

OPINION UNDER SECTION 74A

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|---------------------|---------------------------|
| Patent | GB 2501945 B |
| Proprietor(s) | Rigdeluge Global Limited |
| Exclusive Licensee | |
| Requester | Scantech Offshore Limited |
| Observer(s) | Rigdeluge Global Limited |
| Date Opinion issued | 25 February 2021 |

The Request

1. The comptroller has been requested by Marks & Clerk LLP on behalf of Scantech Offshore Limited (“the Requester”) to issue an opinion as to whether GB 2501945 B (“the Patent”) is invalid on the following grounds: (i) insufficiency, (ii) added subject matter and (iii) lack of novelty and/or lack of inventive step in light of cited documents D1-D7.
2. The request was accompanied by a statement explaining the request along with copies of the cited references and English translations of documents D2 and D5.

Observations & Observations in reply

3. Observations were received from HGF Limited on behalf of the proprietor Rigdeluge Global Limited (“the Observer”).
4. Observations in reply were received from the Requester.
5. The Observer considers the request should be dismissed as vexatious for a number of reasons. I have summarized the key issues as follows. Firstly, the Observer states that opposition proceedings are in progress on a corresponding European patent with identical parties to the current opinion. Secondly, the Observer notes that documents D1-D3 were cited on the international search report from a related PCT application. A copy of the report was sent to the UKIPO by the applicant’s representative during prosecution of the Patent. The Observer requests the Office not to reappraise novelty and inventive step in light of these documents. Thirdly, the Observer states that the translation of D2 is a machine translation and that of D5 is marked as “For Information Purposes Only” and therefore there is an absence of a certified human translation for both. They submit that only the drawings for these documents can be interpreted for disclosure purposes. Finally, the Observer states

that it is not possible to verify the dates given on documents D6 and D7 nor to establish that they were made available to the public and therefore the Observer submits that these documents should be discounted from the opinion.

6. In response to these issues, firstly, I note that the opposition proceedings on the EP family member have not been completed. Also, the claims on the EP patent are considerably narrower and therefore of different scope. The opinion should therefore proceed despite these proceedings. Secondly, I agree with the Observer that documents D1-D3 have been brought to the attention of the examiner during prosecution of the Patent and therefore any arguments regarding novelty and inventive step, either using any of these three documents alone or in combination with each other, will not raise a new question. Therefore, such arguments will not be considered in this opinion. I will, however, consider arguments where disclosures in these documents are combined with those in any of further cited documents D4-D7. Thirdly, regarding the translations of documents D2 and D5, I agree with the Requester that they are for the most part reliable. I will proceed with the translations as provided but will be wary of their limitations. Finally, I will discuss whether D6 and D7 form part of the state of the art later in this opinion.

The Patent

7. The Patent entitled "Deluge System" was filed on 9 July 2012. It was granted on 13 August 2014 and remains in force. The Patent relates to a deluge system 10 provided on a burner boom 12 of an offshore installation (see Fig. 1, reproduced below). Oil and gas are flared at the end of the boom whilst the well is being tested. The deluge system 10 comprises a base unit 30 having a main body 50 connected to a stanchion tube 20. At the opposite end of the stanchion 20 is a nozzle apparatus 22. The deluge system takes water through pipework 14, through the stanchion into the nozzle apparatus to create a screen of water, thus mitigating the heat transfer from the well flaring operation. The deluge system may be secured to the boom in various positions such that the boom and its walkway are left free to walk on for personnel, who may need to run off the boom in the event of an emergency.

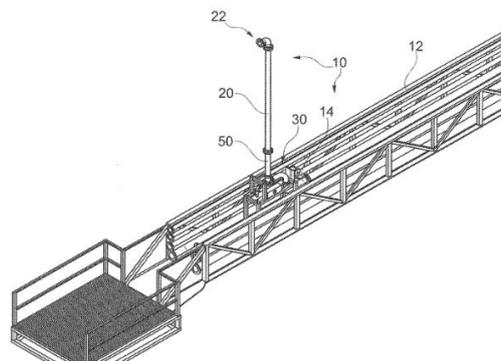


Fig. 1

8. The Patent has 1 independent claim, claim 1, and 5 dependent claims. Claim 1 reads as follows with the features separated out and labelled for future reference:

| | |
|----|--|
| 1a | <i>A method of providing a deluge system</i> |
| 1b | <i>on a boom,</i> |
| 1c | <i>the deluge system comprising a base unit,</i> |
| 1d | <i>a stanchion</i> |
| 1e | <i>moveably attached to the base unit,</i> |
| 1f | <i>and a nozzle apparatus;</i> |
| 1g | <i>the method comprising attaching the deluge system to a burner boom with a walkway,</i> |
| 1h | <i>such that there remains a width of at least 30cm clear on the boom's walkway width after the deluge system has been attached.</i> |

Construction of claim 1

9. When considering the validity of the claims of the Patent I will first need to construe them. That is to say I must interpret them in the light of the description and drawings as instructed by Section 125(1). 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.
10. Neither the Requester nor the Observer have defined the skilled person. I consider them to be a person skilled in the design, manufacture or assembly of deluge systems for use in oil and gas installations.
11. There has been some dispute regarding the construction of some features of claim 1. I will consider the key arguments.
12. The Observer submits that a "boom" is a structure which extends away from the oil and gas installation. They refer to page 1 (lines 6-8) of the Patent which states: "When testing a well it is a common operation to flare the oil and gas from the well. This normally involves piping the oil and gas through pipework provided on a burner boom extending from the installation". The Requester disagrees and states that "there is nothing in the claims to require that - it just needs to be a boom or a burner boom with a walkway." They state further that there is nothing to specify from where or to where it extends.
13. I agree with the Observer that the skilled person on reading the Patent would understand that the boom, also referred to as a flare boom or a burner boom, is a

structure that extends away from an oil and gas installation. No other type of boom is described in the Patent, and all the embodiments refer to such a boom.

