

OPINION UNDER SECTION 74A

Patent	GB 2422546
Proprietor(s)	Mr Dennis Lee Hakes
Exclusive Licensee	
Requester	Ambic Equipment Limited, on 19 May 2009
Observer(s)	
Date Opinion issued	14 August 2009

The request

1. The comptroller has been requested to issue an opinion in relation to the validity of patent GB 2422546 under Section 74A(1)(b) Patents Act 1977. The request is accompanied by a statement of reason which proposes “that the patent is invalid in its entirety, as all the claims are obvious”. The statement of reason includes a discussion of five prior art patent documents, a witness statement detailing the common general knowledge of a person skilled in the art from one Richard Hiley which includes an extract from the book “Mastitis Control in Dairy Herds”, copies of price lists and brochures relating to dip cups produced by Ambic Equipment Ltd. The request also includes a copy of submissions made by the patentee during prosecution before grant.
2. The five prior art patent documents are;
 - D1 US 3366111 (Gandier) published 30 January 1968
 - D2 EP 0399132 (Bodini et al) published 28 November 1990
 - D3 EP 0207572 (van der Lely) published 7 July 1987
 - D4 US 6302058 (Dahl et al) published 16 October 2001
 - D5 US 5211132 (Farina et al) published 18 May 1993
3. The request acknowledges that D1, D4 and D5 were cited during prosecution of a corresponding US patent (US 7165510 B2) and that D2 was cited during prosecution of the application for the patent in suit. I also note that D5 is an equivalent of EP 0514765 which was cited during prosecution of the application for patent in suit. It is stated that D3 has not been cited during prosecution either in the UK or the US.

Observations

4. Observations in response to the request were received from Marks & Clerk LLP on behalf of the patent holder. These observations question a number of points made in the request. They also highlight that D1 was cited during the prosecution of a US equivalent patent. The observations include testimonies which point to the commercial success of the patented device and a declaration to that effect which was submitted to the US Patent & Trademark Office by the patent holder during prosecution of the US equivalent patent.
5. Observations in reply were received from the requester. These contest a number of the points made in the observations from the patent holder including the question over the use of D1 and the issue of commercial success. They also propose that as the observations from the patent holder have “offered no argument or evidence as to why the claims according to their natural wording are inventive and so must, by default, accept that, if he loses on the point of construction, then the claims are obvious.”

