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(54) **AN OUTDOOR COLLAPSIBLE SHELTER**

(57) An outdoor collapsible shelter (10), especially but not exclusively for use in angling, comprising a plurality of ribs (12, 22) which are splayed apart when the shelter is erected for use. Sheet material (18) is attached to the ribs (12, 22) in such a way that it is stretched out when the ribs (12, 22) are so splayed. The shelter (10) has at least one storm rod (24) and at least one connector (26, 28) which connects the said at least one storm rod (24) to one of the said ribs (22) when the shelter is in use. The said at least one connector (26, 28) comprises a releasable snap-fit mechanism (30) having a first part (26) attached to the said at least one of the said ribs (22) and a second part (28) attached to the said at least one storm rod (24) when the shelter (10) is in use. The said first part (26) and the said second part (28) are so constructed that they are connected together releasably by a snap-fit (40, 58) when the shelter (10) is in use.

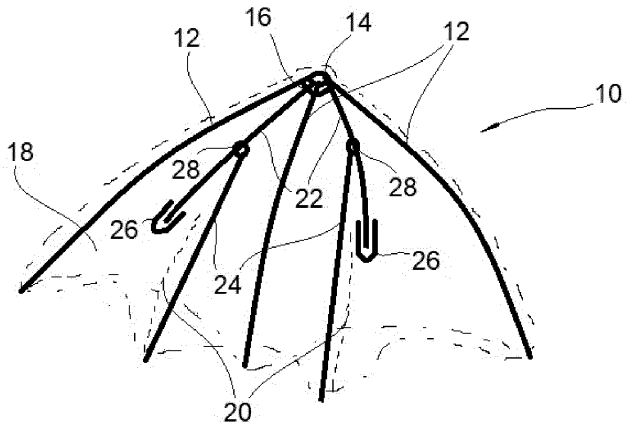

Fig. 1

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Description

[0001] The present invention relates to an outdoor collapsible shelter, especially but not exclusively for use in angling, comprising a plurality of ribs which are splayed apart when the shelter is erected for use, sheet material attached to the ribs in such a way that it is stretched out when the ribs are so splayed, at least one storm rod and at least one connector which connects the said at least one storm rod to one of the said ribs when the shelter is in use.

[0002] GB 2262551 A discloses such a construction of outdoor shelter, being in this case a fishing umbrella, having two ribs which project outwardly from a hub of the shelter with their free ends located over an entrance to the shelter. Respective storm rods are pivotally attached to those free ends by way of respective connectors, each connector being connected to its associated storm rod by interengaging screw threads. Because of the time taken to attach and remove the storm rods, some users of such shelters collapse the shelter when they have finished using it without removing the storm rods, which are simply pivoted inwardly towards the hub as the whole shelter is collapsed and folded for stowage. One disadvantage of this is that the free ends of the storm rods may catch on the sheet material and transfer dirt onto it or even damage or tear it. Also the storm rods may become entangled with the ribs.

[0003] The present invention seeks to provide a remedy.

[0004] Accordingly, the present invention is directed to an outdoor shelter having the construction set out in the opening paragraph of the present invention, **characterised in that** the said at least one connector comprises a releasable snap-fit mechanism having a first part attached to the said at least one of the said ribs and a second part attached to the said at least one storm rod when the shelter is in use, the said first part and the said second part being so constructed that they are connected together releasably by a snap-fit when the shelter is in use.

[0005] This provides the advantage that when the outdoor shelter is to be collapsed for stowage, the two parts of the or each releasable snap-fit mechanism can be separated, and the or each storm rod can be laid parallel to the said plurality of ribs, with their intended lower ends being directed away from the hub of the shelter to reduce the likelihood of transfer of dirt to or of damage to the sheet material of the shelter and the likelihood of entanglement between the or each storm rod and the ribs. Both collapse and erection of the shelter may be effected speedily.

[0006] One of the said two parts may comprise a male part, and the other of the said two parts may comprise a female part which receives the said male part when the two parts are brought together.

[0007] This facilitates a simple construction for the snap action.

[0008] A portion of the male part may be elongate in cross section which is transverse of the relative movement by which the male part is received in the female part, and the female part may be provided with a slot into which the said portion is received when the two parts are brought together.

[0009] This provides a sturdy interengagement between the two parts.

