

**OPINION UNDER SECTION 74A**

Patent	EP 1026645 B1
Proprietor(s)	R. Stahl Schaltgeräte GmbH
Exclusive Licensee	
Requester	European Safety Systems Limited
Observer(s)	R. Stahl Schaltgeräte GmbH
Date Opinion issued	03 July 2014

**The request**

1. The comptroller has been requested by European Safety Systems Limited (“the Requester”) to issue an opinion as to whether the making, disposal of, offer to dispose of, use or keeping of either the Requester’s Flare Horn alarms or the Requester’s Radial Horn alarms (“the Products”) would constitute a direct infringement of any of claims 1, 4 and 5 of patent EP 1026645 B1 (“the Patent”) under section 60(1) of the Patents Act 1977.
2. The opinion request was received from the Requester’s representatives on 7<sup>th</sup> April 2014. The request included a detailed Statement of Reasons substantiating the Requester’s claim that acts in relation to the Products do not infringe the Patent. Enclosed with the statement were a number of accompanying documents in eleven appendices. These included a witness statement regarding the relevant skilled person; a number of prior art documents; details of the prosecution history of the Patent; and details of the Products.

**Observations & Observations in reply**

3. Observations in response to the request were received on 7<sup>th</sup> May 2014 from the representatives of the proprietors of the Patent (R.Stahl Schaltgeräte GmbH, “the Observer”) asserting that the Products do infringe the Patent. Attached were copies of photographs of an example of one of the Products obtained by the Observer and a copy of a corresponding delivery note.
4. Observations in reply were received from the Requester’s representatives on 22 May 2014 countering the allegation of infringement.

## The Patent

5. The Patent entitled "Alarms" is an EP(UK) patent derived from PCT application PCT/GB97/02959 filed on 28 October 1997, claiming priority from GB application GB9623209.5 dated 7 November 1996. The PCT application entered into the European phase as EP97910519.4 and the Patent derived from a subsequently-lodged divisional application. The Patent was granted on 11 June 2003 and is still in force in the UK.
6. The Patent relates to an alarm device having two alarms which is suitable for use in a hazardous environment. In the main embodiment illustrated in Figures 1 and 2 (reproduced below) a sounder 11 and a strobe 12 are connected to the top and bottom respectively of a flameproof housing 13. Cap 20 at the top of the housing 13 supports a pressure unit 23 that produces the sound. From there the sound passes upwardly through a sintered disc 24 and into a diverging cone 25. The sound is then reflected outwardly and downwardly within a dome 26. The top of the cap 20 includes a ramp 27 that assists in reflecting and emitting the sound.

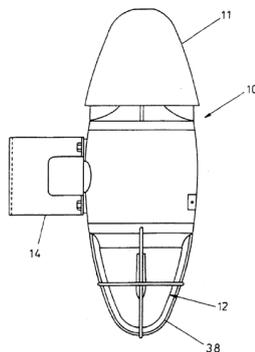


FIG. 1

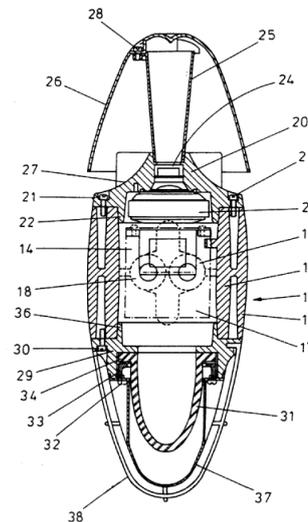


FIG. 2

7. The Patent has a single independent claim, claim 1, that reads as follows:
  1. *An alarm device (10) incorporating a housing (13), the housing being adapted to have two alarms (11,12) operating therefrom in which at least one of the alarms is an audible alarm (11) arranged to emit sound, the housing being flameproof whereby the housing is constructed such that in the case of an explosion occurring in the housing the flames will be prevented from leaving the housing, **characterized in that** the device includes a dome (26) mounted on top of the housing arranged to emit sound from the audible alarm downwardly towards the housing.*

