

Paper Ref	Sheet	Percentage Mark Awarded
<b>FD4</b>	<b>1 of 39</b>	<b>62%</b>

Examiner's  
use only

Spare set of Claims

### CLAIMS

1. A rope-descending device for slowing the speed of descent of a load on a rope, comprising:  
a ring defining an inner aperture, said aperture sized to accommodate the rope;  
5 a rail extending across the width of the aperture, said rail adapted to provide a force on the rope; and  
means for connecting the ring to the user of the rope-descending device, wherein the rail and the aperture are configured such that the path of the rope through the rope-descending device is linear.
- 10 2. A rope-descending device according to claim 1, wherein the rail is integrally formed with the ring.
3. A rope-descending device according to claim 1 or claim 2, wherein the device comprises 2 to 4 rails.
4. A rope-descending device according to claim 3, wherein the width of the rails  
15 occupies substantially all of the aperture.
5. A method of braking a load on a rope using the device of claims 1–4, said method comprising:  
securing the rope-descending device to a user;  
securing one end of the rope to a load;  
20 adding one or more rails extending across the width of the aperture of the rope-descending device, said rails adapted to provide a force on the rope;  
passing the support rope through the device in a linear manner; and  
lowering the load, whereby the user controls the rate of descent of the load by varying the level of friction provided by the device.

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>2 of 39</b>

Examiner's  
use only

**[Instruction to Candidate:** Save your Answer document to your computer as a Word document. Convert the Answer document to a PDF. Check the Answer document to make sure that amended Claims are shown as you want in the Answer document. Upload the PDF-ed Answer document to the PEBX system.]

Start typing here ....

## ABBREVIATIONS

PSA = person skilled in the art

CGK = common general knowledge

IC = inventive concept

CS = ClimbSafe

AG = Abseilen GmbH

PDC = patent drafting convention

## CLAIM FEATURE BREAKDOWN

1.1 A rope-descending device for slowing the speed of descent of a load on a rope, comprising:

1.2 a ring defining an inner aperture, said aperture sized to accommodate the rope;

1.3 a rail extending across the width of the aperture, said rail adapted to provide a force on the rope; and

1.4 means for connecting the ring to the user of the rope-descending device,

1.5 wherein the rail and the aperture are configured such that the path of the rope through the rope-descending device is linear.

2.1 A rope-descending device according to claim 1,

2.2 wherein the rail is integrally formed with the ring.

3.1 A rope-descending device according to claim 1 or claim 2,

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>3 of 39</b>

Examiner's  
use only

3.2 wherein the device comprises 2 to 4 rails.

4.1 A rope-descending device according to claim 3,

4.2 wherein the width of the rails occupies substantially all of the aperture.

5.1 A method of braking a load on a rope using the device of claims 1–4, said method comprising:

5.2 securing the rope-descending device to a user;

5.3 securing one end of the rope to a load;

5.4 adding one or more rails extending across the width of the aperture of the rope-descending device, said rails adapted to provide a force on the rope;

5.5 passing the support rope through the device in a linear manner; and

5.6 lowering the load,

5.7 whereby the user controls the rate of descent of the load by varying the level of friction provided by the device.

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>4 of 39</b>

Examiner's  
use only

## CONSTRUCTION

1.1 A rope-descending device for slowing the speed of descent of a load on a rope, comprising:

- Independent claim. Sets the scene and defines the technical field, i.e. for slowing speed of descent of a load on a rope.
- “A rope-descending device” = A device used by climbers during e.g. abseiling or rappelling – p3, l8-9. Usage may be during, for example, mountain climbing (p3, l8-9), construction industry and emergency services (p3, l18-19). The device is used by the climber themselves to lower themselves using a rope – p3, l9-10. P5, l35-36 suggests the device can be used as a belay device. However, this was introduced at a later filing date and so is not used to construe claim 1 (which possesses an earlier priority date). Doc C (referenced in application) suggests that a ‘rope-descender device’ is a term of art for a device used by a climber to support their own weight – p13, l1. This is supported by the client’s view that a rope-descending device is in contrast to a belay device – p2, l34. Seek expert insight on whether this is a term of art that is considered to distinguish over a belay device.
- “Device” may comprise an assembly, since the rail may be non-integral and so can be a separate component.
- “For” = Suitable for. I.e. the device is suitable for the following purpose.
- “A load on a rope” = The load refers to the load of the climber and any load attached thereto, since this is consistent with the construction of the term “rope-descending device” – p3, l5-7. The “rope” is the rope on which

1

Page sub-  
total

1

Paper Ref	Sheet
<b>FD4</b>	<b>5 of 39</b>

Examiner's  
use only

the device is being used to descend. Neither the load nor the rope are part of the claimed subject-matter.

- “Comprising” = the device includes but is not limited to the following features – PDC.

