UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLUMBIA

BELL HELICOPTER TEXTRON INC., Plaintiff, v. EUROCOPTER, Defendant.	Civil Action No. 10-cv-00789 (RLW)

MEMORANDUM OPINION AND ORDER

On June 18, 2012, the Court conducted a Markman[1] hearing for the purpose of construing the disputed claim terms in the patent at issue in this case. The parties have submitted briefing advancing their proposed construction for each disputed term. After careful consideration of the briefs submitted by the parties, the applicable law, the arguments presented at the hearing, and the record before the Court, the Court issues the following Opinion and Order setting forth the claim constructions adopted by the Court.

I. BACKGROUND[2]

At issue in this case is a patent titled "Helicopter Landing Gear with Skids," U.S. Patent. No. 5,860,621 ("the '621 patent"). The '621 patent is primarily directed to a helicopter landing gear with skids, particularly intended for light helicopters. The claimed invention overcomes many of the disadvantages of conventional landing gears by significantly reducing acceleration

[1] Markman v. Westview, Instruments, Inc., 52 F.3d 967, 976 (Fed. Cir. 1995) (*en banc*), *aff'd*, 517 U.S. 370, 116 S. Ct. 1384, 134 L. Ed. 2d 577 (1996).

[2] Unless otherwise noted, this account of the facts reflects the factual allegations in Bell Helicopter's complaint and does not incorporate Eurocopter's response to those factual allegations.

factors during landing, "ground resonance," and landing gear weight. '621 Patent col. 1:28-44. Eurocopter is the owner by assignment of the '621 patent.[3] Compl. ¶ 18. Bell Helicopter Textron Inc. ("Bell") and Eurocopter are two of the largest distributors of commercial helicopters in the world. Compl. ¶ 17.

On May 14, 2010, Bell Helicopter filed an action against Eurocopter seeking a declaratory judgment that the '621 patent is invalid and not infringed by Bell Helicopter. Compl. ¶¶ 10, 12. On October 29, 2010, Eurocopter filed a counterclaim alleging infringement of the '621 patent. Answer and Countercl., ¶¶ 18-22.

II. LEGAL STANDARD

The Court is guided by the principles of claim construction outlined by the Federal Circuit in Phillips v. AWH Corp., 415 F.3d 1303 (Fed. Cir. 2005) (en banc). "It is a 'bedrock principle' of patent law that 'the claims of a patent define the invention to which the patentee is entitled the right to exclude.' " Id. at 1312 (quoting Innova/Pure Water Inc. v. Safari Water Filtration Syy., Inc., 381 F.3d 1111, 1115 (Fed. Cir. 2004)). The Federal Circuit has repeatedly stated that courts are to give claim terms their "ordinary and customary meaning" as understood by a "person of ordinary skill in the art in question at the time of the invention." Phillips 415 F.3d at 1312-13.[4]

[3] Eurocopter also owns foreign counterpart patents in France and Canada, French Patent No. FR 9,607,156 (the "French '156 patent") and Canadian Patent No. 2,207,787 (the "Canadian '787 patent"). The French, Canadian, and U.S. patents contain substantially identical disclosures and each makes a claim of priority to the French '156 patent. Compl. ¶ 18.

[4] Based on the patent and the representations of the parties in the briefing and at the hearing, the Court finds that in this case a person of ordinary skill in the art would have at least an undergraduate degree in engineering and several years of practical experience with the design of helicopter landing gear.

The claims themselves provide substantial guidance in determining the meaning of particular claim terms; and the context in which a term is used in the asserted claim can be very instructive. Id. at 1314.

The claims do not stand alone, and "must be read in view of the specification, of which they are a part." Id. at 1315 (quoting Markman, 52 F.3d at 979). "[T]he specification is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term." Id. at 1315. The specification necessarily informs the proper construction of the claims because the specification may reveal that a patentee has defined his own terms or given a term a meaning that differs from the meaning it would otherwise possess, or that a patentee has intended to disclaim or disavow claim scope. Id. at 1316. In addition, the specification may aid in resolving the meaning of ambiguous claim terms "where the ordinary and accustomed meaning of the words used in the claims lack sufficient clarity to permit the scope of the claim to be ascertained from the words alone." Teleflex, Inc. v. Ficosa N. Am. Corp., 299 F.3d 1313, 1325 (Fed. Cir. 2002). However, while the specification can aid the court in interpreting the meaning of disputed claim language, the Federal Circuit repeatedly has warned against confining the claims to the particular embodiments and examples appearing in the specification. Phillips 415 F.3d at 1323; see also Nazomi Communications, Inc. v. ARM Holdings, PLC. 403 F.3d 1364, 1369 (Fed. Cir. 2005) (claims may embrace "different subject matter than is illustrated in the specific embodiments in the specification").

