

OPINION UNDER SECTION 74A

Patent	GB 2549469 B
Proprietor(s)	Haygrove Limited
Exclusive Licensee	
Requester	Swindell and Pearson Limited on behalf of PRO-TECH Marketing Limited
Observer(s)	
Date Opinion issued	26 March 2020

The Request

1. The comptroller has been requested by Swindell and Pearson Limited on behalf of PRO-TECH Marketing Limited ("the Requester") to issue a validity opinion in respect GB 2549469 B ("the Patent") in the name of Haygrove Limited.
2. The request was received on 27 December 2019 and was accompanied by a statement explaining the request. The Requester has provided the following evidence accompanying the request:

E1: Statutory Declaration of Yanick Harnois, of Les Harnois Industries Inc. which includes exhibits A1-A6, B0-B6, C1-C3, D1.

E2: US4837990 (not considered by the UKIPO)

E3: GB2397005 (previously considered by the UKIPO, but requested to be reconsidered in view of new arguments and evidence)

E4: WO00/25571

E5: FR2388486

E6: FR2386760

E7: Excerpt from "The New Science of Strong Materials or why you don't fall through the floor!" by JE Gordon (1976)

E8: Excerpt from "Structures or why things don't fall down" by JE Gordon (2003)

E9: Recommended Reading for budding engineers (cam.ac.uk) 12 Apr 2016

E10 "Sound Structures" published Aug 13 2013

<https://www.producegrower.com/article/pg0813-sound-structures-greenhouses/>

Along with versions of A5 in E1 (without annotations)

3. Each of documents E2-E10 have a publication date prior to the priority date of the patent.

Observations

4. No observations have been received.

Whether E3 should be considered

5. The Requester has asked me to consider E3 which has been previously considered by the UKIPO examiner during pre-grant prosecution of the Patent.

6. Section 74A(3) of the Patents Act 1977 provides that:

(3) The comptroller shall issue an opinion if requested to do so under subsection (1) above, but shall not do so;

(a) in such circumstances as may be prescribed, or

(b) if for any reason he considers it inappropriate in all the circumstances to do so.

7. Rule 94(1) of the Patents Rules 2007 provides that:

(1) The comptroller shall not issue an opinion if—

(a) the request appears to him to be frivolous or vexatious; or

(b) the question upon which the opinion is sought appears to him to have been sufficiently considered in any relevant proceedings.

8. The Requester argues that E3 should be reconsidered as part of this opinion as a different inventive step argument based on different evidence has been presented. Although E3 was considered by the examiner in the original examination process it has not been assessed in the light of the potentially new prior art documents and corresponding argument relating to what constitutes the common general knowledge of the skilled person. I consider this to be a new question and it to be appropriate for me to reconsider E3 in this opinion.
9. The Requester has also asked me to reconsider the inventive step analysis carried out by the examiner during pre-grant prosecution of the Patent. The Requester contends that the examiner erred in her reasoning. This does not raise a new question and it is not appropriate for me to reconsider the examiner's inventive step analysis in this opinion. Therefore, I will not do so.

The Patent

10. The Patent is titled "Polytunnel structure". It was filed on 14th April 2016, published on 25th October 2017 and granted on 25th December 2019. The patent remains in force.
11. The Patent relates to a polytunnel structure, for example for use in aiding controlling the environmental conditions in which crops are grown, enhancing or optimising the growing conditions to enhance crop production, reduce insect damage and the like.
12. One form of known polytunnel structure in common use comprises a series of rows of upstanding legs, a series of cover support members which are supported, at one end, by one of the legs of one of the rows, and at its opposite end by a corresponding leg of an adjacent one of the rows. A cover, for example in the form of a flexible plastics material sheet, a net, a mesh or the like, extends over the cover support members. The cover support members typically take the form of lengths of a suitable steel material tube of circular cross-sectional shape, the tube having been bent to take on the desired arcuate form. The upper end of each leg is typically of bifurcated form, defining a pair of angled, upwardly extending projections of diameter slightly smaller than the inner diameter of the tube of the cover support members such that the end parts of the cover support members can receive the projections so that the cover support members are supported by the legs in a desired orientation.
13. It is explained that in use, the loadings borne by the cover support members and legs in supporting the cover and in withstanding loads applied to the cover, for example as a result of high winds, can be significant, and the cover support members and legs are designed in such a manner that they are able to withstand these loads. In order to ensure that the cover support members are able to bear the loads applied thereto, in use, the cover support members are typically formed from relatively thick-walled tubes. However, the use of relatively thick-walled tubes is disadvantageous in that it results in the loads having to be borne by the legs being increased, and in that the cover support members are of relatively costly form. Furthermore, there is a tendency for the cover support members to sag under their own weight, in use, the end parts thereof rotating relative to the projections of the legs.
14. The invention seeks to overcome the problems with the prior art discussed above through using cover support members in tubular form of non-circular cross-sectional shape. The non-circular cross-sectional shapes of the cover support members are supported by projections of the leg members in a non-rotatable manner.
15. The patent suggests the use of cover support members of non-circular cross-sectional shape enables cover support members of thinner wall thickness to be used without negatively impacting upon the load bearing capacity thereof in the directions in which most loads are experienced. Accordingly, weight and material cost savings can be made. The use of the non-circular cross-section material for the cover support members means that rotation of the clips or clamps relative thereto can be avoided without needing excessively high clamping loads to be used. The risk of damage to the cover support member through the application of such clamping loads is thus reduced. Furthermore, relative rotation or angular movement between the cover support member and the leg can be avoided.

16. The embodied invention is shown in the figures, with figures 1, 2, 3a and 3b reproduced below for reference:

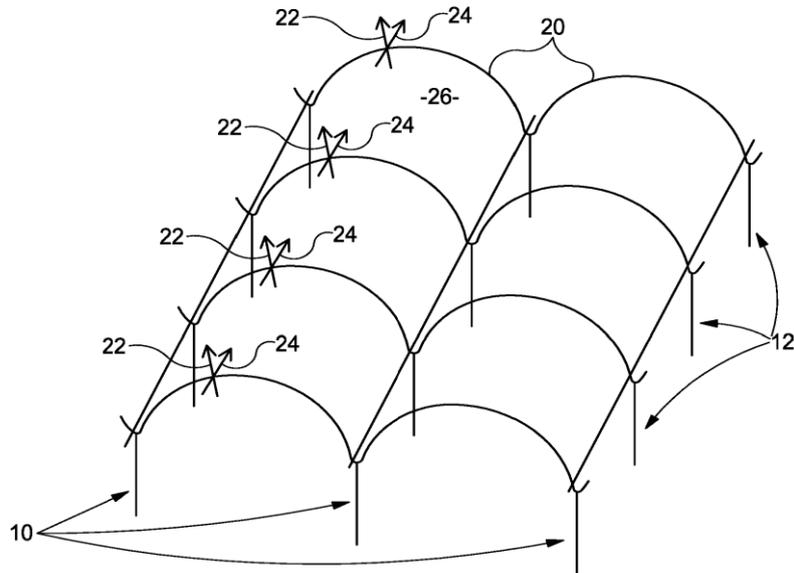


Figure 1

17. A polytunnel structure 10 embodying the invention comprises a plurality of rows 10 of upstanding legs 12. Each leg 12 includes an upright 14 and a bifurcated support region 16 defining arms or projections 18 that are angled to the upright 14. As best shown in Figure 2 below, the projections 18 are of non-circular cross-sectional shape. The structure 10 further comprises a series of cover support members 20. Each cover support member 20 is of arcuate form, being constructed from a tubular steel or the like material that is bent to take on the desired arcuate form. Each support member 20 is supported, at one end thereof, by one of the legs 12 of one of the rows 10, and at the opposite end thereof by a corresponding leg 12 of an adjacent one of the rows 10. The end parts of the cover support members 20 are supported by the leg members 12 by being slid over respective ones of the projections 18.

