

PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1
Stylesheet Version v1.2

Assignment ID: PATI880753

SUBMISSION TYPE:	RESUBMISSION
NATURE OF CONVEYANCE:	SECURITY INTEREST
RESUBMIT DOCUMENT ID:	508940824
CONVEYING PARTY DATA	
Name	Execution Date
Ammunition Operations LLC	12/20/2024
Federal Cartridge Company	12/20/2024
RECEIVING PARTY DATA	
Company Name:	PNC Bank, National Association
Street Address:	500 First Avenue
Internal Address:	Commercial Loan Service Center/DCC
City:	Pittsburgh
State/Country:	PENNSYLVANIA
Postal Code:	15219
PROPERTY NUMBERS Total: 135	
Property Type	Number
Patent Number:	8784583
Patent Number:	8128766
Patent Number:	D733252
Patent Number:	D733834
Patent Number:	D733835
Patent Number:	D733836
Patent Number:	D733837
Patent Number:	D734419
Patent Number:	D735289
Patent Number:	9500453
Patent Number:	D744058
Patent Number:	8800449
Patent Number:	D747773
Patent Number:	D750727
Patent Number:	8220393
Patent Number:	9052174
Patent Number:	D791265

Property Type	Number
Patent Number:	D791264
Patent Number:	D791266
Patent Number:	D800244
Patent Number:	D800245
Patent Number:	D800246
Patent Number:	D802705
Patent Number:	9506731
Patent Number:	9534876
Patent Number:	9778002
Patent Number:	8460486
Patent Number:	9835446
Patent Number:	7383152
Patent Number:	7983873
Patent Number:	8454769
Patent Number:	8454770
Patent Number:	7607393
Patent Number:	7765933
Patent Number:	9134164
Patent Number:	7726245
Patent Number:	D723653
Patent Number:	8202377
Patent Number:	8192568
Patent Number:	8206522
Patent Number:	8470107
Patent Number:	8991292
Patent Number:	9677860
Patent Number:	9046332
Patent Number:	D809622
Patent Number:	D810226
Patent Number:	D813974
Patent Number:	9115961
Patent Number:	9146086
Patent Number:	9329003
Patent Number:	9562754
Patent Number:	10030956
Patent Number:	10605577
Patent Number:	11047660
Patent Number:	11668549

Property Type	Number
Patent Number:	9157713
Patent Number:	9733052
Patent Number:	9651346
Patent Number:	9329009
Patent Number:	D847293
Patent Number:	D847294
Patent Number:	D848569
Patent Number:	9360284
Patent Number:	D849874
Patent Number:	D857523
Patent Number:	D870842
Patent Number:	D884821
Patent Number:	9700186
Patent Number:	11268791
Patent Number:	9863746
Patent Number:	10520288
Patent Number:	10928170
Patent Number:	11346641
Patent Number:	11391551
Patent Number:	11740061
Patent Number:	9879957
Patent Number:	10422611
Patent Number:	10935354
Patent Number:	11486681
Patent Number:	10001355
Patent Number:	10684108
Patent Number:	11378368
Patent Number:	D937962
Patent Number:	10801820
Patent Number:	10041773
Patent Number:	11359896
Patent Number:	10690465
Patent Number:	11280597
Patent Number:	10466022
Patent Number:	11713935
Patent Number:	10260850
Patent Number:	11118851
Patent Number:	10222187

Property Type	Number
Patent Number:	11512935
Patent Number:	10551154
Patent Number:	11280595
Patent Number:	10690463
Patent Number:	D977055
Patent Number:	10690464
Patent Number:	11226182
Patent Number:	10976144
Patent Number:	11609077
Patent Number:	11781843
Patent Number:	10900759
Patent Number:	11668546
Patent Number:	11248883
Patent Number:	11333472
Patent Number:	11162757
Patent Number:	11137229
Patent Number:	11221199
Patent Number:	11306989
Patent Number:	11378364
Patent Number:	11774221
Patent Number:	11519703
Patent Number:	11490259
Patent Number:	11543219
Patent Number:	11933593
Patent Number:	11808551
Patent Number:	D1017756
Patent Number:	12007210
Patent Number:	11788811
Patent Number:	11788823
Patent Number:	11852449
Patent Number:	10254092
Patent Number:	8881634
Patent Number:	9739582
Application Number:	17686549
Application Number:	29883061
Application Number:	18123652
Application Number:	29818013
Application Number:	18138836

Property Type	Number
Application Number:	29768547
Application Number:	17884502
Application Number:	18298808
Application Number:	18584087

CORRESPONDENCE DATA

Fax Number:

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.