1.2 a ring defining an inner aperture, said aperture sized to accommodate the rope;

- “A ring defining an inner aperture” = Ring refers to a closed loop, e.g. ring 10 and aperture 12. The term “inner” is not used in the specification other than in the context of the claim language. In view Fig. 4 and p4, l32-33, “inner” is defined relative to the ring. I.e. the aperture is “inner” of the ring. The ring need not be circular – Fig. 4, but should possess at least partially rounded portions (e.g. rounded ends 19’, 19”) – p4, l33-34.
- “said aperture sized to accommodate the rope” = This defines the aperture with respect to an unclaimed entity (i.e. the rope) and so is potentially unclear. The PSA would understand that climbing ropes come in an approximate range of sizes (i.e. diameters), of the order of several mm (while Doc B cannot be used to construe the claims, this supports the notion that ropes are roughly 9-11mm – p11, l28). Therefore, this limitation simply defines that the aperture has a diameter that is slightly greater than a typical diameter of a climbing rope. Seek technical expert evidence to determine what the PSA would understand to be a reasonable dimension.

1

1

Page sub-  
total

2

Paper Ref	Sheet
<b>FD4</b>	<b>6 of 39</b>

Examiner's  
use only

1.3 a rail extending across the width of the aperture, said rail adapted to provide a force on the rope; and

- “A rail extending across the width of the aperture” = The “width” of the aperture lacks antecedence and so is not defined by the claim. Width construed to refer to the dimension perpendicular to the direction of the rope when in use – Fig. 4; p4, l39-p5, l2. This defines the direction of the rail adequately to provide the force on the rope. In other words, the PSA would understand that the rail should not be extending parallel to the rope in order to provide the force. The rail may be provided by an edge of a loop – Fig. 4; p4, l33. The ring may have raised sides, in which case the width is defined as being perpendicular to these sides – p4, l34. More than one rail may be provided – repercussive effect, claim 3. The rail may be separate or integrally formed with the ring – p5, l27.
- “Extending across the width” implies that the rail extends across the entire width of the aperture so as to separate the aperture into two smaller effective apertures – Fig. 4.
- “said rail adapted to” = equivalent to “configured to” – PDC. Functional limitation that implies that in use the rail is able to provide a force on the rope. Does not limit to the rail being in use.
- “provide a force on the rope” = In use, the rail engages with the rope such that the rail exerts a force (e.g. frictional) on the rope in order to slow the rate of descent – p5, l. 18-20.

1

1

1.4 means for connecting the ring to the user of the rope-descending device,

Page sub-  
total

2

Paper Ref	Sheet
<b>FD4</b>	<b>7 of 39</b>

Examiner's  
use only

- “Means” = broad term that provides no structural limitation on the device.
- Means is suitable for connecting the ring to the user. The user is construed, as above, to be the climber themselves. The means can be any device or feature that is suitable for this purpose. The means may comprise a plate that has openings to accommodate a means to attach the device to the user – p5, I23-26. The claim language is broad enough to refer to the plate/openings alone or also the plate/openings alongside an attachment means itself (e.g. carabiner or rope). There is nothing in the claim language to suggest that the “means” must refer to the attachment means itself.
- As construed above, the “load” and the “user” are construed to be the same physical object. I.e. the load is provided by the user.

1

1.5 wherein the rail and the aperture are configured such that the path of the rope through the rope-descending device is linear.

- Functional limitation. Whether the path is actually linear, of course, depends on how the rope and the device is used. Therefore, this limitation is satisfied providing the “rail and the aperture” can achieve the function.
- Provides a limitation in use, since the rope is not claimed per se. The path of the rope, in use, must be linear.
- “Linear” = the path of the rope bends through less than 90 degrees from the axis of the direction of force applied to the rope by the load (the ‘line of action’) – p5, I1-2. The rope can still bend to pass over the rails – p5, I38.

1

Page sub-  
total

2

Paper Ref	Sheet
<b>FD4</b>	<b>8 of 39</b>

Examiner's  
use only

2.1 A rope-descending device according to claim 1,

- Claim requires all of the features of claim 1, plus the following - PDC

2.2 wherein the rail is integrally formed with the ring.

- Self-explanatory. Claim 1 encompasses embodiments where the rail is a separate component from the ring – Fig. 4. Claim 2 limits to embodiments where the rail and the ring are integrally formed (i.e. not separate components). Additional rails may be present that are not integrally formed – p5, l24-26. In this case, the construction of the “aperture” is more challenging, since the rail now ‘permanently’ divides such an aperture into two smaller apertures. The ‘aperture’ is therefore construed to refer to apertures through which the rope is received when in use. This aperture may be divided by a rail, but is still construed to refer to a single aperture providing the rope may pass through both apertures for the force to be provided by the rail in use.

3.1 A rope-descending device according to claim 1 or claim 2,

- Claim requires all of the features of claim 1 or 1+2, plus the following - PDC

3.2 wherein the device comprises 2 to 4 rails.