14. Regarding features 1c, 1d, 1e, the Observer states that “a base unit provides a secure base for a moveable interface between the stanchion and the supporting structure. It also allows the deluge system to be moved to different positions on various boom structures”. The Requester states that this is not necessarily the case and all that is required is that stated in claim 1 i.e. “a base unit” and “a stanchion moveably attached to the base unit”.
15. In response I refer to the Patent. Here, from page 5 lines 33-34 and Fig. 1, the deluge system has a base unit 30 having a main body 50 connected to a stanchion tube 20. From the paragraph bridging pages 7 and 8, the deluge system can move from a stowed position to an operational position by moving the main body and stanchion using an internal winch 40 or gearing with a handle 41 (see Fig. 7, reproduced below). The skilled person would understand the ‘base unit’ to be the lower part of the deluge system for mounting the system in position. I agree with the Observer that the base unit must provide a secure base but agree with the Requester that the base unit does not necessarily need to allow the deluge system to be moved to different positions on various boom structures. The skilled person would understand that the stanchion is moveably attached to the base unit possibly via an interim component such as the main body 50.

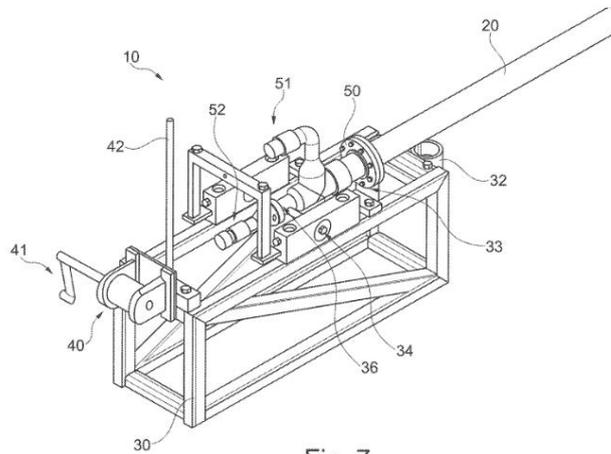


Fig. 7

16. The Observer contends that the nozzle apparatus is shown in all figures as attached to the stanchion and therefore the claim should be construed as a nozzle apparatus attached to the stanchion. The Requester disagrees and states that claim 1 “simply requires the deluge system to comprise a nozzle apparatus”. I agree with the Observer. The skilled person would be very familiar with these systems and understand from the Patent that the nozzle apparatus is attached to the stanchion.
17. The main area of contention is the construction of the term ‘walkway’ and the final feature “*such that there remains a width of at least 30cm clear on the boom’s walkway width after the deluge system has been attached.*” To summarize, the Observer asserts that a ‘walkway’ is a flat portion of the burner boom over which personnel can walk. They further assert that the remaining space is clear after the

system is installed and is for a person to egress the walkway. They emphasize that 'clear' means without obstacles such as the base plate or other parts of the deluge system that a person would otherwise need to climb under or over. Further, the Observer asserts that the space must be construed as a continuous space of 30cm (rather than two 15cm spaces). The Requester in reply submits that the walkway need not be flat and could include pipes, cables etc. They state that the clear width is simply any relevant part or parts of the walkway space above the walkway floor and not necessarily a specific or singular part thereof. They dispute that the space is for a person to escape the walkway and should be interpreted more broadly.

18. In response, from the Patent we are told on page 1 lines 33-34, "Thus by leaving such a space, a person can escape the walkway in the event of an emergency". On page 2 lines 1-3, "Having a space on the width of the walkway means that a person can walk past the deluge system after it has been installed without having to crawl under or climb over any of its parts". The skilled person would understand that the walkway need not be flat but must be a portion of the burner boom over which personnel can walk. Further, the skilled person would realise that the remaining width defined in claim 1 must be considered after the deluge system has been attached and must take into account all parts of the deluge system. I agree with the Observer that the skilled person would understand from the Patent that the space must be clear so that a person may escape from the walkway in an emergency and so must not involve climbing over or under parts of the deluge system. Logically, therefore, the space must be a continuous space of 30 cm (not two separate spaces of 15cm).

Sufficiency of Disclosure – the law

19. Section 14(3) of the Patents Act states:

The specification of an application shall disclose the invention in a manner which is clear enough and complete enough for the invention to be performed by a person skilled in the art.

Sufficiency of Disclosure – arguments

20. The Requester argues that "no width of the walkway to which the deluge system is applied is provided, and prior art walkways for which the claimed invention is intended, will typically be too narrow to allow the claimed effect to be achievable."
21. The Requester refers to claims 4 and 5 which specify that the deluge system is placed over pipework on the boom (claim 4) or is attached to the boom outboard of handrail supports of the boom (claim 5). The Requester submits that this implies that claim 1 covers scenarios where the deluge system is placed not over pipework or is placed inbound of the handrail. The Requester asserts that if both conditions co-exist and given the size of the base unit of these deluge systems and the narrow width of the walkways it would be impossible to retain at least 30cm clear width on the boom's walkway. The Requester submits that the Patent does not disclose the invention in a manner sufficiently clear and complete for it to be carried out by a person skilled in the art across the full breadth of the claim.

