



 **EUROPÄISCHE PATENTANMELDUNG**

 Anmeldenummer: **94810106.8**

 Int. Cl.⁸: **A63C 9/08**


 Anmeldetag: **21.02.94**

 Veröffentlichungstag der Anmeldung:
20.09.95 Patentblatt 95/38


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 Benannte Vertragsstaaten:
AT BE CH DE DK ES FR GB GR IE IT LI LU MC
NL PT SE

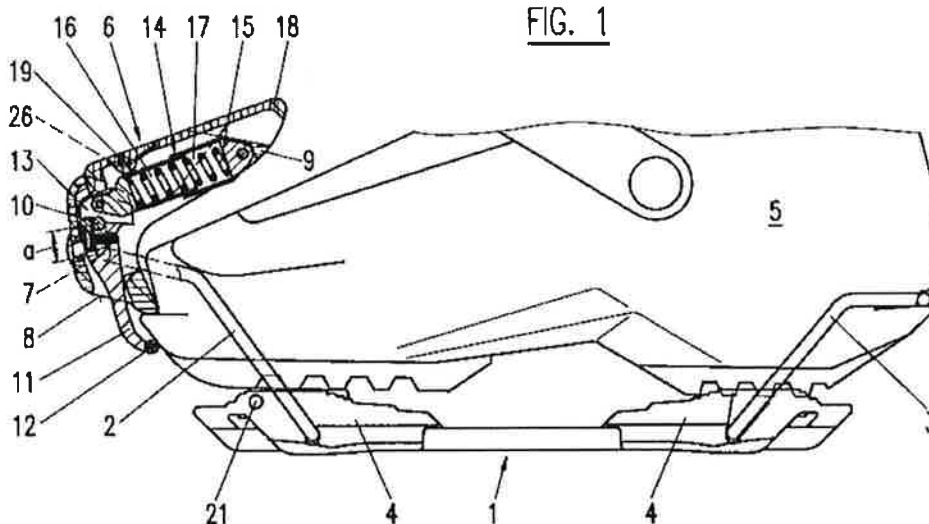
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 **Einrichtung für eine Bindung für Gleitbretter, insbesondere Snowboards.**

 Ein Spannbügel (8) einer Bindung (1) für Gleitbretter, insbesondere Snowboards, der um eine Achse (7) eines vorderen Haltebügels (2) schwenkbar ist, weist einen integrierten Trittsporn (11) auf, der um eine weitere Achse (10) verschwenkbar ist. Dieser Trittsporn (11) steht über einen Halteteil (8) des Spannbügels (6) vor, mit welchem ein Schuh (5) in

der Bindung (1) gehalten wird. Mit Hilfe dieses Trittsorns (11) wird ein automatischer Einstieg und Festspannen des Schuhs in der Bindung ermöglicht. Der vordere Haltebügel (2) wird hierzu durch einen Endanschlag (21) in einer vorgegebenen Stellung gehalten.



EP 0 672 438 A1

(19)



Europäisches Patentamt
European Patent Office
Office européen des brevets



(11)

EP 0 857 498 B1

(12)

EUROPÄISCHE PATENTSCHRIFT

(45) Veröffentlichungstag und Bekanntmachung des Hinweises auf die Patenterteilung:
22.08.2001 Patentblatt 2001/34

(51) Int Cl.7: **A63C 5/03**

(21) Anmeldenummer: **98890026.2**

(22) Anmeldetag: **02.02.1998**

(54) **Bindungseinrichtung**

Binding system

Dispositif de fixation

(84) Benannte Vertragsstaaten:
AT CH DE FR IT LI

(30) Priorität: **03.02.1997 AT 16797**

(43) Veröffentlichungstag der Anmeldung:
12.08.1998 Patentblatt 1998/33

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(56) Entgegenhaltungen:
WO-A-92/09339 **WO-A-96/14123**
DE-A- 3 733 104

EP 0 857 498 B1

Anmerkung: Innerhalb von neun Monaten nach der Bekanntmachung des Hinweises auf die Erteilung des europäischen Patents kann jedermann beim Europäischen Patentamt gegen das erteilte europäische Patent Einspruch einlegen. Der Einspruch ist schriftlich einzureichen und zu begründen. Er gilt erst als eingelegt, wenn die Einspruchsgebühr entrichtet worden ist. (Art. 99(1) Europäisches Patentübereinkommen).