1

Page sub-  
total

1



Paper Ref	Sheet
<b>FD4</b>	<b>9 of 39</b>

Examiner's  
use only

- “Comprising” = the device includes but is not limited to the following features – PDC.
- Construction of “comprising” means that this limitation implies that the device comprises at least 2 to 4 rails. I.e. the device may have 2, 3, 4, or more rails. This is supported by p5, l8 (“passing the rope over one, two, or more rails”).
- The rails are configured in the same was as “the rail” of claim 1. I.e. so as to provide a force to the rope – Figs. 5a-5c. The 2-4 rails is construed to contain “the rail” already present in claim 1. I.e. a total of 2-4 rails, rather than referring to “the rail” of claim 1 plus 2-4 further rails. This is consistent with Figs. 5a-5c and p5, l7-8.
- One of the 2-4 rails may be integrally formed, with the remaining rails being provided by separate components – p5, l27-29.

1

4.1 A rope-descending device according to claim 3,

- Claim requires all of the features of claim 1+3 or 1+2+3, plus the following - PDC

DEP. 1

4.2 wherein the width of the rails occupies substantially all of the aperture.

- “The width” here refers to a different dimension compared to the “width” of the aperture. The width here is measured in the direction of the rope (i.e. the line of action, perpendicular to the ‘width’ of the aperture). This is consistent with Figs. 5a-5c – p5, l20-22.

1

Page sub-  
total

3

Paper Ref	Sheet
<b>FD4</b>	<b>10 of 39</b>

Examiner's  
use only

- “substantially all of the aperture” = leaving aside the space occupied by the rope, the combined width of the rails (in the direction of the rope) occupies substantially all of the aperture – p5, I20-22; Fig. 5c.

1

5.1 A method of braking a load on a rope using the device of claims 1–4, said method comprising:

- Independent claim, directed to a method. But requires the use of the device in the preceding claims as part of the method.
- I.e. method requires the use of the device in claim 1, 1+2, 1+3, 1+2+3, or 1+2+3+4
- “of braking a load on a rope” = intended purpose of the method. Performing the method should achieve this outcome.
- “Comprising” = the method includes but is not limited to the following steps – PDC.

5.2 securing the rope-descending device to a user;

- The device is secured to a user by way of the means for connecting the ring to the user – claim 1. E.g. plate, rope, carabiner – p5, I23-26.
- In the context of this claim, in view of the added passage at p5, I30-36, which shares the same later effective filing date of claim 5, the user may refer to a user who remains stationary while lowering a load, i.e. with the device being used as a belay device – p5, I34-36.

1

Page sub-  
total

2

Paper Ref	Sheet
<b>FD4</b>	<b>11 of 39</b>

Examiner's  
use only

- Alternatively, the user may refer to a climber as already construed for claim 1. P5, I34-36 specifies that “in particular” the method is useful for lowering a load while the user remains stationary. I.e. this is an optional advantageous purpose of the method, and so the method is still construed to provide the functionality of claim 1 (i.e. the load is the user).

5.3 securing one end of the rope to a load;

- The one end of the rope is secured either to a separate load (i.e. when in use as a belay device) or the one end of the rope may be secured to the user of the device (i.e. when in use as a rope-descending device). Any means of securing known in the art may be used.

5.4 adding one or more rails extending across the width of the aperture of the rope-descending device, said rails adapted to provide a force on the rope;

- The arrangement of the rails and their adaptation to provide a force is construed equivalently to claim 1.
- In the case of non-integral rails, the results in the device having 1 or more rails. In the case of a device having an integral rail (i.e. claim 2), the device will have 2 or more rails after this step (since the device already comprises a first rail before the one or more rails are added). The process of “adding” an integral rail occurs during the manufacturing process of the device (p5, I27-28), and so it is not reasonable to construe that this step encompasses adding an integral rail.

1

Page sub-  
total

1

Paper Ref	Sheet
<b>FD4</b>	<b>12 of 39</b>

Examiner's  
use only

5.5 passing the support rope through the device in a linear manner; and

- “Linear” is construed in the same way as claim 1. The PSA would understand that the method is a method of using the above claimed device, therefore, the support rope is specifically passed through the aperture in a linear manner, as defined in claim 1.

5.6 lowering the load,

- The device is used to lower the load that is secured to the device. This load may be the user or may be a separate load, as already construed above.

5.7 whereby the user controls the rate of descent of the load by varying the level of friction provided by the device.

- “Rate of descent” = speed at which the load is lowered in step 5.6.
- It is unclear whether this limitation refers to a prior adjustment of the rate of descent by selecting the number of rails (i.e. p5, I15-22) or the ongoing variation of the rate of descent as described in Doc C and referenced at p4, I1-12. Claims 1 and 5 both require that the rope is passed through linearly. However, this does not preclude the rope being subsequently used in a non-linear fashion. Therefore 5.7 is construed to refer to either:
  - varying the number of rails in order to control the frictional resistance provided to the load – p5, I15-22.

1

Page sub-  
total

1

Paper Ref	Sheet
<b>FD4</b>	<b>13 of 39</b>

Examiner's  
use only

- variable braking force that the user can apply when lowering the load – p5, I35-36. The application refers to the Figure Eight descender device – p4, I1-2. This illustrates that, during use, the braking can be controlled by varying the position of the rope through the aperture.
- Both of these options lead to a control over the rate of descent of the load which is caused by a varying level of friction and so, despite this usage contradicting the inventive concept of claim 1 (i.e. the rope is linear), the PSA would still understand that both options fulfil the requirements of the claim.

