

#### Search history

Search [SP]: The present invention relates to a mechanical system (1), comprising a support (10), a wearing part (20) and a connecting device (30) between the wearing part (20) and the support thereof (10). The device (30) comprises an elastic sheath (40) provided with an internal cavity (47) and with an external wall (44) that is adjustable in a housing (14) of the support (10), and a pin (50) having an elongate body along a pin axis (X50). According to the invention, the device (30) also comprises a cam (60) provided with an external wall (63) that is adjustable in the internal cavity (47) of the sheath (40) and with an internal cavity (64) intended to receive the pin (50), and when the device (30) is positioned in the housing (14) of the support (10), the pin (50) and the cam (60) are able to rotate as one in the internal cavity (47) of the sheath (40), between an insertion configuration (A) of the pin (50) into the cam (60) and at least one locking configuration in which the pin (50) bears, radially with respect to the pin axis (X50), against the wearing part (20), while the cam (60) bears against the sheath (40) and deforms the external wall (44) thereof counter to the housing (14) of the support (10), thereby forming a coupling connection between the wearing part (20) and the support (10). (Results 546)

Search key (Results 722615)

2:

Search 1 and 2 (Results 13)

3:

1) Family number: 32394592 (US2005251147A)

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Title: OPEN WEDGE OSTEOTOMY SYSTEM AND SURGICAL METHOD

**Abstract:** Source: US2005251147A An osteotomy implant for supporting an open wedge osteotomy, the osteotomy implant comprising: a first component for disposition in a posterior portion of the open wedge osteotomy; a second component for disposition in an anterior portion of the open wedge osteotomy; and a connection device for selectively connecting the first component and the second component to one another.

#### Classifications:

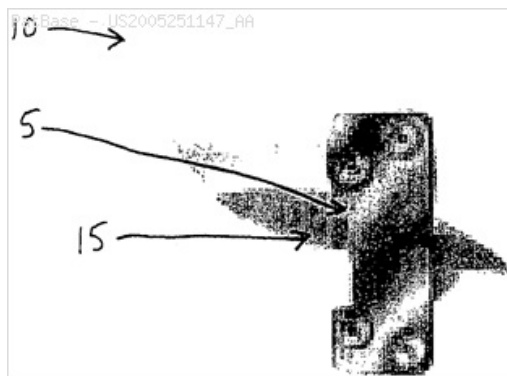
**International (IPC 8-9):** A61B17/00 A61B17/15 A61B17/16 A61B17/17 A61B17/29 A61B17/56 A61B17/58 A61B17/68 A61B17/70 A61B17/80 A61B17/86 A61B17/88 A61B18/18 A61B19/00 A61F2/00 A61F2/08 A61F2/28 A61F2/38 A61F2/44 A61F5/00 C22C27/04 (Advanced/Invention); A61B17/02 A61B17/14 A61B17/16 A61B17/17 A61B17/80 A61B19/00 A61F2/30 (Advanced/Non-invention); A61B17/00 A61B17/14 A61B17/56 A61B17/58 A61B17/68 A61B17/88 A61B18/18 A61B19/00 A61F2/00 A61F2/08 A61F2/28 A61F2/38 A61F2/44 A61F5/00 C22C27/00 (Core/Invention); A61B17/02 A61B17/16 A61B19/00 (Core/Non-invention)

**International (IPC 1-7):** A61F5/00

**CPC:** A61F2/389 A61B17/1666 A61B17/8066 A61B2017/00004 A61B17/8858 A61B17/86 A61B17/8872 A61B17/1728 A61B17/025 A61B17/1703 A61B17/1725 A61B2017/565 A61F2002/30535 A61F2250/0058 A61B2090/034 A61B2090/067 A61B2090/08021 A61B17/02 A61B17/8866 A61B17/15 A61B17/1675 A61B17/1732 A61B17/1764 A61B2017/1602 A61B17/1655 A61B17/8052 A61B17/809 A61B17/88 A61B17/1714 A61F2/0805 A61F2/0811 A61F2002/0829 A61F2002/0858 A61F2002/0864 A61F2002/0882 A61B17/8615 A61B17/862 A61B17/8695 A61B17/885 A61B2017/00464 A61B2017/8655 A61B17/1615 A61B17/68 A61F2002/30736 A61B17/152 A61B17/8095 A61B17/151 A61B90/03

**European:** A61B17/15 A61B17/15C A61B17/15C2 A61B17/16D2 A61B17/16S4 A61B17/16S8 A61B17/17F A61B17/17M A61B17/17Q A61B17/17S A61B17/68 A61B17/80F A61B17/80H2 A61B17/80S A61B17/86A2C A61B17/86A2P A61B17/88 A61B17/88C A61B17/88H A61B17/88S A61F2/08F K61B17/00A K61B17/00H2 K61B17/02 K61B17/02J K61B17/15C2 K61B17/16A K61B17/16N K61B17/16Q K61B17/16S2C K61B17/16S8 K61B17/17B K61B17/17M K61B17/17Q K61B17/56M1 K61B17/80S K61B17/86L K61B17/86W K61B19/30 K61B19/30F2 K61B19/46J K61F2/08D K61F2/08F11B K61F2/08F3A2 K61F2/08F7E K61F2/08F7H K61F2/30A3W K61F2/30B6A K61F250/00W

**US:** 1/1 128/898 128/898S 606/279 606/280 606/286 606/301 606/301S 606/79 606/79P 606/86 606/86.00RS 606/86R 606/87 606/87P 606/87S 606/88 606/88P 606/90 606/96 606/96S 623/13.11 623/13.110S 623/13.14 623/13.140S 623/17.11 623/17.110P 623/20.32 623/20.320P



#### Family:

| Publication number | Publication date | Application number | Application date |
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| US20140530139  | 20141031 |                |          |                |          |

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ATTN MARK J PANDISCIO; MARK J PANDISCO PANDISCO AND PANDISCO PC; DICKSTEIN SHAPIRO  
LLP; SLEZAK MARGARET M; PANDISCIO MARK J

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU  
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SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN YU ZA ZM ZW

## 2) Family number: 33897460 (US2006271056A)

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**Title:** SYSTEM AND METHOD FOR MODULAR NAVIGATED OSTEOTOME

**Abstract:** Source: US2006271056A An osteotome instrument for use in computer assisted surgery is disclosed. The instrument includes a shaft, a connector, a handle, and a cutter component. The handle has a proximal end portion and a distal end portion. The cutter component is connected to the handle at the distal end portion. The connector is releasably connected to the handle at the proximal end portion, and the connector is adapted to rotate about the shaft relative to the handle. A fiducial for tracking is connected to the connector.