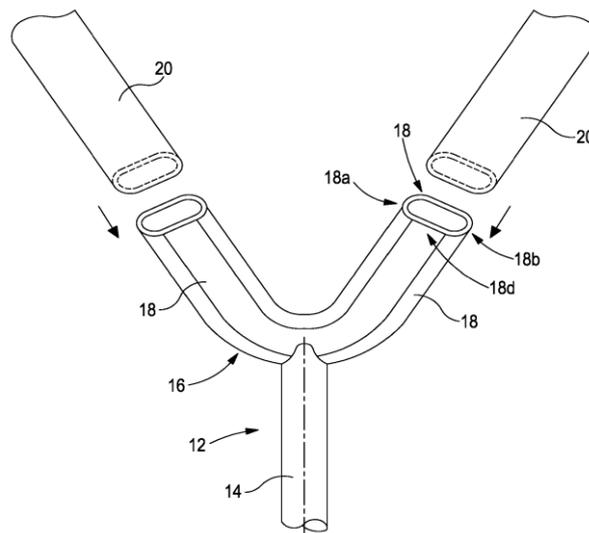


Figure 2

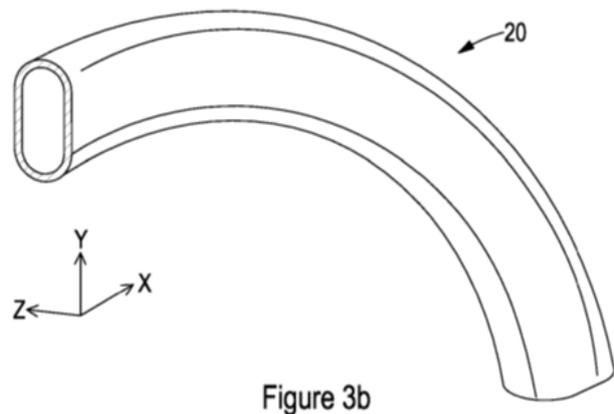
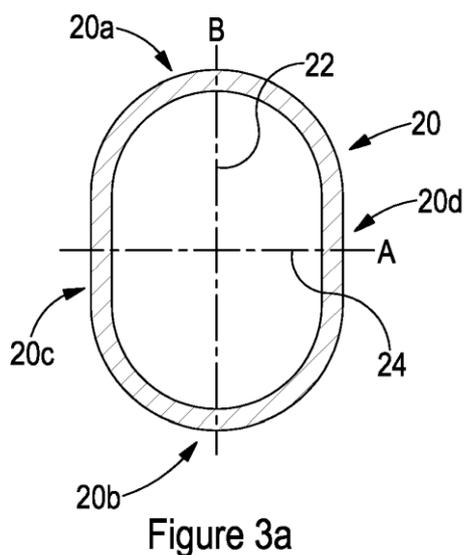


Figure 3b

18. As show in Figures 3a and 3b above, each cover support member 20 takes the form of a length of a tubular steel or the like material that is bent or otherwise formed to take on the desired arcuate form. The tubular material is of non-circular cross-sectional shape, defining a major axis 22 and a minor axis 24, the material being of substantially the same cross-sectional shape as the projections 18, but of slightly larger dimensions so as to allow the introduction of the projections 18 into the ends of the support members 20. The cross-sectional shape of each cover support member 20 thus conveniently takes the form of a pair of part circular regions 20a, 20b interconnected by straight regions 20c, 20d. The orientation of the cover support members 20 is such that, throughout the length of each cover support member, the minor axis 24 extends generally horizontally, substantially parallel to the ground surface upon which the polytunnel structure 10 is constructed. The major axis 22 extends perpendicularly to the minor axis 24.
19. The patent has 5 claims including a single independent claim 1. Claim 1 of the Patent reads:

"1. A polytunnel arrangement comprising a first polytunnel structure and a second polytunnel structure located adjacent the first polytunnel structure, each polytunnel structure comprising a plurality of rows of leg members, and a plurality of cover support members, each cover support member being supported at one end by a leg member of one of the rows, and at its opposite end by a corresponding leg member of an adjacent one of the rows, at least some of the leg members supporting an end of a cover support member of the first polytunnel structure and an end of a cover support member of the second polytunnel structure, wherein a cover support member of the first polytunnel structure and a corresponding cover support member of the second polytunnel structure are both of tubular form of non-circular cross-sectional shape having a major axis and a minor axis, wherein, in use, the minor axis extends generally parallel to a ground surface upon which the polytunnel structure is used, and the major axis extends perpendicularly to the minor axis, wherein each leg includes two arms or

projections for cooperation with respective end parts of the associated cover support members, the arms or projections being angled to the vertical and being of non-circular cross-sectional shape, the non-circular cross-sectional shapes of the cover support members of both of the first and second polytunnel structures and the arms being such that the cover support members are supported by and are non-rotatably connected to the leg member."

20. I will consider the novelty and inventiveness of the dependent claims should that become necessary after my assessment of claim 1.

Claim construction

21. Before considering the novelty, inventive step and infringement issues raised in the request, I need to construe the claims of the patent – that is to say, I must interpret them in the light of the description and drawings as instructed by Section 125(1):

125(1) For the purposes of this Act an invention for a patent for which an application has been made or for which a patent has been granted shall, unless the context otherwise requires, be taken to be that specified in a claim of the specification of the application or patent, as the case may be, as interpreted by the description and any drawings contained in that specification, and the extent of the protection conferred by a patent or application for a patent shall be determined accordingly.

22. In doing so I must interpret the claims in context through the eyes of the person skilled in the art. Ultimately the question is what the person skilled in the art would have understood the patentee to be using the language of the claims to mean. This approach has been confirmed in the recent decisions of the High Court in *Mylan v Yeda*¹ and the Court of Appeal in *Actavis v ICOS*².
23. The Requester has not put forward any argument concerning the construction of claim 1. I also have no issue with claim 1 and consider it to be clear when read in light of the description and drawings. In my opinion the skilled person would have no issue with understanding the meaning of claim 1. The same is true of dependent claims 2-5.

The law - Novelty and Inventive step

24. Section 1(1)(a) and (b) of the Patents Act (henceforth 'the Act') reads:

1(1) A patent may be granted only for an invention in respect of which the following conditions are satisfied, that is to say –
(a) the invention is new;
(b) it involves an inventive step;

¹ *Generics UK Ltd (t/a Mylan) v Yeda Research and Development Co. Ltd & Anor* [2017] EWHC 2629 (Pat)

² *Actavis Group & Ors v ICOS Corp & Eli Lilly & Co.* [2017] EWCA Civ 1671

25. The relevant provisions in relation to novelty are found in section 2(1) and section 2(2) which read:

2(1) An invention shall be taken to be new if it does not form part of the state of the art.

2(2) The state of the art in the case of an invention shall be taken to comprise all matter (whether a product, a process, information about either, or anything else) which has at any time before the priority date of that invention been made available to the public (whether in the United Kingdom or elsewhere) by written or oral description, by use or in any other way.

2(3) The state of the art in the case of an invention to which an application for a patent or a patent relates shall be taken also to comprise matter contained in an application for another patent which was published on or after the priority date of that invention, if the following conditions are satisfied, that is to say –

(a) that matter was contained in the application for that other patent both as filed and as published; and

(b) the priority date of that matter is earlier than that of the invention.

26. The provisions in relation to inventive step are found in section 3 which states:

3. An invention shall be taken to involve an inventive step if it is not obvious to a person skilled in the art, having regard to any matter which forms part of the state of the art by virtue only of section 2(2) above (and disregarding section 2(3) above).

