



## Foreign Patents

Cam Followers		
Country	Patent No.	Title
DE	602017005404.6	CAM FOLLOWER WITH TIRE HAVING AXIAL MOVEMENT MITIGATION FEATURES
DE	602014022308-7	NEEDLE ROLLER CAM FOLLOWER FOR HIGHER MILEAGE APPLICATIONS OF LIGHT, MEDIUM AND HEAVY DUTY VEHICLES
DE	602016020661.7	ROLLER FOR A FUEL PUMP ACTUATOR
EP	3211257	CAM FOLLOWER WITH TIRE HAVING AXIAL MOVEMENT MITIGATION FEATURES
EP	2971624	NEEDLE ROLLER CAM FOLLOWER FOR HIGHER MILEAGE APPLICATIONS OF LIGHT, MEDIUM AND HEAVY DUTY VEHICLES
EP	3048293	ROLLER FOR A FUEL PUMP ACTUATOR
<b>Other Patents May Be Pending</b>		

Collets and Tool Holders		
Country	Patent No.	Title
AU	2012311558	ADJUSTABLE CLAMPING DEVICE
CH	2758199	ADJUSTABLE CLAMPING DEVICE
CH	3003614	Locking Mechanism for a Collet Assembly and Collet Assembly Including a Locking Mechanism
DE	602012043042-7	ADJUSTABLE CLAMPING DEVICE
DE	602013060015-5	Locking Mechanism for a Collet Assembly and Collet Assembly Including a Locking Mechanism
EP	2758199	ADJUSTABLE CLAMPING DEVICE
EP	3003614	Locking Mechanism for a Collet Assembly and Collet Assembly Including a Locking Mechanism
FR	2758199	ADJUSTABLE CLAMPING DEVICE
FR	3003614	Locking Mechanism for a Collet Assembly and Collet Assembly Including a Locking Mechanism
JP	6159331	ADJUSTABLE CLAMPING DEVICE
JP	6185158	Locking Mechanism for a Collet Assembly and Collet Assembly Including a Locking Mechanism
CN	216279948	FLEXIBLE ALIGNMENT SEALING COUPLING
CN	215922199	ELASTOMERIC BEARING FOR A SUSPENSION ASSEMBLY
CN	215845787	Flexible Collet Assembly with Limited Radial Stiffness
CN	216029409	A CLAMPING DEVICE FOR CLAMPING A TOOL OR WORK PIECE
<b>Other Patents May Be Pending</b>		

## Duct Couplings

Country	Patent No.	Title
DE	602004041494-8	Flexible Coupling for Gas Conduits
DE	602004022672.6	Spring-Loaded 'L'-Shaped Seal Ring
DE	602004041494-8	Offset Stacked Sealing System
EP	1631764	Flexible Coupling for Gas Conduits
EP	1639202	Spring-Loaded 'L'-Shaped Seal Ring
EP	2157340	Offset Stacked Sealing System
FR	1631764	Flexible Coupling for Gas Conduits
FR	1639202	Spring-Loaded 'L'-Shaped Seal Ring
FR	2157340	Offset Stacked Sealing System
GB	1631764	Flexible Coupling for Gas Conduits
GB	1639202	Spring-Loaded 'L'-Shaped Seal Ring
GB	2157340	Offset Stacked Sealing System
NL	1631764	Flexible Coupling for Gas Conduits
NL	2157340	Offset Stacked Sealing System

**Other Patents May Be Pending**

## Fasteners

Country	Patent No.	Title
DE	EP3591242	SLEEVES FOR INTERFERENCE FASTENERS

**Other Patents May Be Pending**

## Plain Journal Bearings

Country	Patent No.	Title
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**Other Patents May Be Pending**

