

Internal distribution code:

- (A) [-] Publication in OJ
(B) [-] To Chairmen and Members
(C) [-] To Chairmen
(D) [X] No distribution

**Datasheet for the decision
of 20 October 2014**

Case Number: T 0319/11 - 3.2.03

Application Number: 96936998.2

Publication Number: 0857242

IPC: E03D9/00

Language of the proceedings: EN

Title of invention:

HORIZONTAL-FLOW OIL-SEALANT-PRESERVING DRAIN ODOR TRAP

Patent Proprietor:

Falcon Waterfree Technologies, LLC

Opponents:

IFÖ Sanitär AB
URIDAN A/S
John Reese

Headword:

Relevant legal provisions:

EPC Art. 56

Keyword:

Inventive step - (yes)

Decisions cited:

Catchword:



**Beschwerdekammern
Boards of Appeal
Chambres de recours**

European Patent Office
D-80298 MUNICH
GERMANY
Tel. +49 (0) 89 2399-0
Fax +49 (0) 89 2399-4465

Case Number: T 0319/11 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 20 October 2014

Appellant: Falcon Waterfree Technologies, LLC
(Patent Proprietor) 2255 Barry Avenue
Los Angeles, CA 90064 (US)

Representative: Ricker, Mathias
Wallinger Ricker Schlotter Tostmann
Patent- und Rechtsanwälte
Zweibrückenstrasse 5-7
80331 München (DE)

Respondent: IFÖ Sanitär AB
(Opponent 1) Box 140
29522 Bromölla (SE)

Respondent: URIDAN A/S
(Opponent 2) Snerlevej 3
6100 Haderslev (DK)

Respondent: John Reese
(Opponent 3) Aaroesund Landevej 150
6100 Haderslev (DK)

Representative: Mann, Volker
Patentanwälte
Bonnekamp & Sparing
Goltsteinstrasse 19
40211 Düsseldorf (DE)

Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 17 December
2010 revoking European patent No. 0857242
pursuant to Article 101(3)(b) EPC.**

Composition of the Board:

Chairman	G. Ashley
Members:	C. Donnelly
	I. Beckedorf

Summary of Facts and Submissions

- I. The appeal lies from the decision of the opposition division dated 17 December 2010 revoking European Patent No. EP-B-857242.
- II. Grant of European patent EP-B-857 242 was initially opposed by IFÖ Sanitär AB (OI) and Uridan A/S (OII), and a notice of intervention was filed by John Reese (OIII). All three oppositions were withdrawn by letter of 13 November 2013 filed by the common representative of the opponents.
- III. In its decision the opposition division held that the claimed subject-matter of the main and auxiliary requests lacked an inventive step starting out from DE-A-2 816 597 (E2) in the light of the teachings of documents "Aflöbsintallationer " by Finn Schmidt Jörgensen & Kaj Ovesen, pages 208 to 214, 1974 (E4) and US-A-5203369 (E22).
- IV. The patent proprietor (hereinafter: "the appellant") filed a notice and grounds of appeal against this decision in due form and time.
- V. Other relevant documents are:

E24: "Eidesstattliche Versicherung" (Declaration) from John Reese, filed during the opposition proceedings with the Opponents' letter of 15 October 2010.

E25: Declaration by Ditmar Gorges, dated 26 April 2011, filed with the statement of the grounds of appeal.

E26: Declaration by Dr James Pugh, filed with the Appellant's letter of 16 July 2012.

E27: "Eidesstattliche Versicherung" by Dietmar Gorges, filed with the Respondents' letter of 28 February 2013.

VI. In its summons to attend oral proceedings dated 14 February 2014, the board indicated that the communication pursuant to Article 15(1) RPBA, annexed to the original summons of 19 April 2013, still applied.

VII. Oral proceedings were held on 20 October 2014. At the conclusion of the debate the appellant requested that the decision under appeal be set aside and that a patent be maintained in amended form on the basis of the set of claims filed as (new) main request during the oral proceedings.

