with the assumption. I reject that submission. Firstly I do not think it is unrealistic to consider the case, as Mr Mitchell did, of the potato in the nip of the rollers. It may be that larger potatoes, or most of them, do not enter the nip. Smaller potatoes will enter the nip. Secondly, I think the critical final answer was given without reference to the assumption. However, Mr Fernando's cross examination did involve asking Mr Fox to consider a clod roller placed much higher than that in Figure 3 of Pearson. Mr Fox was not certain what the range of adjustment in the Rollastar was.

> "Q. You accept that the Rollastar shows that the clod roller could be moved in all sorts of directions relative to the star roller?
>
> A. That is so. When you say all sorts of directions?
>
> Q. It follows if it can go vertically and horizontally ----
>
> A. Yes, I do not know exactly what the range is on the Rollastar, I have to say, but I assume it can be moved ----
>
> Q. All sorts of directions within whatever mechanical ----
>
> A. That is right within an envelope, a pre-determined envelope.
>
> Q. That is a fair point."

82. I was left with the impression that it is not inevitable that the machine precisely as disclosed in Pearson could operate so that potatoes which enter the nip receive an amplified forward feed. Mr Fox's evidence was based on a widely adjustable machine which is not disclosed, and Mr Mitchell's analysis is inconclusive either way. I am not satisfied that it is inevitable that the machine precisely as disclosed in Pearson would be able to produce the claimed effect.

83. Fourthly and finally Grimme argue that Pearson does not disclose "an elastically deformable shell part" from the contours of which the ribs etc. project. Mr Mitchell agreed that Pearson did not show this. Mr Fernando bravely sought to argue that this was inevitable in the light of the way the star wheels were described as being made in Pearson. I reject that submission. Whilst the distinction is a fine one, there is no cylindrical shell part, certainly none with any contours, in the stars shown in Pearson.

84. There is a further distinction, again a narrow one. On the claim as I have construed it there is a requirement for elastically deformable clod rollers. These are not disclosed by Pearson.

85. It follows, for the reasons I have given, that Pearson does not anticipate claim 1 of the Patent.

86. If claim 1 is not anticipated, then claims 17 and 24 are not anticipated either.

87. I should also consider, under the heading of novelty, the Rollastar machine, as it was common ground that this was common general knowledge. However the Rollastar machine is not an anticipation either, at least for the rubber roller reason. I will consider whether it would provide amplified forward feed and the cylindrical shell part under the heading of lack of inventive step.

Lack of inventive step

88. 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?"

89. 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."

90. I have identified the person skilled in the art above, together with the principal items of the common general knowledge. The inventive concept is that which is embodied in the claim, as I have construed it. By the end of the trial, Mr Fernando concentrated on three starting points as being his best obviousness attacks. In my judgment he was correct to do so, as if he could not succeed on these, he would not succeed on any others. The three starting points are Rollastar, Dahlmann rollers, and Spatz.

Differences between Rollastar machine and the inventive concept

91. Although both the Pearson patent application and Rollastar are relied on, it is convenient to consider the Rollastar machine as the starting point, as it is closer to the inventive concept as I have construed it than the patent specification. Of the three differences between the patent application and the inventive concept, namely (a) amplified forward feed; (b) cylindrical shell part (c) deformable clod roller, it is clear that (b) was present on the Rollastar machines.

92. So far as amplified forward feed is concerned, the evidence failed to establish anticipation because the machine as shown in *Pearson* was not widely adjustable. But the evidence showed that *Rollastar machines* were widely adjustable both as to spacing and as to height of the roller: see for example the instructions exhibited by Mr Scott. Once the artificial constraints of an anticipation attack are removed, it seems to me that it is inevitable that the machine could be adjusted so that at least some

potatoes would be temporarily in the nip and knocked forward by the rotating stars. If that is so, then there is no distinction between the Rollastar machine and the inventive concept on this point either. I accept Mr Fox's evidence on this point.

Are the differences obvious?

93. It seems to me that the only surviving difference is whether it was obvious, to use a deformable clod roller. It was not seriously argued by Grimme that this would constitute an inventive step. In my judgment, given that no particular level of deformability is called for, the difference between the two is obvious.

94. Much of the cross examination of Mr Mitchell on the issue of obviousness was dedicated to the modification of the Pearson/Rollastar so as to incorporate features which were not part of the inventive concept on my construction of the claim. Thus it was suggested to him that a necessary step would be the removal of Rollastar's extra star rollers. Equally it was suggested to him that he would need to incorporate Dahlmann type rollers in order to arrive at something which falls within Grimme's very narrow construction of "lip" etc.

95. Mr Fernando argues that none of this is necessary or relevant. I agree.

96. Mr Mitchell was also cross examined extensively about what happens in the Rollastar in normal operation. Thus he was asked about his drawing of the Rollastar's function:

> "Q. What happens is that potatoes are carried up over the star roller fingers and then they are sort of tipped gently down and they tend to pass almost basically straight over the clod roller or plain roller and on to the next set of stars. That is how it works?
>
> A. Yes. ..
>
> Q. Anyway, the usual operation is that the crop passes essentially over the clod roller and on to the next star?
>
> A. In other words, if you were using the bigger potato, if it was a ware crop, this would have been drawn up as a seed crop from the small potatoes, where you have the chance of pulling them through. If this had been drawn and you were working on a ware crop where it was big potatoes, the roller could be moved higher up around the arc.
>
> Q. But the intention still is that the crop passes ----
>
> A. Over the roller.
>
> Q. ---- over the roller?
>
> A. Yes.

Q. If it goes between the roller and things it tends to go straight through and you have to modify your set-up?.....

A. Yes.

Q. The conclusion to be drawn is that our model Rollastar over there on the left-hand side is somewhat misleading in its set-up because the plain roller is set up really very high. It tends to be much lower and tucked in?

A. In a way, I would say it would tend to be closer to the star -- the roller would be closer to the star. That set-up here, it would be closer together.

Q. It would be tucked further down as well?

A. Depending on the size of the potato."

97. The reference to "the Rollastar over there" was to a model, provided for the trial, of three star rollers and a clod roller with their axes aligned in the same horizontal plane. Placing the roller lower down, and tucked in, obviously greatly restricts the opportunity for anything but the smallest potatoes to get into a nip between the two rollers.

