



## US Patents

### Cam Followers

Country	Patent No.	Title
US	8991351	NEEDLE ROLLER CAM FOLLOWER FOR HIGHER MILEAGE APPLICATIONS OF LIGHT, MEDIUM AND HEAVY-DUTY VEHICLES
US	9835123	ROLLER FOR A FUEL PUMP ACTUATOR
US	10167896	TRIPLE ROW YOKE ROLLER ASSEMBLY
US	10274013	CAM FOLLOWER WITH TIRE HAVING AXIAL MOVEMENT MITIGATION FEATURES
US	10697493	CAM FOLLOWER WITH MULTIPLE ROWS OF INDEPENDENTLY OPERATING BEARINGS
US	10801546	BALL BEARING CAM FOLLOWER FOR AN ADJUSTABLE AIRCRAFT SEAT
US	11306807	MAINTENANCE FREE EXTENDED LIFE CAM FOLLOWER FOR A NECKER MACHINE
US	11674584	MAINTENANCE FREE EXTENDED LIFE CAM FOLLOWER FOR A NECKER MACHINE

Other Patents May Be Pending

### Collets and Tool Holders

Country	Patent No.	Title
US	9248508	ADJUSTABLE CLAMPING DEVICE
US	9999931	LOCKING MECHANISM FOR A COLLET ASSEMBLY AND COLLET ASSEMBLY INCLUDING A LOCKING MECHANISM
US	10639726	FLEXIBLE COUPLING FOR ATTACHING A COLLET TO A DRAW BAR
US	11033971	CLAMPING DEVICE FOR HOLDING A COLLET
US	11179783	QUICK CHANGEABLE COLLET CLAMPING ASSEMBLY
US	11583940	A CLAMPING DEVICE FOR CLAMPING A TOOL OR WORK PIECE

Other Patents May Be Pending

### Duct Couplings

Country	Patent No.	Title
US	6880863	Flexible Coupling for Gas Conduits
US	6905144	Spring-Loaded 'L'-Shaped Seal Ring
US	7,883,094	Offset Stacked Sealing System

Other Patents May Be Pending

### Fasteners

Country	Patent No.	Title
US	10882553	Kingpin Assembly with a Torque Receiving Configuration
US	11300147	SLEEVES FOR INTERFERENCE FASTENERS

Other Patents May Be Pending

## Hydraulics

Country	Patent No.	Title
US	11111936	Piston Assembly Having Reduced Extend Force and Reduced Displacement Volume
US	11697492	ROTOR BLADE LEAD-LAG HYDRAULIC DAMPER WITH CENTRIFUGAL FORCE COMPENSATING DAMPING CHARACTERISTICS

Other Patents May Be Pending

## Plain Bearings

Country	Patent No.	Title
US	6799895	CARTRIDGE-TYPE THRUST BEARING
US	8,764,034	STEERING AXLE ASSEMBLY WITH SELF-LUBRICATED BEARINGS
US	9856910	SELF-LUBRICATED THRUST BEARING FOR A HINGED AIRCRAFT WING
US	11353002	MULTI SEGMENT WIND TURBINE BLADE JOINT BUSHING

Other Patents May Be Pending

## Plain Journal Bearings

Country	Patent No.	Title
US	7828482	Tungsten Carbide Enhanced Bearing
US	8,038,351	SELF-LUBRICATED BEARING ASSEMBLY

Other Patents May Be Pending

## Rods

Country	Patent No.	Title
US	9841048	ROTATION ROD ASSEMBLY WITH SELF LUBRICATING LINER OR GROOVED BUSHINGS
US	9909613	COMPRESSION ROD HAVING A BUCKLING INITIATING FEATURE

