Neutral Citation Number: [2019] EWHC 991 (Pat)

Claim No: HP-2017-000050

IN THE HIGH COURT OF JUSTICE
BUSINESS AND PROPERTY COURTS OF ENGLAND AND WALES
PATENTS COURT (ChD)

Rolls Building, Royal Courts of Justice
Fetter Lane, London EC4A 1NL

Date: 17 April 2019

Before :

MR JUSTICE NUGEE

- -

Between :

E. MISHAN & SONS, INC T/A EMSON	**Claimant**
- and -	
(1) HOZELOCK LIMITED	
(2) BLUE GENTIAN LLC	
(3) TELEBRANDS CORP	**Defendants**

- -
- -

Thomas Hinchliffe QC and Katherine Moggridge (instructed by **HGF Law LLP**) for the **Claimant**
Michael Hicks and Nick Zweck (instructed by **Wiggin LLP**) for the **1st Defendant**

Hearing dates: 26, 27, 28 February, 1 and 5 March 2019

- -

Approved Judgment

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

.....

MR JUSTICE NUGEE

Mr Justice Nugee:

Introduction

1. This is a patent action concerning expandable garden hoses. The Claimant, E. Mishan & Sons Inc, which trades as Emson, (**"Emson"**) is the exclusive sub-licensee in the UK of two patents, a UK Patent, GB 2 490 276 (**"GB 276"**), and a European Patent, EP (UK) 2 657 585 (**"EP 585"**), each entitled "Expandable Hose Assembly" (together **"the Patents"**). They are in similar but not quite identical form. Emson markets in the UK (and elsewhere) an embodiment of the Patents called the XHose (X for expandable).

2. The 1st Defendant, Hozelock Ltd, (**"Hozelock"**) is a well-known manufacturer and seller of garden products including hoses. It sells a rival expandable garden hose called the Superhoze. There have in fact been two successive versions marketed under the title Superhoze. They are very similar but not identical and have to be considered separately. They have been referred to in these proceedings as **"the Superhoze 1"** and **"the Superhoze 2"** respectively.

3. Emson claims that both the Superhoze 1 and the Superhoze 2 infringe the Patents. Hozelock denies infringement, and also claims that the Patents are invalid for lack of inventive step (obviousness). (There was also a claim on the pleadings of invalidity for lack of novelty, but Mr Michael Hicks, who appeared with Mr Nick Zweck for Hozelock, did not pursue this claim in closing submissions). Emson relies among other things on commercial success in answer to the allegation of obviousness. There is also an issue about priority which I explain later.

4. Emson's status as exclusive licensee was formerly put in issue but is no longer disputed. The position is as follows. The Patents were originally granted to Blue Gentian LLC (**"Blue Gentian"**), now the 2nd Defendant. Blue Gentian granted a worldwide exclusive head licence to a company called National Express, Inc (**"National Express"**). National Express in turn granted an exclusive sub-licence for the world excluding the US to Emson. In 2017 National Express assigned its rights under its head licence to Telebrands Corp, the 3rd Defendant (**"Telebrands"**), and in 2018 Blue Gentian sold its patent portfolio, including the Patents, to Telebrands. Neither of these transactions affects Emson's status as exclusive licensee. Blue Gentian, which was originally a claimant, and Telebrands have now been added as defendants (see s. 67(3) of the Patents Act 1977 (**"PA 1977"**)), but neither has taken any part in the action.

Background

5. The inventor of the Patents is Mr Michael Berardi, a resident of Florida. He came up with the idea of an expandable garden hose in 2011. The basic idea is not difficult to state. Conventional garden hoses were then usually made of plastics in a number of layers bonded together. They suffered from three problems from the point of view of the consumer: they were bulky and difficult to store; they were heavy; and they had a tendency to kink. Mr Berardi's idea was to make a hose consisting of two tubes one inside the other, the inner tube (which carried the water) being made of an elastic or expandable material such as natural rubber, and the outer tube, several times as long, made of a non-elastic and flexible material such as nylon or polyester. By connecting

the tubes at both ends but not otherwise, the hose, when empty of water, would be the same length as the inner tube (with the outer tube ruffled around it); but when the hose was filled with water, the inner tube would expand to the length and diameter of the outer tube (which constrained it from expanding further and bursting). Thus for example if the outer tube were 50 feet long and the inner tube 17 feet long, the hose would be 50 feet long in use but only 17 feet long when not in use.

6. This invention had three noticeable advantages over conventional garden hoses. First, it took up very much less room to store, not only because it was shorter in its contracted state but also because it was less bulky and folded easily. Second, it was much lighter: the specifications in the Patents refer to a hose, 10 feet long in its contracted state and 50 feet long when expanded, as weighing less than 2 lb, in contrast to a conventional 50 foot rubber hose which could weigh up to 12 lb. Third, it did not kink: the Patents do not really explain (and I was not given any technical explanation) why this is so, but it is not disputed.

7. Mr Berardi started experimenting with prototypes in 2011, initially in the kitchen of his then house at 223 Skylark Point, Jupiter, Florida, and later, when he was making 50 foot hoses, in his garden. Mr Berardi's wife video-ed what Mr Berardi was doing (both in his house and in his garden) in order to document it in a series of videos (**"the Videos"**), so there is quite good evidence of exactly what he did. By 3 November 2011 he had made a prototype which worked, and the next day he filed a US patent application. This date (4 November 2011) is the first claimed priority date for the Patents.

8. The XHose was launched in the US in March 2012. It has since been sold around the world. In the UK it has been sold since May 2013. When it was launched there was nothing similar on the market. The evidence is that it has been a considerable commercial success. This has attracted a number of other manufacturers to offer expandable hoses, and there are now many versions on the market, as was shown by the results of a search for "expandable hose" on Amazon's UK site. Expandable hoses now account for a significant share of the garden hose market in the UK (and no doubt elsewhere).

9. In the UK, Blue Gentian and Emson have already successfully sued the seller of one rival product for infringement of GB 276: see *Blue Gentian LLC v Tristar Products (UK) Ltd* [2013] EWHC 4098 (Pat) 746 (***"Tristar"***), which concerned an expandable hose launched by the defendants, two Tristar companies, called the FlexAble Hose. The defendants did not dispute that if GB 276 was valid their product was infringing, but contended that it was invalid for lack of novelty and obviousness over two items of prior art. These were (i) US Patent Application No. US 2003/0098084 A1 entitled "Pressure-actuated Linearly Retractable and Extendible Hose" published on 29 May 2003 (**"Ragner"**); and (ii) US Patent Application No. US 2003/0000530 A1 entitled "Self-Elongating Oxygen Hose for Stowable Aviation Crew Oxygen Mask" published on 2 January 2003 (**"McDonald"**). Birss J found that Claim 1 (the main product claim) of GB 276 was novel and not obvious over either Ragner or McDonald; the defendants' appeal (confined to the question of obviousness) was subsequently dismissed by the Court of Appeal: see [2015] EWCA Civ 746. In the present case Hozelock again claim that the Patents are obvious over Ragner and McDonald, and I will have to consider in due course to what extent the decision in *Tristar* is of any assistance to the issues I have to decide.

10. Hozelock launched the Superhoze 1 in early 2017. These proceedings were brought (initially by Blue Gentian and Emson) in August 2017 claiming that the Superhoze 1 infringed GB 276, and were later amended to include an allegation of infringement of EP 585. In the course of 2018 Hozelock provided the Claimants' solicitors with first pre-production samples, and then a product description, of the Superhoze 2, and asked for an acknowledgment that it did not infringe. This was not forthcoming, and Hozelock amended to claim a declaration to that effect, and the Claimants amended to claim that the Superhoze 2 was also infringing. The Superhoze 2 was launched (replacing the Superhoze 1) in February 2019, shortly before trial.

Factual witnesses

11. Each side relied on a number of factual witnesses. Those who gave oral evidence did so in a straightforward and helpful manner, and I am satisfied that each of them was seeking to assist the court to the best of his recollection.

12. Those called by Emson were Mr James Coleman and Mr Berardi himself. Mr Coleman is the Chief Executive Officer of High Street TV (Group) Ltd, which entered into an exclusive distribution agreement with Emson for the sale of the XHose in the UK and the Republic of Ireland, and gave evidence of the commercial success of the XHose.

13. Mr Berardi's oral evidence was almost entirely directed to the construction and use of the prototypes in his garden at 223 Skylark Point as recorded in the Videos. Hozelock's case is that since the garden was visible from the (public) road at the front of the property, that amounted to making available to the public all the information that could have been seen from the road, and that the Patents are invalid for obviousness in the light of these disclosures. Mr Berardi was therefore asked about the details of the layout of his garden, precisely what he did and where, and what could be seen in the Videos.

14. In addition Emson served two witness statements from witnesses who were not required for cross-examination. They were Mr Jim E Mishan of Emson and Mr Richard Kelly of National Express, each of whom gave evidence of the commercial success of the XHose.

15. The witnesses called by Hozelock were Mr Nicolino Iaciofano, and Mr Simon Davies. Mr Iaciofano is Hozelock's Group Technical Director. He was responsible for arranging an exercise referred to as **"the Reconstruction Videos"**. These were an attempt to reconstruct what Mr Berardi had done in his garden, video-ed from a viewpoint that was intended roughly to equate with the position of a person standing on the road outside Mr Berardi's house.

16. Mr Davies is Hozelock's Group Marketing and Sales Director and gave evidence in answer to Emson's evidence of commercial success.

17. In addition Hozelock served a witness statement from Mr Eric Berger, a private investigator in Florida who had made a report of a visit he had made in September 2017 to Skylark Point. He was not cross-examined.

18. Hozelock also adduced a witness statement from Ms Maeve Lynch under a Civil

Evidence Act notice. Ms Lynch is a solicitor employed by Wiggin LLP, Hozelock's solicitors, and exhibited some photographs of Skylark Point taken by a paralegal who accompanied her on a visit she made in March 2018.

Expert witnesses

19. Emson's expert was Mr Richard Hurst. He is an engineer, having started as an apprentice in the Merchant Navy in 1966. From 1989 he worked for a consultancy company, WRc, that was formerly the research and advisory arm of the water industry, and that provided advice with regard to the installation and design of water fittings and water systems, and in particular advice to ensure that they met applicable regulations. His current role is with RAH Consultancy, which he established in 2004, and which provides water engineering consultancy in similar areas.

20. Mr Hurst did not claim to be an expert in the manufacture of hoses. His experience of hoses includes the operation and maintenance of fire hoses when in the Merchant Navy, and advising on and testing fixtures and fittings for commercial and domestic usage. This included pipes for underfloor heating, and garden water products such as backflow protection arrangements and other hose related ancillary fittings. He is also a keen gardener and has naturally used garden hoses himself. He accepted that he had no personal experience of working directly in the design or manufacture of hoses, although he said he needed to understand their design when offering advice.

21. Mr Hicks submitted that there were two problems with Mr Hurst's evidence, and that it should be treated with considerable caution. The first problem was that he was not an expert in the relevant field; the second that he was a poor witness, and appeared partisan.

22. I do not accept the second criticism, and do not think it necessary to examine in detail the specific points relied on by Mr Hicks in this respect, or the answers to them given by Mr Thomas Hinchliffe QC, who appeared with Ms Katherine Moggridge for Emson. As Mr Hinchliffe accepted, Mr Hurst's evidence was not as polished as that of Hozelock's expert, Mr Fabrice Doosterlinck; and he found it difficult, as witnesses sometimes do, to answer questions on the hypothetical assumption that he was wrong on some point. But I do not think that he was doing anything other than attempting to give his honest opinion on the issues, and his views emerged clearly enough.

23. There is however I think something in the first point. Mr Hurst is an engineer with particular experience in water systems. That no doubt enables him to consider the hoses in question from the point of view of an experienced engineer. But what he does not have is any direct experience of the processes of designing and manufacturing hoses, or any direct knowledge of the way the industry is organised. As Mr Hicks said, this is not his fault, but it does limit his ability in particular to give evidence as to the attributes of the person skilled in the art, and the common general knowledge that such a person would possess. I have borne this in mind when considering these questions.

24. Hozelock's expert, Mr Doosterlinck, has been Directeur Général (or Chief Executive Officer) of Tricoflex SAS, a French company, (**"Tricoflex"**) since 2010. Tricoflex is an associated company of Hozelock. It was formerly (since 2000) owned by the Hozelock group and then called Hozelock Tricoflex SAS. Hozelock was acquired by

Exel Industries SA, a listed French company, (**"Exel"**) in 2012, and Hozelock and Tricoflex are now both subsidiaries of Exel.

25. Hoses are usually divided into garden hoses and technical hoses. Tricoflex sells a wide range of technical hoses: its industrial catalogue for 2011 includes hoses for the transfer of gases, fuels and oils, chemicals, food and water among other things, as well as various types of suction hose. Mr Doosterlinck however explained that Tricoflex also supplies a number of the hoses sold by Hozelock for garden use.

26. Mr Doosterlinck himself is also an engineer. He has a postgraduate degree in engineering from the École des Mines in Douai where he specialised in plastics and polymers. He has been at Tricoflex since 1994 where he initially worked on the development of garden hoses but soon moved into management. He continued to work on garden hose design until 1996, but thereafter he focussed only on technical hoses, until, on appointment as Directeur Général, he assumed overall responsibility for the entire Tricoflex business, comprising both technical and garden hoses.

27. Mr Doosterlinck was an impressive witness, who gave his evidence in fluent English, despite this being his second language, and his evidence was clear and cogent throughout. Mr Hinchliffe made no personal criticism of him, accepting that he was seeking to assist the Court. But he said that he was put in a difficult if not impossible position because he was inevitably approaching the issues with a large degree of hindsight. He suggested that Mr Doosterlinck was selected as expert because Hozelock was well aware of the *Tristar* decision. In that case it was suggested to Birss J that the skilled garden hose designer to whom the patent was addressed would have knowledge of more specialised hoses, but he was not satisfied of that: see at [17]. Mr Hinchliffe suggested that the very reason why Mr Doosterlinck was asked to give evidence was to address this point. He also referred to the facts that Mr Doosterlinck was also aware of the Patents, and of the XHose, before his involvement in this trial; that he had read Birss J's judgment in *Tristar* before he wrote his report; and, as Mr Doosterlinck accepted, that he wrote his report in the knowledge of everything that had gone on in those proceedings.

28. I do not think I can decide, or should speculate on, the reasons why Mr Doosterlinck was asked to give evidence. As to the other matters, these are primarily directed as to Mr Doosterlinck's evidence on the attributes of the skilled person and obviousness, and it seems to me that the appropriate place to consider whether, as Mr Hinchliffe suggested, his evidence is fatally tainted by hindsight is when considering those issues and the specific evidence he gave. I do not accept that they mean that I should approach his evidence as a whole with any particular caution.

GB 276

29. The Patents are not technical. A description of GB 276 is included in Birss J's judgment in *Tristar*, and it is simplest to reproduce it here, as follows:

> "21. The patent is not complicated and technical terms are not used. After describing the field of the invention in general terms, without reference to garden water hoses, the background section (paragraphs [0003] and [0004]) describes problems encountered with garden hoses. The problems identified relate to storage, such as the need for a reel or a container and relate to tangling, kinking

and the weight of the hose. The patent states that it would be of great benefit to have a hose that is light in weight, contractable in length and kink resistant.

22. Following a lengthy section listing numerous items of prior art, a summary of the invention starts at paragraph [0022]. The detailed description section including figures 1 to 11 runs from paragraphs [0031] to [0063]. Although the specification is written in general terms and contemplates that other fluids apart from water could be used, the claims are clearly limited to a garden water hose. The skilled reader would understand that while the inventor no doubt has contemplated that his idea might be applicable in other fields, the invention claimed is directed to a garden water hose.

23. The invention is a hose with an inner tube inside an outer tube. The outer tube is secured to the inner tube only at the ends. The hose expands when connected to a pressurised water supply such as a water tap (faucet). The hose can expand longitudinally up to six times its length and width. On release of the pressurised water from the inner tube, the inner tube will contract. The inner tube could be made of rubber while the outer tube could be made of a non-elastic relatively soft fabric like woven nylon. Figures 9 and [6] and figures 10 and [5] show the invention in its unexpanded and in its expanded states:

unexpanded

Figure 9

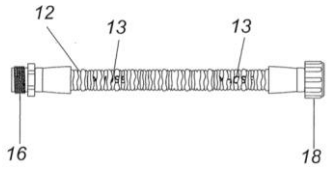
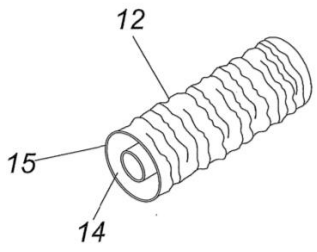


Figure [6]



expanded

Figure 10

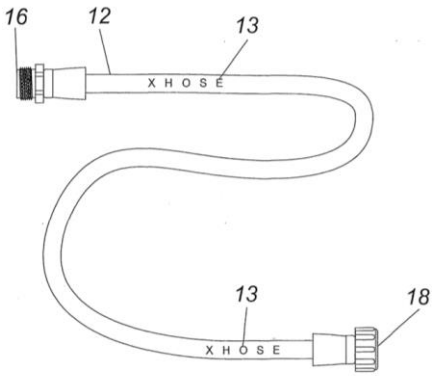
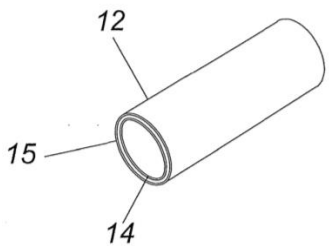


Figure [5]



24. In the unexpanded state, when not connected to water pressure, the inner tube is in a relaxed condition. There are no forces being applied to expand or stretch it. It has a relatively narrow diameter. In this state the outer tube is ruffled. When the hose is connected to a water supply and the supply turned on, water pressure expands the rubber inner tube. The inner tube will expand laterally (also referred to as radially or circumferentially) and will also expand axially

(i.e. along the length of the hose). As the inner tube expands the wall thickness of the inner tube material reduces, in other words the material gets thinner. The radial expansion is constrained by the diameter of the outer tube. The axial expansion is constrained by the length of the outer tube. As the water inflates the inner tube, the hose expands lengthways and the ruffles of the outer tube unfurl until it is smooth (see fig 10). In this state the hose can be used. The hose contains a flow restrictor, which can be a small disc with a narrower bore than the bore of the hose.

25. When the water is allowed to flow along the hose the pressure inside will drop to some extent but there will be enough pressure remaining in the hose to keep it expanded in use (described in paragraph [0050])

26. The patent describes how the invention meets the objectives referred to. The savings in weight are addressed in paragraph [0053]. A conventional 50 foot garden hose is said to weigh 12 lb (5.4 kg) whereas an equivalent hose of the invention weighs 2 lbs (0.9 kg). The hose also does not contain any metal components such as springs along the length of the hose between the connectors.

27. The fact that the hose has a reduced length when there is no pressure in the inner tube is addressed in paragraph [0054]. An empty hose of the invention can be readily stored without kinking or becoming entangled as most conventional hoses do. The hose can be stored in a very small space. There is no need for a hose reel (paragraph [0055]).

28. Claim 1 is in this form:

> A garden water hose assembly comprising:
>
> an outer tube formed from a non-elastic and flexible material and no metal;
>
> an inner tube constructed from an elastic material,
>
> said outer tube and said inner tube each having a first end attached together by a first coupler and a second end attached together by a second coupler;
>
> said outer tube being unattached from said inner tube between said first and second couplers;
>
> said outer tube and said inner tube having a substantially shortened first length in a non-water flow contracted state with said outer tube extending about an outer surface of said inner tube in an undulating state
>
> and a substantially longer second length with said outer tube capturing said inner tube in an expanded state upon the application of water pressure to the interior of the elastic inner tube as water flows through the assembly,
>
> said inner tube having a larger wall thickness in the contracted state than in the expanded state and the wall thickness decreasing as the hose moves from the contracted to the expanded state,

> and wherein a water flow restrictor is provided in or is connected to the second coupler."

30. In this action Emson claims infringement of claim 1 (the main product claim) and claim 14 (the main process claim) of GB 276. Claim 14 is in these terms:

> "A method of transporting water comprising introducing water into a garden water hose assembly, the hose assembly comprising:-
>
> an outer tube formed … [there then follows a description in materially identical terms to claim 1] …connected to the second coupler, and wherein the method comprises the steps of attaching the first coupler to a water supply and introducing water into the hose."

EP 585

31. EP 585 follows the text of GB 276 very closely. There are some minor variations but it has not been suggested to me that any of them in the body of the specification is of any significance.

