

**Señora Jefe
DIVISIÓN DE NUEVAS CREACIONES
SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
Bogotá, D.C.**

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO



No 06-112086- -00003-0000

Fecha 2008-03-14 12:07:55 Dep 2020 NUECREACION
No 11 DE INDUSTRIA Eve 378 FASENACIONALI
Act 508 PLICION Folios. 2

**Re.: Expediente No. 06 112.086
Fase Nacional Solicitud PCT
a nombre de
SYNTHES GmbH
Código 02 - 01 - 538**

En relación con la solicitud contenida en el Expediente de la referencia y, en particular, con la publicación del extracto de la misma en la Gaceta de la Propiedad Industrial No. 581 de 31 de Octubre de 2007, por medio del presente escrito muy respetuosamente me permito solicitarle se sirva proceder a efectuar el **EXAMEN DE PATENTABILIDAD** de la solicitud aquí contenida.

Para tal efecto, acompaño el comprobante de pago por concepto de la tasa correspondiente, Recibo No. 08-21,987

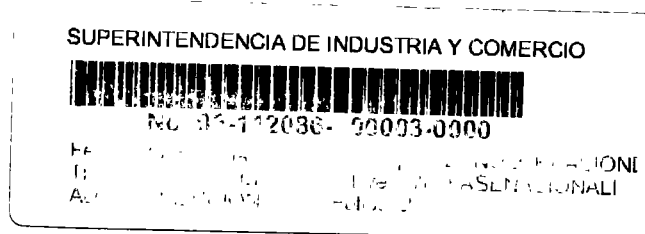
De Usted Atentamente,

GERMAN CASTILLO GRAU
T.P. No. 2.978 del C.S.J.

SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO

NIT : 800176089-2

RECIBO OFICIAL DE CAJA : 08 - 21,987
FECHA : MARZO 13 DE 2008



***** CONSIGNACION *****

DEPOSITANTE	TIPO PAGO	BANCO	CUENTA	Nº. PAGO	FECHA PGO	Vr. PAGO
CASTILLO GRAU Y ASOCIADOS	CONSIGNACION	BANCO DE BOGOTA	062754387	1483423	13/03/2008	4,334,000.00

***** CONCEPTO *****

CANT.	RENTISTICO	CONCEPTO	TOTAL CONCEPTO
1	50005-01-01	SOLICITUDES	
		85 EXAMEN DE PATENTABILIDAD DE INVEN	420,000.00
		TOTAL :	\$ 420,000.00

SON: CUATROCIENTOS VEINTE MIL PESOS

RESPONSABLE :

RECIBO DE CAJA APLICADO AL EXPEDIENTE N°.

DIVISIÓN DE NUEVAS CREACIONES

RADICACIÓN EXPEDIENTE No. 06-112086

EL EXTRACTO DE LA PRESENTE SOLICITUD DE **PATENTE DE INVENCION**

FUE PUBLICADO EN LA GACETA DE PROPIEDAD INDUSTRIAL No **581** DE

FECHA **31 DE OCTUBRE DE 2007** EL TÉRMINO HÁBIL SEÑALADO POR LA

LEY EXPIRA EL **31 DE ENERO DE 2008**

NOTA: Dentro del plazo de los seis (6) meses siguientes a partir de la fecha de publicación en la gaceta de Propiedad Industrial, deberá solicitar y cancelar el examen de patentabilidad so pena de que la solicitud caiga en abandono, de acuerdo con lo establecido en el Artículo 44 de la Decisión 486/2000.

SE PRESENTARON OPOSICIONES POR PARTE DE TERCEROS.

SI _____

NO X

21
62



US005255485A

United States Patent [19]

[11] Patent Number: 5,255,485

Lemke et al.

[45] Date of Patent: Oct. 26, 1993

[54] APPARATUS AND METHOD FOR
INSTALLING ROOFING FASTENERS

[75] Inventors: Lorne R. Lemke; James A. Smith;
Stuart H. Lemke, 349 River Bluff, all
of Mosinee, Wis. 54455

[73] Assignee: Stuart H. Lemke, Mosinee, Wis.

[21] Appl. No.: 672,353

[22] Filed: Mar. 20, 1991

Related U.S. Application Data

[63] Continuation-in-part of Ser. No. 473,240, Jan. 31, 1990,
abandoned, which is a continuation of Ser. No.
385,256, Jul. 25, 1989, Pat. No. 4,987,714, which is a
continuation-in-part of Ser. No. 235,542, Aug. 25, 1988,
abandoned, and a continuation-in-part of Ser. No.
236,666, Aug. 25, 1988, Pat. No. 4,834,600.

[51] Int. Cl.⁵ E04B 5/00

[52] U.S. Cl. 52/410; 7/158;
7/165; 81/52

[58] Field of Search 52/410, 512; 7/158,
7/165; 81/437, 439, 459, 52, 54, 57.32, 57.36,
57.22

[56] References Cited

U.S. PATENT DOCUMENTS

3,965,510 6/1976 Ernst 7/158

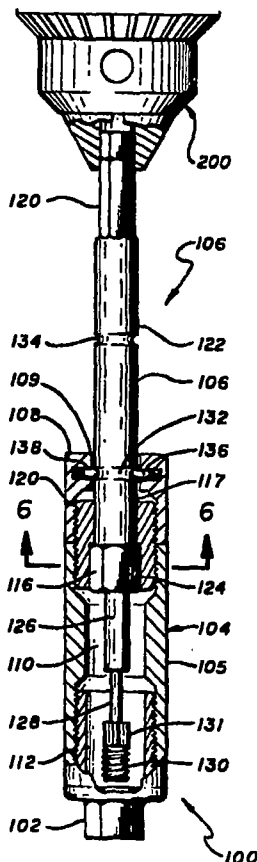
4,074,501 2/1978 Sandquist .
4,361,997 12/1982 DeCaro .
4,380,413 4/1983 Dewey .
4,455,804 6/1984 Frankovitch .
4,467,581 8/1984 Frankovitch .
4,520,606 6/1985 Frankovitch .
4,545,270 10/1985 Deavey 52/512 X
4,551,875 11/1985 Getz et al. 81/437 X
4,616,455 10/1986 Hewison .
4,620,402 11/1986 Beneze .
4,658,558 4/1987 Verble .
4,712,959 12/1987 Hasan .
4,726,164 2/1988 Reinwall et al. .
4,727,699 3/1988 Sargent .
4,757,661 7/1988 Hasan .
4,763,456 8/1988 Giannuzzi .
4,787,188 11/1988 Murphy .
4,860,513 8/1989 Whitman 52/410
4,987,714 1/1991 Lemke .

Primary Examiner—Carl D. Friedman
Assistant Examiner—Creighton Smith
Attorney, Agent, or Firm—Streich Lang

[57] ABSTRACT

The present invention relates to a tool and method for
installing a roof fastener for securing insulation or wa-
terproof membrane to a rooftop.