Other Patents May Be Pending

## Rolling Element Bearings

Country	Patent No.	Title
US	8/29/2008	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
US	8,021,053	ROTARY WING AIRCRAFT BALL BEARING
US	8,104,779	BEARING FOR FOLLOWER OR CAM
US	8,132,964	BEARING FOR FOLLOWER OR CAM
US	8,215,845	TANDEM STACK ANGULAR CONTACT BEARING FOR ROTARY WING AIRCRAFT
US	8651810	Ball Bearing and Pump for Cryogenic Use
US	8690446	Thermally Stable Bearings
US	9033587	CAGE FOR A ROLLER BEARING AND A METHOD OF MANUFACTURING
US	9109623	INTEGRATED CARTRIDGE DOUBLE-ROW BALL BEARING FOR A NUCLEAR REACTOR CONTROL ROD DRIVE MECHANISM

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<b>Rolling Element Bearings - Continued</b>		
<b>Country</b>	<b>Patent No.</b>	<b>Title</b>
US	9,453,531	Integrated Bearing Assemblies for Guided Attack Rockets
US	9,561,845	SUPPORT STRUCTURE OF A FLAP AT THE REAR OF AN AIRCRAFT WING WITH DOUBLE-ROW CONCAVE ROLLER BEARING
US	9,695,875	TOP DRIVE BEARING FOR USE IN A TOP DRIVE SYSTEM, AND MADE OF NON-VACUUM ARC REMELTED STEEL CONFIGURED TO ACHIEVE AN EXTENDED LIFE CYCLE AT LEAST EQUIVALENT TO A LIFE FACTOR OF THREE FOR A VACUUM ARC REMELTED STEEL
US	9890814	PRONG CAGE FOR A DOUBLE-ROW CONCAVE ROLLER BEARING FOR THE SUPPORT STRUCTURE OF A FLAP AT THE REAR OF AN AIRCRAFT WING
US	10012265	CORROSION RESISTANT BEARING
US	10077808	ROLLER PROFILE FOR HOURGLASS ROLLER BEARINGS IN AIRCRAFT
US	10082179	Seal for Self Aligning Roller Bearing
US	10738825	NON-SEPARABLE TDI STYLE TAPERED ROLLER BEARING ASSEMBLY
US	10767688	A Bearing System For A Lightweight Vertical Articulating Motor Device Operating Across A Wide Temperature Range
US	10837488	A ROLLER BEARING ASSEMBLY FOR USE IN A FRACKING PUMP CRANK SHAFT
US	11149788	HYBRID BEARING ASSEMBLY WITH ROLLING ELEMENTS AND PLAIN BEARING
US	11274699	Double Row Needle Track Roller Bearing with a Thrust Load Carrying Ball Bearing
US	11306782	Cover Assembly for Bearing
US	11,555,520	Exterior mounted constrictive locking system to achieve enhanced sealing on tapered surfaces
US	11,603,887	Split splined clamping flange mechanism for torque transmission
US	11661969	Cover Assembly for Bearing
US	11668342	INTEGRATED STUD BALL BEARING WITH PRECISION MATCHED RACEWAY CONTACT ANGLES FOR CONSISTENT STIFFNESS OF GIMBAL ASSEMBLY
US	11835093	Threaded member shaft clamp collar for uniform shaft holding pressure
US	83879245/24/2011	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND ROLLER BEARINGS USED THEREIN
<b>Other Patents May Be Pending</b>		

