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Datasheet for the decision of 15 December 2022

Case Number: T 3024/18 - 3.2.02

Application Number: 13197251.5

Publication Number: 2708258

IPC: A61M16/06

Language of the proceedings: EN

Title of invention:
Mask system

Patent Proprietor:
ResMed Pty Ltd

Opponent:
Fisher & Paykel Healthcare GmbH

Headword:

Relevant legal provisions:
EPC Art. 54(2), 56, 76(1), 83, 84, 123(2)
RPBA Art. 12(4)
RPBA 2020 Art. 13(2)

Keyword:

Novelty - main request (no) - auxiliary request (yes)
Amendments - added subject-matter (no)
Sufficiency of disclosure - (yes)
Claims - clarity - auxiliary request (yes)
Inventive step - auxiliary request (yes)

Decisions cited:

Catchword:

Europäisches Patentamt
European Patent Office
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Case Number: T 3024/18 - 3.2.02

D E C I S I O N
of Technical Board of Appeal 3.2.02
of 15 December 2022

Appellant: (Patent Proprietor)	ResMed Pty Ltd 1 Elizabeth Macarthur Drive Bella Vista, New South Wales 2153 (AU)
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Appellant: (Opponent)	Fisher & Paykel Healthcare GmbH Wiesenstraße 49 73614 Schorndorf (DE)
Representative:	Bird & Bird LLP Maximiliansplatz 22 80333 München (DE)
Decision under appeal:	**Interlocutory decision of the Opposition Division of the European Patent Office posted on 26 November 2018 concerning maintenance of the European Patent No. 2708258 in amended form.**

Composition of the Board:

Chairman	M. Alvazzi Delfrate
Members:	A. Martinez Möller
	Y. Podbielski

Summary of Facts and Submissions

I. Appeals were filed by the patent proprietor and by the opponent against the interlocutory decision of the Opposition Division finding that, account being taken of the amendments made by the patent proprietor according to the then auxiliary request I (filed as auxiliary request II on 17 August 2018), European patent No. 2708258 and the invention to which it related met the requirements of the EPC.

II. Oral proceedings before the Board took place on 15 December 2022.

The appellant/opponent ("the opponent") requested that the decision under appeal be set aside and that the patent be revoked.

The appellant/proprietor ("the proprietor") requested that the decision under appeal be set aside and that the patent be maintained as granted. As an auxiliary measure they requested that the patent be maintained on the basis of one of auxiliary requests II* to 9'' filed with letter dated 24 October 2019.

III. The following documents are relevant to this decision:

D1: US 2006/0042629 A1
D2: EP 1057494 A2
D5: R.A. Malloy "Plastic Part Design for Injection Molding - An Introduction"; section 6.3 Snap joint assemblies, 1994, Munich, Hanser
D10: WO 97/20597 A1

D14: excerpt from U. Delpy et al. "Schnappverbindungen aus Kunststoff", Expert Verlag, 1989
D24: US 2008/0041391 Al
D25: US 6,491,034 B1
D26: WO 2005/004974 A1
D29: Affidavit of John Shi-Nash dated 17 January 2019
D30: Affidavit of Robert Malloy, PhD, dated 11 January 2019
D34: Affidavit of Robert Malloy, Ph.D., dated 24 October 2019 and including two attachments
D35: Affidavit of John Shi-Nash dated 24 October 2019
VP-04: Expert opinion of Prof. Rixen dated 13 February 2019
VP-05: Expert opinion of Prof. Dahlmann dated 13 February 2019

IV. Claim 1 of the **main request** reads as follows:

"A mask system (x10) comprising:
a frame (x40) defining a breathing chamber;
a cushion (x44, 1060) provided to the frame (x40) and adapted to form a seal with the patient’s face and
a shroud (x20) provided to the frame (x40) and adapted to attach headgear (x90);
wherein the frame (x40) includes a collar (x49) surrounding an opening (x46) adapted to communicate with an elbow (x70),
wherein the shroud (x20) is characterized in that it includes a retaining mechanism structured to establish a positive connection between the shroud (x20) and the frame (x40), and
the retaining mechanism includes one or more snap finger (X45) structured to engage the collar (x49) with a snap-fit."

V. Compared to claim 1 of the main request, in claim 1 of **auxiliary request II*** the last "and" has been deleted and the claim further includes the following features at the end of the claim:

"; wherein the collar (x49) includes one or more protrusions adapted to engage the respective snap fingers (x45) provided to the shroud (x20); and wherein, in use, the snap fingers resiliently deflect and engage the one or more protrusions of the collar."

VI. Compared to claim 1 of the main request, in claim 1 of **auxiliary request II** the last "and" has been deleted and the claim further includes the following feature at the end of the claim:

"; and
wherein, in use, the snap fingers resiliently deflect and engage respective part-annular protrusions provided to the collar."

VII. The opponent's arguments relevant to the decision can be summarised as follows.

Main request - Novelty over D1

The subject-matter of claim 1 was not novel over D1. The semi-circular wall 74 of D1 subtended more than 180° and defined a snap finger which engaged the cylindrical wall 38 with a snap fit. The interference of both components in the snap fit of D1 served to ensure a reliable relative positioning, corresponding to the explanations in the textbook D5.

Claim 1 did not require that the snap finger predominantly deflected during assembly of the snap

fit. The explanation in paragraph [0117] of the contested patent described an embodiment more specific than claim 1 and could not be used for a narrower interpretation of the claim. The narrow interpretation of the term "snap finger" could not be derived either from any of D5 or D14.