22. The Observer replies that the Patent teaches various options for leaving 30cm or more clear on walkways including providing the deluge system inboard or outboard, providing it over pipework or not providing it over pipework. They also submit that walkways come in various widths and argue that even if, as the Requester states, they may 'typically' be too narrow this still leaves atypical walkways which are wide enough. The Observer provides a picture of an example of a walkway which they submit shows that in any case normal walkways are wide enough to provide more than 30cm clear, even with pipework and an inboard deluge system.
23. The Requester emphasizes in their observations in reply that the question is whether the invention can be put into effect across the full breadth of the claims not just whether it is impossible to perform the invention at all. They refer again to claims 4 and 5 to illustrate that for a given boom it is uncertain whether the invention can be performed for that given boom without knowledge in the claim of a minimum width of a walkway and where the deluge system is to be fitted.
24. In response to these arguments, I agree with the Requester that claim 1 does not specify the width, particularly a minimum width, of the walkway. I agree, however, with the Observer that the Patent provides several embodiments describing where and how the deluge system could be placed to ensure a sufficient space is left clear on the walkway for a person to walk along, defined as 30cm in the claim. The skilled person with knowledge of typical walkways would be able to find a solution for a particular walkway by placing the deluge system in different places depending on the width and pipe structure of a particular walkway.
25. Therefore, in my view the Patent is sufficient in this regard.

Added matter – the law

26. The Requester submits that claim 1 contains added matter. The section of the Act concerning added matter is section 76(2), which reads:

No amendment of an application for a patent shall be allowed under section 15A(6), 18(3) or 19(1) if it results in the application disclosing matter extending beyond that disclosed in the application as filed.

27. In *Bonzel and Schneider (Europe) AG v Intervention Ltd* [1991] RPC 553, Aldous J described the task of determining whether an amendment to the description had the result that a patent as granted disclosed matter which extended beyond that disclosed in the application as:

(1) to ascertain through the eyes of the skilled addressee what is disclosed, both explicitly and implicitly in the application;
(2) to do the same in respect of the patent as granted;
(3) to compare the two disclosures and decide whether any subject matter relevant to the invention has been added whether by deletion or addition.
The comparison is strict in the sense that subject matter will be added unless such matter is clearly and unambiguously disclosed in the application either explicitly or implicitly.

28. In Richardson-Vicks Inc.'s Patent [1995] RPC 568, Jacob J. summarised this as follows: "the test of added matter is whether a skilled man would, upon looking at the amended specification, learn anything about the invention which he could not learn from the unamended specification."

Whether the Patent contains added matter

29. Claim 1 as granted requires "a stanchion moveably attached to the base unit". Claim 1 also defines "a nozzle apparatus". Claim 1 as filed recites: "A deluge system comprising a base unit, a stanchion moveably attached to the base unit, a nozzle apparatus attached to the stanchion and a mechanism for moving the stanchion from a stowed position to an operative position." The Requester asserts that as the claim no longer requires the nozzle apparatus to be attached to the stanchion, the claim covers embodiments where moving the stanchion does not move the nozzle apparatus. The Requester asserts that this extends beyond the content of the application as filed. The Requester also refers to dependent claim 6 of the Patent which defines the mechanism for moving the stanchion from a stowed to an operative position as being optional. The Requester asserts that claim 1 as filed had the mechanism for moving and the moveable stanchion inextricably linked. They assert that "to claim 1 without the other extends beyond the content of the application as filed".
30. The Observer contends that claim 1 as granted finds basis in claim 16 as filed with the only amendment being that the stanchion is moveably attached to the base unit, which has clear basis. They submit further that there is no reasonable interpretation that the nozzle apparatus does not move with the stanchion. They suggest that the point that the wording of claim 1 does not explicitly state that the nozzle apparatus is attached to the stanchion is, if anything, a question of clarity not added matter. Further, they note that the features of claim 6 as granted were not included in claim 16 as filed and so there has been no extension of subject matter. These arguments are rebutted by the Requester in their observations in reply.
31. In response, I agree with the Observer that claim 1 as granted is based on independent claim 16 as filed with the additional feature regarding the stanchion moveably attached to the base unit. I also agree that this feature has clear basis in the application as filed. Therefore, there is no added matter in this regard. I note that in all the embodiments of the Patent, the nozzle apparatus is attached to the stanchion and moves with the stanchion. As discussed above I consider that the skilled person would interpret claim 1 so that the nozzle apparatus is attached to the stanchion and will move in this way. Even if it is not explicit in the claim that the nozzle is attached to the stanchion, it would be clear to the person skilled in the art reading the application as a whole that that is a requirement. There is nothing in the application suggesting otherwise. Regarding the mechanism for moving the stanchion, which is an optional feature in claim 6, I agree with the Observer that this feature was not included in claim 16 as filed from which claim 1 was derived. Again, omitting this feature from claim 1 does not provide any new information. In my view the skilled person on reading the specification and claims together would learn nothing new about the invention, despite the absence of particular features in claim 1.

32. Therefore, in my opinion the claims as granted do not add subject matter.

Novelty and inventive step – the law

33. The Requester argues that claim 1 lacks novelty and/or an inventive step in light of evidence provided by the Requester. Section 1(1) of 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;

34. 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.