1

16

**MARKS AWARDED: 16**

Page sub-  
total

1

Paper Ref	Sheet
<b>FD4</b>	<b>14 of 39</b>

Examiner's  
use only

## **INFRINGEMENT**

CS have developed a device described in Doc B.

The device has been manufactured by CS in Bulgaria. The device has been imported into the UK. The device has been distributed directly to retailers in the UK. CS has recently decided to move manufacture into the UK, commencing Dec 2021.

Manufacture, importation, and disposing/offering to dispose (i.e. distribution) in the UK are all infringing acts. Therefore, if device is covered by claims, CS have already infringed as importers and sellers, and will further infringe if they begin to manufacture.

CS supplies devices to UK-based retailers. Therefore, their subsequent offer and sale of products is also an infringement. AG could pursue retailers as well.

Use of the devices by commercial entities, e.g. climbing schools, for commercial purposes would also be an infringement. AG could therefore pursue entire downstream pipeline.

Use of the devices by private individuals would be exempt from infringement as being private and non-commercial use.

CS has two separate embodiments of device: 2 slots (Figure 2); and 1 slot (Figure 3a).

Therefore, check whether claims cover devices.

Any discussion of equivalence is assessed using the test in Actavis.

### Claim 1

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>15 of 39</b>

Examiner's  
use only

#	Comment	Conclusion
1.1	'Rope-descending device' is not construed to encompass a belay device. Doc B describes a belay device – p11, l1. However, Doc B describes that belay devices may be used as a descender, and so the device is functionally not distinct from a rope-descending device. Not clear how device is not suitable as a rope-descending device.	Present (both embodiments)
1.2	Either two slots or single slot have rings that define the aperture of the slot – Fig. 2, 3a. The slots have sizes suitable for climbing rope diameter – p11, l22-24; p11, l27-28	Present (both embodiments)
1.3	Carabiner extends across the slot in a direction perpendicular to the direction of the rope – Fig. 3b; p11, l23. Carabiner provides a force on the rope – p11, l25-26. Carabiner is provided as part of the belay device – p11, l30-31.	Present (both embodiments)
1.4	Cord hole – p11, l29; Fig. 2, 3a	Present (both embodiments)
1.5	The device can be used such that the path of the rope is linear – Fig. 3b. The rope can pass through a slot, over	Present (both embodiments)

1

1

1

1

1

Page sub-  
total  
5

Paper Ref	Sheet
<b>FD4</b>	<b>16 of 39</b>

Examiner's  
use only

	the carabiner, and back through the same slot in a linear fashion – Fig. 3b.	
--	--	--

Claim 1 is infringed by both embodiments.

Equivalence: Claim 1 is infringed under normal interpretation and so Actavis need not be applied.

Claim 2

#	Comment	Conclusion
2.1	See above	Present (both embodiments)
2.2	The carabiner is not integrally formed with the ring that defines the two slots – Fig. 3b; p11, l30-31. However, the two slot embodiment could be construed to possess a 'single' aperture separated by a rail that is integrally formed to divide the aperture into two slots – Fig. 2. While this is not the described use of the 2 slot embodiment, the structural arrangement still satisfies the claims and is suitable for the purpose defined in claim 1.	ABSENT (single slot)  Present (two slots)

1

Claim 2 is not infringed by the single slot embodiment.

Claim 2 is infringed by the two slot embodiment.

Page sub-  
total

1



Paper Ref	Sheet
<b>FD4</b>	<b>17 of 39</b>

Examiner's  
use only

Equivalence: Regarding the single slot embodiment, there is no rail integrally formed with the ring. The carabiner is non-integral. A non-integral rail does not achieve the same effect as an integral rail – p3, l37-39. Furthermore, the PSA would understand that the patentee intends strict compliance with the wording of claim 2, since this is the only further limitation provided by claim 2. Therefore, PSA would understand that a non-integral rail is not equivalent to an integral rail.

1

Claim 3

#	Comment	Conclusion
3.1	See above	Present (claim 1, both embodiments)  ABSENT (claim 2, one slot)  Present (claim 2, two slot)
3.2	No disclosure of multiple rails or carabiners. No disclosure of more than two slots. Only single carabiner is supplied. These additional rails are not construed to be integral.	ABSENT (both embodiments)

Page sub-  
total

1

Claim 3 is not infringed by either embodiment.

Equivalence: A single rail/carabiner does not provide the same effect as multiple carabiners, i.e. adjustable friction – p5, I3-4. Therefore, these are not equivalent.

Claim 4

#	Comment	Conclusion
4.1	See above	ABSENT (both embodiments)
4.2	Fig. 3b shows that <u>aside from the space occupied by the rope</u> , the carabiner occupies all of the slot. I.e. no space can be seen that is not occupied by the rope or the carabiner.	Present (both embodiments)

1

Claim 4 is not infringed by either embodiment (dependency).