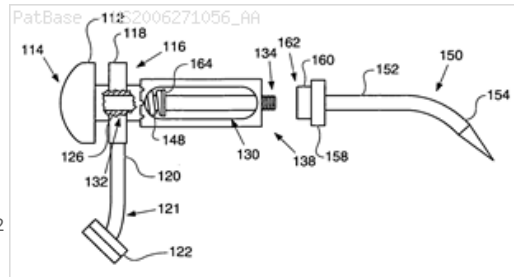
### Classifications:

**International (IPC 8-9):** A61B17/00 (Advanced/Invention);  
A61B17/00 (Core/Invention)

**CPC:** A61B34/20 A61B34/25 A61B90/39 A61B2034/102  
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**European:** A61B17/02J A61B17/16 A61B17/16S8 A61B17/17B  
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K61B19/52H12B6 K61B19/52H12D K61B19/54 K61B19/56  
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**US:** 606/84 606/84P



### Family:

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|--------------------|------------------|--------------------|------------------|
| US2006271056 AA    | 20061130         | US20060431467      | 20060510         |

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**Inventor(s):** CULLEY PATRICK

**Agent(s):** CHIEF PATENT COUNSEL SMITH AND NEPHEW INC

## 3) Family number: 43941789 (US2007118136A)

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**Title:** TIBIAL RESURFACING SYSTEM

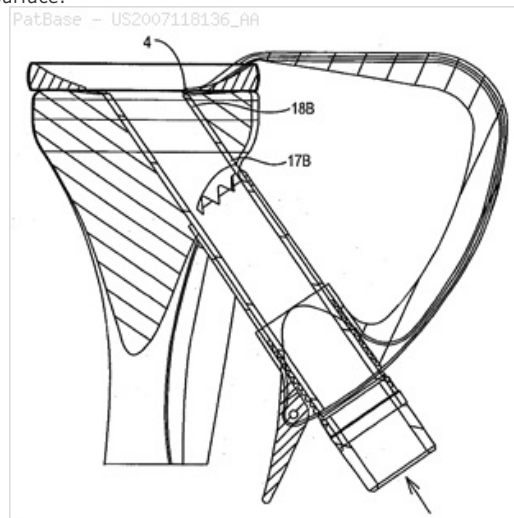
**Abstract:** Source: US2007118136A A tibial resurfacing system is provided that includes a drill guide, bone chisel and implant. In one aspect, the system includes a drill guide that includes a targeting ring that is shaped to be placed on the superior tibial surface and a bore section that is connected to the ring to create an axis through the tibia to the superior tibial surface in the vicinity of the targeting ring. The drill guide permits a drill pin and/or drill to be advanced through the tibia to the superior tibial surface. In another aspect, a bone chisel is provided that includes an elongated tubular structure having a first end and a bone-cutting end, and the bone-cutting end is terminated in a transverse angle thereby creating an elliptical bone-cutting face. In another aspect, an implant is provided that includes an angled bearing element formed of a cylindrical member having a first end and a second end. The first end is formed at an angle that creates an elliptical face of the first end, and the first end defines a load-bearing surface of an articular surface.

### Classifications:

**International (IPC 8-9):** A61B17/16 A61B17/17 A61B17/56  
A61B17/90 A61F2/30 A61F2/38 A61L27/00 (Advanced/Invention);  
A61F2/00 (Advanced/Non-invention);  
A61B17/16 A61B17/56 A61B17/88 A61F2/30 A61F2/38  
A61L27/00 (Core/Invention);  
A61F2/00 (Core/Non-invention)

**CPC:** A61B17/1604 A61B17/1675 A61B17/1764 A61F2/30721  
A61F2/30749 A61F2/389 A61F2002/30354 A61F2002/30604  
A61F2002/3085 A61F2002/3895 A61F2220/0033

**European:** A61B17/16C A61B17/16S8 A61B17/17S8 A61F2/30B  
A61F2/30B10 A61F2/38T K61F2/00T1E K61F2/30A3T1E  
K61F2/30A3W32 K61F2/30L2Q K61F2/38U K61F220/00T1  
**US:** 606/80 606/80P 606/96 606/96S 623/908 623/908S



### Family:

| Publication number | Publication date | Application number | Application date |
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| US2007118136 AA | 20070524 | US20070623513 | 20070116 |
| US8523872 BB    | 20130903 | US20070623513 | 20070116 |

**Priority:**

US20020308718 20021203 US20070623513 20070116

**Probable Assignee:** ARTHROSURFACE INC

**Assignee(s):** (std): ARTHROSURFACE INC ; EK STEVEN

**Inventor(s):** (std): EK STEVEN

**Agent(s):** GROSSMAN TUCKER PERREault AND PFLEGER PLLC

**4) Family number: 34501390 (US2007119504A)**

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**Title:** HEAT DISSIPATING APPARATUS FOR CYLINDERS OF INJECTION MOLDING MACHINES

**Abstract:** Source: US2007119504A A heat dissipating apparatus for cylinders of injection molding machines is disclosed. The heat dissipating apparatus includes a piston having a valve pin locking hole installed in a cylinder. A valve pin is coupled to the pin locking hole of the piston, with a piston bushing fitted around the upper end of the valve pin, a slide ring fitted around the valve pin at a position above the piston bushing, and a locking ring mounted to the pin locking hole at a position below the piston bushing. An outside guide bushing is installed between a cylinder housing and a manifold, with both a protrusion and a groove formed on the lower surface of the outside guide bushing. An inside guide bushing is installed in the outside guide bushing and inserted into a locking hole of the cylinder housing.

**Classifications:**

**International (IPC 8-9):** B29C45/17 B29C45/18 B29C45/23 B29C45/26 B29C45/28 B29C45/72 B29C45/76 B29C45/80 F16K49/00 (Advanced/Invention);

B29C45/18 B29C45/23 B29C45/26 B29C45/72

B29C45/80 (Advanced/Non-invention);

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B29C45/80 F16K49/00 (Core/Invention)

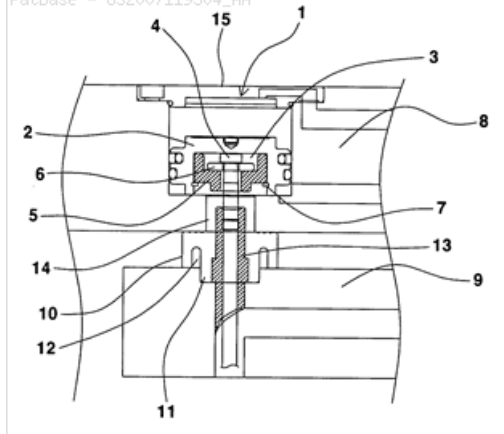
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B29C2045/2848 B29C2045/2889