Phone: (215)569-5619

Email: pecsenye@blankrome.com

Correspondent Name: Timothy D. Pecsénye

Address Line 1: One Logan Square, 8th Floor

Address Line 4: Philadelphia, PENNSYLVANIA 19103

ATTORNEY DOCKET NUMBER:	074658-00030
NAME OF SUBMITTER:	KATHERINE HOLLENBECK
SIGNATURE:	/KATHERINE HOLLENBECK/
DATE SIGNED:	03/12/2025
	This document serves as an Oath/Declaration (37 CFR 1.63).

Total Attachments: 20

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INTELLECTUAL PROPERTY SECURITY AGREEMENT SUPPLEMENT

(Patents, Patent Applications and Patent Licenses)

This INTELLECTUAL PROPERTY SECURITY AGREEMENT SUPPLEMENT, dated December 20, 2024, is made by FEDERAL CARTRIDGE COMPANY, a Minnesota corporation and AMMUNITION OPERATIONS LLC, a Delaware limited liability company (collectively the “Grantors”, and each, a “Grantor”) in favor of PNC Bank, National Association, as administrative agent (the “Administrative Agent”, which expression shall include its permitted successors, assigns and transferees) for the Secured Parties.

WHEREAS, Vista Outdoor Inc., a Delaware corporation, the other Grantors from time to time party thereto, the Administrative Agent and the Secured Parties are party to the Credit Agreement, pursuant to which, among other things, the Secured Parties have agreed to make loans or otherwise to extend credit to the Borrower upon the terms and subject to the conditions specified in the Credit Agreement and certain Grantors have agreed to guarantee the obligations of the Borrowers under the Loan Documents.

WHEREAS, pursuant to (i) that certain ABL Security Agreement dated as of December 20, 2024 (as amended, supplemented or otherwise modified from time to time, the “Security Agreement”; capitalized terms used herein and not otherwise defined herein shall have the meanings assigned to such terms in the Security Agreement) entered into between, among others, the Grantor and the Administrative Agent and (ii) certain other Loan Documents (including this Intellectual Property Security Agreement Supplement), the Grantor has secured the Secured Obligations by granting to the Administrative Agent as Administrative Agent for the Secured Parties a continuing security interest in personal property of the Grantor, including all right, title and interest of the Grantor in, to and under the Intellectual Property Collateral (as defined below).

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Grantor grants to the Administrative Agent, to secure the Secured Obligations, a security interest in all of the 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 “Intellectual Property Collateral”), whether now owned or existing or hereafter acquired or arising:

(i) each Patent owned by the Grantor, including, without limitation, each Patent referred to in Schedule 1 hereto;

(ii) each Patent License to which the Grantor is a party, including, without limitation, each Patent License identified in Schedule 1 hereto;

(iii) all proceeds of and revenues from the foregoing, including, without limitation, all proceeds of and revenues from any claim by the Grantor against third parties for past, present or future infringement of any Patent owned by the Grantor (including, without limitation, any Patent identified in Schedule 1 hereto); and

(iv) all rights and benefits of the Grantor under any Patent License (including, without limitation, any Patent License identified in Schedule 1 hereto).

The Grantor authorizes and requests that the Register of Copyrights, the Commissioner for Patents and the Commissioner for Trademarks record this Intellectual Property Security Agreement Supplement.

The foregoing security interest is granted in conjunction with the security interests granted by the Grantor to the Administrative Agent pursuant to the Security Agreement. The Grantor acknowledges and affirms that the rights and remedies of the Administrative Agent with respect to the security interest in the Intellectual Property 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.

This Intellectual Property Security Agreement Supplement shall be governed by, and construed in accordance with, the laws of the State of New York. The Grantor agrees that any suit for the enforcement of this Intellectual Property Security Agreement Supplement may be brought in the courts of the State of New York sitting in New York County and of the United States District Court of the Southern District of New York, and any appellate court from any thereof, and consents to the non-exclusive jurisdiction of such court and to service of process in any such suit being made upon the Grantor by mail at the address specified in the Security Agreement. The Grantor hereby waives any objection that it may now or hereafter have to the venue of any such suit or any such court or that such suit is brought in an inconvenient court.