98. It is clear on the evidence that *in normal operation* of the Rollastar the whole purpose is to cause the potatoes to pass over the clod roller, and to avoid potatoes arriving in the nip, where, if they do so, they are likely to be dragged through with the clods and stones. Mr Chacksfield submitted that normal operation was what was material when considering obviousness, and one could ignore the fact that in other modes it might be possible to obtain amplified forward feed. I reject that submission. The Patent is for a machine, not for a method. If the Rollastar machine, as I hold it is, is so constructed that it can be adjusted to provide amplified feed, then the machine falls within this aspect of the claim.

99. Claim 1 is invalid for obviousness over Rollastar.

Rollastar and claim 17

100. Neither Pearson nor Rollastar discloses the use of rollers with internal resilient spokes.

101. Mr Fernando argues that such rollers were known from the Kverneland machine, and that there can be no invention in combining those rollers with the machine which he contends was obvious to make in the light of Rollastar.

102. The Kverneland machine in question is a single-row harvester (narrower than the much more common two-row harvesters). It has two principal webs arranged crosswise with respect to the direction of travel of the machine. At the end of each web the crop is moved to the side and onto the next web, so that its direction of travel is changed by 180^{o}. This operation is in part performed by a deflector and in part by

two small deformable rollers, arranged on parallel axes one above the other. The rollers are equipped with spirals, and counter-rotate. Their effect is to extract haulm, and to deflect potatoes laterally onto the next web, or onto a picking table. The effect is like a miniature, vertically arranged Dahlmann table, carrying potatoes a short distance laterally, along the axial direction of the rollers.

103. In my judgment, claim 17 is not rendered obvious by Pearson and Kverneland. Firstly, as I have already held, Kverneland did not form part of the common general knowledge. That is not necessarily fatal. It may be obvious to combine two pieces of prior art (what the European Patent Office refer to as a primary and a secondary reference). Obviousness is not a card game where the party attacking the patent only gets to play one card. So, for example, a document which said, in general terms that "all potato separators with rollers would benefit from a deformable inner chamber" could be combined with any known or obvious potato separator without much difficulty.

104. The real problem for Mr Scott is that the disclosure which the skilled person would obtain from an examination of Kverneland would have nothing like the general impact for which he contends. The deformable rollers in Kverneland are for a limited and specific purpose. The skilled person would see in them a highly specific design in which crop is conveyed a short distance along the axis of the roller. The evidence did not in my judgment establish that the skilled person would see in Kverneland something of use in a Rollastar separator. The star wheels of the Rollastar are already deformable. No motive was put forward as to why one would want to substitute the star rollers with Kverneland rollers, or add deformable chambers to the stars.

105. Mr Mitchell agreed that these Kverneland rollers were highly unusual in their design and function. Moreover, as their effect is to transfer crop along their axes, they would, on the face of it, have no obvious relevance to the Rollastar arrangement, which requires crop transfer at right-angles to the axis. Further, the crop would be passing above the rollers in a Rollastar, not being pushed sideways by a vertical pair. The skilled person would, if he even contemplated the idea at all, think that, if installed in a Rollastar, crop would tend to pile up at the side. Mr Mitchell's answer to this was to have alternating spirals, so that crop is moved one way and then the other.

106. I think that this was one area where Mr Mitchell was striving too industriously to arrive at the claimed invention from the prior art. I do not think that the skilled person would see in Kverneland anything other than a roller designed in a particular way for a specific job. There is absolutely nothing about it to suggest that it would be useful in the quite different conditions in the Rollastar machine.

Rollastar and claim 24

107. The approach I have taken to construction, requires either (a) each roller or (b) each counter rotating pair to be individually adjustable. The evidence did not establish that this feature was present on Rollastar, or that it would be obvious to incorporate it.

Obviousness over Dahlmann rollers

108. There is no dispute as to what the Dahlmann consisted of. I have described them above when dealing with the common general knowledge.

109. From the video footage I was shown of the operation of the Dahlmann machines it is fair to say that, in addition to the axial transport caused by the ribs, there is some transport across the rollers as well. The evidence was that the ribs on the fast rotating rollers would cause the potatoes to bobble around in a variety of directions. The predominant movement is the worming along the nip, with some sideways movement to one side as well as random "pinging" of the potatoes.

110. To go from the Dahlmann arrangement to the inventive concept one would have to rotate the Dahlmann table through 90^{o} and ensure that the new arrangement provides amplified forward feed.

111. I think this argument of obviousness fails at the first hurdle. The first question one asks is why, if it is obvious to arrange these identical rollers in a transverse orientation, was this not done by Dahlmann? The history of the Dahlmann device shows that the original arrangement was unsatisfactory precisely because the crop flow was axial. This meant that material built up at the discharge end, where the axial rollers were supported on bearings. At that stage, rather than turn the rollers round through 90^{o} maintaining bearings at both ends, and providing a free discharge across the last roller, the designers proceeded to devise a cantilevered roller, an obviously undesirable engineering arrangement if it can be readily avoided, particularly where the rollers are to carry large amounts of heavy clod, stones and crop.

112. Mr Fernando said that the answer to this was that the designers might have been trying to avoid the Pearson patent: but this seems unlikely as the designers were in the United States, where there was no patent protection for the Rollastar.

113. Next, at least at first blush, rotating the device through 90^{o} would result in transport of the crop across the machine, which is the opposite of what the skilled person would be trying to achieve. This would result in accumulation of crop and debris at the side of the machine. Consideration would have to be given to the whole question of how one would achieve transport in the right direction. Mr Mitchell had numerous suggestions as to how this could be achieved (alternating spirals, reversing spirals on the end of the rollers, allowing crop to build up at the beginning of the table, tipping the table etc). But, again, I have to take into account the fact that he appeared to me to be directing his efforts towards arriving within the claim, rather than looking without hindsight at the task as it would have appeared in 1993.

114. A further consideration arises out of the Dahlmann reverser mechanism, which I have already described. This functioned on the basis that large stones caught between the rollers would be forced upward and dropped back into an axial valley. If this occurred with a transverse rollers it would not work, or at least not work in the same way. The stone would be carried to one side. Mr Fox thought that retaining this feature would be a strong reason not to depart from axial rollers.

115. Ultimately I did not detect that Mr Mitchell retained his initial enthusiasm for the proposal that to turn a Dahlmann round was obvious:

> "Q. Let me rephrase it. In November 1993 the skilled person would never think of trying to use a Dahlman roller sideways.
>
> A. I suppose 1993, I am not saying it was impossible but whether you had the time or not to do it is another thing."