7 Claims, 2 Drawing Sheets



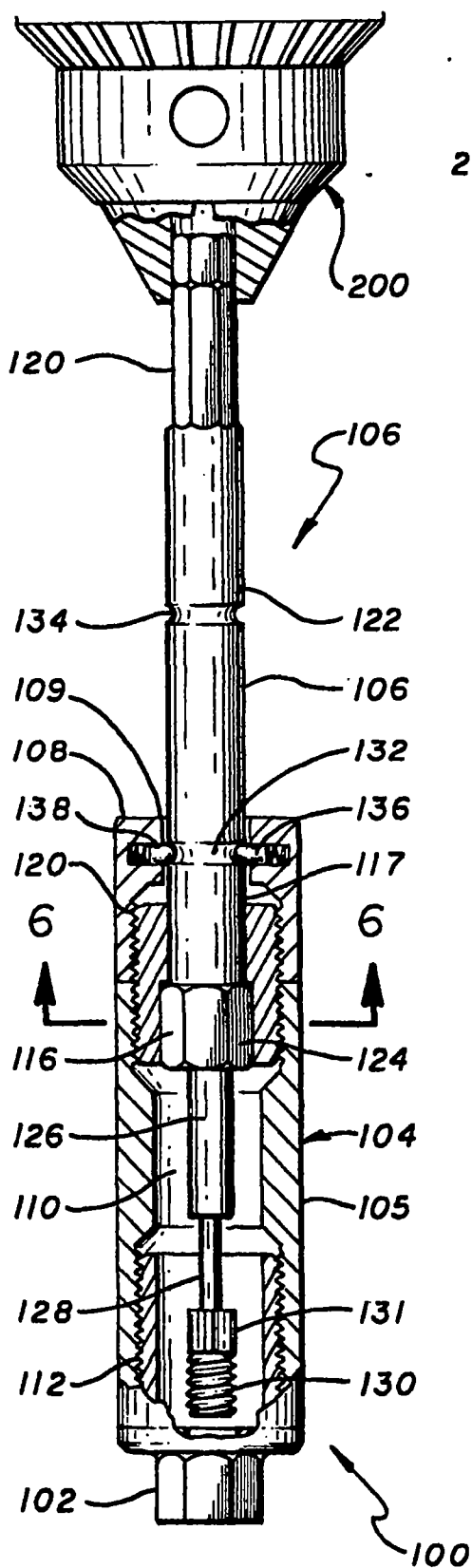


FIG. 4

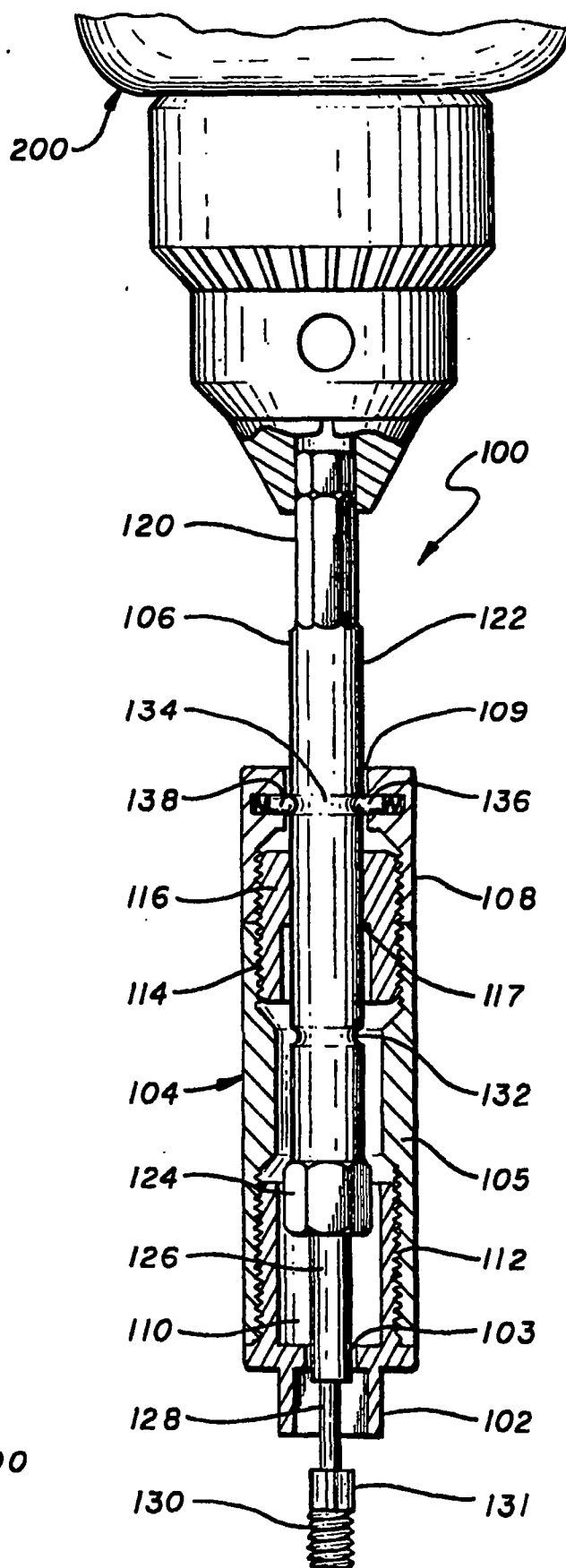


FIG. 5

reliever 14, suitably a disk-shaped stress plate, designed for use with a roof fastener to spread stress on the underlying roof structure over a board area.

Screw 12 has an elongated body 16 symmetrical about a longitudinal axis 15, configured for insertion through a central hole 18 in stress reliever 14. Body 16 is suitably at least partially threaded, preferably with an aggressive pitch external thread and terminates at one end in a tapered point 17 suitable for boring through relative soft roof materials such as a structural cement wood fiber, e.g., tectum deck. The thread height of threaded body 16 is preferably at least about $\frac{1}{8}$ inch (about 0.32 cm), particularly $\frac{1}{8}$ to $\frac{1}{4}$ inch (0.32–0.64 cm) to obtain suitable holding strength in terminates in a head 20, which suitably comprises a peripheral flange 22; a polygonal, e.g., hexagonal, recess 24 in its flat end surface, entered about axis 15; a welding surface 26; and a shoulder 28. As will hereinafter be more fully explained, polygonal recess 24 is configured to engage a mating head 102 on an installation tool 100. Welding surface 26, suitably slightly frustoconical and disposed intermediate flange 22 and shoulder 28, serves as a primary surface for spin welding or adhesion. Welding surface 26 may, alternatively, be cylindrical. Shoulder 28 is suitably frustoconical, tapering outwardly from body 16 at an angle of at least about 30 degrees. Shoulder 26 aids in centering screw 12 in hole 18.

