

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT3072599

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|---|---|-----------------------|
| <b>SUBMISSION TYPE:</b>   | NEW ASSIGNMENT                              |                       |
| <b>NATURE OF CONVEYANCE:</b>  | PATENT SECURITY AGREEMENT                   |                       |
| <b>CONVEYING PARTY DATA</b>   |   |                       |
|   | <b>Name</b>                                 | <b>Execution Date</b> |
|   | THE MESH COMPANY, LLC                       | 10/20/2014            |
| <b>RECEIVING PARTY DATA</b>   |   |                       |
| <b>Name:</b>  | GOLDMAN SACHS BANK USA, AS COLLATERAL AGENT |                       |
| <b>Street Address:</b>  | 200 WEST STREET                             |                       |
| <b>City:</b>  | NEW YORK                                    |                       |
| <b>State/Country:</b>   | NEW YORK                                    |                       |
| <b>Postal Code:</b>   | 10282                                       |                       |
| <b>PROPERTY NUMBERS Total: 3</b>  |   |                       |
| <b>Property Type</b>  | <b>Number</b>                               |                       |
| <b>Patent Number:</b>   | 6186920                                     |                       |
| <b>Patent Number:</b>   | 6287229                                     |                       |
| <b>Patent Number:</b>   | 6623392                                     |                       |
| <b>CORRESPONDENCE DATA</b>  |   |                       |
| <b>Fax Number:</b>  | (714)755-8290                               |                       |
| <i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i> |   |                       |
| <b>Email:</b>   | ipdocket@lw.com, kristin.azcona@lw.com      |                       |
| <b>Correspondent Name:</b>  | LATHAM & WATKINS LLP                        |                       |
| <b>Address Line 1:</b>  | 650 TOWN CENTER DRIVE, 20TH FLOOR           |                       |
| <b>Address Line 4:</b>  | COSTA MESA, CALIFORNIA 92626                |                       |
| <b>NAME OF SUBMITTER:</b>   | KRISTIN J AZCONA                            |                       |
| <b>SIGNATURE:</b>   | /KJA/                                       |                       |
| <b>DATE SIGNED:</b>   | 10/20/2014                                  |                       |
| <b>Total Attachments: 17</b>  |   |                       |
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**PATENT SECURITY AGREEMENT**

**(Patents and Patent Licenses)**

PATENT SECURITY AGREEMENT, dated as of October 20, 2014, between **CLOYES GEAR AND PRODUCTS, INC.**, an Ohio corporation ("**Cloyes**"), **GREDE II LLC**, a Delaware limited liability company ("**Grede**"), **KYKLOS BEARING INTERNATIONAL, LLC**, a Delaware limited liability company ("**Kyklos**"), **THE MESH COMPANY, LLC**, an Arkansas limited liability company ("**Mesh**"), **METALDYNE, LLC**, a Delaware limited liability company ("**Metaldyne**"), and **METALDYNE BSM, LLC**, a Delaware limited liability company ("**BSM**") and together with Cloyes, Grede, Kyklos, Mesh and Metaldyne, each a "**Grantor**" and collectively, the "**Grantors**", and **GOLDMAN SACHS BANK USA**, as Collateral Agent.

WHEREAS, each Grantor owns, or in the case of Patent Licenses is a party to, the Patent Collateral (as defined below);

WHEREAS, MPG Holdco I Inc. (the "**Borrower**"), Metaldyne Performance Group Inc. ("**Holdings**"), certain Subsidiaries party thereto from time to time, the Lenders party thereto and Goldman Sachs Bank USA, as Collateral Agent and Administrative Agent, are parties to a Credit Agreement, dated as of the date hereof (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "**Credit Agreement**");

WHEREAS, pursuant to (i) a Security Agreement, dated as of the date hereof (as amended, restated, amended and restated, supplemented or otherwise modified from time to time, the "**Security Agreement**"), among the Borrower, the Guarantors party thereto and Goldman Sachs Bank USA, as Collateral Agent for the Secured Parties referred to therein (in such capacity, together with its successors in such capacity, the "**Grantee**"), and (ii) certain other Security Documents (including this Patent Security Agreement), each Grantor has secured its guarantee of certain obligations of the Borrower (the "**Grantor's Secured Guarantee**") by granting to the Grantee for the benefit of such Secured Parties a continuing security interest in the Collateral of such Grantor, including all right, title and interest of such Grantor in, to and under the Patent Collateral (as defined below); and