Auxiliary request II - admittance*

Auxiliary request II* should not be admitted. It was a broader version of the request found allowable by the opposition division and there was no reason for filing it for the first time on appeal.

Auxiliary request II - added subject-matter

The subject-matter of claim 1 extended beyond the content of the parent application and beyond the content of the application as filed.

There was no basis for a mask system with part-annular protrusions but without an elbow, sandwich tabs and respective recesses, features disclosed in paragraph [0194] of the parent application and which also provided for a connection between the shroud and the frame. Moreover, an elbow provided to the frame was an essential component of a mask system and also present in independent claim 36. Finally, paragraph [0194] described the embodiment of Figures 22-23, which showed several features related to the part-annular protrusions and to the collar which had not been included in claim 1.

Several dependent claims likewise comprised added subject-matter.

Auxiliary request II - clarity

The expression "in use" in the last feature of claim 1 left open whether the step of deflecting and engaging occurred while connecting the frame with the shroud, when the mask was worn or even at any other time during the life cycle of the mask system. The description was not helpful to resolve that because it used the term "in use" to refer to different time points. It was thus unclear in claim 1 when the deflecting and engaging occurred.

Only a circular collar and protrusions protruding away from the longitudinal axis of the collar were disclosed by the description, but claim 1 was much broader. Hence, claim 1 was not supported by the description.

Claim 1 did not define the shape of the collar. It was unclear how a part-annular protrusion and the engagement with snap fingers could agree with a collar of a polygonal or irregular cross section.

Claim 1 did also not specify in which direction the protrusions protruded. The collar's ability to communicate with an elbow was incompatible with a retaining mechanism including snap fingers and part-annular protrusions protruding into the collar's opening.

Claim 1 defined in one feature "one or more snap finger", which included the option of a single snap finger, and in another feature "snap fingers", which required at least two snap fingers, thus resulting in a further lack of clarity.

Auxiliary request II - sufficiency of disclosure

The inventions defined in claims 1 and 9 were not sufficiently disclosed within the meaning of Article 83 EPC.

Claim 1 covered collars surrounding an opening of any shape adapted to communicate with an elbow and having part-annular protrusions. The contested patent did not teach how to design a mask with those items.

Claim 9 required the shroud to be provided with a forehead support but the patent did not describe or show any forehead support.

Auxiliary request II - novelty over D1

The subject-matter of claim 1 was not novel over D1. The lateral sides of the cylindrical wall 38 anticipated the part-annular protrusions of claim 1, especially since claim 1 did not exclude that the protrusions could be part of the collar. These protruding sides caused the semi-circular wall 74 to deflect during engagement, thus anticipating the last feature of claim 1.

Auxiliary request II - novelty over D2, Figure 2A

The subject-matter of claim 1 was not novel over the embodiment of Figure 2A of D2. The slots 13 and 15 visible in Figures 2A and 2C were step-like structures which deflected upon assembly, thus anticipating the one or more snap finger of claim 1. Also if the slots were of another shape such as a ridge they would still anticipate the snap fingers of claim 1.

Auxiliary request II - novelty over D2, Figure 10A

The subject-matter of claim 1 was not novel over the embodiment of Figure 10A of D2. The cylindrical part of the inlet 208 defined two part-annular protrusions, each in front of the respective part-annular depressed region 280.

Auxiliary request II - novelty over D10

The subject-matter of claim 1 was not novel over D10. Claim 1 neither required the frame and the collar to be separate elements nor defined the collar's geometry. Figure 7 of D10 showed a discernible element of the shell 3 starting at the plane defined by 45/47/49 respectively 55/57/59 which surrounded an opening and which thus anticipated a collar included in the frame as required by claim 1.

Auxiliary request II - inventive step starting from D1

The subject-matter of claim 1 was obvious when starting from D1 in view of common general knowledge.

There was no technical effect associated to the lack of part-annular protrusions. The objective technical problem was thus to provide an alternative to the snap fit design used in D1.

Snap fit connections with protrusions were known, for example from Figure 9 of D1 or as shown in Figures 6.8 and 6.9 of the textbook D5. It was thus part of common general knowledge to provide protrusions on a snap fit, also when a collar or a circular element were involved. As also indicated in the affidavit D29, it would have been obvious to provide the collar of D1 with

protrusions (e.g. ramps or bumps) in order to have a more secure and difficult to remove fit.

The subject-matter of claim 1 was also obvious when starting from D1 and in view of D24, D25 or D26. D24-D26 were in the same technical field and would have been considered by a person skilled in the art when starting from D1 and looking for an alternative.

Each of D24-D26 showed a cylindrical structure similar to D1's collar and the use of snap fingers combined with part-annular protrusions on the cylindrical structure. Hence, it would have been obvious to modify the collar of D1 by implementing such a snap fit design.

Auxiliary request II - inventive step starting from D2, Figure 10A

The subject-matter of claim 1 was also obvious when starting from the embodiment of Figure 10A of D2.

There was no effect associated to the lack of part-annular protrusions, the problem solved was thus providing an alternative. In view of any of common general knowledge, D24, D25 or D26 the person skilled in the art would have provided two part-annular protrusions to the inlet 208 of D2, thereby arriving at the subject-matter of claim 1.

The person skilled in the art starting from Figure 10A of D2 and looking for a tighter connection would have also provided part-annular protrusions, as explained in the affidavit D29.

Auxiliary request II - inventive step starting from D10

The subject-matter of claim 1 was obvious when starting from D10 in view of any of D1 or D2 when combined with common general knowledge.

