



Neutral Citation Number: [2020] EWCA Civ 871

Case No: A3/2019/1506

**IN THE COURT OF APPEAL (CIVIL DIVISION)**  
**ON APPEAL FROM THE HIGH COURT OF JUSTICE, BUSINESS AND PROPERTY**  
**COURTS, INTELLECTUAL PROPERTY LIST (ChD), PATENTS COURT**

**Nugee J**

**[2019] EWHC 991 (Pat)**

Royal Courts of Justice  
Strand, London, WC2A 2LL

Date: 8 July 2020

**Before :**

**LORD JUSTICE FLOYD**  
**LORD JUSTICE HENDERSON**

and

**LORD JUSTICE ARNOLD**

-----

**Between :**

**E. MISHAN & SONS, INC**

**- and -**

**(1) HOZELOCK LIMITED**

**(2) BLUE GENTIAN LLC**

**(3) TELEBRANDS CORP**

-----  
-----

**Appellant**

**Respondent**

**s**

**Thomas Hinchliffe QC and Katherine Moggridge (instructed by HGF Law LLP) for the**  
**Appellant**

**Michael Hicks and Nick Zweck (instructed by Wiggin LLP) for the First Respondent**

Hearing dates: 8-9 June 2020  
-----

**Approved Judgment**

## **Lord Justice Arnold:**

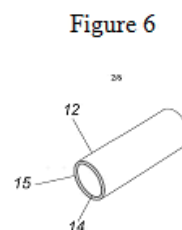
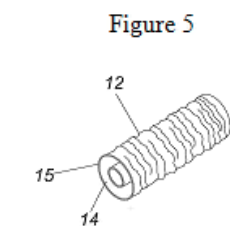
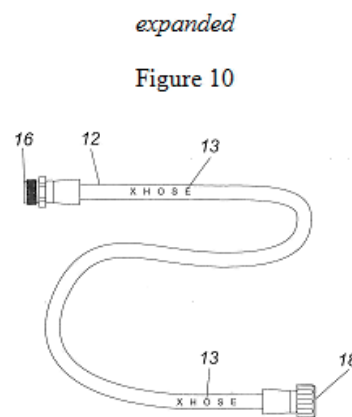
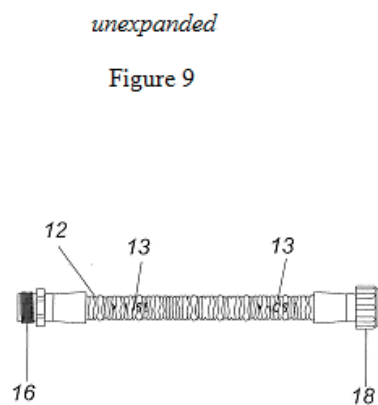
### Introduction

1. This is an appeal, brought with the permission of the judge, from an order of Nugee J dated 5 June 2019 that UK Patent No 2 490 276 (“GB 276”) and European Patent (UK) No 2 657 585 (“EP 585”) (collectively “the Patents”), which are exclusively licensed to the Appellant (“Emson”), be revoked on the ground that all the claims were obvious over US Patent Application No. 2003/0000530 (“McDonald”) for the reasons given in the judge’s judgment dated 17 April 2019 [2019] EWHC 991 (Pat). The appeal challenges that conclusion. The judge also held that (i) the Patents were entitled to their claimed priority date of 4 November 2011, (ii) the Patents were valid over certain prior uses by the inventor Michael Berardi while reducing the invention to practice in his garden and (iii) if they were valid, the Patents had been infringed by the First Respondent (“Hozelock”). Hozelock challenges those conclusions by a respondent’s notice. The current and former owners of the Patents are formally respondents to the appeal, but have played no part in the proceedings.
2. The Patents disclose and claim expandable garden hoses which are compact when empty, but expand in length when filled with water. Hoses embodying the invention have achieved considerable commercial success under the brand name Xhose.
3. The case is an unusual one, for three reasons. First, Mr Berardi was an individual inventor who made the invention in his garage and garden. Despite that, his invention has transformed the garden hose industry in that it resulted in the introduction of an entirely new type of garden hose which solved long-standing problems with previous garden hoses (which is not to say that the Xhose has displaced conventional hoses – on the contrary, there continues to be a substantial market for the latter).
4. Secondly, the validity and infringement of GB 276 has previously been litigated in proceedings brought against different defendants with a different outcome. In *Blue Gentian LLC v Tristar Products (UK) Ltd* [2013] EWHC 4098 (Pat) Birss J held that GB 276 was valid, including over McDonald, and had been infringed by the defendants. His conclusions were upheld by this Court: [2015] EWCA Civ 746. As the judge in the present case correctly noted at [40], strictly speaking the previous decisions are not admissible evidence on any question of fact arising in the present case. As he said, his function was to decide this case on the evidence adduced by parties in this case. Moreover, as he explained, the evidence in this case was materially different to that in the previous case. I shall return to this point more than once below.
5. Thirdly, the prior use allegations involve an unprecedented set of factual circumstances and thus gave rise to some novel issues.
6. Despite these unusual features of the case, Hozelock’s appeal raises a familiar issue, which is whether the claimed invention is obvious over close prior art from a different field. That issue can, and must, be determined by applying conventional principles.

### The Patents

7. The judge quoted the helpful summary of GB 276 given by Birss J in *Blue Gentian*, and I shall do the same:

- “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 5 and figures 10 and 6 show the invention in its unexpanded and in its expanded states:



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]).”
8. There is no material difference between the specification of EP 585 and that of GB 276.

The claims in issue

9. Broken down into integers, claim 1 of GB 276 is as follows:
- “[A] A garden water hose assembly comprising:
  - [B] an outer tube formed from a non-elastic and flexible material and no metal;
  - [C] an inner tube constructed from an elastic material,
  - [D] 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;
  - [E] said outer tube being unattached from said inner tube between said first and second couplers;

- [F] 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
- [G] 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,
- [H] 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,
- [I] and wherein a water flow restrictor is provided in or is connected to the second coupler.”

10. Claim 1 of EP 585 is as follows:

- “[A] A garden water hose assembly comprising a hose (10) and a water flow restrictor, wherein the hose (10) comprises:
  - [B] an outer tube (12) formed from a non-elastic, soft, bendable, tubular webbing material having a first end and a second end;
  - [C] a flexible, elastic, hollow inner tube (14) having a first end and a second end;
  - [D] a first coupler (18) secured to said first end of said inner and said outer tubes (14, 12);
  - [E] a second coupler (16) secured to said second end of said inner and said outer tubes (14, 12);
  - [F] 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;
  - [G] 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
  - [H] 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

[I] wherein the water flow restrictor is configured to vary the amount of water under pressure that is released from the water flow restrictor.”

11. Claim 2 of EP 585 is as follows:

“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).”

#### The expert witnesses

12. Emson’s expert was Richard Hurst, an engineer with particular experience in water systems. Mr Hurst had no personal experience in the design or manufacture of hoses. As the judge rightly held at [23], that limited Mr Hurst’s ability to give evidence as to the attributes of the skilled person, and the common general knowledge that such a person would possess. I would add that it also affected the weight to be attached to his opinions on obviousness.
13. Hozelock’s expert was Fabrice Doosterlinck, an engineer with a postgraduate degree specialising in plastics and polymers who had been employed since 1994 by Tricoflex SAS, an associated company of Hozelock since 2000. Mr Doosterlinck had considerable experience in the design and manufacture of both garden hoses, which are sold to consumers, and what are described as “technical” hoses, which are sold for commercial use. The judge described Mr Doosterlinck at [27] as “an impressive witness”. Counsel for Emson submitted that Mr Doosterlinck’s evidence was fatally tainted by hindsight. The judge said at [28] that he did not accept that he should approach Mr Doosterlinck’s evidence as a whole with any particular caution, but that he would consider whether the specific evidence Mr Doosterlinck had given on obviousness was tainted by hindsight when considering the issues.
14. Somewhat remarkably, in *Blue Gentian* neither of the experts had experience in the design or manufacture of hoses. The claimants’ expert was an engineer mainly specialising in the design of plastic products. The defendant’s expert was a polymer materials engineer whose primary focus was investigating product failure. As counsel for Hozelock pointed out, it follows that the only one of the four experts who gave evidence in the two cases with experience in the design and manufacture of hoses was Mr Doosterlinck.

#### The person skilled in the art

15. It was common ground before the judge that the Patents are addressed to a person interested in the design and manufacture of garden hoses. There was nevertheless a substantial dispute before the judge as to the attributes of such a person, and in particular as to whether they would have experience in the design and manufacture of technical hoses as well as garden hoses. Having analysed the evidence on this issue, the judge concluded at [50] 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”. There is no challenge by Emson to that conclusion. As counsel for Hozelock pointed out, Birss J reached a different conclusion in *Blue Gentian* at [17], not having had the benefit of Mr Doosterlinck’s evidence.

