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**Datasheet for the decision
of 7 June 2018**

Case Number: T 2528/16 - 3.2.03

Application Number: 04255634.0

Publication Number: 1518964

IPC: E01C11/22, E03F1/00, E03F3/04

Language of the proceedings: EN

Title of invention:
Surface drainage arrangement

Patent Proprietor:
ACO Technologies plc

Opponent:
HAURATON GmbH & Co. KG

Headword:

Relevant legal provisions:
EPC Art. 100(a), 54(1), 54(2), 54(3), 56, 123(2)
EPC 1973 Art. 54(4)

Keyword:

Amendments - added subject-matter (no)

Novelty - (yes)

Inventive step - (yes)

Decisions cited:

Catchword:



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Chambres de recours

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Case Number: T 2528/16 - 3.2.03

D E C I S I O N
of Technical Board of Appeal 3.2.03
of 7 June 2018

Appellant: ACO Technologies plc
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Decision under appeal: **Decision of the Opposition Division of the
European Patent Office posted on 25 November
2016 revoking European patent No. 1518964
pursuant to Article 101(3) (b) EPC.**

Composition of the Board:

Chairman G. Ashley
Members: V. Bouyssy
E. Kossonakou

Summary of Facts and Submissions

- I. European patent No. 1 518 964 (in the following: "the patent") relates to surface drainage.
- II. The patent as a whole was opposed on the grounds of insufficient disclosure (Article 100(b) EPC), lack of novelty and lack of inventive step (Article 100(a) EPC).
- III. The opposition division held that the ground for opposition of lack of novelty prejudiced the maintenance of the patent as granted and as amended according to auxiliary requests I, II, IIa and IIb before it; further, that the ground for opposition of lack of inventive step prejudiced the maintenance of the patent as amended according to auxiliary request IV before it. In addition, the opposition division refused to admit auxiliary requests IIa', IIa'', III and IIIa into the proceedings. Thus, the opposition division decided to revoke the patent.
- IV. This decision was appealed by the patent proprietor (in the following: the appellant).
- V. Oral proceedings before the Board were held on 7 June 2018.
- VI. Final requests

The appellant requested that the appealed decision be set aside and the patent be maintained as amended on the basis of auxiliary request IIa filed with letter dated 16 May 2018 (main request), or on the basis of one of auxiliary requests IIa', IIa'', IIb, III, IIIa and IV - all of these requests having been filed in

opposition proceedings, with the exception of auxiliary request IIb which was filed with letter dated 16 May 2018 - or the "additional auxiliary request" filed with the statement setting out the grounds of appeal.

The opponent (in the following: the respondent) requested that the appeal be dismissed.

VII. Claims of the appellant's main request

Independent claim 1 as amended is directed to the following subject-matter (compared with claim 1 as granted, added passages are indicated in bold; the feature numbering is introduced by the Board for ease of reference):

- a) A **discrete** inlet former (1) for a surface draining system comprising
- b) a longitudinal slot (6) that lies, in use, in a surface to be drained and
- c) a conduit via which liquid can drain, in use, from the surface through the former (1), characterised in that
- d) the former (1) comprises one or more transverse openings (5) into which a material in which the former is embedded, in use, can extend from one or both sides of the former (1) to form a structural bridge member,
- e) **wherein the transverse opening (5) or at least one of the transverse openings (5) provides, in use, a continuous passage from one side of the former to the other and**
- f) **wherein the main structure of the inlet former (1) is provided by two side walls, both of which are flanged at bottom edges to form outwardly extending**

lips (4, 4') or a series of broad feet, which can be used to secure the inlet former (1) on an underlying longitudinal channel (14).