This objection should be admitted because another objection of lack of inventive step starting from D10 had been raised in the supplement to the statement of grounds of appeal and was thus known to the proprietor. The current objection had been raised at the oral proceedings before the Board and not in the statement of grounds of appeal because it had been assumed until the Board's conclusion on novelty over D10 that D10 disclosed a collar.

VIII. The proprietor's arguments relevant to the decision can be summarised as follows.

Main request - Novelty over D1

D1 did not disclose a snap finger structured to engage a collar with a snap fit.

D1 disclosed a "wedged or interference friction engagement" between the semi-circular wall 74 and the cylindrical wall 38. This corresponded to a press fit with a high residual stress after assembly, so that D1 did not disclose a snap fit. This was also confirmed by the expert opinion VP-05.

A "snap finger" was a protruding element which deformed elastically upon engagement. This could be derived from the term itself, from the corresponding terms discussed in textbooks ("snap hook or beam" in D5, "Schnappelement" in D14) and from the expert opinions VP-04 and VP-05. Also paragraph [0117] of the patent

specification disclosed that in use the snap fingers resiliently deflected. In D1 the cylindrical wall 38 was deflected upon engagement and not the semi-circular wall 74, so that the semi-circular wall 74 was not a snap finger.

Hence, the subject-matter of claim 1 was novel over D1.

Auxiliary request II - admittance*

The request had been filed on appeal because only at the oral proceedings before the opposition division did it become clear that the decision on the then auxiliary request I relied on the presence of protrusions and not on their part-annular shape.

Auxiliary request II - added subject-matter

Support for claim 1 of auxiliary request II was provided in the parent application, in particular in claims 36-37 and 41-42 as well as in paragraph [0194].

The elbow was not essential for the attachment of the shroud to the frame. The connection provided by the elbow was defined only in claims depending on claim 36 and thus as optional. The last sentence of paragraph [0194] confirmed that the snap fingers allowed a connection independent of the elbow. There was thus no inextricable link to the connection provided by the snap fit. Claims 36, 41 and 42 provided support for neither including the sandwich tabs and the respective recesses nor any further restriction from the specific embodiments of Figures 22 and 23.

The objections of added subject-matter to the dependent claims did not address the reasons in the appealed decision and should be disregarded.

Auxiliary request II - clarity

The person skilled in the art would understand that the deflecting and engaging in the last feature of claim 1 described how a snap fit worked during the assembly/ disassembly operation. Even if the term "in use" was construed broadly as referring to any point in time, it would result in the claim being broad but not unclear.

As to the collar of any shape having part-annular protrusions, it was not necessary to have an exemplary embodiment for each option covered by the claims. Moreover, claim 1 defined that the protrusions engaged with the snap fingers, effectively delimiting the direction of the protrusions. Claim 1 was thus clear and supported by the description.

The person skilled in the art understood that the number of protrusions corresponded to the number of snap fingers due to the wording "respective part-annular protrusions" in the last feature of claim 1.

Auxiliary request II - sufficiency of disclosure

The invention defined in claim 1 was sufficiently disclosed because the patent specification showed embodiments of the invention including part-annular protrusions on a circular collar. It was not apparent why the person skilled in the art would not be enabled to use a collar of another shape.

The fact that the forehead support defined in claim 9 was not shown in the figures did not imply that the invention was not sufficiently disclosed. There was no requirement for each and every feature to be shown in a figure.

Auxiliary request II - novelty over D1

D1 did not anticipate the subject-matter of claim 1 because it did not disclose part-annular protrusions provided to the collar. The lateral sides of the collar were parts of the collar itself and did not protrude from it.

Auxiliary request II - novelty over D2, Figure 2A

D2 did not disclose snap fingers within the meaning of claim 1. The shape of the slots 13 and 15 could not be derived from D2. The description only indicated their ability to hold the retainer in a particular orientation. The opponent's submissions as regards the slots' shape, their deflection and their engagement in a snap fit were thus speculative.

Auxiliary request II - novelty over D2, Figure 10A

The inlet 208 had a circular shape and included two depressions but a single circular wall without any part-annular protrusions provided to it. The subject-matter of claim 1 was thus novel over the embodiment of Figure 10A.

Auxiliary request II - novelty over D10

The subject-matter of claim 1 was novel over D10 because D10 did not disclose at least the feature of a

collar included in the frame. The collar of claim 1 had to be a structure and not merely the frame's wall in which the opening was formed. It was artificial to regard the part of the shell 3 of D10 starting on the plane drawn up by channels 45, 47 and 49 as defining a collar.

Auxiliary request II - inventive step starting from D1

The subject-matter of claim 1 was inventive when starting from D1. The technical problem solved by the part-annular protrusions was to provide an improved connection between the shroud and the frame.

It was not part of common general knowledge to provide part-annular protrusions to the collar 38 of D1. D5 showed annular protrusions being used in an annular snap fit with an axial connection direction rather than with a vertical connection direction as used in D1. The affidavit D29 did not demonstrate that part-annular protrusions would be provided to the collar of D1. If a tighter snap fit was intended, the person skilled in the art would rather modify the diameters to increase the coupling strength.

Documents D24-D26 did not deal with the connection of a shroud to a frame and showed an axial connection direction between the two components, different from the vertical connection direction used in D1.

Auxiliary request II - inventive step starting from D2, Fig. 10A

The subject-matter of claim 1 was inventive when starting from D2 in view of any of common general knowledge, D24, D25 or D26.