[0010] The centre axis of the slot may be offset from that of the rib to which the first part is attached.

[0011] This enables the construction to be compact.

[0012] The said portion may be provided with a tab which is resiliently moveable from a rest position which it adopts when not subject to any force and in which it protrudes beyond the said cross section, to a depressed position which it adopts when the said portion is within the said slot, the female part having an opening into which the tab springs when the said portion is slid through the slot beyond a given threshold position, to effect the snap-fit.

[0013] This provides a simple and readily made construction of the snap-fit mechanism.

[0014] The said opening may be a through opening, in the sense that it is open to both the interior and exterior of the female part, to enable the user to depress the tab and thereby enable the male part to be released from the female part.

[0015] This provides an easily released snap-fit mechanism.

[0016] The first part may be the said female part.

[0017] This enables the part that is attached to a rib to be simple in construction.

[0018] The said second part may be provided with a screw-threaded portion to enable it to be attached to a storm rod with a complementary screw thread.

[0019] This provides a secure connection between the storm rod and the said second part.

[0020] The screw-threaded portion may be pivotally attached to the rest of the said second part.

[0021] As a result the storm rod may be rotated relative to the rib between a position in which it is transverse thereof to a position in which it is parallel thereto.

[0022] The said second part may be provided with a slidable clip to enable it to be attached to the said at least one rib or to one of the ribs and slid therealong.

[0023] This enables the storm rod to remain connected to the shelter when the latter is collapsed for stowage with reduced risk of transfer of dirt to or of damage to the sheet material thereof, by sliding the said second part away from the free end of the rib or one of the ribs, and at the same time bringing the storm rod into a position in which it is generally parallel to the rib with the free and of the storm rod directed away from the interior of the collapsed shelter.

[0024] Alternatively the said second part may be connected to the said at least one rib or to one of the ribs by way of the snap-fit mechanism.

[0025] An example of a collapsible shelter made in ac-

cordance with the present invention will now be described in greater detail with reference to the accompanying drawings, in which:

Figure 1 shows diagrammatically a collapsible shelter embodying the present invention in a semi-collapsed condition;

Figure 2 shows on a larger scale a perspective view from one side of parts of the shelter shown in Figure 1 including a connector thereof with parts of the connector separated; and

Figure 3 shows a perspective view from one side of the parts of the shelter shown in Figure 2 with the parts of the connector joined together.

[0026] An outdoor collapsible generally oval shelter 10 shown in Figure 1, which is especially but not exclusively for use in angling, comprises a plurality of ribs 12 pivotally attached at respective ends thereof to a hub 14 of the shelter 10. These ribs 12 can therefore be pivoted about the hub 14 from a position they adopt in a collapsed condition of the shelter 10, in which they are substantially parallel to one another and close together as a bundle ready for stowage, to a positon they adopt in an extended condition of the shelter 10 in which they are splayed apart from one another so that they radiate outwardly from the hub 14, being held in such a position by a releasable clamp 16 when the shelter 10 is erected ready for use.

[0027] The condition of the shelter 10 shown in Figure 1 is at an intermediate condition between the fully extended condition and the fully collapsed condition. Nylon sheet material 18 shown by broken lines in Figure 1 is retained on and covers the ribs 12, there being sufficient sheet material 18 to be stretched between and over ribs 12 when they are in the extended condition, to form a canopy of the shelter 10. The sheet material 18 is duly folded when the shelter 10 is in the collapsed condition. Zips 20 are provided in the sheet material 18 to provide an entrance to the shelter 10 when the latter is in the erected condition and the zips 20 are undone.

[0028] Two of the ribs 22 are shorter than the other ribs 12, and are located so as to have their respective ends which are further from the hub 14 in registration with upper ends of the zips 20 when the shelter 10 is in the erected condition. Respective first parts 26 of respective snap-fit mechanisms (labeled 30 in Figure 3) are slid onto the respective ends of the ribs 22 which are further from the hub 14. Respective storm rods 24 are attached to the two ribs 22 by way of respective second parts 28 of these snap-fit mechanisms 30. When the shelter 10 is in the erected condition, the second parts 28 are so connected to the ribs 22 as to be slidable therealong.