## Plain Bearings

Country	Patent No.	Title
CN	106812789	SELF-LUBRICATED THRUST BEARING FOR A HINGED AIRCRAFT WING
DE	2977627	Self-Aligning Outer Race
DE	3173639	SELF-LUBRICATED THRUST BEARING FOR A HINGED AIRCRAFT WING
DE	3255292	BEARING SYSTEM WITH SELF-LUBRICATION FEATURES, SEALS, GROOVES AND SLOTS FOR MAINTENANCE-FREE OPERATION
EP	2977627	Self-Aligning Outer Race
EP	3173639	SELF-LUBRICATED THRUST BEARING FOR A HINGED AIRCRAFT WING
EP	3255292	BEARING SYSTEM WITH SELF-LUBRICATION FEATURES, SEALS, GROOVES AND SLOTS FOR MAINTENANCE-FREE OPERATION
FR	2977627	Self-Aligning Outer Race
DE	EP3747765	SELF-LUBRICATED ELECTRICALLY CONDUCTIVE BUSHING
GB	3255292	BEARING SYSTEM WITH SELF-LUBRICATION FEATURES, SEALS, GROOVES AND SLOTS FOR MAINTENANCE-FREE OPERATION

**Other Patents May Be Pending**

**Rods**

Country	Patent No.	Title
DE	2937579	COMPRESSION ROD HAVING A BUCKLING INITIATING FEATURE
DE	3176463	ROTATION ROD ASSEMBLY WITH SELF LUBRICATING LINER OR GROOVED BUSHINGS
EP	2937579	COMPRESSION ROD HAVING A BUCKLING INITIATING FEATURE
EP	3176463	ROTATION ROD ASSEMBLY WITH SELF LUBRICATING LINER OR GROOVED BUSHINGS

**Other Patents May Be Pending****Rolling Element Bearings**

Country	Patent No.	Title
CA	2856859	Top Drive Bearing Made of Non-Vacuum Arc Remelted Steel
DE	2844886	HYBRID BEARING ASSEMBLY WITH ROLLING ELEMENTS AND PLAIN BEARING
DE	2927115	Composite Annular Seal Assembly for Bearings in Aircraft
DE	602014009258-6	ROLLER PROFILE FOR HOURGLASS ROLLER BEARINGS IN AIRCRAFT
DE	2952758	CORROSION RESISTANT BEARING
DE	602015007527-7	PRONG CAGE FOR A DOUBLE-ROW CONCAVE ROLLER BEARING FOR THE SUPPORT STRUCTURE OF A FLAP AT THE REAR OF AN AIRCRAFT WING
DE	2957781	SUPPORT STRUCTURE OF A FLAP AT THE REAR OF AN AIRCRAFT WING WITH DOUBLE-ROW CONCAVE ROLLER BEARING
DE	3034899	Seal for Self Aligning Roller Bearing
EP	2 844 886	HYBRID BEARING ASSEMBLY WITH ROLLING ELEMENTS AND PLAIN BEARING
EP	2927115	Composite Annular Seal Assembly for Bearings in Aircraft
EP	2894359	ROLLER PROFILE FOR HOURGLASS ROLLER BEARINGS IN AIRCRAFT
EP	2952758	CORROSION RESISTANT BEARING
EP	2952760	PRONG CAGE FOR A DOUBLE-ROW CONCAVE ROLLER BEARING FOR THE SUPPORT STRUCTURE OF A FLAP AT THE REAR OF AN AIRCRAFT WING
EP	2957781	SUPPORT STRUCTURE OF A FLAP AT THE REAR OF AN AIRCRAFT WING WITH DOUBLE-ROW CONCAVE ROLLER BEARING
EP	3034899	Seal for Self Aligning Roller Bearing
KR	10-1677080	Composite Annular Seal Assembly for Bearings in Aircraft

**Other Patents May Be Pending**

## Self Lubricated Liners

Country	Patent No.	Title
CA	2725433	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
DE	2565243	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
DE	602009022952-4	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
DE	3001090	Self Lubricating Cam Follower Assembly
EP	2565243	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
EP	2285884	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
EP	3001090	Self Lubricating Cam Follower Assembly
GB	2285884	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
JP	5384619	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications

**Other Patents May Be Pending**

## Spherical Plain Bearings

Country	Patent No.	Title
CN	ZL 201280045772.6	LOW FRICTION SEAL FOR BEARINGS
CN	ZL201610185771.1	LOW FRICTION SEAL FOR BEARINGS
CN	201520145572.9	BOOT SEAL WITH SLIDING RING FOR SPHERICAL PLAIN BEARING
CN	ZL201380074587.4	Spherical Plain Bearing with Spring-Ball Configuration
CN	106170631	BEARING WITH ANCHOR MEMBER
CN	ZL201510645961.2	A VARIABLE FIXED INSTALLATION TORQUE BEARING
DE	602012010244-6	Spherical plain bearing and a housing in combination with a spherical plain bearing
DE	2923097	SPHERICAL PLAIN BEARING WITH LUBRICATION GROOVE
DE	602011020997.3	Spherical Plain Bearing with Constant Torque
DE	602011017931.4	COMBINATION SPLIT OUTER RING AND SEAL RETENTION METHOD FOR SPHERICAL PLAIN BEARINGS
DE	602012012079-7	Spherical bearing with sealing member, method of sealing a spherical bearing and steering assembly comprising said bearing
DE	2791518	SLOTTED BEARINGS WITH WEAR-RESISTANT TREATMENTS FOR GEARBOX MOUNTING IN A GEARED TURBOFAN ENGINE
DE	2831434	SUPPORT FOR A SPHERICAL BEARING
DE	202012013567	SUPPORT FOR A SPHERICAL BEARING
DE	602012014656.7	BOOT SEAL WITH SLIDING RING FOR SPHERICAL PLAIN BEARING
DE	2981723	Tabbed Washer for a Bearing Assembly
DE	3211254	Tabbed Washer for a Bearing Assembly
DE	602013016447-9	TWO STAGE SEAL FOR A BEARING ASSEMBLY
DE	2981724	SPHERICAL BEARING AND METHOD OF MAKING THE SAME
DE	2929198	TWO STAGE SEAL FOR A BEARING ASSEMBLY

## Spherical Plain Bearings (cont.)

Country	Patent No.	Title
DE	2964968	LINKAGE APPARATUS HAVING A LOW PROFILE ASYMMETRICAL HEAD
DE	602013017964-6	Spherical Plain Bearing with Spring-Ball Configuration
DE	2905486	Swaged Bearing Assembly with a Flange Mounted Thereon
DE	2930380	Bearing Assembly with Split Outer Ring Having Interference Fit Tabs and Method of Assembly of Bearing
DE	2905445	TURBOCHARGER WASTEGATE ACTUATOR HIGH TEMPERATURE ROD END WITH A SPHERICAL BEARING AND A METHOD FOR OPERATING THE ACTUATOR
DE	3066351	BEARING WITH ANCHOR MEMBER
DE	2975277	BEARING ASSEMBLY HAVING SURFACE PROTRUSIONS AND A SEAL
DE	602016000848-3	BEARING ASSEMBLY HAVING AN ANTI-ROTATION DEVICE
DE	3002472	A VARIABLE FIXED INSTALLATION TORQUE BEARING
DE	3006751	System for Isolating Electrical Current in a Bearing for Use in an Aircraft Structure
DE	3034897	SPHERICAL BEARING WITH ANNULAR SEAL HAVING AN AUXILIARY SEAL LEG EXTENDING THEREFROM
DE	3324082	Elastomeric Seal Having Impact Protecting Protrusions
DE	3450779	ARRANGEMENT FOR MAINTAINING A POSITION OF A SPRING-BALL ON A SHAFT
EP	2631501	Spherical plain bearing and a housing in combination with a spherical plain bearing
EP	2923097	SPHERICAL PLAIN BEARING WITH LUBRICATION GROOVE
EP	2640986	COMBINATION SPLIT OUTER RING AND SEAL RETENTION METHOD FOR SPHERICAL PLAIN BEARINGS
EP	2505858	Spherical bearing with sealing member, method of sealing a spherical bearing and steering assembly comprising said bearing
EP	2791518	SLOTTED BEARINGS WITH WEAR-RESISTANT TREATMENTS FOR GEARBOX MOUNTING IN A GEARED TURBOFAN ENGINE
EP	2831434	SUPPORT FOR A SPHERICAL BEARING
EP	2812590	BOOT SEAL WITH SLIDING RING FOR SPHERICAL PLAIN BEARING
EP	2981723	Tabbed Washer for a Bearing Assembly
EP	3211254	Tabbed Washer for a Bearing Assembly
EP	2981725	TWO STAGE SEAL FOR A BEARING ASSEMBLY
EP	2981724	SPHERICAL BEARING AND METHOD OF MAKING THE SAME
EP	2929198	TWO STAGE SEAL FOR A BEARING ASSEMBLY
EP	2964968	LINKAGE APPARATUS HAVING A LOW PROFILE ASYMMETRICAL HEAD
EP	2986862	Spherical Plain Bearing with Spring-Ball Configuration
EP	2905486	Swaged Bearing Assembly with a Flange Mounted Thereon
EP	2930380	Bearing Assembly with Split Outer Ring Having Interference Fit Tabs and Method of Assembly of Bearing
EP	2905445	TURBOCHARGER WASTEGATE ACTUATOR HIGH TEMPERATURE ROD END WITH A SPHERICAL BEARING AND A METHOD FOR OPERATING THE ACTUATOR