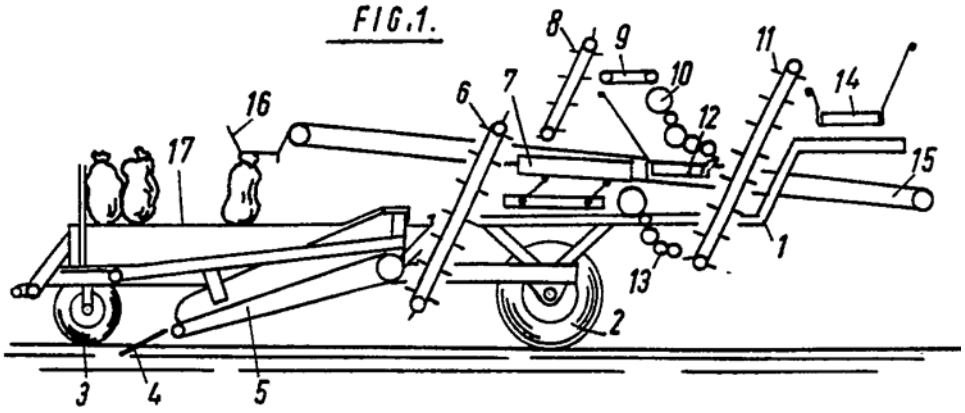
116. Although Mr Mitchell stopped short of admitting impossibility, the evidence did not come close to establishing obviousness. In my judgment claim 1 is not obvious in the light of Dahlmann.

Obviousness over French Patent 1 428 425 ("Spatz")

117. Spatz was published in 1960. It is not known whether it gave rise to any commercial machine. If it did, it had passed into history by 1993.

118. The disclosure of Spatz can be understood from Figures 1 and 2. Figure 2 is an enlargement of the separator shown generally at 10 in Figure 1.

FIG.1.



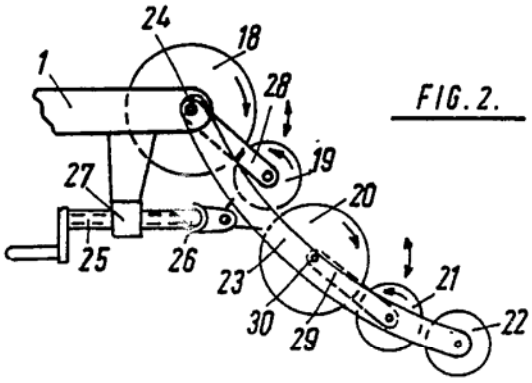


FIG. 2.

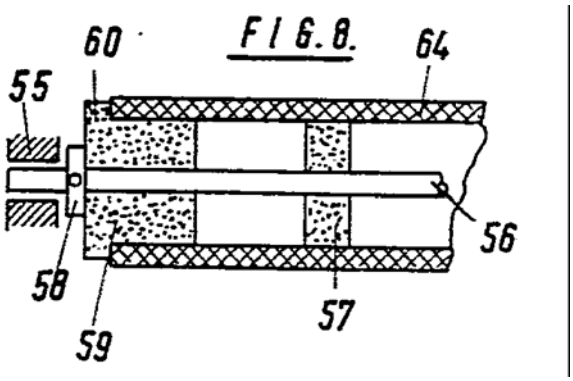
> "In Figure 1, item 1 is the frame or chassis of a potato harvesting machine mounted on back wheels 2 and front wheels 3. Near front wheels 3 is a ploughshare 4, followed by a conveyor and riddle device 5, which delivers the gathered mixture consisting of tubers, stones, clods of earth and haulm to a conveyor and elevator 6. At the exit end of conveyor and

elevator 6, the tubers, stones and clods of earth, together with the shorter lengths of haulm, drop onto a shaking device 7. In contrast, the longer lengths of haulm coming off the conveyor and elevator with tubers attached are taken up by a conveyor 8 and delivered on an intermediate conveyor 9 to a haulm separation device 10. This device comprises several cylinders in a flexible material arranged one behind the other, working together in pairs while rotating in opposite directions. The haulm passing through the separation device is then taken up by each pair of cylinders and passes between the cylinders, which remove the tubers adhering to the haulm. The tubers reach a second conveyor and elevator 11, while the haulm separated by the cylinders falls onto a transverse conveyor 12, which ejects it from the machine and drops it onto the ground.

"Meanwhile, the mixture containing the shorter lengths of haulm, which dropped from conveyor and elevator 6 onto shaking device, is riddled by the latter, in other words the earth it carried with it is removed. After leaving shaking device 7, the mixture arrives at a haulm separation device comprising, like device 10, flexible cylinders arranged one behind the other and working together as described above. The shorter lengths of haulm contained in the mixture are taken up by this second device, separated and immediately strewn on the ground. The other constituents of the mixture, which, after leaving haulm separation device 13, consist mainly of tubers, stones and clods of earth, arrive at a conveyor and elevator 11, which delivers them, together with the tubers from haulm separation device 10, to a transverse conveyor 14. From this transverse conveyor 14, the mixture can pass along one or more sorting conveyors 15 extending in the longitudinal direction of the machine and ending at a bagging device 16. This last device can be located on a platform 17 situated at the front end of the machine."

119. Thus the device is, or is primarily, a haulm separator. Sorting conveyors are used to separate the potatoes from clods and stones. The rollers in device 10 are arranged in pairs which counter-rotate, with the second roller taking its drive from the first. There is no indication that the rollers carry any projections.

120. The device 10 uses flexible rollers, constructed with deformable rubber disks 57 mounted on the shafts.



121. It is to be noted that the device 10 uses a steep angle of inclination although this is adjustable. There is a disclosure of a more horizontal arrangement in Figure 3, which uses an overhead belt (known as a pintle belt) to convey the potatoes from the nip of one roller pair to the next.

122. Grimme contend that the disclosure of Spatz differs from the inventive concept in at least the following ways: (a) it is not "for separating potatoes from other materials such as earth, clods, stones, weeds etc"; (b) it does not have any "lip" etc on the rollers and (c) it does not provide amplified forward feed.

123. I think the first of these distinctions is a bad one. A machine which *can* separate any of the materials identified in claim 1 falls within it. The only question is whether it would be obvious to modify Spatz so as to include a lip or projection of the kind necessary to provide amplified forward feed.