The common general knowledge

16. As the judge explained at [51], in closing submissions the parties produced rival lists of what they contended to be the common general knowledge of the skilled person. The judge accepted both lists subject to the comments he made in [52] and [53] respectively.

17. For present purposes the relevant points from Emson's list, including the judge's comments, are 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). ...

(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 [multilayer] hoses where the layers were not bonded together. The skilled person would not be aware of expandable hoses ...

(6) ... 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 ... however ... 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 ... might have to operate ... at much higher pressure. In some cases they have to be more resistant to extremes of temperature. ... 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.

...

- (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 ... extend ... is by being pulled. They are not designed to expand under pressure.

... corkscrew hoses ... look quite different to conventional hoses and have different qualities, but ... the technology of the hose material itself (as opposed to the way the hose is configured) is not different from other hoses.

...

- (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.”

18. The relevant points from Hozelock’s list are as follows:

- “(3) A hose of a particular structure may be useful for a wide variety of applications.

[There are] numerous examples of this. I need not detail them. One ... 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.

... 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.

...

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

Again [there are] a number of examples ... 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.

...

- (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.

...

- (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 ... 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.”

### McDonald

19. McDonald’s title is “Self-elongating oxygen hose for stowable aviation crew oxygen mask”. The invention is succinctly and accurately summarised in the abstract as follows:

“A supplemental gas assembly (10) such as used for aircraft crews is provided which includes a mask adapted to fit over at least the nose and mouth of a wearer, together with a flexible, self-elongating hose assembly (14) and a stowage box (16) for receiving the mask (12) and 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.”

20. As the judge noted at [171], this already discloses to the skilled reader a self-elongating hose comprising an inflatable elastomeric inner tube, an outer sheath of woven or braided material that constrains its radial expansion, the hose having a relaxed state when not in use and an axially expanded state when in use which is up to three times as long, and the axial expansion being actuated by a pressurised gas. As can be seen from the judge’s findings on common general knowledge, and other passages in his judgment, the skilled reader would be aware that both gases (such as oxygen) and liquids (such as water) are fluids.
21. The specification begins by describing the field of the invention in the following terms at [0002]:

“The present invention is broadly concerned with supplemental gas assemblies such as supplemental oxygen units typically used in aircraft

for supplemental oxygen to aircraft crew in the event of a cabin depressurisation or other emergency. 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.”

This confirms that the inventive feature of the assembly is the self-elongating hose which axially expands when pressurised. It also makes it clear that the advantage of this new hose is that it gives the user a relatively long effective length while avoiding the handling and stowing problems of conventional hoses.

22. The specification next describes the prior art. It explains that, during fires and other emergencies, aircraft crew need to be able to don gas (particularly oxygen) masks in less than five seconds. The problem addressed by the invention is identified as follows:

“[0006] In recent years, available flight desk space has become even more precious, leading to efforts to reduce the volume of components. However, very little reduction in mask stowage box volume has been achieved, owing to the fact that the oxygen delivery hoses coupled with the mask must be of a certain minimum length to allow and facilitate crew use. That is, these stowage boxes, because they must receive a relatively long length of hose, cannot readily be reduced in size.

[0007] There is accordingly a need in the art for improved supplemental gas assemblies which can be made in a more compact design, while still achieving the utility and rapid donning characteristics required for crew oxygen equipment.”

In short, the problem is that the prior art hoses are too bulky when stored. It is nothing to do with the gas mask.

23. The specification states that this problem is overcome by the invention, which it summarises in the following terms:

“[0008] ... In accordance with the invention, the hose assembly comprises a length-expandable hose which, when a user grasps the mask and pulls it from the stowage box, will inflate and axially expand to a deployed length greater than the relaxed length thereof. In this way, the stowage requirements for the hose assembly are reduced, or alternatively a hose having a substantially longer effective length can be used in a standard stowage box designed to accommodate a much smaller length conventional hose assembly.

[0009] In preferred forms, the hose assembly includes an inflatable elastomeric inner tube together with an exterior sheath formed of woven or braided material which in use restricts the radial expansion of the inner tube upon pressurization thereof, while allowing the tube to expand axially. The hose assembly may have a deployed length of at least about 1.5

times the relaxed length thereof, and more preferably greater than about two times the relaxed length.”

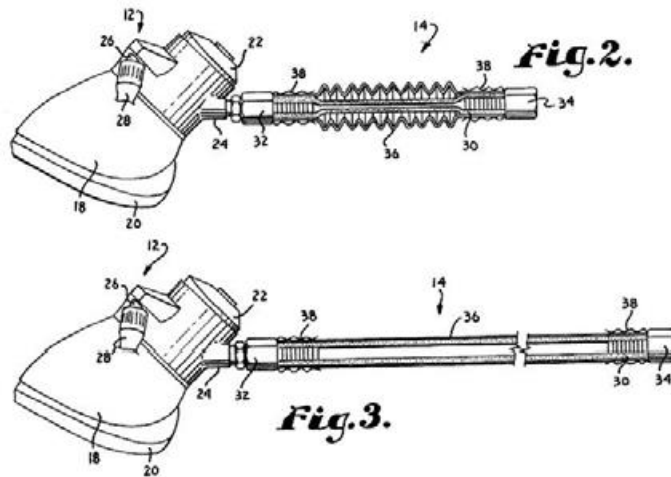
24. This confirms to the skilled reader that the invention is a self-elongating hose comprising an inflatable elastomeric inner tube, an outer sheath of woven or braided material that constrains its radial expansion, the hose having a relaxed state when not in use and an axially expanded state when deployed which can be more than twice as long, the axial expansion being actuated by pressurisation; and that the advantage of the invention is that it saves space when the hose is in its relaxed state.

25. In the detailed description of the preferred embodiment, the specification explains at [0014] and [0017] respectively that both the gas mask 12 and the storage box 16 are of conventional design. The hose assembly is described as follows:

“[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 sheath 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. However, as depicted in FIG.3, when a pressurized gas such as oxygen is delivered into the tube, 30, it expands in both radial and axial directions. However, the presence of the sheath 36 serves to inhibit and restrict the extent of radial expansion of the tube 30, but permits axial elongation thereof. Preferably, the deployed length of the hose assembly 14 is at least about 1.5 times the relaxed length thereof, and more preferably at least about two times the relaxed length.”

26. I reproduce Figures 2 and 3 below. Fig. 2 shows the hose in the relaxed state with the exterior sheath 36 gathered up, while Fig. 3 shows the hose in the expanded state with the sheath fully extended. The expansion of the inner tube 30 both radially and axially can also be seen.



27. The behaviour of the hose in use is described as follows:

“[0018] The use of assembly 10 is similar to that of standard crew oxygen emergency equipment. That is, in the event of a cabin depressurization, the pilot may grasp the upper end of mask 12 and pull it upwardly. ... The pilot then pulls the mask to his or her face with seal 20 surrounding the nose and mouth area of the pilot’s face, so that the mask may be quickly donned. ...

[0019] ... 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.”

28. Although the precise mechanism is not described, it is clear that the supply of oxygen is triggered by the crew member pulling the mask (and hence one end of the hose). Given what has been stated at [0016], it is also clear that the hose is caused “to *self-elongate* from a relaxed condition [emphasis added]” by the pressure of the gas. Given that the inner tube of the hose assembly is formed from an elastomeric material, it is implicit in the statement “after use, the hose will ‘retract’ *itself* [emphasis added]” that this is caused by the removal of the gas pressure, although again the precise mechanism is not described.
29. McDonald does not disclose (i) the diameters of the inner tube or external sheath of the hose (save in so far as Figs. 2 and 3 give an impression of scale relative to the gas mask), (ii) the pressure of the gas or (iii) how the gas supply is managed.
30. Although McDonald proceeded to grant in the US, and the applicant obtained a European Patent designating Germany, France and the UK, there is no evidence that the invention was ever commercialised.

The judge's assessment of obviousness

31. The judge carefully followed the structured approach to the assessment of obviousness laid down in *Pozzoli SpA v BDMO SA* [2007] EWCA Civ 588, [2007] FSR 37. I have already set out his findings as to the skilled addressee of the Patents and the common general knowledge.

32. So far as the inventive concept is concerned, the judge said at [155]:

“I have accepted [counsel for Emson]’s formulation, ... 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.”

The judge was right to make that qualification. As he went on to say, it is important when one comes to McDonald. Without it, the inventive concept would be anticipated by McDonald. In any event, this conclusion is not challenged.

33. Turning to the differences between McDonald and the inventive concept, the judge identified these at [174] as follows:

“... 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.”

Again, this conclusion is not challenged.