27. The Court of Appeal in *Windsurfing*³ formulated a four-step approach for assessing whether an invention is obvious to a person skilled in the art. This approach was restated and elaborated upon by the Court of Appeal in *Pozzoli*⁴. Here, Jacob LJ reformulated the *Windsurfing* approach as follows:

(1)(a) Identify the notional “person skilled in the art”

(1)(b) Identify the common general knowledge of that person;

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

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

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

28. I will begin by considering the validity of the invention as defined by claim 1. Only if I find it to be invalid will I consider the dependent claims.

³ *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59

⁴ *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

E1 – Les Harnois Industries and the Tunnel-Pro polytunnel system

29. E1 is a statutory declaration by Yannick Harnois of Les Harnois Industries Inc that states the Tunnel-Pro polytunnel system made by Les Harnois Industries Inc is state of the art and anticipates all of the features of claim 1. E1 also includes exhibits A1-A6, B0-B6, C1-C3, D1. The exhibits are as follows:

A1: An internet article (<https://www.fruitandveggie.com/production/fruit/page-44>) dated 19 October 2009 announcing the launch of Tunnel-Pro.

A2: An internet article (<https://www.fruitandveggie.com/fruit/harnois-launches-tunnelpro-2779>) dated 19 October 2009 describing some technical features of Tunnel-Pro including a high tunnel with arches made of oval tubing for strength throughout the tunnel. The photograph clearly shows the Y-shaped support that interconnects two side-by-side tunnels.

A3: An internet article (<https://www.greenhousecanada.com/marketplace/new-products/gutter-connected-tunnels-from-harnois-1793>) dated 12 August 2009 describing some technical features of Tunnel-Pro including a high tunnel with arches made of oval tubing for extraordinary strength throughout the unit.

A4: An historic internet article (<https://web.archive.org/web/20160317220941/https://www.harnois.com/en/greenhouse-uses-high-tunnels/tunnelpro.html>) from an archive from the Wayback machine dated 17 March 2016 of the www.harnois.com website.

A5: An excerpt from the Griffin 2015 Hard Goods Catalogue (page 26) that offers the Harnois Tunnel-Pro for sale. It discloses a Y-shaped support for arches with oval arches and supports. Oval arms swaged at one end insert into the oval arches and are supported by Y-shaped leg members.

A6: An excerpt from the Grower magazine dated March 2014 (page 15) that includes an advertisement of the Harnois Tunnel-Pro. The advert mentions oval tubing and includes a photograph showing the Y-shaped supports for the arches.

B0: A copy of a Harnois Tunnel-Pro installation manual dated 18 April 2011.

B1: The cover page of the Tunnel-Pro installation manual of Exhibit B0. It shows a unique order number and customer number and is specific to an individual customer.

B2: An installation instruction dated 15 April 2011. It is an extract from the customer installation manual of Exhibit B0. It shows the location of plan TPB5000 (Exhibit B4) and plan TPB5005 (Exhibit B5) in the polytunnel arrangement. It shows Y-shaped supports of oval cross-section connecting to arches of oval cross-section.

B3: An installation instruction dated 29 September 2008. it is an extract from the customer installation manual of Exhibit B0. It shows the location of plan TPB5030A (Exhibit B6) in the polytunnel arrangement.

B4: An installation instruction (Plan TPB5000) dated 24 October 2007. It is an

extract from the customer installation manual of Exhibit B0. It shows connection of the intermediate support (see B2) vertically into the ground.

B5: An installation instruction (Plan TPB5005) dated 24 October 2007. It is an extract from the customer installation manual of Exhibit B0. It shows the Y-shaped support with arms of oval cross-section. The arms are swaged for close fit insertion into the arches of oval cross-section.

B6: An installation instruction (Plan TPB5030 Type A) dated 19 May 2010 (Rev 4). It is an extract from the customer installation manual of Exhibit B0. It shows the Y-shaped support (intermediate axis) With arms of oval cross-section that connect to (intermediate) arches of oval cross-section. The orientation of both the oval cross-section of both the arms and the arches is illustrated. The minor axis of the oval cross-sections would be parallel to the ground when installed. The swaging of the end of the oval arms, for closest insertion is shown.

C1, C2 and C3 are undated diagrams of the Harnois Tunnel-Pro that illustrates various features of the Harnois Tunnel-Pro.

D1: A customer delivery slip of 12 pages issued by Harnois, obtained from the company records of Les Harnois Industries Inc. The delivery slip records a shipping date of 19 April 2011 (order date of 8 March 2011). The dates are formatted yy/mm/dd. The order number is 146041 and customer number Q1J813 which are the same as the order and customer numbers in Exhibit B1 (the front page of Exhibit B0). The description of the article at page 1 line 1 refers to Tunnel-Pro. According to the statement in E1 the customer delivery slip has the necessary materials required to construct a greenhouse as instructed in Exhibit B0.

30. The Requester contends that E1 establishes that the Tunnel-Pro polytunnel system was made available to the public by sale; that the sale was without restriction; that the disclosure was an enabling disclosure; and that the disclosure was a disclosure of all of the features of claim 1.
31. In E1, Yannick Harnois states that Les Harnois Industries Inc, have manufactured, sold and installed oval tube polytunnel structures under the brand of Harnois Tunnel-Pro since before 14 April 2016. The exhibits A1 to A6 and B0 to B6 relate to the Harnois Tunnel-Pro. The Harnois Tunnel-Pro polytunnel structure has been manufactured, in strict accordance with the same design since its launch. The design of the Harnois Tunnel-Pro polytunnel structure is accurately represented by exhibits A5 and C1-C3. This design was made available to the public before 14 April 2016 by sale of the Harnois Tunnel-Pro to customers.

Is the Tunnel-Pro system part of the state of the art?

32. The only matter which becomes part of the state of the art as the result of the use of an invention is that which is thereby made available to the public. In *Lux Traffic Controls*⁵ Aldous J recognised that what was made available to the public often differed according to whether the public had an article in their possession to handle, measure and test or whether they could merely look at it. Depending on the

⁵ *Lux Traffic Controls Ltd v Pike Signals Ltd and Faronwise Ltd*, [1993] RPC 107

circumstances a skilled person might be able to determine how an article was constructed and operated or nothing material might be disclosed. If an article or a material is unconditionally supplied to a member of the public, possibly as the result of just a single sale, this is regarded as also making available any information which could be obtained by dismantling or analysing the article or material, even to destruction.

33. When considering prior use which may be destructive to the novelty of a claimed invention, the required standard of proof is the balance of probabilities. Within this standard, the Patents County Court in *Kavanagh Balloons*⁶ held that a flexible degree of probability should be applied to evidence relating to prior use. It was held that it was not necessary for an opponent to prove their case “up to the hilt”. The hearing officer in *Colley's Application*⁷ did not require proof “up to the hilt” but found that mere assertion of prior use was insufficient: place, time and detail were essential.
34. On the balance of evidence provided in E1 and the accompanying exhibits, I am persuaded that the Tunnel-Pro polytunnel system forms part of the state of the art under s.2(2). The Requester has provided sufficient evidence to my mind to prove this. The Tunnel-Pro system was launched in 2009 and advertised for sale before the earliest date of the Patent (14 April 2016). The system has been sold to at least one customer (in 2011) with all the necessary component parts along with an installation instruction manual (see exhibit D1) before the earliest date of the Patent.

Does the Tunnel-Pro system have all of the features of claim 1?