VIII. Independent claim 1 according to the main request reads:

"A drain odor trap adapted to contain in operation a body of wastewater acting as an odor seal against sewer gasses for waterless urinals, the trap comprising:

a main container (14) having a baffle (16A, 16B) therein and having at least one entry opening (16D) through which generally all of the wastewater enters the main container; an entry compartment receiving said wastewater and communicating with an adjacent discharge compartment beneath said baffle (16A, 16B); a drain stand (14A), formed in the discharge compartment, having an upper edge defining an overflow level of the container and having a bottom outlet adapted to communicate with an external drain;

a layer of low density sealant (20) floating on a portion of the wastewater body in said entry compartment of the trap and acting as an odor seal against odor from the contained wastewater; said entry opening (16D) and said baffle (16A, 16B) being arranged to provide a fluid flow path (22) through the trap of generally all wastewater entering the trap, and said main container (14) having a dimension (R) at a height at a bottom end of the baffle (16A,16B), from the center of the container to a side thereof,

characterized in that

said liquid flow path (22) defines a horizontal component length (X) along which stray sealant is buoyed up and returns to the sealant layer (20), the horizontal component length (X) being the horizontal component of travel of wastewater in the flow path from the middle of the entry opening (16D) to the bottom end of the baffle (16A,16B), wherein the horizontal component length (X) is greater than 30% of said container dimension (R)."

Independent claim 2 according to the main request reads:

"A drain odor trap adapted to contain in operation a body of wastewater acting as an odor seal against sewer gasses for waterless urinals, the trap comprising:

a main container (14) having a baffle (16A, 16B) therein and having at least one entry opening (16D) through which generally all of the wastewater enters the main container; an entry compartment receiving said

wastewater and communicating with an adjacent discharge compartment beneath said baffle (16A, 16B);
a drain stand (14A), formed in the discharge compartment, having an upper edge defining an overflow level of the container and having a bottom outlet adapted to communicate with an external drain;
a layer of low density sealant (20) floating on a portion of the wastewater body in the entry compartment and acting as an odor seal against odor from the contained wastewater;
said entry opening (16D) and said baffle (16A, 16B) being arranged to provide a fluid flow path (22) through the trap of generally all wastewater entering the trap,

characterized in that

said liquid flow path (22) defines a horizontal component length (X) along which stray sealant is buoyed up and returns to the sealant layer (20), the horizontal component length (X) being the horizontal component of travel of wastewater in the flow path from the middle of the entry opening (16D) to the bottom end of the baffle (16A, 16B), wherein the horizontal component length (X) is larger than a vertical distance (Y) measured from said overflow level to the bottom end of said baffle (16A, 16B)."

Reasons for the Decision

1. The appeal is admissible

2. *Inventive Step*

2.1 The main issue to be addressed is that of inventive step. It is undisputed that E2 forms the closest prior art from which this is to be assessed.

E2 discloses:

A drain odor trap adapted to contain in operation a body of wastewater acting as an odor seal against sewer gasses for waterless urinals (see figure, column 1, lines 4 to 8 and 50 to 51), the trap comprising: a main container ("Siphon" 10, "Aussenmantel" 11) having a baffle (see cylindrical element in figure between 11 and 18) therein and having at least one entry opening ("Urindurchlauflöchern" - see column 1, line 6) through which generally all of the wastewater enters the main container; an entry compartment receiving said wastewater (space between the baffle and "Aussenmantel" 11 and communicating with an adjacent discharge compartment ("Überlaufrohr" 17) beneath said baffle; a drain stand (18,19,20), formed in the discharge compartment, having an upper edge defining an overflow level of the container and having a bottom outlet (20) adapted to communicate with an external drain; a layer of low density sealant floating on a portion of the wastewater body in said entry compartment of the trap and acting as an odor seal against odor from the contained wastewater (see column 1, lines 4 to 6); said entry opening and said baffle being arranged to provide a fluid flow path through the trap of generally all wastewater entering the trap (see figure), and said main container having a dimension (R) at a height at a bottom end of the baffle, from the center of the

container to a side thereof (see figure - a dimension must be present); and

wherein

said liquid flow path defines a horizontal component length (X) along which stray sealant is buoyed up and returns to the sealant layer, the horizontal component length (X) being the horizontal component of travel of wastewater in the flow path from the middle of the entry opening to the bottom end of the baffle, wherein the horizontal component length (X) is greater than 30% of said container dimension (R)."