34. The judge considered the fourth *Pozzoli* question at [175]-[189]. His approach was first to consider at [176]-[185] a series of detailed reasons relied upon by counsel for Emson (which incorporated points made by Mr Hurst) for saying that the differences represented steps which would not have been obvious to the skilled person. He then went on:

“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.”
35. Finally, the judge added two points. First, he noted at [188] that Birss J had reached a different conclusion in *Blue Gentian* which had been upheld by the Court of Appeal, but explained that he had based his conclusions on the evidence before him. Secondly, he dealt at [189] with Emson’s reliance upon commercial success. He accepted that the Xhose had been highly commercially successful, that this was due to it solving the problems with conventional hoses of being bulky, heavy and liable to kink and that, to that extent, it had met a long-felt want. He held, however, that this did not show that the invention was not obvious over McDonald, because there was no evidence that McDonald was known to hose designers. Indeed, the only relevant evidence (Mr Doosterlinck’s acceptance that he did not regularly review patents from the aerospace industry) went the other way.

#### The grounds of appeal

36. Obviousness involves a multi-factorial evaluation and therefore this Court is not justified in intervening in the absence of an error of law or principle on the part of the judge: see *Actavis Group PTC EHF v ICOS Corp* [2019] UKSC 15, [2019] Bus LR 1318 at [78]-[81] (Lord Hodge).
37. Emson does not suggest that the judge misdirected himself as to the law. It advances two grounds of appeal. The first ground is that the judge erred in principle because he conducted an *ex post facto* hindsight-based analysis, and moreover one based upon the evidence of Mr Doosterlinck, which was tainted by hindsight. The second ground is that the judge erred in principle in failing to take commercial success into account when assessing obviousness.

#### Hindsight

38. On the face of it, the contention that the judge erred in applying hindsight is an unpromising one. When posing the fourth *Pozzoli* question at [175], the judge correctly

asked himself whether the differences constituted steps which would have been obvious to the skilled person “viewed without any knowledge of the alleged invention as claimed”. Moreover, as can be seen from [186], he expressly stated that he did not consider that his conclusion was based on hindsight. It is therefore clear that he was conscious of the need to avoid hindsight.

39. In support of the submission that, despite this, the judge had in fact applied hindsight, counsel for Emson relied first upon what the judge had said at an earlier stage of his analysis, when considering the differences between McDonald and the claimed invention at [171]:

“... 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.”

40. This is a bad point for three reasons. First, as I have already indicated, this statement was made in the context of the judge’s consideration of the third *Pozzoli* question and before he had embarked on the fourth question. Secondly, the judge expressly stated that this was not the statutory test. Thirdly, the judge had to compare McDonald to the claimed invention in order to identify the differences. Moreover, it was relevant for him to consider whether the differences were small or significant ones.

41. More importantly, counsel for Emson argued that the judge’s reasoning at [176]-[186] did involve hindsight despite his attempt to avoid it. This argument requires this Court to consider every step of that reasoning in detail. It is therefore important to keep in mind throughout that the question for us is not what our evaluation of the issue would have been had we been in the judge’s position, but whether the judge fell into error.

42. It is convenient to consider the points in the same order as the judge did. The first is 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 from the aerospace industry and that Tricoflex did not make hoses for aerospace industry. Counsel for Emson submitted that the skilled person would therefore be uninterested in McDonald.

43. Counsel for Emson relied both before the judge and before this Court on the observations of Laddie J in *Inhale Therapeutic Systems Inc v Quadrant Healthcare plc* [2002] RPC 21 at [47]:

“... A fiction in patent law is that the notional uninventive skilled man in the art is deemed to have read and assimilated any piece of prior art pleaded by the party attacking the patent claim. If the invention is obvious to that person in the light of a particular piece of prior art, the claim is invalid. It is no answer to say that in real life the prior art would never have come to the attention of a worker in the field, for example because it was tucked away on the top shelf of a public library or because it was in a language which nobody in the art knew. The notional skilled person is assumed to have read and understood the contents of the prior art. However that does not mean that all prior art will be

considered equally interesting. The notional skilled person is assumed to be interested in the field of technology covered by the patent in suit, but he is not assumed to know or suspect in advance of reading it that any particular piece of prior art has the answer to a problem he faces or is relevant to it. He comes to the prior art without any preconceptions and, in particular, without any expectation that it offers him a solution to any problem he has in mind. Some pieces of prior art will be much more interesting than others. A document directed at solving the particular problem at issue will be seized upon by the skilled addressee. Its very contents may suggest that it is a worthwhile starting point for further development. But the same may not be the case where a document comes, say, from a distant and unrelated field. For example, in theory a notional skilled person engaged in trying to improve the operation of an internal combustion engine is assumed to know, have read and assimilated the contents of all published material including those, say, in the baking field. It may be that a document in the latter field discloses something which, if applied to the internal combustion art, would produce a marked improvement in performance. However, the person skilled in the art is not deemed to read the baking document in the knowledge, or even with a suspicion, that it is of significance to the problems he has to deal with. It may be that it is written in such a way that, although he understands it, the skilled person will dismiss it as irrelevant to his work. The more distant a prior art document is from the field of technology covered by the patent, the greater the chance that an intelligent but uninventive person skilled in the art will fail to make the jump to the solution found by the patentee.”

44. Having referred to this passage, the judge said at [177]:

“... 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.”

45. To this there should be added the point which the judge had made previously in [171] (quoted above) that the elements of the invention are “placed upfront and exemplified in the embodiment described”, referring first to the abstract and then in [172] to [0002], [0015]-[0016] and [0019].

46. Counsel for Emson submitted that the judge should have found that the skilled person would conclude that McDonald was not relevant to garden hoses. I cannot see any error



in the judge's approach, whether of hindsight or otherwise, and I consider that his conclusion was one that was open to him. As discussed above, the invention in McDonald is the self-elongating hose. The evidence before the judge established that the same hose is frequently used for multiple applications, including transporting both gases and liquids. No technical reason was identified by counsel for Emson as leading the skilled person to think that McDonald's hose would (or even might) be unsuitable for use as a garden hose.

47. The second point considered by the judge was counsel for Emson's submission that McDonald was addressing issues that did not arise with garden hoses, and in particular the need for aircrew gas masks to be donned in five seconds or less. The judge's assessment of this at [178] was as follows:

"... 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."

48. Counsel for Emson submitted that there was only a small overlap between the problem addressed by McDonald and those addressed by the Patents, but the fact remains that the problem addressed by McDonald's hose is saving space, and that is also the first problem addressed by the Patents. I cannot see any error in the judge's approach, whether of hindsight or otherwise, and I consider that his conclusion was one that was open to him. It is well-established that, if an invention is obvious for one reason, the fact that it also has other, non-obvious, benefits is immaterial: see *Hallen Co v Brabantia (UK) Ltd* [1989] RPC 307, [1991] RPC 195.

49. The third point considered by the judge was counsel for Emson’s submission that, because garden hose design had not really changed in many years, the skilled person reading McDonald would be unlikely to make the leap to a garden hose. The judge’s assessment of this at [180] was as follows:

“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.”

50. Counsel for Emson submitted that the last sentence betrayed hindsight reasoning, because one can only be put off an idea if you have had it, and that the real question was whether it would have been obvious to the skilled person that McDonald’s hose could be adapted into a garden water hose. In my view this is a purely linguistic point. If the judge had said “prevent” rather than “put off”, it would not have altered his reasoning. I cannot see any error in the judge’s approach, whether of hindsight or otherwise, and I consider that his conclusion was one that was open to him. In *Dyson* the evidence was that the skilled person’s thinking was so “bag-ridden” that they were blind to, or at least prejudiced against, solutions that did not involve bags. There is no comparable evidence of blindness or prejudice in the present case. Nor is there evidence that the hose industry was resistant to innovation. On the contrary, it was common ground that there had been developments both in the materials used for hoses and in accessories such as hose reels and nozzles (as the judge recorded at [52(3) and (4)], quoted above) and that corkscrew hoses had been introduced in order to save space (as the judge recorded at [52(11) and 53(13)], also quoted above).
51. After dealing with the three points considered above, the judge turned to consider a series of features of McDonald which Emson contended that the skilled person would find confusing. The first of these was that McDonald did not disclose the diameter of the hose. The judge’s assessment of this at [181] was as follows:

“... 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.”

52. Counsel for Emson submitted that the judge should have found on the evidence that tubes for cabin oxygen masks were likely to be 6 mm in diameter, whereas garden hoses were typically larger. Leaving aside the point that this submission amounts to an attack on the judge’s findings of fact for which Emson has neither sought nor obtained permission, it goes nowhere because counsel accepted that there was evidence that garden hoses could be as small as 6 mm in diameter. Moreover, as the judge found, there is an overlap between the diameters of hoses used for breathable air and those used for watering gardens. In any event, the key point made by the judge was that the skilled person would not see the teaching of McDonald as being tied to any particular diameter. The absence of any disclosure of the diameter in McDonald supports that conclusion, rather than undermining it. In any event, I see no error in the judge’s approach and I consider that his conclusion was open to him.