WHEREAS, terms defined in the Security Agreement (or whose definitions are incorporated by reference in Section 1 of the Security Agreement) and not otherwise defined herein have, as used herein, the respective meanings provided for therein;

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, subject to and upon the terms and conditions contained in the Security Agreement, each Grantor hereby grants to the Grantee, to secure such Grantor's Secured Guarantee, a continuing security interest in all of such Grantor's right, title and interest in, to and under the following (all of the following items or types of property being herein collectively referred to as the "**Patent Collateral**"), whether now owned or existing or hereafter acquired or arising:

- (i) each United States Patent constituting Recordable Intellectual Property owned by such Grantor, including, without limitation, each Patent referred to in Schedule 1 hereto;
- (ii) each Patent License constituting Recordable Intellectual Property to which such Grantor is a party, including, without limitation, each Patent License identified in Schedule 1 hereto; and
- (iii) all Proceeds of and revenues from the foregoing;

provided that, notwithstanding anything herein to the contrary, in no event shall the Patent Collateral include any Excluded Assets.

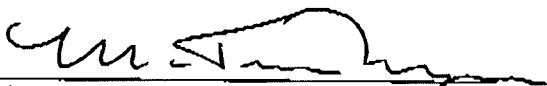
THE PARTIES HERETO AUTHORIZE AND REQUEST THAT THE COMMISSIONER OF PATENTS AND TRADEMARKS OF THE UNITED STATES RECORD THIS SECURITY INTEREST IN THE PATENT COLLATERAL.

The foregoing security interest is granted in conjunction with the security interests granted by each Grantor to the Grantee pursuant to the Security Agreement. Each Grantor acknowledges and affirms that the rights and remedies of the Grantee with respect to the security interest in the Patent Collateral granted hereby are more fully set forth in the Security Agreement, the terms and provisions of which are incorporated by reference herein as if fully set forth herein. In the event of any conflict between the provisions of this Patent Security Agreement and the provisions of the Security Agreement, the provisions of the Security Agreement shall govern.

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IN WITNESS WHEREOF, the Grantor has caused this Patent Security Agreement to be duly executed by its officer thereunto duly authorized as of the date first written above.

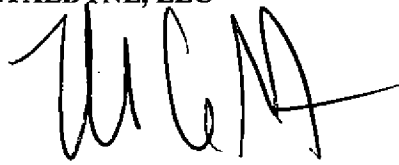
**CLOYES GEAR AND PRODUCTS, INC.  
THE MESH COMPANY, LLC**

By:   
Name: M. Trevor Myers  
Title: President and Chief Executive Officer

[Signature Page to Patent Security Agreement]

**PATENT  
REEL: 034024 FRAME: 0341**

**METALDYNE BSM, LLC**  
**METALDYNE, LLC**

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By: \_\_\_\_\_

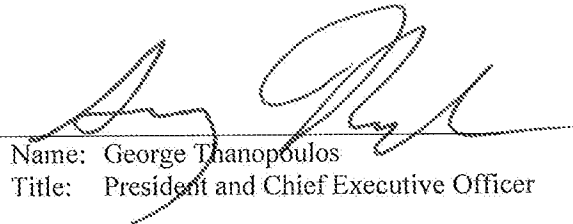
Name: Thomas A. Amato

Title: President and Chief Executive Officer

[Signature Page to Patent Security Agreement]

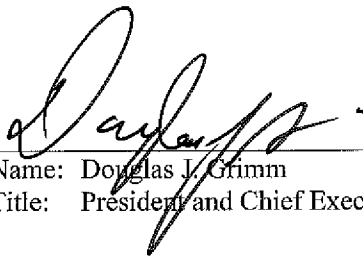
**PATENT**  
**REEL: 034024 FRAME: 0342**

**KYKLOS BEARING INTERNATIONAL, LLC**

By:   
Name: George Thanopoulos  
Title: President and Chief Executive Officer

[Signature Page to Patent Security Agreement]

**GREDE II LLC**

By:   
Name: Douglas J. Grimm  
Title: President and Chief Executive Officer

[Signature Page to Patent Security Agreement]