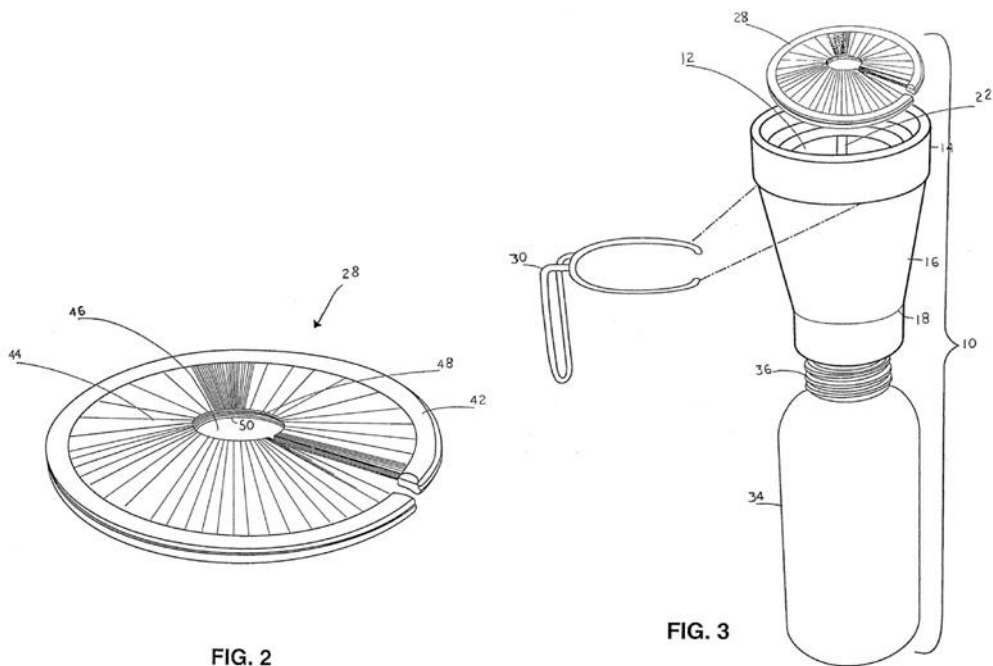
Scope of this opinion

6. Section 74A Patents Act 1977 was introduced by the Patents Act 2004 and provides a procedure where the comptroller can issue, on request, non-binding opinions on questions of validity relating to novelty and inventive step, and on questions of infringement. Rule 96 Patent Rules 2007 allows for the submission of observations by any person on any issue raised by the request. Neither the Rules nor the Act require the submission of observations or that these observations cover all issues raised in the request. Whether or not the patent holder (or other person) has provided observations on an issue in the request it is for me to form an opinion as to the validity of the patent in suit in light of the issues raised in the request. Silence, on the part of any effected party, is expressly not an acceptance that any issue is to be found against them as a matter of course. This opinion therefore details the comptroller’s opinion of the validity of the patent in suit relating to inventive step in light of the documents provided.
7. There is no legal authority which allows the use of the prosecution history of a patent as an aid to claim construction (see paragraphs 27 to 30 of *Telsonic’s patent* [2004] RPC 38 and *Kirin-Amgen Inc v Hoechst Marion Roussel Ltd* [2005] RPC 9). This opinion will therefore proceed on the basis that meaning of the claims and their effect is discernible from the patent.

8. Rule 94(1)(b) provides for the refusal of a request to issue an opinion on the grounds that the request relates to a question which has been “sufficiently considered in any relevant proceedings”. As D2 to D5 are discussed in relation to establishing what can be regarded as the common general knowledge of the person skilled in the art I will consider these as such regardless of the extent to which they have already been considered in proceedings. Whilst D1 was considered by the USPTO during the application for the US equivalent patent and the scope of the claims of the equivalent patent are essentially the same as those in the patent in suit I do not believe that I can regard these proceedings as “relevant proceedings” or that I can be certain that the issue of the inventive step has been “sufficiently considered”. I will therefore proceed with the opinion requested.

The patent in suit

9. The application entitled “Bovine germicide application device” was filed on 2 November 2004 and claims priority from two earlier US applications dated 4 November 2003 and 6 August 2004. As filed the application states that the invention relates generally to veterinary and animal care equipment and more particularly to devices that are utilized to support and maintain proper care of udders and teats in lactating animals. The claims included with the application refer to a germicidal application device and a method of applying germicidal solutions. During proceedings the application was amended to include only one independent claim directed to a non-foaming teat dip application device. Patent GB 2422546 B entitled “Bovine germicide application device” including these claims was granted with effect from 29 August 2007 and remains in force in the UK.
10. The patent describes a single preferred embodiment of the invention which I believe is best illustrated by figures 2 and 3 (shown below). The device 10 of the preferred embodiment comprises a cleansing chamber 16 defined by a body 12 with an open first end 14 and extending to a closed second end 18. A circumvolving inner ring (said to be shown in Figure 3, but not numbered) is positioned within the device and is configured to allow passage of an animal teat into the chamber defined within the body 12. In the preferred embodiment of the invention, the cleaning chamber 12 is attached to a reservoir 34 but paragraph 0031 clearly provides for embodiments in which a remote reservoir 34 is provided and connected to the cleaning chamber by way of a transport conduit. The transport conduit 22 of the preferred embodiment brings solution from the reservoir container 34 and terminates at a position at, near or within the circumvolving ring.