53. The second allegedly confusing feature of McDonald was that it required the hose designer to work with unfamiliar materials, and in particular the highly elastic elastomer required for the inner tube. The judge’s assessment of this at [182] was as follows:

“... 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.”

To this there should be added the point, recorded by the judge at [186] (quoted above), that the skilled person would be readily able to make the necessary adaptations to turn McDonald into a garden hose.

54. Again, I see no error in the judge’s approach and I consider that his conclusion was open to him. I would add that the judge’s findings as to common general knowledge show that the skilled person would know that hoses expand under pressure unless reinforced. Thus the skilled person would be used to working with materials which have some elasticity and with constraining that elasticity. McDonald merely requires the use of a more elastic inner tube constrained from (some, but not all) expansion in a different way.

55. The third allegedly confusing feature of McDonald was that it does not disclose the gas pressure. The judge’s assessment of this at [183] was as follows:

“... 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.”

56. Again, I see no error in the judge’s approach, whether of hindsight or otherwise, and I consider that his conclusion was open to him. As he said, the key point is that it is clear from McDonald that, when actuated, the gas in the hose is supplied at sufficient pressure to cause the hose to self-elongate, and in particular to cause the elastomeric inner tube to expand. Replacing oxygen with water would make no difference to this (as is confirmed by the fact that, as the skilled person would know from their common general knowledge, gas hoses are pressure-tested with water). Counsel for Emson particularly criticised the judge’s statement that the skilled person did not need to understand the correct oxygen pressures required to make McDonald work safely and effectively “as he is not interested in making [an oxygen mask assembly]”. This criticism is misconceived, however. For the purposes of the obviousness enquiry, the skilled person is deemed to be interested in solving the problems of space, weight and kinking with conventional garden hoses. The skilled person is then deemed to read McDonald, but without any preconception that it will assist him to solve any of those problems. The question is whether it would then be obvious to adopt the principles of McDonald’s hose for a garden hose. The judge was entirely correct to say that the skilled person is not deemed to be engaged in making an oxygen mask assembly.

57. The fourth allegedly confusing feature of McDonald was that it did not disclose how the gas flow was initiated (I would add, beyond the fact it happens when the mask is pulled). The judge's assessment of this at [184] was as follows:

“... [Mr Doosterlinck] 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.”

58. Again, I see no error in the judge's approach, whether of hindsight or otherwise, and I consider that his conclusion was open to him. The details of the gas actuation mechanism in McDonald do not affect the principles upon which the hose operates. Counsel for Emson again criticised the judge's statement that “he is not going to make an oxygen mask assembly”, but the answer to this is the same as in the context of [183]. Counsel for Emson also pointed to the use of the expression “put him off”, but the answer to this is the same as in the context of [180].

59. The fifth allegedly confusing feature of McDonald was that it did not disclose any details as to how the hose retracted itself (I would add, beyond the fact that it occurs when the gas pressure is removed). The judge's assessment of this at [185] was as follows:

“... 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.”

60. As this stage in his submissions to this Court, counsel for Emson resorted to some island-hopping (to use Lewison LJ’s expression in *Fage UK Ltd v Chobani UK Ltd* [2014] EWCA Civ 5, [2014] FSR 29) to parts of the evidence. Leaving aside the objection to this as a matter of principle, the evidence did not assist him.
61. Counsel for Emson particularly relied upon two passages. The first was the evidence of Mr Hurst in paragraph 91 of his first report that the skilled person would find this aspect of McDonald confusing. There are two problems with this evidence, however. First, Mr Hurst assumed that the oxygen pressure in the hose when it expanded was “about 1 bar”. Mr Doosterlinck disagreed with this, however, and gave a sound technical reason, namely that (as the judge accepted at [183], quoted above) the pressure had to exceed ambient pressure (1 atm, or approximately 1 bar) in order to make the hose expand. Mr Doosterlinck’s opinion was that the pressure would be 2-3 bar, although it could be as low as 1.5 bar, pressures which (as the judge accepted in [185]) were consistent with a garden water hose application. Secondly, as counsel for Hozelock pointed out, Mr Hurst accepted in cross-examination that, on the assumption that the skilled person had the attributes the judge ultimately found, the principle of how the hose in McDonald expanded and retracted would be clear to them:
- “Q. So I suggest to you that it would be very clear to such a person, indeed to any reader with some technical ability, that the hose in McDonald expands when the gas, under pressure, enters the inner tube and will retract when that pressure falls. That is how it works.
- A. Yes.
- Q. Assume the skilled person might not know the details of oxygen systems for aircraft or exactly how a mask on an aircraft would work, but I want to suggest to you that the principle as to how the hose expands and contracts is perfectly clear to such a person.
- A. Yes.”
62. Secondly, counsel for Emson relied upon Mr Doosterlinck’s initial acceptance in cross-examination that he did not know whether the hose would self-retract, nor would the skilled person. Later on, however, the witness said that, if the hose expanded under a pressure of 1.5 bar, it would retract when the pressure came down. Not only is this consistent with Mr Hurst’s evidence quoted above, but also counsel for Emson did not put to Mr Doosterlinck any technical reason why it was wrong. As the judge noted, on the face of it, this is precisely how one would expect an elastic material to behave. I would add that this is the principle upon which the Patents rely.
63. Again, therefore, I see no error in the judge’s approach, whether of hindsight or otherwise, and I consider that his conclusion was one which he was entitled to reach on the evidence.
64. Having considered all the detailed points, it is necessary to return, as the judge did, to the overall question of whether it would have been obvious to the skilled person to take

McDonald's hose and adapt it for use as a garden hose. I have quoted the judge's answer to this question in full above. As with the points of detail, I see no error in the judge's approach, whether of hindsight or otherwise, and I consider that his conclusion was open to him.

65. In addition to the specific points considered above, counsel for Emson advanced a number of general submissions which I should address.
66. First, he submitted that the judge had lost sight of the importance of the factor identified by Jacob LJ in *Technip France SA's Patent* [2004] EWCA Civ 384, [2004] RPC 46 at [122]:

“The question ‘why was it not done before’ is always a powerful consideration when considering obviousness, particularly when all the components of a combination have been long and widely known.”

It is not clear that this submission was made to the judge, but in any event I do not accept it. McDonald was not “long and widely known”. On the contrary, as I shall discuss when I come to the question of commercial success, there is no evidence that it was known to persons in the hose industry, and such evidence as there was pointed the other way.

67. Secondly, counsel for Emson pointed out that “any prior art document relied on must be deemed to be read properly and in that sense with interest”: see *Asahi Medical Co Ltd v Macopharma (UK) Ltd* [2002] EWCA Civ 466 at [21] (Aldous LJ). He submitted that the judge ought to have held that the skilled person would read all of McDonald with the goal of understanding it, and that instead the judge's approach had been one of “cherry-picking the general parts of McDonald which support obviousness while ignoring all the inconvenient difficulties with the details”. I do not accept this submission, which is completely unfair to the judge. It is clear that the judge was perfectly well aware of the principle that the prior art must be read properly, since he cited *Asahi v Macopharma* when considering a different item of prior art (“Ragner”) at [160]. The judge did read McDonald properly, and quoted or referred to almost all of it. The judge did not cherry-pick from McDonald. On the contrary, he carefully considered the aspects, and in particular the missing details, relied upon by Emson to see what impact they would have on the skilled reader.
68. Thirdly, although counsel for Emson accepted that the decision in *Blue Gentian* could not be relied upon as evidence in this case, and that the judge was bound to decide this case upon the evidence before him, he nevertheless submitted that it was legitimate to compare the reasoning of Birss J with that of the judge because the comparison confirmed that the judge's approach was based on hindsight. I do not accept this submission. First, as a matter of principle, if hindsight cannot be demonstrated by examining the judge's reasoning in his judgment, then it is not legitimate to compare his reasoning with that of another judge based on different evidence. Secondly, and contrary to the submission of counsel for Emson, the differences in the evidence were highly material. Birss J was considering a skilled person with different attributes and different common general knowledge, and as explained above he did not have the benefit of expert evidence from anyone with experience in the design and manufacture of hoses.