D2 disclosed a self-contained solution, there was thus no motivation to apply further recesses to have two part-annular protrusions. If the teaching of D24-D26 would be followed, the snap fingers in D2 would protrude axially from the plane of the retainer, preventing the tight positioning between the retainer and the shroud disclosed in D2.

Auxiliary request II - inventive step starting from D10

The objections of lack of inventive step starting from D10 in view of any of D1 or D2 when combined with common general knowledge had been raised for the first time at the oral proceedings before the Board. These objections should have been filed with the opponent's statement of grounds of appeal and should not be admitted at this stage.

Reasons for the Decision

1. The invention

The invention relates to a mask system intended for use in positive pressure therapy for patients suffering from Obstructive Sleep Apnea (OSA) or another respiratory disorder (see paragraphs [0001] and [0016] of the patent specification).

The patients have to wear such mask systems for the whole night, every night. The comfort and fit of the patient interface is thus a relevant factor in the efficacy of therapy and compliance of patients (see paragraphs [0002]-[0003] of the patent specification). The invention seeks to provide

alternative arrangements of mask systems to enhance the efficacy of therapy and compliance of patients.

2. Main request - novelty over D1

2.1 D1 discloses a mask system depicted as mask 10 in Figures 1 and 18 reproduced below.

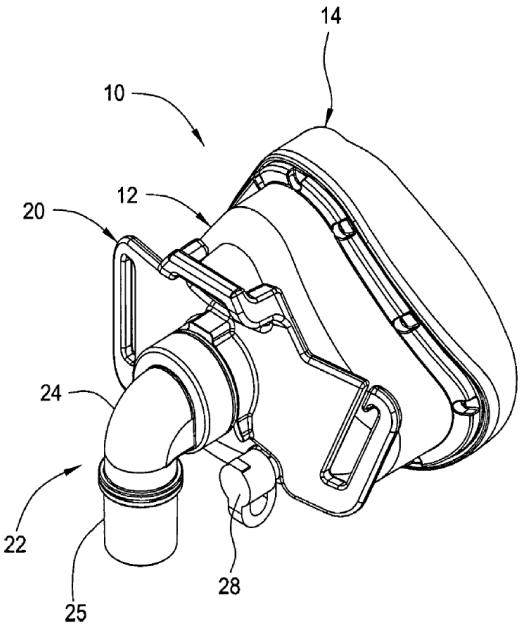

FIG. 1

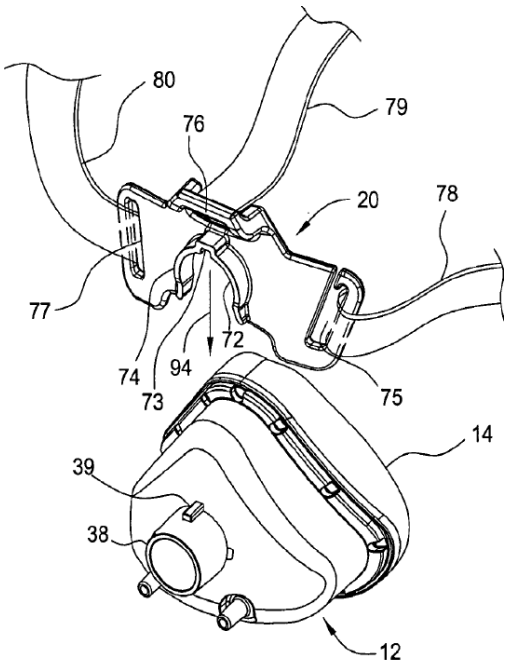

FIG. 18

The mask system of D1 comprises:

a frame (mask shell 12) defining a breathing chamber ("the interior of the shell" in paragraph [0035]);
a cushion (mask seal 14) provided to the frame and adapted to form a seal with the patient's face (see paragraph [0038]) and
a shroud (head strap retention bracket 20, see also headstraps 78-80 in paragraph [0044] and Fig. 18) provided to the frame and adapted to attach headgear;
wherein the frame includes a collar surrounding an opening ("circular opening 37 circumscribed ... by an

outwardly extending hollow cylindrical wall 38" in paragraph [0036]) adapted to communicate with an elbow (dual swivel 22 mounted into the opening 37 in paragraph [0039]),
wherein the shroud includes a retaining mechanism structured to establish a positive connection between the shroud and the frame ("this mounts the mask shell 12 and seal 14 removably to the headstrap retention bracket 20" in paragraph [0044]), and
the retaining mechanism includes a semi-circular wall 74 structured to engage the collar (Figures 5, 14-16 and 18 of D1 show the semi-circular wall 74 subtending more than 180 degrees and engaging the hollow cylindrical wall 38) .

It was disputed whether this engagement is a snap fit and whether the semi-circular wall 74 can be regarded as a snap finger.

2.2 As pointed out by the proprietor and by the expert opinion VP-05, D1 does not explicitly describe the engagement between elements 74 and 38 as a snap fit but as a "wedged or interference friction engagement" (see paragraphs [0042] and [0044] of D1), indicative of a press fit.

It is common ground that during the assembly operation, at least one of the semi-circular wall 74 or the cylindrical wall 38 must have elastically deflected to achieve the assembled state as shown in Figure 5 of D1. This results from the complementary shape of the elements involved (see [0042], 4th sentence) and from the fact that the "generally semi-circular wall or member 74" subtends more than 180° (see Figures 5, 14-16 and 18).