(12) **EUROPÄISCHE PATENTANMELDUNG**

(43) Veröffentlichungstag:
29.09.2004 Patentblatt 2004/40

(51) Int Cl.7: **B26D 3/26**

(21) Anmeldenummer: **03405205.0**

(22) Anmeldetag: **26.03.2003**

(84) Benannte Vertragsstaaten:
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR
 HU IE IT LI LU MC NL PT RO SE SI SK TR**
 Benannte Erstreckungsstaaten:
AL LT LV MK

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(54) **Hacker zum Zerkleinern von Lebensmitteln**

(57) Der Hacker weist einen Stößel (6) auf, an dessen unterem Ende (19) ein Messer befestigt ist. Um zu verhindern, dass das Messer bei jedem Hub des Stößels (6) auf die selbe Stelle des Hackgutes trifft, ist ein Drehmechanismus (10, 13) vorhanden, der den Stößel (6) schrittweise dreht. Der Erfindung liegt die Aufgabe zugrunde, einen Hacker vorzuschlagen, bei dem zuverlässig verhindert wird, dass sich das Messer beim Arbeitshub und beim Rückhub in jeweils entgegengesetzter Richtung dreht und dadurch immer auf die selbe Stelle des Hackgutes trifft. Dazu ist ein Betätigungskopf (8) unter Zwischenschaltung einer Rückdreh Sperre (20, 21, 22, 24) drehbar mit dem Stößel (6) verbunden. Dadurch wird sichergestellt, dass sich das Messer bei jedem Rückhub um einen Schritt weiter dreht.

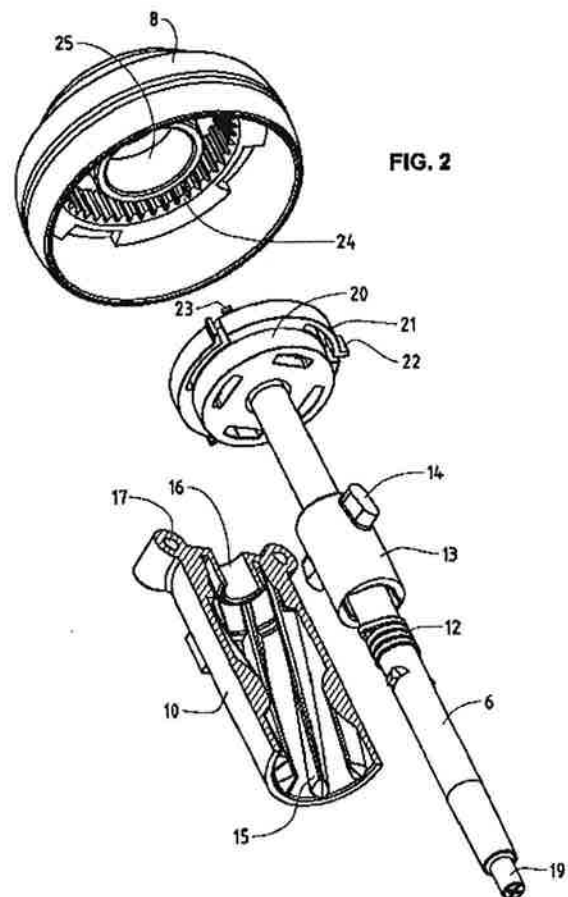


FIG. 2



US007241074B2

(12) **United States Patent**
Thomke et al.