69. Fourthly, counsel for Emson also relied upon a decision dated 22 January 2020 by the Opposition Division of the European Patent Office on an opposition by Hozelock to EP 585 in which the Opposition Division rejected Hozelock's contention that EP 585 was obvious over the combination of a standard garden hose and McDonald. The Opposition Division's reason, which occupies a single, short paragraph of the decision, was that "the skilled person trying to reduce the storage size of a garden hose would not look into the field of oxygen supply for aircraft crew". Leaving aside the fact that the decision is under appeal, the Opposition Division was not faced with precisely the same argument as the judge. Hozelock's case in this jurisdiction starts from McDonald, not from a standard garden hose. In any event, nothing in the Opposition Division's decision casts doubt on the much more detailed reasoning of the judge based on the evidence before him (which the Opposition Division excluded, partly because it was filed late).
70. Fifthly, counsel for Emson submitted that the judge was wrong to rely upon the evidence of Mr Doosterlinck because it was tainted by hindsight. The assessment of the witnesses was a matter for the judge, however. As noted above, the judge found Mr Doosterlinck to be an impressive witness and saw no reason to treat his evidence generally with caution, but said that he would consider whether specific aspects of it were tainted by hindsight when considering the issues. Moreover, as the judge noted at [165], Mr Doosterlinck accepted that he was unable to say whether the invention was obvious over Ragner without hindsight. As can be seen from the discussion above, the judge came to the conclusion that Mr Doosterlinck's evidence with respect to McDonald was not infected by hindsight. It is well established that what matters is not the expert's opinion, but the reasons the expert gives for that opinion. The judge carefully considered the reasons given by both Mr Hurst and Mr Doosterlinck for their respective opinions, and reached his conclusion after doing so. As I have explained, I consider that he was entitled to reach the conclusion he did. I would add two points. First, as the judge explained, Mr Doosterlinck accepted a number of the points which counsel for Emson put to him, and counsel relied upon those answers. That is inconsistent with the suggestion that the judge should have disregarded Mr Doosterlinck's evidence with respect to McDonald. Secondly, counsel relied upon evidence given by Mr Doosterlinck on other issues as demonstrating a hindsight approach. What matters is his evidence about McDonald, however, particularly given that the judge did not accept that he should treat Mr Doosterlinck's evidence generally with caution.
71. In addition to the submissions advanced by counsel for Emson, I wish to address three points which are relied upon by Floyd LJ, whose judgment I have had the advantage of reading, but which did not form part of counsel's submissions. The first point is that McDonald is a "mere paper proposal" and therefore less likely to render the claimed invention obvious, referring to three authorities none of which were cited by counsel. Given that the submission was not made to this Court, it may be presumed that it was not made to the judge, and therefore he cannot be criticised for not dealing with it. That said, I accept that the fact that there is no evidence that McDonald was commercialised is a relevant consideration. But the force of that consideration depends crucially on two factors.
72. First, if the prior art has been "long disregarded" (in the words of Jacob LJ in *Grimme Maschinenfabrik GmbH & Co KG v Scott* [2010] EWCA Civ 1110, [2017] FSR 7 at



[59]), that invites the question as to why it has long been disregarded. As Jacob LJ pointed out in the same paragraph, the age of the prior art is a relevant consideration in considering obviousness: other things being equal, the older the prior art, the less likely it is to contain teaching which assists in solving current problems. This is reinforced if the prior art is known to those in the field, because it makes it more likely that skilled persons have not found it to be of assistance. In *Grimme* the prior art in question (Spatz) had been published as long ago as 1960 and was acknowledged in the patent. In the present case McDonald was only eight years old at the priority dates of the Patents; and the evidence was not that McDonald had been disregarded, but that, as discussed in more detail below, it was unknown to those in the hose industry.

73. Secondly, if the prior art has been “unused”, that invites the question as to why it has not been used, which may cast doubt on its teaching and/or the applicability of that teaching to the problem at hand. In *Grimme* not only had Spatz not been commercialised, but also the patent began by identifying problems with Spatz. In the present case it is a matter for speculation as to why McDonald was not commercialised, but the evidence did not establish that the reason for this was because the hose did not work. As noted above, although Mr Hurst queried whether it would work in its own context, not only was his query technically unsound, but also he accepted that the skilled person would understand the principle upon which McDonald was based. In any event, the cogency of McDonald’s teaching and the applicability of its solution to the problem at hand was explored in the evidence and the judge carefully analysed the evidence on these questions. I cannot see that in doing so he treated McDonald as a real, practical machine.
74. The second point is the suggestion that the problem of providing a compact space-saving hose had been solved. It is, of course, correct that there had been prior solutions to that problem, but: (i) there was no evidence that the skilled person would have regarded the problem of saving space as having been so successfully solved that it was no longer worth trying to come up with better solutions; (ii) in general, one way in which technology advances is by coming up with better solutions to problems; (iii) the Patents state that saving space is a problem to be solved; (iv) Emson’s own case is that the commercial success of the Xhose is attributable, at least in part, to its space-saving properties; and (v) the judge found as a fact that that was indeed the case.
75. The third point is the suggestion that the allegation of obviousness involved a step-by-step analysis of the kind deprecated by Fletcher Moulton LJ in *British Westinghouse Electric & Manufacturing Co Ltd v Braulik* (1910) 27 RPC 209 at 230 (“a series of apparently easy steps”) in a passage cited with approval by Lord Russell in *Non-Drip Measure Co Ltd v Strangers Ltd* (1943) 60 RPC 135 at 142 and also by Lord Reid in *Technograph Printed Circuits Ltd v Mills & Rockley (Electronics) Ltd* [1972] RPC 346 at 353. Where getting from the prior art to the claimed invention involves a number of steps, the dangers of hindsight are particularly acute even if each step is simple in itself. In the present case, however, it only requires a single step to get from McDonald to the claimed invention. Moreover, McDonald’s hose is as simple in conception as the hose described and claimed in the Patents.
76. Finally, I would echo and expand on what the judge said at [187]. Like the judge, I am sympathetic to the position of Mr Berardi; but that is not enough for Emson to prevail on this appeal. The judge referred to patent protection being unavailable where there is prior art which discloses the invention or makes it obvious “for good reasons” without

elaborating on what those reasons were. There is a good deal of scholarly literature on the justifications for the patent system. In simple terms, however, the patent system aims to incentivise technical innovation, and investment in and disclosure of such innovation, by conferring limited monopolies. Monopolies are generally contrary to the public interest, however, because they prevent competition. Patent law contains a number of mechanisms which are designed to strike a balance between these conflicting considerations. Amongst these mechanisms are the requirements of novelty and inventive step (i.e. non-obviousness): in order not to fetter competition unduly, the public is deemed to have the right to do anything which is disclosed by, or obvious in the light of, any item of prior art, no matter how obscure, which was made available to the public anywhere in the world before the relevant date, without infringing a patent. For that reason, when attacking the validity of a patent, the party doing so is allowed to select the prior art used as the foundation for the argument with 20/20 hindsight. To that extent (but only to that extent), hindsight is not merely permitted, but an inherent feature of the current design of the European patent system (and indeed, of most patent systems worldwide). It inevitably follows that some patents turn out to be invalid because, unbeknownst to the inventor, or indeed other persons skilled in the relevant art, prior art emerges when sufficient searches are carried out which anticipates or renders obvious the claimed invention. The judge concluded that this was such a case so far as obviousness over McDonald was concerned, and I see no basis on which this Court is entitled to interfere with that conclusion.

#### Commercial success

77. I can deal with this ground of appeal shortly. As was common ground between counsel, the classic exposition of the law with respect to commercial success is that of Laddie J in *Haberman v Jackel International Ltd* [1999] FSR 683 at [32]. As he explained, commercial success of a patented invention can only demonstrate that the invention was not obvious over the prior art if it provides an insight into the thinking of the skilled person when considering that prior art. Accordingly, one of the considerations identified by Laddie J was the following at sub-paragraph (e):

“What prior art would have been likely to be known to all or most of those who would have been expected to be involved in finding a solution? A development may be obvious over a piece of esoteric prior art of which most in the trade would have been ignorant. If that is so, commercial success over other, less relevant, prior art will have much reduced significance.”

78. Counsel for Emson submitted that this did not justify the judge in giving the commercial success of the Xhose no weight, as opposed to “much reduced” weight. I do not accept this. In the present case, there was, as the judge noted, no evidence that McDonald was known to anyone in the hose industry, and such evidence as there was pointed the other way. In those circumstances the commercial success of the Xhose could not as a matter of logic help to show that the invention was not obvious over McDonald.

79. Counsel for Emson suggested in his skeleton argument, although not in his oral submissions, that the burden lay on Hozelock to show that McDonald was not known to persons in the hose industry and that Hozelock had failed to discharge that burden. I do not accept this either. Since it was Emson that relied on commercial success, the burden lay on Emson to establish the necessary factual basis for the contention.

Moreover, as noted above, counsel for Emson himself put it to Mr Doosterlinck in cross-examination that he and his colleagues were not familiar with the aerospace industry, that he did not regularly review patents from the aerospace industry and that Tricoflex did not make hoses for the aerospace industry.