As best seen in FIGS. 2 and 3, body 16 includes an internal cylindrical channel 30 of predetermined diameter centered upon axis 15, communicating with a concentric counterbore 32 of a second predetermined diameter, greater than that of channel 30, disposed interiorly of polygonal recess 24. Respective small diameter side channels 34 and 36 are formed in the sides of channel 30 at 180° from each other. Side channels 34 and 36 communicate at one end with counterbore 32, and at the other ends with openings 38 and 40, respectively, formed in the side walls of body 16.

An extensible mechanism, actuatable through channel 30, for engaging the decking material after screw 12 is turned into the decking material is provided; e.g. a U-shaped wire member 42 is disposed for longitudinal movement within channels 30, 34 and 36. The sides of wire member 42 are received in channels 34 and 36. Wire 44 is suitably of a diameter corresponding to the diameter of channels 34 and 36 and is configured to include a base portion 44 and respective feet 46 and 48. Feet 46 and 48 are, in assembly, disposed in the vicinity of side wall openings 38 and 40. A plunger 50 is disposed for longitudinal movement in channel 30. If desired, plunger 50 can include side members conforming to side channels 34 and 36.

Stress reliever 14 is preferably a round plate, although other shapes may be employed. For purposes of the present invention, the term "stress reliever" includes disks, plates, battens, elongated strips secured by multiple fasteners, and similar devices. Hole 18 is round in cross section and extends completely through plate 14 at its center, suitably including a slightly frustoconical lower end 52 and a cylindrical upper end (counterbore) 54 of larger diameter which together define a generally horizontal step 56 (see FIG. 3). Upper end 54 of hole 18 defines a recess which is large enough so that flange 22 fits mostly or entirely therein, whereby the underside of flange 22 engages step 56. Specifically, the diameter of upper end 54 is slightly greater than the diameter of screw flange 22, to accommodate a minor misalignment in inserting screw 12. Similarly, lower

frustoconical end (surface) 52 of hold 18 is geometrically similar to welding surface 26 of screw 12, so that surface 26 fits closely therein. Lower end 52 of hole 18 is preferably slightly smaller in overall diameter than welding surface 26 so that a slight interference fit is obtained upon complete insertion of screw 12 into hole 18. This interference fit promotes friction during installation to, e.g., induce spin-welding. Specifically, the relative diameter of welding surface 26 and lower end 52 of hold 18 (i.e., the interference fit) are preferably chosen to ensure a minimum pressure of surface 26 against surface 52. This tends to lessen the sensitivity of the weld to variations in downward pressure by the operator. This is particularly true where surfaces 26 and 52 are cylindrical in shape. Thus, for the foregoing purposes, it is generally preferred that lower end 52 of hole 18 have an overall diameter from about 0 to 0.01 inch (0–0.025 cm) than the corresponding diameter of welding surface 26 of screw 12.

Referring to FIGS. 2 and 3, the underside of plate 14 may, if desired, include a central frustoconical projection 58 centered on hole 18 to provide a surface to coast with shoulder 26 of screw 12. In practice, however, projection 58 about the periphery of hole 18 is typically omitted, and screw shoulder 28 extends beyond the bottom surface of plate 14. A plurality of cleats (spikes) 59 disposed in an array about hole 18, extend from the underside of plate 14.

When installed, as shown in FIG. 3, screw 12 is received through hole 18 of stress plate 14 and extends through and into successive layers of roofing materials such as a waterproof membrane 60, e.g., rubberized fabric, a layer of thermal insulation 62 and a roof deck 64, formed of, for example, tectum. Feet 46 and 48 of wire member 42 are extruded outward through opening 40 by longitudinal movement of plunger 50, as will be explained. A fastener combining a spin weld barbed plate, and extensible barbs is particularly advantageous in a number of respects. In particular, such a fastener is securely locked both into membrane 60 and decking material 64. The solid bond between screw 12 and plate 14 in combination with the backout preventing wire legs 46 and 48, not only tends to prevent rocking of the plate due to wind or roof traffic, but also makes the fastener considerably more tolerant of insulation collapse.

Installation of fastener 10 is effected, in accordance with one aspect of the present invention, with installation tool 100. Referring now to FIGS. 4–6, tool 100 comprises a casing 104, and a drive shaft 106. Casing 104 suitably comprises a polygonal head 102, a tubular body 105, and a cap 108.

Polygonal head 102 conforms in configuration to recess 24 (FIGS. 1–3) of screw head 20, and is adapted to be engaged therewith. When engaged head 102 is solidly seated in recess 24, an not only effects rotation of screw 12 with head 102, but also maintains coaxial alignment between screw 12 and shaft 106. Head 102 is suitably in the form of a bushing threadedly mounted to one end of casing body 105. Head bushing 102 includes a central bore therethrough of sufficient dimensions to pass the end portion of drive shaft 106, as will be explained.

Casing body 105 is suitably cylindrical, with an internal chamber 110. Respective end portions 112 and 114 of chamber 110 are threaded, adapted to receive at end 112 polygonal head 102, and at end 114, a bushing 116 including an interior polygonal (e.g., hex) internal pas-

sage, e.g., a $\frac{1}{2}$ inch hex bushing. The upper portion of bushing 116 suitably includes exterior threads 120 for receiving cap 108.

Drive shaft 106 couples installation tool 100 to, e.g., an electric drill, or other rotary device and is employed to actuate (extend) wire 42. Shaft 106 suitably includes a plurality of contiguous sections 120-128: an end portion 120 suitable for engagement by a standard drill chuck, e.g., $\frac{1}{2}$ inch hex; relatively large diameter round shaft portion 122, e.g., a $\frac{1}{2}$ inch round; a polygonal (e.g., hex) section 124 conforming in cross section to the passage configuration of bushing 116; an intermediate diameter section 126 approximately $\frac{1}{2}$ inch round, and a small diameter section 128, e.g., a round of slightly smaller than $\frac{1}{2}$ inch diameter, with a threaded tip 130 formed at the end thereof. Respective ring detents 132 and 134 are formed in round portion 122 at predetermined distances, axially from the upper edge 134 of polygonal section 124. The distance between ring detents 132 and 134 generally corresponds to, as will be explained, the travel required to extend legs to end 48 of wire member 42.

Threaded tip 130 suitably is of a diameter slightly larger than the diameter of channel 30 of screw 2, and less than the diameter of counterbore 32 and manifests a relatively coarse, aggressive thread, e.g., $\frac{1}{2}$ inch by 0.250.

Cap 108, suitably threadedly fastened to external threads on hex bushing 116 and coaxial with casing 108, is preferably tubular with a cylindrical internal chamber 109. A pair of spring loaded pins 136 and 138 are disposed in the side walls of cap 108 extending inwardly a predetermined distance from the top of bushing 116. Pins 136 and 138 suitably terminate in rounded portions, and cooperate with the curved surface of ring detents 132 in such a manner that axial force beyond a predetermined threshold (greater than the downward pressure typically exerted in installation of screw 12) Causes pins 136 and 138 to ride up on the curve, and become dislodged from the detents.