**European:** B29C45/28C B29C45/28C2 L29C45/28C15 L29C45/28C3 L29C45/76

**US:** 137/338 425/562 425/562P

PatBase - US2007119504\_AA



**Family:**

| Publication number | Publication date | Application number | Application date |
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| CN1974172 A        | 20070606         | CN200610079864     | 20060515         |
| CN1974172 B        | 20100526         | CN200610079864     | 20060515         |
| CN1974179 A        | 20070606         | CN200610081847     | 20060512         |
| DE602006025798 D1  | 20120126         | DE200660025798T    | 20060505         |
| EP1790455 A2       | 20070530         | EP20060009353      | 20060505         |
| EP1790455 A3       | 20080220         | EP20060009353      | 20060505         |
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| EP1790456 A2       | 20070530         | EP20060009354      | 20060505         |
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| JP2007144982 A2    | 20070614         | JP20060135676      | 20060515         |
| JP4436812 B2       | 20100324         | JP20060135672      | 20060515         |
| KR100855933 B1     | 20080902         | KR20060118410      | 20061128         |
| KR100877910 B1     | 20090113         | KR20060118391      | 20061128         |
| KR20070055987 A    | 20070531         | KR20060118391      | 20061128         |
| KR20070056996 A    | 20070604         | KR20060118410      | 20061128         |
| US2007119504 AA    | 20070531         | US20060414490      | 20060428         |
| US2007122519 AA    | 20070531         | US20060413509      | 20060428         |

**Priority:**

EP20060009353 20060505 KR20050114097 20051128 US20060413509 20060428  
KR20050114817 20051129

**Probable Assignee:** YUDO CO LTD

**Assignee(s):** (std): YUDO CO LTD

**Assignee(s):** YUDO CO LTD HWASEUNG ; YUDO CO

**Inventor(s):** (std): HEE YU YOUNG ; YOUNG HEE YU ; YU YOUNG HEE

**Agent(s):** KRAUS AND WEISERT PATENTANWALTE PARTGMBB; BANZER HANS JOERG ET AL; BANZER HANS JOERG; PARK LAW FIRM

**Designated states:** AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK NL PL PT RO SE SI SK TR YU

**5) Family number: 38524553 (US2007233140A)**

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**Title:** FEMORAL ADJUSTMENT DEVICE AND ASSOCIATED METHOD

**Abstract:** Source: US2007233140A A femoral adjustment device to balance a flexion gap. The device includes a body attachable to a distal femur, the body having a cutting guide and an adjustment mechanism operable to balance the flexion gap, wherein upon balancing the flexion gap, the cutting guide is operable to guide at least one cut in the distal femur.

**Classifications:**

**International (ipc 8-9):** A01N43/54 A61B17/00 A61B17/15 A61B17/16 A61B17/17 A61B17/56 A61B17/58 A61B17/60 A61B17/68 A61B17/74 A61B17/80 A61B17/84 A61B17/88 A61B17/90 A61B19/00 A61B34/10 A61B34/20 A61B5/05 A61B5/055 A61B5/103 A61B6/03 A61B90/00 A61F2/00 A61F2/02 A61F2/08 A61F2/28 A61F2/30 A61F2/32 A61F2/34 A61F2/36 A61F2/38 A61F2/46 A61F2/76 A61F5/00 A61K31/4545 A61K31/517 A61K31/519 A61K45/00 A61K45/06 A61P35/00 A61P43/00 B23B47/28 B23B49/00 B23P11/00 B23P13/04 B23P17/04 C07D239/72 C07D239/91 C07D239/93 C07D239/95 C07D495/04 C07D495/14 G01C1/00 G06F17/50 G06F19/00 G06F21/41 G06F21/44 G06K9/00 G06Q10/00 G06Q30/00 G06Q50/00 H04L29/06 H04L29/08 H04L9/00 (Advanced/Invention); A61B17/00 A61B17/14 A61B17/15 A61B17/16 A61B17/22 A61B17/56 A61B17/68 A61B17/80 A61B17/92 A61B19/00 A61B34/00 A61B6/00 A61B6/12 A61F2/30 A61F2/34 A61F2/36 A61F2/38 A61F2/46 (Advanced/Non-invention); A61B17/00 A61B17/14 A61B17/16 A61B17/58 A61B17/68 A61B17/88 A61B19/00 A61B5/055 A61B5/103 A61F2/02 A61F2/28 A61F2/30 A61F2/38 A61F2/46 A61F2/50 A61F5/00 G01C1/00 G06F17/50 G06F19/00 G06Q30/00 G06Q50/00 H04L9/00 (Core/Invention); A61B19/00 A61B6/00 A61B6/12 (Core/Non-invention)

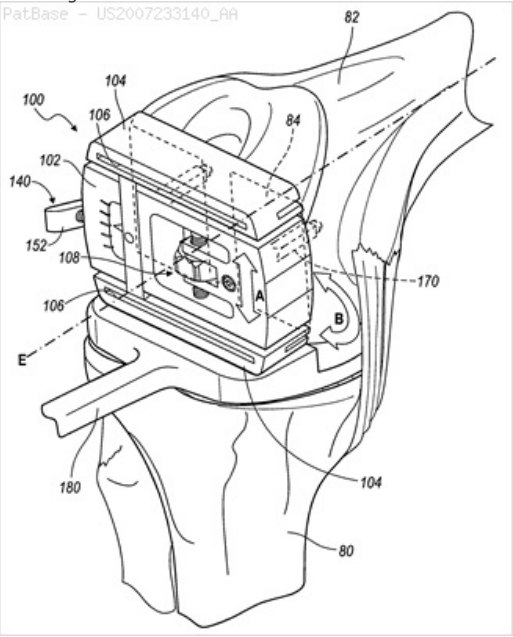
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**European:** A61B17/15 A61B17/15C A61B17/15C2 A61B17/15K A61B17/15K2 A61B17/15K4 A61B17/16R A61B17/16S2C A61B17/17R A61B17/17S A61B17/17S2C A61B17/17S2F A61B17/17S4 A61B17/17S8 A61B17/80S A61B19/50 A61B5/107A A61F2/30C A61F2/30M2 A61F2/36A A61F2/36A1 A61F2/38 A61F2/38F A61F2/38K A61F2/38M A61F2/38T A61F2/46B5 A61F2/46M G06F19/32A G06F19/34A G06F19/34H G06F19/34N G06F21/33A G06Q30/0601 G06Q50/22 G06Q50/24 K61B17/00E K61B17/00M K61B17/00S25M K61B17/02J4 K61B17/14B K61B17/15C K61B17/15K2 K61B17/15K4 K61B17/16D2B K61B17/16S2C K61B17/17P K61B17/17R K61B17/17S8 K61B17/22A K61B17/56S K61B17/68D K61B17/74D2 K61B17/80H K61B17/92M K61B19/20B2 K61B19/20D K61B19/30F2 K61B19/44B K61B19/44H K61B19/46D K61B19/46H K61B19/46J K61B19/50 K61B19/50B2 K61B19/50B4 K61B19/50F K61B19/54L K61B19/56B K61B5/055 K61B5/103 K61B5/45K K61B6/00 K61B6/12 K61F2/00 K61F2/00Y1 K61F2/30A1N4 K61F2/30A1N6 K61F2/30A2Y1 K61F2/30A3W12 K61F2/30A3W24 K61F2/30A3W32 K61F2/30A3W32S K61F2/30A3W34 K61F2/30A5Q K61F2/30A5R K61F2/30B6A K61F2/30L2S K61F2/30L2S3 K61F2/30L2S9P K61F2/30M2 K61F2/30M2B K61F2/30M2C K61F2/30M2D K61F2/30M2R K61F2/30M2S K61F2/34 K61F2/36A1 K61F2/38B K61F2/38F K61F2/38T K61F2/46D2 K61F2/46M2 K61F2/46M6 K61F2/46P K61F2/46T K61F2/46Y K61F230/00Y1 K61F250/00N12 K61F250/00N2 K61F250/00W80 K61F250/00W82 K61F250/00W99A K61F310/00A2F K61F310/00A4 K61F310/00A66C