### Conclusion

80. For the reasons given above, I would dismiss the appeal. Given that the appeal is to be dismissed, it is unnecessary to consider the issues raised by Hozelock's respondent's notice. Nor is it desirable to do so given that anything said would be obiter.

### **Lord Justice Henderson:**

81. I agree that the appeal should be dismissed for all the reasons given by Arnold LJ.
82. In common with Arnold LJ, I am unable to detect any error of law or principle in the admirably clear and comprehensive judgment of Nugee J. On the critical issue of the alleged obviousness of the Patents over McDonald, the judge followed the structured approach required by *Pozzoli SpA v BDMO SA* [2007] EWCA Civ 588, [2007] FSR 37, and reached evaluative conclusions which were in my opinion clearly open to him. It follows that there are no grounds on which this court can properly interfere with those conclusions.
83. I accept that the result may appear harsh, even unfair, to Mr Berardi. One feels intuitively that he should be able to reap the rewards of his brilliantly simple invention, and I fully share the sympathy for him expressed by the judge and by each of my colleagues in this court. But as Arnold LJ has explained at [76], there are indeed good reasons, in the wider public interest, why patent protection is unavailable where there is prior art which either discloses the invention or makes it obvious. That is so even if the prior art was in fact unknown to the inventor himself, or to other persons skilled in the art working in the same industry.
84. I am of course acutely conscious that the opposite conclusion has been reached by Floyd LJ, who (like Arnold LJ) is an acknowledged expert in the field of patent law. I have read Floyd LJ's judgment with the care and attention it deserves, and I have learnt much from it. In the end, however, I remain unconvinced that his reasoning provides a proper basis for overturning the judge's conclusions on the issue of obviousness. I would respectfully associate myself with the points in response made by Arnold LJ in his judgment at [71] to [75] above.
85. In particular, I find myself unable to agree with Floyd LJ's repeated dismissal of McDonald as "a mere paper proposal". So it was, in the limited sense that there was no evidence that McDonald had ever been translated into a working model in the eight (in fact nearer nine) years between its publication in the USA on 2 January 2003 and the first claimed priority date of the Patents on 4 November 2011. But the important point, to my mind, is that McDonald unambiguously disclosed the same basic concept of an extensible and retractable hose as Mr Berardi's later invention. That concept was clearly expressed, both verbally and visually, in the original patent application for McDonald. Bearing in mind that the notional skilled person was a designer of hoses in general, not just of garden hoses, and that he was familiar with the transposition of a hose structure from one application to another (see the judgment at [177]), it seems to

me only a small step, and not an impermissible exercise in hindsight, to conclude that the skilled person would at once have seen the potential for use of the same basic idea in the construction of a garden hose. The question of how to make the idea work in practice would not then have been a problem, because as every gardener knows the operation of a garden hose depends on nothing more sophisticated than its attachment at one end to a pressurised supply of water through an ordinary household tap.

**Lord Justice Floyd:**

86. I agree with Arnold LJ that the commercial success of the invention does not assist Emson in defeating the attack on the patent based on obviousness over McDonald. The commercial success of the Mr Berardi's invention was due to the fact that, viewed against the common general knowledge of garden hoses, the invention was one of breathtaking ingenuity bringing with it real practical advantages over what was available. For commercial success to assist a patentee on the issue of obviousness, however, one needs to analyse how it bears on the particular allegation of obviousness under consideration. The logic of the argument normally runs along the following lines. First, the patentee has demonstrated that there are rich commercial rewards to be earned from exploiting the invention in the patent. Secondly, the prior art over which the invention is said to be obvious has been available to the person skilled in the art for some time, yet no comparable device has ever been made. Thirdly, it is said that the absence of such a device on the market in the period between the prior art and the patent cannot be explained if the invention were obvious over that document, when it is one which the skilled person must have been aware of. The argument is at its most powerful if the prior art relied on is held to be common general knowledge, but is nevertheless a factor to be taken into account if the prior art is merely known to some of those in the field in question. The problem for the patentee in the present case is that the prior art fell into neither of these two categories. As Arnold LJ has explained, it is a proposal for a breathing apparatus for the crew on an aircraft. The evidence was that such a document would not in the normal course come to the attention of the skilled but unimaginative person skilled in the art. The absence of a comparable device on the market is thus readily explained by the fact that no real skilled person is ever likely to have seen it.
87. It is undoubtedly the law that an invention may have been published in, or rendered obvious by, a document which no person skilled in the art would ever be likely to have seen. The award of a monopoly is not available if such a document exists and the person skilled in the art could have access to it, whether or not in the real world anybody would ever have taken that opportunity, or read it. The policy justification for the rule, which is in essence a "deeming provision", is that once the possibility exists that a skilled person could obtain the document and consider what to do in the light of it, a subsequent patent should not interfere with his freedom to take it forward, either as precisely directed by the document or in ways which are rendered obvious by it. The policy justification does, however, lose its force in the situation, of which this case is an example, where the evidence establishes positively that the person skilled in the art would not even look for the document. The net result of the application of the rule to such a case is that the person who delivers the benefit of the invention to the consuming public is deprived of his monopoly in order to protect a right which would never in fact be exercised.

88. Judges have in the past bridled at the harshness of this rule. In *Technograph v Mills & Rockley* [1972] RPC 346 Lord Reid considered that the possible starting points for an obviousness attack differed from those which could be deployed for novelty. Although in the case of novelty any publication could be deployed, when considering obviousness the pool should be restricted to what could be discovered by the diligent searcher. His view did not appeal to a majority of their Lordships, however. The law must now be regarded as settled on this point. There is no support for the notion that “the state of the art” can be different depending on whether one is considering novelty or obviousness.
89. Be that as it may, the law has found ways of mitigating the penal nature of the rule. In *Inhale v Quadrant* [2002] RPC 21 at [47], Laddie J said this:

“However, there is one issue which is of significance to one of the pieces of prior art relied on in this action. A fiction in patent law is that the notional uninventive skilled man in the art is deemed to have read and assimilated any piece of prior art pleaded by the party attacking the patent claim. If the invention is obvious to that person in the light of a particular piece of prior art, the claim is invalid. It is no answer to say that in real life the prior art would never have come to the attention of a worker in the field, for example because it was tucked away on the top shelf of a public library or because it was in a language which nobody in the art knew. The notional skilled person is assumed to have read and understood the contents of the prior art. However that does not mean that all prior art will be considered equally interesting. The notional skilled person is assumed to be interested in the field of technology covered by the patent in suit, but he is not assumed to know or suspect in advance of reading it that any particular piece of prior art has the answer to a problem he faces or is relevant to it. He comes to the prior art without any preconceptions and, in particular, without any expectation that it offers him a solution to any problem he has in mind. Some pieces of prior art will be much more interesting than others. A document directed at solving the particular problem at issue will be seized upon by the skilled addressee. Its very contents may suggest that it is a worthwhile starting point for further development. But the same may not be the case where a document comes, say, from a distant and unrelated field. For example, in theory a notional skilled person engaged in trying to improve the operation of an internal combustion engine is assumed to know, have read and assimilated the contents of all published material including those, say, in the baking field. It may be that a document in the latter field discloses something which, if applied to the internal combustion art, would produce a marked improvement in performance. However, the person skilled in the art is not deemed to read the baking document in the knowledge, or even with a suspicion, that it is of significance to the problems he has to deal with. It may be that it is written in such a way that, although he understands it, the skilled person will dismiss it as irrelevant to his work. The more distant a prior art document is from the field of technology covered by the patent, the greater the chance that an intelligent but uninventive

person skilled in the art will fail to make the jump to the solution found by the patentee.”