Alternatively, cap 108 can comprise a commercially available ball and retaining sleeve such as a Mitton 728 air line coupling. If such a ball and retaining sleeve is employed for cap 108, the retaining sleeve is moved axially to permit the balls to disengage from detent 132 or 134.

Referring to FIGS. 4 and 5, drive shaft 106 is received through chamber 109 of cap 108, passageway 117 of bushing 116, and chamber 110 of casing body 105. Shaft 106 is adapted for axial movement relative to casing 104 between retracted (FIG. 4) and extended (FIG. 5) positions.

In the retracted position, pins 136 and 138 are received in ring notch 132, and polygonal portion 124 of drive shaft 106 is seated Within passage 117 of bushing 116 so that polygonal portion 124 and bushing 117 cooperate as a gear. Thus, in the retracted position, rotational motion imparted to drive shaft 106 by drill 200 is concomitantly imparted to casing 104, and in particular, to head 102.

In the extended position, pins 136 and 138 are lodged in ring detent 134, large diameter round portion 122 of drive shaft 106 extends through bushing 116, with hex portion 124 forward of bushing 116 and disengaged therefrom, and tip 130 extends through bore 103 of head 102, exteriorly of head 102. With polygonal section 124 unseated from bushing 116, casing 104 is effectively rotationally decoupled from casing 104, while at the

same time maintained in coaxial alignment. Thus, shaft 106 rotates independently of casing 104.

In operation, end portion 120 is engaged in the chuck of, e.g., a conventional reversible drill, schematically indicated as 200. Head 102 is firmly seated in recess 24 of screw head 20, with shaft 106 in the retracted position. A plate 14 is disposed on membrane 60, spike side down. The tip 17 of screw 20 is disposed overlying membrane 60 at the center of hole 18. Drill 200 is then actuated to impart rotational motion to drive shaft 106, and in the retracted position, hence, casing 104 and head 102.

Once screw 20 is completely turned into the deck, and, preferably, a spin weld effected between screw 12 and plate 14, casing 104 is decoupled from shaft 106; the operator exerts an increased downward force on shaft 116 to dislodge pins 136 and 138 from ring notch 132 and unseat hex portion 124 from bushing 116. Once polygonal portion 124 is decoupled from bushing 116, shaft 106 rotates independently of casing 104 and head 102; rotational motion of casing 104 and head 102 ceases.

As welding surface 26 comes into frictional contact with the surface of lower end 52 of hold 18, heat is generated to melt plastic on one or both of the inner surface of hold 18 and welding surface 26. Friction welding may also occur at the same time between flange 22 and step 56 i.e., spin welding may be conducted on horizontal and vertical surfaces. At the same time, spikes 59 engage membrane 60 so that plate 14 does not substantially rotate relative to screw 12. Spikes 59 thereby serve dual functions of securing the plate during spin welding and securing membrane 60 beneath plate 14 after installation is completed (see FIG. 3).

Screw 12 and plate 14 are preferably configured so that heat generation (and, thus, spin welding) occurs only during the last segment of the insertion of screw 12. Thereafter, rotation of screw 12 is abruptly stopped so that a secure weld will form. The height of spikes 59 affects the length of the final segment of rotation, i.e., the number of rotations of screw 12 that will occur before screw 12 is completely installed. Spikes 59 having a lengths of at least $\frac{1}{2}$ inch, especially in the range of about $\frac{1}{2}$ to $\frac{3}{4}$ inch (about 0.3-1.3 cm) are generally sufficient for this purpose. In general, the screw and plate are preferably configured so that at least one complete revolution of screw 12 occurs during the final segment of installation as spikes 59 engage membrane 60.

Further downward pressure on shaft 106 causes shaft 106 to move axially relative to casing 102 (motion of casing 102 is arrested by head 20 of screw 12). Since casing 104 is rotationally decoupled from shaft 106, it can remain in engagement with recess 24, and maintain alignment of shaft 106 with channel 30. As shown in FIG. 2, threaded tip 130 ultimately extends through bore 102 of polygonal head 102, and is received in counterbore 32 of head 20. The relative lengths of sections 124, 126 and 128 are chosen such that section 124 is fully decoupled from bushing 116 prior to tip 130 engaging screw 12. In some instances, it may be desirable to omit counterbore 32 from head 20. In such instances, the forward threads of tip 130 engage channel 30. Once the threads of tip 130 have engaged screw 12, rotation of shaft 106 causes tip 130 to tap channel 30; tip 130 screws into and proceeds to travel axially downward in channel 30. As shaft 106 is screwed into channel 30, plunger 50 is forced downward, to in turn, force legs 46 and 48 of wire member 42 to extend outwardly through open-



US005868749A

United States Patent [19]
Reed

[11] Patent Number: 5,868,749
[45] Date of Patent: Feb. 9, 1999

[54] FIXATION DEVICES

[76] Inventor: Thomas M. Reed, 29 Raintree Pl., The Woodlands, Tex. 77381

[21] Appl. No.: 791,611

[22] Filed: Jan. 31, 1997

Related U.S. Application Data

[63] Continuation of Ser. No. 627,355, Apr. 5, 1996, abandoned.

[60] Provisional application No. 60/027,510 Oct. 7, 1996.

[51] Int. Cl.⁶ A61B 17/56

[52] U.S. Cl. 606/76; 606/72; 606/73; 606/104

[58] Field of Search 606/72, 73, 232, 606/76, 77, 104; 623/16

[56] References Cited

U.S. PATENT DOCUMENTS

3,739,773	6/1973	Schmitt et al.	128/92
4,356,572	11/1982	Gullemin et al.	128/92
4,632,100	12/1986	Somers	128/92
4,654,464	3/1987	Mittelman et al.	623/16
4,905,680	3/1990	Tunc	606/69
4,924,865	5/1990	Bays et al.	606/77
4,932,973	6/1990	Gendler	623/16
4,944,742	7/1990	Clemow et al.	606/59
4,976,715	12/1990	Bays et al.	606/77
4,997,433	3/1991	Goble	606/64
5,013,316	5/1991	Goble	606/72
5,019,038	5/1991	Linden	604/49
5,053,036	10/1991	Perren et al.	606/69
5,053,049	10/1991	Campbell	623/16
5,059,206	10/1991	Winters	606/213
5,084,050	1/1992	Draenert	606/77
5,108,399	4/1992	Eitenmuller et al.	606/77
5,112,354	5/1992	Sires	623/16
5,129,906	7/1992	Ross et al.	606/77

(List continued on next page.)

FOREIGN PATENT DOCUMENTS

471-334 A 2/1992 European Pat. Off. .

2-405-062A 5/1979 France .
2-405-705A 5/1979 France .
60-150756 of 1985 Japan .
62-268553 11/1987 Japan .
2 148 122 5/1985 United Kingdom .
2 175 807 12/1986 United Kingdom .