Equivalence: The use of a single rail that still occupies all of the slot will achieve the maximum friction possible. This is substantially the same effect as having multiple rails achieving this. Knowing that this is the case, it would be obvious to the PSA that it does so in the same way (i.e. by having a width that occupies substantially all of the slot such that the rope is contoured). The PSA would, however, construe that the patentee intends strict compliance with the use of multiple rails, since claim 4 could have been made dependent on claim 1 if this was not intended. The dependency on claim 3 alone indicates that the patentee had only contemplated achieving this by using multiple rails. Therefore, equivalence not present.

Claim 5

#	Comment	Conclusion
5.1	A user using the device as intended according to Figure 1 will be performing a method of braking a load on a rope – p11, l3-4. For comments on the use of the device in the preceding claims, see above.	Present (claim 1, both embodiments; claim 2, two slot)  ABSENT (claim 2, one slot; claims 3 and 4, both embodiments)
5.2	Belay device secured to belayer – Fig. 1	Present (both embodiments)
5.3	Rope is secured to fallen climber – Fig. 1	Present (both embodiments)
5.4	Adding a carabiner constitutes adding a single non-integral rail – Fig. 3b; p11, l22-26. This applies whether the integral rail (Fig. 2) is present or not.	Present (both embodiments)
5.5	Rope is passed through device – Fig. 3b	Present (both embodiments)

1

1

1

1

1

Paper Ref	Sheet
<b>FD4</b>	<b>20 of 39</b>

Examiner's  
use only

5.6	Used to descend fallen climber – p11, l13-14	Present (both embodiments)
5.7	The position of the rope can be adjusted to vary the friction and thus the rate of descent – p11, l17-21	Present (both embodiments)

1

14

Claim 5 is infringed when the method is applied to a device that is covered by any of claims 1-4.

Equivalence: Claim is infringed under normal interpretation and so Actavis need not be applied.

**MARKS AWARDED: 14**

Page sub-  
total

1

**NOVELTY**

Claims 1-4 of Doc A claim priority and so possess an effective filing date of 1 February 2014. Therefore, prior art against claims 1-4 includes Doc C (which is acknowledged in Doc A as prior art) and Doc A, Figures 1-22 (referred to as “Fig 2”).

1

Claim 5 of Doc A does not have the same right to priority, as it was added on filing. Claim 5 has an effective filing date of 1 February 2015. Therefore, in addition to Doc A, Fig. 2 and Doc C. The WIC Championships also constitutes a prior public disclosure that is prejudicial to claim 5.

1

Claim 1

#	Comment (Fig 2)	Conc (Fig 2)	Comment (Doc C)	Conc (Doc C)
1.1	Depicts a carabiner brake, which is a type of rope-descending device – p3, l25-26; p3, l29-30	Present	Figure eight is a rope-descender device – p13, l1-2	Present
1.2	Frame carabiner B is a ring that defines an inner aperture of the carabiner B. The carabiner B can receive a rope – Fig. 2	Present	Upper ring 3 defines a hole 6 and can accommodate a rope – Fig 2.	Present

1

1

1

1

Paper Ref	Sheet
<b>FD4</b>	<b>22 of 39</b>

Examiner's  
use only

1.3	Brake carabiner A is a loop that has an edge that provides a rail. The carabiner A extends across the width of carabiner B – Fig. 2.	Present	No rail extending across hole 6 discussed. Neck 5 could constitute a 'rail' dividing an aperture into two holes (upper and lower). However, no means for connecting the ring to a user would be present.	ABSENT
1.4	Connecting carabiner D connects to the climber – p3, 132-33	Present	Ring 4 – p13, 17-8	Present
1.5	As shown in Figure 2, it is possible for the rope to be linear in use. I.e. Figure 2 shows that the rope is bending less than 90 degrees from the direction of force. The rope also extends substantially from a top 'end' of carabiner B (i.e. akin to end 19') to a	Present	No rail present. Assuming rope cannot pass through lower ring 4, since this is the mean for connecting the ring to the user. It is not possible to have a linear path without the presence of a rail. The path shown in Figure 2 involves a bend of	ABSENT

1

1

1

Page sub-  
total  
3

Paper Ref	Sheet
<b>FD4</b>	<b>23 of 39</b>

Examiner's  
use only

	bottom 'end' (i.e. akin to end 19").		greater than 90 degrees.	
--	--------------------------------------	--	--------------------------	--

Claim 1 lacks novelty over Doc A, Fig. 2.

Claim 1 is novel over Doc C.

Claim 2

#	Comment (Fig 2)	Conc (Fig 2)	Comment (Doc C)	Conc (Doc C)
2.1	See above	Present	See above	ABSENT
2.2	Carabiner A is not integral with carabiner B.	ABSENT	No rail present	ABSENT

0.5

Claim 2 is novel over Doc A, Fig. 2.

Claim 2 is novel over Doc C.

Claim 3

#	Comment (Fig 2)	Conc (Fig 2)	Comment (Doc C)	Conc (Doc C)
3.1	See above	Present (claim 1)	See above	ABSENT

Page sub-  
total  
0.5

		ABSENT (Claim 2)		
3.2	Only one 'brake' carabiner is disclosed. No discussion of further carabiners – p3, l30-32. Carabiner D cannot be considered a rail, since it does not provide a force to the rope and does not extend across the width of the aperture of carabiner B.	ABSENT	No rail(s) present.	ABSENT

0.5

Claim 3 is novel over Doc A, Fig. 1.