Even if the engagement is not literally presented as a snap fit in D1, the engagement following an elastic deflection of at least one of the mating components and ending in a state of reduced deflection/stress as compared with the state during the assembly operation corresponds to a snap fit (see the definition of a snap fit in D5, page 342, 2nd paragraph and in D14, page 1, 3rd paragraph). The description of the engagement in D1 as an "interference friction engagement" is not incompatible with a snap fit: it belongs to common general knowledge that interference after assembly is often present in a snap fit and serves to control the tightness of the fit and the location of the parts (see D5, page 343, 2nd paragraph, 2nd-3rd sentences and D14, page 1, 3rd paragraph, 3rd-4th sentences).

2.3 The proprietor submitted that the semi-circular wall 74 could not define a "snap finger" because a snap finger not only had to participate in the snap fit but also had to deflect during the assembly operation. The proprietor supported this based on the term itself, on paragraph [0117] of the patent specification and on the common general knowledge as shown in D5 and D14. The proprietor further indicated that this was in line with the expert opinions VP-04 and VP-05.

The Board holds that the term "snap finger" in claim 1 does not require the finger to deflect during the assembly operation or, to be more precise, to be the component deflecting more from both mating components. The term "snap" in "snap finger" indicates its participation in a snap fit. The term "finger" refers to its protruding geometry.

The expert opinion VP-04 indicates that it can be understood from the denomination "finger" that the snap

fingers are the parts that deform elastically, adding that defining a finger just from the geometry would be unclear because different geometrical realizations where the snap mechanism is identical can be designed. The Board cannot follow this reasoning. Not all properties of a (human) finger can be implied by the use of the term "finger" in claim 1. There is thus no reason to assume that the term "finger" would imply an ability to deflect or bend, the same way that it does not require the element to have a skin or a nail. The term reflects instead the protruding geometry of the element, comparable to the terms "snap beam" and "snap hook" as used in D5. It thus limits the possible shapes of the element and it plays no role in this regard that different realizations with an identical snap fit mechanism can be designed.

The expert opinion VP-05 discusses on page 2, first question, the definition of a snap fit as requiring a protruding component to deflect. There is however no specific discussion of the term "snap finger" and its possible implications.

The statement in paragraph [0117], 1st sentence, of the patent specification ("In use, the snap fingers 1145(1) resiliently deflect ...") refers to a particular embodiment and cannot be used to construe the term narrowly in claim 1.

It is correct that D5 provides examples of a hook, beam or cantilever being the protruding feature which deflects in a snap fit (page 342, 2nd paragraph, page 346, 2nd paragraph and figures 6.14-6.16). D5 also teaches that snap hooks or beams define a category of snap joints (page 343, 3rd paragraph). However, D5 says at no point that a snap hook or beam (or a snap finger,

a term which is never used in D5) would necessarily be the component which (predominantly) deflects.

The same applies to D14, which teaches on page 1, 4th paragraph, 1st sentence that at least one of the mating components is deflected. The second and third sentences of the same paragraph refer to this at least one deflecting element by avoiding a repetition ("Danach federt er ..." respectively "... das Schnappelement ..."). Hence, the term "Schnappelement" is used in D14 to refer to the element of the snap fit which was previously discussed and which in this case happened to deflect. By no means is D14 providing a definition of a snap element -or a snap finger- as the component that (primarily) deflects.

2.4 In view of the above, claim 1 does not require the "one or more snap finger" to deflect during the assembly operation. Hence, it is irrelevant whether in D1 the semi-circular wall 74 is deflecting during the assembly operation.

2.5 It follows that the subject-matter of claim 1 is not novel over D1.

3. Auxiliary request II* - admittance

Auxiliary request II* corresponds in essence to auxiliary request 1 filed with the proprietor's statement of grounds of appeal. In view of the transitional provisions under Article 25(2) RPBA 2020, admittance of the request is subject to the Board's discretion under Article 12(4) RPBA 2007.

The fact that the contested decision did not rely on certain features for the finding on novelty and

inventive step of claim 1 of the then auxiliary request I is not a valid reason for filing on appeal a higher-ranked request where these features are not included anymore. This would go against the primary object of the appeal proceedings to review the decision under appeal in a judicial manner. By not filing auxiliary request II* in the first-instance proceedings, the proprietor prevented the opposition division from dealing with it. The Board thus decided not to admit auxiliary request II*.

4. Auxiliary request II - added subject-matter

4.1 Claim 1 of auxiliary request II is identical to claim 1 of the request found to be allowable in the appealed decision. The opponent submitted that claim 1 comprised subject-matter extending beyond the content of the parent application EP 09716457.8 (Article 76(1) EPC).

4.2 As compared to the combination of claims 36, 37 and 41 of the parent application, claim 1 does not comprise the feature "an elbow provided to the frame and adapted to be connected to an air delivery tube that delivers breathable gas to the patient".

Claim 1 deals with a mask system and not only with a retaining mechanism. This does not imply, however, that an elbow must be present in order to form a mask system as defined by claim 1. This is also clear from independent claims 1 and 14 of the parent application, which are directed to a mask system and which do not include an elbow. The claims of the parent application refer to an elbow for the first time in dependent claim 20.

The elbow is presented in claim 36 of the parent application in functional terms relating to the delivery of breathable gas to the patient, without any link to the retaining mechanism defined in the same claim. While the elbow can play a role for the retention (see paragraph [0194] and claims 38-39 of the parent application), this is disclosed as optional and not inextricably linked to the retention provided by the snap fit, as further explained below.