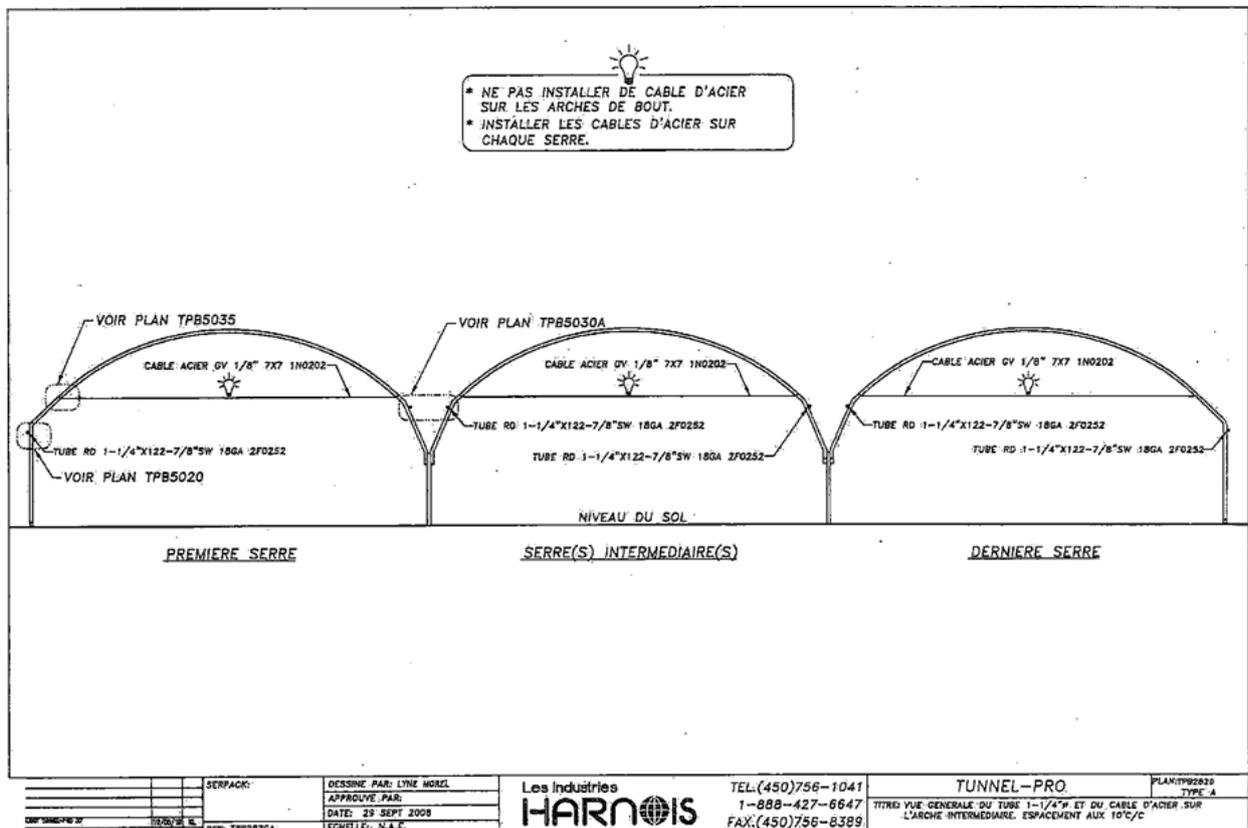
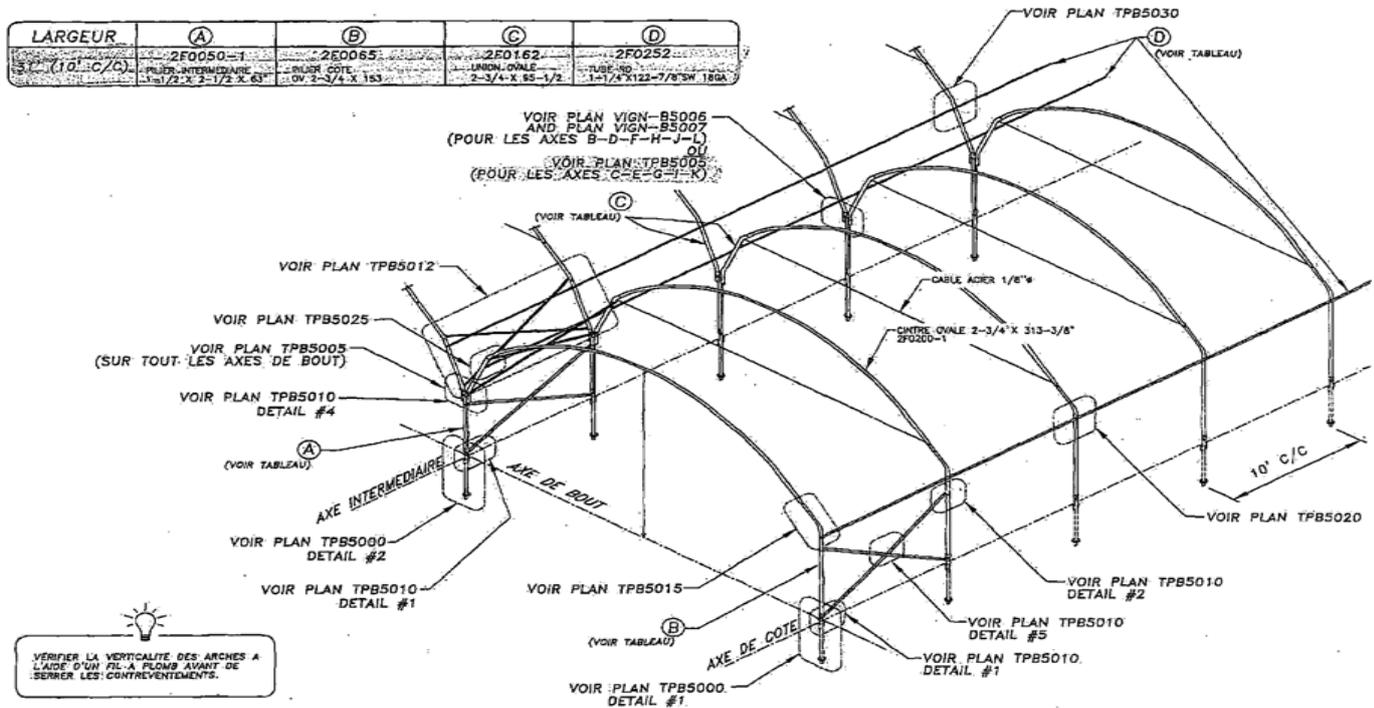
35. As I have decided the Tunnel-Pro system forms part of the state of the art under s.2(2), I now need to consider whether it includes all of the features of claim 1. The Requester has argued the system clearly does. In his statement in E1, Yannick Harnois explains that the Tunnel-Pro system has been manufactured in strict accordance with the same design since its launch. The exhibits provided with E1 show the design of the system sold to customers prior to the earliest date of the Patent.
36. In E1 it is explained that the Tunnel-Pro is a modular system. When assembled it comprises linked, adjacent side by-side polytunnels that form a greenhouse. The side-by-side tunnels are joined above ground via metal Y-shaped supports in a 'multibay' arrangement. Each polytunnel uses the same structural design, in which a series of arches are provided along the length of the polytunnel, to support a polytunnel cover. The ends of each arch are attached to different Y-shaped supports. Each Y-shaped support has a vertical leg mounted in the ground and two upstanding arms angled to the vertical. The upstanding arms have an oval transverse cross-section, and which are referred to as oval-shaped. The aligned arches in adjacent polytunnels are supported at their ends by respective arms of a shared Y-shaped support. The arches have an oval transverse cross-section and they are referred to as oval-shaped. The non-circular cross-section of the oval shaped tubing is extended from circular vertically and flattened from circular horizontally. Each oval-shaped arm of the Y-shaped support is designed to be pushed inside the oval-shaped end of the