OTHER PUBLICATIONS

Päivärinta et al., "Intraosseous Cellular Response to Biodegradable Fracture Fixation Screws Made of Polyglycolide or Polylactide", Archives Of Orthopaedic and Trauma Surgery, pp. 71-74, 1993.

Bucholz et al., "Fixation with Bioabsorbable Screws for the Treatment of Fractures of the Ankle", The Journal of Bone and Joint Surgery, vol. 76-A, No. 3, pp. 319-324, Mar. 1994.

Lavery et al., "Mechanical Characteristics of Poly-L-Lactic Acid Absorbable Screws and Stainless Steel Screws in Basilar Osteotomies of the First Metatarsal", The Journal of Foot and Ankle Surgery, vol. 33, No. 3, pp. 249-254, 1994.

Malinin et al., "Healing of Fractures with Freeze-dried Cortical Bone Plates", Clinical Orthopaedics and Related Research, No. 190, pp. 281-286, Nov. 1984.

Johnson & Johnson Orthopaedics, "OrthoSorb 2.0mm Absorbable Pin with Applicator Kit", 1992.

Mitek Surgical Products, Inc., "Fastout", 1996.

Corey et al., "Principles of Internal Fixation", Comprehensive Textbook of Foot Surgery, 2nd Ed., pp. 113-159 (1992).

Mahan, "Bone Grafting", Comprehensive Textbook of Foot Surgery, 2nd Ed., pp. 1232-1255 (1992).

Musculoskeletal Transplant Foundation, "Musculoskeletal Allograft Tissue", Aug. 1990.

(List continued on next page.)

Primary Examiner—Michael Powell Buiz

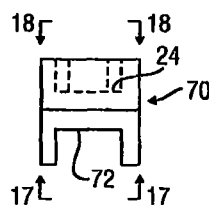
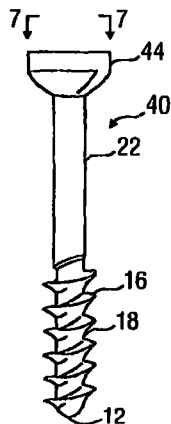
Assistant Examiner—Julian W. Woo

Attorney, Agent, or Firm—Arnold, White & Durkee

[57] ABSTRACT

Sterile bone fixation devices, such as bone screws, pins, anchors and plates, fabricated from bone tissue and the method of making such devices.

4 Claims, 7 Drawing Sheets



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72

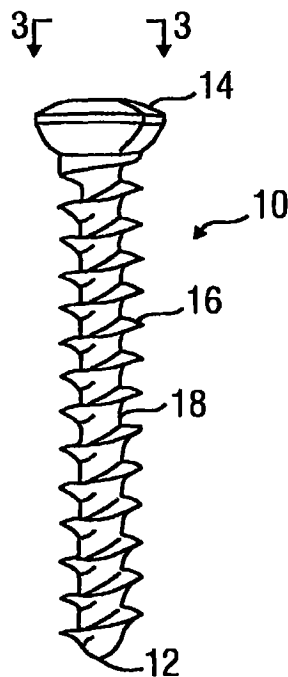


FIG. 1

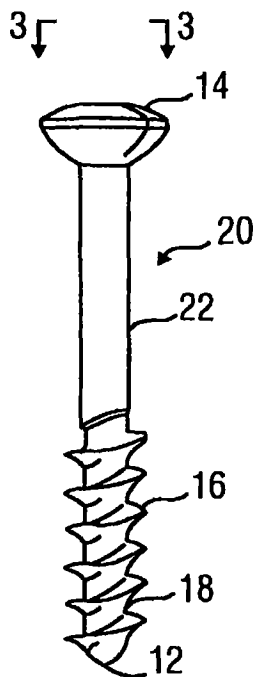


FIG. 2

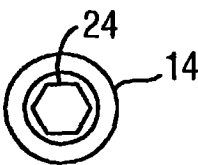


FIG. 3

75
73

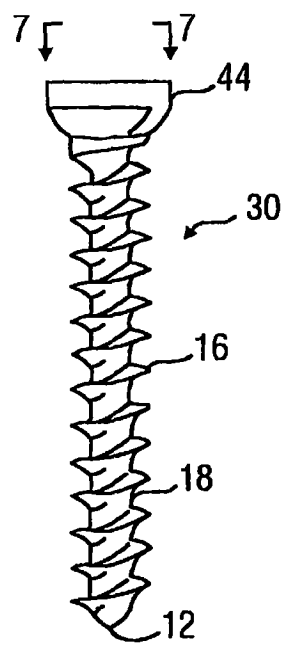


FIG. 4

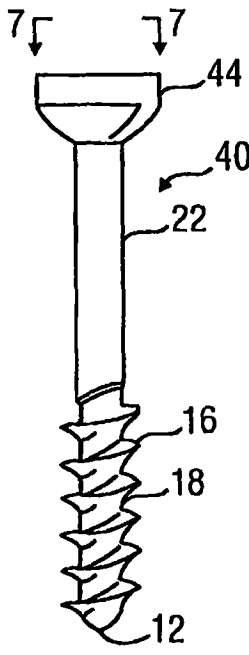


FIG. 5

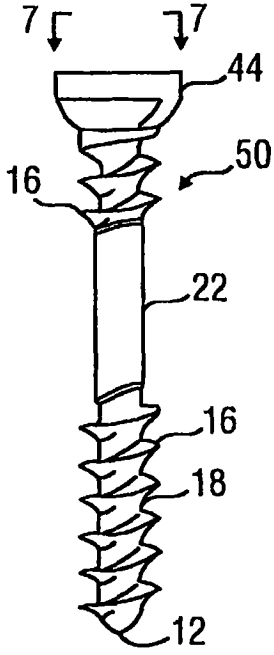


FIG. 6

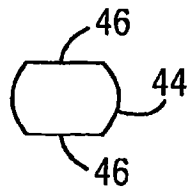


FIG. 7

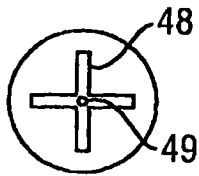


FIG. 8



FIG. 9

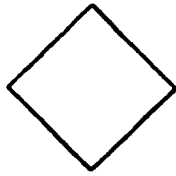


FIG. 10

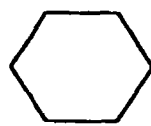


FIG. 11

79
24



FIG. 28A

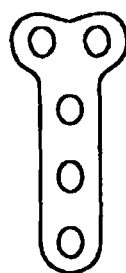


FIG. 28B

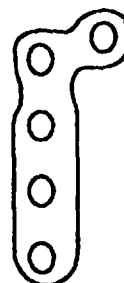


FIG. 28C

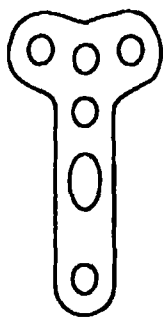


FIG. 28D

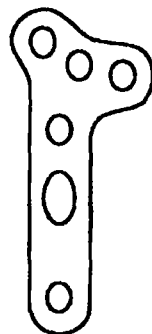


FIG. 28E

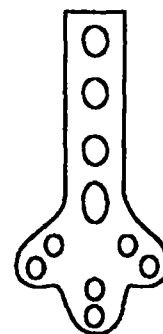


FIG. 28F

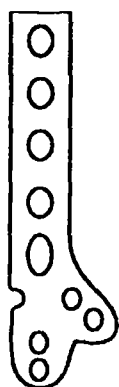


FIG. 28G

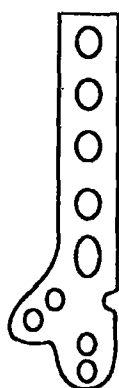


FIG. 28H

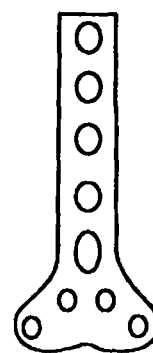


FIG. 28I

United States Patent [19]