4.3 The opponent argued that the embodiment of paragraph [0194] of the parent application, which provides support for the feature added to claim 1 of the auxiliary request II, comprised an elbow, sandwich tabs included in the shroud and respective recesses provided to the end of the collar. Figures 22 and 23 also showed that the part-annular protrusions protruded radially from the collar of circular cross-section. Not including these features thus constituted an unallowable intermediate generalisation.

In the parent application, it is clear from the claim structure and dependency that the retaining mechanism may include the sandwich tabs (claims 38-40) and/or the snap fingers (claims 41-42). The embodiment in paragraph [0194] merely combines both optional features. There is thus support for the retaining mechanism including the snap fingers / snap fit (and details therefrom such as the respective protrusions in the collar, as also disclosed in claim 42) but without including sandwich tabs and respective recesses.

Moreover, paragraph [0194] itself states in its last sentence that the snap fingers "allow the shroud to connect to the frame independent of the elbow", emphasising that the connection provided by the snap

fingers / snap fit is functionally independent from the elbow and its retention forces applied through the sandwich tabs (see lines 7-11 of paragraph [0194]). This is again reflected in the claim structure of the parent application, with claims 41 and 42 not necessarily depending on claim 39, indicating that the two aspects are not inextricably linked but can instead be considered separately.

Figures 22 and 23 are referred to in the first sentence of paragraph [0194] within parentheses and presented as showing only an example of how the snap fingers may engage respective part-annular protrusions ("(e.g. see Figs. 22 and 23)"). It is thus allowable to incorporate features from paragraph [0194] without including the specific details shown in those exemplary figures.

4.4 In summary, the parent application provides support for the combination of features defined by claim 1 without the additional features of an elbow, sandwich tabs included in the shroud and respective recesses provided to the end of the collar. Thus, claim 1 does not comprise subject-matter extending beyond the content of the parent application (Article 76(1) EPC).

4.5 The description of the application as filed is almost identical to the description of the parent application, except that it further recites the claims of the parent application as "aspects" on pages 4a-4l of the application as filed. The whole disclosure of the parent application is thus comprised in the application as filed. Hence, for the same reasons indicated for Article 76(1) EPC above, claim 1 does not comprise subject-matter extending beyond the content of the application as filed either (Article 123(2) EPC).

4.6 The opponent objected in its statement of grounds of appeal that several dependent claims likewise comprised added subject-matter. As indicated in the Board's communication dated 5 October 2022 and uncontested by the opponent, the objections of added subject-matter against the dependent claims repeat objections raised in the first-instance proceedings without addressing the corresponding reasons in the decision under appeal. The Board thus decided to disregard these objections (Articles 12(2) and (4) RPBA 2007).

4.7 It follows that Articles 76(1) and 123(2) EPC do not prejudice maintenance of the patent on the basis of auxiliary request II.

5. Auxiliary request II - clarity

5.1 As submitted by the opponent, the term "in use" in the feature added to claim 1 of auxiliary request II does not necessarily refer to the assembly operation but may refer to any time at which the mask is used. That is, the deflecting and engaging may occur at any time. This results in a possibly broad, yet clearly defined limitation.

5.2 The opponent further submitted that claim 1 was not supported by the description. The description only presented an example of part-annular protrusions provided to a circular collar, without examples directed to collars of other shapes.

However, the description does not indicate that it is essential to have a circular-shaped collar when part-annular protrusions are provided to it. Moreover, the subject-matter of claim 1 is present in the description of the patent specification: formal support is provided

in paragraph [0005] and part-annular protrusions without the collar being limited to a circular shape are presented in paragraph [0117], without any contradiction in this regard between claim 1 and the description. It follows that claim 1 is supported by the description.

5.3 The opponent further submitted that claim 1 encompassed combinations which seemed to be incompatible. In particular, part-annular protrusions were argued to be incompatible with a collar having a non-circular shape and part-annular protrusions protruding into the opening were argued to be incompatible with the collar's ability to communicate with an elbow

In the absence of any contradiction in the claim, the question of whether the person skilled in the art would be able to carry out a conceivable embodiment encompassed by claim 1 is an issue which can be potentially relevant in the context of Article 83 EPC, which is discussed hereafter, but not in the context of Article 84 EPC.

As to the direction of the protrusions, it is on one hand effectively delimited by their engagement with the snap fingers. On the other hand, the elbow's shape is not limited to a circular shape in claim 1, so that also an opening with inward protrusions could be adapted to communicate with an elbow having a matching shape.

5.4 The last feature of claim 1 refers to "the snap fingers", using a definite article. There is thus no doubt that the "one or more snap finger" of the previous feature are meant, so that there is no inconsistency nor any lack of clarity in this regard.

5.5 It follows that the objections under Article 84 do not prejudice maintenance of the patent on the basis of auxiliary request II.

6. Auxiliary request II - sufficiency of disclosure

6.1 The patent specification details at least one embodiment in which part-annular protrusions are provided to a collar (see for example paragraph [0194] and Figures 11-12, 22-23 showing a circular collar). At least one way of enabling the person skilled in the art to carry out the invention is thus disclosed.

While it is correct that opening's shapes other than a circle such as a polygonal opening are encompassed by claim 1, the opponent did not reason why a person skilled in the art would not be able to carry out the invention using other opening's shapes. The Board does not see any reason either. Due to their protruding nature, there is no need for the protrusions to have a shape matching the shape of the structure they are provided to.