32. There is however a potentially significant difference in the claims. Emson claims infringement of claims 1 and 2. Claim 1 is in these terms:

> "A garden water hose assembly comprising a hose (10) and a water flow restrictor, wherein the hose (10) comprises:
>
> an outer tube (12) formed from a non-elastic, soft, bendable, tubular webbing material having a first end and a second end;
>
> a flexible, elastic, hollow inner tube (14) having a first end and a second end;
>
> a first coupler (18) secured to said first end of said inner tubes and said outer tubes (14, 12);
>
> a second coupler (16) secured to said second end of said inner and said outer tubes (14, 12);
>
> said first coupler (18) arranged in use to couple said hose (10) to a source of pressurized water, said second coupler (16) being connected to the water flow restrictor, wherein the water flow restrictor includes a nozzle having an internal valve that permits, limits, and stops a flow of water through the nozzle;
>
> whereby said outer tube (12) and said inner tube (14) have a substantially shortened first length in a non-water flow contracted state with said outer tube (12) extending about an outer surface of said inner tube (14) in an undulating state, and a substantially longer second length with said outer tube (12) capturing said inner tube (14) in an expanded state when water flows through said hose assembly.
>
> whereby, when water under pressure is introduced into the first end of the hose (10), said elongated inner tube (14) expands longitudinally along a length of said inner tube (14) and laterally across a width of said inner tube (14) thereby increasing a length of said hose (10) to an expanded condition; and
>
> wherein the water flow restrictor is configured to vary the amount of water

under pressure that is released from the water flow restrictor."

The numbers are references to the figures, which are identical to those in GB 276.

33. Claim 2 is in the following terms:

> "The garden water hose assembly of Claim 1, wherein said inner and outer tubes (14, 12) are unattached, unbonded, unconnected and unsecured to each other except at the couplers (16, 18)."

34. The relevant point of difference between the two Patents is that whereas claim 1 of GB 276 includes a reference to the outer tube being unattached from the inner tube between the first and second couplers (as does claim 14 which is in similar terms), claim 1 of EP 585 contains no such reference, and claim 2 makes it clear that being unattached except at the couplers is not a requirement of claim 1 as that is what distinguishes claim 2 from claim 1. This was accepted by Mr Hicks.

Skilled person

35. A patent specification is addressed to those skilled in the art, that is those persons likely to have a practical interest in the subject matter of the invention, and such persons will have practical knowledge and experience of the kind of work in which the invention is intended to be used: *Medimmune Ltd v Novartis Pharmaceuticals UK Ltd* [2012] EWCA Civ 1234 at [72]. The identification of the skilled person, and the relevant skills and knowledge that such a person is to be taken as possessing, can be significant for a number of reasons, but in the present case is particularly important for the assessment of obviousness for reasons that I explain below.

36. The Patents are concerned with garden hoses, and it is common ground that the person skilled in the art (or 'skilled person') would therefore be a person interested in the design and manufacture of garden hoses.

37. However the experts disagreed as to what skills and experience such a person would have. The skilled person is a notional person or legal construct, not a real person, but there is to be attributed to him the skills that real-life persons skilled in the art in fact possessed at the relevant date. I was referred to two statements to this effect, the first by Pumfrey J in *Conor v Angiotech* [2006] EWHC 260 (Pat) at [34]:

> "…when assessing the attributes of the skilled person, it is essential to try to reflect, to the extent that the evidence permits, the actual ordinary skills of the real-life contemporaries of the skilled man at the priority date"

and the other by Jacob LJ in *Schlumberger Holdings Ltd v Electromagnetic Geoservices AS* [2010] EWCA Civ 819 at [42]:

> "I think one can draw from this case [*Dyson Appliances v Hoover Ltd* [2002] RPC 22] that the Court, in considering the skills of the notional "person skilled in the art" for the purposes of obviousness will have regard to the reality of the position at the time. What the combined skills (and mind-sets) of real research teams in the art is what matters when one is constructing the notional research team to whom the invention must be obvious if the Patent is to be found invalid on this ground."

38. There was no dispute as to this principle, but there was a dispute as to its application

to the facts, and specifically whether the skilled person's experience and knowledge would be limited to garden hoses (a 'garden hose designer') or would include both garden and other (industrial or technical) hoses (a 'general hose designer', albeit one with a remit or interest in garden hoses). This is potentially significant when it comes to assessing obviousness, specifically obviousness over McDonald, as Mr Hicks accepted that his case on obviousness over McDonald depended on the skilled person being a general hose designer not just a garden hose designer.

39. There was some debate as to where this question fitted into the analysis. Mr Hicks addressed it as an aspect of the identification of the skilled person. Mr Hinchliffe accepted it was a grey area, but addressed it as part of his submissions on common general knowledge. I doubt it makes any substantive difference, but I propose to follow Mr Hicks' approach. This was to separate out three stages of the analysis: (i) to whom were the Patents addressed? (it being common ground that the answer is a person interested in the design of garden hoses); (ii) what sort of persons in the real world are designers of garden hoses? (in other words, are they simply garden hose designers or are they general hose designers?); and (iii) what common general knowledge do such people have? The present question is question (ii) and seems to me more naturally regarded as part of the identification of the skilled person, and a prior stage to the identification of the common general knowledge of such a person.

40. I have already referred (see paragraph 27 above) to the fact that in *Tristar* Birss J considered a similar question, and said that he was not satisfied that the skilled person would have experience and knowledge of specialist hose applications. In opening, Mr Hinchliffe referred me to this and suggested that it would be slightly surprising if I came to a different view from Birss J on the question of the skilled person. It is however well established – and Mr Hinchliffe did not suggest to the contrary – that whereas on questions of law it is the usual practice for one judge to follow another (even though not bound to do so) unless convinced they are wrong, questions of fact are to be decided on the basis of the evidence admitted at the trial in question and the conclusions of another judge, however eminent, on the evidence they heard at a different trial do not carry any particular weight; indeed strictly speaking I do not think they are even relevant or admissible (that is, on the well-known principle of *Hollington v Hewthorn* [1943] KB 587, reaffirmed as still good law in *Rogers v Hoyle* [2014] EWCA Civ 257). I can see that there might be a grey area if the dispute were over the question to whom a patent was addressed (question (i) in the analysis above), as this looks much more like a question of construction of the patent, which is of course regarded as a question of law, but in the present case there is no dispute that the patent is addressed to a person interested in designing garden hoses. The dispute is over what skills and experience such a person would have, which is a question of fact which turns on the evidence about real-world garden hose designers. In the end I did not understand Mr Hinchliffe to dispute any of this. Although therefore I was asked to read Birss J's decision in *Tristar*, and have naturally done so with great interest and respect, I propose to accord no weight to it when considering the factual questions I have to decide.

41. So far as the evidence is concerned, Mr Hurst's evidence was that a garden hose designer would have a grounding in material science and experience of working with materials such as plastics, rubbers and other synthetic materials used for hosepipes, and a general understanding of manufacturing constraints and processes; and might

have a background in practical engineering and experience in product design and testing. But although he would have been aware of technical hoses, Mr Hurst did not think he would necessarily have any experience of, or detailed knowledge about them, and thought that a person designing garden hoses would be focussing on that field.

42. Mr Doosterlinck's evidence however was that the skilled person would be a hose designer working for a hose manufacturing company for several years, and that such a person would be familiar with the design and manufacture of all types of hoses, not just hoses for sale to consumers for use in their garden; anyone involved in hose design for several years would have exposure to a wide range of hose products and have experience in the design and manufacture of many types of hoses including garden hoses.

43. Mr Doosterlinck supported this with evidence, drawn from his own experience, to the following effect. From a commercial point of view the hose market is divided into different distribution channels for garden hoses, which are sold to consumers, and technical hoses, which are sold for commercial use. But hose companies generally make all types of hose (except for some companies which are essentially rubber manufacturing companies who only make technical hoses, as garden hoses are now usually made of plastic). An example is Tricoflex itself, 25% of whose business is made up of garden hoses and 75% of other hose applications. Tricoflex does sell some of its garden hoses directly, but these are top of the range specifications for professional use; its consumer garden hoses are supplied to Hozelock and sold by Hozelock. Mr Doosterlinck illustrated this by identifying, by reference to the garden hoses shown on Hozelock's website, the ones which were supplied to Hozelock by Tricoflex (5 out of 11, not including the Superhoze).

44. Mr Doosterlinck had also made a list of the companies that he regarded as Tricoflex's 25 main competitors, all of which were competitors in 2011. With one exception (a company which only made technical hoses), all the companies in the list manufacture both garden and technical hoses. Mr Doosterlinck's evidence was that at Tricoflex all employees working on hose design for several years will have exposure to both garden and technical hoses; and he believed the same would be true at Tricoflex's competitor companies.

45. Mr Hinchliffe invited me to treat this evidence with caution. As well as the general points that Mr Doosterlinck would naturally, given his position in the Exel group, want to do his best for Hozelock, and that he gave his evidence in the full knowledge of the *Tristar* decision and the reasons why the attack based on obviousness over McDonald had there failed, Mr Hinchliffe relied on the fact that one cannot necessarily regard Mr Doosterlinck's experience at Tricoflex as representative of the ordinary skilled person. In this respect he referred me to the classic statement that common general knowledge is that which is generally known "by the bulk of those who are engaged in the particular art" (*British Acoustic Films* 53 RPC 221 at 250 per Luxmoore J) and the comments of Aldous LJ in *Beloit Technologies Inc v Valmet Paper Machinery Inc (No 2)* [1997] RPC 489 at 494:

> "The notional skilled addressee is the ordinary man who may not have the advantages that some employees of large companies may have."

He suggested that Mr Doosterlinck's evidence was directed at the experience of

employees of Tricoflex, and some other highly specialist companies from a limited number of European countries, and not representative of the skilled person.

46. That seems to me to raise two slightly different questions. The first is whether I should accept what Mr Doosterlinck says based on his own experience and knowledge of the hose business. My answer is yes: I have already said that Mr Doosterlinck was an impressive witness and despite the fact that he is not independent of Hozelock and has come to the issues with an understanding of the *Tristar* decision, I have no reason not to accept this part of his evidence. The second question is whether there is any reason to think that his experience at Tricoflex is atypical or not representative of garden hose designers as a whole. As Mr Hicks submitted, that really amounts to a submission that outside Tricoflex and its competitors there is a body of hose designers whose experience is limited to designing garden hoses and who have no experience of designing technical hoses.

47. I have heard no evidence that there is a cohort of such people. Mr Hurst said that technical hoses had different requirements to garden water hoses (for example, having to work at higher pressures, and possibly transporting gases or flammable or toxic materials) and that this was specialised and detailed knowledge, which he did not think the garden water hose designer would necessarily have unless they had previously worked in designing industrial hoses. But that all seems to me to be based on the different technical requirements of different hoses, not on Mr Hurst's experience of how hose businesses in fact operate in the real world, and he does not say, no doubt because it is outside his expertise, how likely it is that a garden water hose designer would in fact work for a company also making technical hoses, or have experience of working on them.

48. Mr Hinchliffe suggested in closing that there were specialist garden hose companies that do not make technical hoses but do make garden hoses. Apart from Hozelock however I heard no evidence about any such companies. Mr Doosterlinck was asked about two companies which sell garden hoses (Gardena and Karcher), but he explained that they sold hoses but did not design and make them, and that he had confined his list of competitors to those who did.

49. As to Hozelock, I accept that this is a garden hose designer and manufacturer – it is described by Mr Iaciofano as "a major UK based designer, manufacturer and supplier of gardening equipment, including hoses and other watering and pond products". Mr Hinchliffe suggested it was the exemplar of companies that did not make technical hoses but did design and make garden hoses, and that persons working for Hozelock such as Mr Iaciofano (who has worked for Hozelock since 1991) and Mr Robert Boughton (another Hozelock employee, who assisted Mr Iaciofano with the Reconstruction Videos, acting the part of Mr Berardi, and who had worked at Hozelock for about 25 years) were only involved with garden products and closer to the epitome of the skilled person than a technical hose person. I accept that Mr Iaciofano's and Mr Boughton's experience has been almost entirely with Hozelock, that Hozelock is a specialist garden product company, that the likelihood is that insofar as they have been concerned in designing hoses those will have been garden hoses, and that there is no evidence that either of them has had any experience of technical hoses (although Mr Iaciofano, who gave evidence, was not asked any questions about this so I in fact have no evidence that he does not have such experience). But I have no evidence at all as to whether Hozelock is typical, being

one of a number of companies doing similar things, or whether it is unusual in this respect. Mr Hicks suggested that the list of Hozelock's patents (which dates back to the 1960s) indicates that Hozelock's business stemmed from designing the fittings at the end of hoses such as tap connectors (something which, although not explored in evidence, seems plausible enough, not least because of Hozelock's name), and suggested that Hozelock might be slightly unusual. I do not know whether this is so, but what I can say is that I have no evidence that there are other similar companies, nor any evidence that there is any significant number of garden hose designers working specifically for garden product companies as opposed to working for general hose companies such as Tricoflex and its competitors, let alone that the bulk of them do so.

50. On this state of the evidence, I do not think I can find that real-world garden hose designers are generally persons whose experience is limited to designing garden products, or that Mr Doosterlinck's experience is anything other than representative of the industry as a whole. I conclude that Hozelock have established that the skilled person, being a person interested in the design and manufacture of garden hoses, would typically be a hose designer with exposure to both garden and technical hoses.

Common general knowledge

51. In their closing submissions the parties produced rival lists of what they respectively contended was common general knowledge, which naturally overlapped to some degree but with different emphases. Rather than try and produce my own list from a synthesis of the two, I have decided the simplest course is to go through the lists in turn with my comments.

52. Mr Hinchliffe's list (ignoring some repetition) was as follows:

(1) The basic design of a garden water hose did not really change between the 1950s/1960s and 2011. The traditional design was a multilayer hose with some reinforcement, comprising between 3-5 layers. In such multilayer hoses, the hose is always a combination of layers, usually bonded together into a composite.

(2) Garden water hoses had low technical demands. They operate at low pressures, transport water only and are used relatively infrequently.

(3) There have been some developments in the materials used for garden hoses (for example, the use of plastic rather than rubber, the introduction of knitting techniques as a reinforcement, the use of PVC foam as a layer for a garden hose). These are changes in the materials used, rather than in the basic design of hoses, and the basic design of hoses has not changed for a considerable time.

My comment is that I do not think a sharp division can be made between changes in material and changes in design. I accept however that these particular changes can be described as changes in the materials of which hoses are made rather than a fundamentally new design of hose such as the XHose represented.

(4) To the extent there was any innovation, this was all in accessories such as hose reels and nozzles. Hose reels for example were a way of solving the problems of heaviness and storage of hoses.

(5) Before 2011, there were no examples of hoses where the layers were not bonded together. The skilled person would not be aware of expandable hoses, a category that has only existed since the XHose.

(6) The skilled person would not have been familiar with or used silicone rubber in hose design. None of the known hoses in 2011 used highly elastic materials.

My comment is that it was common ground that the skilled person would have a background in material science, and that although they would not have direct experience of using highly elastic materials for hoses, they would have a knowledge of materials in general, and experience of using rubber in particular. Rubber was formerly used for garden hoses until it was replaced by plastics, and is still used for many technical hoses. I accept however that those would be stiff rubbers, not highly elastic ones.

(7) There were a number of long-standing problems with garden hoses that were very well known. They were typically heavy, difficult to store and prone to kinking.

(8) Technical hoses have much more demanding requirements than garden water hoses. They have to operate (I would prefer to say might have to operate) at much higher pressure. In some cases they have to be more resistant to extremes of temperature. Some of them have anti-static lining to conduct electricity. They [may] have to be resistant to chemicals, oils and harsher liquids that are being transported, and often have to be in frequent or even constant use.

(9) Tricoflex's catalogue includes a hose for breathable air. It is of a multilayer reinforced design and described in the catalogue as being for use in nuclear power plants, the petrochemical industry and paint applications. The catalogue also includes a hose for medical gas (air, oxygen, carbon dioxide etc). It has a small diameter of 6.4mm.

(10) There were 3 basic types of hose at the priority date in 2011, which have not changed for a considerable amount of time. They are: (i) the basic multilayer hose with reinforcement, the layers being bonded together and forming a composite; (ii) the spiral reinforced hose, originally designed because canvas hoses could not be used as suction hoses as they collapsed under vacuum; and (iii) the monolayer hose without reinforcement. Expandable hoses such as the XHose did not exist in 2011. The market has gone from a position where there were none in 2011 to one in 2019 where there are a large number of expandable hose products on the market, albeit that they are only used in the garden.

My comment is that as with most attempts to classify things, it is possible to produce longer or shorter lists depending on how many distinctions one draws.

Mr Hicks' list (below) is rather longer, but I do not think it matters whether one says there were 3 types of hose known or 7 types of hose known. The essential point is that the expandable hose was not known until the XHose appeared, and that it is quite unlike existing hoses.

(11) There were corkscrew or helix hoses, but these are not different types of hose. They are monolayer hoses that have been given a secondary spiral structure. The way they unravel (I would say extend) is by being pulled. They are not designed to expand under pressure.

My comment is that I do not think it is of any significance whether corkscrew hoses are described as a different type of hose: they look quite different to conventional hoses and have different qualities, but I accept that the technology of the hose material itself (as opposed to the way the hose is configured) is not different from other hoses.

(12) Mr Doosterlinck also referred to a Protec nylon hose, but this is not a hose – it is a protective cover.

(13) For technical hoses, the general way in which the more demanding requirements were achieved was by the materials chosen.

(14) Vulcanised rubber became available in the late 1800s or early 1900s, and hoses became made of rubber. In about the mid 20th century plastics, and PVC in particular, became the most commonly used material for hoses, particularly for garden hoses, PVC being both lighter and more durable than rubber.

(15) The usual range for water pressure in the UK is 1 to 6 bar. 2.5 to 3.5 bar is about the average pressure for the domestic water supply. In London it can often be much lower, perhaps even down to 1 bar.

Subject to the comments I have made, I accept that this was all common general knowledge at the priority date of 4 November 2011.

53. Mr Hicks' list was as follows:

(1) Hoses, including garden hoses, can be made from a variety of natural and synthetic materials including rubber. A skilled person is used to working with "elastomers" not least because they are used to working with rubber.

My comment is that I have already addressed this above. I accept that the skilled person would be used to working with rubbers, but these would be stiff rubbers not highly elastic ones. I do not think it matters if such stiff rubbers are described as "elastomers" or not.

(2) A variety of structures can be used for hoses. Known hose structures include: hoses with knitted reinforcements, spirally reinforced or braided hoses, "true" braided hoses, non-reinforced hoses, flat hoses, corkscrew hoses and helix-reinforced hoses (spiral hoses).

(3) A hose of a particular structure may be useful for a wide variety of

applications.

Mr Hicks supplied a comprehensive analysis of the various catalogues in evidence demonstrating numerous examples of this. I need not detail them. One example will suffice: Tricoflex's catalogue includes a hose called Tricoclair which is described as a multipurpose hose whose applications include supplying compressed air, carrying industrial gases, and carrying foodstuffs, chemical products and water.

Mr Hinchliffe made the point that some hoses are multipurpose but others are not, being designed for specific applications. One should not assume that because there are hoses which can be used for both gases and liquids, all hoses can be so used. I accept this.

(4) A hose needs to be made of materials which are chemically compatible with the substance being conveyed. The skilled person would understand the difference in chemical structure and the properties of rubber and PVC and the consequences for their use in hoses.

(5) The hose has to be able to withstand the pressures and temperatures involved in the likely application of the hose.

(6) The same hose can be made in a range of diameters.

Again Mr Hicks gave a number of examples drawn from the Tricoflex catalogue, of which one will suffice. The Tubclair, a single layer multipurpose hose used for non-pressurised liquids and powdered foodstuffs, could be supplied in diameters from 2mm to 60mm.

(7) The skilled person would be aware of metal hose fittings and their use. Although plastic hose fittings are now widespread in Europe, metal hose fittings are widely available, and used in professional applications; and they are used when conducting burst testing.

(8) The skilled person would know that fittings may include a valve to stop water escaping when the hose is not in use.

(9) A hose designer would be familiar with the fact that a hose without reinforcement will expand under pressure. Reinforcement is present to limit that expansion to acceptable levels.

(10) Domestic water pressures are in the range 0.7 bar to 10 bar. Pressures in the UK generally range from 1 bar to 6 bar but typical pressure tends to be in the region of 2.5 to 3.5 bar.

(11) A fluid tight hose can in principle and in practice carry a gas or a liquid (subject to questions of chemical compatibility). There is no hard and fast distinction between hoses for gases and hoses for fluids (I think what is meant is liquids) including water. A hose that is suitable for a gas is (subject to chemical compatibility) likely to be suitable for carrying liquids; a hose that is suitable for a liquid could carry a gas (but with some risk of leakage if the

wrong material is selected). Designers would be familiar with the fact that hoses for gas can carry water because it is necessary for safety reasons to use water when pressure-testing them.

(12) In practice hoses of types used for air can be and are used for carrying water, including garden hoses. Examples are corkscrew hoses which are used for air as well as garden hoses, and the Tricoclair hose already referred to.