**US:** 1/1 128/897 128/898 128/898S 29/428 29/428S 29/557 29/557S 29/592 29/592S 382/131 382/131S 408/241G 435/375 514/260.1 514/266.3 544/278 544/285 600/414 600/414P 600/416 600/416P 600/425 600/425S 606/1 606/102 606/104 606/130 606/130S 606/280 606/280P 606/79 606/79S 606/80 606/80P 606/80S 606/81 606/86.00R 606/86.00S 606/86R 606/87 606/87P 606/87S 606/88 606/88P 606/88S 606/89 606/89P 606/91 606/91P 606/91S 606/96 606/96P 606/96S 606/99 623/14.12 623/14.120P 623/16.11 623/16.110S 623/18.11 623/18.110S 623/20.11 623/20.14 623/20.21 623/20.32 623/20.320P 623/20.320S 623/20.33 623/20.35 623/20.350P 623/20.350S 623/20.36 623/20.360P 623/22.11 623/22.12 623/22.15 623/22.150P 623/22.21 623/22.210S 623/22.23 623/22.24 623/23.11 623/23.15 623/23.35 623/901 703/1 703/1S 705/2 705/26 705/26.1 705/26.100S 705/26S 705/2P 705/3 705/3S 709/227 709/229 713/171 713/171P 726/8

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| Publication number | Publication date | Application number | Application date |
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| US2013066323 AA | 20130314 | US20120674531  | 20121112 |
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#### Priority:

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| US20110041883  | 20110307 | US20110041495  | 20110307 | US20120400652  | 20120221 |
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| WO2013US26875  | 20130220 | US20140327234  | 20140709 | US20140297425  | 20140605 |
| WO2009IB06076  | 20090529 | US20140483214  | 20140911 | US20150684936  | 20150413 |
| US20150658429  | 20150316 | US20150812583  | 20150729 | US20150739160  | 20150615 |
| US20150865762  | 20150925 | US20150798809  | 20150714 | US20150973057  | 20151217 |
| US20150983077  | 20151229 | US20160008528  | 20160128 | US20160093384  | 20160407 |
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| US20160352721  | 20161116 | WO2015US39561  | 20150708 |                |          |

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**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT LU QO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**Abstract:** Source: US200819953A An actuator for a hot runner has a piston and a valve pin holder threadably connected to the piston. The piston can be translated by fluid pressure and rotated by an electric motor. The valve pin holder is rotationally fixed, and therefore moves along the thread when the piston is rotated. A valve pin connected to the valve pin holder moves in response to fluid pressure and also in response to the electric motor rotating the piston.

**International (IPC 8-9):** B29C45/13 B29C45/23 B29C45/27  
B29C45/28 F15B15/02 F16H25/20 H02K7/06 (Advanced/Invention);  
F15B15/02 F16H25/20 H02K7/06 (Advanced/Non-invention);  
B29C45/03 (Core/Invention)

**European:** B29C45/28C2 L29C45/16B L29C45/17Z7B L29C45/27B2  
L29C45/28C11 L29C45/28C2C L29C45/28C2D

| Publication number | Publication date | Application number | Application date |
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| AT482068 E         | 20101015         | AT20080002955T     | 20080218         |
| CA2621814 AA       | 20080821         | CA20082621814      | 20080220         |
| CA2621814 C        | 20150922         | CA20082621814      | 20080220         |
| CN101254643 A      | 20080903         | CN200810092004     | 20080221         |
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| EP1961549 B1       | 20100922         | EP20080002955      | 20080218         |
| US2008199553 AA    | 20080821         | US20080034323      | 20080220         |
| US7686603 BB       | 20100330         | US20080034323      | 20080220         |

**Designated states:** AL AT BA BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL  
PT RO RS SE SI SK TR

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electric apparatus with a dual-driving function, a plasticizing unit, an injection unit, an injection carriage, a guide frame, and a base, wherein the electric apparatus with a dual-driving function is connected with the plasticizing unit and the injection unit, the guide frame is connected with the electric apparatus with a dual-driving function and the injection unit, and the electric apparatus with a dual-driving function, the plasticizing unit, the injection unit, the injection carriage, and the guide frame are installed on the integral base. An injection molding method is realized using the system. The system has an obviously simplified and compact structure, thus reducing the manufacturing cost, lowering the energy consumption, obviously extending the service life of the motors and ball screws, and making easy to popularize. The system provides some new ideas and innovation for developing next generation of the electrically-driven injection molding machines.

#### Classifications:

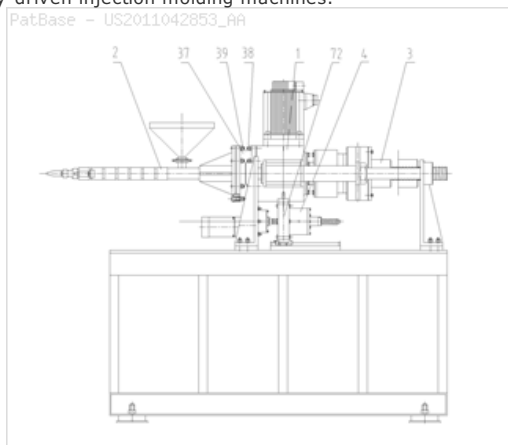
**International (IPC 8-9):** B29C45/03 B29C45/07 B29C45/17 B29C45/47 B29C45/48 B29C45/50 B29C45/76 (Advanced/Invention); B29C45/03 B29C45/17 B29C45/46 B29C45/76 (Core/Invention)

**CPC:** B29C2045/1792 B29C45/5008 B29C2045/5076

**European:** B29C45/50B L29C45/50B17

**US:** 264/328.1 264/328.100P 425/209 425/209S 425/542 425/542S 425/587 425/589

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#### Family:

| Publication number | Publication date | Application number | Application date |
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| WO09111992 A1      | 20090917         | WO2009CN70792      | 20090313         |

#### Priority:

CN200810026771 20080313 WO2009CN070792 20090313 WO2009CN70792 20090313

**Probable Assignee:** SOUTH CHINA UNIV OF TECHNOLOGY SCUT

**Assignee(s):** (std): HUANG HANXIONG ; LV BAIYUAN ; LV XIAOLONG ; SOUTH CHINA UNIV OF TECHNOLOGY ; UNIV SOUTH CHINA TECH

**Assignee(s):** SOUTH CHINA UNIVERSITY OF TECHNOLOGY SCUT ; SOUTH CHINA UNIV TECHNOLOGY ; SOUTH CHINA UNIV OF TECHNOLOGY SCUT ; SOUTH CHINA UNIV OF TECHNOLOGY (SCUT) ; SOUTH CHINA UNIVERSITY OF TECHNOLOGY

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**Inventor(s):** LU BAIYUAN ; LU XIAOLONG

**Agent(s):** CHAILLOT GENEVIEVE; SHOJI TAKASHI; SUKENOBU YURIKO; HUANG HANXIONG; GUANGZHOU HUAXUE INTELLECTUAL PROPERTY AGENCY CO LTD

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**8) Family number: 44665001** (US2010076564A)

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**Title:** TIBIAL TUBEROSITY ADVANCEMENT IMPLANT

**Abstract:** Source: US2010076564A A tibial tuberosity advancement implant with first and second arms pivotally joined at an apex. Tabs including anchor apertures extend from each arm for attachment of the arms in a traverse osteotomy tibia. A selection of various width keys are each insertable between the arms for setting the distance between the arms and the width of the osteotomy tibia.