6.2 Dependent claim 9 requires that the shroud is provided with a forehead support. The figures do not illustrate a forehead support but the patent specification defines it functionally, teaching that it is "adapted to engage the patient's forehead" (paragraph [0014]) and that it "typically eliminates rotation of the mask system in the sagittal and coronal planes" (paragraph [0017]). This is sufficient to enable the person skilled in the art to include such a forehead support, all the more as - as explained in point 2.4 of the appealed decision and undisputed by the opponent - such forehead supports

were well known in the technical field of mask systems at the priority date of the opposed patent.

6.3 It follows that Article 83 EPC does not prejudice maintenance of the patent on the basis of auxiliary request II.

7. Auxiliary request II - novelty

7.1 Novelty over D1

The last feature of claim 1 reads "wherein, in use, the snap fingers resiliently deflect and engage respective part-annular protrusions provided to the collar".

The collar in D1 is defined by the hollow cylindrical wall 38. This wall comprises a protrusion defined by the "radial ridge 39", but the snap fingers (i.e. the semi-circular wall 74) do not engage this protrusion.

The opponent submitted that the lateral parts of the cylindrical wall 38 anticipated the protrusions of the last feature of claim 1.

The diameter of the cylindrical wall 38 is larger than the bottom part of the semi-circular wall 74, resulting in interference between the left and right sides of the cylindrical wall 38 and the lower part of the semi-circular wall 74 during assembly and causing deflection of at least one of the components (see point 2.2 above). However, other than the radial ridge 39, the cylindrical wall 38 has a continuous, regular cylindrical shape. The left and right sides of the cylindrical wall do neither comprise nor define any protrusion provided to the wall.

Hence, in D1 there are no "respective part-annular protrusions provided to the collar" to which the snap fingers engage. It follows that the subject-matter of claim 1 is novel over D1.

7.2 Novelty over D2, Figure 2A

It was disputed whether the slots 13 and 15 shown in the embodiment of Figure 2A of D2 defined snap fingers within the meaning of claim 1.

The description of D2 does not provide any hint as to the shape of the slots 13 and 15. It only teaches that the tabs 11, 11' mate with the slots 13, 15 to hold the retainer in a particular angular orientation (see paragraph [0026], lines 6-8 and 12-13).

The slots are represented in the views of Figures 2A and 2C with three lines, indicative of a non-planar structure. However, it is not possible based on the drawings to draw any conclusion as to their specific shape and as to whether they define snap fingers. The drawings are compatible with different structures (see item 9 of D30, item 11 of D34 and item 20 of D35), including also a ridge of low height and inclination which cannot be regarded as a snap finger within the meaning of claim 1. Hence, the embodiment of Figure 2A does not directly and unambiguously disclose "one or more snap finger".It follows that the subject-matter of claim 1 is novel over this embodiment.

7.3 Novelty over D2, Figure 10A

The opponent submitted that in the embodiment of Figure 10A of D2 the cylindrical part of the inlet 208 defined

two part-annular protrusions, each in front of the respective part-annular depressed region 280.

The inlet 208 is a cylinder with two depressed regions but without any protrusion provided to it. Even if the cylindrical (non-depressed) part of the inlet 208 were to be regarded as defining a protrusion, it would define a single, fully annular protrusion. Hence, D2 does not disclose in the embodiment of Figure 10A "respective part-annular protrusions provided to the collar" as required by claim 1.

7.4 Novelty over D10

D10 does not disclose a frame including a collar surrounding an opening adapted to communicate with an elbow in combination with the one or more snap finger being structured to engage the collar. While the cup-shaped shell 3 of D10 can be regarded as defining a frame, it does not comprise a collar within the meaning of claim 1.

The channels 45, 47 and 49 and the respective walls/ shoulders of the shell 3 enable attachment and positioning of the rigid plate 9 on the shell 3 (see page 8, line 29 - page 9, line 2 as well as Figures 1, 3, 6 and 7). It is however artificial and not supported by the disclosure of D10 to regard the plane where these elements are located as dividing the shell 3 in two sections, with the distal section defining an additional element included in the shell 3. Moreover, while claim 1 defines the collar in functional terms without defining its precise geometry, it still requires an identifiable structure (a collar) providing these functions, so that the presence of a collar cannot be derived only from the achievement of the

associated functions. Hence, D10 does not anticipate the subject-matter of claim 1.

7.5 It follows from the above that the subject-matter of claim 1 is novel.

8. Auxiliary request II - inventive step

8.1 Starting from D1

8.1.1 As established in point 7.1 above, D1 does not disclose that the snap fingers engage "respective part-annular protrusions provided to the collar". Even if the technical problem solved by claim 1 would be seen as providing an alternative to the snap fit construction of D1, as argued by the opponent, it must still be established whether the person skilled in the art starting from D1 would have provided part-annular protrusions to the hollow cylindrical wall 38 of D1.

8.1.2 Annular snap fits in which two cylindrical pieces of slightly different diameter are fitted using a circular protrusion / rim provided on one of the cylinders and a mating circular depression provided on the other cylinder belong to common general knowledge (see for example the engagement between swivel members 23 and 24 in Figure 9 of D1 as well as the example shown in Figure 6.9 of D5). In such annular fits, snap fingers engage with respective annular protrusions. More importantly, the assembly in such known annular snap fits occurs by axially aligning both cylinders and moving them axially towards each other, with the annular protrusion being essential for achieving the snap fit.