⁶ *Kavanagh Balloons Pty Ltd v Cameron Balloons Ltd* [2004] RPC 5

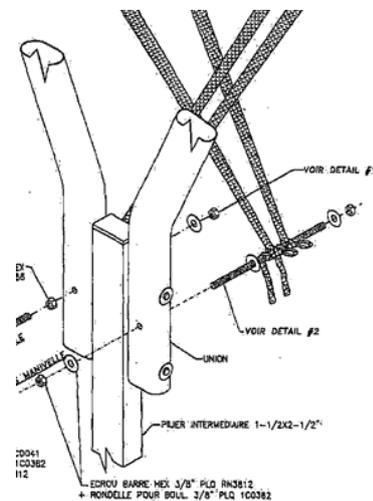
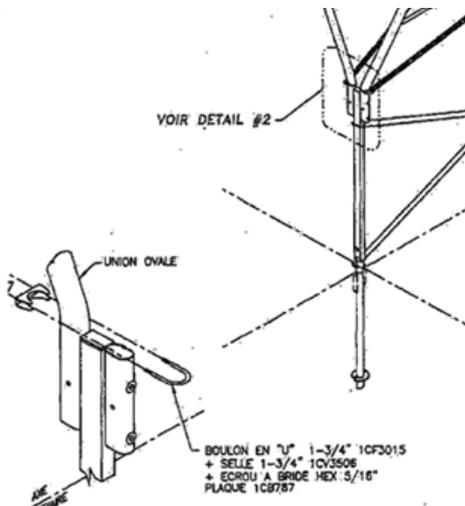
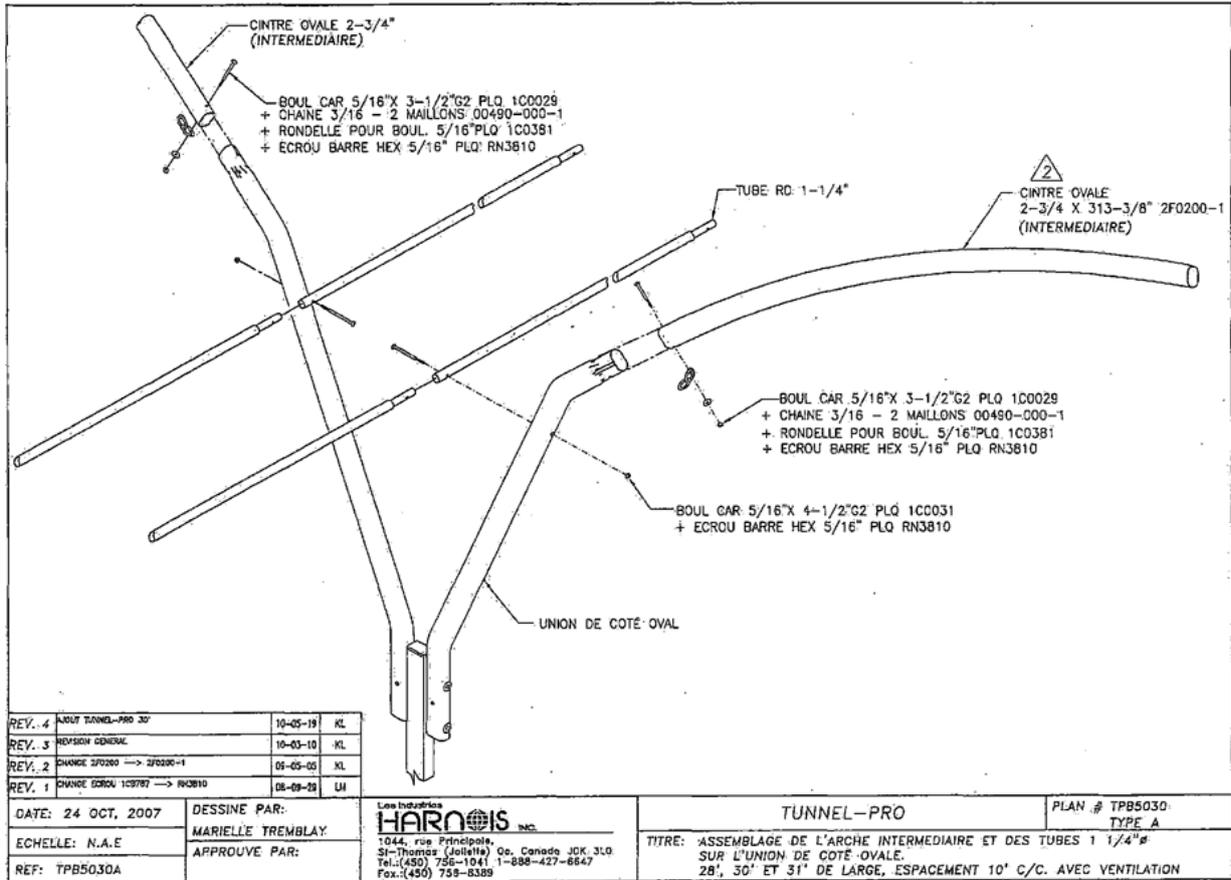
⁷ *Colley's Application* [1999] RPC 97

arch it supports. The exterior cross-section of the arms of the Y-shaped support are therefore also oval. The push-fit interface between the arm of the Y-shaped support and the end of the arch provides a snug, non-rotatable fit. The arms of the Y-shaped support are swaged for controlled push-fit insertion of the arms into the arches.

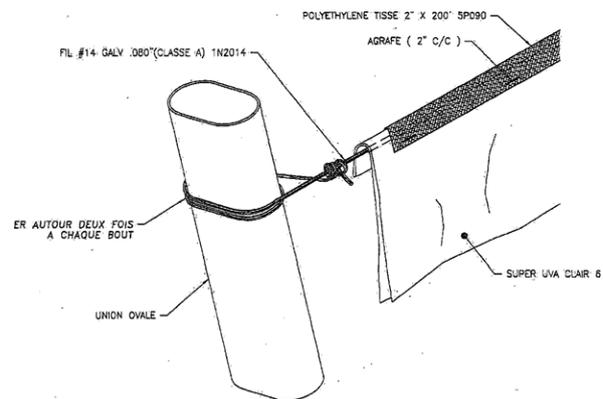
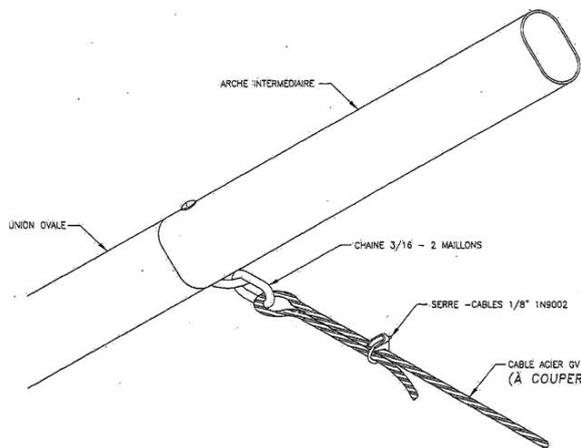
37. The installation manual B0 includes a large number of figures. I will reproduce the most relevant figures below:



38. As can be seen from the figures above the Tunnel-Pro is a multibay polytunnel having adjacent polytunnel structures. Each polytunnel structure includes legs and cover support members arranged as required by claim 1. As explained above with regard to the prior art, the crux of the invention lies in the non-circular cross-sectional shape of the cover support members and each leg having two arms or projections for cooperation with respective end parts of the associated cover support members, the arms or projections being angled to the vertical and being of non-circular cross-sectional shape. The non-circular cross-sectional shapes of the cover support members and the arms being such that the cover support members are supported by and are non-rotatably connected to the leg member.