Claim 3 is novel over Doc C.

Claim 4



Paper Ref	Sheet
<b>FD4</b>	<b>25 of 39</b>

Examiner's  
use only

#	Comment (Fig 2)	Conc (Fig 2)	Comment (Doc C)	Conc (Doc C)
4.1	See above	ABSENT	See above	ABSENT
4.2	The carabiner A does not occupy all of the aperture of carabiner B – Fig. 2.	ABSENT	No rail(s) present	ABSENT

Claim 4 is novel over Doc A, Fig. 1.

Claim 4 is novel over Doc C.

Claim 5

#	Comment (Fig 2)	Conc (Fig 2)	Comment (Doc C)	Conc (Doc C)
5.1	See above. Method is considered assuming that an infringing device is used. See above for analysis of claims 1-4.	Present	See above	ABSENT
5.2	Connecting carabiner D is used to secure to user.	Present	Lower ring 4 is used to secured to user.	Present
5.3	No disclosure that one end of rope is secured to user. Ropes appear to be	ABSENT	No disclosure that end of rope is secured to user. Ropes are free or	ABSENT

1

Page sub-  
total

1

	free/secured to outcrop – Fig. 1.		secured to anchor point – p13, l12-14		1
5.4	Brake carabiner A is a rail.	Present	No disclosure of adding rails.	ABSENT	
5.5	Rope is shown in Figure 2 as satisfying the requirements for 'linear'	Present	Rope is not linear when passed through device – Fig. 2.	ABSENT	1
5.6	User is lowered – Figure 1	Present	Climber descends – p13, l1-2	Present	1
5.7	No disclosure of controlling the rate of descent by varying friction.	ABSENT	Amount of friction of rope can be varied to control rate of descent – p13, l15-20.	Present	

Claim 5 is novel over Doc A, Fig. 2.

Claim 5 is novel over Doc C.

According to the client, a method corresponding to Doc B, Figure 1 was shown at WIC Championships, which is a prejudicial disclosure against claim 5. The above infringement analysis with respect to Doc B considers that claim 5 is infringed by such a method. By a similar analysis, if this method were performed at the Championships, then the method would be a novelty-destroying disclosure of

Paper Ref	Sheet
<b>FD4</b>	<b>27 of 39</b>

Examiner's  
use only

claim 5. Therefore, assuming the client's recount is correct – claim 5 lacks novelty over Championships.

**MARKS AWARDED: 16**

CONC. 1

16

**Page sub-  
total**  
1

Paper Ref	Sheet
<b>FD4</b>	<b>28 of 39</b>

Examiner's  
use only

## INVENTIVE STEP

Doc A, Figs. 1-2 and Doc C are fully citable for novelty and inventive step against claims 1-5, as they are acknowledged as full prior art.

Championships are also fully citable for novelty and inventive step against claim 5 alone (subject to enablement).

Inventive step will be assessed using the Windsurfer-Pozzoli test.

### Claim 1

PSA = A designer of safety equipment for climbing/search and rescue

CGK = Carabiner brakes are well-known since 1980s – p2, l37-39. Therefore, carabiner brake described in Figure 2 of Doc A is considered CGK. Supported by p3, l25. Carabiners themselves are known – p3, l25-28. Mountain climbers commonly descend by abseiling/rappelling as shown in Figure 1 – p3, l8-9. Therefore, Figure 1 and description at p3, l8-19 is CGK. The disadvantages of carabiner brakes are known and they are no longer used – p3, l35-42.

IC = Reducing twisting of device leading to interlocking of ropes and changed frictional forces, by having a linear rope path – p4, l8-12.

Differences = No differences with respect to Doc A, Fig. 2. No rail or linear rope path present in Doc C.

Obviousness = Due to the presence of a rail, Doc A, Fig. 2 is considered to be the most promising starting point for arriving at the invention, since it shares the most structural similarities to the claimed invention. It is arguable that Doc A, Fig. 2 may provide a non-linear path for the rope. Assuming this is the case, consider

1

1

1

Page sub-  
total

3

Paper Ref	Sheet
<b>FD4</b>	<b>29 of 39</b>

Examiner's  
use only

the claim as novel and assess inventive step. Starting from Doc A, Fig. 2, the only modification that would be required would be for the PSA to move the connecting carabiner D so that the rope can take a linear path through the device. Since the carabiner D is free to move, this is not a challenging modification for the PSA. Indeed, the PSA is likely to stumble across such an arrangement accidentally and would then see the advantages of using the device with a linear rope path. Starting from Fig. 2, the differences are obvious. Starting instead from Doc C, the PSA would need to introduce a rail in order to allow the rope to take a linear path through the device. It is known to use carabiners in a carabiner brake and this is CGK. It is known that this provides a braking mechanism. The PSA may be dissuaded from this arrangement as the assembly is time-consuming and cumbersome – p3, I35-36. However, the PSA could still foresee the advantages that are provided and so, in spite of the time-consuming nature, the PSA would still consider this as part of routine experimentation. There is nothing structurally that prevents the PSA from using a carabiner with the Doc C device. However, it is worth seeking technical expert input on whether, in practice, the PSA would be dissuaded from introducing carabiners due to the perceived safety concerns – p3, I40-42. On balance, starting from Doc C, the differences are obvious.