(13) The skilled person would be aware of the problem of hose storage and various solutions to that problem. Saving of space can be a concern for some users. The same space saving techniques are applicable to technical and garden hoses, such as corkscrew hoses, hoses on reels and flat hoses.

Again, subject to my comments, I accept that all this was common general knowledge at the priority date.

54. Mr Hicks had one other point which is that Mr Berardi himself saw that his hose could be used not just for water, but for gas, other non-corrosive liquids and flowable semi-solids. That I accept, but, as Mr Hinchliffe said, Mr Berardi was the inventor and not representative of the skilled person and one cannot derive much assistance as to what the skilled person would know from what he did.

55. Although logically the question of whether the Patents are valid comes before the question whether they have been infringed, I find it more convenient to consider next the question whether the Superhozes infringe the Patents (on the assumption they are valid).

The Superhoze 1 and Superhoze 2

56. The Superhoze 1 and Superhoze 2 are very similar but not identical. Like the XHose, they are expandable hoses consisting of a 2-tube design. There is an inner tube made of latex rubber, and a much longer outer tube made of a woven material. As with the XHose, the entire length of the inner tube is surrounded by the outer tube; when there is no water in the hose the inner tube is in a contracted state and the outer tube undulates or ruffles about the inner tube; and when filled with water the hose expands, the expansion being limited by the outer tube.

57. The Superhozes come in four nominal expanded lengths of 7.5m, 15m, 30m and 40m. The outer tube is roughly 2½ to 3 times as long as the inner tube (in its unexpanded state): thus for example in a Superhoze of nominal expanded length of 7.5m, the inner tube is 3m (+ 0 to 0.5m) and the outer tube 7.5m (+ 0 to 0.5m), and in one of nominal expanded length of 40m, the corresponding figures are 13.5m and 40.1m (in each case + 0 to 0.6m).

58. The difference between the Superhoze 1 and the Superhoze 2 is in the material used for the outer tube. In the Superhoze 1 it is a woven polyester (polyethylene tetraphthalate). In the Superhoze 2 the same polyester is used for the weft of the material but the warp is made of nylon. The effect is that the outer tube has slightly more give in it (but still not much). Hozelock rely on this as meaning that the outer tube of the Superhoze 2 is not made of a "non-elastic" material (as required by each of the claims said to be infringed). No other difference between the two Superhozes was

identified before me.

59. The two ends of the Superhoze (both Superhoze 1 and Superhoze 2) are identical. At each end there is a short 'sleeve', made of a clear thermoplastic elastomer, which encloses the inner tube (and is therefore between the inner and outer tube). This is about 300mm long. The ends of the inner tube, sleeve and outer tube are all secured by a metal ferrule to a (grey) hard plastic connector. That connector is in turn connected to a fitting called an 'Aquastop', a (yellow) plastic end fitting which can be connected either to a water tap connector or an outlet nozzle, and which allows water to pass when so connected, but which incorporates a valve preventing water flow when not so connected. The Aquastop can be easily removed by the consumer. A short distance from the ferrule – about 150mm in its unexpanded state and about 300mm in its expanded state – is a component that was referred to as a 'joiner'. This is a hard plastic tube about 40mm long which sits around the inner tube and sleeve, and so between them and the outer tube.

60. The joiner is glued to the inner tube. This is effected as follows. The joiner has two oval apertures, one on each side. These correspond to similar apertures in the sleeve. The apertures in the joiner are filled with silicone adhesive which bind to the edges of the apertures in the joiner and the sleeve, and to the faces of the inner tube exposed by each of the apertures. The joiner is not glued to the outer tube. Instead it is bonded to the outer tube by ultrasonic welding.

61. There is no connection of the outer tube to the inner tube between the two joiners. This allows the outer tube to ruffle up around the inner tube when the hose is in its contracted state, as it also does in the much shorter sections at each end between the ferrule and the joiner.

Infringement

62. Apart from its attacks on the validity of the Patents, two separate points are taken by Hozelock on infringement:

    (1) Both the Superhoze 1 and the Superhoze 2 have the inner and outer tubes attached at the joiners. This means that the outer tube is not "unattached" from the inner tube between the couplers, as required by claims 1 and 14 of GB 276 and claim 2 of EP 585.

    (2) The Superhoze 2 is not "non-elastic", as required by each of the claims relied on.

    As already referred to (paragraph 34 above), Mr Hicks accepted that claim 1 of EP 585 does not require the outer and inner tubes to be unattached, which means that the first point is not available in relation to that claim. He also accepted that the second point is only available in relation to the Superhoze 2, the Superhoze 1 being sufficiently inelastic to be regarded as "non-elastic" within the meaning of the claims. The effect of this is that, subject always to Hozelock's points on validity, it is not disputed that the Superhoze 1 infringes claim 1 of EP 585.

63. There was no dispute between the parties as to the approach to be adopted, following the Supreme Court decision in *Actavis UK Ltd v Eli Lilly & Co* [2017] UKSC 48

(***"Actavis"***), to a question of infringement. The principles were analysed in detail by Lord Kitchin in *Icescape Ltd v Ice-world International BV* [2018] EWCA Civ 2219 (***"Icescape"***) at [55]-[67], and can be summarised as follows (see in particular at [66]):

(1) A problem of infringement is now best approached by addressing two issues (*Actavis* at [54]).

(2) The first (issue (i)) is whether any of the claims is infringed as a matter of "normal interpretation" (*ibid*).

(3) This involves solving a problem of interpretation of a type familiar to all lawyers concerned with construing documents, the applicable principles being those affirmed in *Wood v Capita Insurance Services Ltd* [2017] UKSC 24 (*Actavis* at [58]). In *Icescape* Lord Kitchin confirmed that despite Lord Neuberger's later reference to "the literal meaning of the relevant claim(s)" (*Actavis* at [66]), this involves purposive interpretation, reading the patent through the eyes of the skilled addressee and identifying what the words of the claim would mean in their context to such an addressee (*Icescape* at [60]).

(4) To this can be added the statement by Lord Briggs in *Warner-Lambert Company LLC v Generics (UK) Ltd t/a Mylan* [2018] UKSC 56 at [92]:

> "The Claims must be construed in their context in the patent as a whole, including its summary and detailed description and the teaching which it discloses. A course must be steered between the Scylla of slavish literalism and the Charybdis of pure purposiveness, a task which recent English cases about construction generally suggest requires a constant hand on the tiller. The object is to interpret them as they would be understood by a person skilled in the art, with all the common general knowledge available to such a person as at the priority date."

(5) The second issue (issue (ii)) is whether the variant nonetheless infringes because it varies from the invention in a way or ways which are immaterial (*Actavis* at [54]).

(6) That issue is to be determined by asking the 3 so-called *Improver* questions (formulated by Hoffmann J in *Improver Corp v Remington Consumer Products Ltd* [1990] FSR 181), as reformulated by Lord Neuberger in *Actavis* at [66].

64. The 3 reformulated or *Actavis* questions are as follows (*Actavis* at [66]):

> "i) Notwithstanding that it is not within the literal meaning of the relevant claim(s) of the patent, does the variant achieve substantially the same result in substantially the same way as the invention, ie the inventive concept revealed by the patent?
>
> ii) Would it be obvious to the person skilled in the art, reading the patent at the priority date, but knowing that the variant achieves substantially the same result as the invention, that it does so in substantially the same way as the invention?
>
> iii) Would such a reader of the patent have concluded that the patentee

> nonetheless intended that strict compliance with the literal meaning of the relevant claim(s) of the patent was an essential requirement of the invention?"

"Unattached" – normal interpretation

65. Each of the relevant claims (claims 1 and 14 of GB 276, and claim 2 of EP 585) includes reference to the tubes being unattached between, or except at, the couplers as follows:

(1) Claim 1 of GB 276:

> "said outer tube being unattached from said inner tube between said first and second couplers"

(2) Claim 14 of GB 276:

> "said outer tube being unattached from said inner tube between said first and said second coupler"

(3) Claim 2 of EP 585:

> "wherein said inner and outer tubes (14, 12) are unattached, unbonded, unconnected and unsecured to each other except at the couplers (16, 18)."

It is not suggested that the slight difference in wording between these claims is of any significance.

66. Hozelock's case is that the effect of the joiners being (a) glued to the inner tube and (b) welded to the outer tube is that the outer and inner tubes cannot be said to be "unattached" between, or except at, the couplers. The "couplers" are in Mr Hicks' submission the items which connect to a tap at one end, and a fitting such as a spray nozzle at the other. He did not, I think, actually identify which component on this view was the coupler in the case of the Superhozes, but I take it to be the component which I have referred to above (paragraph 59) as the grey plastic connector, to which the inner tube, sleeve and outer tube are attached by the metal ferrule. This does not directly connect to a tap or an outlet nozzle, but can be connected via an Aquastop (which in turn connects either to a water tap connector and hence to a water tap, or to an outlet nozzle, the water tap connector and nozzle being supplied by Hozelock with the Superhoze).

67. Emson has four answers to this case. The first is that this is too restrictive a view of what a coupler is. Mr Hinchliffe's submission is that "coupler" is an ordinary English word and simply means something that joins two things together, and is used in the Patents to mean something that joins the inner and outer tubes together. There is nothing to prevent such a coupler joining the two tubes together in two places, and no requirement that the coupler has to make a join of any particular length. In the case of the Superhozes the entire end assembly from the ferrule to the joiner is therefore to be regarded as a coupler which joins the inner and outer tubes together at two places, namely the ferrule and the joiner, and this means that the outer tube of the Superhozes is indeed unattached between, or except at, the couplers.

68. I do not accept this submission. Although it is agreed that "coupler" does not have

any technical meaning, my understanding of the law is that one cannot decide what it means simply by reading the claims on their own. On the contrary, the whole of the specification, including the description and drawings, can, and should, be looked at to construe the claims. Thus at the European level Art 69(1) of the European Patent Convention (**"EPC"**) provides:

> "The extent of the protection conferred by a European patent … shall be determined by the claims. Nevertheless, the description and drawings shall be used to interpret the claims."

(I have omitted reference to a patent application). At the national level, the PA 1977 expressly provides (by s. 130(7)) that certain provisions of the Act are framed to have, as nearly as practicable, the same effects in the United Kingdom as the corresponding provisions of the EPC. One of those is s. 125, sub-s. (1) of which provides as follows:

> "For the purposes of this Act an invention … for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the … patent, … as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent … shall be determined accordingly."

(Again I have omitted references to patent applications). Art 69 EPC has been supplemented by a Protocol on its interpretation, expressly applied by s. 125(3) PA 1977, but it is not necessary for present purposes to refer to it: Art 69(1) EPC and s. 125(1) PA 1977 by themselves clearly provide that the description and drawings are to be used to interpret the claims.

69. It seems to me therefore that the skilled addressee reading the Patents would seek to understand what was meant by "coupler" in the claims by reading the description to see if that sheds any light on it. If he did so, he would find numerous references to couplers and cognate expressions in the description. These include the following (I have taken these examples from GB 276, but similar passages are found in EP 585):

> "[0022] …The outer tube is positioned around the outer circumference of the inner tube and secured to the inner tube only at the ends. The inner tube is preferably secured to the outer tube at the ends of the tube which is preferably the adapter to male and female water couplings, such as a water faucet at one end and an adjustable spray head at the opposite end.
>
> [0029] It is a still further objective of the present invention to provide a hose that can be readily coupled and uncoupled to a source of pressurized water such as a faucet on a residential or commercial property.
>
> [0044] The hose 10 employs a female coupler 18 at a first end and male coupler 16 at a second end. The male coupler 16 includes a threaded portion 20, a mid-portion 22, and a portion 24 onto which are secured the inner tube 14, the outer tube 12 and an expansion restrictor sleeve 26. The inner tube 14, the outer tube 12, and the expansion restrictor sleeve 27 are secured to the male coupler as will be described herein after.
>
> [0045] The female coupler 18 includes a threaded portion 28 on the interior of the female coupler, see Figs. 1, 3 and 8. The threaded portion 28 is constructed to receive the male threads 20 and enable coupling of one hose to another. The

> threaded portion 28 is also constructed to couple to a faucet, spigot or the like valve control typically found on the exterior of a residence or commercial property. Most water faucets on residences employ a standard size male coupler or fitting. Such couplers are known in the industry, most conventional garden hoses have a standard size female coupler or fitting which will engage such a faucet.
>
> [0046] The inner tube 14, the outer tube 12, and the expansion restrictor sleeve 27 are secured to the female coupler as will be described herein after. In the preferred embodiment the female coupler also includes a washer 29 which assures a fluid tight connection between the male and female couplers or any other male and female coupler.
>
> [0049] …For example, when the hose 10 of the present invention is utilized as a garden house around a house, coupler 18 is secure to a faucet or water outlet on an exterior wall of the house…
>
> [0051] Figs. 7 and 8 illustrate how male and female couplers 16 and 18 respectively are secured to the hose of a preferred embodiment of the present invention. In Fig. 7 the male coupler 16 includes a plurality of threads 20. The male coupler 16 also includes a tubular extension 32 which extends into the interiors of the inner tube 14, the outer tube 12 and the expansion restrictor sleeve 26…A securing device 34 encompasses the outer sleeve 26, the outer tube 12, and the inner tube 14 and secures these elements to the tubular extension 34…
>
> [0052] Fig. 8 illustrates the female coupler 18 secured to the hose of the present invention in a contracted condition. The female coupler 18 is provided with a plurality of internal threads 28. The threads 28 are designed to interact and cooperate with complementary threads 20 on a male coupler to provide a fluid tight connection between the male and female couplers 16 and 18. The female coupler 18 also includes a tubular extension 36 which extends into the interiors of the inner tube 14, the outer tube 12 and the expansion restrictor sleeve 27…A securing device 40 encompasses the outer sleeve 27, the outer tube 12, and the inner tube 14 and secures these elements to the tubular extension 36…"

Figures 7 and 8 are reproduced below:

FIG. 7

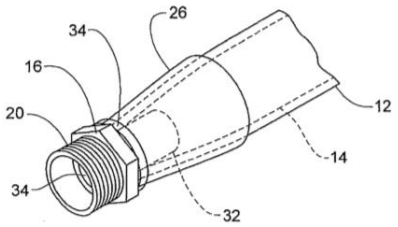
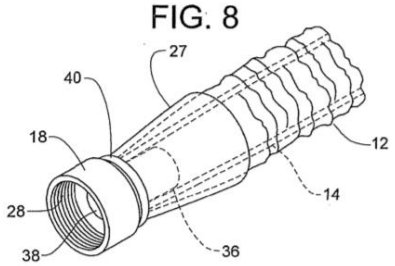


FIG. 8



70. It seems to me plain that in these passages the draftsman of the patent is not using "coupler" to mean a component which couples or joins the inner tube to the outer tube, but is using it to mean a component which enables the hose as a whole to be coupled or connected to something else, whether another hose (as in [0045]), or a source of pressurized water such as a faucet (as in [0022], [0029], [0045] and [0049]) or a fitting such as an adjustable spray head (as in [0022]). That is consistent with the description of the couplers as male and female, and the female coupler as incorporating a washer designed to enable a fluid tight connection between any male and female couplers ([0046]). It is also consistent with the illustrations in figs 7 and

8, where the coupler referred to is the threaded portion extending into the tubes (16 (and 32) in fig 7, 18 (and 36) in fig 8), to which the ends of the tubes are attached by the "securing device", namely the band around the outside (one of the two 34s in fig 7, and 40 in fig 8). In these circumstances I accept Mr Hicks' submission that the draftsman is using "coupler" to refer to the items which connect the hose to something else, a tap or a fitting such as a spray nozzle or indeed another hose.

71. Mr Hinchliffe referred to the fact that, as is very common, the description and drawings only describe one preferred embodiment of the invention. That I accept. The description for example is introduced at [0042] as follows:

> "While the present invention is susceptible of embodiment in various forms, there is shown in the drawings and will hereafter be described a presently preferred, albeit not limiting, embodiment with the understanding that the present disclosure is to be considered an exemplification of the present invention and is not intended to limit the invention to the specific embodiments illustrated."

There is a passage to similar effect at [0063] which I need not set out.

72. Mr Hinchliffe then referred me to *Fabio Perini SpA v LPC Group plc* [2010] EWCA Civ 525. This concerned a patent for apparatus and methods for glueing the tail ends of rolls of paper such as lavatory rolls (known as logs) so that they remain rolled up. The relevant claim was a method claim which referred to the glue being applied by rolling a log "over a slit from which the glue is dispensed". The detailed description and drawings were of a specific apparatus where the relevant slit was an opening formed by a pair of inclined plates, and the defendants (the alleged infringers) argued that "slit" in the claim should be construed narrowly to mean an opening formed by a pair of inclined plates. Floyd J had rejected this, holding that "slit" was an ordinary English word that meant a long narrow opening, and the Court of Appeal agreed with him. Lord Neuberger MR put it like this at [26]:

> "PCMC also argues that if one refers to certain passages in the specification of the 929 Patent, they justify the narrow interpretation of "a slit" for which it contends. The two primary passages on which PCMC relies are quoted in the judgment below at [2009] EWHC 1929 (Pat), paragraphs 51-52, and constitute descriptions of specific apparatus. But the fact that a particular type of slit in specific apparatus is called "a slit" in a document which includes a description of that apparatus, cannot justify the notion that, whenever the document uses the term "a slit", it must have the same limited and specific meaning. As Perini says in its skeleton argument, just because "the word 'slit' is used when describing the gap between the plates of a nozzle … it does not follow that 'slit' is therefore used to *mean* that." "

Mr Hinchliffe submitted that Mr Hicks was similarly trying to give "coupler" a narrow and limited meaning by reference to a description of a particular embodiment, and that this should be rejected for similar reasons.

73. I do not accept the analogy. In the *Perini* case the claim used an ordinary word (slit) with a well understood core meaning (a long narrow opening), and it is not difficult to see why the Court of Appeal took the view that just because the description and drawings described one example of a slit, that was no reason to read the claim as limited to that particular type of slit. Here the question however is a different one. It is what the draftsman meant by coupler (a much less everyday word than slit) in the

claim – did he mean, or mean to include, a component that couples together the two tubes or did he mean something else? Reference to the description and drawings to my mind indicates that he was not intending to refer to a component that joins together the two tubes but to a component that enables the hose to be connected to other things, such as other hoses, water taps and fittings. The detailed description and drawings illustrate one example of such a coupler, but they are not being used to limit the meaning of coupler to that particular example; they are being used to elucidate what the draftsman meant by coupler at all. Indeed in the case of EP 585, claim 1 (which is incorporated by reference in claim 2) itself refers to the first coupler being:

> "arranged in use to couple said hose (10) to a source of pressurized water."

74. I may add that in the first priority document, which is the patent application filed in the US on 4 November 2011 (US13/289,447), there are further uses of the word coupler which are similarly explicit: see claim 1 (the text of which I give in paragraph 195 below) which refers to the couplers coupling the hose to a source of pressurized fluid and a fluid flow restrictor. The priority document is cross-referred to in each of the Patents and as I understand it, that means that it is admissible to construe the Patents, and that the skilled addressee who was left in doubt as to the meaning of the Patents could refer to the priority document to help resolve those doubts: *Terrell on the Law of Patents* (18th edn, 2016) (***"Terrell"***) at §9-231, *Milliken Denmark AS v Walk Off Mats Ltd* [1996] FSR 292 (***"Walk Off Mats"***) at 299 per Jacob J. I was not however addressed on any of this so I have placed no reliance on this particular point; but it does seem consistent with the view I have come to.

75. For the reasons I have given I do not accept Emson's first answer to Hozelock's case: the complete end assembly from the ferrule to the joiner cannot in my judgment be regarded as a coupler within the meaning of the claims.

76. If I am wrong about that, and "coupler" in the claims means, or includes, something which joins the outer and inner tube together, I would still not accept Emson's case on this point, as I would not regard the complete end assembly as constituting a single coupler in this sense. There are two places where the outer and inner tubes are joined together, one at the ferrule and one at the joiner, which are 150mm apart. Mr Hinchliffe's submission is that that can be regarded as a single coupler with a gap in it, but that seems to me artificial: at each end of the hose there are two separate attachments in two separate places, and this cannot in my view reasonably be described as a single coupler, especially as the fact that there is not a continuous attachment between the ferrule and the joiner means that the outer tube ruffles around the inner tube in this section of the hose just as it does in the main section between the two joiners. On this view the ferrules are the couplers which join together the ends of the tubes, and the tubes are not unattached between the couplers as they are also attached at the joiners.

77. Emson's second answer to Hozelock's case is to regard the joiners as the couplers. On this view the Superhoze consists of a hose that is unattached between the two couplers, together with short additional lengths beyond the couplers. That, Mr Hinchliffe submits, does not matter as the claim is to a hose assembly "comprising" various elements, and this means "including but not limited to", so it catches a hose with extra elements: see *Terrell* at §9-322, referring to *Napp Pharmaceutical Holdings Ltd v ratiopharm GmbH* [2009] EWCA Civ 252 at [65].