In addition to consulting the claims and the specification, the court should also consider other intrinsic evidence such the prosecution history, which consists of the complete record of the proceedings before the Patent and Trademark Office ("PTO"), including the prior art cited during the examination of the patent. Phillips 415 F.3d at 1317. The prosecution history can

provide proper context for claim construction because it "provides evidence of how the PTO and inventor understood the patent" and "can often inform the meaning of the claim language by demonstrating how the inventor understood the invention in the course of prosecution, making the claim scope narrower than it would otherwise be." Id. at 1317.

Courts may also consider extrinsic evidence, which "consists of all evidence external to the patent and prosecution history, including expert and inventor testimony, dictionaries, and learned treatises." Id. at 1317. Although extrinsic evidence may be useful, the Federal Circuit has explained that extrinsic evidence is "less significant than the intrinsic record in determining the legally operative meaning of claim language." Id. at 1317.

The patent-in-suit contains means-plus-function language that invokes 35 U.S.C. § 112, paragraph 6, which provides:

> An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure ... in support thereof, and such claim shall be construed to cover the corresponding structure ... described in the specification and equivalents thereof.

Construing a means-plus-function limitation is a two-step process. First, the court must determine the claimed function. JVW Enters. v. Interact Accessories, Inc., 424 F.3d 1324, 1330 (Fed. Cir. 2005). Second, the court must identify the corresponding structure in the written description of the patent that performs that function. Id. A "structure disclosed in the specification is a corresponding structure only if the specification or prosecution history clearly links or associates that structure to the function recited in the claim." Med. Instr. & Diag. Corp. v. Elekta AB, 344 F.3d 1205, 1210 (Fed. Cir. 2003) (citation omitted).

II. CLAIM CONSTRUCTION

The parties have asked the Court to construe certain terms in Claim 1 and Claim 7 of the '621 patent. Claims 1 and 7 the '621 patent provide as follows:

> 1.Helicopter landing gear, comprising a plurality of skids having a longitudinal support stretch for standing on ground and which are connected to a front cross-piece and a rear cross-piece for attachment to a structure of an aircraft by connecting devices, the rear cross-piece being fixed by ends of descending branches to a rear part of each said longitudinal support stretch, wherein each of said skids comprises a front comprising an inclined transition zone with double curvature oriented transversely with respect to each said longitudinal support stretch to form together an integrated front cross-piece offset with respect to a front delimitation of a plane of contact of each said longitudinal support stretch of each of said skids.
>
> 7. The helicopter landing gear according to claim 1, wherein said front cross-piece comprises a single branch comprising ends connected by a removable junction means to a front part of a corresponding skid, said junction means being disposed between two curves of a transition zone.

'621 Patent col. 6:50-62; 7:18-22

a. Construction of Agreed Terms

The parties have agreed to the construction of the following terms:

1) "offset with respect to a front delimitation of a plane of contact"

This term appears in Claim 1 in the phrase "offset with respect to a front delimitation of a plane of contact of each said longitudinal support stretch of each of said skids." '621 Patent col. 6:60-62. The parties have agreed that the "front delimitation of a plane of contact" is the forward-most vertical plane at which the longitudinal support stretch of the skids contacts the surface of the ground. The parties have also agreed that the front cross-piece is "offset with respect to a front delimitation of a plane of contact" if the front cross-piece does not intersect, or cross through, the "front delimitation of a plane of contact."