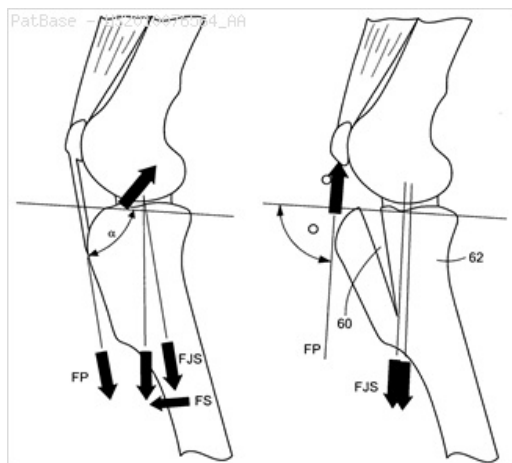
#### Classifications:

**International (IPC 8-9):** A61B17/58 A61F2/38 (Advanced/Invention); A61B17/58 A61F2/38 (Core/Invention)

**CPC:** A61B17/68

**European:** A61B17/68

**US:** 606/88 623/20.14



# Family:

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| US2010076564 AA    | 20100325         | US20080284483      | 20080923         |
| WO10036284 A1      | 20100401         | WO2009US00443      | 20090123         |

# Priority:

US20080284483 20080923

**Probable Assignee:** MWI VETERINARY SUPPLY CO

**Assignee(s):** (std): MWI VETERINARY SUPPLY CO ; SCHILLING ERIC M ; WOTTON HAROLD M ; WOTTON III HAROLD M

**Inventor(s):** (std): SCHILLING ERIC M ; WOTTON HAROLD M ; WOTTON III HAROLD M

**Agent(s):** JOSEPH S IANDIORIO; THOMPCKINS THOMAS E ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PG PH PL PT RO RS RU SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

## 9) Family number: 52109290 (US2012259338A)

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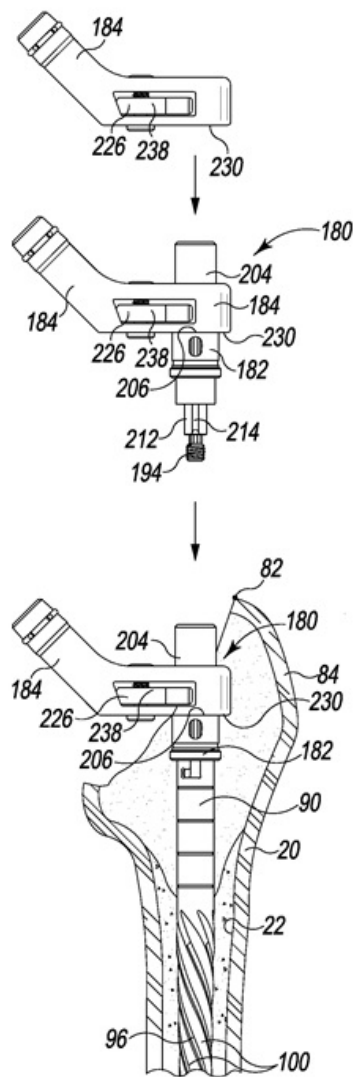
**Title:** DISTAL REAMER FOR USE DURING AN ORTHOPAEDIC SURGICAL PROCEDURE TO IMPLANT A REVISION HIP PROSTHESIS

**Abstract:** Source: US2012259338A A modular femoral prosthesis for use during performance of a hip revision procedure includes a proximal body component, a distal stem component, and a locking bolt. Surgical instruments and methods for use in implanting such a modular femoral prosthesis are disclosed.

### Classifications:

**International (IPC 8-9):** A61B17/00 A61B17/16 A61B17/56  
A61B17/58 A61B17/60 A61B17/72 A61B17/74 A61B17/88  
A61B17/90 A61B90/00 A61F2/00 A61F2/30 A61F2/32 A61F2/36  
A61F2/46 (Advanced/Invention);  
A61B17/00 A61B17/16 A61B19/00 A61B90/00 A61F2/30 A61F2/36  
A61F2/46 (Advanced/Non-invention)  
**CPC:** A61F202/30332 A61F2/30734 A61B17/1637 A61B17/164  
A61B17/1659 A61B17/1668 A61B2017/00464 A61F2/36 A61F2/3662  
A61F2/4607 A61F2/4637 A61F2/4657 A61F2/4684 A61F2002/30235  
A61F2002/30332 A61F2002/30507 A61F2002/30515 A61F2002/3054  
A61F2002/30616 A61F2002/30617 A61F2002/30738 A61F2002/3625  
A61F2002/3652 A61F2002/3674 A61F2002/4622 A61F2002/4627  
A61F2002/4629 A61F2002/4662 A61F2002/4668 A61F2002/4681  
A61B2090/062

**US:** 606/102 606/62 606/80 606/85 606/89 606/95 623/22.42  
623/22.46 623/23.11 623/23.23 623/23.31 623/23.33 623/23.35  
623/23.44