124. Mr Mitchell's suggestion was that it would be obvious to think of swapping roller 18 in device 10 for one Kverneland roller. This has all the problems I have already discussed in relation to claim 17 above. Kverneland rollers also have a free end to allow entangled haulm to escape lengthwise, something that would not be possible if the roller was mounted at each end, as it would have to be in Spatz. Mr Mitchell had a series of ingenious suggestions as to how to overcome this, including mounting segments of alternating spirals on the same shaft and the incorporation of a scraper. Moreover, it was not established that the skilled person would see any benefit in adopting Mr Mitchell's suggestion. Indeed Mr Mitchell accepted that, subject to being able to adjust it, there could be increased crop loss. It is also not clear how the drive mechanism would work if tightly nipped smooth rollers are replaced with ribbed ones.

125. Alternatively Mr Mitchell suggested that it would be obvious simply to add projections to Spatz, as these were known from Dahlmann and Rollastar. If these were straight ribs, he accepted that the ability to drive one roller from the other would be lost, as there would inevitably be gaps between the rollers some of the time. He also accepted that this would increase the amount of crop pulled through, as compared with the tight nip which Spatz required. It is surprising that Spatz went to the trouble of incorporating a pintle belt for horizontal feed if it was obvious to achieve this with a ribbed roller.

126. I do not think that any of these suggestions is a valid obviousness attack. I think that Mr Mitchell was again approaching his task by identifying the difference from the inventive concept and then scouting around for elements of other machines to fill the

gap. That approach is not correct because it involves hindsight. Claim 1 is not obvious over Spatz.

Commercial success

127. Grimme also rely on commercial success of machines made in accordance with the invention. Commercial success can, in some fairly rare and clear cases, amount to a secondary indication of inventive step. The reasoning behind why this is so was explained in characteristically lucid terms by Laddie J in *Haberman v Jackel* [1999] FSR 683 at 699 to 701.

128. Grimme have provided a table of the sales which it relies on to show commercial success. It relies on the Grimme MultiSep spiral segment separator sales from 2000 when it was launched. It contrasts these with sales of other separators, including the MultiSep with paddle star wheels. Grimme contend that the MultiSep spiral segment is made in accordance with the Patent but that the MultiSep paddle star is not.

129. I have not found the evidence of commercial success helpful on any issue of obviousness in this case. The basis on which I have found claim 1 to be obvious is that a Rollastar machine with rubber clod rollers is sufficiently adjustable that it falls within the claim. That being so, no amount of commercial success of either MultiSep machine can have a bearing on the issue. The same applies to claim 24.

130. So far as claim 17 is concerned, I have been able to find that claim to be inventive by a sufficient margin not to require secondary indicia of the kind provided by commercial success. But given the level of sales enjoyed by the paddle star, which did not have this feature, I do not think that it is established that commercial success is due to the features of claim 17.

131. I think it would be unwise to attribute the success of the MultiSep to anything disclosed in the Patent. The lips or projections taught by the Patent are nothing like those used in the MultiSep. The evidence showed that those used in the Patent would fill with mud and be difficult to clean. I believe that the commercial success of the machines relied on is likely to be due to a combination of factors including Grimme's market position and the decline of the Pearson business. It is impossible to distill from that evidence any indication that the features of claim 17 played a significant role.

Insufficiency

132. A patent will be invalid if "the specification of the patent does not disclose the invention clearly enough and completely enough for it to be performed by a person skilled in the art": section 72(1)(c) of the Act.

133. Although insufficiency is a single objection to the validity of a patent, it may arise in a number of different ways. In every case, however, the purpose behind the objection is to prevent a patentee laying claim to products or processes which the teaching of the patent does not enable in the relevant sense.

134. Here there are four paragraphs of pleaded allegations of insufficiency which I paraphrase, I hope without violence to their meaning, as follows:

i) Feature (f) has no discernible meaning;

ii) Alternatively if feature (f) means that the roller has a cross sectional form other than that shown in Figure 12, then there is insufficient teaching of how to make a separator with such a feature;

iii) To the extent that the claims cover rollers without Figure 12 lips, the requirement of the claim was self-evidently obvious or old; and

iv) Commercial success was achieved only by the spiral roller design, which does not fall within the meaning of feature (f).

135. Paragraphs (iii) and (iv) do not seem to me to be allegations of insufficiency. Paragraph (iii) is an argument about construction. If correct the claim will be found old or obvious. I am not sure what paragraph (iv) is doing in an allegation about insufficiency either.

136. I deal with paragraphs (i) and (ii) in turn.

Feature (f) has no meaning

137. Although there are circumstances where a claim may be insufficient because it is impossible to understand and therefore to know whether or not a given act is an infringement, I have been able to come to a clear view as to what feature (f) of the claim means. It follows that this allegation fails.

Feature (f) is over-broad

138. It would seem to me, almost in the absence of any evidence, that once the general concept of the patent has been understood, the skilled person would be able to develop a variety of different roller profiles which had the same effect. Mr Fox confirmed this in his written evidence, on which he was not challenged. Mr Mitchell gave evidence to like effect.

139. There is accordingly nothing in either insufficiency attack.

Added Matter

140. The law with regard to added matter was summarised by Kitchin J in his judgment in *European Central Bank v Document Security Systems Inc*: [2007] EWHC 600 (Pat):

> "96. The test for added matter was explained by Aldous J in Bonzel v Intervention Ltd [1991] RPC 553 at 574:
>
> > "The decision as to whether there was an extension of disclosure must be made on a comparison of the two documents read through the eyes of a skilled addressee. The task of the Court is threefold:
> >
> > "(a) To ascertain through the eyes of the skilled addressee what is disclosed, both explicitly and implicitly in the application.

> "(b) To do the same in respect of the patent as granted.
>
> "(c) To compare the two disclosures and decide whether any subject matter relevant to the invention has been added whether by deletion or addition.
>
> "The comparison is strict in the sense that subject matter will be added unless such matter is clearly and unambiguously disclosed in the application either explicitly or implicitly.'
>
> "97. A number of points emerge from this formulation which have a particular bearing on the present case and merit a little elaboration. First, it requires the court to construe both the original application and specification to determine what they disclose. For this purpose the claims form part of the disclosure (s.130(3) of the Act), though clearly not everything which falls within the scope of the claims is necessarily disclosed.
>
> "98. Second, it is the court which must carry out the exercise and it must do so through the eyes of the skilled addressee. Such a person will approach the documents with the benefit of the common general knowledge."