[0029] Further details of the snap-fit mechanisms 30 are shown in Figures 2 and 3. The first part 26 thereof comprises synthetic plastics material and has a hollow cylindrical base 32 which is closed at one end by an end cap 34 and which is fixed to the free end of its associated rib 22 which has been inserted through the open end 36 of the base 32 and pushed into the base 32 until it reaches the internal side of the end cap 34.

[0030] The base 32 has two parallel ridges 38 (only one of which can be seen in Figures 2 and 3) extending along it to facilitate rotation of the base 32 about the rib 22 to enable it to be set in the desired orientation relative to the free end of the rib 22 and the sheet material 18.

[0031] Rigidly secured to one side of the base 32 at the open end 36 thereof is a box 40 which is open on its side 42 furthest from the base 32 and is formed with a through-slot 44 in its side 46 which is furthest from the end cap 34 of the base 32. The slot 44 extends transversely of the rib 22 and its central axis is offset from that of the rib 22.

[0032] The opening 48 on the side of the box 40 which is furthest from the base 32 is defined in part by a curved surface 50 of a wall of the box 40, which is concave and U-shaped, with the base of the U being adjacent to the side 46 of the box 40 but facing in the opposite direction, away from that side.

[0033] The second part 28 of the snap-fit mechanism 30 also comprises synthetic plastics material and comprises a clip 52 having a hollow cylindrical slide 54 through which extends the rib 22 in such a fashion that the clip 52 can be slid along the rib 22 and also rotated or pivoted therearound. The clip 52 is integral with a support block 56 outwardly from which projects, in a direction towards the end cap 34 of the base 32, a tongue 58 which has a cross section in a plane parallel with the slot 44 which is elongate and complementary to the slot 44. A tab 60 within the tongue 58 is mounted on the inside of the end 62 of the tongue 58 which is furthest from the block 56 and has an end 64 further from the end 62 of the tongue 58 which protrudes slightly from the side 66 of the tongue 58 which is furthest from the rib 22. The base of the tab 60 is resilient so that the tab 60 can be urged inwardly until it is flush with the side 66 of the tongue 58, from which position the resilience of the base of the tab 60 urges it back to its rest position in which its end 62 protrudes slightly from the side 66.

[0034] Two trunnions 68 extend in an intended downward direction from the support block 56 and support a pivot pin 70 which extends between them and through the upper end 72 of a screwthreaded mount 74 on to which is screwed a storm rod 24.

[0035] When the shelter 10 is erected for use, which is usually performed with the shelter inverted, the ribs 12 are splayed apart from one another, each clip 52 is slid along its associated rib 22, and if necessary rotated or pivoted therearound, until the second part 28 of the snap-fit mechanism 30 reaches the first part 26 thereof. Continued movement of the clip 52 in this direction causes the tongue 58 to be inserted into the slot 44. Further movement brings the tongue 58 fully home into the box 42 whereupon the side 46 of the box 42 abuts the support block 56 and the end 64 of the tab 60 just clears the base

of the U-shaped wall of the box 40 so that the tab 60 snaps outwardly by virtue of the resilience of base of the tab 60 so that the end 64 abuts the curved surface 50 and the first and second parts are releasably held together by a snap or click action, thereby to keep the upper end of the storm rod 24 close to the free end of it associated rib 22. The shelter is now turned the correct way up and pegged to the ground. In this condition, each rib 22 is arranged in a generally horizontal position, and each storm rod 24 is arranged in an upright position, although the two degrees of freedom of rotation of each storm rod 24 provided by the ability of each mechanism 30 to rotate around its associated rib 22 and the ability of each mount 74 to pivot relative to the trunnions 68 enables the user to choose from a range of possible orientations of the storm rods 24 relative to the rest of the shelter 10 to suit preferences and/or uneven ground. At the same time each mechanism 30 and with it the associated storm rod 24 is inhibited from sliding up the associated rib 22, when the sheet material 18 is under tension, by the end cap 34.

[0036] When the shelter 10 is to be collapsed for stowage, a thumb of the user can be inserted through the opening 48 to depress the tab 60 so that it is clear of the surface 50, whereupon the second part 28 of the snap-fit mechanism 30 can be slid along the rib 22 away from the first part 26 of the snap-fit mechanism 30 and the storm rod 24 can be pivoted about the pivot pin 70 until it is parallel to and lies alongside its associated rib 22 to facilitate full collapse of the shelter 10 with reduced risk of transfer of dirt to or of damage to the sheet material 18 by the free end of the storm rod 24. Thus the free end of each storm rod 24 is then directed away from the hub 14 without protruding beyond the end of the collapsed shelter which is further from the hub 14.