78. I do not accept this answer either. First, if I am right that "coupler" is used in the claims to mean a component that can be used to couple the hose to something else, the joiner is not a coupler at all. Second, even if I am wrong about that, it is a requirement of the claims that the couplers are at the ends of the tubes, which the joiners are not. Specifically claim 1 of GB 276 refers to:

> "said outer tube and said inner tube each having a first end attached together by a first coupler and a second end attached together by a second coupler"

In my view the joiners do not attach the "ends" of the outer and inner tubes. The joiners are no doubt near the ends, but they do not attach the ends of the tubes, they attach a part of the inner tube which is some 150mm from the end (and a part of the outer tube which is rather further from the end). I do not see how that can be regarded as a matter of normal interpretation as attaching the ends, especially as there is another component, the ferrule, which does attach the ends.

79. In my judgment the Superhoze 1 and Superhoze 2 are not "unattached" between the couplers as a matter of normal interpretation of the relevant claims.

"Unattached" – Actavis questions

80. Emson's third answer to Hozelock's case is that the Superhozes nevertheless infringe because they vary from the invention in a way or ways which are immaterial. This falls to be decided by reference to the three *Actavis* questions.

81. The first question is whether the variant achieves "substantially the same result in substantially the same way as the invention, ie the inventive concept revealed by the patent." That requires identifying the inventive concept revealed by the patent. Mr Hinchliffe told me that the notion of inventive concept first came into patent law in the structured analysis to obviousness: see *Windsurfing International Inc v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 (***"Windsurfing"***), where the Court of Appeal said that the first step to be taken in answering the jury question of obviousness was to identify the inventive concept of the patent in suit (per Oliver LJ at 74), and *Pozzoli SpA v BDMO SA* [2007] EWCA Civ 588 (***"Pozzoli"***) where the Court of Appeal reformulated the *Windsurfing* analysis and Jacob LJ discussed the question of inventive concept in the context of obviousness at some length at [14]-[23].

82. For an example of the identification of the inventive concept in the context of answering the first *Actavis* question I was referred to the judgment of Lord Kitchin in *Icescape* at [72] where he says:

> "I must have regard to the problem underlying the invention and the patent's inventive core. I do not think there can be any doubt about the answer to this question. The inventive core of the patent [it] is the provision of the joint member (70) … It is this feature which makes the patented system different from the conventional systems which formed part of the common general knowledge. By contrast, integers D and E are simply common general knowledge ways of implementing that inventive concept. Focusing on that inventive core, as I must, I am satisfied the variant does achieve the same result in substantially the same way as the invention. It satisfies the aims of the patent, namely to provide a cooling member which can be installed rapidly and is reliable in operation, with which it is

> possible to proceed rapidly to the ice-forming stage, and with which a mobile ice rink can be made with a large number of different surface areas. It is true that the Icescape system has a parallel rather than a series connection between the manifolds and that this may itself confer certain advantages but also carry with it certain disadvantages, as I have explained at [53] above. But this has nothing to do with the inventive core of the patent."

83. The general idea of an inventive concept (what Mr Hinchliffe referred to as "the bit that is clever") is clear enough from these materials. At the hearing I was troubled however by the fact that they do not clearly indicate the level of generality at which the inventive concept should be stated. At its most general Mr Berardi's invention could be described as an expandable hose consisting of an elastic inner tube and a non-elastic outer tube which expands when filled with water and contracts when not. It is that which is the clever bit and which solves the problems underlying the invention, namely that existing garden hoses are heavy, bulky and liable to kink; and as Mr Hicks accepted, if the invention is stated at that level of generality, there is no doubt that the Superhozes achieve the same result in substantially the same way.

84. But that would be to ignore the wording in the relevant claims that requires the outer tube to be unattached from the inner tube, and Mr Hinchliffe did not in fact suggest that the inventive concept should be expressed at such a high level of generality. His formulation of the inventive concept was:

> "An expandable hosepipe comprising of a non-elastic outer [and] an elastic inner, that are joined together at their ends and that between the ends are unattached."

Mr Hicks for his part referred to the statement in GB 276 (at [0046]) that:

> "The outer tube 12 is preferably unattached, unconnected, unbonded, and unsecured to the elastic inner tube 14 along the entire length of the inner tube 14 between the first end and the second end and thus the outer tube 14 is able to move freely with respect to the inner tube along the entire length of the inner tube 14 when the hose expands or contracts."

On this basis he submitted that the inventive concept of GB 276 has this freedom of movement along the entire length of the hose at its heart. Mr Hinchliffe accepted that the purpose of the tubes being unconnected is so that the tubes can move freely with respect to each other, so the hose can expand and contract.

85. In those circumstances it does not seem to me that there is actually any substantial dispute between the parties as to the relevant inventive concept: it is common ground that it includes the fact that the tubes are unconnected save at the ends (so that the tubes can move freely) and I will adopt Mr Hinchliffe's formulation of the inventive concept.

86. On this basis I can now answer the first *Actavis* question. In the Superhozes, the effect of the tubes being connected at the joiners as well as at the ferrules is that the tubes cannot move freely with respect to each other along the entire length of the hose. Nevertheless it does seem to me that the Superhozes achieve substantially the same result in substantially the same way as the invention. Each of the Superhozes is a hose which expands and contracts; which has an elastic inner tube and a non-elastic outer tube (assuming for present purposes that the outer tube of the Superhoze 2 is

non-elastic); whose tubes for the great majority of their length are unattached and can move freely with respect to each other; and which is therefore light, not bulky and not liable to kink. The effect of the inner tube being attached to the outer tube at each joiner is only to prevent a very small section of the outer tube moving freely with respect to the inner tube, namely the 40mm or so which is actually attached; the section between the joiners (which constitutes by far the majority of the hose), as well as the sections at each end between the joiner and the ferrule, can and do move freely. In those circumstances I accept Mr Hinchliffe's submission that the Superhozes do work in substantially the same way as the invention. I heard some evidence from Mr Doosterlinck as to other effects that the presence of the joiner might have (by affecting the pressure in the end section of the hose), but I agree with Mr Hinchliffe that that would seem to have no bearing on the present question. It is not the presence of the joiner which constitutes the relevant difference between the Superhoze and the invention disclosed in the claims, but the attachment of the inner tube to the outer tube at the joiner, and I did not understand Mr Doosterlinck to suggest that the attachment itself (as opposed to the presence of the joiner) had any substantive effect on the way the Superhozes work. The fact that the joiner might have other advantages does not seem to me to be relevant.

87. In my judgment therefore the answer to the first *Actavis* question is "Yes".

88. Mr Hicks accepted that if that was the answer to the first *Actavis* question, the second *Actavis* question should also be answered "Yes".

89. The third *Actavis* question requires asking whether the skilled person reading the patent would have concluded that the patentee nonetheless intended that strict compliance with the literal meaning of the relevant claims was an essential requirement.

90. Mr Hicks pointed out that this is not a case of the use of terms of degree (such as "vertically", the term considered by Lord Diplock in the classic case of *Catnic Components Ltd v Hill & Smith Ltd (No 1)* [1982] RPC 183); that I accept, but that does not take matters very far, as in such a case the question of degree can be addressed as part of normal interpretation, and one does not need to get into the *Actavis* questions at all. It is noticeable that neither *Actavis* nor *Icescape* involved terms of degree.

91. Mr Hicks' main point was that the Patents referred to the inner and outer tubes being only "preferably" unattached: see for example the extract from [0046] of GB 276 quoted at paragraph 84 above. He submitted that where the patentee has said in the description that a particular element is preferable but has then specifically included it as an integer in the claim, the reader would understand that this was intended to be an essential feature.

92. I have not found this an easy question, nor one on which the authorities are of much assistance. It is implicit in the third *Actavis* question that the mere fact that the language of the claim does not cover the variant cannot be decisive, as otherwise the question would never arise: see *Actavis* at [65] per Lord Neuberger:

> "the fact that the language of the claim does not on any sensible reading cover the variant is certainly not enough to justify holding that the patentee does not satisfy

the third question."

See also *Icescape* at [98] per Floyd LJ:

> "the language of the claim alone is not to be taken as giving rise to this inference [ie that the patentee regarded something as essential]"

But apart from the language, how can one tell whether the patentee regarded strict compliance with an integer in the claim to be an essential requirement of the invention or not? Relevant considerations appear to include whether a plausible reason can be advanced why any rational patentee should want to place such a limitation on his invention (see *Actavis* at [73]), and whether the inventive core of the patent has anything to do with the particular way in which the variant differs from the claims (see *Icescape* at [74] per Lord Kitchin and at [98] per Floyd LJ).

93. In the present case the reason why it is desirable for the tubes to be unattached is explained in the Patents, for example at [0054] of GB 276 as follows:

> "Because the outer tube is unsecured to the inner tube along the entire length of the hose between the first end and the second end, the soft fabric material of the outer tube 12 can move freely with respect to the inner tube. The fact that the outer tube can move freely with respect to the inner along the entire length of the hose enables the outer tube to become folded, compressed and tightly gathered around the outside of the circumference of the inner tube along its length in the contracted condition when there is not fluid pressure within the inner tube 14. This folded, compressed and tightly gathered condition of the outer tube 12 prevents the hose 10 from kinking and also helps prevent it from becoming entangled upon itself."

That is then followed by an explanation of the advantages of a hose that does not have a tendency to become kinked or entangled.

94. It seems to me in those circumstances that it was part of the inventive core of the patent that the outer tube should be able to move freely so that it could become folded, compressed and gathered around the inner tube in the contracted state. But I do not see any plausible reason why a rational patentee would want a hose that in substance did just this to be excluded from the scope of his protection. The fact that the Superhozes have the tubes attached at the joiners as well as at the ferrules does not prevent the outer tubes from becoming folded, compressed and gathered around the inner tubes, save for the very short 40mm sections where they are attached at the joiners. In those circumstances I answer the third *Actavis* question, at any rate in relation to GB 276, "No". It follows that the Superhoze 1 and (subject to the "non-elastic" issue to be considered next) the Superhoze 2 would in my judgment infringe the relevant claims of GB 276 if the patent is valid.

95. No separate argument was addressed to me on EP 585. I have some doubts whether the position is necessarily the same. The relevant claim in EP 585 is claim 2. The only difference between claim 2 and claim 1 (which contains no reference to the tubes being unattached) is that in claim 2 the tubes are:

> "unattached, unbonded, unconnected and unsecured to each other except at the couplers."

I would have thought that where the patentee has gone to the trouble of identifying a

separate claim 2 which differs from the main claim 1 only by the addition of another integer, then it might be arguable that that by itself would lead the reader to regard the additional integer as an essential requirement of the invention claimed in claim 2. That is after all what the patentee has identified as the difference between the two claims (quite apart from the fact that in the present case the patentee has chosen to use quite emphatic language to express the point).

96. In the absence however of any submission to that effect, I do not think I should conclude that the position in relation to claim 2 of EP 585 is any different from that I have decided is the case in relation to GB 276. I therefore conclude that the Superhozes would equally infringe claim 2 of EP 585.

"Unattached" – indirect infringement

97. Emson has a fourth answer to Hozelock's case. This is based on the contention that the attachment of the inner tube to the joiner is relatively weak and in practice breaks in use, the argument being that this means that the Superhozes will in due course become hoses that are unattached between the couplers, and hence that Hozelock is guilty of indirect infringement under s. 60(2) PA 1977 by supplying the means for putting the invention into effect.

98. The short answer to this is that there is no evidence before me that the attachment to the joiner will readily break in normal use of the Superhoze. The evidence is as follows:

(1) Hozelock gave notice of experiments. These were repeated on 4 December 2018 at Hozelock's factory near Birmingham. One of the experiments consisted of taking 12 samples of the Superhoze 2 (3 of each of the 4 nominal lengths of 7.5m, 15m, 30m and 40m). These were first stretched so that all the wrinkles in the outer tube disappeared, and then filled with water at increasing pressures up to 10 bar.

(2) It does not seem to be disputed that at the end of the repeat experiments on 4 December 2018 the glue joint was found to have failed at each end of each of the 12 hoses used. What however that evidence fails to establish, as Mr Hinchliffe expressly accepted, is whether this took place when the hoses were stretched, or when they were filled with water. He said that there was no evidence that the glue join *only* broke because of the pulling and that they would not break simply by being inflated with water, but equally there is no evidence the other way. In fact Mr Hurst said that he had himself managed to break the join on 5 Superhozes by simply taking the outer tube and pulling it away from the connector. That suggests that it may indeed have been the stretching that caused the break of the 12 hoses used in the repeat experiments rather than the filling with water. But whether that is so or not, there is no evidence before me of any example of a glue joint failing when simply filled with water. I agree with Mr Hicks that if Emson had wished to prove this, they should have devised, and given notice of, an experiment to test it in the usual way.

(3) Mr Hinchliffe suggested that the pressure involved in filling the hoses would produce a force considerably larger than the force applied in stretching the

hoses. That may be so but I do not think it establishes anything. Stretching the hose applies a force along the length of the hose; filling the hose with water causes it to expand both radially and longitudinally and I do not think it is at all self-evident that it will have the same effect. It might rather have the effect of pushing the glued section of the inner tube against the joiner, thereby reducing the likelihood of the join breaking. I do not know, and do not speculate, if this is so, the point being that it requires evidence to make good this point, not argument.

(4) Finally, Mr Hinchliffe suggested that ordinary use of a hosepipe involves manoeuvring it around a garden before the hose is turned on, and that this can involve it being pulled around objects such as chair legs which would cause stretching. He said that Mr Doosterlinck had accepted this, but his answers were I think in relation to a normal hose rather than an expandable hose. It is not at all clear to me either that normal use of an expandable hose would involve the user moving it around before it had expanded, or, if it did, that this would cause any relevant stretching of it at all. I regard this suggestion as unfounded speculation.

In those circumstances I am not satisfied that Emson has established that the attachment of the inner tube to the joiner is likely to break in normal use, and I reject the claim of indirect infringement.

"Non-elastic" – normal interpretation

99. Each of the relevant claims requires the outer tube to be non-elastic as follows:

(1) Claims 1 and 14 of GB 276:

> "an outer tube formed from a non-elastic and flexible material and no metal"

(2) Claim 1 (and by reference 2) of EP 585:

> "an outer tube (12) formed from a non-elastic, soft, bendable, tubular webbing material"

As already referred to, it is not disputed that the outer tube of the Superhoze 1 is non-elastic within the meaning of these claims, so this point only affects the Superhoze 2.

100. The evidence can be summarised as follows:

(1) Both parties carried out tensiometer experiments on the fabric of the outer tubes of both the Superhoze 1 and the Superhoze 2 (and in Hozelock's case on the XHose). Hozelock also carried out experiments on complete hoses, but Mr Doosterlinck agreed that the tensiometer experiments were more relevant.

(2) Emson's experiments started with a tension of 30N (in order to eliminate wrinkles) and measured the extension of the fabric at 100N; Hozelock's experiments measured the extension between 1N and 250N, but could be used to derive a figure for the extension between 30N and 100N equivalent to Emson's. 100N is equivalent to a water pressure of about 4 to 5 bar. As already referred to it is common ground that water pressure supply in the UK

was generally limited to 6 bar and typically about 2.5 to 3.5 bar.

(3) The two sets of figures over the range 30N to 100N were not dissimilar. Emson's showed that the percentage extensions were as follows:

Superhoze 1	2.4%
Superhoze 2	7.7%

Hozelock's equivalent figures were:

XHose	1.8%, 2.5%
Superhoze 2	4.9%, 6.5%

In other words the fabric of the outer tube of the Superhoze 2 is around 2.5 to 3.5 times as elastic as that of the Superhoze 1.

(4) Mr Doosterlinck also gave the corresponding figures for the percentage extension from 30N to 250N (which he calculated as equivalent to about 10 bar), as follows:

XHose	4.17%, 4.79%
Superhoze 1	5.37%
Superhoze 2	10.88%, 14.33%, 18.55%

(5) By contrast the inner tubes (which are the same for the Superhoze 1 and the Superhoze 2) are very much more elastic. Emson's experiments showed that the percentage extension from 1.5N to 100N was about 630%, and from 30N to 100N was about 270%.

(6) Mr Hurst had also calculated what he called the ratios of the extension of the inner and outer tubes. This was done by taking the "fractional extension" of the inner tube (that is, the final length of the inner tube divided by its starting length) divided by the fractional extension of the outer tubes. To take a simplified example, if an inner tube expands by 270% between 30N and 100N, its fractional extension would be 3.7; the comparable fractional extension of the outer tube of the Superhoze 1 at 2.4% extension would be 1.024, and that of the Superhoze 2 at 7.7% would be 1.077. The calculated values would therefore be as follows:

Inner tube compared to Superhoze 1:	3.7/1.024 = 3.61
Inner tube compared to Superhoze 2:	3.7/1.077 = 3.44

Mr Hurst's figures in fact differ somewhat, and I have some doubts about the arithmetic, but the precise calculation does not matter and in any event I did not find this calculation of any particular assistance. It is evident even without the calculation that compared to an inner tube that expands by 270%, that is to 3.7 times its original starting length, an outer tube that expands by less than

> 10% under the same load is very much less elastic, whether the actual extension is 2.4% or 7.7%. Unsurprisingly it was readily accepted by Mr Doosterlinck that as compared to the elasticity of the inner tube, the difference between the elasticity of the Superhoze 1 and the elasticity of the Superhoze 2 was very small. That is all that I think this comparison was designed to show.

101. So far as normal interpretation is concerned, it is common ground that "non-elastic" as used in the Patents does not mean perfectly non-elastic. "Elastic" deformation of a material means that when a force is applied to it it deforms and that when the force is removed it returns to its original dimensions. But in this sense many materials that a layman would not normally think of as elastic, such as steel or concrete, are elastic – indeed Mr Doosterlinck said that all materials will expand if a force is applied. The Patents must therefore be using "non-elastic" in a non-technical sense; hence Hozelock's acceptance that the Superhoze 1 is "non-elastic" despite the fact that it does expand to a small extent.

102. Emson's case is that what was meant was that the outer tube had to be substantially non-elastic compared to the inner tube, or very much less elastic than the inner tube. The teaching of the Patents is that the purpose of the outer tube is to constrain the expansion of the inner tube: see for example the following from GB 276:

> "[0043] …The inner tube 14 is formed from a material that is elastic with an elongation ratio of up to 6 to 1 and can expand up to 4 to 6 times its relaxed or unexpanded length when a pressurized fluid is introduced into the inner tube 14. In the preferred embodiment the length is expanded 2.5-2.8 times the contracted length and the inner tube 14 is natural latex rubber. However, other synthetic materials, which have elastic properties similar to rubber can also be used. The elastic inner tube 14 expands radially outwardly or laterally, with respect to its length. The radial expansion of the inner tube 14 is constrained by the maximum diameter of the non-elastic outer tube 12…
>
> [0048] In the expanded or extended condition, illustrated in Figs. 3-5, the inner tube 14 is expanded or stretched. In this expanded condition, the non-elastic outer tube 12 constrains the lateral expansion of inner tube 14….Since the outer tube 12 will not expand laterally or longitudinally, the actual length and width of the outer tube 12 determines the maximum length and maximum width of the hose 10 in its expanded condition. Thus the diameter and length of the outer tube 12 determines the length and diameter of the hose of the present invention upon the application of fluid pressure to the interior of the elastic inner tube 14. This diameter and length of the non-elastic outer tube is the final diameter and the final length of the hose 10 when it is in its expanded condition and in use to transport or deliver a fluid."

That in Mr Hinchliffe's submission means that the skilled person would understand that "non-elastic" was being used to mean very much less elastic than the inner tube so that it could do the job of constraining the expansion of the inner tube.

103. Hozelock's case is that the skilled person would understand that "non-elastic" could not just be a relative term but must have some absolute meaning. Mr Doosterlinck's evidence was that in conventional garden hoses an acceptable degree of deformation under pressure would be 4-6%. Hoses that expanded more than that would be at risk of delamination. Although that would not apply to an expandable hose (where delamination is not an issue) the skilled reader would have that threshold or limit of 4-

6% in mind when considering what would be meant by non-elastic in the context of garden hoses.

104. On these arguments I prefer Emson's construction. I accept Mr Doosterlinck's evidence as to the normal limits of expandability in the case of conventional garden hoses, but I do not see that the skilled reader would read that across to the very different context of an expandable hose where the purpose of the outer tube being non-elastic is quite different. It is not to avoid the risk of delamination but to act, as the Patents explain, as a constraint on the expansion of the inner tube. As the passage cited above from [0043] indicates, the Patent contemplates that the inner tube will be made of a highly elastic material such as natural rubber, with a preferred embodiment which expands to 2.5 to 2.8 times. The purpose of the outer tube, which by contrast is non-elastic, is to constrain this expansion and stop the inner tube bursting. For this purpose it does not have to be (and it appears could not be) completely non-elastic; it is enough if it is very much less elastic than the inner tube. In my judgment that is what was meant by "non-elastic" in the context of the Patents.