(10) **Patent No.:** **US 7,241,074 B2**
(45) **Date of Patent:** **Jul. 10, 2007**

(54) **CLAMPING AND ARTICULATION ELEMENT**

(75) **Inventors:** **Roland Thomke, Bellach (CH); Vinzenz Burgherr, Bern (CH); Christian Lutz, Solothurn (CH); Damian Fankhauser, Bern (CH); Clemens Dransfeld, Niederlenz (CH); René Fischer, Zurich (CH)**

(73) **Assignee:** **Stryker Trauma S.A. (CH)**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) **Appl. No.:** **11/202,690**

(22) **Filed:** **Aug. 12, 2005**

(65) **Prior Publication Data**
US 2006/0039750 A1 Feb. 23, 2006

(30) **Foreign Application Priority Data**
Aug. 20, 2004 (EP) 04405521

(51) **Int. Cl.**
B25G 3/36 (2006.01)
E04G 7/00 (2006.01)
E04G 7/14 (2006.01)

(52) **U.S. Cl.** 403/385; 606/57; 24/545

(58) **Field of Classification Search** 403/385, 403/384, 395, 289; 606/54-61, 63, 72-73; 24/514, 545, 569, 525
See application file for complete search history.

(56) **References Cited**

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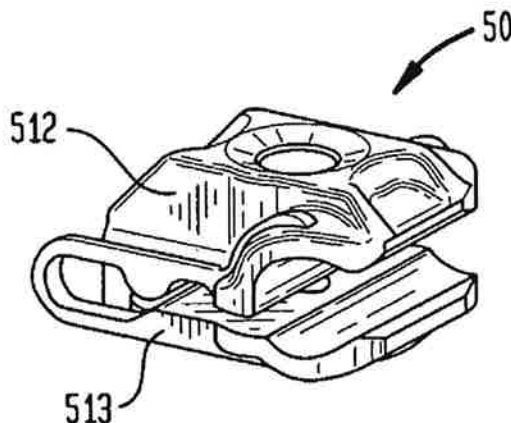
Search Report from EP 1 627 608 A1 dated Jan. 27, 2005.

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Assistant Examiner—Nahid Amiri
(74) *Attorney, Agent, or Firm*—Lerner, David, Littenberg, Krumholz & Mentlik, LLP

(57) **ABSTRACT**

A one-piece clamping element has two opposing clamping jaws forming a laterally open cavity to receive a rod-shaped element. A hinge is located between the jaws, arranged opposite the cavity, and connecting the clamping jaws with one another and thus allowing them to be movable with respect to one another. Each clamping jaw has one bore, aligned flush with one another. One clamping jaw has a receptacle for an anti-rotation device. The receptacle makes it preferable—with the exception of an immediate tightening of the screw in this or another place of an external fixator clamping element used for the same patient—to use the clamping element only once and discarding it after use. Two identical clamping elements, with the possible exception of the size of the rod receptacle, can be placed on top of one another to form an articulation element.

20 Claims, 13 Drawing Sheets





US007491008B2

(12) **United States Patent**
Thomke et al.

(10) **Patent No.:** **US 7,491,008 B2**

(45) **Date of Patent:** **Feb. 17, 2009**

- (54) **EXTERNAL FIXATION CLAMP**
- (75) **Inventors:** **Roland Thomke, Bellach (CH); Vinzenz Burgherr, Bern (CH); Damian Fankhauser, Bern (CH)**
- (73) **Assignee:** **Stryker Trauma S.A. (CH)**
- (*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

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(21) **Appl. No.:** **11/120,775**

(22) **Filed:** **May 3, 2005**

(65) **Prior Publication Data**
US 2006/0177263 A1 Aug. 10, 2006

(30) **Foreign Application Priority Data**
Feb. 9, 2005 (EP) 05100926

- (51) **Int. Cl.**
A61B 17/70 (2006.01)
- (52) **U.S. Cl.** **403/373; 403/316; 403/391; 606/54; 606/57**
- (58) **Field of Classification Search** **403/316, 403/373, 389, 391, 396, DIG. 9, 237; 24/335, 24/535; 248/68.1; 606/61, 54, 57, 277, 324; 439/781; 600/226, 230**
See application file for complete search history.