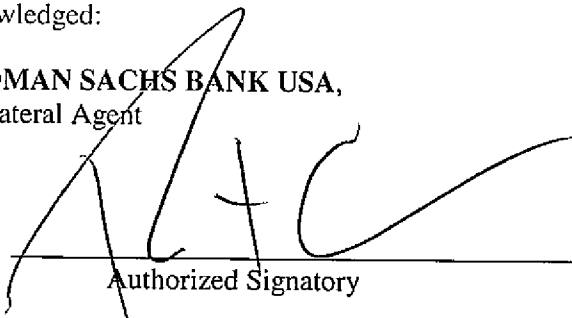
**PATENT**  
**REEL: 034024 FRAME: 0344**



Acknowledged:

**GOLDMAN SACHS BANK USA,**  
as Collateral Agent

By:

A large, stylized handwritten signature in black ink, appearing to be 'R. Ehudin', is written over a horizontal line.

Authorized Signatory

**Robert Ehudin**  
**Authorized Signatory**

[Signature Page to Patent Security Agreement]

**PATENT**  
**REEL: 034024 FRAME: 0345**

**Schedule 1  
to Patent Security Agreement**

**PATENTS**

| <b>Grantor</b>                       | <b>Title</b>  | <b>Filing<br/>Date/Issued Date</b>      | <b>Status<br/>(Application/Regis<br/>tered)</b> | <b>Application/<br/>Registration<br/>No.</b> |
|--------------------------------------|---|---|---|--|
| Cloyes Gear<br>and Products,<br>Inc. | Adjustable Camshaft<br>Sprocket   | October 29,2012 /<br>(March 7, 2013)    | Pending Published                               | 13/663067 /<br>(20130055836)                 |
| Cloyes Gear<br>and Products,<br>Inc. | Captive Fastener<br>Apparatus for Chain<br>Guide or Tensioner<br>Arm                | March 8, 2013 /<br>(July 25, 2013)      | Pending Published                               | 13/790931 /<br>(20130190115)                 |
| Cloyes Gear<br>and Products,<br>Inc. | Inverted Tooth Chain<br>and Sprocket Drive<br>System with Reduced<br>Meshing Impact | March 17, 2014 /<br>(July 17, 2014)     | Pending Published                               | 14/217025 /<br>(20140200106)                 |
| Cloyes Gear<br>and Products,<br>Inc. | Chain Tensioner   | December 9, 2013 /<br>(June 12, 2014)   | Pending Published                               | 14/101157 /<br>(20140162819)                 |
| Cloyes Gear<br>and Products,<br>Inc. | Display Device and<br>Driving Method<br>Thereof                                     | October 29, 2012 /<br>(January 9, 2014) | Pending published                               | 13/663047 /<br>(20140009456)                 |
| Cloyes Gear<br>and Products          | Camshaft End-Play<br>Device   | October 26, 1995 /<br>July 8, 1997      | Granted   | 08/548872 /<br>5645024                       |
| Cloyes Gear<br>and Products,<br>Inc. | Chain Tensioner<br>Apparatus and Method   | April 30, 1996 /<br>January 27, 1998    | Granted   | 08/640333 /<br>5711732                       |
| Cloyes Gear<br>and Products,<br>Inc. | Adjustable Camshaft<br>Timing Device  | April 1, 1997 / April<br>14, 1998       | Granted   | 08/831390 /<br>5738055                       |
| Cloyes Gear<br>and Products          | Automatic Tensioner<br>with One-Pin Locking<br>Mechanism                            | December 7, 1995 /<br>July 21, 1998     | Granted   | 08/568657 /<br>5782625                       |
| Cloyes Gear<br>and Products,<br>Inc. | Chain Tensioner with<br>Damping Feature   | February 26, 1997 /<br>August 25, 1998  | Granted   | 08/806844 /<br>5797818                       |
| Cloyes Gear<br>and Products,         | Roller Chain Timing<br>Drive Having Reduced   | August 2, 1996 /<br>December 15, 1998   | Granted   | 08/691350 /                                  |