105. I accept that the outer tube of the Superhoze 2 is non-elastic in this sense: even though it is more elastic than the outer tube of the XHose or the Superhoze 1, it is very much less elastic than the inner tube. I did not understand Mr Hicks to contend to the contrary. I therefore find that the Superhoze 2 as well as the Superhoze 1 would infringe the relevant claims.

"Non-elastic" – Actavis questions

106. I will briefly consider the *Actavis* questions in case I am wrong on the question of normal interpretation. So far as the first *Actavis* question is concerned, I consider the Superhoze 2 does achieve substantially the same effect in substantially the same way as the invention in the Patents. Mr Doosterlinck accepted that the outer tube in the Superhoze 2 constrains the expansion of the inner tube and stops it bursting; and that a customer who had a Superhoze 1 and was given a Superhoze 2 would probably not notice any difference.

107. Mr Hicks accepted that if the first *Actavis* question were answered "Yes", then the second should be as well.

108. So far as the third *Actavis* question is concerned, I answer this "No". There does not seem to me any reason to suppose that the skilled reader would read the Patents as indicating that the patentee intended strict compliance with the literal meaning of "non-elastic" to be an essential requirement. If that had been intended, one might have expected rather more explanation in the specification as to what the patentee understood the parameters of non-elastic to be, and why it was important to stick strictly to them.

109. In those circumstances even if I am wrong on the normal interpretation of "non-elastic" I would hold that the Superhoze 2 was an immaterial variant that nevertheless infringed the relevant claims.

Conclusions on infringement

110. I can summarise my conclusions on infringement as follows:

(1) So far as being "unattached" is concerned, this is not a requirement of claim 1 of EP 585, but it is a requirement of claims 1 and 14 of GB 276 and claim 2 of EP 585. The Superhoze 1 and Superhoze 2 are not "unattached" within the normal meaning of these claims; but they are variants which are within the scope of protection as explained in *Actavis*.

(2) So far as "non-elastic" is concerned, this is a requirement of all the claims relied on. The Superhoze 1 is accepted to be "non-elastic", and I find that the Superhoze 2 is also "non-elastic" within the normal meaning of these claims; if I am wrong about that, it is a variant which is within the scope of protection on the *Actavis* basis.

(3) On the assumption that the Patents are valid, both the Superhoze 1 and the Superhoze 2 therefore infringe each of the claims relied on.

Prior use

111. Hozelock claims that the Patents are obvious over two pieces of prior art, namely Ragner and McDonald, referred to in paragraph 9 above. It also claims that they are obvious having regard to prior use: this is based on the work that Mr Berardi did in his garden on the prototypes, and what could be seen by a notional skilled person standing on the public road at the front of Mr Berardi's house.

112. I will start with the latter. This raises a number of questions. There is first the question of what Mr Berardi did; there is then the question of what the notional skilled person could have seen, what he could have deduced from what he saw, and whether in those circumstances the invention would have been obvious. But there is also a point taken by Emson as to whether this counts as prior use at all. I will consider the points in that order.

Facts: what Mr Berardi actually did

113. Emson disclosed 41 Videos. They were made by Mrs Berardi between 24 August and 3 November 2011. They were all taken either inside Mr and Mrs Berardi's house or in the garden.

114. In 2011 Mr Berardi was living at 223 Skylark Point. Skylark Point is a small cul-de-sac (some 7 or 8 houses) in a development called Egret Landing in Jupiter, Florida. Although there is a clearly marked entrance to Egret Landing there is no gate or barrier at the entrance or anything suggesting it is private property, and it is not disputed that Skylark Point is a road open to the public. Mr Berardi's house, like the others in Skylark Point, is a detached house. It is set back from the road, the distance from the kerb at the side of the road (there is no pavement or footway) to the front of the house being some 37 feet. On the right of the house looking at it from the road (which I will refer to as the right hand-side), where there is a garage, the distance is a little less as the road bends slightly towards the house. The house sits between the road at the front, a small lake at the back and two other detached houses (1075 Lakeshore Drive and 225 Skylark Point) and has garden on all four sides, mostly consisting of grass but with some borders and trees and shrubs. There is no hedge, wall, fence or other boundary feature at the front, the grass coming right up to the kerb of the road. A person standing on the road would therefore have an

uninterrupted view of anything done in front of the house and (although more distant) of anything done at the sides of the house.

115. Mr Berardi had the Videos made to document the process of reducing his invention to practice, reduction to practice being a feature of US patent law which has no equivalent in the UK. Videos 1 to 33 were taken between 24 and 30 August 2011. They show the construction and testing of various prototypes, mostly taken inside the house although a few are taken outside. It is not necessary to detail them as Hozelock does not place any reliance on them.

116. Videos 34 to 39 were taken on 13 September 2011 and were all taken outside. Videos 35 to 39 were taken on the right-hand side of the house. With the benefit of the videos it is possible to identify what Mr Berardi did, as follows (not all of these steps are shown in the Videos, but those that are not either must have happened, or were confirmed by Mr Berardi):

(1) Mr Berardi had 5 10-foot sections of white 1" PVC pipe which he attached to the top of 6 sawhorses roughly 10 feet apart to make a pipe 50 feet long. This construction extended down the right-hand side of the house, the end of the pipe nearer the road (the 'near end') being roughly level with the front of the garage, or just slightly back from it, (and hence about 33 to 35 feet from the kerb) and the other end (the 'far end') towards the back of the house and the lake.

(2) He had a bundle of 4-foot wooden dowels (about 16 in all) which he had connected together with flexible tubing to make a sort of folding rod longer than the pipe. He fed this folding rod through the pipe from the near end, until it was sticking out of both ends.

(3) He had a length of yellow tubular webbing slightly over 50 feet long. He attached one end to the end of the rod sticking out of the pipe at the near end, went to the far end, and pulled the rod and yellow material through the pipe until it came out the far end. He then returned to the near end where he clamped the near end of the yellow tube to the pipe; at the far end he left a piece hanging out. He therefore now had the yellow tube running all the way through the pipe.

(4) He then inserted the flexible rod through the pipe inside the yellow tube. (This step is not shown in the Videos and it is not apparent which end he fed it through from, but nothing turns on this).

(5) He had a length of green elastic latex tubing, which was about 17 feet long. He attached one end to the rod at the near end, went to the far end, and pulled the rod and green material through to the far end. At the near end the green material was prevented from going down the pipe because he had two fittings attached to the end, a blue plastic fitting and a brass tap fitting, so this involved stretching the 17 foot tube to a length of over 50 feet.

(6) When it emerged at the far end, he clamped the yellow outer tube and the green inner tube to an additional length of PVC pipe stuck on the end of the 50 foot pipe. He then clamped the two tubes together. At this point he therefore

had the green inner tube stretched to 50 feet inside the yellow outer tube which was itself inside the pipe.

(7) He then unclamped the outer and inner tubes from the additional length of pipe and let go. The inner tube quickly contracted to its original length of about 17 feet, shooting down the pipe and taking the outer tube with it.

(8) He then walked to the near end, removed the assembly from the pipe and held it up. At this stage the two tubes were clamped together at what had been the far end, but were not attached at what had been the near end (although the inner tube had the blue plastic fitting and brass fitting attached). The yellow outer tube was wrinkled about the green inner tube in what is the now familiar appearance of an expandable hose in its contracted state.

(9) Mr Berardi, holding the assembly, walked over to the front of the garage where a conventional hose was on the ground, which he briefly picked up and then dropped again.

(10) He then went inside where he added a male standard garden hose fitting to one end and a female standard garden hose fitting to the other end.

He had now constructed his first 50-foot hose. The inner tube however broke before he could test it.

117. Mr Berardi did not construct another 50-foot hose until 2 November 2011. There are no videos of that day, but he set up the sawhorse and pipe construction on the left-hand side of the house, and it is not disputed that he would have gone through a broadly similar process to that on 13 September 2011 to construct the hose. There is however no evidence as to the precise steps taken.

118. Videos 40 and 41 were taken the next day, 3 November 2011. They show Mr Berardi testing the hose he had made the day before. The steps he took were as follows:

(1) He attached the end of the (yellow) expandable hose to a (green) conventional garden hose lying on the ground by the left hand side of the house. There was some debate about how far back from the road this took place. Mr Hicks suggests it was by a tap on the outside wall of the house, and hence about 57 feet from the road as measured by Mr Berardi. I consider however that this underestimates it. It can be seen to be just in front of the fourth sawhorse from the road, that is almost 30 feet from the front of the pipe; and the front of the pipe can be seen from Video 41 to be either parallel with the front of the house (itself 37 feet from the road) or at any rate no more than a foot or so closer to the road. I would therefore judge the green hose to be about 65 feet from the road rather than 57 feet. But in the end I do not think it matters as it does not make any material difference to what could be seen from the road.

(2) Mr Berardi bent down and opened a valve on the connector at the end of the green hose. That filled the yellow hose with water which began to expand. He walked with the yellow hose towards the front of the sawhorses and sprayed water from it. He was at this point just by a white item in the grass (a city water outlet). Mr Hicks put this at about 7 feet from the kerb; Mr Berardi

thought it could be 10 or 12 feet. Again I do not think it makes any significant difference although it looks to me from all the available evidence about 9 feet.

(3) Mr Berardi then put the nozzle down, went back to the connector with the green hose to open the valve fully, returned and picked up the nozzle, and sprayed the hose again.

(4) Then he walked back to the connector with the green hose, turned the valve off and sprayed water out of the hose, which contracted. By this stage the connection between the green and yellow hoses had been pulled slightly closer to the road than when first connected. Mr Hicks put it at 20 feet from the near end of the pipe, and 47 feet from the road: these are in my view underestimates. I think it was slightly over 2 sawhorses' length from the front of the pipe, or about 21 feet, and that the front of the pipe was itself some 36 to 37 feet from the road, giving a total of about 57 to 58 feet from the road.

The test was a success and the next day Mr Berardi filed his US patent application.

What could the skilled person see and deduce?

119. Hozelock relies on the notional skilled person standing on the edge of the road at Skylark Point and observing what Mr Berardi was doing on 13 September (construction of the first 50 foot hose), 2 November (construction of the second 50 foot hose) and 3 November 2011 (testing of the second 50 foot hose). It does not contend that the Patents would be obvious having regard to what happened on any single day, but seeks to combine what took place on 13 September and 3 November, or on 2 and 3 November, or on all three days.

120. Both experts gave their views on what the skilled person could have seen, and were cross-examined on them, but in the end I think this is largely a matter of my own impression of what could have been seen. I have had regard both to the Videos and to the Reconstruction Videos, making allowances for the fact that the latter do not actually show what happened but are reconstructions, and are not always 100% accurate (although Mr Iaciofano and Mr Boughton were no doubt genuinely trying to make them so). They are nevertheless of some utility as the Videos are taken by Mrs Berardi standing quite close to Mr Berardi whereas the Reconstruction Videos attempt to show what might be visible by an observer standing on the road, and hence some way distant from the events. On this material my findings are as follows.

13 September 2011

121. So far as 13 September is concerned, the skilled person would see and understand the following. First, that Mr Berardi was using the pipe to make something. There would however be no particular reason for the skilled person to think that what he was making was a garden hose.

122. Mr Doosterlinck suggested two reasons why the skilled person would nevertheless understand that Mr Berardi was making a garden hose product. The first is the comparison with the conventional garden hose at the end of Video 39. With the benefit of the soundtrack it is clear that Mr Berardi was comparing the lightness of his new hose with the weight of the conventional hose, which he briefly picks up and

drops. But it is not suggested that the skilled person would have been able to hear the explanations given by Mr Berardi on the Videos or the conversations between him and his wife. Without the commentary, and without the benefit of hindsight, I agree with Mr Hinchliffe that this fleeting incident (lasting 2 or 3 seconds at most) is not enough to have conveyed to the interested observer that what Mr Berardi had made was also a hose – the observer, even if he had a clear view of it (itself very uncertain as Mr Berardi was standing in front of the conventional hose when he picked it up and thus in the line of sight), would not know why Mr Berardi had done this. Mr Doosterlinck accepted that a non-skilled person would maybe not make the connection, but thought that a skilled person, living in the hose business every day and seeing hoses everywhere, would do so. But as Mr Hinchliffe submitted, the skilled person comes to the prior art without any preconceptions and in particular without any expectation that it will be of any particular assistance in his field (see *Inhale Therapeutics Inc v Quadrant Healthcare plc* [2002] RPC 21 at [47] per Laddie J); and the thing that Mr Berardi had made was quite unlike a conventional garden hose. It was light enough to be held in one hand and very flexible, and insofar as it was possible to see its appearance at all (as to which see below), it did not have the characteristic smooth appearance of conventional garden hoses. The skilled person would be familiar with the characteristics of garden hoses, which had not changed their essentials for many years, and I do not think it would occur to him that the thing Mr Berardi had made was a hose.

123. Mr Doosterlinck's second reason for the skilled person understanding that what Mr Berardi had made was a garden hose was the tap connector, which in the US are often made of metal. The difficulty with that is that all that can be seen is there is something at the end of the thing Mr Berardi had made – it is quite difficult to spot (as Mr Doosterlinck accepted) and it is impossible to conclude that it is a hose fitting at all.

124. In those circumstances I find that the skilled observer would not have understood on 13 September 2011 that what Mr Berardi was making was a hose.

125. The skilled person would have seen the yellow material being fed down the pipe. He would have seen that it was soft and flexible. As to whether it was a tube, Mr Doosterlinck accepted that he would not have known that it was a tube when seeing it being fed down the pipe, or even when seeing the green material being fed down the pipe, as it would be impossible to see that the green material is being passed through the yellow material. Mr Doosterlinck however thought the skilled observer would conclude that it was a tube when Mr Berardi removed the completed assembly as the green material had all but disappeared (there is in fact a small piece hanging out of the far end, but it is doubtful if one could have seen that: it is not easy to see even when one knows it is there, and without knowing to look for it, I do not think an observer would notice it from over 30 feet away). With some hesitation, I think he is right about this. Mr Hinchliffe suggested that for all the skilled observer knew Mr Berardi might have attached a short piece of green material to the end of the yellow material and cut off the rest but I do not quite see how that works. The skilled observer sees the green material being fed into the pipe. I think he also sees that there is something on the end (now known to be a hose fitting) stopping the green material being pulled right through the pipe – there is no Video of this but Reconstruction Video 36b shows it and in this respect I think does show what would have been visible – and in those

circumstances I do not see how Mr Berardi could be thought to have pulled the green material all the way through the pipe as it would have meant pulling it out of the fitting which would have dropped to the ground.

126. On the other hand I do not think the skilled person would understand that the yellow material was non-elastic (taking that to mean, as explained above, very much less elastic than the inner tube). I did not understand Mr Doosterlinck to put forward any particular reason why the skilled person would conclude that the yellow material was non-elastic. Indeed Mr Hicks in cross-examination of Mr Hurst in another context had suggested a thought experiment to him under which an expandable hose had an outer tube of 10 metres and an inner tube of 5 metres, but both made of equally elastic material, and suggested that such a hose would be wrinkled when contracted and smooth when expanded and so have the same appearance as an expandable hose with an elastic inner and a non-elastic outer tube. Mr Hurst did not accept that that was so, but I did not understand why: Mr Hicks' suggestions seemed to me to be well founded. But it follows from that that one can tell nothing from the appearance of the assembly that Mr Berardi made on 13 September about how elastic or non-elastic the yellow material was. Even if the skilled person had worked out that the green material was elastic and responsible for the wrinkled appearance of the yellow material in the final assembly (as to which see below), there would still have been no reason for him to conclude that the yellow material was non-elastic. Mr Hicks in closing did not suggest that there was, but relied instead on what could be seen on 3 November, as to which see below.

127. As to the green material, unless the skilled person has concluded that what Mr Berardi was making was a hose, there is no reason for him to have concluded that it was a tube. One cannot see that it is (as Mr Doosterlinck accepted) and without knowing what the assembly is for, there is no reason why it should be. Whether he would have concluded that it was made of elastic material is less easy to be confident of. It was suggested that the skilled observer would have seen Mr Berardi having to pull the green material hard to stretch it; but this would have been at the far end, and I doubt this would have been observable. Mr Hicks suggested that the green material was obviously shorter than the yellow tube during assembly, but I do not think this could be clearly seen. Mr Doosterlinck relied on two matters for his conclusion that the skilled person would know that the green material was elastic: (i) the fact that the completed assembly snapped back when released and dropped out of the near end of the pipe (although he did not suggest that the observer could have heard an audible snap) and (ii) the wrinkled appearance of the completed assembly. There was a dispute whether the skilled person would have been able to see the wrinkles from the road. I think Mr Doosterlinck is probably right about this – it is obvious once one knows what to look for, but even without the benefit of hindsight, one can in my view see that the final assembly does not have a smooth appearance but a wrinkled one. I also think Mr Doosterlinck was right about the first point. It is clear from Video 38 that when released the completed assembly shot back down the pipe with some speed; and Video 39 suggests that Mr Doosterlinck was right that some 30-40 cm comes out of the near end. Mr Hinchliffe suggested that might be the force of gravity on the brass connector, but I accept Mr Doosterlinck's evidence that it is likely to have popped out of the near end at some speed, and that the skilled observer would understand that that is likely to have been because there was some elasticity involved. And I also accept that given the wrinkled appearance of the yellow material, he would

have concluded that it was the green material inside that was supplying the elasticity.

128. My conclusions on what the skilled observer would have understood from what he could see on 13 September 2011 are as follows. He would have understood that Mr Berardi had made something with a yellow outer tube and an elastic green inner material, with a wrinkled appearance and some sort of fitting on one end; but he would not have understood that what Mr Berardi had made was a hose, that the yellow outer tube was non-elastic, or that the green inner material was a tube.

2 November 2011

129. Although Mr Berardi accepted that he made another 50 foot hose on 2 November 2011, this time on the left-hand side of the house (where the pipe and sawhorse construction can be seen the next day) and that the procedure for making it was "pretty much the same" as on 13 September, there are no Videos and no detailed evidence of what he did. No detailed conclusions can therefore be drawn as to what the skilled person would have seen.

3 November 2011

130. On 3 November 2011 the skilled person would have seen Mr Berardi using a hosepipe. The skilled person would not have been able to see that the hose was initially wrinkled: when Mr Berardi attached it to the conventional hose, it was lying on the grass about 65 feet from the observer. Mr Doosterlinck agreed that this was so. Nor would the skilled person in my judgment have been able to see the hose expand when filled with water. This is because Mr Berardi is walking towards the road with the hose behind him, and by the time he gets close enough to the road to be seen clearly the hose is already expanded. Mr Doosterlinck, when asked about this, said he was not sure. There remains the question whether the skilled person would have seen the hose contract when the pressure is released. Mr Doosterlinck thought he would; Mr Hurst that he would not. Having viewed Video 41 several times (and Reconstruction Video 41), I prefer Mr Hurst's opinion. If one knows that the hose is an expandable hose one can see it contracting. But unless one is looking for it, it is not at all obvious that this is what is happening: Mr Berardi pulls the hose back towards him and most of the contraction takes place on the ground between the second and third sawhorse from the near end – that is some 50 feet from the road – and it would not be easy to see it in the grass.

Mosaicing

131. Mr Hicks does not suggest that what could be observed on any one day would have been sufficient to make the XHose obvious. I agree. On my findings what could be seen on 13 September would not have led the skilled observer to conclude that what Mr Berardi had made was a hose at all, and there is no evidence that any more could be seen on 2 November; what could be seen on 3 November did not look at all novel – it just looked like a man using a hose in his garden. Indeed Mr Doosterlinck accepted that what could be seen on 3 November (even if, which I have not accepted, this included the hose contracting) would not by itself lead one to the XHose.

132. It is therefore necessary for Hozelock to add together what could be seen on more than one day in order to establish its case on obviousness. Mr Hinchliffe said that was

impermissible mosaicing. It is well established that it is not permissible, either for the purposes of novelty or obviousness, to put together two separate disclosures or prior uses, but there is an exception where one cross-refers to the other, and (at least in relation to obviousness) where the second disclosure would cause the skilled addressee to consult the first: *Terrell* at §§11-61 to 11-63, 12-29 to 12-30. Applying those principles here, the question to be asked I think is whether it would have been clear to the skilled person watching Mr Berardi on 3 November that what he was doing was testing the thing he had made on 2 November (or a thing similar to that which he had made on 13 September).