Independent claim 9 is directed to the following subject-matter (compared with claim 14 as granted, added passages are indicated in bold, deleted passages are in strike-through):

A linear surface drainage system comprising an **a discrete** inlet former ~~as claimed in any one of claims 1 to 9~~ and a longitudinal channel (14), **wherein the inlet former (1) is configured to be secured to the longitudinal channel (14) so that** which, in use, the longitudinal channel (14) underlies the inlet former (1) and is in fluid communication with the former (1) in order that fluid can drain through the former into this underlying channel (14) **wherein the inlet former (1) comprises a longitudinal slot (6) that lies, in use, in a surface to be drained and a conduit via which liquid can drain, in use, from the surface through the former (1), characterised in that the former (1) comprises one or more transverse openings (5) into which a material in which the former (1) is embedded, in use, can extend from one or both sides of the former (1) to form a structural bridge member wherein the transverse opening (5) or at least one of the transverse openings (5) provides, in use, a continuous passage from one side of the former to the other and wherein the main structure of the inlet former (1) is provided by two side walls, both of which are flanged at bottom edges to form outwardly extending lips (4,4') or a series of broad feet, which can be used to secure the inlet former (1) to the underlying longitudinal channel (14).**

Dependent claims 2 to 8 and dependent claim 10 define preferred embodiments of the inlet former of claim 1 and the linear surface drainage system of claim 9, respectively.

VIII. Cited evidence

In the statement setting out the grounds of appeal and in the reply to it, the parties relied among others on the following prior art documents which were filed in the opposition proceedings and are cited in the decision under appeal:

D1: US 6,000,881

D2: AU 733361 B

D3: EP 1 380 691 A2

Of these, D3 constitutes prior art relevant for the common designated contracting states for which the designation fees have been validly paid (see Article 54(3) EPC and Article 54(4) EPC 1973, which continues to apply in the present case, see Article 1(1) of the Decision of the Administrative Council of 28 June 2001 on the transitional provisions under Article 7 of the Act revising the EPC).

IX. The arguments of the parties, insofar as relevant for the present decision, can be summarised as follows:

(a) Article 123(2) EPC

Claim 1 as amended differs from claim 1 as granted, among others, in that feature f) has been introduced. The appellant submitted that this amendment was supported by the teaching in paragraphs 42 and 43 of the application as published. The respondent contested

that paragraphs 42 and 43 provided a solid basis for feature f). It is disclosed there that the flanges at the lower end of the former walls could be used to secure the former in place, i.e. in the embedding material, but there is no teaching that the former is secured to an underlying channel by means of outwardly extending lips formed at the flanges, still less by means of broad feet formed at the flanges.

(b) Novelty

Appellant's case:

The opposition division erred in deciding that the teachings of D2 and D3 anticipated the subject-matter of claim 1.

Claim 1 is directed to a discrete inlet former (see feature a)). In the context of the patent (see independent claims 1 and 9 and paragraph 12 and figures 6 to 9 of the patent specification), the term "inlet former" must be construed as defining a discrete part which is configured to form the inlet area in the surface to be drained and may, but need not be, used in conjunction with an underground drainage channel.

D3 fails to disclose an inlet former. In particular, it cannot be derived from D3 that the arched inlet arrangement shown in figure 3 is manufactured as a discrete part, separately from the underlying drainage channel 6. Further, the arched inlet arrangement comprises a series of vertical slots but no transverse opening as required in features d) and e) of claim 1.

Whilst D2 discloses a discrete inlet former (figure 1), it fails to disclose features d), e) and f) of claim 1.

In fact, the accidental gap delimited by the bottom of channel 2 and two adjoining spigots 3 does not form a transverse opening as required by feature d). It is not disclosed that, in use, embedding material can extend through the gap. Even though channel 2 comprises two side walls flanged at their bottom edges to form outwardly extending lips 8 (figure 2), channel 2 is not "the main structure of the inlet former" which enables it to perform its drainage function, as defined in the first part of feature f). In addition, the lips 8 are not adapted to be used to secure channel 2 to the underlying longitudinal channel 5, as required in the second part of feature f). In particular, the lips 8 are neither intended nor suitable for attaching rods or bars to support channel 2 on channel 5.

The claimed subject-matter is novel over D1, too. As with document D3, D1 fails to disclose a discrete inlet former in the sense of claim 1. In fact, there is no teaching in D1 that the inlet arrangement shown in figures 1 and 2 is manufactured as a separate part adapted to be secured on the underlying drainage channel. In addition, D1 fails to disclose transverse openings as required in claim 1. In particular, there is no teaching that the hollow bridging members 48 are open at both ends and suitable for receiving embedding material, e.g. wet concrete.