|                                |  |                                     |         |                     |
|--------------------------------|--|-------------------------------------|---------|---------------------|
| Inc.                           | Noise  |                                     |         | 5848948             |
| Cloyes Gear and Products, Inc. | Roller Chain Drive System Having Improved Noise Characteristics  | January 23, 1997 / March 2, 1999    | Granted | 08/787675 / 5876295 |
| Cloyes Gear and Products, Inc. | Roller Chain Drive System Having Improved Noise Characteristics  | June 19, 1997 / July 13, 1999       | Granted | 08/879157 / 5921878 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket with Staged Meshing and Flank Relief to Provide Improved Noise Characteristics | December 17, 1997 / July 13, 1999   | Granted | 08/992306 / 5921879 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket Having Improved Noise Characteristics  | July 25, 1997 / November 2, 1999    | Granted | 08/900661 / 5976045 |
| Cloyes Gear and Products, Inc. | Roller Chain Drive System Having Improved Noise Characteristics  | May 12, 1999 / November 30, 1999    | Granted | 09/310804 / 5993344 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket with Staged Meshing and Root Relief to Provide Improved Noise Characteristics  | March 26, 1999 / December 7, 1999   | Granted | 09/277058 / 5997424 |
| Cloyes Gear and Products, Inc. | Method for Chain Meshing Phasing on a V-Engine Camshaft Drive to Reduce Noise  | August 14, 1998 / February 29, 2000 | Granted | 09/134125 / 6030306 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Sprocket Having Improved Noise Characteristics  | October 15, 1999 / July 18, 2000    | Granted | 09/419336 / 6090003 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket with Cushion Rings and Root Relief for Improved Noise Characteristics          | August 25, 1999 / January 30, 2001  | Granted | 09/383128 / 6179741 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket  | May 27, 1999 / December 4, 2001     | Granted | 09/321246 /         |

|                                |   |                                       |         |                     |
|--------------------------------|---|---------------------------------------|---------|---------------------|
| Inc.                           | with Staged Meshing and Flank Relief to Provide Improved Noise Characteristics                                |                                       |         | 6325734             |
| Cloyes Gear and Products, Inc. | Chain Tensioner Assembly Having a Single-Fastener Mounting Arrangement  | December 23, 1999 / March 12, 2002    | Granted | 09/471783 / 6354972 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket with Cushion Rings and Root Relief for Improved Noise Characteristics | December 1, 2000 / April 16, 2002     | Granted | 09/728698 / 6371875 |
| Cloyes Gear and Products, Inc. | Adjustable Cam Sprocket   | June 28, 2002 / March 18, 2003        | Granted | 10/186169 / 6532923 |
| Cloyes Gear and Products, Inc. | Chain Tensioner for Use in a Confined Space   | February 10, 2000 / June 3, 2003      | Granted | 09/502541 / 6572502 |
| Cloyes Gear and Products, Inc. | Blade-Type Mechanical Chain Tensioner with External Strengthening Rib   | October 16, 2001 / September 23, 2003 | Granted | 09/981044 / 6623391 |
| Cloyes Gear and Products, Inc. | Snap-Fit Guide with Locking Connector Arrangement   | November 16, 2001 / July 6, 2004      | Granted | 09/992470 / 6758777 |
| Cloyes Gear and Products, Inc. | Roller Chain Sprocket with Added Chordal Pitch Reduction  | December 4, 2001 / July 13, 2004      | Granted | 10/004544 / 6761657 |
| Cloyes Gear and Products, Inc. | Cushion Ring Sprocket Assembly and Method   | March 18, 2003 / June 28, 2005        | Granted | 10/391268 / 6910980 |
| Cloyes Gear and Products, Inc. | Snap-Fit Chain Guide with Saw-Tooth Fixing Feature  | January 23, 2003 / July 5, 2005       | Granted | 10/349679 / 6913552 |
| Cloyes Gear and Products, Inc. | Integrated Drive Sprocket and Gear for Balance Shaft  | April 22, 2003 / January 24, 2006     | Granted | 10/420380 / 6988479 |
| Cloyes Gear and Products, Inc. | Roller Chain Sprocket with  | April 16, 2002 / July 11, 2006        | Granted | 10/123940 / 7074147 |