[0037] In a second embodiment (not shown) of the present invention, the clip 52 may be omitted so that the storm rod 24 is only attached to the rib 22 by way of the snap-fit mechanism 30. With such a construction, the storm rods 24 may be detached entirely from the shelter 10, and may be nonetheless stowed away inside the collapsed shelter, or stowed away separately.

[0038] Numerous variations and modifications to the illustrated shelter may occur to the reader without taking the resulting construction outside the scope of the present invention. For example, the tongue 58 may be replaced by a sprung-loaded button. The block 56 may be provided with a second tongue on the opposite side of the block 56 to the tongue 58, and a second box may be provided on the rib 22 closer to the hub 14 to enable the second part 28 to be releasably secured to the second box when the shelter 10 is collapsed for stowage. The snap-fit mechanism may be referred to as a click fitting mechanism. The screwthreaded attachment between a mount 74 and a storm pole 24 may be replaced by a magnetic attachment or a clamp. The zips 20 may be replaced by Velcro™ fasteners. Whilst two of the ribs 22 are illustrated as being shorter than the other ribs 12, it will be appreciated that in each of many possible constructions, the ribs 12 will be of varying length. Although two storm rods 24 are illustrated, there may be more than two, and four is a useful number of storm rods to have as part of one shelter. Each snap-fit mechanism 30 may be provided with two parallel tongues 58 instead of one tongue 58, with corresponding slots 44. Such two tongues may be oriented at right angles relative to the orientation of the illustrated tongue 58, and may comprise an upper and a lower tongue.

Claims

1. An outdoor collapsible shelter (10), especially but not exclusively for use in angling, comprising a plurality of ribs (12, 22) which are splayed apart when the shelter is erected for use, sheet material (18) attached to the ribs (12, 22) in such a way that it is stretched out when the ribs (12, 22) are so splayed, at least one storm rod (24) and at least one connector (26, 28) which connects the said at least one storm rod (24) to one of the said ribs (22) when the shelter is in use, **characterised in that** the said at least one connector (26, 28) comprises a releasable snap-fit mechanism (30) having a first part (26) attached to the said at least one of the said ribs (22) and a second part (28) attached to the said at least one storm rod (24) when the shelter (10) is in use, the said first part (26) and the said second part (28) being so constructed that they are connected together releasably by a snap-fit (40, 58) when the shelter (10) is in use.

2. An outdoor collapsible shelter (10) according to claim 1, **characterised in that** one of the said two parts (26, 28) comprises a male part (28), and the other of the said two parts (26, 28) comprises a female part (26) which receives the said male part (28) when the two parts (26, 28) are brought together.

3. An outdoor collapsible shelter (10) according to claim 2, **characterised in that** a portion (58) of the male part (28) is elongate in cross section which is transverse of the relative movement by which the male part (28) is received in the female part (26), and the female part (26) is provided with a slot (44) into which the said portion (58) is received when the two parts (26, 28) are brought together.

4. An outdoor collapsible shelter (10) according to claim 3, **characterised in that** the centre axis of the slot (44) is offset from that of the rib (22) to which the first part (26) is attached.

5. An outdoor collapsible shelter (10) according to claim 3 or claim 4, **characterised in that** the said portion (58) is provided with a tab (60) which is resiliently moveable from a rest position which it adopts when not subject to any force and in which it protrudes

beyond the said cross section, to a depressed position which it adopts when the said portion (58) is within the said slot (44), the female part (26) having an opening (48) into which the tab (60) springs when the said portion (58) is slid through the slot (44) beyond a given threshold position, to effect the snap-fit.

6. An outdoor collapsible shelter (10) according to claim 5, **characterised in that** the said opening (48) is a through opening, in the sense that it is open to both the interior and exterior of the female part (26), to enable the user to depress the tab (60) and thereby enable the male part (28) to be released from the female part (26).

7. An outdoor collapsible shelter (10) according to any one of claims 2 to 6, **characterised in that** the first part (26) is the said female part (26).

8. An outdoor collapsible shelter (10) according to any preceding claim, **characterised in that** the said second part (28) is provided with a screw-threaded portion (74) to enable it to be attached to a storm rod with a complementary screw thread.