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AU2012240191 AA    | 20121011         | AU20120240191      | 20120405         |
| AU2012240191 BB    | 20160512         | AU20120240191      | 20120405         |
| CN103813764 A      | 20140521         | CN201280028040     | 20120405         |
| CN103813764 B      | 20170419         | CN201280028040     | 20120405         |
| DE602012020891 D1  | 20160901         | DE201260020891T    | 20120405         |
| DE602012024899 D1  | 20161215         | DE201260024899T    | 20120405         |
| DE602012028842 D1  | 20170330         | DE201260028842T    | 20120405         |
| DE602012029466 D1  | 20170413         | DE201260029466T    | 20120405         |
| DE602012029467 D1  | 20170413         | DE201260029467T    | 20120405         |
| DE602012030021 D1  | 20170427         | DE201260030021T    | 20120405         |
| EP2693988 A2       | 20140212         | EP20120768276      | 20120405         |
| EP2693988 A4       | 20140910         | EP20120768276      | 20120405         |
| EP2693988 B1       | 20161102         | EP20120768276      | 20120405         |
| EP2842519 A1       | 20150304         | EP20140189761      | 20120405         |
| EP2842519 B1       | 20170517         | EP20140189761      | 20120405         |
| EP2853240 A1       | 20150401         | EP20140189764      | 20120405         |
| EP2853240 B1       | 20170517         | EP20140189764      | 20120405         |
| EP2853241 A1       | 20150401         | EP20140189777      | 20120405         |
| EP2853241 B1       | 20170315         | EP20140189777      | 20120405         |
| EP2856974 A1       | 20150408         | EP20140189766      | 20120405         |
| EP2856974 B1       | 20170301         | EP20140189766      | 20120405         |
| EP2856975 A1       | 20150408         | EP20140189774      | 20120405         |
| EP2856975 B1       | 20170614         | EP20140189774      | 20120405         |
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| EP2856979 A1       | 20150408         | EP20140189769      | 20120405         |
| EP2856979 B1       | 20170301         | EP20140189769      | 20120405         |
| EP2859865 A1       | 20150415         | EP20140189771      | 20120405         |
| EP2859865 B1       | 20160720         | EP20140189771      | 20120405         |
| IN08495DN2013 A    | 20141219         | IN2013DN08495      | 20130930         |
| JP2014516613 T2    | 20140717         | JP20140503972T     | 20120405         |
| JP2015163213 A2    | 20150910         | JP20150084019      | 20150416         |

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| JP2015163214 A2 | 20150910 | JP20150084041  | 20150416 |
| JP2015163215 A2 | 20150910 | JP20150084079  | 20150416 |
| JP2015163216 A2 | 20150910 | JP20150084096  | 20150416 |
| JP2015163217 A2 | 20150910 | JP20150084108  | 20150416 |
| JP2016137254 A2 | 20160804 | JP20160034065  | 20160225 |
| JP2016209744 A2 | 20161215 | JP20160183943  | 20160921 |
| JP2017038949 A2 | 20170223 | JP20160201614  | 20161013 |
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| JP5894259 B2    | 20160323 | JP20140503972T | 20120405 |
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| JP6022633 B2    | 20161109 | JP20150084019  | 20150416 |
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| JP6027175 B2    | 20161116 | JP20150084079  | 20150416 |
| JP6081632 B2    | 20170215 | JP20160034065  | 20160225 |
| US2012259338 AA | 20121011 | US20120440406  | 20120405 |
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| US2012259423 AA | 20121011 | US20120440448  | 20120405 |
| US2012259424 AA | 20121011 | US20120440397  | 20120405 |
| US2013218290 AA | 20130822 | US20130804361  | 20130314 |
| US2014214172 AA | 20140731 | US20140231007  | 20140331 |
| US8696758 BB    | 20140415 | US20130804361  | 20130314 |
| US8702807 BB    | 20140422 | US20120440397  | 20120405 |
| US8900246 BB    | 20141202 | US20120440425  | 20120405 |
| US9504578 BB    | 20161129 | US20140231007  | 20140331 |
| US9597188 BB    | 20170321 | US20120440433  | 20120405 |
| WO12138824 A2   | 20121011 | WO2012US32260  | 20120405 |
| WO12138824 A3   | 20130404 | WO2012US32260  | 20120405 |

#### Priority:

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| EP20120768276 | 20120405 | EP20140189766  | 20120405 | EP20140189771  | 20120405 |
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| JP20140503972 | 20120405 | JP20140503972T | 20120405 | JP20150084019  | 20150416 |
| JP20150084041 | 20150416 | JP20150084079  | 20150416 | JP20150084096  | 20150416 |
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| US20120440425 | 20120405 | US20120440433  | 20120405 | US20120440430  | 20120405 |
| US20120440448 | 20120405 | US20130804361  | 20130314 | WO2012US32260  | 20120405 |
| US20140231007 | 20140331 | JP20150084108  | 20150416 | JP20160034065  | 20160225 |
| JP20160183943 | 20160921 | JP20160201614  | 20161013 | JP20160034065  | 20120405 |

**Probable Assignee:** DEPUY SYNTHES PRODUCTS LLC

**Assignee(s):** (std): CARR JONATHAN E ; DEPUY PRODUCTS INC ; FORTIN MICHAEL J ; GHEEVARUGHESE VINEETHA S ; HOOD MEGAN A ; FURBEE REBECCA M ; DEPUY SYNTHES PRODUCTS LLC ; MCCLEARY LARRY G ; MUHAMMAD WILLIAM ; SATTERTHWAITE RODNEY E ; LASHURE DANIEL E ; DEPUY SYNTHES PRODUCTS INC

**Assignee(s):** DEPUY SYNTHES PRODUCTS LLC RAYNHAM ; N A ; HAND INNOVATIONS LLC ; DEPUY SPINE LLC

**Inventor(s):** (std): DANIEL E LASHURE ; GHEEVARUGHESE VINEETHA S ; JONATHAN E CARR ; LARRY G MCCLEARY ; VINEETHA S GHEEVARUGHESE ; WILLIAM MUHAMMAD ; SATTERTHWAITE RODNEY E ; MUHAMMAD WILLIAM ; MCCLEARY LARRY G ; LASHURE DANIEL E ; HOOD MEGAN A ; FURBEE REBECCA M ; FORTIN MICHAEL J ; CARR JONATHAN E ; MEGAN A HOOD ; MICHAEL J FORTIN ; REBECCA M FURBEE ; RODNEY E SATTERTHWAITE

**Inventor(s):** SATTERTHWAITE RODNEY E WARSAW ; MUHAMMAD WILLIAM WARSAW ; CARR JONATHAN E WARSAW ; LASHURE DANIEL E WARSAW ; MCCLEARY LARRY G WARSAW ; GHEEVARUGHESE VINEETHA S WARSAW ; HOOD MEGAN A WARSAW ; FORTIN MICHAEL J WARSAW ; FURBEE REBECCA M WARSAW

**Agent(s):** CALLINANS ; FISHER ADAMS KELLY CALLINANS ; MUELLER BORE AND PARTNER PATENTANWALTE PARTG MBG ; BELCHER SIMON JAMES ; KATO MASANOBU ; BARNES AND THORNBURG LLP ; BARNES AND THORNBURG LLP ; BAUER SHAWN D

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

#### 10) Family number: 52578304 (US2014102658A)

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**Title:** SUCTION VALVE DEVICE FOR DISCHARGING GAS FROM A MOULD

**Abstract:** Source: US2014102658A The invention relates to a valve device for a pressure injection or die-casting machine, said device comprising a body (18) with a valve chamber (21) including a suction chamber and a control chamber, and a sliding valve (20) mounted in the valve chamber, said sliding valve comprising a first portion (34) with a valve head (44) that co-operates with a valve seat (22) on the body in order to open and close the valve and a second portion (35) comprising a piston (38) mounted in the control chamber (21a). The control chamber is connected to fluid control connections (26a, 26b) in order to exert a pressure on the piston (38) so as to control the opening and closing of the valve. The second valve portion and the first valve portion re aligned on the same axis in the direction of movement of the sliding valve and said first and second portions of the sliding valve can be separated from one another and secured to one another using a removable securing member (36, 36').