|                                |  |  |         |                     |
|--------------------------------|--|--|---------|---------------------|
| Cloyes Gear and Products, Inc. | Cushioned Sprocket and Improved Inverted Tooth Chain for Use with Same         | May 6, 2003 / August 22, 2006          | Granted | 10/430536 / 7094170 |
| Cloyes Gear and Products, Inc. | Snap-Fit Chain Guide with Locking Connector Arrangement                        | June 4, 2004 / January 16, 2007        | Granted | 10/860873 / 7163479 |
| Cloyes Gear and Products, Inc. | Cushion Ring Sprocket Assembly and Method                                      | April 4, 2005 / June 19, 2007          | Granted | 11/098285 / 7232392 |
| Cloyes Gear and Products, Inc. | Integrated Drive Sprocket and Gear for Balance Shaft                           | January 23, 2006 / August 7, 2007      | Granted | 11/337886 / 7252066 |
| Cloyes Gear and Products, Inc. | Roller Chain Sprocket with Resilient Cushion Rings and Root Relief             | July 6, 2006 / May 13, 2008            | Granted | 11/481678 / 7371200 |
| Cloyes Gear and Products, Inc. | Random Engagement Roller Chain Sprocket and Timing Chain System Including Same | April 1, 2004 / August 26, 2008        | Granted | 10/815316 / 7416500 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain System with Inside Flank Engagement                       | September 16, 2005 / September 7, 2010 | Granted | 11/228186 / 7789783 |
| Cloyes Gear and Products, Inc. | Adjustable Camshaft Sprocket Assembly and Tool for Same                        | June 8, 2007 / December 7, 2010        | Granted | 11/811187 / 7845320 |
| Cloyes Gear and Products, Inc. | Multiple-Cushion Ring Sprocket Assembly  | September 29, 2006 / March 29, 2011    | Granted | 11/541209 / 7914408 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain System With Inside Flank Engagement                       | August 24, 2005 / August 30, 2011      | Granted | 11/210599 / 8007387 |
| Cloyes Gear and Products, Inc. | Roller Chain Sprocket Having an Improved Tooth Form and Metal Cushion Rings    | September 29, 2006 / December 27, 2011 | Granted | 11/541210 / 8083624 |
| Cloyes Gear and Products, Inc. | Automotive Parts Kit Differentiation System                                    | March 9, 2007 / January 31, 2012       | Granted | 11/716326 / 8106774 |
| Cloyes Gear and Products, Inc. | Adjustable Camshaft Sprocket Assembly and                                      | November 4, 2010 / October 30, 2012    | Granted | 12/939437 /         |

|                                |   |  |            |                     |
|--------------------------------|---|--|------------|---------------------|
| Inc.                           | Tool for Same   |  |            | 8297246             |
| Cloyes Gear and Products, Inc. | Captive Fastener Apparatus for Chain Guide or Tensioner Arm                       | January 7, 2009 / March 12, 2013       | Granted    | 12/349826 / 8393986 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain and Sprocket Drive System with Reduced Meshing Impact        | June 14, 2010 / September 10, 2013     | Granted    | 12/814963 / 8529389 |
| Cloyes Gear and Products, Inc. | Blade Tensioner with Captured Spring  | November 18, 2009 / December 31, 2013  | Granted    | 12/621001 / 8617012 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain and Sprocket Drive System with Reduced Noise Characteristics | September 9, 2009 / January 14, 2014   | Granted    | 12/556332 / 8628440 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain Sprocket with Frequency Modulated Meshing                    | May 9, 2008 / February 4, 2014         | Granted    | 12/151944 / 8641565 |
| Cloyes Gear and Products, Inc. | Investor Tooth Chain Sprocket with Frequency Modulated Meshing                    | August 29, 2011 / March 11, 2014       | Granted    | 13/220567 / 8668609 |
| Cloyes Gear and Products, Inc. | Blade Tensioner with Pocket Pivot Feature   | August 29, 2011 / March 18, 2014       | Granted    | 13/220021 / 8672785 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain and Sprocket Drive System with Reduced Meshing Impact        | March 9, 2011 / March 18, 2014         | Granted    | 13/043932 / 8672786 |
| Cloyes Gear and Products, Inc. | Inverted Tooth Chain Sprocket with Frequency Modulated Meshing Features           | April 6, 2011 / April 29, 2014         | Granted    | 13/081283 / 8708849 |
| Cloyes Gear and Products, Inc. | Blade Tensioner with Spring Retaining Features                                    | August 8, 2011 / May 6, 2014           | Granted    | 13/205590 / 8715122 |
| Grede II LLC                   | Axle assembly   | October 30, 2003 / February 7, 2006    | Registered | 10/696855 / 6994405 |
| Kyklos Bearing                 | Wheel Bearing   | November 6, 2008 / (September 3, 2009) | Pending    | 12/291144 /         |