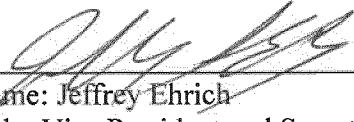
This Intellectual Property Security Agreement Supplement may be executed in two or more separate counterparts, each of which shall constitute an original and all of which shall collectively and separately constitute one and the same agreement.

In case of any inconsistencies between the terms of this Intellectual Property Security Agreement Supplement and those of the Security Agreement, the Security Agreement shall prevail.

[Remainder of page left blank intentionally; signatures follow.]

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

FEDERAL CARTRIDGE COMPANY, as a
Grantor

By: _____

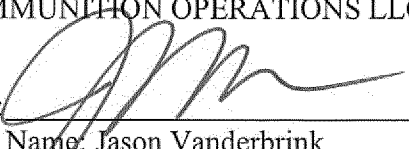
Name: Jeffrey Ehrich

Title: Vice President and Secretary

[Signature Page to Patent Security Agreement (PNC-Vista Outdoor)]

PATENT
REEL: 070479 FRAME: 0593

AMMUNITION OPERATIONS LLC, as a Grantor

By: 

Name: Jason Vanderbrink

Title: President & CEO

[Signature Page to Patent Security Agreement (PNC-Vista Outdoor)]

PATENT
REEL: 070479 FRAME: 0594

Acknowledged:

PNC BANK, NATIONAL ASSOCIATION,
as Administrative Agent

By: 

Name: Luke Tripodi

Title: Senior Vice President

[Signature Page to Patent Security Agreement (PNC-Vista Outdoor)]

PATENT
REEL: 070479 FRAME: 0595

SCHEDULE 1

Patents and Patent Licenses

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Ammunition Operations LLC	Priming Mixtures for Small Arms	United States of America	10/764246	8784583	23-Jan-2004	22-Jul-2014
Ammunition Operations LLC	Bismuth Oxide Primer Composition	United States of America	11/087274	8128766	23-Mar-2005	06-Mar-2012
Ammunition Operations LLC	Firearm Bullet and Portion of Firearm Cartridge	United States of America	29/462555	D733252	06-Aug-2013	30-Jun-2015
Ammunition Operations LLC	Firearm Bullet	United States of America	29/462552	D733834	06-Aug-2013	07-Jul-2015
Ammunition Operations LLC	Firearm Bullet	United States of America	29/462558	D733835	06-Aug-2013	07-Jul-2015
Ammunition Operations LLC	Firearm Bullet	United States of America	29/462559	D733836	06-Aug-2013	07-Jul-2015
Ammunition Operations LLC	Firearm Bullet	United States of America	29/462563	D733837	06-Aug-2013	07-Jul-2015
Ammunition Operations LLC	Firearm Bullet	United States of America	29/462561	D734419	06-Aug-2013	14-Jul-2015
Ammunition Operations LLC	Firearm Bullet	United States of America	29/462556	D735289	06-Aug-2013	28-Jul-2015

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Ammunition Operations LLC	Wad with Ignition Chamber	United States of America	14/455673	9500453	08-Aug-2014	22-Nov-2016
Ammunition Operations LLC	Target	United States of America	29/489286	D744058	29-Apr-2014	24-Nov-2015
Ammunition Operations LLC	Wad with Ignition Chamber	United States of America	13/548464	8800449	13-Jul-2012	12-Aug-2014
Ammunition Operations LLC	Portion of a Target	United States of America	29/489287	D747773	29-Apr-2014	19-Jan-2016
Ammunition Operations LLC	Portion of a Target	United States of America	29/489285	D750727	29-Apr-2014	01-Mar-2016
Ammunition Operations LLC	Wad with Ignition Chamber	United States of America	12/606447	8220393	27-Oct-2009	17-Jul-2012
Ammunition Operations LLC	Tipped Projectiles	United States of America	12/199306	9052174	27-Aug-2008	09-Jun-2015
Ammunition Operations LLC	Firearm Bullet and Portions of a Firearm Cartridge	United States of America	29/528405	D791265	28-May-2015	04-Jul-2017
Ammunition Operations LLC	Firearm Bullet and Portions of a Firearm Cartridge	United States of America	29/527735	D791264	21-May-2015	04-Jul-2017
Ammunition Operations LLC	Firearm Bullet	United States of America	29/528438	D791266	28-May-2015	04-Jul-2017