8. Claims 2-8 are dependent on claim 1. I have also been asked to consider whether acts in relation to the Products would constitute an infringement of dependent claims 4 and 5. Therefore these are also reproduced as follows:

*4. A device as claimed in any preceding claim in which the housing includes a sound deflecting portion (27) arranged to deflect sound travelling towards the housing to a direction in which the sound travels away from the housing.*

*5. A device as claimed in Claim 4 in which the sound deflecting portion comprises a ramp surface that extends towards the housing in an outwardly diverging direction.*

### **Infringement-the law**

9. Section 60 Patents Act 1977 governs what constitutes infringement of a patent; the relevant part of section 60(1) reads as follows:

*Subject to the provision of this section, a person infringes a patent for an invention if, but only if, while the patent is in force, he does any of the following things in the United Kingdom in relation to the invention without the consent of the proprietor of the patent, that is to say -*  
*(a) where the invention is a product, he makes, disposes of, offers to dispose of, uses or imports the product or keeps it whether for disposal or otherwise;*  
*(b) where the invention is a process, ...*  
*(c) where the invention is a process, ...*

10. In order to decide whether there is any direct infringement of claim 1 of the Patent, I shall follow the usual approach in opinions of deciding whether or not the Products fall within the scope of claim 1. In other words I will determine whether or not the Products have all the features defined in claim 1 of the Patent. I will then continue to consider dependent claims 4 and 5 as appropriate.

### **Claim construction – claim 1**

11. Before I can do this I need to construe claim 1 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 claim, interpret it in the light of the description and drawings as instructed by section 125(1) of the Act 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 claim to mean.
12. The Requester has asked me to consider infringement of the claims ‘when construed in a manner which is not invalid’. To assist with this the Requester provided several prior art documents and details of the prosecution history of the Patent. The Requester has also referred me to a number of authorities. The Observer has noted

that there is no request seeking opinion as to the validity of the claims of the Patent and has urged me to 'ignore extraneous materials and submissions and adopt a straightforward approach to the question of infringement'.

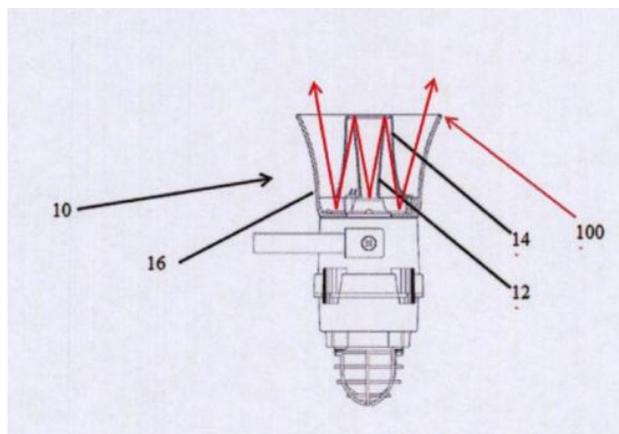
13. In response, I confirm that I have considered carefully all of the documents and arguments submitted by both parties. However in deciding what a person skilled in the art would have understood the patentee to have used the language of the claim to mean, I do not believe that it is appropriate for me to consider only constructions that would render the patent valid.
14. The Requester has identified the skilled person in some detail. I am generally in agreement with their assessment. In summary for the purposes of this opinion, I will take the person skilled in the art to be an engineer or a team of engineers familiar with the design and manufacture of both flameproof alarm housings and audible alarms including familiarity with different types of sound production, sound amplification and factors affecting the audibility of such alarms.
15. The Requester and Observer appear to be in agreement that the key part of claim 1 for me to consider is the final characterizing features i.e. "*a dome mounted on top of the housing arranged to emit sound from the audible alarm downwardly towards the housing*". I agree that the pre-characterizing part of claim 1 is generally self-explanatory. However, a main area of disagreement between the Requester and Observer is the meaning of the term 'audible alarm' which also appears in the first part of the claim as 'an audible alarm arranged to emit sound'. I will therefore deal with this term first.
16. The Requester asserts that the term 'audible alarm' refers to the whole sound-producing system i.e. including the pressure unit, the cone and the dome. In contrast, the Observer asserts that the term only refers to the components within the housing making the original sound and in particular doesn't include the dome. To resolve this disagreement I refer to the Patent.
17. Firstly I note that claim 1 labels the audible alarm as 11. In the figures of the Patent and in the associated description the numeral 11 is referred to as the sounder and would appear to be directed at the upper part of the alarm device and to include the dome.
18. Paragraph 0007 of the description which is consistent with dependent claim 3 states that 'The audible alarm may be arranged to emit sound substantially around the complete periphery of the housing'. This is reinforced in paragraph 0014 where we are told that, 'The sounder, although extending upwardly, emits its sound downwardly over the complete periphery of the housing and outwardly'. This distribution of sound is only possible with the help of the dome. Therefore from these considerations, the skilled person would realise that the audible alarm must include the dome and therefore the audible alarm refers to the whole sound-producing system including the dome.
19. I will move on now to consider the characterizing features of claim 1. Here the dome is 'arranged to emit sound from the audible alarm'. From the discussion of 'audible alarm' above the sound must be emitted when it leaves the audible alarm as a whole. This view is supported by paragraph 0016 where we are told that 'The base