(56) **References Cited**
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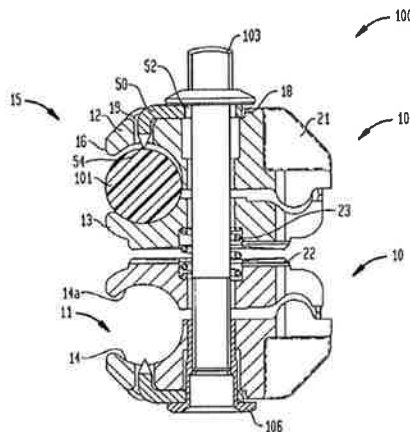
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Primary Examiner—Daniel P Stodola
Assistant Examiner—Ernesto Garcia
(74) *Attorney, Agent, or Firm*—Lerner, David, Littenberg, Krumholz & Mentlik, LLP

(57) **ABSTRACT**

An insert for an external fixation has two jaws for clamping a rod-shaped element. The insert includes a locking element and is an angled piece having two free ends, with at least one engagement edge for engagement into the rod-shaped element being provided at its one free end. The insert has a recess or bore for engagement with a locking shaft of the clamp provided at the free end thereof that lies opposite to the free end having the rod engagement edge. The insert is angled so that it may extend through a passageway in one of the jaws and into a cavity formed in the jaw for receiving the rod. The insert rod engaging edges are tapered to bite into the rod to prevent its movement.

11 Claims, 15 Drawing Sheets





US007618417B2

(12) **United States Patent**
Thomke et al.

(10) **Patent No.:** **US 7,618,417 B2**

(45) **Date of Patent:** **Nov. 17, 2009**

(54) **CLAMP FOR MULTIPLE ROD SHAPED ELEMENTS**

(75) **Inventors:** **Roland Thomke, Bellach (CH);
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Damian Fankhauser, Bern (CH);
Clemens Dransfeld, Niederlenz (CH);
René Fischer, Zurich (CH)**

(73) **Assignee:** **Stryker Trauma S.A. (CH)**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 648 days.

(21) **Appl. No.:** **11/108,492**

(22) **Filed:** **Apr. 18, 2005**

(65) **Prior Publication Data**
US 2006/0052781 A1 Mar. 9, 2006

(30) **Foreign Application Priority Data**
Aug. 20, 2004 (EP) 04405522

(51) **Int. Cl.**
A61F 5/04 (2006.01)
(52) **U.S. Cl.** 606/59; 606/324; 606/54;
403/329
(58) **Field of Classification Search** 606/59,
606/53, 57, 54, 55, 56, 58; 403/385, 397,
403/329, 781, 782, 783, 776, 761, 803
See application file for complete search history.

(56) **References Cited**
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European Search Report dated Jan. 18, 2005.

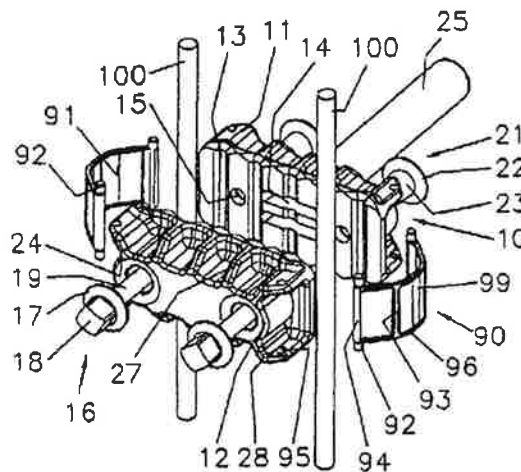
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Primary Examiner—Eduardo C Robert
Assistant Examiner—Jan Christopher Merene
(74) *Attorney, Agent, or Firm*—Lerner, David, Littenberg,
Krumholz & Mentlik, LLP

(57) **ABSTRACT**

A clamping element for the clamping of multiple rod-shaped elements has two opposing jaws, which have a number of corresponding grooves for the acceptance of a corresponding number of rod-shaped elements such as bone pins. Spring elements are provided, with which in the resting position the closed jaws are tensed, to hold the rod-shaped elements in position.