11. A wiping device 28 is positioned near the open first end 14 of the cleaning device and is configured to allow passage of a teat through an aperture 46 and into the chamber 12. The wiping device 28 of the preferred embodiment is a generally circular brush having a plurality of soft bristles 44, connected to a split outer ring 42, in various layers 48, 50. These bristles 44 define an aperture 46, which is configured to have a diameter that is slightly smaller than the average diameter of a cattle teat. The wiping device 28 is configured to be positioned and held upon the circumvolving ring by a clip.
12. The claims of the patent are as follows;
 1. A non-foaming teat dip application device configured for applying designated quantities of a non-foaming teat dip to a teat, said application device comprising:
 - a reservoir container, having a top and an outer surface and defining a reservoir capable of holding a preselected quantity of a desired germicidal substance therein;
 - an attachment connected to with said top portion of said reservoir container, said attachment having a open first end configured to receive a teat therein, and extending along a body to a closed second end, said closed second end connected to said top portion of said reservoir container whereby material may pass from said reservoir container into said attachment through a transport conduit;
 - said transport conduit is positioned within said conduit and has a first end and a second end and defining a passageway that extends

from said first end to said second end along a length, said length sufficient so as to transport germicidal material from said reservoir to a desired location within said attachment and proximate said attachment open first end; and

at least one wiping device fixedly laterally positioned within said attachment; said wiping device comprised of a generally circular brush having pluralities of soft bristles connected to an outer ring in layers, said outer ring configured to fit within said open first end of said attachment, said wiping device configured to wipe a portion of said teat while said teat is positioned within said attachment, said attachment further comprising a circumvolving ring positioned with said attachment, said ring configured for connection with at least one of said wiping devices.

2. The teat dip application device of claim 1 wherein said transport conduit extends above said circumvolving inner ring.
3. The teat dip application device of claim 1 wherein said transport conduit extends through said circumvolving inner ring.
4. The teat dip application device of claim 1 wherein at least one wiping device is positioned above said circumvolving ring.
5. The teat dip application device of claim 1 wherein at least one wiping device is positioned below said circumvolving ring.
6. The teat dip application device of claim 1 wherein at least one of said wiping devices is a generally circular brush having a generally circular aperture defined therein.
7. The teat dip application device of claim 1 wherein said reservoir container is made of a material that is capable of being compressed by a manual force.

Claim construction

13. Before considering the documents put forward in the request I need to construe the claims of the patent following the well known authority on claim construction which is *Kirin-Amgen and others v Hoechst Marion Roussel Limited and others* [2005] RPC 9. This requires that I put a purposive construction on the claims, interpret them in the light of the description and drawings as instructed by Section 125(1) and take account of the Protocol to Article 69 of the EPC. Simply put, I must decide what a person skilled in the art would have understood the patentee to have used the language of the claims to mean.

14. To my mind the person skilled in the art is someone working in the design and manufacture of equipment for use in dairies in milking cattle and is familiar with all aspects of conventional milking procedures.
15. From the submissions made in the request and observations I believe that the question of validity will turn on the nature of the one wiping device in claim 1.
16. In the description of the invention the patent presents several problems with known dip cups used to apply teat dip to animal udders and teats. Firstly that obtaining proper coverage of the teat is dependent upon the skill of the user, with poor coverage reducing the effectiveness of the teat dip. Secondly that prior art methods produce a substantial amount of waste. It is the object of the invention to mitigate both of these problems and the invention is said to provide a device for use in applying teat dip in a way which reduces the amount of waste while providing adequate coverage over the teat. Both the observations from the patent holder and the observations in reply from the requester discuss the problems, objects and the nature of the solution being proposed at length. The method of applying teat dip using the device cannot be fool-proof and the nature of the process means that there will always be some waste. It is my opinion that whilst these objects of the invention inform the design of the described device they do not limit the scope of the claims of the patent.
17. The claims relate to a non-foaming teat dip application device. The person skilled in the art is well aware of what constitutes teat dip as encompassing liquids which comprise one or more biocides, germicides, disinfectants etc. which destroy organisms known to cause diseases of the teat such as mastitis. Claim 1 also specifies that the reservoir is capable of holding "germicidal substance" and the transport conduit as being provided to transport "germicidal material". Whilst different terminology is used I believe that the skilled man would regard the claims as relating to a device to be utilised in the application of teat dip.
18. The patent holder's observations regarding document D3 describe it as an industrial cleaning device unlike the simple teat cup of D1. Whilst this may have bearing on the issue of combining documents for inventive step the claims do not specify the size of the device. Thus I believe that the person skilled in the art would regard the claims as covering all devices which can apply teat dip to teats.
19. I believe that the requirements of the reservoir, attachment and transport conduit, for the most part, would be clear to the person skilled in the art. Whilst the preferred embodiment shows that the reservoir and attachment are attached, paragraph 0031 points to alternative