of the dome 26 is spaced from the cap 20 and sound is thus emitted from the device'. Therefore sound is emitted when it leaves the base of the dome.

20. Finally in claim 1 the sound is emitted 'downwardly towards the housing'. To understand this phrase it is important to consider Fig. 2. It is clear that there is a gap between the bottom or base of the dome and the cap that forms the top of the housing. This is reinforced in paragraph 0016 as quoted above. Therefore it will be apparent to the skilled person that the sound leaves the bottom of the dome heading through the gap in a downwardly direction towards the cap (and the rest of the housing). At least part of the sound will be deflected by the top surface of the cap and will be sent in a more radial direction. Therefore I consider the phrase 'downwardly towards the housing' to refer to the initial path of the sound as it exits the dome and moves through the gap in a direction towards the housing.

### Comparison of the Products with claim 1

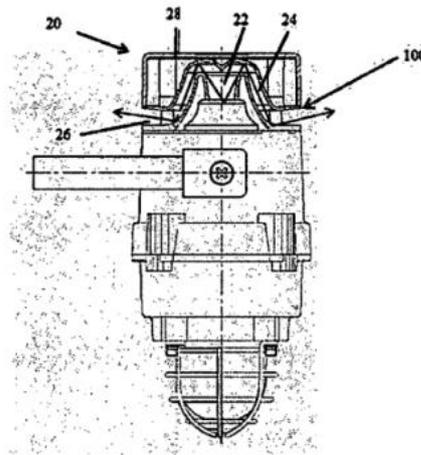
21. The Products I need to consider are the so-called Flare Horn Alarms and Radial Horn Alarms. Each type includes a number of different models. However, the Requester has confirmed that the differences between the models are irrelevant to the question of infringement. I can therefore consider the different models together.
22. Considering first the Flare Horn alarm, this consists of a visual alarm and an audible alarm positioned at either end of a flameproof housing. Therefore the Flare Horn alarm exhibits all the features of the pre-characterising part of claim 1.



23. Moving onto the characterizing features of claim 1, I consider the cross-sectional diagram of the alarm (reproduced above) and the corresponding description provided by the Requester. After the sound is generated it moves through a folded wave guide structure. The sound moves "upwards through a central section 12 of the wave guide, downwards through an intermediate section 14 of the wave guide, before being directed upwards again through the outer section 16 of the wave guide, to be emitted at the rim 100".
24. The Observer considers the intermediate section of the waveguide to be the required 'dome'. However, I am not convinced that this section would be considered by the skilled person to be what the patentee intended when he used the term 'dome'. In any case although this section of the waveguide is mounted on top of the housing as

required, this section is not arranged to emit sound from the audible alarm downwardly towards the housing. As discussed above when construing claim 1, the sound is only emitted when it leaves the audible alarm as a whole. In the case of the Flare Horn alarm the sound is emitted *upwardly* when it leaves rim 100 in a direction *away from* the housing. The sound is still within the audible alarm i.e. it has not been emitted when travelling downwardly in the intermediate section of the waveguide. Therefore the Flare Horn Alarm does not exhibit all the features of claim 1.