14 Claims, 9 Drawing Sheets



(19)



(11)

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(12)

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(51) Int Cl.:
A61B 17/88^(2006.01) A61B 17/92^(2006.01)

(21) Application number: **04405741.2**

(22) Date of filing: **29.11.2004**

(54) **Extractor device for an insert for a bone connection element and insert**

Extraktionsvorrichtung für den Einsatz eines Knochenverbindungselementes und Einsatz

Dispositif d'extraction pour un insert d'un élément de connection osseux et un insert

(84) Designated Contracting States:
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IS IT LI LU MC NL PL PT RO SE SI SK TR

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(43) Date of publication of application:
31.05.2006 Bulletin 2006/22

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(56) References cited:
DE-A1- 19 841 252 US-A- 6 112 623
US-A1- 2002 099 386

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 • **Thomke, Roland**
4512 Bellach (CH)
 • **Gasser, André**
4513 Langendorf (CH)

• **DATABASE WPI Section PQ, Week 200367**
Derwent Publications Ltd., London, GB; Class P31, AN 2003-704635 XP002330457 & JP 2003 265492 A (REED SHOKAI KK ROBERT) 24 September 2003 (2003-09-24)

EP 1 661 527 B1

Note: Within nine months from the publication of the mention of the grant of the European patent, any person may give notice to the European Patent Office of opposition to the European patent granted. Notice of opposition shall be filed in a written reasoned statement. It shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).

(19)



(11)

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(12)

EUROPEAN PATENT SPECIFICATION

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(51) Int Cl.:
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(21) Application number: **06112136.4**

(22) Date of filing: **31.03.2006**

(54) External fixator element having a rough ablated surface

Externes Fixierelement mit einer rauhen, abgetragenen Oberfläche

Élément de fixateur externe à surface rugueuse traitée par érosion

(84) Designated Contracting States:
CH DE ES FR GB IT LI

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(43) Date of publication of application:
03.10.2007 Bulletin 2007/40

(74) Representative: **Liebetanz, Michael**
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(73) Proprietor: **Stryker Trauma SA**
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(72) **Inventors:**
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(56) References cited:
WO-A-86/07568 **US-A- 5 042 462**
US-A- 5 571 103 **US-A- 5 891 144**
US-A1- 2005 038 425

EP 1 839 605 B1

Note: Within nine months of the publication of the mention of the grant of the European patent in the European Patent Bulletin, any person may give notice to the European Patent Office of opposition to that patent, in accordance with the Implementing Regulations. Notice of opposition shall not be deemed to have been filed until the opposition fee has been paid. (Art. 99(1) European Patent Convention).



US 20080065068A1

(19) **United States**

(12) **Patent Application Publication** (10) **Pub. No.: US 2008/0065068 A1**
Thomke et al. (43) **Pub. Date: Mar. 13, 2008**