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Ammunition Operations LLC	Firearm Bullet	United States of America	29/527732	D800244	21-May-2015	17-Oct-2017
Ammunition Operations LLC	Firearm Bullet	United States of America	29/527745	D800245	21-May-2015	17-Oct-2017
Ammunition Operations LLC	Firearm Bullet	United States of America	29/528430	D800246	28-May-2015	17-Oct-2017
Ammunition Operations LLC	Firearm Bullet	United States of America	29/528380	D802705	28-May-2015	14-Nov-2017
Ammunition Operations LLC	Multiple projectile fixed cartridge	United States of America	13/815670	9506731	14-Mar-2013	29-Nov-2016
Ammunition Operations LLC	Projectile and Mold to Cast Projectile	United States of America	14/289354	9534876	28-May-2014	03-Jan-2017
Ammunition Operations LLC	Shot Cup Wad	United States of America	14/570369	9778002	15-Dec-2014	03-Oct-2017
Federal Cartridge Company	Percussion Primer Composition and Systems Incorporating Same	United States of America	13/477750	8460486	22-May-2012	11-Jun-2013
Federal Cartridge Company	Non-Contact Deviation Measurement System	United States of America	14/853470	9835446	14-Sep-2015	05-Dec-2017
Federal Cartridge Company	Non-Contact Deviation Measurement System	United States of America	11/329215	7383152	10-Jan-2006	03-Jun-2008
Federal Cartridge Company	Non-Contact Deviation Measurement System	United States of America	12/131613	7983873	02-Jun-2008	19-Jul-2011

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Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Non-Toxic Percussion Primers and Methods of Preparing the Same	United States of America	13/456920	8454769	26-Apr-2012	04-Jun-2013
Federal Cartridge Company	Non-Toxic Percussion Primers and Methods of Preparing The Same	United States of America	13/473324	8454770	16-May-2012	04-Jun-2013
Federal Cartridge Company	Slug Ball Ammunition	United States of America	10/915210	7607393	10-Aug-2004	27-Oct-2009
Federal Cartridge Company	Shotshell With Shot Pellets Having Multiple Shapes	United States of America	11/936012	7765933	06-Nov-2007	03-Aug-2010
Federal Cartridge Company	Non-Contact Deviation Measurement System	United States of America	13/185395	9134164	18-Jul-2011	15-Sep-2015
Federal Cartridge Company	Muzzleloader Ammunition	United States of America	12/109472	7726245	25-Apr-2008	01-Jun-2010
Federal Cartridge Company	Muzzleloader Propellant Cartridge	United States of America	29/468434	D723653	30-Sep-2013	03-Mar-2015
Federal Cartridge Company	Non-Toxic Percussion Primers and Methods of Preparing The Same	United States of America	11/704530	8202377	09-Feb-2007	19-Jun-2012
Federal Cartridge Company	Non-Toxic Percussion Primers and Methods of Preparing The Same	United States of America	12/029084	8192568	11-Feb-2008	05-Jun-2012
Federal Cartridge Company	Non-Toxic, Heavy-Metal Free Sensitized Explosive Percussion Primers and Methods of Preparing the Same	United States of America	12/751607	8206522	31-Mar-2010	26-Jun-2012

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Non-Toxic, Heavy-Metal Free Explosive Percussion Primers and Methods of Preparing the Same	United States of America	13/477723	8470107	22-May-2012	25-Jun-2013
Federal Cartridge Company	Firearm Projectiles and Cartridges and Methods of Manufacturing the Same	United States of America	14/332160	8991292	15-Jul-2014	31-Mar-2015
Federal Cartridge Company	Shot Shells with Performance-Enhancing Absorbers	United States of America	14/722719	9677860	27-May-2015	13-Jun-2017
Federal Cartridge Company	Projectile Assembly with Stabilization/Obturation Enhancement	United States of America	13/738646	9046332	10-Jan-2013	02-Jun-2015
Federal Cartridge Company	Shotgun Wad	United States of America	29/553154	D809622	28-Jan-2016	06-Feb-2018
Federal Cartridge Company	Shotgun Wad	United States of America	29/553822	D810226	04-Feb-2016	13-Feb-2018
Federal Cartridge Company	Cartridge with an Enhanced Ball Round	United States of America	29/544894	D813974	06-Nov-2015	27-Mar-2018
Federal Cartridge Company	Corrosion-Inhibited Projectiles, and Shot Shells Including the Same	United States of America	13/943625	9115961	16-Jul-2013	25-Aug-2015
Federal Cartridge Company	Muzzleloader Bullet System	United States of America	14/041648	9146086	30-Sep-2013	29-Sep-2015
Federal Cartridge Company	Muzzleloader Systems	United States of America	14/041452	9329003	30-Sep-2013	03-May-2016