9. An outdoor collapsible shelter (10) according to claim 8, **characterised in that** the screw-threaded portion (74) is pivotally attached to the rest of the said second part (28).

10. An outdoor collapsible shelter (10) according to any preceding claim, **characterised in that** the said second part (28) is provided with a slidable clip (52) to enable it to be attached to the said at least one rib (22) or to one of the ribs and slid therealong.

11. An outdoor collapsible shelter (10) according to any one of claims 1 to 9, **characterised in that** the said second part (28) is connected to the said at least one rib (22) or to one of the ribs by way of the snap-fit mechanism.

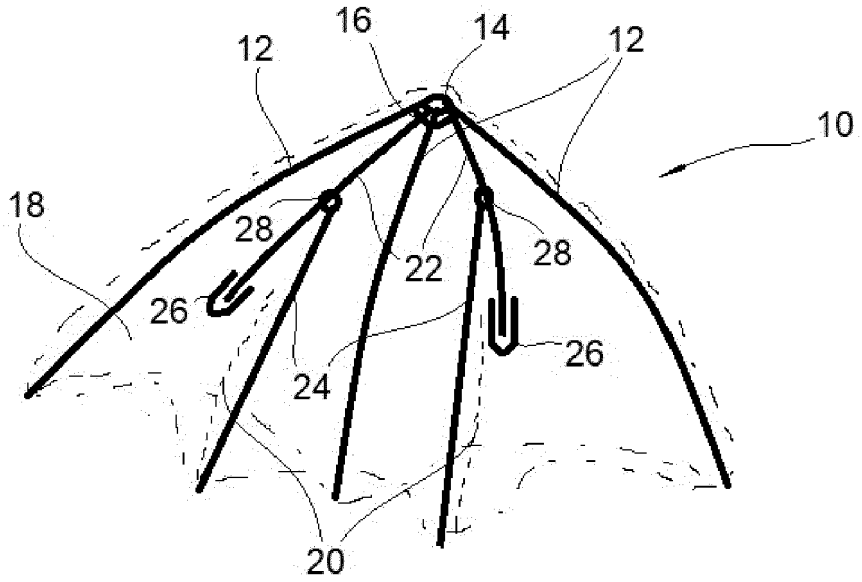

Fig. 1

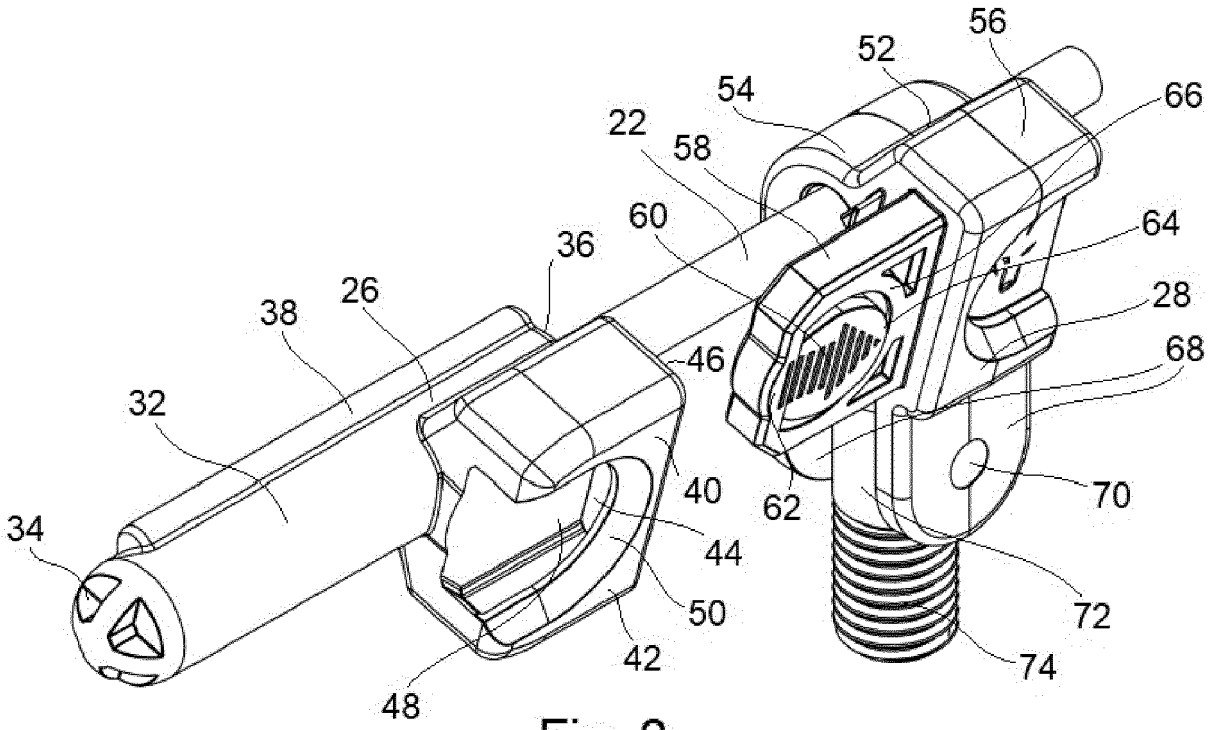
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Fig. 2