Respondent's case:

The subject-matter of claim 1 lacks novelty over D1, D2 and D3.

With respect to D1, the claim language is not limited to the "inlet former" being manufactured as a separate part adapted to be secured on an underlying drainage

channel. In fact, in light of figures 8 and 9 of the patent, the term "inlet former" must be construed broadly as covering an inlet arrangement attached to an underlying drainage channel. Thus, the drain shown in figures 1 and 2 of D1 forms an inlet former as defined in claim 1. It is also clear that the inlet former formed by side walls 42 and bridging members 48 as shown in figures 1 and 2 of D1 is manufactured separately from, and later secured to, the channel formed by the side walls 40 and the bottom wall 26. Finally, it is at least implicitly disclosed in D1 that the hollow members 48 are open at both ends (figures 1 and 7) and thus provide continuous passages through the former to form structural bridges of embedding material.

Based on the broad interpretation of the term "inlet former", the drainage channel section shown in figure 1 of D3 also forms an inlet former as defined in claim 1. Moreover, it is stated in paragraph 44 of D3 that the inlet arrangement shown in figure 3 can be manufactured separately from the underlying channel 20 and later secured to it, as shown in figure 1. This inlet arrangement anticipates the subject-matter of claim 1, too. As shown in figure 3, slot channel 24 and projections 22 together define a plurality of arched openings which form continuous transverse openings as required by features d) and e).

With respect to D2, the shallow channel 2 and the spigots 3 shown in figure 1 together form a discrete inlet former as defined in claim 1. It comprises a plurality of transverse openings, each being delimited by the bottom of channel 2 and two adjoining spigots 3. Channel 2 forms "the main structure of the inlet former" which enables it to perform its function of

forming the inlet area. As required in feature f) of claim 1, it is provided by two side walls, both of which are flanged at bottom edges to form outwardly extending lips 8. The language of the second part of feature f) ("can be used to secure the inlet former on an underlying longitudinal channel") is not limited to the outwardly extending lips or feet being configured to secure the former on an underlying channel: they can, or cannot, be suitable for this purpose. In any event, the lips 8 could be used to secure channel 2 on underlying channel 5, for instance by means of supporting rods or bars attached to lips 8, even though such a use is not mentioned in D2.

(c) Inventive step

The respondent submitted that, should the Board decide that D1 failed to disclose a discrete inlet former configured to be secured on an underlying drainage channel by means of bottom flanges as defined in feature f), this distinguishing feature would be an obvious modification for the skilled person assisted by his common general knowledge. Indeed, a flange connection was a commonly known connection technique, which the skilled person would select, depending on the given circumstances, to secure the upper inlet part (42, 48) to the lower channel part (40, 26).

The appellant argued that the subject-matter of claim 1 involved an inventive step over D1. The features distinguishing claim 1 from D1, i.e. features a), d), e) and f), improved flexibility in design and installation. The problem objectively solved by these features was how to achieve this effect. The claimed solution to the problem was not rendered obvious by common general knowledge. D1 taught that the drain was

moulded as a single unit and the skilled person had no motivation to chop it up in upper and lower parts and later attach them by means of a flange connection. At any rate, even if he were to carry out this modification, he would not arrive at the transverse opening required by features d) and e) of the claim.

Reasons for the Decision

1. Admission of the appellant's main request
 - 1.1 The appellant filed the current main request as auxiliary request IIa after oral proceedings had been arranged, in replacement of auxiliary request IIa filed with the statement of grounds of appeal.
 - 1.2 The Board exercised its discretion to admit this new request into the proceedings for the following reasons (Article 13(1) RPBA):
 - 1.3 In its communication under Article 15(1) RPBA in preparation of the oral proceedings, the Board had raised a new issue against auxiliary request IIa filed with the statement of grounds of appeal, namely that in claims 1 and 9, reference signs 4 and 4' should be placed in parentheses (Rule 43(7) EPC).
 - 1.4 The amendments to claims 1 and 9 overcame this objection and furthermore did not give rise to any new issues. This has not been disputed by the respondent.
2. Amendments - Article 123 EPC
 - 2.1 Claim 1 as amended differs from claim 1 as granted by the added limitations:

- that the inlet former is "a discrete inlet former" (feature a) of claim 1);
- that "the transverse opening (5) or at least one of the transverse openings (5) provides, in use, a continuous passage from one side of the former to the other" (feature e)) and
- that "the main structure of the inlet former (1) is provided by two side walls, both of which are flanged at bottom edges to form outwardly extending lips (4, 4') or a series of broad feet, which can be used to secure the inlet former (1) on an underlying longitudinal channel (14)" (feature f)).

2.2 These amendments are supported by the disclosure in the application documents as originally filed.

2.2.1 Support for the first amendment can be found in paragraph 11 of the application as published ("the present invention provides a discrete inlet former").

2.2.2 The second amendment is based on claim 4 as granted and claim 4 as originally filed.

2.2.3 Support for the third amendment can be found in paragraphs 26, 42 and 43 of the application as published:

- in paragraph 26 see "The main structure of the inlet former 1 is provided by two side walls 2, 2', both of which are flanged at top edges and bottom edges to form outwardly extending lips 3, 3', 4, 4' respectively";
- in paragraph 42 see "On installation, the inlet former is located above the underground void and secured in place by some suitable means" and "For example, the broad flanges 2, 2' at the lower end of the former walls can be used to secure the

former in place (alternatively, in place of such flanges, a series of broad feet might be provided";
- in paragraph 43 see "other installations employing embodiments of the inlet former of the invention may use an underground drainage channel in place of the high void material".

2.3 In conclusion, the amendments to claim 1 meet the requirements of Article 123(2) and (3) EPC.

2.4 Claim 9 is the result of the above amendments carried out in claim 14 as granted, whereby it is drafted as a separate independent claim rather than as a dependent claim. These amendments also meet the requirements of Article 123(2) and (3) EPC.

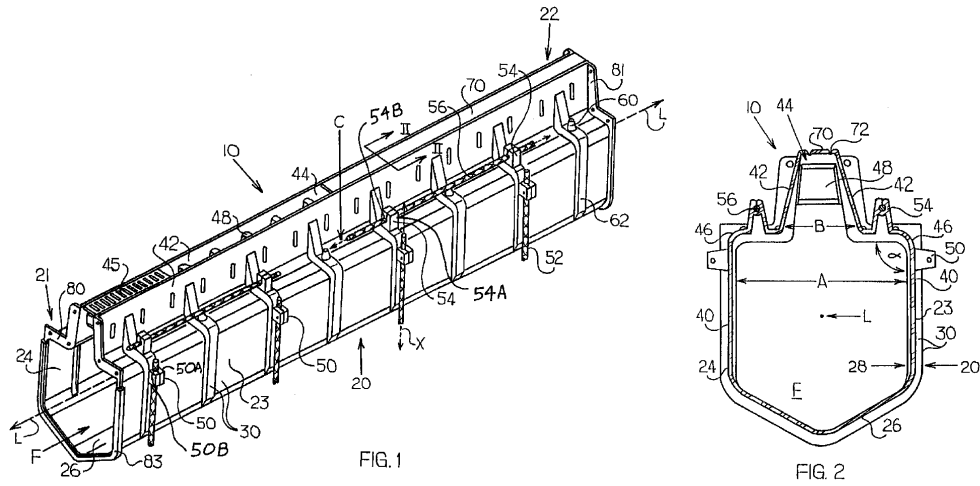
3. Novelty

3.1 The Board is not persuaded by the respondent's arguments that the subject-matter of claim 1 lacks novelty in the sense of Article 54(1) EPC in light of D1, D2 and D3.