35. 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).

36. The Court of Appeal in *Windsurfing*¹ 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*.² Here, Jacob LJ reformulated the *Windsurfing* approach as follows:

- (1)(a) Identify the notional “person skilled in the art”*
- (1)(b) Identify the relevant 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?*

¹ *Windsurfing International Inc. v Tabur Marine (Great Britain) Ltd*, [1985] RPC 59

² *Pozzoli SPA v BDMO SA* [2007] EWCA Civ 588

Novelty and Inventive step - arguments

37. The Requester argues that claim 1 is either not novel or lacks an inventive step in light of documents D1-D7 in various combinations. I will deal with the key arguments in the order they arise in the original request.
38. Where appropriate I will follow the Windsurfing/Pozzoli steps provided above. In each case, regarding steps 1(a) and 1(b), I consider the person skilled in the art to be the person defined previously i.e. a person skilled in the design, manufacture or assembly of deluge systems for use in oil and gas installations. I consider the common general knowledge of that person to include an understanding of the common components of deluge systems. They would also understand how such systems are constructed, how they operate in practice and how they are commonly fixed in position on location.
39. Regarding step 2 of the Windsurfing/Pozzoli steps, in each case, I consider the inventive concept of claim 1 to be as set out in the claim and construed above.
40. The Requester begins by asserting that claim 1 is not novel, and failing that lacking an inventive step, in light of the disclosure in D3 alone. As discussed above I consider D3 to have been adequately considered by the examiner pre-grant and therefore I will not re-visit these arguments here.

Arguments surrounding D6 and D7

41. I will move onto the arguments surrounding D6 and D7. D6 is a report entitled "Heat Suppression Safety System Rig Survey Report". The cover page includes a date, 03.02.12. Similarly, D7 is a report entitled "Heat Suppression Safety System Boom System Installation Procedures". The front cover of D7 includes a date, 24/03/11. The two reports include various photographs of deluge system installations on drilling platforms. The Requester asserts that both reports predate the filing date of the Patent and form relevant prior art. The Requester also asserts that for both D6 and D7 the drilling platforms are visible to the public and therefore the related deluge systems were in the public domain prior to the filing date of the Patent. They submit that each of the prior installations are relevant prior art.
42. The Observer argues that it is not possible for the Patentee or any other third party to independently verify the dates given on these documents. Further the Observer notes that the cover page of D6 states "Issued for Proposal". The Observer claims that the report is internal documentation, not a public disclosure, and more specifically is a sales document only available to the parties involved. Similarly, the Observer notes that the cover page of D7 states "Issued for Review". They assert that this is an internal procedural document with nothing to establish that it was published. They also submit that many photographs in both documents are likely from a private yard or from an area of a rig only involving persons who would have an onus of confidentiality. They conclude that D6 and D7 should be discounted as they are not available to the public and therefore are not prior art.
43. In their observations in reply, the Requester states that there is nothing about D6 or D7 to suggest that either is a confidential document. The Requester asserts that

such documents are distributed to customers without any duty of confidentiality. They suggest that, in any event, even if held that D6 and D7 are not citeable documents the photographs still illustrate installations that are prior art.

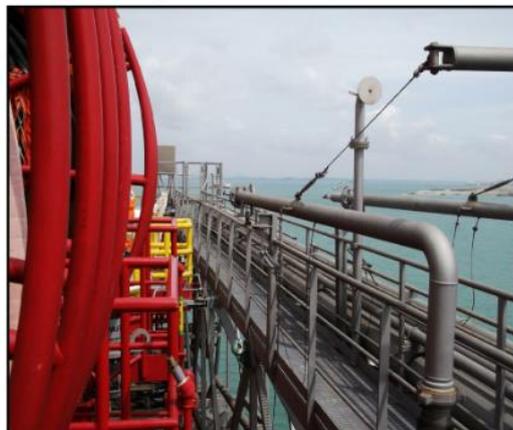
44. In response, I am not convinced that either document D6 or D7 was made available to the public and therefore forms part of the state of the art. The Requester has not provided any evidence that the documents were in the public domain before the filing date of the Patent. As the Observer suggests, it is possible that these documents were provided to customers only under an onus of confidentiality. The Requester has also not provided any evidence that the deluge systems that appear in the photographs were accessible to the public. In these situations of prior use, the required standard of proof is the balance of probabilities. It is not necessary for an opponent to prove their case “up to the hilt”. However, mere assertion of prior use is insufficient: place, time and detail are essential. I think, on balance due to their location, it is likely that the deluge systems in the photographs will have been viewed by a member of the public. Therefore, I will continue with the analysis assuming that the deluge systems in the photographs form part of the state of the art. However, further evidence in this regard is likely to be required were fully litigated proceedings to take place.
45. Beginning with D6, the Requester refers to page 1 which shows two photographs (see below). The one on the left is also provided on page 24. The Requester submits that claim 1 lacks an inventive step over these installations. The Observer and Requester agree that the photograph on the left shows a deluge system with a vertical stanchion, base unit and nozzle, provided on a burner boom walkway with handrails, for well flaring. It appears from the photograph that the base unit is provided in the middle of the walkway. I agree with the Observer that this would not provide the required clearance on either side as the clearance must take into account all parts of the deluge system including the base unit. The Requester refers to the data under the photograph on page 24 which states “Fold down base plate” but this does not disclose that the stanchion is moveably attached to the base plate.