embodiments where they are merely connected by the transport conduit. The connection between the reservoir and the attachment is not described in detail in the discussion of the alternative embodiments. The claim specifies that the reservoir and the attachment are connected, specifically that the “closed second end [of the attachment is] connected to said top portion of said reservoir container”. The requestor proposes that “the skilled person would not regard strict compliance with this feature as essential”. I agree. There is no suggestion in the patent specification that it is essential to the operation of the invention that the connection with the attachment be made at the closed (or bottom) end. It makes sense in those embodiments where the reservoir is physically located directly beneath the attachment, but it makes little or no sense if the reservoir is positioned remotely to (eg. adjacent) the attachment. The skilled person would immediately appreciate that in such embodiments the transport conduit could be connected closer to the top of the attachment.

20. Claim 1 requires at least one wiping device which is “fixedly laterally” positioned within said attachment. The requirement that the wiping device be “fixedly” positioned within said attachment was present in claim 6 as originally filed. I believe that the person skilled in the art, having regard to the figures, would understand what is meant by both terms. The term fixedly would be regarded by the person skilled in the art as requiring that the wiping device is connected to the attachment in a manner which precludes movement, other than flexing, in use. The term laterally would be regarded as requiring that the wiping device define a plane or axis which is perpendicular to the direction of insertion of a teat into the attachment.
21. From the description it would be clear to the person skilled in the art that the reference to “said” wiping device which follows actually relates to “each” of the one or more wiping devices. Each wiping device is said to comprise a “generally” circular brush. The circular brush is said to have pluralities of soft bristles connected to an outer ring in layers. This outer ring is configured to fit within the open first end of the attachment. All of these features are clearly present in the embodiment but the patent clearly does not envisage claims being restricted to this embodiment. The claims do not define any requirement as to the orientation of the bristles of the brush or the centre about which the brush is considered to be “generally” circular. The skilled man would, I believe, read the claim as specifying at least one substantially circular brush comprised of pluralities of soft bristles connected to an outer ring in layers and which is fixedly, laterally positioned within the open end of the attachment.
22. The wiping device is further said to be “configured to wipe a portion of

said teat while said teat is positioned within said attachment". Having regard to the description of the method of using the device of the preferred embodiment it is clear that the wiping device is configured to wipe the teat upon entry into, and exit from, the attachment.