2) "removable junction means"

This term appears in Claim 7 in the phrase "said front cross-piece comprises a single branch comprising ends connected by a removable junction means to a front part of a corresponding skid." The parties agree that this is a means-plus-function limitation that invokes, and should be construed under, 35 U.S.C. § 112, para. 6, and that the recited function is: connecting the ends of a front cross-piece comprising a single branch to a front part of a corresponding skid. The Court so holds. The parties also agree, and the Court finds, that the corresponding structures disclosed in the specification are the coupling piece system 9 fixed by screws as disclosed in Figure 5 or the fixing collar 10 fixed by bolts 11 as disclosed in Figures 9a and 9b. '621 Patent col. 5:23-30.

In light of the parties' agreements on the proper construction of each of the above identified terms, the Court adopts and approves the parties' agreed constructions.

b. Construction of Disputed Terms

1) "a front"

The term at issue appears in Claim 1 in the phrase "each of said skids comprises a front." '621 Patent col. 6:56-57. Bell proposes that "a front" is "the portion of the skid forward of the longitudinal support stretch, *i.e.*, the portion of the skid that contacts the ground." Eurocopter proposes that no construction is necessary for this term and that it should be given its plain and ordinary meaning, or alternatively, that it should be construed as "a forward part."

Bell argues that "a front," as recited in the claim, is a portion of the skid that is separate from, and forward of, the longitudinal support stretch. Bell contends that Claim 1 explicitly requires that the skids have two portions: a "longitudinal support stretch for standing on [the] ground" and "a front comprising an inclined transition zone with double curvature . . . ." '621 Patent col. 6:50-57. Because the claims define "a front" and the "longitudinal support stretch"

as separate claim elements, Bell argues that "a front" cannot be construed to encompass the "longitudinal support stretch."

Eurocopter contends that Bell's proposed construction improperly imports limitations from the specification because there is nothing in the specification of the '621 patent indicating that Eurocopter intended that the term have a meaning other than its ordinary meaning. Therefore, Eurocopter believes that the term "a front" does not require construction by the Court. However, if construction of the term is required, Eurocopter believes the term should be given its ordinary meaning—a forward part. Eurocopter argues that Claim 1 utilizes the term in its general sense to refer to the front of the skid, as opposed to the middle part of the skid, or the rear part of the skid. Eurocopter contends that throughout the claims and specification the term "front" is used in a relative sense in relation to the term "rear." For example, the claims and the specification refer to "a front cross-piece and a rear cross-piece." Thus, Eurocopter argues that, taken in context, the term "front" is a general description of the relative position on the skid or the helicopter, not the precise location that Bell advocates in its proposed construction. Eurocopter also argues that Bell's construction effectively excludes a preferred embodiment described in the specification.

The Court first notes that the term "front" is used in two different ways throughout the claims and specification. For the most part, "front" is used as an adjective that describes a spatial relationship. For example, Claim 1 recites a "front cross-piece" that is distinguished from a "rear cross-piece." When the term "front" is used in this sense, it is readily understood that the term is used in its more general sense as establishing a spatial relationship. However, in the claim language at issue here, "a front" is used as a noun. Therefore, it is not merely defining a

general area, such as the "front of the skid." Instead, the term is referring to a specific structural component of the skid. Accordingly, the term requires construction by the Court.

The parties' major dispute with respect to this claim term is whether "a front" refers to a specific portion of the helicopter skid or whether the term refers only to a general area of the skid. The Court agrees with Bell's position that "a front" is a specific section of the helicopter skid and a separate element from the longitudinal support stretch. The claim specifically requires the skid to have a "longitudinal support stretch" *and* "a front." While the use of two terms in a claim requires that they connote different meanings, it does not mean that they necessarily refer to different structures. Applied Medical Research Corp. v. U.S. Surgical Corp., 448 F.3d 1324, 1333 n.3 (Fed. Cir. 2006). Nonetheless, the prosecution history, specification, comparison with other claims in the patent, and other evidence may require that two terms in a claim refer to different structures. See Phillips, 415 F.3d 1312-19. Such is the case here. The language of the claim itself indicates that "a front" and the longitudinal support stretch are two different structures. Because "a front" is described as being "oriented transversely" with respect to the longitudinal support stretch, "a front" cannot be part of the longitudinal support stretch. Therefore, the claim language establishes that the front is a separate structure from the longitudinal support stretch. It follows that this structure must also be forward of the longitudinal support stretch. This is supported by the language in the specification that only describes and discloses the "front" as occurring forward of the longitudinal support stretch. The specification expressly states: "[a]t the front, each of the skids P has, *after the corresponding longitudinal support stretch 1*, a transition zone T with double curvature before constituting the integrated front cross-piece." '621 Patent col. 5:10-13 (emphasis added).