46. The photograph on the right also shows a deluge system with a vertical stanchion and a nozzle apparatus. Both Requester and Observer agree that the stanchion is positioned by a lateral side of a rig, not along a burner boom walkway. Also, it is not apparent that the stanchion is attached to a base unit nor that the stanchion is moveably attached to a base unit.
47. I will move onto steps 3 and 4 of the Windsurfing /Pozzoli approach for the

disclosures in these two photographs. The differences between the disclosure in the left-hand photograph and claim 1 is the stanchion being moveably attached to the base unit and a width of 30cm remaining clear on the walkway after the deluge system has been attached i.e. features 1e and 1h. The differences between the right-hand photograph and claim 1 are features 1b, 1c, 1e, 1g and 1h.

48. I have carefully considered the arguments forwarded by the Requester and the Observer. In my view, it would not be obvious to place either deluge system on a burner boom walkway such that there is 30cm clear after the system is attached and meet the other requirements of claim 1. For the left-hand photograph, it is difficult to see how the system could be positioned to meet this requirement as it appears too large to be placed in the walkway itself or elsewhere. In the right hand photograph the system would need to be positioned on a burner boom walkway plus have a base unit and a moveable stanchion. Both scenarios would require significant modification beyond routine workshop practice. Moreover, I can see no incentive from this document for the skilled person to make these adjustments. Therefore, in my view claim 1 involves an inventive step in light of these disclosures in D6.
49. The Requester refers to a further deluge system in D6, with images on pages 10 and 15, and submits that claim 1 is not novel over this installation. The images show a deluge system on a flare boom. Upper and lower images on page 10 are taken from opposite sides and the middle image on page 15 provides an overview. The images show three stanchions positioned outboard of the handrail of a boom walkway. Two of the stanchions have a right-angle bend and the third one is vertical. There seems to be no dispute that these images disclose features 1a, 1b, 1d and 1g of claim 1. The Requester refers particularly to the stanchion in the foreground of the upper photograph on page 10, reproduced below.



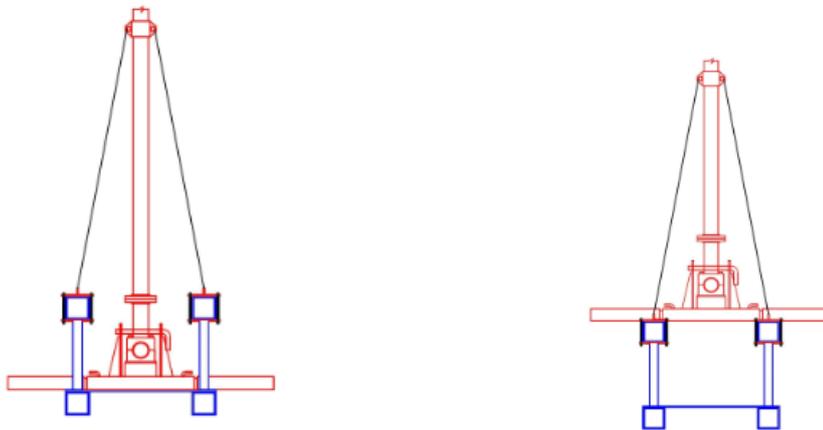
50. The Observer asserts that in these images there is not a nozzle but rather a splash plate. In response, the Requester submits that the splash plate will generate a screen of water and is therefore a nozzle apparatus. I agree this is sufficient to meet the terms of feature 1f.
51. The Observer states that these images relate to a permanent installation, with no base unit. The Requester submits, and I agree, that claim 1 does not require a non-permanent installation. The Requester asserts that the stanchion is clearly designed to be swung from a stowed position (as shown) to an operative position where the

stanchion is swung sideways to point the nozzle appropriately for use. They explain that a fitting is visible in the upper figure which can be loosened and tightened to move and then lock the stanchion in place. The Requester submits that the part of the deluge system that attaches the deluge system to the boom is the base unit (see bottom right of photograph above) i.e. the fitting. I agree that the skilled person would understand that the deluge system operates in this way. Therefore, the stanchion is moveably attached to a base unit and meets features 1c and 1e.

52. Finally, regarding feature 1h and the required remaining width on the walkway, the Requester states that the stanchion and base unit are outboard of the handrail supports of the boom walkway and therefore the space along the walkway is entirely unblocked and thus clear for the full width. They assert that there will necessarily remain a width of at least 30cm clear on the boom's walkway as required by claim 1. In response, I agree with the Requester, that the whole walkway will be clear as the deluge system is not on the walkway itself. The walkway is clearly designed to be walked along and therefore it is likely that it will be at least 30cm wide. Further, page 10 of D6 specifies the deluge system to have a six-inch diameter connection at the base which feeds a four-inch diameter nozzle. Given these pipe dimensions, from the photographs on page 10, the walkway must be at least 30cm. Thus, whilst the size of the walkway is not specified, on balance I consider the walkway to be at least 30cm. Therefore, in my view feature 1h is also met.
53. Therefore, in my opinion claim 1 is not novel in light of this disclosure.
54. I will deal quickly with the five dependent claims. Claims 2 and 3 require the remaining width clear on the boom's walkway to be larger than 50cm and 65cm respectively. It may not be possible for wider widths to be considered apparent from the images in D6. However, the skilled person would consider employing this deluge system on walkways of different width and so these claims in my view lack an inventive step.
55. Claim 4 requires the deluge system to be placed over pipework on the boom. The deluge system in D6 is placed outboard of the handrails in D6. It is not clear that it is placed over any pipework. Therefore, claim 4 is not anticipated by D6. I do not consider it obvious to reposition the deluge system over pipework whilst maintaining the required clearance as this would conceivably require a considerable redesign of the system. The skilled person would understand that it would not be sufficient for the stanchion arm to simply swing over pipework as suggested by the Requester. Therefore, in my view claim 4 is both novel and inventive in light of this disclosure.
56. Claim 5 requires the deluge system to be attached to the boom outboard of handrail supports of the boom. As discussed, this is anticipated by this disclosure.
57. Claim 6 requires the deluge system to comprise a mechanism for moving the stanchion from a stowed position to an operative position. I agree with the Requester that the fitting with associated nut is sufficient to provide this feature. Therefore claim 6 is not novel.
58. I will move on now to D7. The Requester asserts that claim 1 is not novel in light of disclosures in D7. In particular, the Requester refers to a number of photographs and diagrams throughout the report. The Requester and Observer agree that the