|                                   |   |                                       |         |                     |
|-----------------------------------|---|---------------------------------------|---------|---------------------|
| International, LLC                | Assembly  |                                       |         | (20090220183)       |
| Kyklos Bearing International, LLC | Sensor Wire Lead Strain Relief                                      | March 27, 1997 / March 16, 1999       | Granted | 08/824986 / 5883511 |
| Kyklos Bearing International, LLC | Integrally Retained Bearing Race With Improved Twisting Resistance  | October 20, 1997 / August 22, 2000    | Granted | 08/954050 / 6105251 |
| Kyklos Bearing International, LLC | Wheel Bearing with Self-Aligning Wheel Speed Sensor Ring            | August 31, 1998 / March 14, 2000      | Granted | 09/143812 / 6036370 |
| Kyklos Bearing International, LLC | Bearing Separator with Random Spacing                               | December 16, 1998 / January 9, 2001   | Granted | 09/212588 / 6170993 |
| Kyklos Bearing International, LLC | Self-Retained Wheel Bearing Assembly                                | October 24, 2000 / November 26, 2002  | Granted | 09/695350 / 6485187 |
| Kyklos Bearing International, LLC | Wheel Bearing With Separable Inner Race Processing Feature          | October 24, 2000 / September 23, 2003 | Granted | 09/695733 / 6622377 |
| Kyklos Bearing International, LLC | Method for Forming an Opening In A Wheel Spindle                    | November 15, 2000 / June 25, 2002     | Granted | 09/713681 / 6408669 |
| Kyklos Bearing International, LLC | Performance Sensor Ring With Reduced Mass                           | March 6, 2001 / December 24, 2002     | Granted | 09/800161 / 6498475 |
| Kyklos Bearing International, LLC | Vehicle Wheel Bearing   | February 11, 2002 / October 26, 2004  | Granted | 10/073792 / 6808311 |
| Kyklos Bearing International, LLC | Vehicle Wheel Bearing and Method for Controlling A Vehicle          | March 4, 2002 / October 12, 2004      | Granted | 10/091396 / 6802208 |
| Kyklos Bearing International, LLC | Vehicle Wheel Bearing and Wheel Speed Sensor Connector-Plug Bracket | March 20, 2002 / August 10, 2004      | Granted | 10/101762 / 6773164 |
| Kyklos Bearing International, LLC | Self-Retained Wheel Bearing Assembly                                | April 5, 2002 / June 10, 2003         | Granted | 10/117643 / 6574865 |
| Kyklos Bearing                    | Vehicle Wheel Bearing, Wheel-Speed Sensor                           | April 29, 2002 / August 10, 2004      | Granted | 10/134292 /         |

|                                   |   |  |            |                        |
|-----------------------------------|---|--|------------|------------------------|
| International, LLC                | Mechanism Assembly, and Wheel Speed Sensor                            |  |            | 6774622                |
| Kyklos Bearing International, LLC | Method and Apparatus for Wheel Spindle and the Like With Improved LRO | May 8, 2002 / June 10, 2003            | Granted    | 10/141382 /<br>6575535 |
| Kyklos Bearing International, LLC | Retaining A Brake Rotor In An Vehicle Corner Apparatus                | August 29, 2002 / February 8, 2005     | Granted    | 10/230622 /<br>6851759 |
| Kyklos Bearing International, LLC | Separator Grease Retention and Feed System for Wheel Spindle Bearings | September 19, 2002 / October 5, 2004   | Granted    | 10/247214 /<br>6799896 |
| Kyklos Bearing International, LLC | Automotive Brake Corner Module  | November 26, 2002 / April 26, 2005     | Granted    | 10/304268 /<br>6883816 |
| Kyklos Bearing International, LLC | Wheel Bearing Assembly Mount with Force Attenuation                   | November 10, 2005 / December 30, 2008  | Granted    | 11/271606 /<br>7470067 |
| The Mesh Company, LLC             | Short Pitch Tooth Chain   | February 9, 1999 / February 13, 2001   | Granted    | 09/247211 /<br>6186920 |
| The Mesh Company, LLC             | Short Pitch Tooth Chain   | December 21, 2000 / September 11, 2001 | Granted    | 09/742655 /<br>6287229 |
| The Mesh Company, LLC             | Short Pitch Tooth Chain   | September 7, 2001 / September 23, 2003 | Granted    | 09/949180 /<br>6623392 |
| Metaldyne, LLC                    | HOLLOW BALANCE SHAFT  | April 21, 1994 / January 16, 1996      | Registered | 08/230642 /<br>5483932 |
| Metaldyne, LLC                    | ACTIVE TORSIONAL VIBRATION DAMPER                                     | June 4, 1996 / October 21, 1997        | Registered | 08/660343 /<br>5678460 |
| Metaldyne, LLC                    | BALANCE SHAFTS HAVING MINIMAL MASS                                    | July 9, 1996 / January 12, 1999        | Registered | 08/677085 /<br>5857388 |
| Metaldyne BSM, LLC                | ENERGY EFFICIENT FLUID PUMP   | September 19, 1997 / November 23, 1999 | Registered | 08/933389 /<br>5987728 |
| Metaldyne, LLC                    | HIGH VALUE STATIC UNBALANCE-TYPE BALANCE SHAFTS                       | January 11, 1999 / May 29, 2001        | Registered | 09/227952 /<br>6237442 |
| Metaldyne,                        | FORGED BUSHING  | September 6, 2001 /                    | Registered | 09/947981 /            |