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Muzzleloader Systems	United States of America	14/869619	9562754	29-Sep-2015	07-Feb-2017
Federal Cartridge Company	Muzzleloader Systems	United States of America	15/426885	10030956	07-Feb-2017	24-Jul-2018
Federal Cartridge Company	Muzzleloader Systems	United States of America	16/044183	10605577	24-Jul-2018	31-Mar-2020
Federal Cartridge Company	Muzzleloader Systems	United States of America	16/788502	11047660	12-Feb-2020	29-Jun-2021
Federal Cartridge Company	Muzzleloader Systems	United States of America	17/357402	11668549	24-Jun-2021	06-Jun-2023
Federal Cartridge Company	Limited Range Rifle Projectile	United States of America	14/213061	9157713	14-Mar-2014	13-Oct-2015
Federal Cartridge Company	Manufacturing Process to Produce Metalurgically Programmed Terminal Performance Projectiles	United States of America	15/175951	9733052	07-Jun-2016	15-Aug-2017
Federal Cartridge Company	Combination Gas Operated Rifle and Subsonic Cartridge	United States of America	15/057616	9651346	01-Mar-2016	16-May-2017
Federal Cartridge Company	Manufacturing Process to Produce Programmed Terminal Performance Projectiles	United States of America	14/216421	9329009	17-Mar-2014	03-May-2016
Federal Cartridge Company	Shotgun Wad	United States of America	29/636143	D847293	06-Feb-2018	30-Apr-2019

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Shotgun Wad	United States of America	29/636973	D847294	13-Feb-2018	30-Apr-2019
Federal Cartridge Company	Rifle Cartridge	United States of America	29/634361	D848569	20-Jan-2018	14-May-2019
Federal Cartridge Company	Manufacturing Process to Produce Metalurgically Programmed Terminal Performance Projectiles	United States of America	14/214780	9360284	15-Mar-2014	07-Jun-2016
Federal Cartridge Company	Muzzleloader Cartridge	United States of America	29/634368	D849874	21-Jan-2018	28-May-2019
Federal Cartridge Company	Cartridge Packaging	United States of America	29/640827	D857523	16-Mar-2018	27-Aug-2019
Federal Cartridge Company	Rifle Bullet	United States of America	29/635655	D870842	01-Feb-2018	24-Dec-2019
Federal Cartridge Company	Enhanced Ball Round	United States of America	29/637432	D884821	19-Feb-2018	19-May-2020
Federal Cartridge Company	Portable Vacuuming Device for Collecting and Neutralizing Flammable Residue	United States of America	14/168693	9700186	30-Jan-2014	11-Jul-2017
Federal Cartridge Company	Handgun Cartridge with Shear Groove Bullet	United States of America	16/509394	11268791	11-Jul-2019	08-Mar-2022
Federal Cartridge Company	Cartridge with Improved Penetration and Expansion Bullet	United States of America	15/219012	9863746	25-Jul-2016	09-Jan-2018

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Cartridge with Improved Penetration and Expansion Bullet	United States of America	15/866153	10520288	09-Jan-2018	31-Dec-2019
Federal Cartridge Company	Cartridge with Improved Penetration and Expansion Bullet	United States of America	16/685413	10928170	15-Nov-2019	23-Feb-2021
Federal Cartridge Company	Cartridge with Improved Penetration and Expansion Bullet	United States of America	17/173778	11346641	11-Feb-2021	31-May-2022
Federal Cartridge Company	Projectiles with Insert-Molded Polymer Tips	United States of America	17/065656	11391551	08-Oct-2020	19-Jul-2022
Federal Cartridge Company	Projectiles with Insert-Molded Polymer Tips	United States of America	17/867009	11740061	18-Jul-2022	29-Aug-2023
Federal Cartridge Company	Shotshell Having Wad with Enhanced Fin Deployment	United States of America	15/295700	9879957	17-Oct-2016	30-Jan-2018
Federal Cartridge Company	Shotshell Having Wad with Enhanced Fin Deployment	United States of America	15/965426	10422611	27-Apr-2018	24-Sep-2019
Federal Cartridge Company	Shotshell Having Wad with Enhanced Fin Deployment	United States of America	16/597508	10935354	09-Oct-2019	02-Mar-2021
Federal Cartridge Company	Shotshell Having Wad with Enhanced Fin Deployment	United States of America	17/188246	11486681	01-Mar-2021	01-Nov-2022
Federal Cartridge Company	Reduced Drag Projectiles	United States of America	15/331631	10001355	21-Oct-2016	19-Jun-2018