document discloses deluge systems comprising a base unit, a stanchion attached to the base unit and a nozzle apparatus. They also agree that the deluge systems are mounted to the walkway of a burner boom. The report reveals that the stanchion of these systems may be moveably attached to the base unit via a pivoting elbow. Therefore, it is not disputed that the disclosures in D7 meet the terms of features 1a-1g of claim 1. I will therefore concentrate on the final feature 1h.

59. The deluge systems in D7 are attached to a burner boom in two main configurations. In the first configuration the deluge system is positioned in the middle of the walkway, on the floor of the walkway. In the second configuration the deluge system is mounted across the walkway but now across the handrails using additional extension legs extending in opposite directions from the base. The two configurations are illustrated in various photographs but also diagrammatically on pages 20 and 21 of the report, reproduced below.



60. In the first configuration (LH diagram), the base unit of the deluge system can be seen to occupy the full width of the walkway. The Requester asserts that the sides of the base unit can easily be stepped over. However, this does not meet the terms of this feature as construed previously. I agree with the Observer that there is insufficient space between the base unit and the side of the walkway for a person to go past i.e. there would not be 30cm remaining width as required. In the second configuration (RH diagram), the base unit is mounted again across the walkway but this time on top of the handrails. The Requester submits that there is free space under the deluge system. I agree with the Observer that a person would need to crawl under the deluge system and therefore this does not meet the terms of claim 1.
61. I therefore conclude that claim 1 is novel over the disclosures in D7. There were no specific arguments regarding the obviousness of claim 1 in light of D7 in the original request and therefore I do not need to consider D7 any further.

Arguments surrounding D1 and D2

62. D1 and D2 were considered during prosecution of the Patent. Both were published

before the filing date of the Patent. I will consider them here briefly in combination with the newly cited documents as proposed by the Requester.

63. The Requester considers claim 1 to lack an inventive step in light of D1 in combination with any of D4, D5, D6 and D7. D1 discloses two burners or flares 23 situated at the end of a burner boom walkway 27 (see Fig. 1, reproduced below). Nozzles 42 spray water at a right angle to the burners 23 to provide a shield of water. The nozzles are connected to water tubes 40 which are hexagonal in shape and surround each of the burners 23. The water tubes 40 are connected to the burners by braces 41 (see also Fig. 10 below). The Requester considers one or more of the braces 41 to be the required stanchion. Each of the two deluge systems is attached to the boom via a conduit 31a which provides crude oil to the burners. The Requester considers the conduit 31a to be the required base unit for the deluge system. The Requester accepts that a key difference between the disclosure in D1 and the inventive concept of claim 1 is that the deluge system in D1 is fixed, specifically the stanchion (brace, 41) is not moveably attached to a base unit. The Requester suggests taking D1 in combination with the embodiments of D4, D5, D6 and D7 to assert that there is nothing inventive about the moveability (pivoting) of the stanchion. The Observer disputes this argument and in particular notes that D1 is a permanently fixed system.

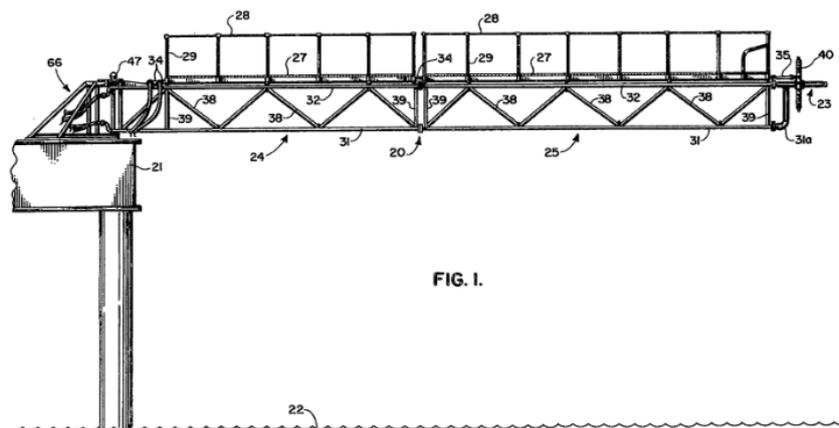


FIG. 1.