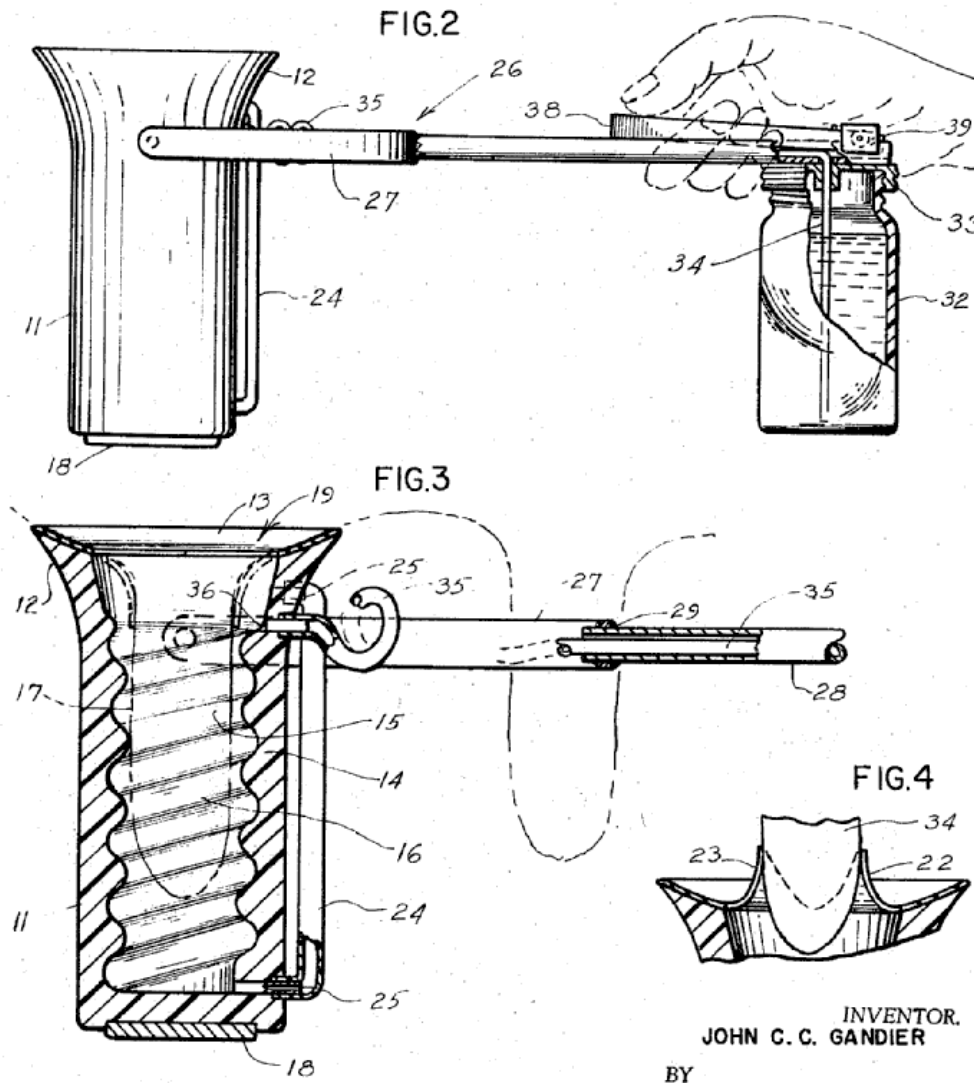
Considerable discussion is made in the request and observations of whether the claims require that the brush is wetted prior to insertion. This is certainly an aspect of the method of using the device of the preferred embodiment. However the application device claimed is not specified as being configured so that the brushes are wetted prior to insertion and as such this is not a requirement of the device claimed. The person skilled in the art would be in no doubt that the claims require that the bristles which make up the wiping device are positioned, oriented and extend such that they are intended to contact a teat upon insertion of the teat into the attachment.

23. The final requirement of claim 1 is that the attachment comprises a circumvolving ring within said attachment which is connected with at least one wiping device. In appendix 2 accompanying the request the requester notes that this seems to be a requirement for a seat upon which to mount the wiping device. This assertion is not contested by the patent holder and in the context of the application it seems correct. I believe that the person skilled in the art would deem that this is a reference to any form of ring or protrusion which extends around the periphery of the attachment for connection with at least one wiping device.

The prior art

24. D1 relates generally to a device for applying treatment liquids or semi-liquids to the teat skin of quadrupeds with special reference to cows, goats, sheep and mares. The liquids in question are antiseptic solutions also referred to as teat dip and I regard the device to be primarily directed to the application of non-foaming teat dip although this is not stated. The device (see exemplary figures below) comprises a teat receiving receptacle 11 which is generally cylindrical in cross-section, but which is formed at its uppermost part with an outwardly flared wall 12 to provide an opening 13. The request proposes, in appendix 2, that this outwardly flared wall 12 constitutes a circumvolving ring as required by the claims. In the preferred embodiment of the invention the teat receiving receptacle is mounted in gimbals to ensure a vertical position during use. The inner lining or core of the receptacle is formed in the shape of a helical screw thread 15 which ensure adequate coating of the whole surface of a teat with teat dip by imparting a rotating motion to the liquid within the teat receiving receptacle 11 when a teat is inserted. The opening 13 is provided with a slit thin, flexible rubber diaphragm 19 (formed of four independent sections 20, 21, 22 and 23) which serves to

remove excess liquid adhering to the teat which falls back into the receptacle 11 to be available when the next teat is treated. A conduit 35 is provided to transfer treatment liquid from a reservoir 32 into the receptacle 11 through an opening 36 formed in the side wall.