- 2.2 The drain odor trap of claim 1 differs from that of E2 in that the horizontal component length of the liquid flow path (X) is greater than 30% of the container dimension, measured as the distance from the centre of the container to the side (R) and in that.
- 2.3 The subject-matter of claim 2 differs in that X is defined as being larger than the vertical distance measured from the overflow level to the bottom end of the baffle (Y).
- 2.4 Starting from the disclosure of E2, the objective problem to be solved can be seen as preventing, or at least minimising, the depletion of liquid sealant from the odour trap. This is also the problem underlying the invention, as described in paragraphs [0010] and [0011] of the contested patent.
- 2.5 The proposed solution according to claim 1 is to ensure that the horizontal component length X along which waste water travels is greater than 30% of the container dimension R. Alternatively, claim 2 defines

the solution as ensuring that the horizontal component length X is greater than the vertical distance Y .

2.6 In its decision with regard to claim 1 (see paragraph 6.3.1.3), the opposition division argued that:

"the flow of wastewater with the claimed trap can be assumed to be regulated by the Stoke's law, as recalled in E4, see expressions (1) and (2), see Fig. 12.11.

In particular, from the Stoke's law presented in E4, expression (2) it can be seen that the parameters l (corresponding to the claimed dimension X), h (corresponding to the claimed dimension Y ; see claim 2), and the horizontal and vertical components of the velocity of the sealant's droplets, influence the physics of the problem of the recovery of an oil droplet within a horizontal flow of wastewater, and not a parameter equivalent to the claimed " R ".

Consequently (in line with the Opponent's assertions) the ratio $X/R > 30\%$ is considered as not contributing to the solution of the problem set in the description (cf. [0010], [0011], and is not to be considered in assessing the inventive step of a combination of features (T37/82)."

2.7 In paragraph 6.4.4 it held that the same reasoning also applied when the subject-matter of the claims was restricted to a waterless urinal.

2.8 With regard to claim 2, it argued (see paragraph 6.5.1.4) that "the claimed parameter $X/Y > 1$, alone, is not sufficient for contributing to the solution of the problem described in the patent specification" since in its view "it should have also been defined, for

example, a minimum dimension Y, which would have excluded paradoxical or ineffective possible ranges of X or Y fulfilling the condition $X/Y > 1$, but wherein the depletion of sealant is not avoided." In particular, it made reference to a "paradoxical" case shown in figure 2 of E22, "wherein the dimension Y (corresponding to the part of the inlet pipe actually sunk into the water level cumulated in the dome shaped water chamber 40") is $\ll X$."

2.9 Thus, also in this case the opposition division concluded that the ratio X/Y does not contribute to the solution of the problem as specified in the patent "and is not to be considered in assessing inventive step of a combination of features" and was also of the opinion that this also applied when the odor trap was restricted to one suitable for a waterless urinal.

2.10 The Board does not accept the opposition division's reasoning since, in the case of a waterless urinal, the dimension R can only be varied within a very limited range and a minimum liquid depth must be respected. As indicated in the contested patent at paragraph [0038], due to existing urinal space limitations, cylindrical traps are typically limited to a maximum diameter of about 150mm and the minimum liquid depth must typically be at least 50mm in order to meet national building code specifications.

2.11 The dimension R is not meaningless since it provides a reference point for the size of the odor trap which in practice can only lie within a restricted range. The skilled person would understand from the specification of $X/R > 30\%$ that a certain amount of the available space within the trap must be given over to providing a horizontal component of the liquid flow path. Hence,

this ratio is a distinguishing constructional feature of the odor trap for waterless urinals which contributes to solving the above defined problem.