(54) **INSERT FOR A CLAMPING ELEMENT,
CLAMPING ELEMENT COMPRISING SAID
INSERT AND UNIVERSAL JOINT
PRODUCED THEREFROM**

(30) **Foreign Application Priority Data**
Nov. 30, 2004 (EP)..... 04405743.8

Publication Classification

(76) **Inventors: Roland Thomke, Bellach (CH);
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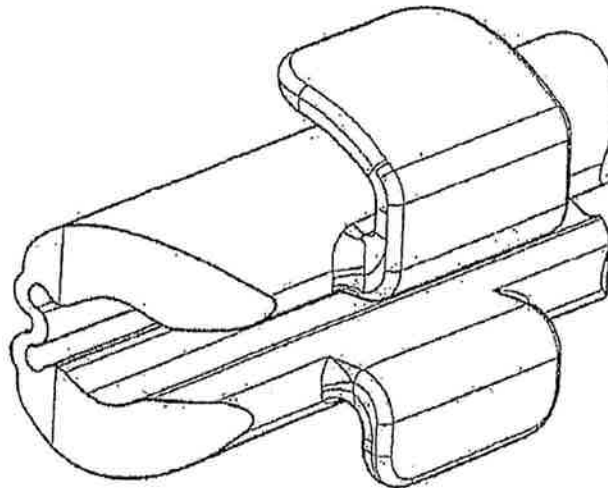
(51) **Int. Cl.**
A61B 17/64 (2006.01)
(52) **U.S. Cl.** **606/57**

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(57) **ABSTRACT**

An insert (50) for a clamping element (10) having two jaws (12, 13) for clamping a rod-shaped element comprises at least one jacket element (51). Said jacket element can be inserted into one jaw (12, 13) each of the clamping element (10), thereby allowing to vary, especially reducing, the free space (11) available for a rod. The insert (50) also comprises at least one retaining section (53,54) which fastens at least one part of the insert (50) in or on at least one of the jaws (12,13) of the clamping element. A clamping element can be provided with two jacket elements (51), interlinked via an undulated web, or two or three juxtaposed longitudinal grooves for receiving rods having different diameters.

(21) Appl. No.: 11/632,191
(22) PCT Filed: Nov. 30, 2005
(86) PCT No.: PCT/CH05/00714
§ 371(c)(1),
(2), (4) Date: Jan. 17, 2007





US 20080215053A1

(19) **United States**

(12) **Patent Application Publication**
Thomke et al.

(10) **Pub. No.: US 2008/0215053 A1**

(43) **Pub. Date: Sep. 4, 2008**

(54) **PREVENTION OF RE-USE OF A MEDICAL DEVICE**

(75) **Inventors:** **Roland Thomke, Bellach (CH);**
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(73) **Assignee:** **Stryker Trauma SA, Selzach (CH)**