Self Lubricated Liners		
Country	Patent No.	Title
US	8034865	Self-Lubricating Surface Coating Composition
US	8735481	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
US	8741996	Self-Lubricating Surface Coating Composition for Low Friction or Soft Substrate Applications
US	9919502	Method and Apparatus for Preparing a Surface for Bonding a Material Thereto
US	9982768	Self Lubricating Cam Follower Assembly
US	10161448	RAILWAY TRUCK HAVING A SELF-LUBRICATING COMPOSITE BEARING PAD DISPOSED THEREIN
US	11299654	Permanent, Self-Adhering, Self-Lubricating, Anti-Wear Composite System
US	11,619,266	A SELF LUBRICATING TITANIUM ALUMINIDE COMPOSITE MATERIAL
US	12215260	PERMANENT, SELF-ADHERING, SELF-LUBRICATING, ANTI-WEAR COMPOSITE SYSTEM
US	12297864	SELF LUBRICATING LINEAR GUIDE BUSHINGS FOR RECIPROCATING CANNING AND BOTTLING MACHINERY
Other Patents May Be Pending		
Spherical Plain Bearings		
Country	Patent No.	Title
US	8079607	SPHERICAL BEARING FOR A STEERING JOINT
US	8721184	SYSTEM AND METHOD FOR ASSEMBLING A SPHERICAL PLAIN BEARING
US	8,783,953	LOW FRICTION SEAL FOR BEARINGS
US	8,876,390	SLOTTED BEARINGS WITH WEAR-RESISTANT TREATMENTS FOR GEARBOX MOUNTING IN A GEARED TURBOFAN ENGINE
US	8,926,185	SPHERICAL PLAIN BEARING WITH LUBRICATION GROOVE
US	9,261,132	LOW FRICTION BEARING ASSEMBLY AND LINK APPARATUS
US	9316257	Spherical bearing with sealing member, method of sealing a spherical bearing and steering assembly comprising said bearing
US	9,371,861	Swaged Bearing Assembly with a Flange Mounted Thereon
US	9,702,411	Bearing Assembly with Split Outer Ring Having Interference Fit Tabs and Method of Assembly of Bearing
US	9829044	SPHERICAL BEARING WITH ANNULAR SEAL HAVING AN AUXILIARY SEAL LEG EXTENDING THEREFROM
US	9926972	SPHEROIDIAL JOINT FOR COLUMN SUPPORT IN A TUNED MASS DAMPER SYSTEM
US	9958011	BEARING ASSEMBLY HAVING SURFACE PROTRUSIONS AND A SEAL
US	10208658	TURBOCHARGER WASTEGATE ACTUATOR HIGH TEMPERATURE ROD END WITH A SPHERICAL BEARING AND A METHOD FOR OPERATING THE ACTUATOR
US	10393179	A VARIABLE FIXED INSTALLATION TORQUE BEARING
US	10487878	Multiple Stage Seal for a Bearing Assembly

## Spherical Plain Bearings (cont.)

Country	Patent No.	Title
US	10520012	A Rod End Having Wear Mitigation Features for an Augmenter Nozzle on a Jet Engine Turbine
US	10598219	BEARING AND SEALING ARRANGEMENT FOR A HAUL TRUCK ARTICULATED JOINT
US	10724575	HYBRID LINED TRUNNION BEARING FOR AIRCRAFT LANDING GEAR
US	10788073	Rapid Movement Loader Slot Bearing Suitable for Use on Munitions Deployment Structures
US	11009063	Solid Lubricated Viscous Damper End Bearing for Tuned Mass Damper Applications
US	11391323	Solid Lubricated Viscous Damper End Bearing for Tuned Mass Damper Applications
US	11441604	Rapid Movement Loader Slot Bearing Suitable for Use on Munitions Deployment Structures
US	11473626	BEARING SYSTEM WITH SELF-LUBRICATION FEATURES, SEALS, GROOVES AND SLOTS FOR MAINTENANCE-FREE OPERATION
US	11,549,552	Anti-Pull Out Ring
US	11560923	SELF-LUBRICATED ELECTRICALLY CONDUCTIVE BUSHING
US	11686343	SPHERICAL BEARING HAVING AN AXIALLY OFFSET INNER MEMBER
US	11686344	BEARING COMPONENT WITH INTERNAL LATTICE STRUCTURE
	11933354	Single Slot Loader Slot Bearing
US	11982313	SPHERICAL PLAIN BEARING WITH LUBRICATION FEATURES
US	12018641	MULTI SEGMENT WIND TURBINE BLADE JOINT BUSHING
US	12044204	MULTI SEGMENT WIND TURBINE BLADE JOINT BUSHING
US	12196258	Spherical Plain Bearing with Misalignment Limiter
US	9033585	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces
US	9062715	Spherical Roller Bearing Cage with Cylindrical Guidance Contact Surfaces