3.2 Novelty in light of D1

3.2.1 D1 discloses, in figures 1 and 2 (reproduced below), a trench drain 10 moulded as a single modular unit and having a longitudinal channel 20 formed from two side walls 23 and 24 and a bottom wall 26 (column 3, lines 38 to 47). Each of the side walls 23 and 24 includes a first portion 40 adjacent to the bottom wall 26 and connected to a second portion 42. The first portions 40 of the side walls are spaced apart a distance A, while their second portions 42 are spaced apart a shorter distance B to form a throat 44. In use, the drain is

embedded in concrete (see figures 8 and 9) and fluid can drain through the throat 44 into the channel 20.



3.2.2 As shown in figures 1 and 2, the drain 10 includes a plurality of spaced apart bridging members 48 interconnecting the second portions 42 of the side walls 23 and 24. The bridging members 48 are hollow beams formed integrally into the drain 10 during its moulding (column 4, lines 7 to 10). They serve a number of purposes, including preventing large objects from entering the drain, adding structural strength to it, and preventing buckling and collapsing of the throat during the embedding process (column 4, lines 10 to 13 and column 6, lines 53 to 55).

3.2.3 From this disclosure it can be concluded that the wall portions 42 and the bridging members 48 together form the inlet part of the trench drain 10, whereby the spaces defined between the wall portions 42 and the members 48 serve as conduits through which liquid can drain, in use, from the surface through the inlet.

3.2.4 It is in dispute among the parties whether or not wall portions 42 and members 48 together constitute an "inlet former" in the sense of feature a) of claim 1,

and whether it comprises features d), e) and f) of the claim.

3.2.5 The term "inlet former" itself is unclear and does not appear to have an unambiguous generally accepted meaning in the art. The skilled reader of claim 1 would consult the description and drawings of the patent to interpret this term. In light of paragraph 12 and figures 6 to 9 of the patent specification, it is then readily apparent that the term "inlet former" must be construed as defining a discrete part that is adapted to form the inlet area of a surface draining system and may, but need not, be used in conjunction with an underlying drainage channel. Thus, the inlet former is manufactured separately from the underlying drainage channel. This understanding is confirmed by the teaching in feature f) of claim 1 and its equivalent in independent claim 9.

3.2.6 Based on this interpretation of the term "inlet former", wall portions 42 and bridging members 48 do not constitute an inlet former in the sense of the claim. In particular, D1 does not disclose that the inlet part formed by wall portions 42 and bridging members 48 is a discrete part manufactured separately from the underlying channel part formed by wall portions 40 and bottom wall 26. D1 teaches only that the drain 10 is moulded as a single modular unit, complete with bottom wall 26, wall portions 40 and 42 and bridging members 48 (column 3, lines 40 and 41 and column 4, lines 8 and 9). There is no teaching in D1 that it is also possible to fabricate the drain from two parts, let alone from a lower part consisting of wall portions 40 and bottom wall 26 and an upper part consisting of wall portions 42 and bridging members 48.

3.2.7 Moreover, the Board shares the appellant's opinion that features d) and e) of claim 1 cannot be directly and unambiguously derived from D1. In fact, from the schematic representation of the hollow members 48 in figures 1 and 7, it is not apparent that, during the embedding process, concrete would be able to flow through hollow members 48, from one or both sides of the drain, to form structural bridge members.

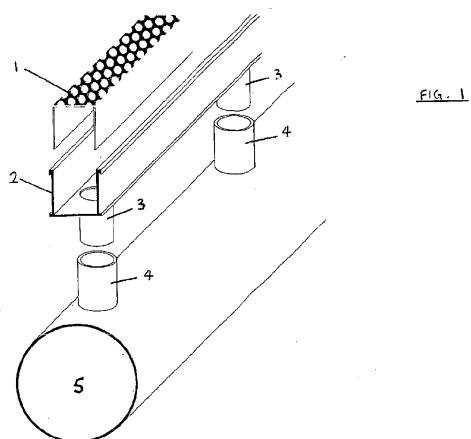
3.2.8 Finally, D1 fails to disclose feature f) of claim 1. On a normal reading, this feature clearly requires that outwardly extending flanges, namely lips or feet, are provided at the bottom edges of two side walls forming the main structure of the inlet former, to secure the side walls on an underlying channel. Contrary to the respondent's view, the wall portions 42 are not provided with bottom flanges for attachment to the underlying wall portions 40. In fact, as shown in figure 2 of D1, a knee portion 46 is integrally formed between adjoining wall portions 40 and 42.