(21) **Appl. No.:** **11/974,172**

(22) **Filed:** **Oct. 11, 2007**

(30) **Foreign Application Priority Data**

Oct. 13, 2006 (EP) 06 122 309.5

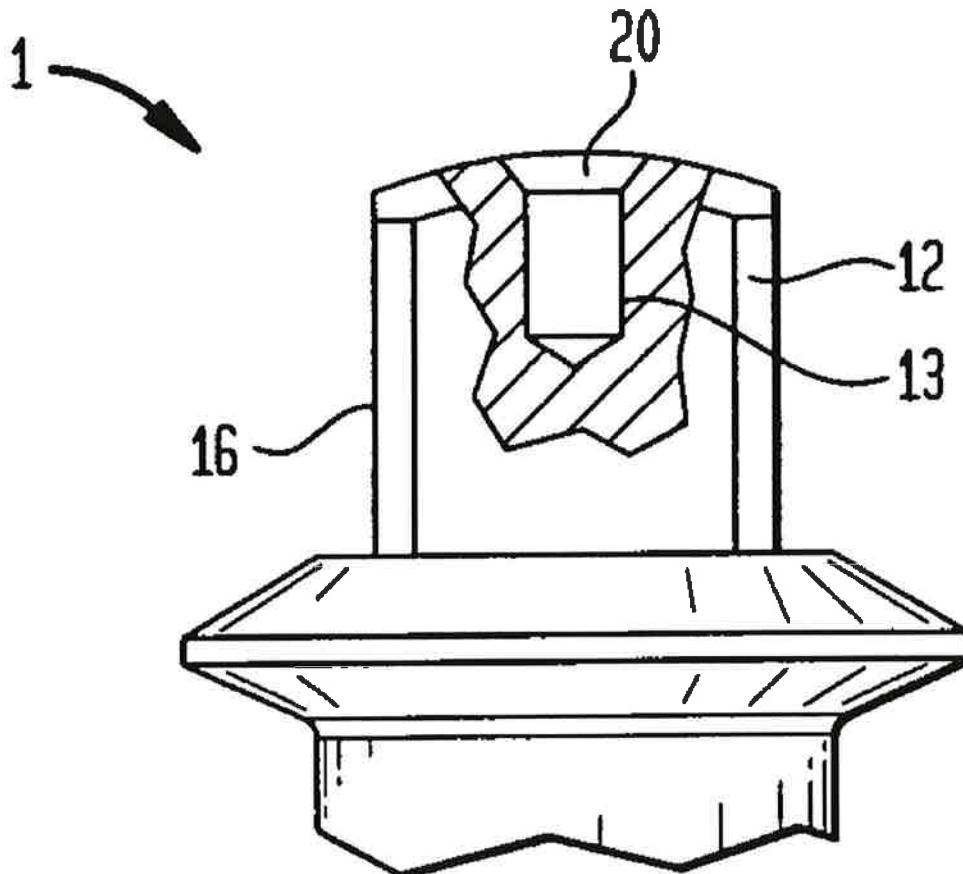
Publication Classification

(51) **Int. Cl.**
A61B 17/60 (2006.01)

(52) **U.S. Cl.** 606/59

(57) **ABSTRACT**

A disposable medical device is especially an articulation for the relative positioning of fixation bars or of pins of an external fixator, having at least a clamping means to be introduced into the medical device, the clamping means comprises an element that alters its appearance when being heated over a threshold temperature, thus giving optical or mechanical information that the device should not be used a second time.





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(19) **United States**

(12) **Patent Application Publication**
Thomke et al.

(10) **Pub. No.: US 2009/0306661 A1**

(43) **Pub. Date: Dec. 10, 2009**

(54) **CLAMPING ELEMENT AND INSERT THEREFOR**

(30) **Foreign Application Priority Data**

May 29, 2006 (EP) 06114661.9

(75) **Inventors:** Roland Thomke, Bellach (CH);
Damian Frankhauser, Bem (CH)

Publication Classification

Correspondence Address:
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(51) **Int. Cl.**
A61B 17/64 (2006.01)
F16L 3/237 (2006.01)

(52) **U.S. Cl.** 606/54; 279/43.1; 606/53

(57) **ABSTRACT**

(73) **Assignee:** Stryker Trauma SA, Selzach (CH)

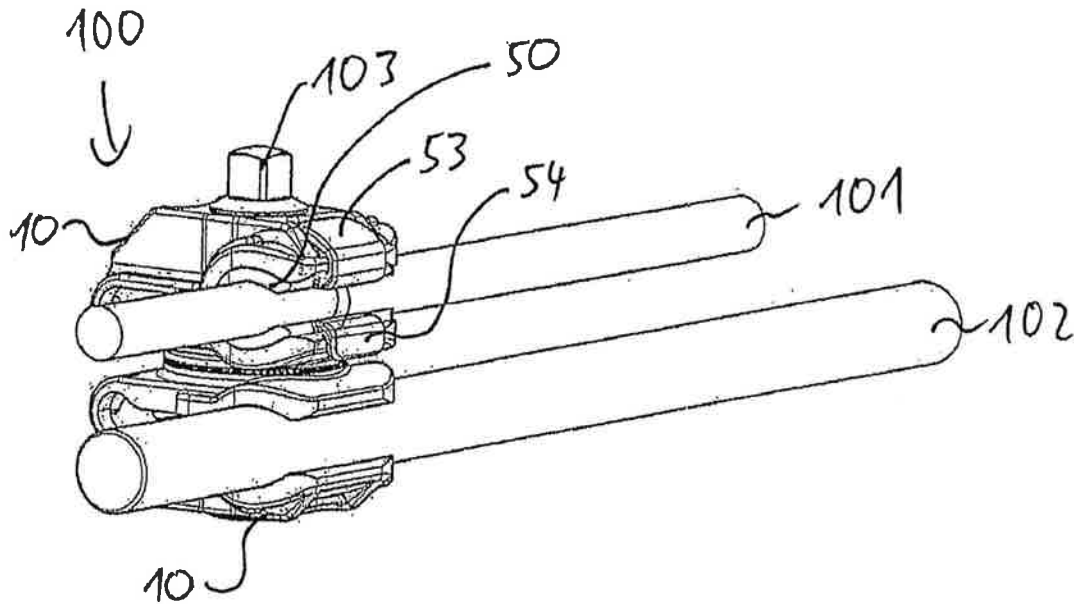
An insert (70) for a clamping element with two jaws to clamp a rod-shaped element comprises an inner cavity (144) to accommodate a rod-shaped element and at least one flange element (153) at one longitudinal end of the insert intended to abut against the clamping element. The flange element (153) comprises clamping members (161) to reduce the available room within the inner cavity (144) for the rod-shaped element to be clamped and to clamp the flange element (153) between the rod-shaped element and an outer clamping surface of the clamping element to prohibit any longitudinal movement of the clamped insert.