Eurocopter contends that Bell's proposed construction would exclude embodiments described in the specification. In particular, Eurocopter points out that on a landing gear with a rear offset, which is depicted in Figure 11(e) of the patent, the entire transition zone is not oriented forward of the longitudinal support stretch. Therefore, Eurocopter argues that Bell's proposed construction would exclude an embodiment with rear offset. Exclusion of this embodiment could prove fatal to Bell's construction of this term, as the Federal Circuit's "case law generally counsels against interpreting a claim term in a way that excludes the preferred embodiment from the scope of the invention." Helmsderfer v. Bobrick Washroom Equip., Inc., 527 F.3d 1379, 1383 (Fed. Cir. 2008); see also Vitronics Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1583 (Fed. Cir. 1996) (stating a construction that excludes a preferred embodiment is rarely, if ever, correct). However, Bell's construction does not exclude the embodiment depicted in Figure 11(e). Bell's construction merely requires the inclined transition zone, which is part of "a front," to begin forward of the longitudinal support stretch. There is no requirement that the entire inclined transition zone be forward of the longitudinal support stretch. Therefore, in an embodiment where the front cross-piece is offset backward, as depicted in Figure 11(e) and recited in Claim 16, the inclined transition zone still begins forward of the longitudinal support stretch. Bell's construction of the disputed claim term is not plainly inconsistent with the disclosed embodiment, as the claim language can reasonably be interpreted to include the disclosed embodiment of the landing gear with a front cross-piece offset backwards. Accordingly, the Court construes "a front" as "the portion of the skid forward of the longitudinal support stretch, *i.e.*, the portion of the skid that contacts the ground."

2) "curvature"

This term appears in Claim 1 in the phrase "inclined transition zone with double curvature" '621 Patent col. 6:57-58. Bell proposes that the term "curvature" refers to a "smooth bend." Bell further proposes that an "abrupt change of direction or a joint where two straight sections come together at an angle or a saddle connection is not a curvature." Eurocopter proposes that no construction is necessary for this term and that it should be given its plain and ordinary meaning. Alternatively, Eurocopter agrees with Bell that a "curvature" is a "smooth bend." However, Eurocopter disagrees with the negative second element of Bell's construction and argues that it is unnecessary.

The proposed construction of "curvature" as "a smooth bend" is consistent with the intrinsic evidence, which only uses the term "curve" or "curvature" to describe continuous bending lines without angles. A person of ordinary skill in the art would understand "curvature" to mean a smooth bend. However, the negative aspect of Bell's construction is unnecessary in light of the proposed construction about which the parties agree. Defining "curvature" as a "smooth bend" sufficiently describes what curvature is and what curvature is not. Therefore, the Court finds that the additional limitation proposed by Bell is unnecessary and unsupported by the claims or the specification. Accordingly, the Court construes "curvature" as "a smooth bend."

3) "inclined transition zone"

This term appears in Claim 1 in the phrase "each of said skids comprises a front comprising an inclined transition zone with double curvature oriented transversely with respect to each said longitudinal support stretch." '621 Patent col. 6:56-59. Bell proposes that an "inclined transition zone" is "an inclined portion of a skid that transitions from the end of the longitudinal support stretch of the skid." Bell further proposes that in order to have "double

curvature oriented transversely with respect to each of said longitudinal support stretch," the "inclined transition zone" must have two separate areas of curvature that extend crosswise from the longitudinal support stretch. Eurocopter proposes that no construction is necessary for this term and that it should be given its plain and ordinary meaning, or alternatively, that it should be construed as "an angled portion of a skid that transitions from the longitudinal support stretch to the front cross-piece."

Because the parties agree that the "inclined transition zone" requires two separate areas of curvature, the parties' dispute with regard to this term reduces to two issues: (1) where the "inclined transition zone" begins; and (2) the orientation of the areas of curvature within the "inclined transition zone" with respect to the longitudinal support stretch.