141. Two allegations of added matter are pleaded, which I paraphrase, again I hope accurately, as follows:

    i) The teaching of the Patent as granted and the application as filed was that a specific rib design was required to achieve "amplified forward feed", whether or not there was a shell part. On the construction advanced by the claimant amplified forward feed has a different meaning.

    ii) The words "It is however also possible for whichever is the second rolling body 8 to be constructed as unyielding parts or to have a configuration corresponding to the respective first rolling bodies 7,7'" have been deleted from the Patent. If the Patent is construed to allow for unyielding rollers, matter will have been added.

142. The first allegation is based on the fact that by post-grant amendment the subject matter of claims 14 and 15 (the cylindrical shell part and conveyor lips projecting beyond it) has been incorporated into claim 1. Normally such an amendment will not add matter.

143. The essence of Mr Scott's case on this point is that the meaning of amplified forward feed has changed by virtue of its being brought into juxtaposition with the cylindrical shell part.

144. I do not consider that this amendment has added any matter as compared with the application as filed. The construction which I have arrived at does not depend on the juxtaposition of the term "amplified forward feed" with the cylindrical part features. It follows that the term, as I have construed it, has the same meaning in both documents. No matter has been added.

145. The second allegation does not arise, as I have construed the claim to require the presence of deformable rollers. If I am wrong, then I reject this second allegation of added matter. The application as filed discloses the use of unyielding second rollers (8). This matter has been deleted. However it does not follow that if the claim were construed to *cover* unyielding rolling bodies (8) that matter would have been added. The fact that a claim *covers* subject matter does not necessarily mean that it *discloses* it: see *A.C. Edwards v Acme Signs & Displays* [1992] RPC 131 at 143 lines 43-52. Here, if the claim covered unyielding rollers it would not disclose them.

Unregistered design right infringement

146. Grimme relied originally on unregistered design right in three rollers, identified by height of rib. These were the 20 mm, the 10 mm and the 8 mm. Grimme no longer need to rely on the 10 mm design, as they accept Mr Scott's admission that he copied from a 20mm roller.

147. Grimme relies on four aspects of shape and configuration of the remaining two rollers:

    i) The overall shape and configuration of the roller;

    ii) The shape and configuration of the individual deformable spirals on the external surface;

    iii) The shape and configuration of the individual internal compression chambers that are formed on the inside of the roller;

    iv) The features of shape and configuration of the spiral in combination with the internal compression chamber.

148. The pleaded infringements are;

    i) Mr Scott's "Original" 10 mm rollers;

    ii) Mr Scott's "Second" 10 mm rollers;

    iii) Mr Scott's 8 mm rollers.

149. Furthermore, shortly before trial, Mr Scott conceded the case of infringement in relation to his 8 mm rollers. He has also conceded the subsistence and ownership case on feature (iii), the internal compression chambers (albeit only in relation to his Original 10mm roller). So the question is whether Mr Scott's Original and Second 10mm rollers infringe any design right in Grimme 20mm rollers.

150. The principal issues as they have emerged at the trial are these:

    i) Design right runs for ten years from the end of the year in which articles made to the design are first sold or let for hire: Copyright Designs and Patents Act 1988 Section 216(1)(b). The issue which arises is as to the date when the 20mm spiral roller was first sold or let for hire. Was it, as Mr Scott recollects, late 1998? Or was it later? Mr Kalverkamp said it was mid to late 2000.

ii) Were any features of the designs commonplace?

iii) Is there infringement, in other words are Mr Scott's rollers made "exactly or substantially" to the Grimme design. Mr Scott admits that his rollers were derived from Grimme's rollers, but contends they are nonetheless sufficiently different to escape infringement.

151. I have included as Annexes 1 and 2 to this judgment comparative colour photographs showing the Grimme 20 mm design relied on contrasted with the Scott Original and Second 10 mm rollers.

The Design Right date issue

152. 1998 was a notoriously wet autumn. So much so that farmers in the UK were struggling to get their potatoes out of the ground. They were not happy. Mr Scott's evidence was that, within the 1998 potato harvest season, probably in about October, he was supplied with spiral rollers to the Grimme design to help farmers who by then were in a desperate position. He said that Grimme were making these rollers as fast as they could to help the farmers get their potatoes out of the ground. Mr Scott said he supplied these rollers to at least one farmer, Marshal Brothers in 1998, one of his hire customers, that is to say a customer who hires a machine from him.

153. Mr Kalverkamp accepted that it was a possibility that Mr Scott was provided with some of these rollers in 1998. Accordingly Mr Fernando submits that the relevant date for the purposes of section 216(1)(b) is the end of the calendar year 2008, because in that year articles made to the design had been let for hire by Mr Scott with the consent of Grimme.

154. I have no hesitation in accepting Mr Scott's evidence about the date.

155. Mr Chacksfield submitted that if I were to come to that conclusion there was still a question as to whether this amounted in law to a letting for hire with Grimme's consent. The most that could be said, it is submitted, was that the rollers were supplied to Mr Scott without any restriction as to what he did with them.

156. I think this is quite unrealistic. Once the rollers had been supplied to Mr Scott, Grimme must have appreciated that they would be sold or hired by Mr Scott and if he did so, it would be with their consent.

157. It follows that the relevant date is 1998.

Design right infringement

158. It is convenient to consider the extent to which each feature is commonplace together with the questions of infringement by the two Evolution roller designs.

159. There are two features which it is necessary to ignore for the purposes of this exercise. These are the interface between the adjacent segments of roller, and the interface between the elastomeric parts of the roller and the central shaft, both of which are excluded from consideration by the "must fit" exclusion: see section 213(3)(b)(i).

160. The test for infringement of unregistered design right was described thus by Aldous J in *C & H Engineering v. Klucznik* [1992] FSR 421 at 428:

> "Section 226 appears to require the owner of a design right to establish that copying has taken place before infringement can be proved; that is similar to copyright. However, the test for infringement is different. Under s16 copyright will be infringed if the work, or a substantial part of the work, is copied. Under s226 there will only be infringement if the design is copied so as to produce articles exactly or substantially to the design. Thus the test for infringement requires the alleged article be compared with the document or article embodying the design. Thereafter the Court must decide whether copying took place and, if so, whether the alleged infringing article is made exactly or substantially to that design. Whether or not the alleged infringing article is made substantially to the plaintiff's design must be an objective test to be decided through the eyes of the person to whom the design is directed. Pig fenders are purchased by pig farmers and I have no doubt that they purchase them taking into account price and design. In the present case, the plaintiff's alleged infringing pig fenders do not have exactly the same design as shown in the defendant's design document. Thus it is necessary to compare the plaintiff's pig fenders with the defendant's design drawing and, looking at the differences and similarities through the eyes of a person such as a pig farmer, decide whether the design of the plaintiff's pig fender is substantially the same as the design shown in the drawing."