90. It is important to understand what Laddie J meant by a “problem he has in mind” and “an answer to a problem he faces”. If the art is facing a particular unsolved problem, then a reading of a prior document from a wholly different field which suggests a specific solution to that problem may indeed cause the skilled person to seize on it. But the same is not true merely because the remote document discusses a design consideration which is also a design consideration for his own field. The skilled person may have common general knowledge ways of satisfying the design consideration in his field, so that achieving it is no longer a problem that he faces.
91. A second factor which can in many cases mitigate the unfairness of the rule is that documents which have not resulted in practical application have less force in an obviousness argument than those which have been implemented or are well known: see e.g. the Manual of Patent Practice published by the UKIPO at paragraph 3.38. In *Grimme Maschinenfabrik GmbH & Co KG v Scott* [2010] EWCA Civ 1110 at [59] Jacob LJ (giving a joint judgment with Etherton LJ, with which Sir David Keene agreed) said this about an attack based on an old, unimplemented proposal prior art document:
- “To say that all this would have been obvious without hindsight to an unimaginative skilled man on the basis of the old proposal of Spatz is quite, quite untenable. That would be so even if Spatz had been a real machine. But as far as anyone knows it was a "mere paper proposal." Patent law has for a long time, and rightly, regarded with particular suspicion arguments based on a suggestion that long disregarded unused proposals render later inventions obvious, see e.g. Blanco White Patents for Inventions 4th edn. (1974) at §4-220.”
92. Jacob LJ made the point about “mere paper proposal” again in *Ferag AG v Muller Martini Limited* [2007] EWCA Civ 15 at [68], this time with the agreement of Tuckey and Mummery LJJ, in rejecting an obviousness attack based on a prior document published some three years before the priority date.
93. This is obviously right. Unless the difference between the document and the invention is entirely trivial, it is not right to assume that that a paper proposal could be successfully implemented when there is no evidence that it has in fact been implemented over a substantial period. It is no answer to say that the document says that it works: most documents describing apparatus will say that. Without a degree of assurance that a proposal is a practical one, there is little if any basis for a skilled person to consider adapting it in any way. I think my Lord, Arnold LJ (as Arnold J) was making the same point when he said, in *Vestergaard Frandsen and others v Bestnet Europe Limited* [2009] EWHC 657 (Ch) at 664, albeit in the context of the value as confidential information to be attributed to a mere paper proposal:

“Thirdly and most importantly, I consider that the argument is based on a fallacy, which is that the recipes can be divorced from the experimental results. Whatever the position might have been if samples 7-16 had remained mere paper proposals, that is not this case. In fact they were bioassayed, and a number of them gave promising results,

including samples 8, 9 and 13. That is why the recipes were of value ...”

94. Particular care is needed with unworked proposals in patent specifications. A patent specification is not a declaration of what a patentee has done: it is a description of an idea.
95. Quite apart from these two points, the case law contains many well-known warnings about the dangers of hindsight, and the dangers of being misled by apparent simplicity. As to the latter point, Lord Herschell said in *Siddell v Vickers & Sons Ltd* (1890) 7 RPC 292 at 304:

“If the apparatus be valuable by reason of its simplicity there is a danger of being misled by that very simplicity into the belief that no invention was needed to produce it. But experience has shown that not a few inventions ... have been of so simple a character that once they have been made known it was difficult ... not to believe that they must have been obvious to everybody.”

96. As that passage indicates, hindsight is a particular danger where the invention is a simple one. In *Non-Drip Measure Co Ltd v Strangers Ltd* (1943) 60 RPC 135 Lord Russell said at 142:

“Whether there has or has not been an inventive step in constructing a device for giving effect to an idea which when given effect to seems a simple idea which ought to or might have occurred to anyone, is often a matter of dispute. More especially is this the case when many integers of the new device are already known. Nothing is easier than to say, after the event, that the thing was obvious and involved no invention. The words of Moulton LJ in *British Westinghouse v Braulic* (1910) 27 RPC 209 at 230 may well be called to mind in this connection: ‘I confess’ (he said) ‘that I view with suspicion arguments to the effect that a new combination, bringing with it new and important consequences in the shape of practical machines, is not an invention, because, when it has once been established, it is easy to show how it might be arrived at by starting from something known, and taking a series of apparently easy steps. This ex post facto analysis of invention is unfair to the inventors and, in my opinion, it is not countenanced by English patent law ... .’”

97. Lord Russell’s summary remains good law. In *Technip France SA’s Patent* [2004] R.P.C. 46 Jacob LJ said that Fletcher Moulton LJ’s statement was “as true today as when it was first said.”
98. Hindsight, like its close cousin unconscious bias, can manifest itself in numerous ways. A few examples are the following. First, when a prior document is examined in the context of an attack on the validity of a patent, the reader is aware of the invention. Parts of the document which would be of no real significance to a reader unaware of the invention are suddenly focused on, and become important because they resemble the invention, or have some other similarity with the industry in which the invention was made. The judge made the point, at paragraph 171 of his judgment that with the benefit of hindsight and knowledge of Mr Berardi’s invention it was striking how

closely McDonald anticipates the elements of the Xhose. Mr Hinchliffe made the unfair point, which I reject, that this particular paragraph supported the case that the judge had used hindsight. I mention it simply to illustrate the wholly different perspective created by the direction in which the telescope is pointing. A second, but equally pervasive, form of hindsight is to accept steps in an obviousness argument too readily because one knows of the direction in which one is seeking to go. A third example is a ready assumption that the skilled person would overcome difficulties with the implementation of the teaching of a prior art document because one is infected with knowledge that the invention works.

99. The judge concluded, now uncontroversially, that the skilled person was a person interested in the design and manufacture of garden hoses, and would typically be a hose designer with exposure to both garden and technical hoses. This was a different conclusion to that reached by Birss J in *Blue Gentian v Tristar* [2013] EWHC 4098 (Pat), but one which it is now common ground he was entitled to reach on the evidence which he heard. One must therefore put Birss J's conclusion on the issue of obviousness over McDonald out of one's mind. Likewise the highly attenuated reasoning in the decision of the Opposition Division of the EPO to which we were referred would not be a reason for doubting the conclusion which the judge arrived at.
100. The judge went on to make some careful findings about the common general knowledge:
  - i) 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.
  - ii) 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 of which the hoses are made rather than a fundamentally new design of hose (such as the XHose represented).
  - iii) 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.
  - iv) There were no examples of hoses where the layers were not bonded together.
  - v) The skilled person would not be aware of expandable hoses, a category that has only existed since the XHose.
  - vi) 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.
  - vii) The skilled person did, however, have a background in materials science, and 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, but all such rubber was stiff.

- viii) 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. The skilled person would be aware of various solutions to the problem of hose storage. 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.
- ix) Although there were others, three basic types of hose at the priority date were (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.
- x) There were corkscrew or helix hoses which are monolayer hoses that have been given a secondary spiral structure. The way they extend is by being pulled. They are not designed to expand under pressure.
- xi) 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.
- xii) A hose of a particular structure may be useful for a wide variety of applications. A hose called Tricoclair is described as a multipurpose hose whose applications include supplying compressed air, carrying industrial gases, and carrying foodstuffs, chemical products and water. Although some hoses are multipurpose, others are 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.
- xiii) The same hose can be made in a range of diameters.
- xiv) 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.
- xv) The skilled person would know that fittings may include a valve to stop water escaping when the hose is not in use.
- xvi) 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.
- xvii) 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 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.

- xviii) 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.
101. It is worth just dwelling on the detail explained to us on the corkscrew hose. The brochures in evidence before the judge which both sides treated as representing the common general knowledge contained illustrations of these:
- i) Copely Developments marketed the Codeflex Polyurethane Compact Coil said to be suitable to specify when "...confined areas are a limitation", and a corkscrew hose for articulated brake coils;
  - ii) Proline marketed a hose under the name "Spring Water" with the rubric "Specials for garden" which "extends up to 20 times. For ...when there are space problems".
  - iii) Hozelock marketed such a hose as the Spiral Hose Set shown in their 2010 catalogue. It "extends from 1 m to 15 m in length and recoils for neat and tidy storage".
102. Mr Hicks accepted that these corkscrew hoses solved the problem of storage space, as did the reeled hoses. Thus, although saving space was a design consideration, a compact space saving hose was part of the common general knowledge. It was not a problem facing the designer of hoses, or one that he would have in mind when reading a prior art document at the priority date.
103. This court needs to exercise caution when considering an appeal from a judge's evaluative assessment on an issue such as obviousness:
- "The need for appellate caution in reversing the judge's evaluation of the facts is based upon much more solid grounds than professional courtesy. It is because specific findings of fact, even by the most meticulous judge, are inherently an incomplete statement of the impression which was made upon him by the primary evidence. His expressed findings are always surrounded by a penumbra of imprecision as to emphasis, relative weight, minor qualification and nuance (as Renan said, *la vérité est dans une nuance*), of which time and language do not permit exact expression, but which may play an important part in the judge's overall evaluation. .... Where the application of a legal standard such negligence or obviousness involves no question of principle but is simply a matter of degree, an appellate court should be very cautious in differing from the judge's evaluation. per Lord Hoffmann in *Biogen v Medeva* [1997] RPC 1 at p.45."
104. I am satisfied that the judge did make a number of fundamental errors of principle in arriving at the conclusion that the invention of the two patents in suit was obvious in the light of McDonald.