1

Conclusion = Claim 1 lacks an inventive step.

### Claim 2

PSA = Same as claim 1.

Page sub-  
total

1

Paper Ref	Sheet
<b>FD4</b>	<b>30 of 39</b>

Examiner's  
use only

CGK = Same as claim 1.

IC = Reduced twisting/jamming and improved control of frictional force because the rail is unable to move with respect to the ring – p3, I37-39.

Differences = Neither Doc C nor Doc A, Fig. 2 discloses an integral rail.

Obviousness = Doc A, Fig. 2 is considered the most promising starting point, as it comprises a rail. Starting from Doc A, Fig. 2, the PSA would need to modify the device such that the brake carabiner A is integral with the frame carabiner B.

However, the construction of Fig. 2 is from standard carabiners, which the PSA is familiar with. There is nothing in Doc A or the CGK to suggest that carabiners may be made integral with other carabiners. On the contrary, carabiners appear to have multiple different purposes in climbing (e.g. as a brake, for securing ropes to loads – Fig. 2.) and so the PSA would be dissuaded from combining carabiners together integrally. This form of brake has been known for a long time (1980s) and there has been little to no development of the carabiner brake in that time. On the contrary, the CGK is that these brakes should no longer be used.

This is a secondary indicator that it is not obvious to modify Fig. 2 in this way.

Starting instead from Doc C, the PSA would need to introduce an integral rail. It may be construed that the neck 5 could serve as a rail, with the rope passing from the hole 6 to lower ring 4. However, the PSA would be dissuaded from such a use/modification of Doc C. The PSA knows that a rope-descending device should be secured to a user/climber – p3, I14-16. Therefore, the device must comprise a means for connecting the device to the user. In Doc C, this is taught as the lower ring 4. This is a teaching away from passing the rope through the lower ring 4, since if this were done, there would be no way to secure the device

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>31 of 39</b>

Examiner's  
use only

to the user, which the PSA understands to be an important part of the device. Furthermore, if the PSA instead decided to introduce a carabiner as a rail, for the same reasons as given above, it would still not be obvious to make this carabiner integral with the device. Therefore, claim 2 is not obvious.

1

Conclusion = Claim 2 possesses an inventive step.

Claim 3

PSA = Same as claim 1.

CGK = Same as claim 1.

IC = Ability to provide a range of friction levels for controlling the rate of descent of the load on the rope by altering the number of rails – p5, l3-7.

1

1

Differences = No more than one rail disclosed in Doc A, Fig. 2 or Doc C.

Obviousness = Neither Fig. 2 nor Doc C contemplate introducing more than one rail. The carabiner brake of Doc A has been known for a long time. Rather than further developments, it is now common not to use the carabiner brake due to its deficiencies. It has seemingly not been considered to introduce further brake carabiners. On the contrary, as the field has developed, friction has been introduced by altering the direction of the rope relative to the device – Doc C. Therefore, starting from Doc C, the PSA would achieve the IC by changing the direction of the rope relative to the device. No further modification would be necessary. However, starting from Doc A, Fig. 2, the PSA would have no teaching as how to introduce variable friction. Nor does the PSA have any motivation to introduce additional carabiners for such a purpose. It is worth

1

Page sub-  
total  
4

Paper Ref	Sheet
<b>FD4</b>	<b>32 of 39</b>

Examiner's  
use only

noting, however, that such a modification would be structurally simple to achieve (i.e. place a second carabiner adjacent to carabiner A). Therefore, it is appropriate to seek technical expert insight on how much the PSA might alter the core structure of the carabiner brake. I.e. might the PSA change the number of brake carabiners present to achieve a desired friction? Or is there some reason that the PSA might be dissuaded from such a modification? On balance, there is no teaching in this direction and so claim 3 is not obvious.

Conclusion = Claim 3 possesses an inventive step.

#### Claim 4

PSA = Same as claim 1.

CGK = Same as claim 1.

IC = A maximum level of friction is achieved by the rails occupying substantially all of the aperture – p5, l20-22.

Differences = No rails are present in Doc C. The carabiner A does not occupy all of the aperture of carabiner B in Doc A, Fig. 2.

Obviousness = Doc A, Fig. 2 will be taken as the most promising starting point, since it possesses a rail. As discussed in claim 3, it is not obvious to introduce multiple carabiners into the device. In view of the dependency on claim 3, it is not clear how else the subject-matter of claim 4 would be achieved. It is conceivable that it could be achieved by introducing a wider rail (though it is noted that this would still not meet the requirement of claim 3). However, the PSA would be dissuaded from such a modification anyway, since carabiners are known from

1

Page sub-  
total

1



Paper Ref	Sheet
<b>FD4</b>	<b>33 of 39</b>

Examiner's  
use only

before the device of Fig. 2 (p3, I25-28) and so the PSA would not consider modifying the actual carabiners themselves. Therefore, claim 4 is not obvious.