161. In the present case, of course, copying is admitted. But the remainder of Aldous J's analysis remains apposite. For pig farmers read potato farmers.

Aspect (i)

162. The overall shape and configuration is not commonplace, although there existed roller designs such as Kverneland and Dahlmann which were similar.

163. I think the Original Evolution roller is made substantially to the design. Although there are differences in the rib design and the number of ribs, the overall impression is extremely similar. From the perspective of the potato farmer I consider that they are made substantially to the Grimme design. The most striking similarity is the design of the internal chambers.

164. The same is not true of the Second rollers. Here the design of the internal chambers is different, and I think the farmer would see differences in all the features. Overall I think the differences are adequate to take the roller out of the scope of the design right protection.

Aspect (ii)

165. The individual ribs. Again, the design of the ribs is not commonplace. But, stripped of the context of the rest of the roller, the Evolution ribs are not sufficiently similar to be within the scope of the design right in the Grimme rib design. It would of course have been possible for Mr Scott to make them more different. But the ribs are a striking external feature of the design, and the farmer would notice the differences in their number and construction. This applies to both the Original and Second rollers.

Aspect (iii)

166. The internal compression chambers are not commonplace: they are nothing like Kverneland.

167. The internal compression chambers in the Original Evolution rollers are virtually identical to the Grimme design. However the chambers are different in the Second design, because they no longer have spirally extending walls and the spoke shape is quite different. These are outside the scope of the design right.

Aspect (iv)

168. Mr Chacksfield did not spend much time on this. I do not think it adds anything to the other aspects.

Conclusion of unregistered design right

169. The Original roller infringed design right in aspects (i) and (iii). The Second Roller does not infringe the design rights sued on.

Unjustified threats

170. Mr Scott brings a claim under section 70 of the Patents Act 1977 and section 253 of the Copyright Designs and Patents Act 1988 for unjustified threats of infringement proceedings.

171. The threats are alleged to be contained in some letters written by Grimme's solicitors to customers of Mr Scott. I set out the text of the letter in full:

> "We represent [Grimme] in ongoing proceedings before the English High Court against Mr Derek Scott, relating to the "Evolution" potato separator sold by Mr Scott.
>
> It has come to our attention that you are selling Evolution separators in conjunction with and/or supplied by Mr Scott. We would expect that Mr Scott has made you aware of both the existence of proceedings and the trial date this Autumn, but we wish to clarify the status of the case.
>
> Our client commenced proceedings against Mr Scott on 7 March 2009 seeking injunction, damages and legal costs from Mr Scott for infringement of our client's patent (No EP (UK) 730,399) and unregistered design rights in separator roller design. The case (reference HC 08 C0063) comes to trial in the High Court in October 2009.

> Our client is claiming damages in respect of losses already sustained as a result of sales by Mr Scott of the Evolution separator and a permanent injunction to prevent Mr Scott from selling any more Evolution separators in the future. Our client is also seeking reimbursement of all its legal costs and expenses in the proceedings.
>
> We understand that you are acting as a reseller of Mr Scott's Evolution separator and/or manufacturing your own version of Mr Scott's Evolution Separator or equivalent product which infringes our client's patent and unregistered design rights. Please note that our client does not intend to commence proceedings against you as its action is against Mr Scott, but of course our client reserves all its rights in this matter.
>
> We will contact you again after judgement has been handed down."

172. The short answer to the threats case in relation to patent proceedings is that the threats, if they be such, were justified. It seems to me that it is unlikely in those circumstances that anything will turn on whether the unjustified threat in respect of unregistered design right was made. But, in case I am wrong about infringement of the Patent, I will set out my views on the threats case.

173. There is no dispute that Mr Scott is a person aggrieved by the threats. Grimme submits, firstly, that this letter does not constitute a threat of infringement proceedings. They place particular reliance on the fact that the letter expressly states that Grimme do not intend to commence proceedings.

174. It is well established that a threat can be implied as opposed to expressed. What needs to be considered is the effect that the letter would have on an ordinary recipient: see *Luna Advertising v Burnham* (1928) 45 RPC 258.

175. In my judgment these letters did constitute a veiled threat of infringement proceedings. I think, in the context, the ordinary recipient would read the last few sentences as indicating that Grimme did not at present intend to commence proceedings against the recipient, but it would be likely to do so in the future if it was successful in its action against Mr Scott. The recipient would be likely to conclude that the rights which were being expressly reserved were the rights to bring those proceedings, and that they would be likely to be exercised when the solicitors contacted them again after judgment.

176. Were the design right allegations justified in the light of the admissions as to design right infringement? The letter is not specific about which particular roller designs are alleged to infringe. Accordingly, it is, in my judgment, necessary for Grimme to show that all Mr Scott's roller designs infringed at least one aspect of Grimme's unregistered design right. The ordinary recipient would understand that the allegation was made against all roller designs made for the Evolution separator. On this basis Grimme have failed to justify the threat.

177. Accordingly the counterclaim for unjustified threats of design right infringement proceedings succeeds.

Untrue statements

178. Mr Scott also complains, by an amendment to the counterclaim in September 2009, that the letter I have set out above was incorrect in a number of respects:

i) It was untrue to suggest that the Claimant was seeking reimbursement of all its costs in the proceedings. The claim was the subject of an agreed costs-capping order.

ii) It was untrue to suggest that the Claimant could restrain alleged design right infringement, as the design rights relied on are in the licence of right period.

iii) It was untrue to suggest that the Defendant might be injuncted from copying the designs in which design right allegedly subsists, in view of his undertaking to take a licence of right, without prejudice to his denial of liability.

179. In consequence of Mr Scott's complaint that the letter misrepresented the position, Grimme's solicitors wrote a further letter to customers dated June 26th 2009 explaining the correct position as regards costs and design right injunctions.