25. I consider next the Radial Horn alarm. Again this consists of a visual alarm and an audible alarm at either end of a flameproof housing. Therefore the Radial Horn alarm also exhibits all the features of the pre-characterising part of claim 1.



26. To consider the characterizing part of claim 1, I refer to the cross-sectional diagram of the alarm (reproduced above) and the corresponding description provided by the Requester. Referring to the diagram and description, after the sound is produced it moves through a folded waveguide structure. It “moves upwards through a central section 22 of the wave guide, downwards through an intermediate section 24 of the wave guide, before being directed outwards through the outer section 26 of the wave guide, to be intentionally emitted at the rim 100 in a radial direction”.
27. I also refer to photographs (reproduced below) provided by the Observer of an example of one of the Radial Horn alarms obtained by the Observer. The Requester has confirmed that the photographs indeed relate to one of their Radial Horn alarms. We see from the diagram and photographs that the folded wave guide described above is formed by attaching a dome-like structure to the housing so that there is a gap between the dome and the housing. It is clear that the sound must move upwards through the centre of the dome and then move downwards guided by the dome itself. The sound must then exit the dome and move downwards through the gap towards the housing (before being deflected in a radial direction).



28. Therefore the Radial Horn alarm includes a dome mounted on top of the housing; the dome is arranged to emit sound from the audible alarm (i.e. the sound is emitted when it leaves the base of the dome); and the sound is emitted downwardly towards the housing (i.e. through the gap between the dome and the housing). Therefore it is my view that the Radial Horn alarm exhibits all the features of claim 1.

### Consideration of dependent claims 4 and 5

29. As stated above, I do not consider the Flare Horn Alarm to exhibit all the features of claim 1. I therefore do not need to consider the dependent claims for this alarm.
30. I do, however, consider the Radial Horn alarm to meet the terms of claim 1. I will therefore now consider dependent claims 4 and 5 as requested for this alarm.
31. Claim 4 requires the device to have a sound deflecting portion to deflect sound travelling towards the housing to a direction in which the sound travels away from the housing. In the alarm device of the Patent the sound deflecting portion is provided by the top surface of the cap which includes an annular ramp 27. From the photographs in particular, the Radial Horn alarm has a similarly curved housing cap which presumably serves to deflect the sound in a radial direction. Therefore I consider the Radial Horn alarm to exhibit the necessary features of claim 4.
32. Claim 5 further requires the sound deflecting portion to comprise a ramp surface that extends towards the housing in an outwardly diverging direction. As the Requester

points out there is some obscurity regarding claim 5, because the housing from claim 4 (on which claim 5 is dependent) includes the sound deflecting portion and so the sound deflecting portion can't then extend towards the housing. However, I consider that the skilled person would realise that what is meant is that the sound deflecting portion extends towards the remainder of the housing. From the photographs, the curved housing cap of the Radial Horn alarm has a suitable ramp surface and therefore I consider the Radial Horn alarm to exhibit the necessary features of claim 5.

## **Conclusion**

33. It is my opinion that the Flare Horn alarm does not fall within the scope of independent claim 1 and therefore the actions of the Requester with regard to this product would not constitute an infringement of the Patent.
34. However it is my opinion that the Radial Horn alarm falls within the scope of the claims considered i.e. claims 1, 4 and 5 of the Patent. Thus any of the actions specified in section 60(1)(a) in respect of this product such as making, disposal of, offer to dispose of, use or keeping of the product will in my opinion constitute a direct infringement of these claims of the Patent.

## **Application for review**

35. 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

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## **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.*