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Reduced Drag Projectiles	United States of America	16/012444	10684108	19-Jun-2018	16-Jun-2020
Federal Cartridge Company	Reduced Drag Projectiles	United States of America	16/899869	11378368	12-Jun-2020	05-Jul-2022
Federal Cartridge Company	Firearm Cartridge	United States of America	29/686654	D937962	05-Apr-2019	07-Dec-2021
Federal Cartridge Company	Projectiles with Insert-Molded Polymer Tips	United States of America	16/057764	10801820	07-Aug-2018	13-Oct-2020
Federal Cartridge Company	Projectiles with Insert-Molded Polymer Tips	United States of America	15/294171	10041773	14-Oct-2016	07-Aug-2018
Federal Cartridge Company	Frangible Firearm Projectiles, Methods for Forming the Same, and Firearm Cartridges Containing the Same	United States of America	16/381977	11359896	11-Apr-2019	14-Jun-2022
Federal Cartridge Company	Frangible Firearm Projectiles, Methods for Forming the Same, and Firearm Cartridges Containing the Same	United States of America	16/547407	10690465	21-Aug-2019	23-Jun-2020
Federal Cartridge Company	Frangible Firearm Projectiles, Methods for Forming the Same, and Firearm Cartridges Containing the Same	United States of America	16/894373	11280597	05-Jun-2020	22-Mar-2022
Federal Cartridge Company	Reduced Energy MSR System	United States of America	16/141505	10466022	25-Sep-2018	05-Nov-2019

Grantor	Patent Title	Country	Serial No.	Patent No.	Filing Date	Issue Date
Federal Cartridge Company	Reduced Energy MSR System	United States of America	17/472896	11713935	13-Sep-2021	01-Aug-2023
Federal Cartridge Company	Frangible Firearm Projectiles, Methods for Forming the Same, and Firearm Cartridges Containing the Same	United States of America	15/461848	10260850	17-Mar-2017	16-Apr-2019
Federal Cartridge Company	Reduced Energy MSR System	United States of America	16/674925	11118851	05-Nov-2019	14-Sep-2021
Federal Cartridge Company	Hunting Projectile	United States of America	15/646832	10222187	11-Jul-2017	05-Mar-2019
Federal Cartridge Company	Extended Range Bullet	United States of America	16/897833	11512935	10-Jun-2020	29-Nov-2022
Federal Cartridge Company	Rifle Cartridge with Improved Bullet Upset and Separation	United States of America	15/876186	10551154	21-Jan-2018	04-Feb-2020
Federal Cartridge Company	Rifle Cartridge with Improved Bullet Upset and Separation	United States of America	16/736309	11280595	07-Jan-2020	22-Mar-2022
Federal Cartridge Company	Extended Range Bullet	United States of America	15/870769	10690463	12-Jan-2018	23-Jun-2020
Federal Cartridge Company	Rifle Bullet	United States of America	29/713220	D977055	14-Nov-2019	31-Jan-2023
Federal Cartridge Company	Cartridge with Combined Effects Projectile	United States of America	15/967169	10690464	30-Apr-2018	23-Jun-2020

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Federal Cartridge Company	Cartridge with Combined Effects Projectile	United States of America	16/904731	11226182	18-Jun-2020	18-Jan-2022
Federal Cartridge Company	High Pressure Rifle Cartridge with Primer	United States of America	16/293632	10976144	05-Mar-2019	13-Apr-2021
Federal Cartridge Company	High Pressure Rifle Cartridge with Primer	United States of America	17/226931	11609077	09-Apr-2021	21-Mar-2023
Federal Cartridge Company	Reduced Stiffness Barrel Fired Projectile	United States of America	17/745266	11781843	16-May-2022	10-Oct-2023
Federal Cartridge Company	Die Assemblies for Forming a Firearm Projectile, Methods of Utilizing the Die Assemblies, and Firearm Projectiles	United States of America	16/580328	10900759	24-Sep-2019	26-Jan-2021
Federal Cartridge Company	Muzzleloader Power Cell with Primer	United States of America	17/490404	11668546	30-Sep-2021	06-Jun-2023
Federal Cartridge Company	Optimized Lever Action Firearm Cartridge Geometry	United States of America	16/714173	11248883	13-Dec-2019	15-Feb-2022
Federal Cartridge Company	Reduced Stiffness Barrel Fired Projectile	United States of America	16/513377	11333472	16-Jul-2019	17-May-2022
Federal Cartridge Company	Muzzleloader with Gas Powered Ejection	United States of America	16/747099	11162757	20-Jan-2020	02-Nov-2021
Federal Cartridge Company	Muzzleloader Power Cell with Primer	United States of America	16/686130	11137229	16-Nov-2019	05-Oct-2021