|                |   |                                    |            |                     |
|----------------|---|------------------------------------|------------|---------------------|
| LLC            | ARTICLE AND METHOD OF MAKING  | June 17, 2003                      |            | 6579492             |
| Metaldyne, LLC | HIGH VALUE STATIC UNBALANCE-TYPE BALANCE SHAFTS   | May 25, 2001 / September 30, 2003  | Registered | 09/866240 / 6626063 |
| Metaldyne, LLC | METHOD OF MANUFACTURING CONNECTING RODS   | December 23, 2003 / July 12, 2005  | Registered | 10/744275 / 6915568 |
| Metaldyne, LLC | HOUSING AND METHOD OF MANUFACTURING SAID HOUSING  | March 25, 2004 / April 11, 2006    | Registered | 10/809200 / 7024751 |
| Metaldyne, LLC | FLUID JET FOR PROVIDING FLUID UNDER PRESSURE TO A DESIRED LOCATION                          | August 9, 2004 / December 26, 2006 | Registered | 10/914297 / 7152623 |
| Metaldyne, LLC | DAMPER AND METHOD FOR TUNING A DAMPER UTILIZING A SURFACE CONTACT REDUCING RESILIENT MEMBER | June 4, 2004 / August 12, 2008     | Registered | 10/860871 / 7410035 |
| Metaldyne, LLC | STRUCTURE OF DIFFERENTIAL HOUSING   | March 22, 2007 / January 20, 2009  | Registered | 11/726685 / 7479086 |
| Metaldyne, LLC | PINION SHAFT AND DIFFERENTIAL HOUSING ASSEMBLY  | April 3, 2007 / January 20, 2009   | Registered | 11/732183 / 7479087 |
| Metaldyne, LLC | FLUID JET WITH NOISE REDUCING SLEEVE  | January 2, 2008 / May 4, 2010      | Registered | 12/006363 / 7708026 |
| Metaldyne, LLC | BEARING CAP WITH WEIGHT REDUCTION FEATURES  | September 13, 2006 / July 13, 2010 | Registered | 11/520322 / 7753592 |
| Metaldyne, LLC | PIN RETENTION AND ASSEMBLY SYSTEM FOR LOCKING DIFFERENTIAL                                  | March 22, 2007 / July 20, 2010     | Registered | 11/726743 / 7758462 |
| Metaldyne, LLC | FLUID JET FOR PROVIDING FLUID UNDER PRESSURE TO A DESIRED LOCATION                          | December 6, 2006 / August 3, 2010  | Registered | 11/634489 / 7766035 |
| Metaldyne, LLC | OVER-CENTER LINKAGE FOR ENGAGING A LOCKING DIFFERENTIAL OR                                  | March 30, 2007 / February 22, 2011 | Registered | 11/731688 / 7892133 |