The snap fit between semicircular wall 74 and collar 38 in D1 works differently. In D1, the diameter of the cylindrical wall 38 is larger than the bottom part of the semi-circular wall 74 and the snap fit is achieved by forcing downwardly the semi-circular wall 74 onto the hollow cylindrical wall 38 (see Figure 18 of D1 as well as paragraph [0044], 2nd sentence). This downward rather than axial assembly of the two components in D1 is important to allow the mask wearer to remove the mask shell and seal while keeping the headstrap retention bracket and the headstraps attached to the person's head, for example to go to the bathroom (see paragraph [0046] of D1, first two sentences). As opposed to an annular snap fit, the downward assembly of the snap fit of D1 based on the differing sizes of the two elements does not need any protrusions on the cylindrical wall 38.

8.1.3 None of the examples of common general knowledge indicated by the opponent relates to a snap fit working in a way similar to the one disclosed by D1. Since the snap fit of D1 uses a different construction and assembly operation, the person skilled in the art would not have provided the cylindrical wall 38 with part-annular protrusions in view of this common general knowledge.

8.1.4 The opponent submitted that according to D29, an affidavit carried out *post facto* by a technical expert, it would be obvious using common general knowledge to do such modifications in the snap fit of D1 to have a more secure fit.

The assertions made in D29 and recited by the opponent as to the obviousness of the modifications are not supported by evidence that providing part-annular

protrusions to a snap fit such as the one used in D1 would belong to common general knowledge before the priority date. Hence, the submission is not convincing.

8.1.5 The opponent submitted that the combination of D1 with any of D24, D25 or D26 also rendered the subject-matter of claim 1 obvious. A snap fit using part-annular protrusions is shown in each of these documents (see D24, Fig. 37; D25, Fig. 2; D26, Fig. 5). In all three cases, a snap fit between two cylindrical elements occurs by axially aligning both cylindrical elements and moving them axially towards each other, with the protrusions being essential for the snap fit to work, similarly as for the annular snap fit discussed above. The teaching of these documents is thus not applicable to the snap fit design used in D1, which as explained above is based on a downward assembly and does not require any protrusions provided to the cylindrical wall 38.

8.1.6 It follows that the subject-matter of claim 1 is inventive when starting from D1 in view of any of common general knowledge, D24, D25 or D26.

8.2 Starting from D2, embodiment of Figure 10A

8.2.1 As concluded in point 7.3 above, D2 does not disclose in its embodiment of Figure 10A "respective part-annular protrusions provided to the collar". In the embodiment of Figure 10A of D2, the snap fingers are defined by the lateral sides of the retainer's central opening (i.e. the two parts which protrude from the opening between slots 213 and 215). The snap fit occurs between these lateral sides and the inlet 208 (see paragraph [0044] of D2).

8.2.2 The opponent submitted that the person skilled in the art starting from the embodiment of Figure 10A of D2 in view of any of common general knowledge, D24, D25 or D26 would provide the inlet 208 with two part-annular protrusions without any further modifications to the snap fit.

The objection based on common general knowledge is not convincing because the opponent did not prove that such modification belonged to common general knowledge (see the discussion on inventive step starting from D1 in the previous section).

Also the combination with any of D24, D25 or D26 is not convincing. Firstly, D24-D26 each show complete snap fit designs, without any teaching specifically directed to the sole provision of part-annular protrusions. Secondly, in D2 the retainer 212 is contoured to match the external curvature of the shell 204 and to fully seat against it when assembled (see paragraph [0044], 2nd and last-but-one sentences). If the snap fit design taught by any of D24-D26 would be implemented in the embodiment of Figure 10A of D2, the snap fingers would protrude axially from the retainer 212 towards the shell 204 rather than radially. This would cause a separation between the retainer 212 and the shell 204 which would go against the teaching of D2 in paragraph [0044], so that said combination would be disregarded.

8.2.3 The opponent further submitted that, according to the affidavit D29, it would be obvious to use a tapered inlet 208 or to provide the inlet 208 with discontinuous part-annular protrusions of different forms such as bumps, ramps or studs in order to achieve a tighter connection between the components of the snap fit of D2.

Similarly as explained for the objection starting from D1, the assertions made in D29 and recited by the opponent as to the obviousness of the modifications are not supported by specific proof of such modifications belonging to common general knowledge before the priority date. Hence, the submission is not convincing.

8.2.4 For the reasons above, the subject-matter of claim 1 is inventive when starting from the embodiment of Figure 10A of D2 in view of any of common general knowledge, D24, D25 or D26.

8.3 Starting from D10 - admittance

The opponent had raised an objection of lack of inventive step starting from D10 in its supplement to the statement of grounds of appeal dated 8 April 2019. The objection raised for the first time at the oral proceedings before the Board starts also from D10 but is based on a different combination of documents involving D1 or D2. It thus constitutes an amendment to the opponent's appeal case and its admittance is subject to Article 13(2) RPBA 2020.

The Opposition Division had concluded in section 6.7 of its interlocutory decision that D10 did not disclose a collar. There was thus no reason for the opponent to assume that a collar was present in D10 and to wait until the Board's conclusion on this matter at the oral proceedings to submit an inventive step objection dealing with the collar as a distinguishing feature. Hence, there are no exceptional circumstances justifying admittance of this objection at such a late stage of the proceedings. The Board thus decided not to take this objection into account.

9. In summary, none of the opponent's objections prejudices the maintenance of the patent on the basis of auxiliary request II.

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 14 of auxiliary request II filed with letter dated 24 October 2019
- description and drawings of the patent specification

The Registrar: The Chairman:

A. Chavinier-Tomsic M. Alvazzi Delfrate

Decision electronically authenticated