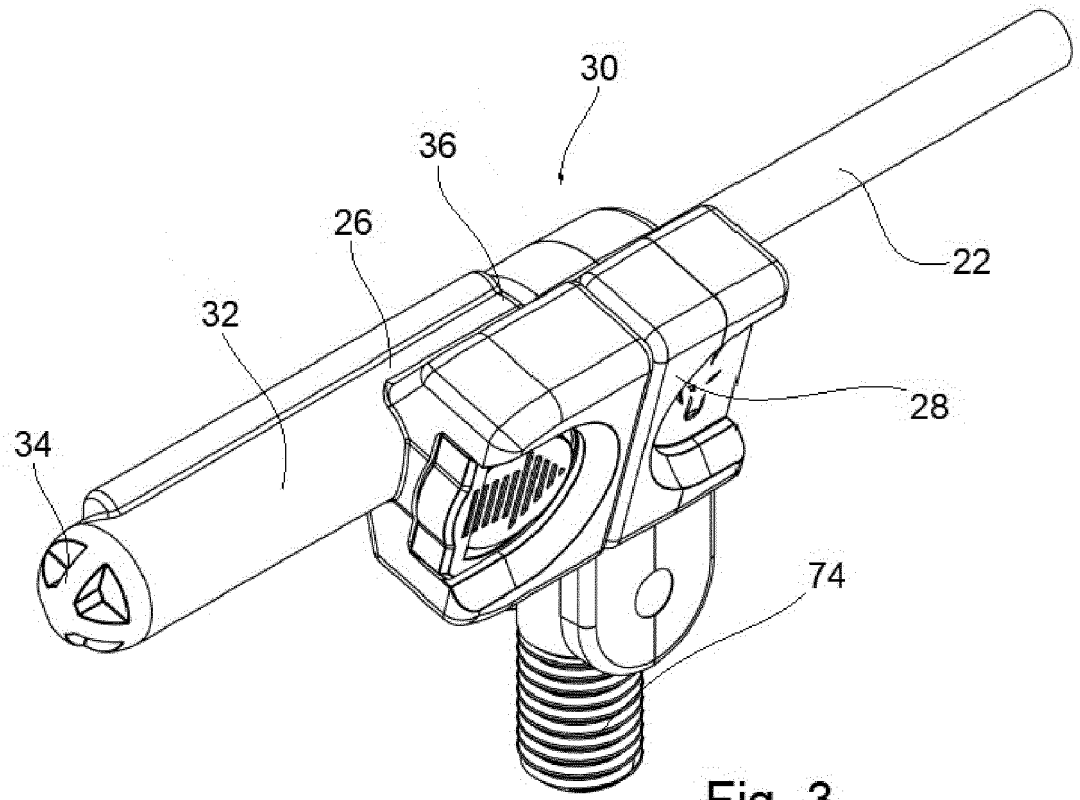
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Fig. 3

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EUROPEAN SEARCH REPORT

Application Number
EP 20 16 8084

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
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A	* the whole document *	4-6	E04H15/00
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A	* the whole document *	4-6	

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TECHNICAL FIELDS SEARCHED (IPC)

E04H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
Munich	7 September 2020	Valenta, Ivar

CATEGORY OF CITED DOCUMENTS

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07-09-2020

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REFERENCES CITED IN THE DESCRIPTION

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