Bell proposes that the inclined transition zone must occur forward of the longitudinal support stretch. Eurocopter contends that the Bell's construction impermissibly adds an additional limitation that the transition must be from the "end" of the skid, rather than the "front" of the skid as recited in the claim and specification.

This dispute has principally been resolved by the Court's construction of the term "a front." The express language of the claim indicates that the "inclined transition zone" is one element of the front of the skid. See '621 Patent col. 6:56-57 ("skid comprises a front comprising an inclined transition zone"). Because, as discussed above, the front of the skid is the portion forward of the longitudinal support stretch, the inclined transition zone must also begin forward of the longitudinal support stretch. The claim language requires that the "inclined transition zone" be located between the longitudinal support stretch and the front cross-piece. See '621 Patent col. 6:56-58 ("a plurality of skids having a longitudinal support stretch . . . connected to a front cross-piece . . . each of said skids comprises a front comprising an inclined transition

zone"). The specification also recognizes that the inclined transition zone transitions from the end of the longitudinal support stretch. The specification expressly states that "[a]t the front, each of the skids P has, after the corresponding longitudinal support stretch 1, a transition zone T with double curvature before constituting the integrated front cross piece 8." '621 Patent col. 5:10-13.

With respect to the orientation of the areas of curvature within the "inclined transition zone," Claim 1 recites "each of said skids comprises a front comprising an inclined transition zone with double curvature oriented transversely with respect to each said longitudinal support stretch." '621 Patent col. 6:56-59. Thus, the language of the claim does not indicate whether either one or both areas of curvature are required to be oriented transversely with respect to each longitudinal support stretch. Eurocopter contends that the specification states that the transition zone has a first bend which stretches upwards, and it is only the second curve, C2, which extends transversely from the longitudinal support stretch. See '621 Patent col. 5:13-17. On the other hand, Bell contends that both curves are transverse because an arc of curvature described as "upwards" from the longitudinal support stretch would plainly be a curvature transverse from the longitudinal support stretch. Essentially, Bell argues that any curve that crosses the plane of the longitudinal support stretch—i.e. upward, inward (toward the center of the helicopter) or outward (away from the center of the helicopter)—would be an area of curvature that is transverse to the longitudinal support stretch.

The plain language of the claim requires at least one area of curvature that is upward of the longitudinal support stretch and at least one area of curvature that is transverse with respect to the longitudinal support stretch. The fact that the "inclined transition zone" is located between the longitudinal support stretch and the front cross-piece necessitates an upward bend in order to

transition to the front cross-piece, which is located above the longitudinal support stretch. The second curve must be transverse in order to orient the inclined transition zone and the front cross-piece transversely with respect to the longitudinal support stretch. This interpretation is consistent with both the claims and the specification. The Court finds that aspects of both parties' constructions are appropriate for this term. Accordingly, the Court construes "inclined transition zone" as "an inclined portion of a skid, with two separate areas of curvature, that transitions from the end of the longitudinal support stretch to the front cross-piece."

4) "integrated front cross-piece"

This term appears in Claim 1 in the phrase "to form together an integrated front cross-piece." '621 Patent col. 6:59-60. Bell proposes that an "integrated front cross-piece" is "a cross-piece that is an extension of a skid. A front cross-piece with ends of descending branches fixed to a front part of the longitudinal support stretch is not an integrated front cross-piece." Eurocopter proposes that no construction is necessary for this term and that it should be given its plain and ordinary meaning, or alternatively, that it should be construed as a "cross-piece whether made of a single part or of multiple components, that is firmly attached to the skids such as to act as a single, structurally integrated piece or element."

Based on the parties' positions, it appears that the central dispute with respect to this claim term is the location and manner in which the integrated front cross-piece attaches to the skid. Bell argues that the integrated front cross-piece can only attach to the very front portion of the skid, and not the longitudinal support stretch which makes contact with the ground. Eurocopter contends that the location of the connection is not so limited, and that all that is required is that the front cross-piece be firmly attached to the skids to enable the front cross-piece and the skids to act as a single, structurally integrated piece or element.

At oral argument, Eurocopter explained that one of the characteristics that distinguishes an integrated front cross-piece from a cross-piece attached in a conventional manner is that downward pressure on the cross-piece creates flexion in the cross-piece itself, as well as all along the longitudinal support stretch. Eurocopter contends that a front cross-piece attached at an angle, rather than perpendicularly, would create similar flexion along the longitudinal support stretch, even if the front cross-piece is not attached to the end of the skid. Thus, Eurocopter's construction is grounded in the behavior of the front cross-piece and its interaction with the rest of the skid, rather than its location.