3.2.9 The subject-matter of claim 1 thus differs from D1 by features a), d), e) and f).

3.3 Novelty in light of D2

3.3.1 It is agreed that D2 discloses, in the terms of claim 1, a discrete inlet former for a surface draining system, comprising a longitudinal slot (see shallow channel 2 in figure 1 reproduced below) that lies, in use, in a surface to be drained and a plurality of conduits (hollow spigots 3) via which liquid can drain, in use, from the surface through the inlet former. On installation, the inlet former is located above an underground drainage channel (pipe 5), which is in fluid communication with the inlet former in order that

fluid can drain through the inlet former into the channel.



3.3.2 The parties dispute whether D2 discloses features d), e) and f) of claim 1.

3.3.3 With respect to feature d), the Board shares the respondent's opinion that the inlet former shown in figure 1 of D1 comprises a plurality of transverse openings, each opening being delimited by the bottom of channel 2 and two adjoining spigots 3. These transverse openings would inevitably allow wet concrete in which the former is embedded to flow through to form structural bridge members (see figure 2 of D2). In this respect, the Board notes that the term "transverse opening" in its broadest sense covers any gap, passage or aperture and, contrary to the appellant's view, is not limited to a closed hole.

3.3.4 With respect to feature e), it is apparent that each transverse opening delimited by the bottom of channel 2 and two adjoining spigots 3 provides, in use, a continuous passage from one side of the former to the other.

3.3.5 With respect to feature f), the Board shares also the respondent's opinion that, in the inlet former shown in

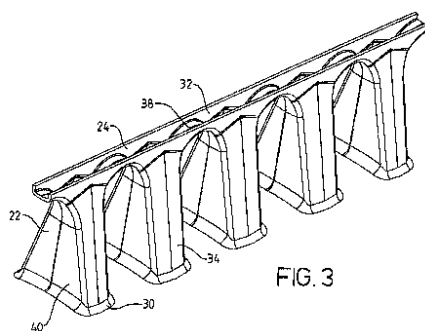
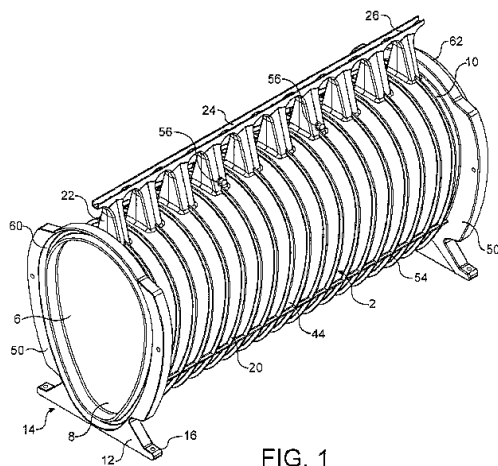
figure 1 of D1, channel 2 forms the main structure having the function of forming the inlet area. This main structure is provided by two side walls, both of which are flanged at bottom edges to form outwardly extending lips 8. However, it cannot be directly and unambiguously derived from D2 that these outwardly extending lips 8 "can be used to secure the inlet former on an underlying longitudinal channel", as required by feature f). As argued by the appellant, this feature makes it clear that the lips must be adapted in such a way as to secure the former on an underlying longitudinal channel. The expression "can be used" in claim 1 cannot be construed as implying that this feature is entirely optional. The respondent contended that it is apparent from figures 1 and 2 of D2 that the lips 8 are suitable for securing the channel 2 to the underlying longitudinal channel, for instance by means of additional support rods or bars attached to the lips 8. However, this arrangement cannot be inferred with any certainty from figures 1 and 2 of D2, which are merely schematic.

3.3.6 Thus, the inlet former defined in claim 1 differs from that disclosed in D2 by the feature that the outwardly extending lips are adapted to be used to secure the inlet former on an underlying longitudinal channel.