B6(10/1)



39. The figures above illustrate the cover support members and the leg members. The leg members comprise two arms angled to the vertical for support of cover support members of adjacent polytunnel structures. The arms are referred to as “union ovale” and as the name suggests are oval-shaped. The cover support members are also oval-shaped. The minor and major axes of the oval-shaped cover support members are oriented when installed as required by claim 1.
40. The statement in E1 along with exhibits A2-A3 and A5-A6 all discuss the Tunnel-Pro system as being made from oval-shaped tubing to improve strength.
41. In my opinion, from the evidence provided, the Harnois Tunnel-Pro polytunnel structure forms part of the state of the art and includes all of the features of claim 1.

Dependent claims

42. Having found claim 1 to be invalid I will now briefly consider the dependent claims which read:
- “2. An arrangement according to Claim 1, wherein throughout the length of the cover support member the major axis extends in a vertical direction or in a direction having a vertical component.
3. An arrangement according to Claim 1 or Claim 2, wherein the cover support members have a cross-sectional shape in the form of a pair of part circular regions spaced apart from one another by substantially straight sides.
4. An arrangement according to any of the preceding claims, wherein each arm or projection is of dimensions smaller than those of the cover support member to allow the arm or projection to be received within an end part of the cover support member.
5. An arrangement according to any of the preceding claims, further comprising at least one clip or clamp adapted to be fitted to the cover support member.”
43. The Requester considers all of the features of each of claims 2-5 to be disclosed in the Tunnel-Pro system. I agree. The features of these claims are clearly shown in

the above figures. Therefore, in my opinion the Harnois Tunnel-Pro polytunnel structure also anticipates claims 2-5.

E2 - US4837990

44. The Requester also argues that E2 discloses all of the features of claim 1. E2 discloses a polytunnel structure as illustrated below:

Fig. 1.

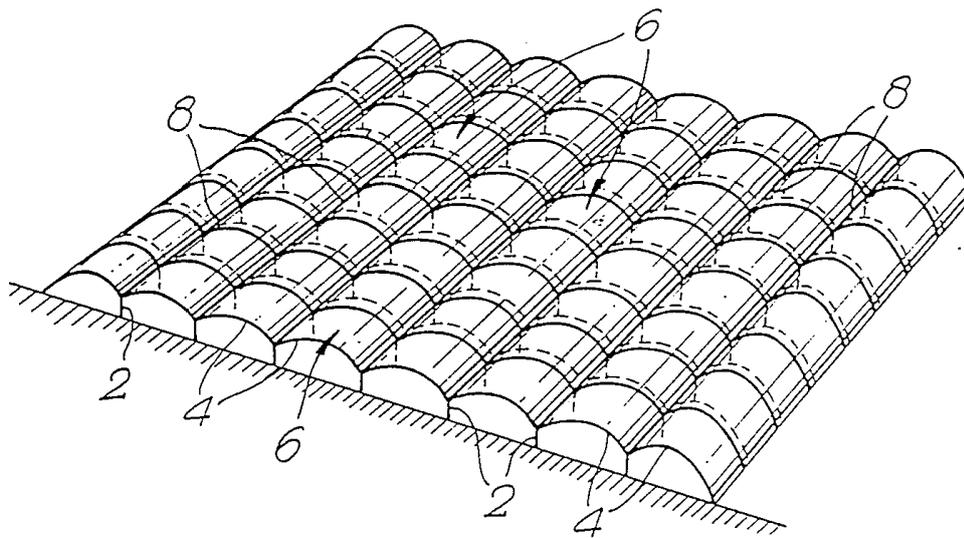
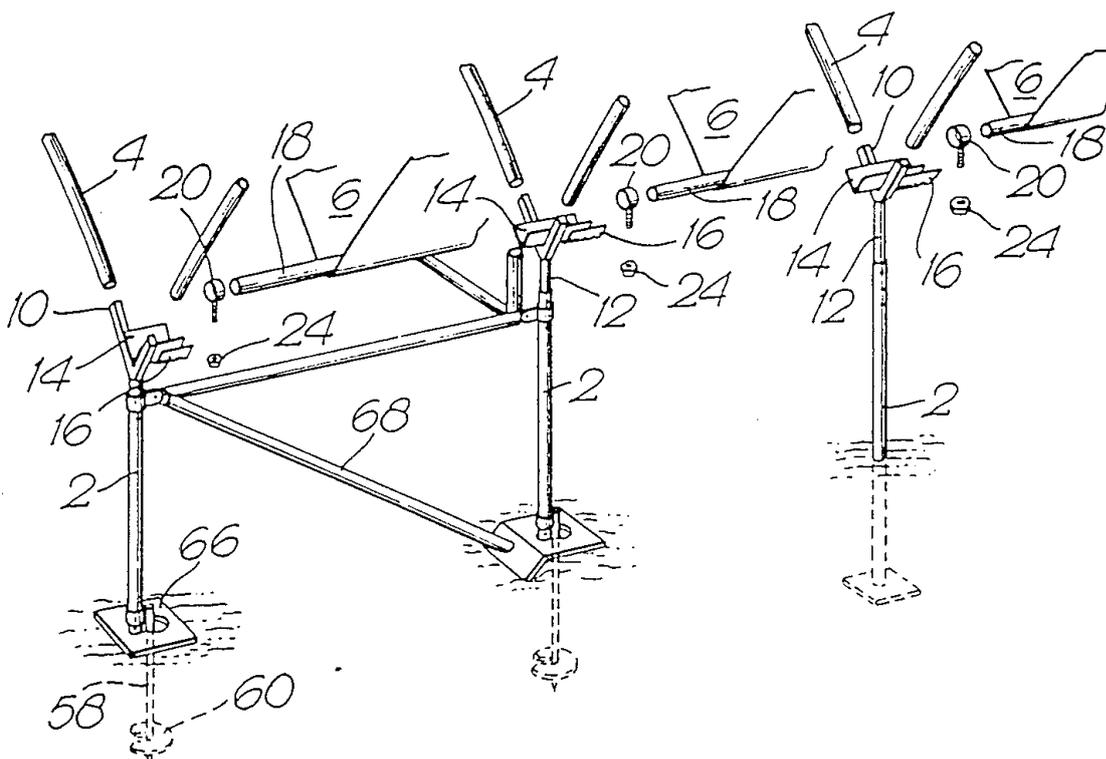
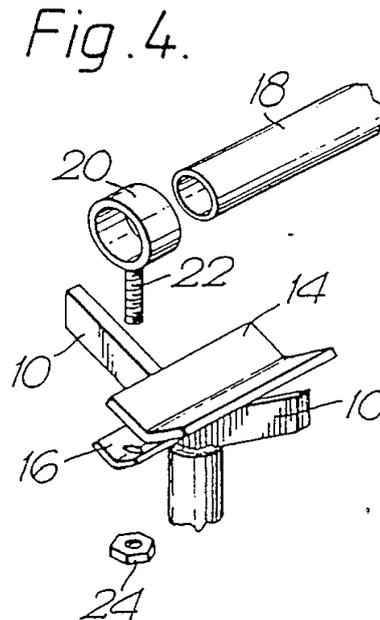
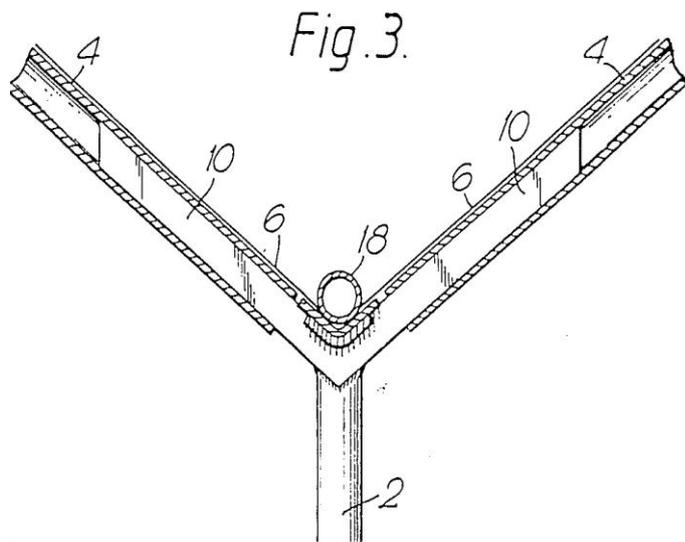


Fig. 2.