133. I have not found this an easy question. If one knows that what Mr Berardi made on the earlier occasions was a hose, it is easy enough to see that the skilled person would make the connection on 3 November and assume that what he was watching was Mr Berardi testing the hose he had previously made. And I also accept that if the skilled person could have seen on 3 November that the hose in its contracted state had the same distinctive wrinkled appearance that I have found he could have seen on 13 September, he would have realised it was likely to be the same object. But I have found that the skilled person would not have understood on 13 September that what Mr Berardi was making was a hose (and there is no evidence that he would be better informed on 2 November); and that he could not have seen the wrinkling on 3 November. In those circumstances I do not think it would have been clear to him that what Mr Berardi was doing on 3 November was testing the same object as he had seen being made on 13 September (or 2 November when there is in any event no evidence as to quite what could have been seen). Unless he was expecting to see a hose being tested, I do not think the skilled person would think it clear that what Mr Berardi was doing was testing anything – he would just see him using a hose in his garden. I therefore accept Mr Hinchliffe's submission that it is not possible to put together the information available on the separate days. It is not like Mr Hicks' example of a person watching a ship being built over a period of time. It follows that there was no sufficient disclosure.

134. I will briefly indicate that if I am wrong about the mosaicing, I would have accepted that the invention disclosed in the Patents would have been obvious. Since it does not in my view arise, I will not go into the question in great detail, but if the skilled person put together his observations on 13 September and 3 November, he would have seen that Mr Berardi had made a hose which had an elastic inner tube and an outer tube. He would not on my findings have seen the hose expand under water pressure and contract when the pressure was removed, nor would he have seen that the outer tube was non-elastic. But putting together the wrinkled appearance of the hose when made, and its smooth appearance when used, together with his understanding that the inner tube was elastic, I see no reason to doubt that the skilled person would understand that the hose must have expanded in use. And if he then asked himself what the outer tube is doing, it does seem to me that he would have concluded that it is there to constrain the inner tube, and that it would be obvious, even if it would not be essential, for it to be very much less elastic than the inner tube, and to be unattached except at the ends so that it could wrinkle around it. That is the inventive core of the Patents.

Was what Mr Berardi did a relevant prior use?

135. On my findings, the point of law as to whether what Mr Berardi did amounted to a

prior use that disclosed information to the public does not arise. But the point was fully argued, and was said by Mr Hinchliffe to be a novel point, and I should deal with it in case I am wrong on the mosaicing.

136. The starting point is ss. 2(2) and (3) PA 1977. These provide as follows:

> "2(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.
>
> …
>
> 3 An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above)."

These sections (ss. 2 and 3 PA 1977) are among the sections referred to in s. 130(7) PA 1977 as having been framed to have the same effects as the corresponding provisions of the EPC. The relevant provisions are Arts 54(2) and 56 which provide:

> "54(2) The state of the art shall be held to comprise everything made available to the public by means of a written or oral description, by use, or in any other way, before the date of the filing of the European patent application.
>
> 56 An invention shall be considered as involving an inventive step if, having regard to the state of the art, it is not obvious to a person skilled in the art…."

It follows that the relevant statutory question is whether matter has been "made available to the public … by use."

137. Mr Hinchliffe referred me to *Merrell Dow Pharmaceuticals Inc v H. N. Norton & Co Ltd* [1996] RPC 76 (***"Merrell Dow"***) at 86 per Lord Hoffmann:

> "Making matter available to the public within the meaning of section 2(2) therefore requires the communication of information. The use of a product makes the invention part of the state of the art only so far as that use makes available the necessary information."

In this respect the PA 1977 changed the law: see *ibid*. Previously a patent could be invalidated for lack of novelty if it had been anticipated by prior use, even if the prior use were secret or uninformative. But under s. 2(2) PA 1977 a secret prior use, or one that conveys no relevant information, is not something that makes the invention available to the public and hence part of the state of the art. The use must itself make the necessary information available to the public.

138. Mr Hinchliffe's submission is that what Mr Berardi did in his garden did not communicate any information to anybody. Nobody was in fact standing on the road watching him. There was some evidence that one or two of his neighbours saw him from time to time working in his garden but there is no suggestion that they were either close enough to see, or had any interest in discovering, quite what he was

doing. In those circumstances Mr Hinchliffe said that what Mr Berardi did did not make any information available to the public within the meaning of s. 2(2) PA 1977.

139. What then does it mean to make information available to the public? Certain points are well established, as follows:

(1) The information need not be widely disseminated. If it is actually communicated to a single person who is free at law and in equity to use it, that suffices: *Terrell* at §§11-19 to 11-20, *Bristol Myers Co's Application* [1969] RPC 146 at 155 per Lord Parker CJ:

> "if the information, whether in documentary form or in the form of the invention itself, has been communicated to a single member of the public without inhibiting fetter that is enough to amount to a making available to the public."

That was a decision under the Patents Act 1949 but reflected long-standing authority. The same applies under the PA 1977: *PLG Research Ltd v Ardon International Ltd* [1993] FSR 197 (***"PLG"***) at 226 per Aldous J.

(2) In the case of disclosure by a written publication, it is not necessary to prove that anyone actually read it. It is sufficient if it is made available to the public, for example by being placed on the shelves of a public library, no matter how obscure or remote the library, or in what language it is written: *Terrell* at §§11-21 to 11-22, *Lux Traffic Controls Ltd v Pike Signals Ltd* [1993] RPC 107 (***"Lux"***) at 133 per Aldous J, *Walk Off Mats* at 311 per Jacob J, *Unilin Beheer BV v Berry Floor NV* [2007] EWCA Civ 364 at [46] per Jacob LJ.

(3) Information can also be made available to the public by being disclosed orally. I was not referred to any case exemplifying this but it is expressly contemplated by s. 2(2) PA 1977 and Art 54(2) EPC. It follows from (1) above that it would be sufficient for an invention to be orally disclosed to at least one person free at law and in equity to use it. Mr Hinchliffe said that there must however be at least one person to hear an oral disclosure: if the inventor recites the details of his invention in an empty room, that is no disclosure of anything, even if the room is one to which the public have access. I revert to this point below.

(4) Information can also be disclosed by putting a product embodying the invention on the market. Again a single sale to a person who is not under any restriction will suffice, and will operate to disclose anything that the purchaser could discover by examining it. Hence:

> "In most cases, prior sale of the product will make available information as to its contents and its method of manufacture, but it is possible to imagine circumstances where that will not happen."

(*PLG* at 225 per Aldous J).

(5) A product need not be sold to be made available to the public. It is sufficient if it is available to be examined. I was referred to three examples of this type of case:

(a) In *Lux* the patent related to traffic light control systems. A prototype was used on public roads, and made available to contractors who were free in law and equity to examine it. Aldous J held that that made available to the public everything that they, or a skilled person, could have gleaned by doing so.

(b) In *Walk Off Mats* the patent related to washable floor mats. Sample mats embodying the invention were hired out to customers by way of trial; the customers knew nothing of the trial or that the mats were different from those previously supplied, but were free to inspect them, conduct non-destructive laboratory tests on them, or ask an expert to examine them. Jacob J held that that was sufficient to make available to the public the information that such an examination would reveal.

(c) In *Wagner International AG v Earlex Ltd* [2012] EWHC 984 (Pat) (***"Wagner"***) the patent related to paint spray guns. A prototype was exhibited at a stand at a show, and members of the public could, and did, try it out for themselves. Floyd J proceeded on the basis that the question was what a skilled person would have been able to deduce from examining the device at the show.

As these cases illustrate it is not necessary to prove that anyone has in fact examined the article, or instructed an expert to do so, or would have any reason to do so. An article that can be examined by a member of the public without any obligation of confidence is made available to the public and amounts to a disclosure of the information that could be obtained by such an examination, and it does not matter that no such examination in fact took place, just as it does not matter that a publication in a library is not in fact read.

(6) Nor need an article be capable of being physically handled, examined or tested. If it is exhibited or shown to the public, or even simply visible in public, this is a disclosure of the information that the public could obtain by looking at it. In *Lux* Aldous J referred to the case of *Luchtenberg* T 84/83 1979-85 EPOR 76 where a car mirror embodying the invention had been used in public and the features could have been seen by members of the public. He also made the point that the information thereby conveyed may, on the facts, be limited:

> "There is a difference between circumstances where the public have an article in their possession to handle, measure and test and where they can only look at it. What is made available to the public will often differ in those circumstances. In the latter case it could be nothing material; whereas in the former the public would have had the opportunity of a complete examination."

140. Those being the principles, none of which were disputed (with the possible exception of Mr Hinchliffe's example of oral disclosure to an empty room), how does that apply to the work that Mr Berardi carried out in his garden? Mr Hicks submitted that the law is plain and that the authorities establish or illustrate a brightline test that is determinative of the present case, namely that if someone standing in a public place

could see something, that is potentially a relevant disclosure. It does not matter whether anyone actually saw it or not; what matters is whether the information was accessible to the public in the sense that it was available to be seen by a member of the public if they had been there and looked.

141. There are undoubtedly statements, and examples, in the authorities which go a long way to support Mr Hicks' proposition, as follows:

(1) In *Lux* Aldous J said (at 133):

> "It is settled law that there is no need to prove that anybody saw the disclosure provided the relevant disclosure was in public."

(2) Aldous J also referred in *Lux* (at 134) to *Union Carbide* T 245/88 1991 EPOR 373, where articles (vaporisers) were not sold to the public but could have been seen over a fence and where the Board appears to have contemplated that such a disclosure could have invalidated the patent (although it did not do so on the facts).

(3) In *Walk Off Mats* Jacob J referred to *Availability to the Public* GO1/92 [1993] EPOR 241. Here the Board held that Art 54(2) EPC makes no distinction between the different means by which any information is made available to the public, and specifically rejected the suggestion that the public should have any particular reason to analyse a product put on the market:

> "It is the fact that direct and unambiguous access to some particular information is possible, which makes the latter available, whether or not there is any reason for looking for it."

(4) Jacob J added (at 311):

> "The rule in *Lux* and *Availability to the Public* sometimes seems harsh when the prior use is by the patentee. Likewise it seems harsh when the publication is in written form but is in an obscure language and a document placed in an obscure library: a leaf in a forest is available to the public even if the wise man hid it there. But the rule provides a "brightline" test – avoiding subjectivity and most questions of degree ("undue burden" remains)."

(5) In *Folding Attic Stairs Ltd v Loft Stairs Co Ltd* [2009] EWHC 1221 (Pat) (***"Folding Attic Stairs"***), Mr Peter Prescott QC was concerned with disclosure on private factory premises. He expressly distinguished that from disclosure in a public place, of which he said (at [83]):

> "The law must draw the line somewhere, as I have said, and it does so by adopting the rule that inasmuch as the public had a right to be there, they are deemed to have the right to access the information. In the same way, if it is proven that all sorts of members of the public could enter private factory premises, no obligation as to confidentiality being imposed, the law will consider that whatever could be seen there has become part of the state of the art. In those circumstances the law cannot start speculating about who did or did not see the thing."

(6) Mr Hicks also referred me to the EPO Guidelines for Examination, which are not binding but which he submitted showed the same approach:

> "7.2.1 General Principles
>
> … If, on the other hand, an object could be seen in a given place (a factory, for example) to which members of the public not bound to secrecy, including persons with sufficient technical knowledge to ascertain the specific features of the object, had access, all knowledge which an expert was able to gain from a purely external examination is to be regarded as having been made available to the public.
>
> …
>
> 7.2.3 Use on non-public property
>
> As a general rule, use on non-public property, for example in factories and barracks, is not considered as use made available to the public, because company employees and soldiers are usually bound to secrecy, save in cases where the objects or processes used are exhibited, explained or shown to the public in such places, or where specialists not bound to secrecy are able to recognise their essential features from the outside…"

142. Mr Hinchliffe however put forward a number of arguments why there was here nothing made available to the public. First, he said that this was a transient or ephemeral use, and should be regarded as akin to an oral disclosure. Just as an oral disclosure requires an actual recipient, so the physical demonstration in Mr Berardi's garden required an actual observer.

143. I will assume for the moment that Mr Hinchliffe is right that an oral disclosure requires an actual recipient (although for reasons given below I think this will in fact depend on the circumstances). Nevertheless I do not see in the authorities any suggestion that the transience or ephemerality of the disclosure is a relevant consideration, or that different rules apply depending on how long the information was made available for. It would also give rise to impossible questions of degree. Suppose Mr Berardi left his prototype hose in his garden for all to see for weeks on end: that could scarcely be thought of as a transient use and on the authorities would be regarded as making available to the public whatever information could thereby be seen without it being necessary to prove that anyone actually looked, but how long would he have to leave it there before his use ceased to be transient? Or suppose a spray paint gun were exhibited at an exhibition stand but no-one came to the stand: how long would it have to be on the stand before the use ceased to be transient? This is the very opposite of a brightline rule and I do not think it can be right.

144. Mr Hinchliffe's second point was that Mr Berardi's garden was private property. If he had been working in his kitchen, he would not have been disclosing anything to the public, even if in theory someone could have looked through his kitchen window. The same should apply to working in his garden, even if it could be seen from the road. He referred to *Folding Attic Stairs* at [86] where Mr Prescott said:

> "it seems to me that if information that is available for viewing on private premises by a small and defined class of visitors is to become part of the state of the art, otherwise than by a legal fiction, that information must be actually imparted to at

> least one human mind which is free in law to divulge it to anyone else as he pleases. It should not be enough that it could have been imparted, but was not."

But Mr Prescott was dealing with private factory premises to which the public did not have access, but only a limited number of visitors. He expressly contrasted that with a case where all sorts of members of the public had access to private premises (see paragraph 141(5) above). I do not think his judgment lends any support to Mr Hinchliffe's submission. As for the inventor working at his kitchen table, what people do inside their own home might well be regarded as private and subject to an implied obligation of confidence (as Mr Hicks accepted), but the mere fact that something is done on private property does not necessarily mean it is confidential if it is in full view of a public street.

145. Mr Hinchliffe indeed submitted that the onus was on the person seeking to invalidate the patent to establish that the notional recipients of the information would have been free in law and equity to use the information they saw. That may be so, but an earlier suggestion that there was some particular aspect of Florida law that affected this question was abandoned before trial, which means that the relevant law is assumed to be the same as English law, and under English law information is not confidential unless there is some particular reason to treat is as such. I do not think that a casual observer of what Mr Berardi was doing in his garden would have any particular reason to regard what he saw as having the necessary quality of confidence.

146. There remains one final submission of Mr Hinchliffe's. Mr Berardi's evidence was that Skylark Point, a small cul-de-sac in a residential area, was not a busy road and that the only people likely to be there were residents or their visitors. It would have been quite obvious if someone had been standing watching him from the road. Although not an expert in patent law (and certainly not in UK or EU patent law), he knew enough at the time to appreciate that he could not tell anyone else about his invention if he wanted to get a patent. He would have felt uncomfortable if someone was watching him and said he believed he would have packed up his equipment and materials and taken it into his house. In cross-examination it was suggested that he knew that the US had at the time a first-to-invent system of patent law rather than a first-to-file system and so might have thought it did not matter if he did some work in public, but he said he did not think of that at all. Otherwise he was not cross-examined on this aspect of his evidence and it seems quite credible (as Mr Hicks accepted) that he would indeed have stopped had he seen someone watching what he was doing. I have no reason to reject his evidence and I therefore find, on the balance of probabilities, that if anyone had stood on the road of Skylark Point watching Mr Berardi on 13 September (or 2 November), he would have packed up his equipment and either waited until the visitor had left, or at least taken it round to the back of his house where it would be out of sight of the road.

147. Mr Hinchliffe submitted that this made a difference. No authority was cited on the point, and so far as anything I was shown is concerned, it does appear to be a novel point. Having read and re-read all the authorities I have referred to above, I have come to the conclusion that I should accept Mr Hinchliffe's submission.

148. It is one thing to say that if the public is given access to information, in whatever guise, that information is made available to the public and it does not matter that no member of the public in fact took up the opportunity: cf *Folding Attic Stairs* at [86]

where Mr Prescott said he understood that the French and German texts of the EPC convey the flavour of "made accessible to the public". Putting a publication in a library makes it accessible to the public, and so available to be read, even if no-one does: it could have been read and the law does not require you to show that it was. Similarly putting a traffic light controller on a public road, or giving contractors access to it, makes it accessible to the public and it could have been observed, and the information that could have been thereby obtained is therefore available to the public, even if no-one stops to look at it; a mat hired to a customer could have been examined, even if it is known for certain that no-one did.

149. But it is quite another thing to say that the law treats information as available to the public when no member of the public could in fact have accessed it. If it is right as a matter of fact (as I have found that it is) that if any member of the public had tried to observe Mr Berardi in his garden, Mr Berardi would have stopped what he was doing, it seems a misuse of language to say that what he was doing could have been observed, even in theory. If anyone had tried to observe him they would not have seen anything because he would have packed everything up. In other words although any member of the public could have turned up at Skylark Point and stopped to look, had anyone done so, whether a skilled person or anyone else, he would not have been given access to any information. That seems to me to be very different from a publication left in a library for all to read if they choose, or an article left in a public place for all to see if they choose.

150. This analysis may also provide an answer to Mr Hinchliffe's example of the inventor talking out loud in a public but empty place. I do not need to decide the point but on the view I take it would all depend on what he was doing. It is quite difficult to think of plausible scenarios where this might actually happen in the real world but if, for example, the inventor advertised a public lecture and, even though no-one came, proceeded to give it so it could be recorded for his own purposes, that would on the view I take be an oral disclosure that was accessible, and hence made available, to the public and it would not matter that no-one had in fact turned up. But that would be very different from the inventor talking out loud to himself while taking a walk along a deserted but public footpath over the moors. If in the latter case he would have stopped talking as soon as any member of the public was close enough to hear, I do not think he would have made anything available to the public.

151. It follows that in the present case the information was not in my judgment in fact "made available to the public" within the meaning of s. 2(2) PA 1977. I therefore hold that the obviousness attack based on the prior use by Mr Berardi in his garden fails, even if I am wrong about the mosaicing.

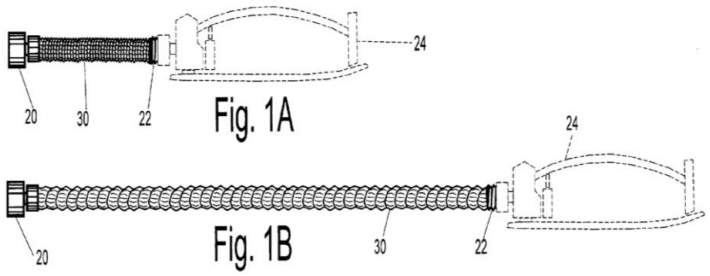
Obviousness over Ragner

152. The basic teaching of Ragner is a hose that has a spring providing a biasing force. The hose can be either a vacuum hose (in which case the biasing spring exerts an extending force) or a pressure hose such as a garden hose (in which case the spring provides a retracting force). In the case of a garden hose the effect is to make a hose which retracts when not in use but expands under water pressure when in use.

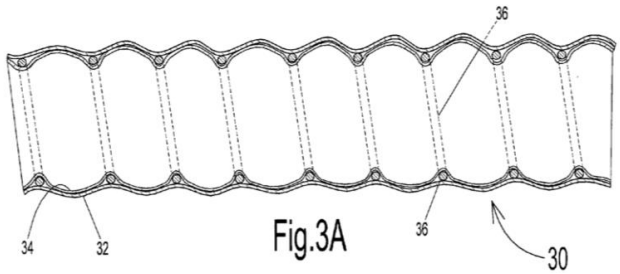
153. In *Tristar* a very similar obviousness attack on GB 276 based on Ragner was considered by Birss J, and I can conveniently take a more detailed description of the

relevant parts of Ragner from his judgment as follows:

> "37. Ragner describes the idea of hoses for carrying fluids which are retractable or extendable. The vast majority of the disclosure is focussed on two things. One is a garden water hose which expands in length in use as a result of water pressure. The other is a vacuum cleaner hose which works the opposite way round. In both cases the hoses consist of coiled springs and cover material. They are short when not in use and then extend when they need to be used. In the water hose case the extension is caused by connecting the hose to a water supply whereby the water pressure acts against the spring to extend the length of the hose. When the supply is turned off the spring contracts and the length of the hose reduces. In the vacuum case the hose is always connected to a vacuum line. When not in use the vacuum is high whereas in normal operation the vacuum is somewhat lower. As the vacuum reduces for normal operation the spring expands and the hose therefore extends in length.
>
> 38. An example of the water hose disclosed in Ragner is shown in figures 1A and 1B. The figures show [a] hose connected to a garden sprinkler:



> 39. In paragraph [0054] Ragner explains that the hose body can be made with a thin-walled flexible material and both ends may be made with standard garden hose connectors. Ragner states that almost all water nozzles and sprinklers provide significant restrictions in the flow of water through them to increase the pressure within the hose sufficiently to cause it to extend as shown in figure 1B (above).
>
> 40. The detailed construction of the water hose is shown in figure 3A as follows:



> 41. This detail is explained in paragraphs [0056] and [0057]. The hose has a biasing spring (36) which can be integrated with the body of the hose or can be internal or external. In the example there is a cover material 32 on the outside and a cover material 34 on the inside. Vinyls or other polymers may be used to make the cover materials. The cover materials are flexible enough to allow the hose to expand and contract. Cover material 34 on the inside provides most of the pressure support. The spring acts as a support structure for the hose cover material 34 to keep it from expanding radially too far. Cover material 32

> basically provides a cover for the spring and helps hold material 34 in place. Cover material 32 can be eliminated if cover material 34 is moulded around the spring coils sufficiently that cover 34 maintains its place on the spring. There is a sentence which states that in an alternative design the spring is allowed to slide freely with respect to the hose material.
>
> …
>
> 43. The validity arguments really start from passages in the disclosure of Ragner which I have not yet addressed. In places Ragner sets out a more general disclosure and includes various other suggestions. Although the abstract refers always to the spring, in places Ragner uses the wider expression "biasing means" (e.g. paragraph [0004], paragraph [0107]). The reader can see that Ragner has at least contemplated the idea of something other than a spring being the biasing means. At paragraph [0060] Ragner addresses the different pressure states and refers to the biasing force as including both the spring bias and any biasing caused by the material which makes up the hose. Ragner then states:
>
> > "In most designs the biasing of the flexible cover material of the hose is designed to be small compared to the biasing caused by the spring. However, in some designs, for special purposes, the cover material may represent a significant portion of the bias force. In fact, if desired, the hose may obtain all its biasing force from the cover material, and not need a separate metal or composite spring at all."
>
> 44. Similarly in paragraph [0107] Ragner refers to the materials from which the spring may be made but also states:
>
> > "[…] Even the hose cover material itself can be used as the biasing means if made of a resilient material that provides consistent restoring force. The biasing spring(s) can also be placed on the interior or exterior of the hose. Even elastic bands can be used to bias a linearly retractable hose. […]"
>
> 45. There was a dispute about what sort of material would be understood as "resilient material". I will return to the argument below. The reference to resilient material in paragraph [0107] is at least a disclosure of material which is elastic."