180. The court has a wide power to grant declarations independently of any other relief or remedy claimed whenever it is just to do so. On the authorities, the question I should ask myself is whether it would be useful in the circumstances for the court to grant the declaration sought. The difficulty I see with this is that there is really no longer any *lis* between the parties as to what the true position is. So there is no point, as between the parties, in declaring the position as they both accept it to be. So far as customers are concerned, would it make any difference if the court were now to declare the position to be that which they have been told it was in the letter of June 26th?

181. In my judgment, in the light of the letter of June 26th 2009, and the absence of any remaining dispute between the parties on the pleaded allegations, the court should not, in the exercise of its discretion grant declaratory relief. There is simply no sufficient reason made out for doing so.

Submissions after release of draft judgment

182. After release of my draft judgment to the parties for the purposes of identifying typographical corrections and other obvious errors, I received, without invitation, further written submissions from Mr Fernando on behalf of Mr Scott relating to the obviousness of claim 17 of the Patent. He invited me to reconsider my judgment in the light of the disclosure of Spatz and common general knowledge. In response Mr Chacksfield submitted a further skeleton argument in response on behalf of Grimme. Inevitably, I have read both documents and considered them

183. It is only in exceptional circumstances that a court should revisit conclusions arrived at in a draft judgment released to the parties. The purpose of releasing the judgment is to identify obvious errors, and enable the parties to agree any necessary consequential orders if possible. The purpose is not to invite further submissions

from the unsuccessful party: see the observations of Smith LJ in *Egan v Motor Services (Bath) Limited* [2008] 1 WLR 1589 at [49] to [51]

184. Mr Fernando suggests that I have not specifically addressed the questions of obviousness of claim 17 of the Patent (a) in the light of Spatz and (b) in the light of common general knowledge.

185. So far as Spatz is concerned I concluded that claim 1 of the Patent was not obvious over Spatz. It follows that claim 17 is not obvious over Spatz either. The case of obviousness over common general knowledge was tested on the basis of Rollastar. I remain of the view that it was not established that claim 17 was obvious over Rollastar. I therefore do not accept that there are exceptional circumstances justifying the submission of further argument.

186. However, in case it may assist, what follows is a short response to the submissions made. Mr Fernando's further submissions start from the proposition that everything that went before claim 17 is unpatentable. This is correct. He further argues that it is then necessary to ask whether it is obvious to include in a *potato separator with the features of claim 1* the further features of claim 17. In my judgment this is a flawed approach. It is necessary to show by evidence how the skilled person would arrive *from the prior art* at a device having all the features of claim 1 and 17. This involves starting from a prior art machine and identifying reasons why it would be modified to include these features. The evidence failed to do this in relation to claim 17. There was no reason why the skilled person faced with Rollastar would have gone to Spatz, Kverneland or his common general knowledge for details of roller design, or seen anything useful in what he found there. Equally there is no reason why the invention would be arrived at the other way round, from Spatz, Kverneland or common general knowledge as starting points. Nothing, therefore in the further submissions causes me to come to a different view.

187. I also decline Mr Fernando's invitation to reconsider my judgment in relation to threats. He submits that threats made to customers who only intended to use steel rollers cannot have been justified. In the light of my finding in paragraph 61 above, that submission is not correct. The threats were made in relation to the act of selling the machines. Such sales would be infringements, as it is a fair inference that the sellers would know and intend, as Mr Scott knew and intended that the rollers would be replaceable.

Conclusions

188. My conclusions are:

i) Claim 1 of the Patent is invalid for obviousness in the light of the Rollastar machine;

ii) Claims 17 and 24 are valid;

iii) The objections of lack of novelty, insufficiency and added matter fail;

iv) Evolution infringes claim 17 of the Patent provided that at some point in the separating path it has two counter-rotating pairs of rubber rollers. It does not infringe claim 24 of the Patent;

v) The sale of spiral replacement rollers is an indirect infringement under section 60(2) of claim17 if the machine infringes;

vi) Evolution machines which do not have at some point in the separating path two counter-rotating sets of rubber rollers, but which are adaptable to include two such sets, do not infringe under section 60(1) but do infringe claim 17 under section 60(2);

vii) The date of expiry of the design right was December 2008;

viii) The design rights sued on are not commonplace;

ix) The allegations of infringement of unregistered design right succeeds in respect of the Original but not the Second roller;

x) The counterclaim for unjustified threats of patent infringement proceedings fails;

xi) The counterclaim for unjustified threats of design right infringement succeeds;

xii) The claim for declaratory relief in respect of untrue statements fails.