45. I am in agreement with the Requester that E2 explicitly discloses all of the features of claim 1 apart from cover support members being of non-circular cross-sectional shape. The Requester considers this feature to be explicitly disclosed. I disagree. E2 is silent on the cross-sectional shape of the cover support members (bars 4). The remaining features of claim 1 can be clearly seen in the figures above including arms or projections (stubs 10) being angled to the vertical and being of non-circular cross-sectional shape (they are illustrated as rectangular in figures 2 and 4).
46. The Requester argues that the bars 4 do not appear circular in figure 2 and stubs 10 have a rectangular cross-section in figure 4. The Requester highlights a passage from the description which reads:

“the arched bars 4 conveniently made of tubular sections, wherein end portions of the bars 4 are adapted to be slipped over stubs 10”

Further attention is drawn to the close fit between the bars 4 and the stubs 10 in figure 3.

47. In my opinion figure 2 illustrates the stubs 10 as being of rectangular cross-section which is consistent with figure 4. However, figure 2 clearly does not illustrate the bars 4 as having a rectangular cross-section. The bars do appear to be illustrated having a circular cross-section. They also appear similar to tubes 18 which from figures 3 and 4 can be seen to have a circular cross-section. To my mind, if the bars were intended to be of non-circular or rectangular cross-section to complement the stubs they would have been illustrated as such (as the stubs have). In the absence of any explicit discussion of the cross-sectional shape of the bars, in my opinion the skilled person would construe the use of the wording “tubular sections” in the above highlighted passage as relating to a circular cross-section from what is shown in figure 2 and the described circular “tube” 18.
48. Furthermore, I’m not convinced that anything can be gleaned from the apparent close fitting of bars 4 with stubs 10 in figure 3. It is not clear at which point the cross-

section in the figure has been taken especially as the stubs are connected to leg portion 12 which telescopically fits inside pole 2 (as shown in figure 2 and discussed in the description with reference to figures 2-4 in column 3). Figure 3 does not show the leg portion 12 which should apparently be shown sitting inside the pole 2 and connected to the stubs 10.

49. The Requester subsequently argues that if the feature of the cover support members being of non-circular cross-sectional shape is not considered to be explicitly disclosed then it is implicitly disclosed. Again, the argument relies on figure 3 and the illustrated close fit of bars 4 and stubs 10 and the perceived non-rotatable joint formed therebetween. For the same reasoning as above, I disagree with the Requester's argument. I consider it to be unclear what figure 3 illustrates and further there is no discussion in E2 of the bars and stubs forming a non-rotatable joint.
50. Therefore, I do not consider E2 to disclose all of the features of claim 1.

Inventive step

Common general knowledge

51. The Requester has provided a significant amount of argument relating to what forms part of the common general knowledge (CGK) of the person skilled in the art. Before I can identify the (CGK) of the skilled person I need to define the skilled person. The Requester during their analysis has defined the skilled person as:

“The person skilled in the art would have direct knowledge in the design and construction of greenhouses and polytunnels, most likely working within this industry. The person would be capable of making routine modifications and would have a commercial interest in producing better, cheaper polytunnels. While they may not be a qualified engineer they would have an interest in engineering in so far as it relates to polytunnel design.”

I am happy to adopt this definition.

52. The Requester considers CGK to include at least exhibits A2, A3, A5, A6 and E10 which all teach the use of arches made of oval tubing for strength. Furthermore, CGK also extends to include the Harnois Tunnel-Pro system. Therefore, CGK would also include the association of oval cross-sectional arches with increased strength.
53. The Requester also considers patent specifications E4-E6 relating to the use of non-circular cross-sectional tubing in arches for greenhouses to also form part of CGK. Additionally, the engineering textbooks (E7-E9) that relate to the relationship between strength of tubing and cross-sectional shape are considered part of CGK.
54. The Requester asserts that CGK includes facts generally known to the skilled person in the technical field and will include a knowledge of what has been put into practice in the industry. It will include information that is prevalent and sufficiently clear in catalogues which would be consulted to keep abreast of products made by

competitors (Red Spider Technology⁸). I am not familiar with Red Spider Technology but having considered it I am not sure it supported the notion that information in catalogues form part of CGK. At paragraph 81 Mann J discusses:

"I accept his evidence that a designer would keep abreast of the competition, and would be generally informed about existing designs of downhole tools. In that context the catalogues of major suppliers would be a resource on his bookshelf of the kind he would refer to in the manner referred to by Laddie J in Raychem Corp's Patents [1998] RPC 31 at 40:

"In the case of standard textbooks, it is likely that all or most of the main text will be common general knowledge. In many cases common general knowledge will include or be reflected in readily available trade literature which a man in the art would be expected to have at his elbow and regard as basic reliable information."

What Mr Moyes relies on is the basic knowledge of a designer and the material to which he would resort. The valves in the various catalogues are not common general knowledge (and are not relied on as such), but features of the tools can be common general knowledge if sufficiently apparent."

The key point is are the catalogues, catalogues of major suppliers which the skilled person would have on his/her bookshelf to keep abreast of the competition.

55. In Generics (UK) Ltd⁹ 2548 Arnold J held that matter being relied on as CGK must be CGK in the UK. He explained:

"The reason for this is that, whether one is concerned with the validity of a European Patent (UK), or a UK patent, one is concerned with a right in respect of the UK. It is true that the prior art may have been published anywhere in the world, but I do not think that alters the need for the skilled team to consider that art as if they were located in the UK. I do not think it matters that a fact was common general knowledge in (say) China, if it was not common general knowledge here. The position may be different if all the persons skilled in a particular art in the UK are acquainted with the position in China".

A5 and A6 would appear to be publications from North America. From E1, Harnois Industries would appear to be based in Canada with the Tunnel-Pro system sold (as evidenced by D1) being shipped to a Canadian address. I have no evidence to suggest publications A5 and A6 were available in the UK or that the Tunnel-Pro system with installation manual (B0) has been sold to a UK based customer. Therefore, in light of Arnold J comments above, in my opinion, A5, A6 or the Harnois Tunnel-Pro system cannot be considered to form part of CGK of the skilled person. Furthermore, in light of paragraph 53 above, I have no evidence to suggest that the publications A5 and A6 qualify as publications of major supplies in the UK which the skilled person would have on his/her bookshelf to keep abreast of the competition.