Looking to the claims and specification, there is no support for Eurocopter's position. The specification only discusses flexion with respect the front cross-piece and the transition zones. Moreover, Figures 12 and 13, which depict a comparison of the behaviors of landing gears both with and without an integrated front cross-piece, show deformation and flexion in the front and rear cross-pieces. Nowhere in the description of these figures, or in any part of the specification or claims, is there any mention of flexion along the longitudinal support stretch.

The claims and specification distinguish an integrated front cross-piece from a rear cross-piece, which is not integrated. The claim recites that the rear cross-piece is "fixed by ends of descending branches to a rear part of each said longitudinal support stretch[.]" '621 Patent col. 6:54-56. On the other hand, Claim 1 requires an inclined transition zone in order to form an "integrated front cross-piece." See '621 Patent col. 6:57-60 ("a front comprising an inclined transition zone with double curvature . . . to form together an integrated front cross-piece."). Therefore, an "integrated" front cross-piece is one which is connected to the longitudinal support stretch by an inclined transition zone.

This construction of an "integrated front cross-piece" also finds support in the specification. First, the specification expressly states that "[a]t the front, each of the skids P has, after the corresponding longitudinal support stretch 1, a transition zone T with double curvature before constituting the integrated front cross-piece." '621 Patent col. 5:11-13. In addition, the specification teaches that the front cross-piece in the claimed invention is able to undergo a much greater deformation than that of a conventional landing gear because of the elastic flexion of the transition zones. '621 Patent col. 6:47-48. Finally, the specification distinguishes the integrated front cross-piece from a conventional landing gear with a front cross-piece which is attached in the same way as the rear cross-piece. '621 Patent col. 6:35-40. Thus, in the claimed invention, the front cross-piece is not attached to the longitudinal support stretch in the same way as the rear cross-piece. This is the only way to give any meaning to the term "integrated," which is only used with respect to the front cross-piece.

Accordingly, the Court construes the "integrated front cross-piece" as "a cross-piece whether made of a single part or of multiple components that is connected to the longitudinal support stretch by an inclined transition zone."

IV. CONCLUSION

For the foregoing reasons, the Court interprets the claim language in this case in the manner set forth above. For ease of reference, the Court's claim interpretations are set forth in a table in Appendix A.

SO ORDERED.

Date: July 11, 2012

Digitally signed by Judge Robert L. Wilkins
DN: cn=Judge Robert L. Wilkins, o=U.S. District Court, ou=Chambers of Honorable Robert L. Wilkins, email=RW@dc.uscourt.gov, c=US
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Robert L. Wilkins
United States District Judge

APPENDIX A

Claim Term	Court's Construction
a front	"the portion of the skid forward of the longitudinal support stretch, *i.e.*, the portion of the skid that contacts the ground."
curvature	"smooth bend"
inclined transition zone	"an inclined portion of a skid, with two separate areas of curvature, that transitions from the end of the longitudinal support stretch to the front cross-piece."
integrated front cross-piece	"a cross-piece whether made of a single part or of multiple components that is connected to the longitudinal support stretch by an inclined transition zone"
"offset with respect to a front delimitation of a plane of contact of each said longitudinal support stretch of each of said skids" (Claim 1)	The "front delimitation of a plane of contact" is the forward-most vertical plane at which the longitudinal support stretch of the skids contacts the surface of the ground. The front cross-piece is "offset with respect to a front delimitation of a plane of contact" if the front cross-piece does not intersect, or cross through, the "front delimitation of a plane of contact."
said front cross-piece comprises a single branch comprising ends connected by a removable junction means to a front part of a corresponding skid	The term "removable junction means" should be construed under 35 U.S.C. § 112, ¶ 6. Recited function: Connecting the ends of a front cross-piece comprising a single branch to a front part of a corresponding skid Disclosed Structure: The coupling piece system 9 fixed by screws as disclosed in Figure 5 or the fixing collar 10 fixed by bolts 11 as disclosed in Figures 9a and 9b.