Schadrack, III et al.

[11] Patent Number: 4,549,538

[45] Date of Patent: Oct. 29, 1985

[54] PIN INSERTER SHEATH

[75] Inventors: William C. Schadrack, III, Memphis, Tenn.; Robert W. McQueen, Warsaw, Ind.; Joyce K. Eyerly, White Bear Lake, Minn.

[73] Assignee: Zimmer, Inc., Warsaw, Ind.

[21] Appl. No.: 441,199

[22] Filed: Nov. 12, 1982

[51] Int. Cl.⁴ A61F 5/04

[52] U.S. Cl. 128/92 EB; 128/92 C; 128/303 R; 623/16; 623/66

[58] Field of Search 128/92 EB, 419 F, 82.1, 128/305.1, 303 R, 303.1, 83; 3/1.9, 1

[56] References Cited

U.S. PATENT DOCUMENTS

1,308,798 7/1919 Masland 128/305.1
2,811,969 11/1957 Shubert 128/303 R
3,128,768 4/1964 Geistauts 128/83
3,384,085 5/1968 Hall 128/305.1
3,835,858 9/1974 Hagen 128/305
3,865,113 2/1975 Sharon et al. 128/305

4,154,248 5/1979 Jones 128/419
4,279,552 7/1981 Epstein 408/112
4,425,115 1/1984 Wuchinich 128/303 R

OTHER PUBLICATIONS

Zimmer Brochure, "The Alternate Treatment of Fracture Nonunion", Lit. No. B-2360-1, C, 1979, Zimmer USA, Inc.

Primary Examiner—Richard J. Apley

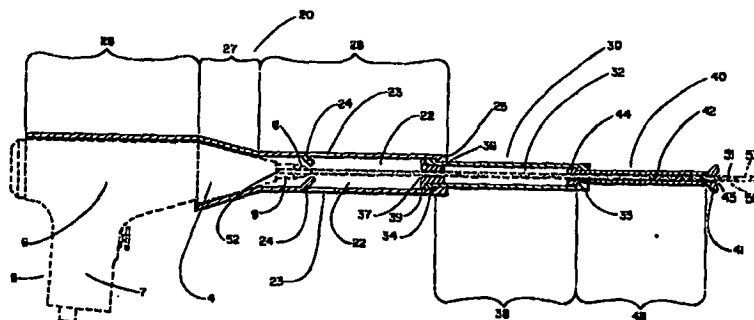
Assistant Examiner—David Isabella

Attorney, Agent, or Firm—Margaret L. Geringer

[57] ABSTRACT

A pin inserter sheath which consists of a plurality of telescoping tubular portions. The sheath is adapted for attachment to a drilling device. A channel extends throughout the elongated telescoping tubular portion which is substantially adapted to the shape of the pin being inserted. The conforming channel provides lateral support to the pin therefore minimizing inflections in the pin as it is being drilled.

5 Claims, 8 Drawing Figures



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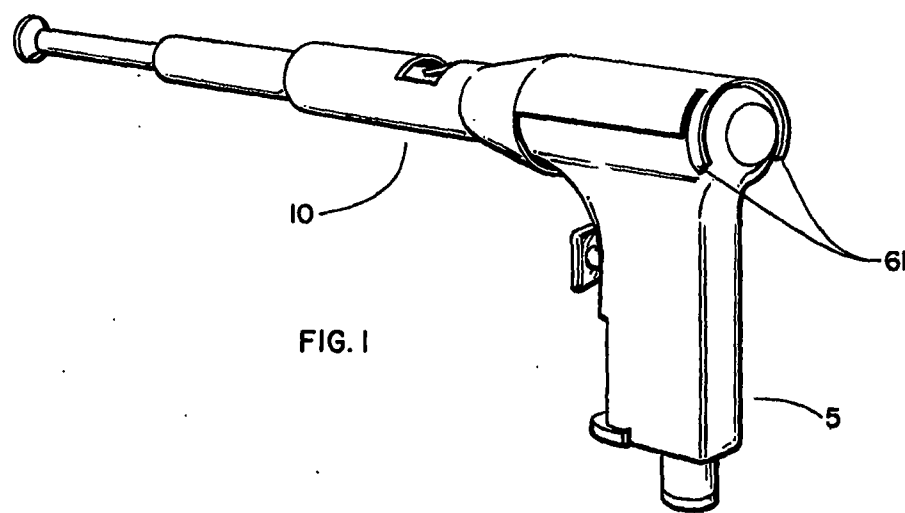