⁸ Red Spider Technology v Omega Corporation [2010] EWHC 59 (pat)

⁹ Generics (UK) Ltd (t/a Mylan) v Warner-Lambert Company LLC [2015] EWHC 2548

56. A2 and A3 are two online articles from www.fruitandveggie.com both dated 19 October 2009. They concern the launch of the Harnois Tunnel-Pro system and describe some of the technical features of the system. Whilst A2-A3 pre-date the patent and form part of the prior art, this does not mean that they necessarily form part of the common general knowledge of the skilled person in the art. In Raychem Corp¹⁰ Laddie J explained CGK as follows:

“The common general knowledge is the technical background of the notional man in the art against which the prior art must be considered. This is not limited to material he has memorized and has at the front of his mind. It includes all that material in the field he is working in which he knows exists, which he would refer to as a matter of course if he cannot remember it and which he understands is generally regarded as sufficiently reliable to use as a foundation for further work or to help understand the pleaded prior art. This does not mean that everything on the shelf which is capable of being referred to without difficulty is common general knowledge nor does it mean that every word in a common text book is either. In the case of standard textbooks, it is likely that all or most of the main text will be common general knowledge. In many cases common general knowledge will include or be reflected in readily available trade literature which a man in the art would be expected to have at his elbow and regard as basic reliable information.”

57. I have no evidence before which suggests either A2-A3 (or the website www.fruitandveggie.com itself) to be well-known and falling into the categories discussed above by Laddie J to be forming part of the common general knowledge. They are merely two online articles both dated the same day and cannot be considered to form part of the common general knowledge of a person skilled in the art. The same also applies to the website E10.

58. Similarly, I have no evidence to persuade me that the textbooks E7-E8 are well-known and falling into the categories discussed above by Laddie J to be forming part of the common general knowledge. Whilst they are both listed in E9 which is a recommended reading list for budding engineers who are to undertake the undergraduate engineering course at Cambridge University, this does not mean they are standard or well-known textbooks to the skilled person as defined by the Requester in paragraph 50 above. The definition describes the skilled person as not being a qualified engineer but having an interest in engineering in so far as it relates to polytunnel design. Neither of these textbooks would appear to be related to polytunnel design and I am not persuaded the skilled person would have either of these books on his/her shelf. Therefore, to my mind, neither E7 nor E8 form part of CGK.

59. With regard to patent specifications E4-E6 the statement by Sachs LJ in General Tire¹¹ is of particular interest because it sets out the relationship of patent specifications to the common general knowledge (“it is clear that individual patent specifications and their contents do not normally form part of the relevant common general knowledge”). With regard to patent specifications Sachs LJ explained:

¹⁰ Raychem Corp’s Patents [1998] RPC 31

¹¹ General Tire & Rubber Co v Firestone Tyre & Rubber Co Ltd [1972] RPC 457

“...it is clear that individual patent specifications and their contents do not normally form part of the relevant common general knowledge, though there may be specifications which are so well known amongst those versed in the art that upon evidence of that state of affairs they form part of such knowledge, and also there may occasionally be particular industries (such as that of colour photography) in which the evidence may show that all specifications form part of the relevant knowledge.”

60. I have no evidence before which suggests any of E4-E6 to be patent specifications falling into the categories discussed above by Sachs LJ and thus forming part of the common general knowledge.
61. The Requester asserts that it is CGK in multiple technical fields (for example, yacht design, building construction, general engineering) that structural members which are required to bear differing loads in differing directions may be optimised by changing their cross-section, such that their greater cross-sectional dimension (their major axis) is aligned in the direction of the greatest forces acting on the member. I am not persuaded that the skilled person who is not a qualified engineer but has an interest in engineering in so far as it relates to polytunnel design would necessarily know this as part of his/her CGK.
62. Further the Requester considers CGK of the skilled person to include that non-circular tubing elongated in the vertical and shortened in the horizontal may be used for polytunnel arches to increase the strength and weight efficiency of a polytunnel design. This is primarily based upon E4-E6 which I have already deemed not to form part of the CGK of the skilled person.

E2 – US 4837990

63. Having found E2 not to disclose all of the features of claim 1 I will now consider it with regard to inventive step. To determine whether or not an invention defined in claim 1 is inventive over E2, I will use the four-step test outlined above in paragraph 27.

(1)(a) Person skilled in the art

64. As defined in paragraph 51 above.

(1)(b) Common general knowledge

65. The common general knowledge of the skilled person would include well-known designs of poly-tunnel structures and well-known methods of installing and fitting polytunnel structures including apparatus and devices to aid in such methods.

(2) Inventive concept of claim 1

66. The inventive concept relates to the nature of the joint formed between the non-circular cover support members and the supporting arms, to produce a stronger, more weight-efficiency polytunnel arrangement i.e.

"the arms or projections being angled to the vertical and being of non-circular

cross-sectional shape, the non-circular cross-sectional shapes of the cover support members of both of the first and second polytunnel structures and the arms being such that the cover support members are supported by and are non-rotatably connected to the leg member".

(3) What differences exist between the matter of E2 and the inventive concept of claim 1?

67. E2 discloses a common leg with two supporting arms of non-circular cross-section, angled to the vertical. However, it does not disclose use of a non-circular cross-sectional shape of the cover support member, to form a non-rotatable joint with the arm.

(4) Are the differences inventive?

68. The Requester argues that E2 discloses polytunnel arrangements of multiple, adjacent tunnels, in which a common support leg is used to support adjacent cover support members (bars 4), in which the stubs 10 are angled to the vertical. E2 additionally discloses that the stubs used have a non-circular cross-section. A skilled person wishing to improve the strength or maintain the same strength at reduced cost, would immediately recognise that the strength of the arches would be improved if they have a non-circular cross-sectional shape that is extended in the vertical (to support the weight) and reduced in the horizontal (to save money). The fact that the bars are made of tubular sections wherein the end portions of the bars are adapted to be slipped over the stubs (col. 3, l. 28-20 & FIG 2) means that a close push-fit connection would be maintained. The combination of a close push-fit connection between the bars and the stubs when both the bars and the stubs have non-circular cross-sections inevitably results in a non-rotatable joint. The skilled person does not have to be motivated to produce a non-rotatable joint because it is an inevitable consequence of improving the strength of the arches while maintaining a push-fit connection to the arms. Therefore, the skilled person would arrive directly at claim 1 without any inventive step.
69. Again, I do not agree with this argument. E2 does not discuss the strength of the bars as being a factor to consider. E2 explains that structures of the kind disclosed are generally made of a metal framework of interconnected elements and a sheet material such as textile fabric or plastic film. The strips of sheet 6 are described as being plastic film and tube 18 is said to be metal. The skilled person would not consider the metal framework disclosed to need strengthening to support the plastic film strips. The skilled person would not be motivated to do so. As discussed above when considering E2 for novelty, to my mind the skilled person would understand the bars to be of circular cross-sectional shape. I do not agree that the unskilled person from the disclosure in E2 would consider it obvious to provide bars of non-circular cross-sectional shape. Furthermore, I do not consider the CGK of the skilled person as discussed at length above to include the provision of non-circular cross-sectional elements.
70. I am therefore of the opinion that the invention as defined by claim 1 is inventive with respect to E2.

E3 - GB2397005

71. As discussed above, E3 was considered by the examiner during pre-grant prosecution of the Patent. However, the Requester asked for E3 to be reconsidered in light of common general knowledge which had not been considered before. However, I have decided that E1 and E4-E10 do not form part of the CGK of the skilled person. Therefore, the argument that claim 1 is obvious in view of E3 in light of CGK (based on E1 and E4-E10) is moot and need not be considered further.

Conclusion

72. On the basis of the evidence put forward I am of the opinion that claims 1-5 of the Patent are anticipated by the Harnois Tunnel-Pro polytunnel structure (E1). Therefore, the Patent is invalid.
73. I am of the opinion that claim 1 of the Patent is novel and inventive in light of what is disclosed in US4837990 and GB2397005.

Application for review

74. Under section 74B and rule 98, the proprietor may, within three months of the date of issue of this opinion, apply to the comptroller for a review of the opinion.

Marc Collins
Examiner

NOTE

This opinion is not based on the outcome of fully litigated proceedings. Rather, it is based on whatever material the persons requesting the opinion and filing observations have chosen to put before the Office.