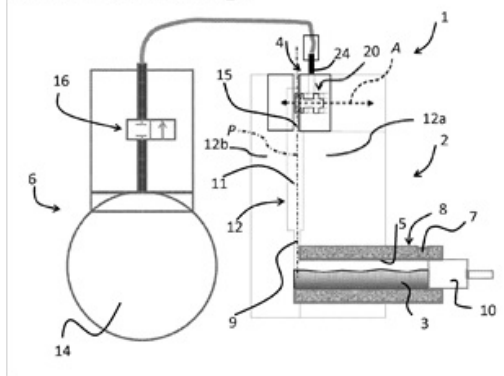
#### Classifications:

**International (IPC 8-9):** B22D17/14 F16K1/12 (Advanced/Invention)

**CPC:** B22D17/145 B22D17/14

**European:** B22D17/14 B22D17/14A

**US:** 1/1 164/253 164/312 164/61

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| CA2837528 AA       | 20131127         | CA20122837528      | 20120601         |
| CH705077 A1        | 20121214         | CH20110000978      | 20110609         |
| CH705077 B1        | 20160129         | CH20110000978      | 20110609         |
| CN103619510 A      | 20140305         | CN201280028404     | 20120601         |
| CN103619510 B      | 20160629         | CN201280028404     | 20120601         |
| DE602012025149 D1  | 20161222         | DE201260025149T    | 20120601         |
| EP2718044 A2       | 20140416         | EP20120735014      | 20120601         |
| EP2718044 B1       | 20161109         | EP20120735014      | 20120601         |
| ES2614473 T3       | 20170531         | ES20120735014T     | 20120601         |
| PL2718044 T3       | 20170428         | PL20120735014T     | 20120601         |
| TR201701340 T4     | 20170221         | TR20170001340T     | 20120601         |
| US2014102658 AA    | 20140417         | US20120123937      | 20120601         |
| US9050653 BB       | 20150609         | US20120123937      | 20120601         |
| WO12168841 A2      | 20121213         | WO20121B52781      | 20120601         |
| WO12168841 A3      | 20131024         | WO20121B52781      | 20120601         |

**Priority:**

CH20110000978 20110609 CH20110097811 20110609 WO20121B52781 20120601  
 EP20120735014 20120601

**Probable Assignee:** V D S VACUUM DIECASTING SERVICE S A

**Assignee(s):** (std): BAGNOUD CHRISTOPHE ; BIGGER RENE ; V D S VACUUM DIECASTING SERVICE S A ; V D S VACUUM DIECASTING SERVICE SA

**Assignee(s):** VDS VACUUM DIECASTING SERVICE SA ; VDS VACUUM DIECASTING SERVICE CHAILLY SA

**Inventor(s):** (std): BAGNOUD CHRISTOPHE ; BIGGER RENE

**Inventor(s):** CHRISTOPHE BAGNOUD ; RENE BIGGER

**Agent(s):** SMART AND BIGGAR; REUTELER AND CIE SA; LOPEZ MARIA EMILIA; MUESERREF AKYOL; PERKINS IP LAW GROUP LLC; JEFFERSON

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PE PG PH PL PT QA RO RS RU RW SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**11) Family number: 52843824** (US2015335439A)

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**Title:** CAGE ASSEMBLY FOR TIBIAL TUBEROSITY ADVANCEMENT PROCEDURE

**Abstract:** Source: US2015335439A A cage assembly for implanting between and securing together two portions of bone in a tibial tuberosity advancement includes an elongated cage body having a first end and a second end, and a securing member. The first end of the cage body and the securing member are engagable with each other so as to interlock in a manner that prevents the securing member from moving longitudinally away from the cage body. The securing member is arrangable, when interlocked with the cage body, such that it has a portion which extends laterally outwards beyond each opposing side of the cage body for use in attaching the securing member to the portions of bone. Different sizes of securing member may be engaged with the cage body. The cage assembly therefore provides a convenient and flexible approach to tibial tuberosity advancement procedures.

**Classifications:**

**International (IPC 8-9):** A61B17/68 A61B17/80

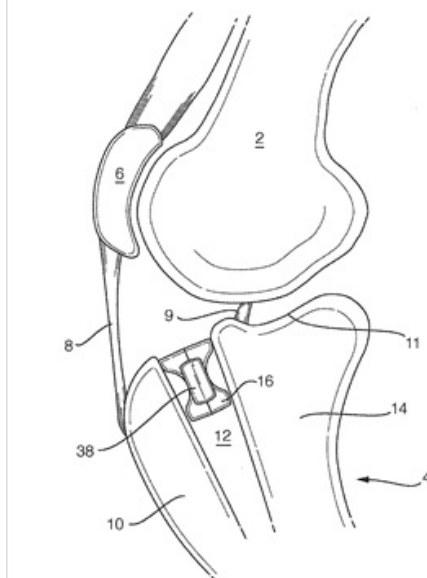
A61F2/38 (Advanced/Invention);

A61B17/56 A61B17/80 (Advanced/Non-invention)

**CPC:** A61B17/683 A61B17/8061 A61B2017/564 A61F2/389

A61B17/68 A61B17/8095

**US:** 623/20.32

**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| CA2891216 AA       | 20150511         | CA20132891216      | 20131111         |
| EP2919687 A1       | 20150923         | EP20130789894      | 20131111         |
| GB201220467 A0     | 20121226         | GB20120020467      | 20121114         |
| GB2507965 A1       | 20140521         | GB20120020467      | 20121114         |
| US2015335439 AA    | 20151126         | US20130442871      | 20131111         |
| WO14076464 A1      | 20140522         | WO2013GB52960      | 20131111         |

**Priority:**

GB20120020467 20121114 WO2013GB52960 20131111

**Probable Assignee:** UNITED BANK**Assignee(s):** (std): WOTTON HAROLD M III ; WOTTON III HAROLD M**Assignee(s):** WOTTON HAROLD M ; HAROLD M WOTTON III ; UNITED BANK**Inventor(s):** (std): WOTTON HAROLD M III ; WOTTON III HAROLD M**Inventor(s):** HAROLD M WOTTON III ; WOTTON HAROLD M**Agent(s):** RIDOUT AND MAYBEE LLP; CHIVA ANDREW PETER

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**12) Family number: 58799571 (US2016319520A)**

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**Title:** MECHANICAL SYSTEM COMPRISING A CONNECTING DEVICE BETWEEN A WEARING PART AND THE SUPPORT THEREOF, AND BUCKET OF A HEAVY CONSTRUCTION MACHINE