FIG. 1

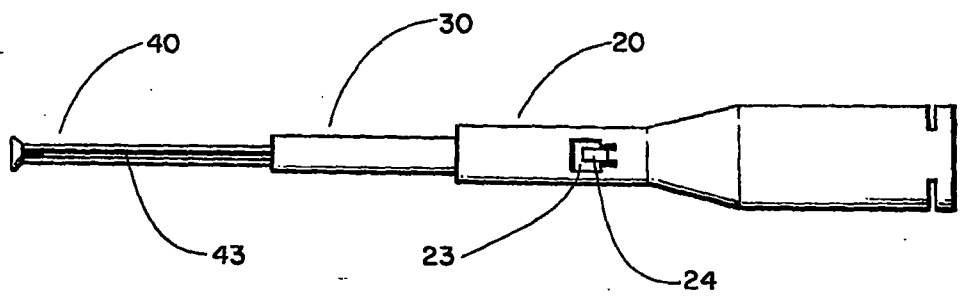


FIG. 2

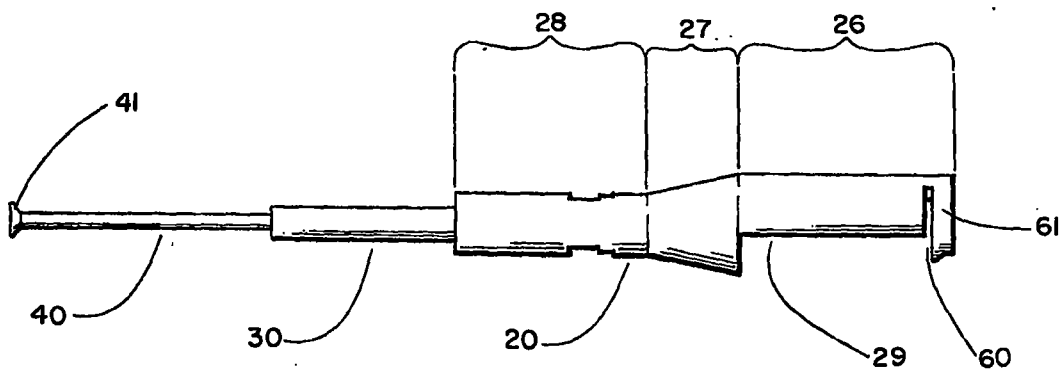


FIG. 3

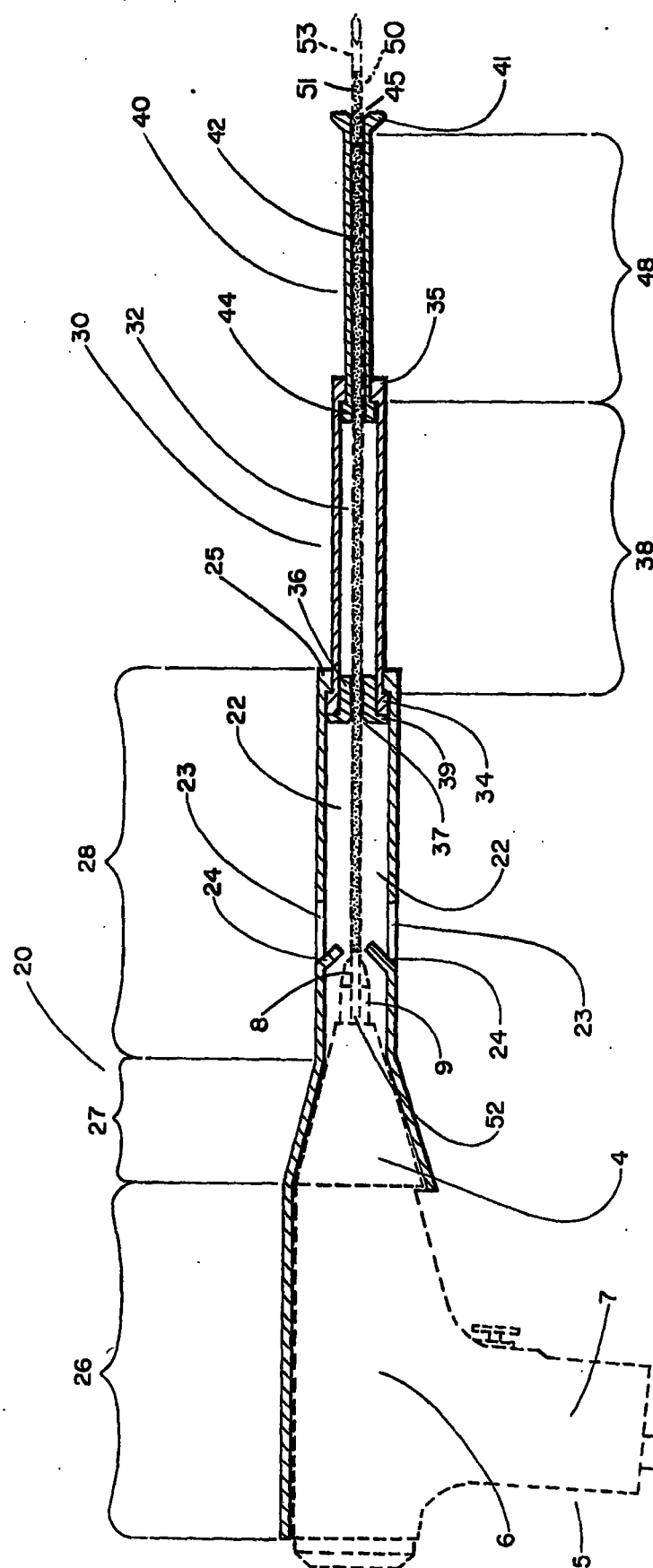


FIG. 8

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**SUPERINTENDENCIA DE INDUSTRIA Y COMERCIO
DIRECCION DE NUEVAS CREACIONES**

202086
Bogotá, D.C.,

Abogado
GERMAN CASTILLO GRAU

ASUNTO	Radicación	06-112086
	Trámite	011
	Evento	379
	Actuación	430
	Oficio	- - - 226
	Folios	16

Patente de Invención	☒	Patente de Modelo de Utilidad	☐
Vía Nacional	☐		
Vía PCT (fase nacional)	☒	Cap. I	☐ Cap. II ☒
No. Sol. Internacional	PCT/US2005/011478		
Fecha de Presentación Internal.	05-04-2005		

Como resultado del examen de fondo, realizado conforme a lo establecido por el artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le comunica:

1. Documentos estudiados

Descripción:	Folios: 7 a 28
Reivindicaciones:	Folios: 29 a 34
Dibujos:	Folios: 35 a 42
Prioridad:	Folios: 7 a 42
	06-04-2004. US10/820,080

2. Objeto de la invención

- Título de la solicitud: "HERRAMIENTA AJUSTABLE PARA ELEMENTOS DE SUJECION CANULADOS" (folio 7).
- Objeto de la invención: según el autor al instalar tornillos para huesos se necesitan instrumentos separados uno para perforar y otro para instalar el tornillo esto trae como consecuencia que algunos de estos tornillos cuando son pequeños se pierdan. Por lo tanto el solicitante propone un instrumento y un conjunto que permita al cirujano perforar e instalar al mismo tiempo un orificio para tornillo de hueso usando un mismo instrumento

- El objeto de esta invención se clasifico como A61B17/16; A61B17/56 según la Clasificación Internacional de Patentes (IPC.).

3. De la solicitud de Patente

3.1 Reivindicaciones (artículo 30 D 486)

Después de realizar el estudio completo de la solicitud, se hacen las siguientes observaciones a este capítulo:

- Se sugiere al solicitante incluir entre paréntesis () los números de referencia de cada uno de los elementos que hacen parte de la invención de acuerdo con la numeración empleada en los dibujos (figuras 1 a 12), con el fin de hacer mas fácil y sencilla la comprensión de la materia objeto reivindicada. Adicionalmente eliminar y no incluir términos imprecisos como. "al menos", "por lo menos", "alrededor" etc. También se sugiere al solicitante reemplazar el término "canulado" por un término adecuado y que defina claramente esta característica.
- La reivindicaciones que se refieren a un método para instalar un elemento de sujeción en el hueso (reivindicaciones 30 a 37, folios 33-34) se consideran un método terapéutico para el tratamiento humano o animal. Según el artículo 20 d) D486, este tipo de procedimientos no son patentables. Por lo tanto se sugiere al solicitante eliminar estas reivindicaciones.