154. As already referred to (paragraph 81 above), in *Pozzoli* the Court of Appeal reformulated the *Windsurfing* approach to obviousness. The structured approach as so reformulated is as follows (*Pozzoli* at [23] per Jacob LJ):

> "(1) (a) Identify the notional "person skilled in the art";
>
> (b) Identify the relevant common general knowledge of that person;
>
> (2) Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
>
> (3) Identify what, if any, differences exist between the matter cited as forming part of the "state of the art" and the inventive concept of the claim or the claim as construed;

> (4) Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?"

155. I have already identified the skilled person and the common general knowledge. As to inventive concept, I have accepted Mr Hinchliffe's formulation, which was essentially common ground between the parties (paragraph 84 above), and which I repeat for convenience here:

> "An expandable hosepipe comprising of a non-elastic outer [and] an elastic inner, that are joined together at their ends and that between the ends are unattached."

I think there should be added to that a reference to it being a garden water hose. This is part of the claims. It makes no difference in the context of Ragner but is significant for obviousness over McDonald for reasons set out below.

156. The third *Pozzoli* step requires me to identify the differences between what is disclosed by Ragner and this inventive concept. The essential difference is the idea of having two separate tubes, the inner elastic one providing the expansion and contraction and the outer non-elastic one constraining the expansion, the two tubes not being bonded together except at the ends.

157. This is quite unlike the main embodiment described in Ragner. There the biasing force is provided by the spring, and although there are two layers or "covers", they are not separate but bonded together with the spring between them. The purpose of the inner one is described in [0057], where it is referred to as cover material 34, as follows:

> "Cover material 34 provides most of the pressure support and may have a mesh of fibers within a more flexible material to help withstand higher pressures…Cover material 34 on the inside of the spring coil providing most of the pressure holding ability of the hose."

Mr Doosterlinck accepted that the skilled person would understand from that that what Ragner is describing is a material like polythene that is able to withstand pressure.

158. The purpose of the outer one is also given in paragraph [0057] where it is described as cover material 32, as follows:

> "Cover material 32 can be molded on top of spring coils 36 (compression biased spring) and cover material 34 to hold the entire system together….Cover material 32 basically provides a cover for the spring and also helps hold cover 34 in place on the spring coils. Cover material 32 can be eliminated if cover material 34 is molded around the spring coils sufficiently that cover 34 maintains its place on the spring."

As Mr Doosterlinck accepted, what Ragner is saying is that the purpose of the outer cover is to hold the spring and inner cover material together.

159. So far the hose described by Ragner is nothing like the XHose, again as Mr Doosterlinck agreed. The case for Hozelock really depends on the two short passages in [0060] and [0107] cited by Birss J in the extract above, where Ragner teaches that if desired the hose may obtain all its biasing force from the cover material and not

need a spring at all.

160. Mr Hinchliffe said that Ragner was a long and repetitive document which would make it difficult for the skilled person to focus on these suggestions, but as I understand the law this is not a relevant consideration. All material forming part of the state of the art is deemed to be considered carefully and properly by the skilled person: see *Terrell* §§12-63 to 12-66, *Asahi Medical Co Ltd v Macopharma (UK) Ltd* [2002] EWCA Civ 466 at [21] per Aldous LJ:

> "Of course any prior art document relied on must be deemed to be read properly and in that sense with interest."

The skilled person does not necessarily expect that any particular piece of prior art will provide an answer to any problem he has in mind, but that is a different point. I proceed therefore on the basis that the skilled person would read and notice these paragraphs and consider whether they contain anything worth pursuing. But there is nothing here which explains how a hose with the biasing force provided by the cover material itself and without a spring would work, or even what it would look like, and certainly nothing suggesting that in such a case the hose would have two tubes, the inner one elastic and the outer non-elastic, not bonded together.

161. That brings me to the fourth *Pozzoli* question. This is ultimately a sort of jury question but is informed by the experts' views. Mr Doosterlinck's opinion was that the skilled person would consider that one of the obvious ways in which the invention could be implemented would be to start with a two layer hose; dispense with the spring and provide the biasing force from one of the layers as suggested by [0060] and [0107], the obvious one being the inner layer so that it would be protected by the outer one; use the outer layer to limit the expansion of the hose; and leave the two layers unconnected so that they could slide freely.

162. Mr Hurst's opinion was that the skilled person who thought about dispensing with the spring would think there was no need for the outer cover, as its purpose is to protect the spring and hold the system together. But he would then be left with the problem of finding a material that both provided the biasing force and the resistance to pressure. That would lead him to conclude that the suggestion of dispensing with the spring had not been thought through; there would certainly be nothing to lead him to two tubes, unconnected save at the ends.

163. I prefer Mr Hurst's opinion on this question. Mr Doosterlinck's opinion seems to me to require the skilled person to put together disparate bits of Ragner without there being any teaching in Ragner to suggest he should, or any other obvious reason to do so. Thus although Ragner does refer to two covers, these are not described as independently moving covers but as two layers of a single construction, the purpose of the outer layer being to protect the spring and hold the structure together. I agree with Mr Hurst that if one dispenses with the spring there is nothing in Ragner to suggest you should nevertheless keep the outer cover. As Mr Doosterlinck accepted, his view also requires the skilled person to change the purpose of the two covers, that is to change the inner one from one providing pressure resistance to one that was elastic and provided no pressure resistance, while changing the outer one from one protecting the spring to one providing pressure resistance.

164. Moreover Mr Doosterlinck's view requires the skilled person to introduce the idea of the two layers being unconnected so that they could move freely in relation to each other. This is nowhere taught or even hinted at in Ragner. Mr Doosterlinck referred to a statement in [0057] where it says:

> "Alternative designs may allow the spring to slide freely with respect to the hose material."

He suggested that this envisaged the two covers being unconnected so that the spring could move freely between them. But it does not say that, and although with the benefit of hindsight and knowledge of the XHose one can envisage such a thing, I do not think it would be at all obvious to the skilled person who had never seen anything like the XHose. His common general knowledge would encompass hoses for different purposes and made of different materials but it is not suggested that there were, before the XHose was invented, any hoses in any context that had two independently moving layers in this way. If the skilled person had thought about what Ragner meant by this single sentence (nowhere explained, expanded on or depicted), I think he would have referred back to the statement in [0056] that:

> "Alternatively, spring 36 may not be solidly attached to the hose at all, but simply positioned around the hoses [sic] exterior surface, or positioned within the hoses interior."

That plainly envisages a spring either wholly outside the hose or wholly inside the hose, not one sandwiched between the two cover layers, and in that context it makes perfect sense to suggest that the spring ("not … solidly attached … at all") would slide freely with respect to the hose material. I do not see that that would lead the skilled person to think of two tubes moving freely with respect to each other.

165. I therefore find that it was not obvious to get from Ragner to the claims in the Patents. It is, as Mr Hicks accepted, quite a leap and would in my judgment require a level of inventiveness to think of the concept of two tubes unconnected save at the ends. Indeed Mr Doosterlinck's final opinion, when it was suggested to him that someone who did not know about the XHose before reading Ragner would not come up with the idea, was that he could not say. I notice that in *Tristar* Birss J reached the same conclusion on obviousness over Ragner for much the same reasons (see at [60]-[62]), although for reasons already given I have reached my own views on the evidence adduced before me without being influenced by his views.

166. Mr Hicks had one further submission on this part of the case which was that Mr Berardi in fact knew about Mr Ragner's idea and met him, and it was this that prompted Mr Berardi to start work on the XHose. That he said tipped the scales in favour of Hozelock's position. I will say straightaway that I do not think it does: the notional skilled person is of course assumed to be uninventive, and the fact that something might trigger a thought in the mind of someone such as Mr Berardi who is undoubtedly inventive does not I think tell you anything about whether something would have been obvious to an uninventive person.

167. Quite apart from that, the evidence does not support the submission. Mr Berardi's evidence was as follows. On 23 August 2011 there was a meeting at his house attended by him and by Mr Ragner (and a couple of others). Mr Berardi was

interested in Mr Ragner's idea, had some weeks before looked at a video produced by Mr Ragner of his hose, and had scanned a patent that Mr Ragner had obtained (it is briefly referred to in the Patents in terms similar to the description in Ragner). Mr Ragner was trying to raise money for the commercial production of his hose, and at the meeting demonstrated to Mr Berardi a prototype, which looked like a vacuum cleaner hose and consisted of two layers sealed together bonded around a spring, similar to that described in Ragner. Mr Berardi said that it worked but it really did not work that well, and when they left he realised that they did not have any chance of making what they said they would and he therefore decided he was not going to work with them. The next day he went out and bought the parts to make the first prototype of the XHose: Video 1 dated 24 August 2011 duly shows the parts that he bought laid out on his kitchen worktop. His evidence was that he had had the original idea for what became the XHose some time before when working in the gym with an expandable gym device, but it was only after deciding not to get involved with Mr Ragner's hose that he decided to see if he could take his own idea forwards.

168. I accept this evidence. I find nothing in it which suggests that the teaching in Ragner makes the inventive concept of the XHose obvious or that casts any doubt on the conclusions I have come to. I find that the attack on the Patents based on obviousness over Ragner fails.

Obviousness over McDonald

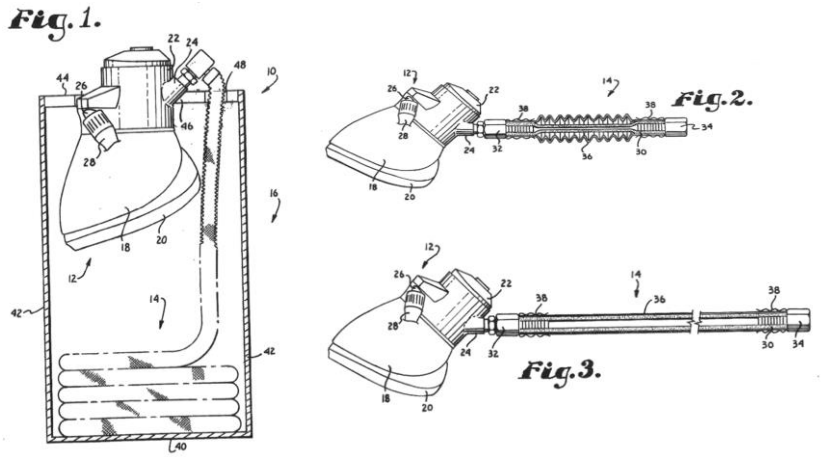
169. McDonald is concerned with a hose, described as "self-elongating", for supplying oxygen to an oxygen mask for aviation crew.

170. In *Tristar* Birss J also had to consider an obviousness attack based on McDonald and it is again convenient to reproduce his description of McDonald as follows:

> "70. McDonald describes a way of providing oxygen to crew on an aircraft. There is a mask and a hose carrying the oxygen from the aircraft supply to the mask.
>
> …
>
> 74. The hose is described as being self-elongating. The hose has an inner tube and an outer sheath. In his report, Mr Sinclair described how the hose in McDonald is supposed to work in the following terms:
>
> > The inner tube is made of elastomeric material which will expand in length when gas pressure is applied inside it. The longer outer, tube or sheath is made of a non-expandable, non-elastic material which is pleated along its length and into which the inner tube is assembled and attached at its ends. As the inner tube expands, the outer non-elastic tube prevents radial expansion of the inner tube whilst allowing axial expansion of the inner tube. This causes the pleated form of the outer tube or sheath to straighten out and therefore lengthen together with the inner tube which remains inside and attached to the outer tube. When the gas pressure is reduced inside the inner tube, both tubes reduce in length, such that the hose can be stored compactly.
>
> 75 Therefore the hose in McDonald is supposed to expand and contract in the same way as the hose of the Blue Gentian patent and uses the same sort of

combination of an elastic inner tube and a non-elastic outer tube to achieve this. However Mr Sinclair's view was that it was very unclear from the specification of McDonald how the assembly described operates in practice. The problem relates to the handling and stowage of the assembly and the way in which the pilot uses it in practice. To explain this one needs to look more closely at McDonald.

76. Figures 1 to 3 of McDonald are as follows:



77. The hose itself can be see[n] in figures 2 and 3 with the pleated outer sheath 36 made of fabric and the inner tube 30 made e.g. from silicone rubber. The hose has threaded fittings 32 and 34. Fitting 32 attaches to the mask while fitting 34 attaches to a box mounted gas fitting which is not shown. The mask includes a regulator (22).

78. Figure 1 shows the arrangement with the hose stowed in a box. The box has a hinged cover 44. The stowage of the hose in the limited space available on an aircraft flight deck and the need to be able to put on the mask quickly (in 5 seconds or less) are important elements of McDonald's disclosure (e.g. paragraph [0004] – [0007]). In the event of cabin depressurisation the pilot grasps the mask and pulls it up. This causes the hinge cover to open and facilitates easy removal of the mask. The pilot pulls the mask to his or her face. During mask deployment the hose assembly self-elongates from a relaxed condition (e.g. Fig 2) into a fully extended condition (fig 3). This gives the pilot an additional length of hose to facilitate donning of the mask. The relaxed condition facilitates easy stowage of the mask assembly both originally and after use. Given that the hose is secured to a connector in the box it will retract itself and the mask back into the box."

Birss J went on to consider the particular points raised before him by the experts in that case, which I need not refer to.

171. McDonald (unlike Ragner) is a short document. With the knowledge of the XHose and the benefit of hindsight (not of course the statutory test), it is striking how closely the invention anticipates the elements of the XHose, and these are not hidden away in obscure asides but placed upfront and exemplified in the embodiment described. Thus the Abstract on the very first page includes the following:

"a flexible, self-elongating hose assembly (14) … the assembly (14) is designed so that when the mask (12) is pulled from the box (16), pressurized gas passing

> through the hose assembly (14) serves to inflate and axially expand the assembly (14) to a deployed length greater than the relaxed length thereof. The assembly (14) preferably includes an inflatable elastomeric inner tube (30) together with an exterior sheath (36) of woven or braided material which restricts radial expansion of the tube (30) while permitting axial expansion thereof. In preferred forms, the deployed length of the assembly (14) is up to three times greater than the relaxed length thereof."

Here therefore are found the ideas of an inflatable elastomeric inner tube, an outer sheath of woven or braided material that constrains its expansion, the hose having a relaxed state when not in use and an expanded state when in use up to three times as long, and the expansion coming from a pressurized fluid, in this case gas.

172. Other passages include the following:

> "[0002] …More particularly, the invention is concerned with such assemblies wherein a self-elongating gas hose assembly is employed which, when pressurized, axially expands to a significant extent. This gives the user a relatively long effective hose length, while avoiding the problems of handling and stowage typical with conventional hoses.
>
> [0015] The hose assembly 14 is best illustrated in FIGS. 2 and 3 and is designed so that the end thereof remote from mask 12 may be coupled with a conventional connector within box 16. The assembly 14 includes an inner, resilient, expandable tube 30 secured to endmost threaded hose fittings 32 and 34, together with an outer sheaf 36 formed of woven or braided material. The sheath 36 is secured to the ends of the hose assembly by means of crimp ferrules 38. Thus, the fitting 32 is secured to coupler 24 of mask 12, whereas the opposite fitting 34 is threaded onto the box-mounted gas fitting (not shown).
>
> [0016] In more detail, the tube 30 may be formed of an elastomeric material, and particularly those selected from the group consisting of silicone rubber materials. The sheath on the other hand is preferably formed of "Nomex" flexible fabric; the sheath could also be formed of other suitable materials such as Kevlar, Nylon or monofilament. The sheath 36 has a length which is two to three times the length of the inner tube 30. As best seen in FIG. 2, in the relaxed condition of the assembly 14, the sheath 36 is in a gathered or shirred condition along the length of the unexpanded tube.
>
> [0019] In the present instance, however, during mask deployment the hose assembly 14 comes into play in order to self-elongate from a relaxed condition (e.g. FIG. 2) to a fully extended position (e.g. FIG 3). This effectively gives an additional length of hose to facilitate donning of the mask. At the same time the hose in its relaxed condition allows easy storage of the mask assembly, both originally and after use of the mask. Furthermore, given that the hose is secured to a connector within the box 16, after use the hose will "retract" itself and the oxygen mask back into box 16. This aids significantly in restowage, since the hose does not require the extent of gathering and coiling typical of conventional hose assemblies."

These passages therefore disclose more details of the materials for the two tubes (resilient, expandable, elastomeric and exemplified by silicone rubber for the inner; woven, braided, flexible and exemplified by among other things Nylon for the outer tube or sheath); they also disclose the idea of the outer tube being secured to the ends

of the hose assembly by crimp ferrules; the idea that in its relaxed state the outer tube is gathered or shirred around the inner tube (as illustrated in Fig 2 and suggesting that it is not otherwise attached); and the idea that the ends of the hose assembly are secured to conventional hose connectors. They also refer to one of the advantages of the invention, namely that the hose retracts itself after use which makes it easier to store.

173. If one compares this with for example claim 1 of GB 276, there is very little in the latter that is not foreshadowed in McDonald, apart from the fact that claim 1 refers to a garden water hose assembly, and has various other references to water flow or water pressure and the like. Indeed it is notable that in *Tristar* Birss J, who had to consider the question of novelty over McDonald, found that the hose in McDonald satisfied all the elements of claim 1 other than that of being a garden water hose assembly (at [88]-[91]).

174. But that of course does not answer the statutory question of obviousness, which I will address using the *Pozzoli* structured approach. The first two questions have been answered above. The third *Pozzoli* question is also in effect identified above: the difference between McDonald and the inventive concept of the Patents is that McDonald is not a garden water hose assembly. As such it does not expand by the operation of water pressure and does not have a water-flow restrictor.

175. The fourth *Pozzoli* question is whether, viewed without any knowledge of the alleged invention as claimed, those differences constitute steps which would have been obvious to the person skilled in the art. Mr Doosterlinck's opinion was that they do. He thought that the skilled person would immediately see that the construction described in McDonald could be used to make an expandable garden hose. Mr Hurst however thought that a garden water hose designer would find McDonald confusing and not thought through particularly well and would be likely to put it to one side.

176. I propose to address this question by considering in turn each of the points relied on by Mr Hinchliffe in closing (which incorporate the points made by Mr Hurst). First, he referred to the fact that McDonald comes from an entirely different field to garden water hoses, namely aerospace. Mr Doosterlinck accepted that he and his colleagues were not familiar with the aerospace industry, that he did not regularly review patents which dealt with products for that industry, and that Tricoflex did not make hoses for the aerospace industry. All of that would, Mr Hinchliffe submitted, be likely to make the skilled person uninterested in McDonald.