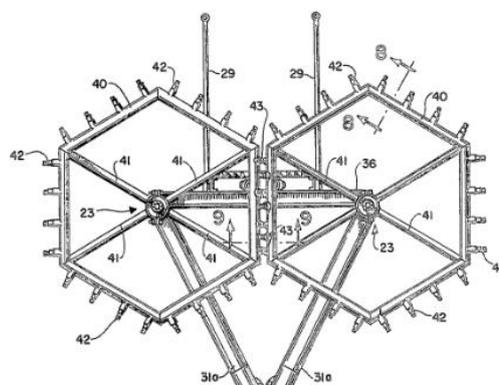
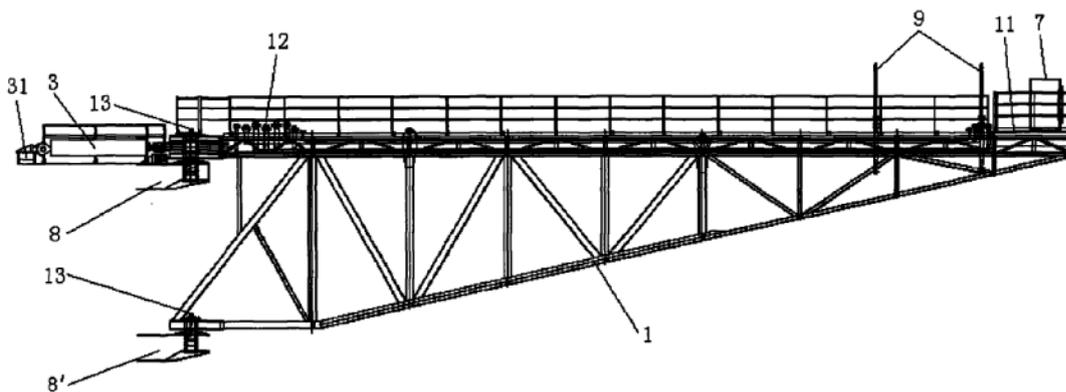


FIG. 10.

64. In response, I agree with the Observer that the nozzles 42 and braces 41 surround the burners 23 in a permanently fixed configuration. There is no mention in D1 of

moving these components in any way. Moreover, there does not seem to be any incentive from this document for the skilled person to mount them so they are moveable as required. Although all the documents have not yet been discussed, the deluge systems disclosed in the other documents are very different to the arrangement in D1. Specifically, none of the other documents discloses an arrangement where the deluge system surrounds the flare. I can see no reason why the skilled person would combine the disclosure in D1 with those in any of the other documents. I therefore consider claim 1 to involve an inventive step over D1 in combination with the suggested documents.

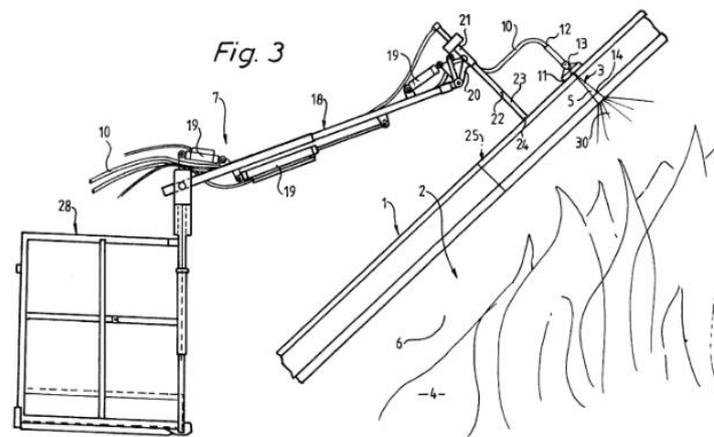
65. D2 is patent document CN 201593420 U. The Requester asserts that claim 1 is not inventive in light of D2 in combination with either of D6 or D7. D2 discloses a burner boom 1 with a burner base 11 at one end, on which a burner 7 is installed. The burner boom is provided with two deluge systems or 'water curtains' 9 (see Fig. 1, reproduced below). It is not clear from the Figures or description how the deluge systems are attached or constructed. Specifically, it is not clear if the systems have a base unit, whether the stanchion is moveably attached to the base unit and whether the systems are attached to the boom to leave 30cm clear width on the walkway. I do not see how this disclosure can be combined with those in any of the other documents to arrive at what is claimed in claim 1.