4. Determinación del Estado de la Técnica

Teniendo en cuenta que la fecha de prioridad reivindicada es 06-04-2004, se encontraron los siguientes documentos relevantes:

N.	Documento	Titulo	Fecha de pub.
D1	US5255485	APPARATUS AND METHOD FOR INSTALLING ROOFING FASTENERS	26-10-1993
D2	US5868749	FIXATION DEVICES	09-02-1999
D3	US4549538	PIN INSERTER SHEAR	29-10-1985

5. Análisis de patentabilidad (artículo 14 D486)

5.1 Novedad (artículo 16 D486)

El estudio se realizo comparando elemento por elemento de la invención tal como esta definida en la reivindicación uno (1, folio 29) con el documento D1, encontrando que el mencionado documento revela todos los elementos y características de dicha reivindicación:

Reivindicación Uno (1, folio 29)	D1
1. Una herramienta ortopédica ajustable que comprende: una porción de vástago que tiene primero y segundo extremos y un eje longitudinal, una porción de ajuste y una porción receptora de elementos de sujeción, el cual primer extremo comprende una porción cortante configurada para perforar un orificio en hueso, y el segundo extremo está configurado para ser acoplado con una fuente de movimiento giratorio.	Ver: elementos 106, 132, 134, 130, figura 4.
2. Una porción de enganche de elementos de sujeción; y un mecanismo de ajuste montado sobre el vástago y configurado para permitirle al usuario variar una distancia entre la porción cortante y la porción de enganche de elementos de sujeción; en donde la porción receptora de elementos de sujeción está configurada para recibir por lo menos una porción de un elemento de sujeción canulado sobre ella.	Ver: elementos 102, 104, 116, figura 4.
3. La porción de enganche de elementos de sujeción está configurada para acoplar de forma giratoria la herramienta con una porción impulsora del elemento de sujeción canulado para transmitirle a ésta el movimiento giratorio; y el mecanismo de ajuste se puede desplazar selectivamente a lo largo del eje longitudinal del vástago para permitir que la herramienta acepte elementos de sujeción que tienen diferentes longitudes.	Ver: elementos 102, 104, 116, 106, figuras 4-5, columna 6 línea 47 a 68, columna 7 fila 1 a 2.

De acuerdo con lo anterior, todos los elementos y características que forman parte del "HERRAMIENTA AJUSTABLE PARA ELEMENTOS DE SUJECION CANULADOS" mostrados en la reivindicación independiente uno (1, folio 29), ya fueron divulgados en D1, por lo cual se podría considerar que carece de novedad. La reivindicación uno (1) esta formulada de manera muy general y no se está caracterizando adecuadamente los elementos.

Las reivindicaciones 1-11 (folios 29 a 30) no muestran en forma clara lo nuevo que se pretende aportar a la técnica ni aporta diferencias a lo ya existente. El análisis anterior permitiría afirmar que este grupo de reivindicaciones no cumplirían con lo estipulado en el artículo 16 de la Decisión 486 de la Comisión de la Comunidad Andina de Naciones.

Continuando con el estudio de novedad al comparar elemento por elemento de la invención tal como esta definida en la reivindicación doce (12, folios 30-31) con el documento D2, se encontró que el mencionado documento revela algunos de los elementos y características de dicha reivindicación:

Reivindicación Doce (12, folios 30-31)	D2
1. Un sistema de elementos de sujeción a hueso que comprende: por lo menos primero y segundo elementos de sujeción canulados.	Ver: elementos 10-50, figuras 1-6.
2. Por lo menos una herramienta ajustable que tiene primero y segundo extremos y una porción de ajuste, el cual el primer extremo comprende una porción cortante configurada para perforar un orificio en hueso.	NO El sistema de sujeción no viene con una herramienta de corte.
3. Y una porción del vástago configurada para ser recibida dentro de la canulación del por lo menos un tornillo canulado y por lo menos una placa de osteosíntesis que tiene por lo menos un orificio configurado para recibir el elemento de sujeción para fijar la placa al hueso.	Ver: elementos 10-50 , 16, 22, 44, 112, 122, figuras 1-6, figuras 28a-28c.

La diferencia entre la reivindicación independiente doce (12) y D2 radica en que se adiciona una herramienta con una porción cortante para perforar un orificio en el hueso (característica 2).

De la tabla anterior se puede deducir que la solicitud tal como fue definida en la reivindicación independiente doce sería nueva y que las reivindicaciones 12-29 cumplirían con lo estipulado en el artículo 16 de la Decisión 486 de la Comisión de la Comunidad

5.2 Nivel Inventivo (artículo 18 D486)

Continuando con el estudio, la reivindicación independiente doce define una herramienta con una porción cortante en un extremo para perforar un orificio en un hueso. Una herramienta de este tipo es revelada por D3 que sugiere y demuestra un dispositivo con un herramienta de corte utilizada para este tipo orificios (Ver en D3: elementos 10, 40, 50-53, figura 1, 8).

Así las cosas, la solicitud se vería afectada por nivel inventivo ya que no sería difícil para un experto en la materia tomar como base la invención propuesta por D2 utilizando una herramienta de corte como la sugerida por el documento D3 logrando formar un conjunto para fijar de forma adecuada el tornillo canulado y la placa al hueso. Hecho que no constituye un resultado sorprendente e inesperado y que por el contrario se ubica en el desarrollo normal de la tecnología. El análisis anterior permitiría afirmar que las reivindicaciones 12-29 no cumpliría con lo estipulado en el artículo 18 de la Decisión 486 de la Comisión de la Comunidad Andina de Naciones.

6. **Conclusión:**

Los requisitos de patentabilidad de la presente solicitud se encuentran afectados así:

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N°	Documento N°	Reivindicaciones afectadas	Requisito que afecta
D1	US5255485	1-11	NOVEDAD
D2	US5868749	12-29	NIVEL INVENTIVO
D3	US4549538	12-29	NIVEL INVENTIVO

En cumplimiento del artículo 45 de la Decisión 486 de la Comisión de la Comunidad Andina, se le indica que debe dar respuesta dentro del término de sesenta (60) días contados a partir de la fecha de notificación de la presente comunicación. En caso de no dar respuesta al presente requerimiento, o si a pesar de la respuesta subsistieran los impedimentos para la concesión, se denegará la patente.

Notifíquese el presente oficio conforme a lo dispuesto en el numeral 5.2, literal e), del capítulo quinto del título primero de la Circular Única N° 10 de 2001.


JESUS FERNEL GARCIA GARCIA
Director de Nuevas Creaciones (e)

El anterior requerimiento fue notificado por fijación en lista, de fecha 08 ENE. 2011

CONCEPTO TÉCNICO No 3844	EXAMINADOR TÉCNICO Código No.202086
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