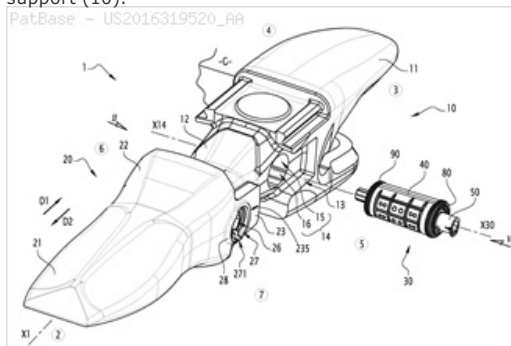
**Abstract:** Source: US2016319520A The present invention relates to a mechanical system (1), comprising a support (10), a wearing part (20) and a connecting device (30) between the wearing part (20) and the support thereof (10). The device (30) comprises an elastic sheath (40) provided with an internal cavity (47) and with an external wall (44) that is adjustable in a housing (14) of the support (10), and a pin (50) having an elongate body along a pin axis (X50). According to the invention, the device (30) also comprises a cam (60) provided with an external wall (63) that is adjustable in the internal cavity (47) of the sheath (40) and with an internal cavity (64) intended to receive the pin (50), and when the device (30) is positioned in the housing (14) of the support (10), the pin (50) and the cam (60) are able to rotate as one in the internal cavity (47) of the sheath (40), between an insertion configuration (A) of the pin (50) into the cam (60) and at least one locking configuration in which the pin (50) bears, radially with respect to the pin axis (X50), against the wearing part (20), while the cam (60) bears against the sheath (40) and deforms the external wall (44) thereof counter to the housing (14) of the support (10), thereby forming a coupling connection between the wearing part (20) and the support (10).

**Classifications:**

**International (IPC 8-9):** E02F3/14 E02F3/42 E02F9/28 F16B21/02 F16B39/282 (Advanced/Invention)

**CPC:** E02F9/2825 E02F9/2816 E02F3/42 E02F9/28 E02F9/2883 E02F9/2841

**US:** 37/457



**Family:**

| Publication number | Publication date | Application number | Application date |
|--------------------|------------------|--------------------|------------------|
| AR097716 AA        | 20160413         | AR2014P103494      | 20140919         |
| AU2014323143 AA    | 20150326         | AU20140323143      | 20140918         |
| CA2924223 AA       | 20160311         | CA20142924223      | 20140918         |
| CL2016000648 A1    | 20161104         | CL20160000648      | 20160318         |
| CN105723034 A      | 20160629         | CN201480051940     | 20140918         |
| CO16072121 A2      | 20160630         | CO20160072121      | 20160322         |
| EP3047074 A1       | 20160727         | EP20140766999      | 20140918         |
| FR3011013 A1       | 20150327         | FR20130059079      | 20130920         |
| FR3011013 B1       | 20151030         | FR20130059079      | 20130920         |
| IN201617008665 A   | 20160722         | IN201617008665     | 20160311         |
| JP2016530420 T2    | 20160929         | JP20160543396T     | 20140918         |
| KR20160056894 A    | 20160520         | KR20167007283      | 20140918         |
| MX2016003595 A1    | 20160819         | MX20160003595      | 20140918         |
| US2016319520 AA    | 20161103         | US20140023173      | 20140918         |
| WO15040101 A1      | 20150326         | WO2014EP69869      | 20140918         |

**Priority:**

FR20130059079 20130920 WO2014EP69869 20140918

**Probable Assignee:** SAFE METAL

**Assignee(s):** (std): SAFE METAL

**Assignee(s):** MARCHAND FABRICE

**Inventor(s):** (std): FABRICE MARCHAND ; MARCHAND FABRICE

**Agent(s):** DAVIES COLLISON CAVE; DAVIES COLLISON CAVE PTY LTD; ROBIC; PORZIO RIOS AND ASOCIADOS; JUAN PABLO CADENA SARMIENTO; MYON GERARD JEAN PIERRE; CABINET LAVOIX LYON; MYON GERARD ET AL

**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LI LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW

**13) Family number: 63933509 (WO16177807A1)**

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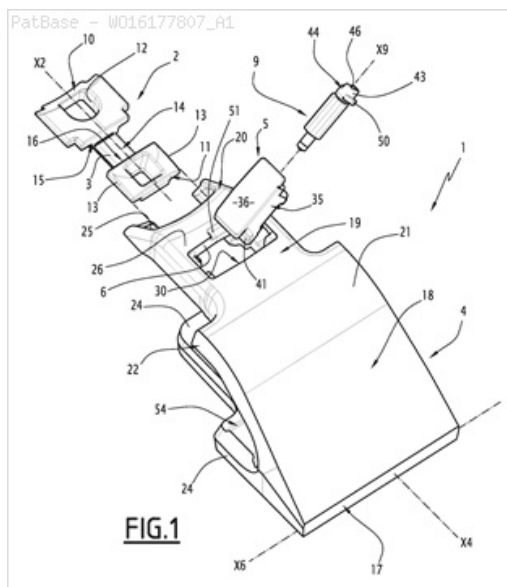
**Title:** DEVICE, SYSTEM AND METHOD FOR PROTECTING AN EDGE OF A BUCKET

**Abstract:** The invention relates to a device (1) for protecting an edge of a bucket comprising a rail (2) having a retaining notch (3), including a protective part (4) which is designed so as to be slipped onto the rail and which includes at least one locking abutment. Said protective device also includes a shim (5) which is designed to be mounted on the protective part so as to be inserted into the retaining notch in order to block the sliding of the protective part. Said protective device includes a locking key (9) which is movable relative to the shim (5), between a first angular position, in which it allows the installation and the removal of the shim in the window (6), and a second angular position, in which the key abuts against the locking abutment and thus prevents the removal of the shim.

**Classifications:**

**International (IPC 8-9):** E02F3/36 E02F9/28 (Advanced/Invention)

**CPC:** E02F9/2883

**Family:**

| Publication number | Publication date | Application number | Application date |
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| FR3035889 A1       | 20161111         | FR20150054024      | 20150505         |
| FR3035889 B1       | 20170616         | FR20150054024      | 20150505         |
| WO16177807 A1      | 20161110         | WO2016EP60051      | 20160504         |

**Priority:**

FR20150054024 20150505

**Probable Assignee:** SAFE METAL

**Assignee(s):** (std): SAFE METAL

**Inventor(s):** (std): MARCHAND FABRICE

**Inventor(s):** FABRICE MARCHAND  
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**Designated states:** AE AG AL AM AO AT AU AZ BA BB BE BF BG BH BJ BN BR BW BY BZ CA CF CG CH CI CL CM CN CO CR  
CU CY CZ DE DK DM DO DZ EC EE EG ES FI FR GA GB GD GE GH GM GN GQ GR GT GW HN HR HU ID  
IE IL IN IR IS IT JP KE KG KM KN KP KR KZ LA LC LK LR LS LT LU LV LY MA MC MD ME MG MK ML MN  
MR MT MW MX MY MZ NA NE NG NI NL NO NZ OM PA PE PG PH PL PT QA RO RS RU RW SA SC SD SE SG  
SI SK SL SM SN ST SV SY SZ TD TG TH TJ TM TN TR TT TZ UA UG US UZ VC VN ZA ZM ZW