Arguments surrounding D4 and D5

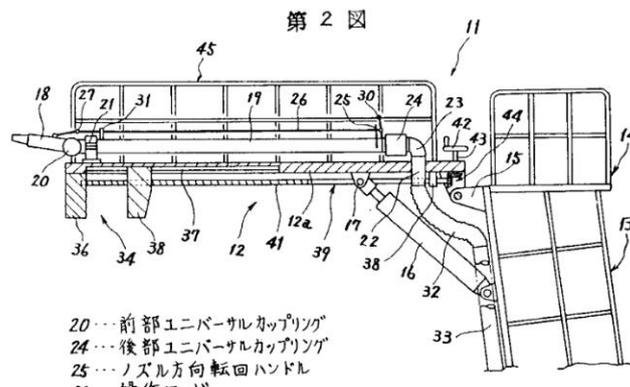
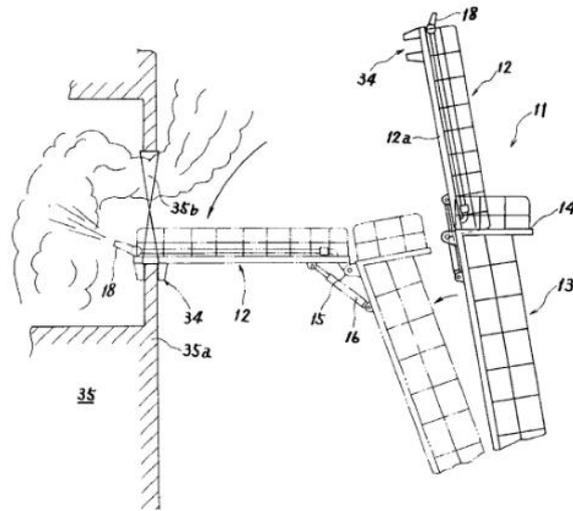
66. The Requester cites documents D4 and D5 for either novelty or inventive step. I will briefly discuss the arguments in each case. Both were published before the filing date of the Patent.
67. D4 is patent document US 6340060 B1. D4 discloses a method for providing a jet 5 of pressurized liquid to cut a hole in a roof 1 or wall of a burning building (see Fig. 3, reproduced below). The jet contributes to extinguishing the fire 2. Combustion gases 6 are then vented through the hole. The equipment comprises a nozzle 11 connected via an inlet 12 to a conduit 10 to supply pressurised fluid from a source 8, typically situated on a fire-brigade vehicle. The nozzle is supported at the end of a moveable arm 18. The arm may be pivotably attached to an operator's cage 28 using actuating means 19. The Requester asserts that D4 discloses a deluge system comprising a nozzle 11 attached to stanchion 18 moveably attached to a base unit (upright element containing a hinge point on the cage 28). The Requestor argues that these disclosures when combined with D1-D3, D6, D7 would encourage the

skilled person to mount the deluge system to a side of a burner boom walkway. They assert further in their observations in reply that cage 28 can be considered a walkway with the stanchion 18 mounted to an outboard of the handrail.



68. I agree with the Observer that D4 is related to the field of fire extinguishing rather than providing a deluge system where hydrocarbons are deliberately burned. Therefore, in D4 the deluge system cannot be considered to be on a boom. I also agree with the Observer that cage 28 cannot be considered a walkway. Therefore, this document is missing key features 1b, 1g and 1h from claim 1. I do not think the skilled person would look to this document when considering any of the documents D1-D3 or D6, D7, all of which relate to deluge systems for use with hydrocarbon flares. I agree with the Observer that the art purported to be combined teaches in different directions. As the Observer points out the Patent (and documents D1-D3, D6, D7) relates to heat transfer mitigation for oil and gas burner booms. D4 (and D5) in contrast relate to fire extinguishing. The Requester argues that D4 and D5 are also to do with using a water deluge for providing personnel better or safer access to a region near a fire and therefore there is enough equivalence for a skilled person to consider the teachings. However, in my view, the scenario in D4 and D5 is still very different to the situation on a burner boom and would not encourage the skilled person to combine disclosures from the two fields. Therefore, in my opinion, it would not be obvious to apply this system to a burner boom walkway. Thus, I consider claim 1 to involve an inventive step over D4 in combination with the other cited documents.
69. D5 is patent document JPS 62115500U. It relates to a ladder device 11 for fire-fighting operations and rescue (see Fig.1, reproduced below). An operation ladder 12 is provided on an operation stage 14 at an upper end of a firefighting ladder 13. The operation ladder 12 can be raised and lowered as required and has a firefighting nozzle 18 at its end. The nozzle 18 is connected by way of front universal coupling 20 to a tip end portion of a water spray pipe 19 in such a way that the nozzle 18 can be moved up and down (see Fig. 2, reproduced below). The spray pipe 19 is supported by way of a rear universal coupling 24 in such a way to be pivotable in a circumferential direction by a support 21 fixed to the front of the operation ladder 12. The Requester submits that the operation ladder 12 is the required walkway of a burner boom and nozzle 18 represents a stanchion with a nozzle at it end, moveably attached to a base unit, elements 20, 21. The Requester further submits that the

deluge system leaves the space clear on the walkway as it is situated at the end and personnel will move to the side of pipe 26. The Requester concludes that claim 1 lacks novelty or an inventive step over D5 when taken alone or in combination with any of D1-D3, D6, D7.



70. In response, I do not consider operation ladder 12 to be a burner boom with a walkway as required by claim 1. As for D4, D5 is concerned with firefighting rather than deliberately flaring hydrocarbons. In particular, the deluge system in D5 is used for extinguishing a fire rather than mitigating the effect of heat. Therefore, I consider claim 1 to be novel in light of D5. Regarding inventive step, it is not clear that the system in D5 would be suitable for providing a deluge system on a boom. Moreover, the skilled person would not consider adapting this apparatus for use on a burner boom as the two functions are so different. Further, as for D4, I do not think the skilled person would look to this document when considering any of the documents D1-D3 or D6, D7 all of which relate to deluge systems for use with hydrocarbon flares. Therefore, I consider claim 1 to involve an inventive step in light of this document in combination with general knowledge and/or the other suggested documents.

Opinion

71. In my opinion the Patent discloses the invention in a manner sufficiently clear and complete enough for it to be carried out by a person skilled in the art. Further it is my opinion that the subject matter of the Patent does not extend beyond the content of the application as filed.
72. I consider claims 1, 5, 6 of the Patent to lack novelty and claims 2, 3 to lack an inventive step in light of D6, with regard to the arrangement illustrated on page 10.
73. I consider the claims of the Patent to be both novel and inventive in light of the arguments presented regarding the remaining disclosures in D6 and those in the other cited documents under consideration.

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.

Susan Dewar
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.