Conclusion = Claim 4 possesses an inventive step.

### Claim 5

PSA = Same as claim 1.

CGK = Same as claim 1.

IC = Minimising problems of rope freezing/twisting/jamming when lowering a load – p5, I34-36; p6, I4-7.

Differences = Claim 5 is considered to be disclosed in its entirety at the Championships. For the sake of argument, assuming that this disclosure did not occur, claim 5 is novel over Doc C and Doc A, Fig. 2 in that the rope is not secured to the user/load and that rope is not linear (Doc C) or no varying of friction (Doc A).

Obviousness = Securing the rope to a load/user is obvious in view of the CGK for mountain climbing in general. It is known that the rope can be secured to an anchor, or to an object when belaying (which is known as a term of art – p11, I3-4). Assuming that a non-inventive combination of device claims is chosen (i.e. inventiveness does not arise from the device itself), then it is considered that claim 5 is obvious. Adding non-integral rails is known from the CGK – Doc A, as is controlling the friction – Doc C.

1

Page sub-  
total

1

Paper Ref	Sheet
<b>FD4</b>	<b>34 of 39</b>

Examiner's  
use only

Conclusion = Claim 5 lacks an inventive step (when dependent on a device claim that lacks an inventive step).

**MARKS AWARDED: 10**

10

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>35 of 39</b>

Examiner's  
use only

**SUFFICIENCY**

No sufficiency issues.

**MARKS AWARDED: 1**

1

1

**Page sub-  
total**

1

Paper Ref	Sheet
<b>FD4</b>	<b>36 of 39</b>

Examiner's  
use only

**AMENDMENT**

Claim 1 could be amended to incorporate any of claims 2-4 which are each considered novel and inventive. Claim 2 would still render the two-slot embodiment infringed, and so this may be a preferred option.

**MARKS AWARDED: 0**

0

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>37 of 39</b>

Examiner's  
use only

## ADVICE

### Two Slot

- Claim 1 infringed.
- Claim 2 infringed.
- Claim 3 not infringed.
- Claim 4 not infringed (dependency)
- Claim 5 infringed (when dependent on claim 1 or 2)

### One Slot

- Claim 1 infringed
- Claim 2 not infringed
- Claim 3 not infringed
- Claim 4 not infringed (dependency)
- Claim 5 infringed (when dependent on claim 1)

### Validity

- Claim 1 lacks novelty (or inventive step)
- Claim 2 is novel and inventive
- Claim 3 is novel and inventive
- Claim 4 is novel
- Claim 5 lacks novelty (or inventive step)

Page sub-  
total

/

Paper Ref	Sheet
<b>FD4</b>	<b>38 of 39</b>

<b>Examiner's use only</b>
--------------------------------

- Check whether renewals have been paid for Doc A in all jurisdictions – i.e. check if in force? Next renewal date is February 2022.
- Check validation states. Where was EP patent validated? Manufacturing in Bulgaria is likely to be an infringement. Check with local agents and check whether in force in Bulgaria.
- Check letter from AG. Seemingly just draws attention – not a threat. Client is a manufacturer/importer so not actionable in an case.
- Claim 1 is infringed by the device and so it is advisable to delay manufacture in UK until issue is resolved. This would be a further infringement.
- Clarify with client why their device cannot be used as a rope-descending device. It appears that it can be.
- See infringement section for infringing acts. If patent is in force, action can be brought against client for previous infringements – which all occurred post-grant. Remedies that could be issued against client in infringement proceedings include: damages or account of profits; declaration that patent is infringed; order for delivery up or destruction; injunction.
- AG may also apply for an interim injunction to prevent further infringements by client.
- YouTube clip can be used as evidence of the disclosure at the WIC Championships, assuming the date of the video can be verified. Recommend reviewing the clip in detail to determine whether the disclosure is covered by claim 5. Need to check whether the demonstration is an enabling disclosure of the method. If method is

1

1

1

<b>Page sub- total</b>
<b>3</b>

Paper Ref	Sheet
<b>FD4</b>	<b>39 of 39</b>

Examiner's  
use only

completely performed in an enabling way, then claim 5 is completely knocked out.

- AG will need to amend claims to restore validity. It is possible that only some embodiments of client's embodiment will be covered (depending on amendment). Consider whether to continue manufacture with only non-infringing variants (e.g. one slot, if claim is limited to claims 2-4).
- If patent is in force, consider approaching AG to discuss licensing. Given AG's product has not been successful, they may be interested in monetising their patent by agreeing to a licensing arrangement. Can draw AG attention to potential invalidity of patent as negotiation tool.
- AG may attempt to amend post-grant under s27 (or central limitation). Place a watch on application to determine whether they do file amendments.
- Seek UKIPO opinion on infringement and validity (in particular regarding 'rope-descending device' vs 'belay device'). Can use these in licensing negotiations.

5

1

1

**MARKS AWARDED: 5**

Page sub-  
total

2