Other Patents May Be Pending

## Track Roller Bearings

Country	Patent No.	Title
US	8,851,755	SELF-ALIGNING TRACK ROLLER BEARING
US	10023302	ACTUATION SYSTEM FOR A LIFT ASSISTING DEVICE AND LINED TRACK ROLLERS USED THEREIN
US	10400818	TRACK ROLLER BEARINGS WITH ROLLING ELEMENTS OR LINERS
US	10443650	A TWO PART SEAL FOR A TRACK ROLLER BEARING

Other Patents May Be Pending

## Valves

Country	Patent No.	Title
US	11028928	Interflow Limiting Valve Assembly

Other Patents May Be Pending

## Couplings

Country	Patent No.	Title
US	8758149	Elastomeric Coupling Having Clamp Ring with Flanges Providing Torsional Stiffness Characteristics
US	9249837	Winged Elastomeric Coupling with Minimized Separation Forces Between Elastomer and Clamp Ring
US	9845830	Profiled Adjustment Nut
US	10228025	Sleeve Coupling with Flange Having Internal Tooth Design for Increasing Useful Life of Flexible Insert
US	10344816	Pressure Plate with Phase Change Material
US	11199228	GRID COUPLING SEAL AND METHOD
US	11226010	Flexible Sleeve Coupling Radial Tooth Support Cap and Method
US	11578764	Flexible Flywheel Coupling
US	11592065	GRID COUPLING SEAL AND METHOD
US	11661973	Flexible Reinforced Radial Spline Coupling and Method
US	12066064	Flexible Sleeve Coupling Radial Tooth Support Cap and Method
US	12158226	FLEXIBLE ALIGNMENT SEALING COUPLING

Other Patents May Be Pending

## Sensors

Country	Patent No.	Title
US	11414276	Pulley Wear Sensor System and Method
US	11599103	Method and System for Data Driven Machine Diagnostics
US	11982665	OIL QUALITY SENSOR

Other Patents May Be Pending

## Gearboxes

Country	Patent No.	Title
US	7207741	Bushing System for Power Transmission Products
US	7788786	Shaft Bearing Attachment System and Method
US	11227078	Method and System for Automated Gear Reducer Design
US	11287025	Cooling Units for Transmissions
US	D775251	Gearbox Housing

Other Patents May Be Pending

## Mounted Bearings

Country	Patent No.	Title
US	7866894	Hydraulically Positioned Shaft Bearing Attachment System and Method
US	7909516	Shaft Bearing Attachment System and Method
US	8061901	Extension Member for a Flinger of a Bearing

## Mounted Bearings - Continued

Country	Patent No.	Title
US	8151465	Hydraulically Positioned Shaft Bearing Attachment System and Method
US	8408808	Two-Piece Bearing Cage with Side Face Grease Carrying Cavities
US	8857061	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
US	9284979	Permanent Visual Indicator and Diametrical to Axial Relation Gage and Method of Using Same
US	9822818	Bearing Assembly with Combination Set Screw and Concentric Shaft Locking Mechanism
US	D690748	Bearing Cage

**Other Patents May Be Pending**

## Pulleys and Drive Components

Country	Patent No.	Title
US	11130639	Modular Pulley for Continuous Belt Conveyor System

**Other Patents May Be Pending**

## Circulating Oil Systems

Country	Patent No.	Title
US	7413054	Oil Circulation Retention System and Method
US	11408559	AUTOMATIC LUBRICATOR FOR LUBRICATING AN OBJECT
US	11512810	AUTOMATIC LUBRICATION SYSTEM FOR LUBRICATING AN OBJECT
US	11614200	AUTOMATIC LUBRICATOR FOR LUBRICATING AN OBJECT
US	11,619,345	AUTOMATIC LUBRICATOR FOR LUBRICATING AN OBJECT

**Other Patents May Be Pending**