25. D2 describes an automatic device for washing the teats of the udders of cows or other milk animals, before milking by means of rotating brushes controlling the sprays of water onto the teat. There is no reference to the application of teat dip or to features of the device which are intended to reduce wastage of liquids.
26. D3 relates generally to an implement for milking animals, such as cows, comprising a milking parlour and a milking machine having several teat cups mounted on a milking cluster. The preferred embodiment comprises a teat cup and a cleaning device which is connected to the teat of an animal. The cleaning device includes a tubular part which

comprises hairs constituting an inwardly directed brush which is driven by an electric motor by means of a worm wheel. In use, it is stated (on page 12 at lines 35 to 37) that, the cleaning device may clean, disinfect, dry and/or massage the animal's teats. I conclude that this reference to disinfecting would be read by the person skilled in the art as including the application of teat dip. The implement is not described as having features intended to reduce wastage of liquids although it is sealed to the animal's udders which would reduce spillage.

27. D4 relates to apparatus and method for producing a foam surfactant containing a biocide, germicide, disinfectant, etc., as a bovine teat dip. The apparatus includes a distant tank containing disinfectant surfactant for supply to a teat cup via a supply line. The teat cup has an open top and closed bottom and the interior is lined with a sleeve of resilient material which includes circumferentially and axially spaced groups of inwardly projecting flexible blade type elements. Movement of the blade elements, in use, is said to perform a scrubbing action on the teat exterior. There is also a plurality of circumferentially and radially spaced axially projecting resilient fingers connected to a flange snap-fitted to the top of the cup which upwardly abuts and stimulates the underside of the udder immediately surrounding an associated teat.
28. D5 has an apparatus for automatically washing teats of generic dairy animals, specifically dairy cattle, comprising a box-type body having an opening through which a teat is introduced. The apparatus of the preferred embodiment includes two pairs of counter-rotating brushes and a rotary brush located at the opening. This rotary brush 8 comprises a ring holder coaxial with the rim of the opening to which bristles are attached, extending radially toward the center of the opening and leaving a passage for the teat. There is no reference to the application of teat dip or features of the device which are intended to reduce wastage of liquids.

Witness statement

29. The witness statement provides a balanced view of the relevant common general knowledge of a person skilled in the art; none of the contents thereof are contested by the observations and therefore I have taken these comments at face value.
30. The statement also describes a non-return dip cup which, it is said, was produced by Ambic before 2000. The dip cup has a lower reservoir chamber and an upper cup for receiving the teat. The upper cup is internally profiled so that cow teats will fill most of the cup and displace dip from the bottom of the cup to cover the teat whilst reducing the amount of dip required. The cup is said to widen at the top to create a

space to “hold overflow and minimize spillage” which appears to be a common problem with basic conventional dip cup designs. The statement then details a conduit which extends from the bottom of the reservoir to a position near the rim of the cup which can be seen as a protrusion in some of the figures. The observations of the patent holder propose that the position of the end of the conduit in the Ambic cup was subsequently abandoned as pictures of dip cups said to be from 2002 do not clearly show the protrusion. This proposal is then contested by the requester in their observations which suggest that the protrusion is present albeit difficult to see and goes on to correct a statement made in the original request. This correction amounts to a statement that the position of the end in the dip cup near the rim was chosen on the basis that this position prevents dip returning to the reservoir (hence the name “non-return”).

Inventive Step

31. The request does not refer to a legal authority upon which the submissions regarding a lack of inventive step in claims 1 to 7 of the patent in suit in light of the disclosures in D1 to D5 are based.
32. When considering a question of inventive step it is necessary to consider the structured approach to assessing obviousness formulated by the Court of Appeal in *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 and reformulated in *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588. This approach has the following steps:
 1. (a) Identify the notional “person skilled in the art” and (b) identify the relevant common general knowledge of that person;
 2. Identify the inventive concept of the claim in question or if that cannot readily be done, construe it;
 3. Identify what, if any, differences exist between the matter cited as forming part of the “state of the art” and the inventive concept of the claim or the claim as construed;
 4. Viewed without any knowledge of the alleged invention as claimed, do those differences constitute steps which would have been obvious to the person skilled in the art or do they require any degree of invention?
33. The statement of reason provided with the request proposes that the invention is obvious based upon D1 identified as the matter cited as forming part of the “state of the art”. D2 to D5 and Ambic’s non-return dip cup are provided as examples of the relevant common general knowledge of the person skilled in the art. I have not been asked to

consider to what extent these documents can be regarded as forming part of the relevant common general knowledge of the person skilled in the art and I do not believe that the question of inventive step will turn on this consideration.