|                    |   |                                     |            |                      |
|--------------------|---|-------------------------------------|------------|----------------------|
|                    | OTHER MECHANISM   |                                     |            |                      |
| Metaldyne, LLC     | COMPACT PUMP ARRANGEMENT  | May 31, 2007 / September 6, 2011    | Registered | 11/809361 / 8011899  |
| Metaldyne, LLC     | ELASTOMETRIC SEAL SIZER   | June 4, 2008 / November 22, 2011    | Registered | 12/156781 / 8062012  |
| Metaldyne, LLC     | METHOD AND APPARATUS FOR HONING A WORKPIECE AND A WORKPIECE           | August 17, 2009 / August 7, 2012    | Registered | 12/542489 / 8235771  |
| Metaldyne, LLC     | PISTON COOLING JET WITH TRACKING BALL ORIFICE                         | September 8, 2008 / March 19, 2013  | Registered | 12/231950 / 8397749  |
| Metaldyne, LLC     | SUPPORT STRUCTURE FOR DIFFERENTIAL                                    | July 21, 2008 / April 30, 2013      | Registered | 12/220028 / 8430780  |
| Metaldyne, LLC     | INVERTED PRESSURE REGULATING VALVE FOR ENGINE OIL PUMP                | May 10, 2007 / January 29, 2013     | Registered | 11/801608 / 8360746  |
| Metaldyne, LLC     | DIFFERENTIAL ASSEMBLY AND METHOD FOR MANUFACTURING SAME               | October 17, 2008 / July 30, 2013    | Registered | 12/288230 / 8500594  |
| Metaldyne BSM, LLC | ENERGY EFFICIENT FLUID PUMP   | April 30, 1998 / July 6, 1999       | Registered | 09/069807 / 5918573  |
| Metaldyne BSM, LLC | OIL/AIR SCAVENGING SYSTEM FOR BALANCE SHAFT HOUSING                   | June 30, 1999 / January 9, 2001     | Registered | 09/3443396 / 6170453 |
| Metaldyne BSM, LLC | STATIC UNBALANCE-TYPE BALANCE SHAFTS WITH AXIS ALIGNMENT PRESERVATION | January 14, 2002 / January 27, 2004 | Registered | 10/047487 / 6682437  |
| Metaldyne BSM, LLC | IMPROVED ENERGY EFFICIENT FLUID PUMP                                  | January 21, 2000 / August 8, 2006   | Registered | 09/489525 / 7086366  |
| Metaldyne BSM, LLC | GEAR-DRIVEN BALANCE SHAFT APPARATUS WITH BACKLASH CONTROL             | June 27, 2006 / July 6, 2010        | Registered | 11/475330 / 7748288  |
| Metaldyne BSM, LLC | DEBRIS FLUSH SYSTEM FOR BALANCE SHAFT BEARINGS                        | August 22, 2007 / September 3, 2013 | Registered | 11/895002 / 8522925  |

|                       |   |   |            |                        |
|-----------------------|---|---|------------|------------------------|
| Metaldyne<br>BSM, LLC | METHOD AND<br>APPARATUS FOR<br>SECURING A<br>BALANCER SHAFT<br>MODULE | October 27, 2010 /<br>December 24, 2013 | Registered | 12/913248 /<br>8613268 |
|-----------------------|---|---|------------|------------------------|

### PATENT LICENSES

| <b>Name of Agreement</b>   | <b>Parties<br/>Licensor/Licensee</b>                      | <b>Date of Agreement</b>                      | <b>Subject Matter</b>  |
|--|---|---|--|
| Amended and Restated Intellectual Property License and Service Agreement | Kyklos Bearing International LLC/BWI (Shanghai) Co., Ltd. | April 13, 2010 (as amended December 22, 2011) | License to use certain intellectual property to produce, market, and sell certain licensed products  |
| Patent License Agreement   | Cloyes Gear and Products, Inc./Schaeffler Group/INA       | November 4, 2006                              | License to use scheduled patents to develop, manufacture, use, offer to sell and advertise asymmetrical tooth profiles used on the cam phaser sprocket that is then assembled into the cam phaser VCT that is sold to General Motors Corporation or its affiliates for engine application in the V6 version of the Gen 5 V-8 engine. |
| Memorandum of Agreement  | Cloyes Gear and Products, Inc./Renold PLC                 | April 20, 2006                                | License to use scheduled patents world-wide  |