177. I have already said that the skilled person is deemed to read the whole of the prior art carefully and properly. I accept that the more remote the field of technology from his own, the less likely it is that the skilled person would expect to find anything of interest: see the comments of Laddie J in *Inhale v Quadrant* at [47]. But I have found that the skilled person is not specifically a garden hose designer but a designer of hoses in general; and I accept Mr Doosterlinck's evidence that such a hose designer is familiar with the idea of transposing a hose structure from one application to another, and that he only has to read the title of McDonald with its reference to "Self-elongating oxygen hose…" to conclude that this might be of interest to him even though the hose is designed for use in a very particular and very different field. And, again as Mr Doosterlinck said, McDonald contains two drawings showing the relaxed and expanded state which clearly illustrate the expanding hose. I find that the skilled

person would not in those circumstances read McDonald in the expectation that because it was concerned with aviation it was likely to be of no interest; on the contrary he would read it with an interest in how this novel type of hose worked.

178. Mr Hinchliffe then said that McDonald was addressing issues that would not arise in garden hoses. In particular one of the issues mentioned by McDonald (at [0004]) is the need for crew masks to be capable of being donned in 5 seconds or less, something that plainly has no relevance to garden hoses. On the other hand, McDonald also refers (at [0006]-[0007]) to the fact that available flight deck space has become more precious and that there is a need for a hose assembly to be made in a more compact design. In fact I think these two issues are really treated by McDonald as facets of the same problem: what McDonald seeks to provide is a hose that is long enough to facilitate donning of the mask (see [0019]) but which when not in use can be stored compactly (see [0008]). Mr Doosterlinck naturally accepted that garden hose designers were not operating under the same severe space constraints. But that does not mean that a space-saving hose would be regarded by a hose designer as irrelevant to garden hoses. On the contrary it is one, indeed the first, of the problems that the Patents are expressed to address: GB 276 starts off with a reference to the fact that a notable problem with conventional garden hoses relates to their storage, with many consumers not having room for a garden hose storage device [0003], and there being many situations where it is beneficial to store a hose in as little a space as possible [0004]. Indeed the corkscrew or helix garden hoses, although entirely different in design from the XHose, were also intended to address the need for a compact but extendable hose. Admittedly GB 276 also refers to two other problems with conventional hoses, their weight and tendency to kink, which are not referred to in McDonald (although McDonald at [0019] does refer to the hose not requiring the extent of gathering and coiling typical of conventional hose assemblies), but I do not think this undermines the fact that the skilled person would regard the space-saving advantages of McDonald as not limited to the particular demands of a flight deck but as potentially applicable more widely.

179. Mr Hinchliffe next referred to the fact that garden hose design had not really changed in many years. The hose in McDonald looks nothing like any garden hose pipe the skilled person has ever seen. This means that the skilled person, not used to expanding hose pipes, would be unlikely to make the leap to a garden hose pipe; and that he is not used to thinking about fundamentally different designs for garden hoses as, as far as he is concerned, they do not change.

180. I accept that the "mindset" of the skilled person can be a factor preventing him from seeing something as obvious: see *Dyson Appliances Ltd v Hoover Ltd* [2001] RPC 27 (and on appeal [2001] EWCA Civ 1440) where the mindset in the vacuum cleaner industry was such that no-one would think of dispensing with a bag, and the skilled person would approach the suggestion of using cyclonic action instead with reserve if not scepticism. But I do not think the present case is quite like that. In *Dyson* the skilled person would be aware in a general sense of cyclone technology but would fail to make the connection with vacuum cleaners; here a hose designer would not have seen any hose, whether a garden hose or any other, that was anything like the hose in McDonald and would therefore have immediately appreciated that McDonald was showing him an entirely new type of hose. Whatever his mindset as to how garden hoses were usually constructed, I do not see that this would put him off seeing that

this new type of hose might have wider application, including to garden hoses.

181. Mr Hinchliffe then referred to a number of features of McDonald that the skilled person would find confusing. The first was that McDonald does not say anything about the diameter of the hose. Mr Doosterlinck accepted that the garden hose designer would not be familiar with the diameters used for crew oxygen masks; and he accepted a suggestion that the garden hose designer would be thinking, if anything, of the tubes for cabin oxygen masks provided for passengers. Mr Hinchliffe submitted that such narrow tubes would be unlikely to make the hose designer think of garden hoses. But Mr Doosterlinck also said that the same hose often comes in different sizes (something confirmed by the catalogues); that Tricoflex makes, among other things, hoses for breathable air which range from 6mm to 19mm; and that this is not very different from garden hoses which are typically around 12mm to 19mm, but can be smaller. Moreover, I do not think the skilled person would see the teaching of McDonald as tied to any particular diameter. What McDonald discloses is the idea of having an expandable hose consisting of two tubes: that idea is not dependent on the tubes being of any particular size. The real question is whether it would be obvious to apply the same idea to a garden hose; if it would, the hose designer would also think it obvious to adapt it by selecting a diameter suitable for a garden hose.

182. Mr Hinchliffe's next point was that McDonald would require the hose designer to work with unfamiliar materials. He would not have worked with a highly elastic elastomer such as is called for for the inner tube. Mr Doosterlinck accepted that; but said that he would be familiar with materials such as rubber and synthetic rubbers. It is as set out above common ground that the skilled person would have a grounding in material science and experience of working with various materials. McDonald tells the skilled person quite a bit about what is needed for the inner tube, and I do not think that the fact that he might not have direct experience of making a hose from such a material would be a significant factor.

183. Mr Hinchliffe next referred to the fact that McDonald does not say anything about the gas pressure that would be used in the hose. Mr Doosterlinck accepted a number of propositions put to him in cross-examination, the upshot of which was that when the oxygen reached the pilot, it should be at 1 atmosphere (atm) or thereabouts, but that the pressure in the hose between wherever the oxygen was stored and the mask would be higher, although not too high as that might be dangerous. I agree that McDonald does not give any details on any of this, possibly because they would be familiar to a person designing oxygen masks for aircraft; and that they would not be familiar to ordinary hose designers. Mr Hurst suggested that this would be one of the factors causing the skilled person to put McDonald down as of no interest. But I do not understand why. The skilled person does not need to understand the correct gas pressures to make McDonald work safely and effectively in the context of crew oxygen masks as he is not interested in making such an assembly. All he needs to understand, as Mr Doosterlinck said, is that there is a higher pressure in the hose than 1 bar (or 1 atm, the two measures being very nearly the same) to enable pressure-activation to function. McDonald has a reference (at [0014]) to the mask including a "regulator" (no 22 in Fig 1), and I see no reason to doubt Mr Doosterlinck's evidence that although the skilled hose designer would not know the details of how this worked, he would understand that a regulator is a type of valve commonly used to restrict gas pressures, so that a higher pressure in the hose would be consistent with

the regulator reducing the pressure of the oxygen reaching the pilot to about 1 atm. What is relevant is whether the skilled person would think it obvious to adapt the teaching to a water-filled garden hose. For that purpose he no doubt needs to understand that if you fill a hose with water and restrict the water leaving the hose, there will be a pressure inside the tube which will cause the tube, if made of an elastomeric material, to expand, but that requires no particular technical knowledge and seems to me well within most people's everyday experience, and certainly that of a hose designer who is used to testing hoses.

184. Mr Hinchliffe next referred to a point made by Mr Hurst that there is nothing in McDonald about how the oxygen flow is initiated, as Mr Doosterlinck accepted. He also accepted that neither he, nor more importantly the skilled person, would understand this. I think this point is similar to the last one. As Mr Hinchliffe himself said, the lack of detail might well be because McDonald's target audience, the oxygen mask designer, would understand how it worked. The skilled hose designer however would not need to understand quite how it worked as he is not going to make an oxygen mask assembly. All he needs to understand is that the McDonald hose does expand when the gas pressure is initiated however that happens. The question is whether he would think it obvious to apply this teaching to a garden water hose. For that purpose he no doubt needs to understand how to initiate the water pressure in a garden hose; but that is done by attaching it to a tap and turning it on. That he would undoubtedly understand and I do not see that he needs any more detail than that, or that the lack of it would put him off.

185. Finally Mr Hinchliffe referred to the fact that McDonald does not give any details as to the hose retracting itself into the box. Mr Hinchliffe suggested that the pressure in the hose might be 1.5 atm, and at one stage got Mr Doosterlinck to accept this (although the general thrust of Mr Doosterlinck's evidence was that the skilled person is not trying to understand quite what the pressure in the McDonald hose is). He then suggested that if this was sufficient to expand the hose, it must have very little resilience; and if it had very little resilience it would not self-retract. Mr Doosterlinck said he did not know, and the skilled person would not know, but that did not matter as McDonald teaches that it does self-retract. Overall, Mr Doosterlinck did not accept that the skilled person would find it all very confusing; he would understand that the hose would be actuated by a pressure in the range used in garden hoses. I accept Mr Doosterlinck's evidence. I am not sure I have quite understood the technical point Mr Hinchliffe was here making: I would have thought that if an elastomeric material expands under pressure like a balloon, it would be likely to deflate when the pressure is removed, and that this is not dependent on how much or how little pressure is needed to expand it. Be that as it may, the relevant question is whether the lack of detail on this point in McDonald would be a factor causing the skilled person to put McDonald aside as too confusing. I do not see that it would.

186. I have now considered all the detailed points made by Mr Hinchliffe, and can return to the overall question whether it would have been obvious to the skilled hose designer to take the McDonald hose and adapt it for use as a garden water hose. Mr Hinchliffe submitted that it would not be as the McDonald hose is in a specialist and remote field, does not look remotely like a garden hose, is made in part from an elastomeric and unfamiliar material, and has numerous details unexplained. But standing back from the detailed points, I am left with Mr Doosterlinck's evidence, which I accept,

that the general hose designer would be well used to designing hoses for both liquids and gases, and would have no difficulty in appreciating that the way in which the McDonald hose works, that is by being pressure-actuated, does not depend on the type of fluid used – nor, I would add, on the particular application which McDonald describes. In those circumstances I also accept his conclusion that the skilled person would indeed immediately see that the construction described in McDonald could also be used to make expandable hoses for other fluids in other situations, including a water hose for use in gardens. That conclusion does not seem to me to be based on an impermissible use of hindsight. Once he has made that connection, the skilled person would, as Mr Hinchliffe accepted in closing, readily be able to make all the necessary adaptations to turn the McDonald hose into a garden water hose without doing anything inventive.

187. In those circumstances, I answer the fourth *Pozzoli* question by saying that the differences between McDonald and the claims in the Patents do constitute steps which would have been obvious and that the Patents are therefore invalid for obviousness. That may seem hard on Mr Berardi who is undoubtedly inventive and who I have no reason to doubt came up with his idea entirely independently of McDonald, but if there is prior art, however obscure, which discloses either the same invention, or something which would lead the skilled person to the same invention, then patent protection is for good reasons unavailable.

188. I add two footnotes. First, I am naturally conscious that Birss J reached a different conclusion in *Tristar*, a conclusion that was upheld by the Court of Appeal. But as I have explained, that decision was based on the evidence called before him, and I have to base my conclusions on the evidence called before me. That is what I have tried to do.

189. Second, Mr Hinchliffe relied on commercial success in relation to obviousness. There is no dispute as to the very considerable commercial success of the XHose, and it is not necessary to go into the details. Nor I do really have any doubt that the reason for this success is not, as was at times suggested by Hozelock, down to heavy spending on marketing; the expandable hose is a highly successful product because it provides a neat solution to the problems of conventional hoses being bulky, heavy and liable to kink. That indeed is why Hozelock has produced the Superhoze which is marketed as having the same three advantages ("expands up to 3x, lightweight, never kinks"). To that extent the XHose can be said to meet a long felt want. But the difficulty with the argument based on commercial success is that it is only an answer to the attack based on obviousness over McDonald if it is shown that McDonald was generally known to hose designers. Unless it was, the fact that no-one else had come up with the idea despite McDonald proves nothing. No evidence was adduced to that effect, and it seems to me that it was for Emson to adduce such evidence if it wanted to rely on commercial success, as the premise of the argument is that there is a known problem and others have failed to come up with the claimed invention, but this depends on it being shown that those who failed were aware of the publication in question: compare the comments of Pumfrey J (in a slightly different context) in *Halliburton Energy Services Inc v Smith International (North Sea) Ltd* [2005] EWHC 1623 (Pat) at [172]. The only potentially relevant evidence I had was that Mr Doosterlinck accepted that he was not regularly reviewing patents in the aerospace industry, which of course goes the other way. I find the undoubted commercial success of the XHose to be

attributable to the fact that it was a genuinely innovative type of garden hose that had not been seen before and that solved the problems that conventional garden hoses suffered from, but that this is of no assistance in answering the question whether it was obvious over McDonald.

Priority

190. Hozelock had a point on priority. In the light of my conclusions on validity it does not arise but I should deal with it briefly.

191. The point is as follows. The Patents refer to two priority documents: US Patent Application US13/289,447 dated 4 November 2011 and US Patent Application US13/448,515 dated 5 June 2012. I did not understand it to be disputed that in order to be valid the claims in the Patents have to have a priority date from the first priority document – this is because the XHose was put on the market in March 2012 before the date of the second priority document.

192. Hozelock accept that claims 1 and 14 of GB 276 and claim 2 of EP 585, all of which refer to the tubes being unattached except at the couplers, are sufficiently disclosed in the first priority document. But Mr Hicks says that claim 1 of EP 585, which does not have any such limitation, is not so disclosed.

193. There was I think no dispute as to the principles, which are as follows (see *Terrell* §§7-15ff):

(1) Priority is dealt with in s. 5(2) PA 1977. This is another section which by s. 130(7) is intended to have the same effect as the corresponding provision of the EPC, and in *Unilin Beheer BV v Berry Floor NV* [2004] EWCA Civ 1021 (***"Unilin (2004)"***) at [39] Jacob LJ said it was preferable to work from the EPC itself.

(2) The relevant provision of the EPC is Art 87(1) which confers a right of priority in respect of "the same invention".

(3) The leading case in the EPO on priority date is *Same Invention* G02/98 [2002] EPOR 167. The Board's answer to the question referred to it was as follows:

> "The requirement for claiming priority of 'the same invention', referred to in Article 87(1) EPC, means that priority of a previous application in respect of a claim in a European patent application in accordance with Article 88 EPC is to be acknowledged only if the skilled person can derive the subject-matter of the claim directly and unambiguously, using common general knowledge, from the previous application as a whole."

(4) Priority is therefore about disclosure. It is not about whether something not disclosed in the priority document would be obvious, but about whether something is unambiguously disclosed in the priority document. The way it was put by Jacob LJ in *Unilin (2004)* at [48] was as follows:

> "…priority is a question about technical disclosure, explicit and implicit. Is there enough in the priority document to give the skilled man essentially the same information as forms the subject matter of the claim and enables him

to work the invention in accordance with that claim?"

(5) For the purposes of considering this question, one looks to the priority document as a whole. This includes the claims in the priority document: see *Unilin (2004)* per Jacob LJ at [49]:

> "The claims (if there are any – there is no rule that there should be) are not determinative. They are just part of its disclosure. For the purposes of priority one just looks at the disclosure as a whole."

194. Those being the principles, Mr Hicks said that the first priority document only disclosed an expandable hose in which the two tubes were unattached except at the couplers. Thus in [0001] the invention is introduced as a hose comprised, among other things, of an outer tube:

> "attached and connected to the inner tube only at both ends and [which] is separated, unattached unbonded and unconnected from the inner tube along the entire length of hose between the first end and the second end."

Similar statements are found in several other parts of the specification, for example at [0030], [0050], [0058], [0060] and [0061]. He contrasted that with the second priority document where the outer tube is only described as "preferably" unattached to the inner tube along its entire length. He said that the first priority document did not therefore disclose an expandable hose which was connected somewhere else, for example in the middle, and it did not matter how obvious that might be.

195. Mr Hinchliffe however pointed to claim 1 in the first priority document. That reads as follows:

> "A hose comprising:
>
> a flexible elongated outer tube having a first end and a second end, an interior of said outer tube being substantially hollow;
>
> a flexible elongated inner tube having a first end and a second end, an interior of said inner tube being substantially hollow, said inner tube being formed of an elastic material;
>
> a first coupler secured to said first end of said inner and said outer tubes;
>
> a second coupler secured to said second end of said inner and said outer tubes; and
>
> said first coupler fluidly coupling said hose to a source of pressurized fluid, said second coupler coupling said hose to a fluid flow restrictor,
>
> whereby said fluid flow restrictor creates an increase in fluid pressure between said first coupler and said second coupler within said hose, said increase in fluid pressure expands said elongated inner tube longitudinally along a length of said inner tube and laterally across a width of said inner tube thereby increasing a length of said hose to an expanded condition and said hose being contracted to a decreased length when there is a decrease in fluid pressure between said first coupler and said second coupler."

That, as can be seen, says nothing at all about the tubes being unconnected. Mr

Hinchliffe therefore says that the first priority document does disclose the same invention as in claim 1 of EP 585, the claims in the first priority document being part of the disclosure.

196. I propose to ignore the change in wording in the second priority document. The question is whether the skilled person can derive the subject-matter of the claim directly and unambiguously from the first priority document as a whole, and the answer to that question cannot be affected by the wording of a different and subsequent document.

197. I accept that the body of the specification in the first priority document consistently refers to the tubes being unconnected along its entire length. But I think Mr Hinchliffe is right. The claim in the first priority document is part of what is disclosed. This does not say anything about the tubes being unattached along their entire length. So what it discloses is a hose with the features in claim 1, without specifying whether the tubes are attached or unattached. Since that is also what claim 1 of EP 585 claims, it seems to me that it does disclose the subject-matter of that claim directly and unambiguously. Indeed when the claim in the priority document and the claim in the patent are in the same terms, it seems very odd to say that the subject-matter of the patent is not disclosed in the priority document. Here claim 1 of the first priority document and claim 1 of EP 585 are not in identical words, but on the relevant point – that is being entirely silent about the tubes being attached or unattached – they are in similar terms.

198. In those circumstances, I hold that the first priority document discloses the same invention as claim 1 of EP 585 and therefore reject Mr Hicks' priority attack on that claim.

The Formstein point

199. The final point that was argued was what was called the *Formstein* point. Mr Hicks said that this would arise if claim 1 of EP 585 were held invalid for lack of priority, but the other claims (claims 1 and 14 of GB 276 and claim 2 of EP 585) were valid. As I understood it, the argument was this. If claim 1 of EP 585 were invalid, that would mean that there was no valid claim for a hose other than one which was unattached along its entire length. A hose that like the Superhoze was attached somewhere else than at the couplers (which I will call 'an attached hose') would therefore not infringe claim 1 of EP 585. Nor would it infringe the other claims on their literal or normal construction as they require the hose to be unattached. But if an attached hose such as the Superhoze would infringe the other claims on the *Actavis* doctrine of equivalents, it would mean that the patentee could obtain protection via the doctrine of equivalents for something that he could not have obtained protection for directly.

200. Mr Hicks referred to the recent decision in *Technetix BV v Teleste Ltd* [2019] EWHC 126 (IPEC) where HHJ Hacon considered the question at [85]-[100] under the heading *"A Formstein Defence"*. He there referred to the principle, which he called "the *Merrell Dow* principle", that it has long been a basic feature of UK patent law that a patent cannot enable the patentee to stop a trader from doing what he had been lawfully entitled to do before. At [94] he said this:

> "One way of reconciling the *Merrell Dow* principle with the doctrine of equivalents would be to say that if an accused product or process is an equivalent and for that reason is nominally within the scope of the claim, but the equivalent would have lacked novelty or inventive step over the prior art at the priority date, then it is deemed to fall outside the scope of the claim, thus providing a defence to infringement."

He then explained that German law provided such a defence, first stated in a case called *Formstein*, and that Dutch and US law provide similar defences.

201. Mr Hicks invited me to declare that such a defence forms part of English law. Mr Hinchliffe advanced a number of detailed and closely argued reasons why I should not do so. I notice that HHJ Hacon suggested in the *Technetix* case at [99] that a *Formstein* defence might be introduced into English law by the Supreme Court or Court of Appeal, and given that on my findings it would in any event have no application here for two reasons – first because I have held the Patents invalid for obviousness, and second because I have not accepted the priority attack on claim 1 of EP 585 – I do not think it is either necessary or appropriate for me to lengthen this judgment by considering whether such a defence might or might not have a place in English law. That should be left to a case where it would make a difference, and very probably to a higher court. I propose to say no more about it.

Conclusion

202. It may be helpful if I summarise my conclusions;

(1) The Patents are not invalidated by prior use, or by lack of inventive step over Ragner, but are invalid for lack of inventive step over McDonald.

(2) Had the Patents been valid:

(a) Claim 1 of EP 585 would have the same priority date as the other claims relied on (claims 1 and 14 of GB 276 and claim 2 of EP 585), namely 4 November 2011.

(b) The Superhoze 1 and the Superhoze 2 would each infringe claims 1 and 14 of GB 276, and claims 1 and 2 of EP 585.

203. I am very grateful to counsel for all the help they have given me in explaining their respective cases with courtesy and skill, and for the care and patience with which they have sought to navigate me through the various points of law which arise.