ANNEXE 1


Grimme roller
20mm ribs
Top View


Scott Original roller
10mm ribs
Top View

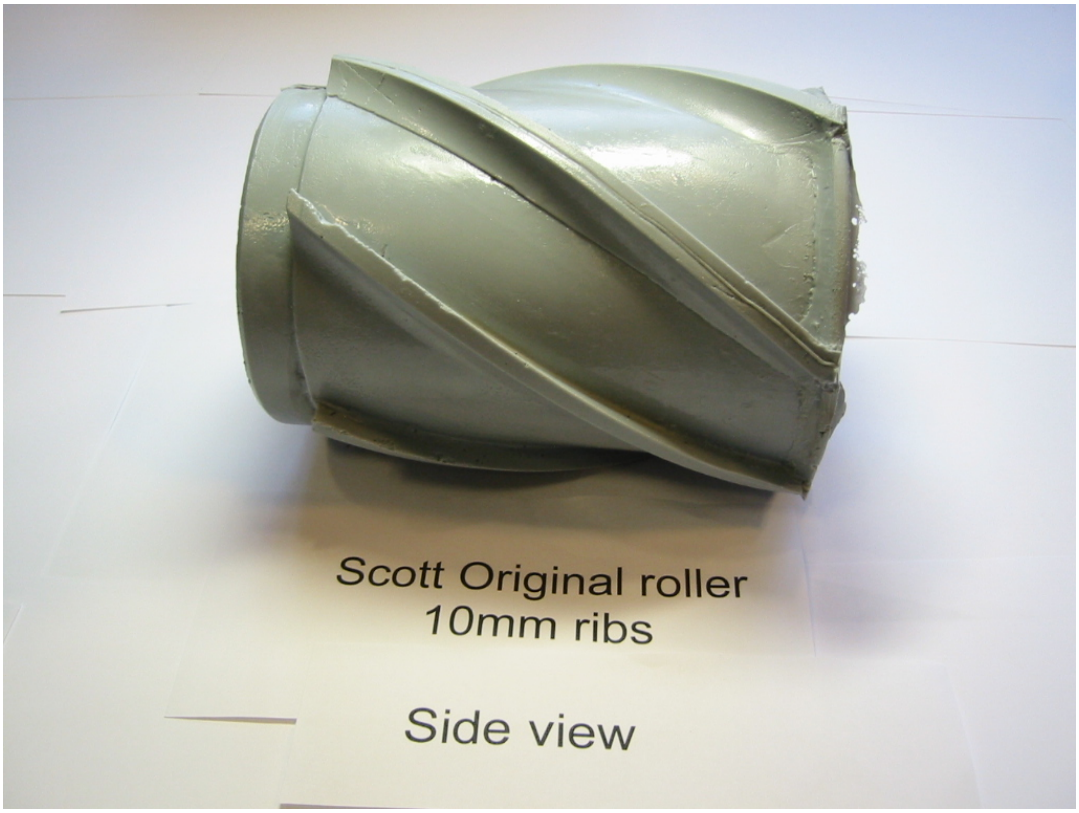
Grimme roller
20mm ribs

¾ view

Scott Original roller
10mm ribs

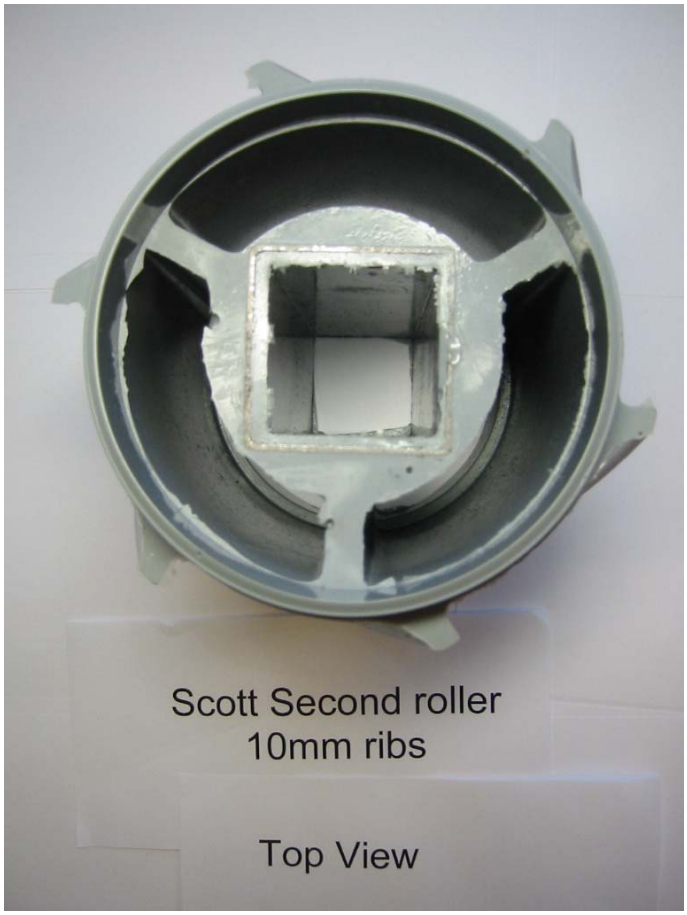
¾ view


Grimme roller
20mm ribs
Side view


Scott Original roller
10mm ribs
Side view

ANNEXE 2

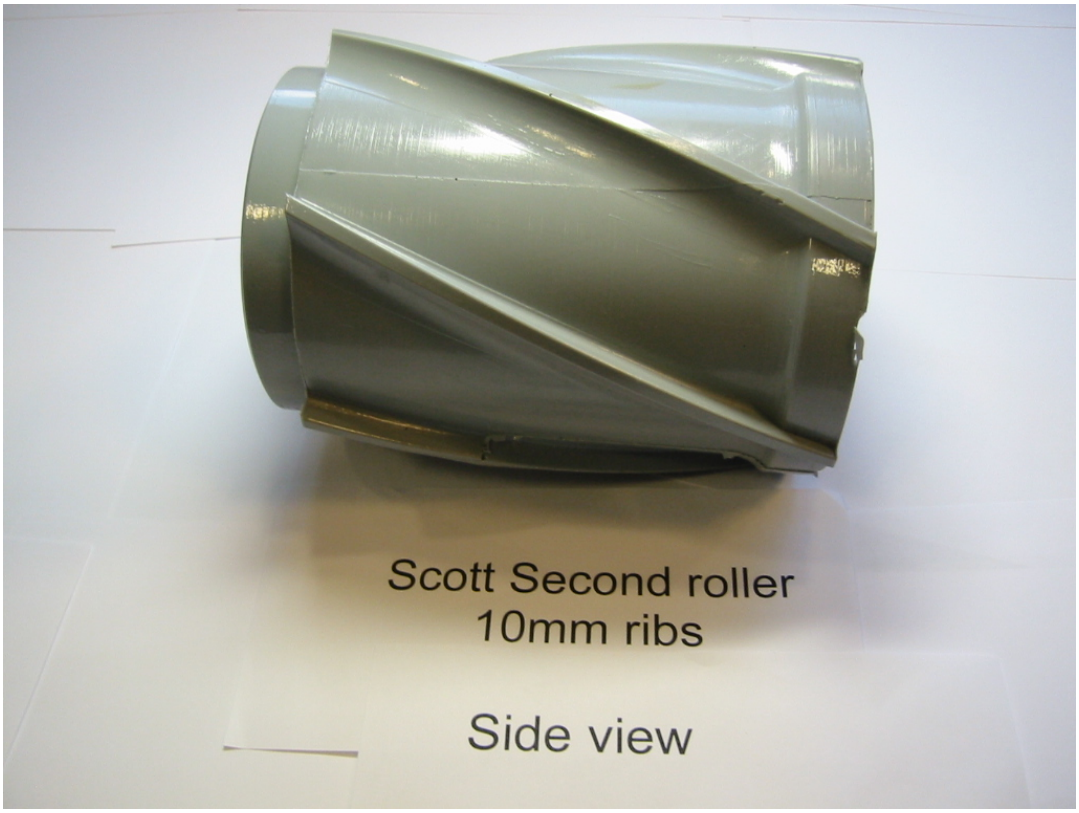

Grimme roller
20mm ribs
Top View


Scott Second roller
10mm ribs
Top View


Grimme roller
20mm ribs
¾ view


Scott Second roller
10mm ribs
¾ view


Grimme roller
20mm ribs
Side view


Scott Second roller
10mm ribs
Side view