(21) **Appl. No.:** 12/227,836

(22) **PCT Filed:** May 29, 2007

(86) **PCT No.:** PCT/CH2007/000270

§ 371 (c)(1),
(2), (4) **Date:** Apr. 15, 2009





US007806623B2

(12) **United States Patent**
Thomke et al.

(10) **Patent No.:** **US 7,806,623 B2**
(45) **Date of Patent:** **Oct. 5, 2010**

- (54) **EXTERNAL FIXATION CLAMP** 4,310,209 A 1/1982 Fleming et al.
- (75) **Inventors:** **Roland Thomke, Bellach (CH);** 4,707,051 A 11/1987 Hall
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(57) **ABSTRACT**

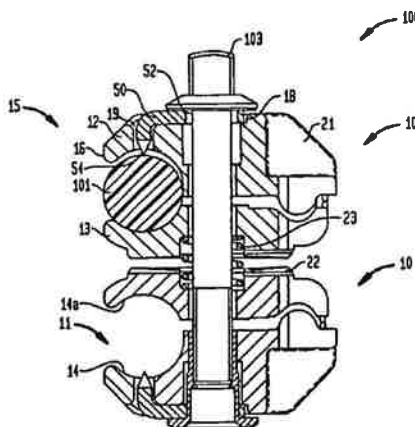
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See application file for complete search history.

An insert for an external fixation has two jaws for clamping a rod-shaped element. The insert includes a locking element and is an angled piece having two free ends, with at least one engagement edge for engagement into the rod-shaped element being provided at its one free end. The insert has a recess or bore for engagement with a locking shaft of the clamp provided at the free end thereof that lies opposite to the free end having the rod engagement edge. The insert is angled so that it may extend through a passageway in one of the jaws and into a cavity formed in the jaw for receiving the rod. The insert rod engaging edges are tapered to bite into the rod to prevent its movement.

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(54) **EASY TO CLEAN CLAMPING DEVICE** (52) **U.S. Cl. 606/**

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(57) **ABSTRACT**

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An easy to clean clamping device has at least one clamping assembly having two jaws. The jaws form at least one recess to accommodate an element to be clamped along the longitudinal axis of the recess. A locking unit is provided to allow closing of the jaws against the force of a spring element. The locking unit has a shaft extending along an axis and through bores of the jaws. The shaft has a head for operating the clamping action abutting against the uppermost jaw. A locking element is provided having a through bore and which locking element can be arranged between the head and the uppermost jaw. One portion of the locking unit has a large diameter than the bore of the second jaw and the head of the locking unit has a smaller diameter than the bore of the adjacent jaw. The locking element comprises at least one locking surface which can be brought into positive lock with a corresponding surface of the head for block removal of the locking element.

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