2.12 The skilled person would also be aware that waterless urinals must respect the requirements of national building codes. In particular, a minimum liquid depth of around 50mm must be provided in order to meet regulations regarding the containment of sewer gas pressure in the drain system. Taken together with the claim's requirement for there to be an entry compartment and a discharge compartment as well as for the urinal to function this means that Y cannot be $\ll X$ and still meet the regulations. Consequently, paradoxical or ineffective possible ranges of X or Y fulfilling the condition $X/Y > 1$, but wherein the depletion of sealant is not avoided since Y is $\ll X$, as postulated by the opposition division, are excluded on any technically reasonable interpretation of the claim.

2.13 The alleged paradoxical case in figure 2 of E22, referred to by the opposition division, is not relevant since it refers to an entirely different type of trap which is intended to form a turbulent outlet flow along the drainage pipe in order to prevent it becoming blocked with impassable matter (see column 2, lines 38 to 42). Liquid entry to the trap is provided centrally through a raised inlet pipe 32 which makes the device unsuitable for use in a urinal since splashing is inevitable. Further, no sealant layer is present and if any were provided it would immediately be washed out of the shallow water chamber 40 and away with the wastewater through the bottom outlet to the drain since there is no baffle arrangement in the sense of the contested patent.

2.14 Consequently, the ratios defined in claims 1 and 2 would clearly be understood by the skilled person as requiring that the waste liquid travels through the trap in a substantially horizontal direction. As a result the loss of sealant is prevented, or at least minimised, since there is more chance that the sealant droplets will float back to the reservoir rather than be washed down the drain.

2.15 There is no hint of an extended horizontal flow path in the cited prior art. In particular, starting out from E2, a skilled person taking into account the teaching of E4 would look to solve the problem by increasing the fluid flow path in the vertical direction since this involves less structural modification and also makes it more difficult for the liquid sealant to travel down and around the overflow pipe (17).

2.16 *Affidavits and Declarations E24 to E27*

2.16.1 The opposition division considered document E24 to be of relevance and admitted into the proceedings. Documents E25 to E27 do not relate to further prior art, but concern further submissions made by the appellant and the then opponents to support their respective arguments that the claimed ratios did or did not contribute to solving the technical problem. In view of this the Board considers it necessary to make some comment as to their content.

2.16.2 According to the affidavit of Mr Reese (E24), two odour traps having X/R ratios of 13% and 46.7% respectively resulted in no loss of sealant during their service life, indicating that the ratio X/R has no relevance for solving the objective problem.

- 2.16.3 On the other hand, according to the declaration of Dr Pugh (E26, point 10) the two ratios defined in claims 1 and 2 represent optimum points at which loss of sealant is prevented.
- 2.16.4 The inventor of the patent, Ditmar Gorges (or Dietmar Gorges according to E27) supplied two affidavits, namely E25 on behalf of the Appellant and E27 on behalf of the Respondent. According to E25, the claimed ratios have to be respected in order to avoid any significant sealant loss and the findings of Mr Reese (E24) contradict his own experiences. On the other hand, in E27 the reverse is stated.
- 2.16.5 Since the documents contradict each other, the Board can only view them as being inconclusive. In particular, taken together, they do not show that the ratios specified in claims 1 and 2 lack a technical effect which contributes towards solving the objective problem.
- 2.17 In conclusion, the subject-matter of claims 1 and 2 involves an inventive step and meets the requirements of Article 56 EPC.
3. *Articles 100(b) and 100(c) EPC.*

In its decision, the opposition division concluded that the patent discloses the invention in a manner sufficiently clear for it to be carried out by a person skilled in the art (see point 2 of the reasons), and that the patent as granted does not contain subject-matter that extends beyond the application as originally filed (point 3 of the reasons). The board sees no reason to go against these conclusions.

Order

For these reasons it is decided that:

1. The decision under appeal is set aside.
2. The case is remitted to the opposition division with the order to maintain the patent in amended form on the basis of the following documents:
 - claims 1 to 22 filed as (new) main request during the oral proceedings
 - description pages 1 to 8 filed during the oral proceedings
 - figures 1 to 18 of the patent as granted.

The Registrar:

The Chairman:



C. Spira

G. Ashley

Decision electronically authenticated