105. First, it seems to me that the judge treated McDonald as a real, practical machine, as opposed to a mere paper proposal. There was no evidence whatsoever that McDonald's apparatus had ever been made in the eight years between its publication and the priority date, and it followed that there was no reason to assume it was a practical proposal for any purpose. In the absence of evidence that McDonald had led anyone in the cabin crew breathing apparatus market to do anything, the judge should have approached the suggestion that its disclosure would be regarded as useful by a skilled person interested in garden hose design with a high degree of scepticism.
106. This assumption that McDonald was describing a practical machine infected the judge's reasoning and his treatment of Mr Hurst's evidence. Mr Hurst had expressed a perfectly understandable concern in paragraph 91 of his first report that, given that the air pressure in the tubing was likely to be only a little over one bar, the material of which it is made would have to exert little resistance to extension. However, the last part of paragraph 19 of McDonald suggests that the elasticity of the hose significantly aids restowage. For that purpose the elastic force exerted by the hose would have to be much greater than that which could be overcome by a pressure of approximately one bar. As he explained, the skilled garden water hose designer would see a conflict between these properties, would be confused about how McDonald was meant to work and conclude that it had not been well thought out. A possible explanation which occurred to him was that the extension was in fact caused by the aircrew member pulling the mask towards himself, so that the assembly did not have to rely entirely on pressure to extend it.
107. The judge did not refer directly to Mr Hurst's evidence about the conflicting requirements placed on the inner tube, but in paragraph 184 recorded that the point was put to Mr Doosterlinck in cross-examination. He said:

“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.”

108. There are a number of difficulties with this passage. First, it assumes that the skilled person reads McDonald's untested proposal completely uncritically and takes as read his statement that the hose self-retracts even though he cannot understand properly how this can be so. That is not the correct approach to a paper proposal such as McDonald, although it might be different if the skilled person had access to a working machine. Mr Hurst made this point when he was cross-examined about McDonald. It was put to him that, despite the fact that flexible elastomers had not been used for garden hoses before, he would know he could use them because McDonald told him that they can be used. He replied:
- “Yes. But being told about something in a patent does not say if it works. There are hundreds of patents out there that do not work at all. Somebody has just come up with an idea and written a patent.”
109. Secondly the judge's balloon analogy is not apt: when the pressure is released from a balloon it will indeed return to its original shape (subject to non-elastic deformation). But the inner tube of McDonald, when self-retracting, is required to do work, because it is surrounded by (and pulling the weight of) the outer sheath and must cause it to move to a “gathered or shirred condition”. Thirdly, the judge appears to dismiss Mr Hurst's problem as irrelevant because the skilled person would bypass it and realise that the hose would be actuated by the (potentially) higher pressure in a garden hose. But why would the skilled person start to contemplate the application of McDonald's untested idea to a different application if unpersuaded that it would work for its own purpose? Moreover, there is no explanation as to how the problem which troubled Mr Hurst would be any less real with a heavy garden hose, which is subject to different technical demands. Mr Doosterlinck's answer that higher pressure would expand the hose is nothing to the point.
110. The judge placed much reliance on the fact that the skilled person with the attributes he had given him “is familiar with the idea of transposing a hose structure from one application to another”: see his dismissal of Mr Hinchliffe's reliance on the fact that McDonald was, as the judge found, from “a particular and very different field”. There is all the difference, however, between transposing a hose structure shown to have worked well in the different field, and transposing a mere paper proposal from that field. I baulk at the suggestion that all one is doing in taking McDonald's idea into the field of garden hoses is transposing an *application* from one field to another.
111. I think that, overall, the judge was misled into treating a paper proposal as if it were something which had been made and tested, when the evidence of both experts was that they could not fully understand the detail of how it was supposed to work. All this is redolent of the use of hindsight.
112. The judge rejected Mr Hinchliffe's submission at trial that McDonald was addressing issues that would not arise in the design of garden hoses. I think he was right to do so because space saving has clearly, at least historically, been a consideration in the design of a garden hose. The space saving supposed to be achievable on a flight deck is mentioned by McDonald, and is also mentioned as an advantage of the invention in the patents in suit. On this appeal Mr Hinchliffe puts the matter slightly differently. He says the judge correctly recognised that garden water hose designers are not operating under the same severe space constraints as on a flight deck. He says the judge was wrong to focus on this issue which the skilled person would not do without the benefit of

hindsight. He attacks the judge's conclusion at [178] that the skilled person would see the space saving advantages of McDonald as potentially applicable more widely.

113. I think the judge's focus on the space saving advantages of McDonald is infected by hindsight. The skilled person may be more interested in a prior art document if it deals with a problem which he is facing (see *Inhale* above). By 2011, however, as the judge found, at least two types of common general knowledge garden hose assembly solved this problem: the reel and the corkscrew hose. The skilled person would not be predisposed to take forward a proposal for a radically new design, therefore, merely because it claimed to be space saving. That is quite apart from the point I have already made that the skilled person would not accept as practically established that the retraction feature (a prerequisite for space saving) would work. What makes Mr Berardi's invention a leap forward in the art is that it delivers three advantages in combination: space saving, lightness and no kinking. The skilled person presented with McDonald, by contrast, is not presented with anything of which he is in real need. Here Sedley LJ's remarks in *Dyson Appliances v Hoover* [2001] EWCA Civ 1440 at [86] are apt:

“... the perceived limits of technical practicability are a matter of mindset, and that mindset is characteristically affected by awareness of need...”

114. I also think the judge was wrong in principle not to attach any weight to the fact that the design of garden hoses had not changed in many decades. The judge dealt with this at paragraphs 179 and 180 of his judgment:

“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.”

115. In my judgment the fact that garden hose design had not changed in many decades was a material factor which the judge ought to have taken into account, even accepting, as I do, that the present case has factual distinctions over *Dyson*. Just as the judge was astute to clothe the skilled person with real world characteristics (namely exposure to technical hoses), so also the judge ought to have recognised that the skilled person's interest was in an industry where there had been no innovation in the design of the hosepipe itself (as opposed to its fittings) for decades. Although the judge found that the skilled person was used to adapting a hose found useful in one application to another application, this is obviously not something which had happened in garden hoses, at least for a very long time. It was at least material to ask the question why this was, rather than to dismiss it as irrelevant. The idea that that the notional, unimaginative skilled person with an interest in this industry would seize on an untested proposal from a "very particular and very distant field" has the air of unreality when no ideas (even practical ones) appear to have been so transposed for so long.
116. The judge also dismissed ("not a significant factor") Emson's point that implementing McDonald would require the garden hose designer to work with materials of which he had no experience. The hoses which would be familiar to him were not designed to be expandable in length. To the extent that they had been made of rubber, the rubber was stiff. Mr Hicks accepted that the skilled person would have to find a suitable material, but we were not shown any evidence that the skilled person would know in advance that a suitable material to function under the technical demands of a hosepipe could be found.
117. We were taken at some length by both counsel to catalogues of hose designs, which supported the judge's findings concerning the common general knowledge. Mr Hicks for Hozelock accepted that there was nothing in this extensive array which would be of utility in adapting McDonald's breathing apparatus to make a garden hose. All garden hoses which had layers had those layers bonded together. The skilled person approaching McDonald with those designs in mind would see nothing whatever to cause him to make the connection with garden hoses, and his knowledge of technical hoses would not assist him to do so. The judge concluded that there was nothing in the materials point "to put him off seeing that this new type of hose might have wider application", but that was not the correct question to ask in this context. The correct question was whether there was anything to cause him to make this connection. I do not think this is a mere linguistic error on the part of the judge.
118. Mr Hinchliffe pressed upon us a number of other points. For example he made the point that although McDonald gives no information as to the diameter of hose to be used, what would be brought to mind was the sort of narrow tubing which drops down in the passenger cabin of an aircraft in response to a drop in cabin pressure and which is shown in safety demonstrations. Mr Doosterlinck accepted this suggestion. This, said Mr Hinchliffe, does not bring to mind a garden hose. The judge accepted Mr Doosterlinck's evidence that the same hose comes in many sizes, and so breathable air tubes come in the range 6-19 mm, and that this was not very different to garden hoses which are typically around 12-19 mm.
119. I think this is flawed hindsight reasoning. The small diameter of breathing air tube used in aircraft is a matter of common experience. Once one has the mental image of the sort of tubing which McDonald is talking about, one may ask what is there in McDonald to bring to mind larger diameter breathing hoses and then to make the connection with

garden hoses? The judge was wrong to disregard the fact that the tubing which McDonald brings to mind is radically different, in this and other respects, from anything ever used for a garden hose. The fact that larger diameters of breathing hose were available seems to me, with respect, to be an irrelevant consideration unless the skilled person would have a reason to think of them in the context of McDonald.

120. For these reasons, my own conclusion is that the judgment on the issue of obviousness over McDonald cannot stand. Viewed with the principles I have mentioned in mind, there is nothing in McDonald to suggest the idea of an expandable garden hose, let alone the combination of advantages which Mr Berardi's invention brings. In view of the fact that my Lords have come to the opposite conclusion, no purpose would be served by a consideration of the issues arising on Hozelock's respondent's notice on which we heard argument. It is sufficient to say that I would not have disturbed the judge's conclusions on those issues. For my part I would have allowed this appeal.