3.4 Novelty in light of D3

3.4.1 D3 discloses, in figure 1 (reproduced below), a drainage channel 2 comprising a pipe 6 and a series of hollow projections 22 which support a longitudinal slot channel 24 that terminates in an open slot 26 adapted to be located in a horizontal surface plane, in use, such that water entering the slot 26 passes down through the projections 22 into the pipe 6 (see

paragraphs 19 and 24). Figure 3 of D3 shows a perspective view of a detail of the slot channel 24 and the projections 22 of figure 1 (column 3, lines 33 to 35 of D3).



3.4.2 The Board is not persuaded by the respondent's argument that the arched inlet arrangement shown in figure 3 forms an inlet former in the sense of claim 1 (see point 3.2.5 above).

3.4.3 It is stated in paragraphs 33 and 44 of D3 that the channel 2 is moulded of plastics as a one piece unit, complete with projections 22 and slot channel 24. Figure 3 of D3 merely shows a close up view of the slot channel 24 and the projections 22. Whilst it is mentioned in these paragraphs that it is also possible to fabricate the channel 2 from two parts (paragraph 33), for instance upper and lower parts (paragraph 44), there is no clear and unambiguous teaching that the upper part could be the arched inlet arrangement shown in Figure 3 while the lower part would be pipe 6. On the contrary, paragraph 44 goes on to teach that "the lower part may be any suitable U shaped drainage channel section" and that "the upper part requires the arched inlet arrangement and is preferably moulded of

plastics material with a suitable lower edge formation to mate with the lower part". It is thus apparent that such an upper part would not correspond to that shown in figure 3.

4. Inventive step

4.1 The parties agree that the drain disclosed in D1 forms a realistic starting point for the assessment of inventive step. The Board shares this view.

4.2 As reasoned in point 3.2 above, the subject-matter of claim 1 differs from D1 by features a), d), e) and f).

4.3 Distinguishing features a) and f) improve flexibility in the design and installation of the inlet (see paragraph 12 of the patent specification): it may, but need not, be used in conjunction with an underground drainage channel (figures 8 and 9 of the patent specification); it may also be used to drain liquid from a surface into any other form of underlying, man-made (figures 6 and 7) or even natural void.

4.4 Distinguishing features d) and e) have the effect that, in use, loads on the inlet are borne principally by bridging material, e.g. concrete, that extends through the transverse openings in the inlet, thereby alleviating any substantial loading on the inlet itself or any underlying structure (see paragraphs 11 and 43 of the patent specification).

4.5 Thus, starting from the drain disclosed in D1, the objective problem to be solved is how to increase design flexibility and improve installation.

- 4.6 The claimed solution to this problem is not part of common general knowledge of the skilled person and is neither disclosed nor suggested in the cited prior art.
- 4.7 The Board is not persuaded by the respondent's argument that concerning feature f), it would be a standard design option to connect the inlet formed by side wall portions 42 and bridging members 48 to the underlying channel. In fact, D1 provides no motivation to manufacture the inlet and the underlying channel as separate parts, let alone to manufacture wall portions 42 as a separate component formed integrally with members 48 as well as bottom lips or feet for securing the component to the underlying channel. As indicated in point 3.2 above, D1 teaches that the whole drain is moulded as a single unit.
- 4.8 In conclusion, when starting from D1, the claimed subject-matter involves an inventive step in the sense of Article 56 EPC.
5. For the reasons set out above, neither the grounds for opposition nor the objection under Article 123(2) EPC raised by the respondent prejudice the maintenance of the patent as amended according to the appellant's main request.
6. In light of this conclusion there is no need to consider the auxiliary requests of the appellant.
7. The description has been brought into conformity with the amended claims. This was not contested by the respondent.

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 as amended in the following version:
 - claims 1 to 10 of the main request filed as auxiliary request IIa with letter dated 16 May 2018;
 - description, pages 2 to 4 and page 5, lines 1 to 4 filed in the oral proceedings before the Board;
 - figures 1 to 11 of the patent specification.

The Registrar:

The Chairman:



C. Spira

G. Ashley

Decision electronically authenticated