Step 1

34. As I mention in paragraph 14 above I believe that the person skilled in the art is someone working in the design and manufacture of equipment for use in dairies in milking cattle and is familiar with all aspects of conventional milking procedures. The person skilled in this art is aware of conventional foaming and non-foaming teat dip cups examples of which can be seen in D4 and Ambic's non-return dip cups respectively. It is said that they would also be aware of teat washing devices which include the use of rotating brushes, examples of which are shown in D2, D3 and D5 both of which also refer to drying the washed teats using the brushes. More generally the person skilled in the art would be well aware of alternatives to rubber seals, including, amongst other things, brush seals.

Step 2

35. The inventive concept of claim 1 relates to a teat dip application device comprising; a reservoir container; an attachment connected to the reservoir container, the attachment having a open first end configured to receive a teat therein; a transport conduit which terminates within the attachment proximate to the open first end and through which teat dip may pass from the reservoir container; and at least one wiping device comprised of a substantially circular brush having pluralities of soft bristles configured to fit within said open first end of said attachment and to wipe a teat when the teat enters or exits the attachment.

Step 3

36. The device claimed in the patent differs from the device disclosed in D1 in that the wiping device is comprised of a generally circular brush rather than a flexible rubber diaphragm.

Step 4

37. The question before me can be summarized as follows: would it have been obvious to the skilled person, when presented with the teaching of D1, to consider replacing the slit rubber diaphragm with a circular brush? (The question has to be asked as at the priority date of the patent.)
38. The rubber diaphragm of D1 is provided to remove excess teat dip

adhering to the teat. As in the patent in suit this mitigates the waste of teat dip and it is clear from the presence of slits that it is not intended to form a watertight seal. The patent in suit does not provide any indication why a brush is preferred over alternative wiping devices. In both D1 and the patent in suit the advantage gained by the devices described is set out in relation to dip cups with no wiping device. A lot has been made of the commercial success of the device made by the patent holder and whilst this may be true it seems likely that this success can be attributed to the provision of a wiping device and not that the requirement that the wiping device is a brush.

39. At the priority date of the patent in suit the person skilled in the art would have been aware of various functional alternatives to the rubber diaphragm of D1 including e.g. a stretchable fabric diaphragm or a circular brush. Each of these functional alternatives has advantages, or avoids disadvantages, over the other alternatives but I do not consider these advantages or disadvantages to be substantial in relation to the function of the wiping device. The alternatives all possess the advantage of reducing waste of teat dip.
40. *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd* [1985] RPC 59 teaches, at page 77, that “it would be wrong to prevent a man from doing something which is merely an obvious extension of what he has been doing or of what is known in the art before the priority date”. I believe that the replacement of the slit rubber diaphragm of D1 with a circular brush is as an obvious extension to what was known in the art before the priority date.
41. It follows therefore, viewed objectively, without prior knowledge of the desired outcome, that it would be obvious to the person skilled in the art to modify D1 in light of their common general knowledge in such a way as to produce a device which would meet all the requirements of claim 1.
42. The conduit in D1 extends through the portion of the teat cup which comprises the circumvolving ring and the wiping device is positioned above the circumvolving ring. As such claims 3 and 4 must also be regarded as obvious.
43. The specification that the wiping device has a “generally” circular aperture in claim 6 can also be seen as an obvious extension of the disclosure in D1. As such the invention of claim 6 does not involve an inventive step.
44. The requirement of claim 7 that the reservoir container is made of a compressible material is such that, in use, when the bottle is squeezed material is forced from the reservoir up through a transport conduit and

into the chamber. The person skilled in the art would be generally aware of compressible containers as an alternative to the resilient container and pump employed in the preferred embodiment of D1. I therefore also regard the invention of claim 7 to be obvious.

45. The evidence has not established that the requirements of claims 2 and 5 represent obvious extensions to what was known in the art before the priority date.

Opinion

46. In conclusion I have formed the opinion that the invention of claims 1, 3, 4, 6 and 7 of patent GB 2422546 lack an inventive step in view of device shown in US 3366111.

Application for review

47. 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.

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.

N. Dowell
Examiner