## Spherical Plain Bearings (cont.)

Country	Patent No.	Title
EP	3066351	BEARING WITH ANCHOR MEMBER
EP	2975277	BEARING ASSEMBLY HAVING SURFACE PROTRUSIONS AND A SEAL
EP	3070350	BEARING ASSEMBLY HAVING AN ANTI-ROTATION DEVICE
EP	3002472	A VARIABLE FIXED INSTALLATION TORQUE BEARING
EP	3006751	System for Isolating Electrical Current in a Bearing for Use in an Aircraft Structure
EP	3034897	SPHERICAL BEARING WITH ANNULAR SEAL HAVING AN AUXILIARY SEAL LEG EXTENDING THEREFROM
EP	3263927	Multiple Stage Seal for a Bearing Assembly
EP	3324082	Elastomeric Seal Having Impact Protecting Protrusions
EP	3450779	ARRANGEMENT FOR MAINTAINING A POSITION OF A SPRING-BALL ON A SHAFT
EP	4184027A1	SELF-LUBRICATING BEARING
ES	3070350	BEARING ASSEMBLY HAVING AN ANTI-ROTATION DEVICE
FR	2631501	Spherical plain bearing and a housing in combination with a spherical plain bearing
FR	2726750	Spherical Plain Bearing with Constant Torque
FR	2505858	Spherical bearing with sealing member, method of sealing a spherical bearing and steering assembly comprising said bearing
FR	2831434	SUPPORT FOR A SPHERICAL BEARING
FR	2812590	BOOT SEAL WITH SLIDING RING FOR SPHERICAL PLAIN BEARING
FR	3211254	Tabbed Washer for a Bearing Assembly
FR	2981724	SPHERICAL BEARING AND METHOD OF MAKING THE SAME
FR	2986862	Spherical Plain Bearing with Spring-Ball Configuration
FR	2905486	Swaged Bearing Assembly with a Flange Mounted Thereon
FR	2930380	Bearing Assembly with Split Outer Ring Having Interference Fit Tabs and Method of Assembly of Bearing
FR	3066351	BEARING WITH ANCHOR MEMBER
FR	3070350	BEARING ASSEMBLY HAVING AN ANTI-ROTATION DEVICE
FR	3002472	A VARIABLE FIXED INSTALLATION TORQUE BEARING
FR	3324082	Elastomeric Seal Having Impact Protecting Protrusions
FR	3450779	ARRANGEMENT FOR MAINTAINING A POSITION OF A SPRING-BALL ON A SHAFT
GB	2923097	SPHERICAL PLAIN BEARING WITH LUBRICATION GROOVE
GB	2452900	SPHERICAL PLAIN BEARING WITH LUBRICATION GROOVE
GB	2929198	TWO STAGE SEAL FOR A BEARING ASSEMBLY
GB	3263927	Multiple Stage Seal for a Bearing Assembly
GB	3324082	Elastomeric Seal Having Impact Protecting Protrusions