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Federal Cartridge Company	High Velocity, Rimfire Cartridge	United States of America	16/841261	11221199	06-Apr-2020	11-Jan-2022
Federal Cartridge Company	Devices and Methods for Extraction of High Pressure Cartridge Casings	United States of America	16/995395	11306989	17-Aug-2020	19-Apr-2022
Federal Cartridge Company	8mm Cartridge	United States of America	17/153758	11378364	20-Jan-2021	05-Jul-2022
Federal Cartridge Company	Handgun Cartridge	United States of America	17/856930	11774221	01-Jul-2022	03-Oct-2023
Federal Cartridge Company	Multi-Faceted Shot	United States of America	17/162848	11519703	29-Jan-2021	06-Dec-2022
Federal Cartridge Company	Multi-Faceted Shot	United States of America	18/074193	11490259	02-Dec-2022	26-Mar-2024
Federal Cartridge Company	Biodegradable Components Shotshell	United States of America	17/482348	11543219	22-Sep-2021	03-Jan-2023
Federal Cartridge Company	Biodegradable Components Shotshell	United States of America	18/083952	11933593	19-Dec-2022	19-Mar-2024
Federal Cartridge Company	Handgun Cartridge with Shear Groove Bullet	United States of America	17/686549		04-Mar-2022	
Federal Cartridge Company	Cartridge with Improved Penetration and Expansion Bullet	United States of America	17/752540	11808551	24-May-2022	07-Nov-2023

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Federal Cartridge Company	Shotgun Wad	United States of America	29/638074	D1017756	23-Feb-2018	12-Mar-2024
Federal Cartridge Company	Extended Range Bullet	United States of America	17/994606	12007210	28-Nov-2022	11-Jun-2024
Federal Cartridge Company	Rifle Bullet	United States of America	29/883061		23-Jan-2023	
Federal Cartridge Company	High Pressure Rifle Cartridge with Primer	United States of America	18/123652		20-Mar-2023	
Federal Cartridge Company	Firearm Cartridge	United States of America	29/818013		06-Dec-2021	
Federal Cartridge Company	Muzzleloader Power Cell with Primer	United States of America	18/138836		25-Apr-2023	
Federal Cartridge Company	Devices and Methods for Extraction of High Pressure Cartridge Casings	United States of America	17/717631	11788811	11-Apr-2022	17-Oct-2023
Federal Cartridge Company	Handgun Cartridge	United States of America	17/856503	11788823	01-Jul-2022	17-Oct-2023
Federal Cartridge Company	Projectile	United States of America	29/768547		29-Jan-2021	
Federal Cartridge Company	Bismuth-Based Firearm Projectiles, Firearm Cartridges Including the Same, and Related Methods	United States of America	17/358465	11852449	25-Jun-2021	26-Dec-2023

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Federal Cartridge Company	Bullet with Jacket Improvement	United States of America	17/884502		09-Aug-2022	
Federal Cartridge Company	Reduced Tension Cartridge Case with Two-Stage Neck	United States of America	18/298808		11-Apr-2023	
Federal Cartridge Company/US Army	Advanced Muzzle Loader Ammunition	United States of America	15/195769	10254092	28-Jun-2016	09-Apr-2019
Federal Cartridge Company/US Army	Muzzle Loader Powder Increment Using Celluloid Combustible Container	United States of America	13/959138	8881634	05-Aug-2013	11-Nov-2014
Federal Cartridge Company	Shotgun Shell	United States of America	14/823769	9739582	11-Aug-2015	2-Aug-2017
Federal Cartridge Company	Multi-Faceted Shot	United States of America	18/584087		22-Feb-2024	