**Other Patents May Be Pending**

## Track Roller Bearings

Country	Patent No.	Title
CA	2643029	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
CN	2.0081E+11	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
DE	2934999	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
DE	2067696	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
DE	602015029734-2	SPLIT INNER OR OUTER RACE ROLLER BEARING WITH ROLLING ELEMENTS
EP	2934999	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
EP	2067696	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
EP	3176076	SPLIT INNER OR OUTER RACE ROLLER BEARING WITH ROLLING ELEMENTS
EP	3388702	A TWO PART SEAL FOR A TRACK ROLLER BEARING
JP	5162421	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
MX	317295	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN

**Other Patents May Be Pending**

## Mounted Bearing Accessory

Country	Patent No.	Title
EM	001095202-0001	Bearings
EM	001095202-0002	Bearings
EM	001095202-0003	Bearings
GB	90010952020003	Bearings

**Other Patents May Be Pending**

## Gearboxes

Country	Patent No.	Title
EP	3575609	System Having Machine and Fan with an Axial Flow Inducer
CN	303521179	Gearbox Housing
EM	002642819-0001	Gearbox Housing
GB	90026428190001	Gearbox Housing
JP	1547203	Gearbox Housing
EP	3576263	Machine and Gearbox System with Air Cooling
DE	3576263	Machine and Gearbox System with Air Cooling
IT	3576263	Machine and Gearbox System with Air Cooling
EP	3575639	Gearbox System with Add-On Cooling Fin Panels
DE	3575639	Gearbox System with Add-On Cooling Fin Panels
GB	3575639	Gearbox System with Add-On Cooling Fin Panels
IT	102019000018719	Convective Cooling Devices and Methods for Cooling Housings
CN	106662237	Vertical Gear Motor Planetary Gear Lubrication System
CN	106574703	Gear Box with Clutch Having Spring Engagement and Hydraulic Disengagement

**Other Patents May Be Pending**

## Sensors

Country	Patent No.	Title
CN	211553257	A Condition Monitoring Device and a System for the Condition Monitoring of Industrial Machinery
CN	216746212	OIL QUALITY SENSOR

**Other Patents May Be Pending**

## Couplings

Country	Patent No.	Title
CN	106030138	Winged Elastomeric Coupling with Minimized Separation Forces Between Elastomer and Clamp Ring
EP	3084247	Winged Elastomeric Coupling with Minimized Separation Forces Between Elastomer and Clamp Ring
DE	3084247	Winged Elastomeric Coupling with Minimized Separation Forces Between Elastomer and Clamp Ring
GB	3084247	Winged Elastomeric Coupling with Minimized Separation Forces Between Elastomer and Clamp Ring
KR	1879179	Winged Elastomeric Coupling with Minimized Separation Forces Between Elastomer and Clamp Ring

**Other Patents May Be Pending**



## Spherical Roller Bearings

Country	Patent No.	Title
CN	105190065	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
EP	2994656	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
DE	2994656	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
FR	2994656	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
IT	2994656	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
RO	2994656	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
SE	2994656	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
CN	104011439	Bearing Mounted Isolator Seal

**Other Patents May Be Pending**

## Mounted Bearings

Country	Patent No.	Title
CN	104662317	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
EP	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
CH	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
DE	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
FR	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
GB	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
IT	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
SE	2875247	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same

**Other Patents May Be Pending**

## Bearing Seals

Country	Patent No.	Title
CN	104011439	Bearing Mounted Isolator Seal
EP	2798246	Bearing Mounted Isolator Seal

**Other Patents May Be Pending**