OHIO ORDNANCE WORKS, INC.

Preserving the Past. Engineering the Future.

The Next Advancement of the M240 General Purpose Machine Gun

Lt. Robert W. Landies III, USMCR
Vice President of Manufacturing

OHIO ORDNANCE WORKS, INC.

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OOW is an ISO 9001:2015 certified company.

CERTIFICATE

TÜVRheinland
Precisely Right.

TUV Rheinland of North America, Inc.
295 Foster Street, Suite 100, Littleton, MA 01460

COPY

Hereby certifies that

Ohio Ordnance Works

310 Park Dr.
Chardon, OH 44024

has established and maintains a quality management system for the

Design, Manufacture and Repair of Weapons and Military Firearms

An audit was performed and documented in Report No 4101.
Proof has been furnished that the requirements according to

ISO 9001:2015

are fulfilled.
Further clarification regarding the scope of this certificate and the applicability of ISO 9001:2015 requirements may be obtained by contacting TRNA.

Certificate Registration No.

74 300 4101

Certificate Issue Date
August 31, 2017

ANAB ACCREDITED

Certificate Expiration Date
August 11, 2020

Certification of Management Systems

QUALITY POLICY

It is the policy of Ohio Ordnance Works, Inc. to provide firearms, parts, accessories and repair services that meet our customer's requirements. Our quality processes are designed to support customer satisfaction and business performance. These processes are continuously monitored through the use of Key Performance Indicators.

This policy has been presented to all employees through general orientation and is displayed in various locations throughout the company.

Previous M240 Improvements

- Single Port Gas Regulator
- MIL-STD-1913 Equipped Feed Cover
- MIL-STD-1913 Accessory Rail System
- Hydraulic Buffer
- Lightweight Adjustable Buttstock
- Lightweight and Shortened Barrels
- Reduced Weight Receiver
- Improved Flash Hider
- Alternative Materials
- Lightweight Trigger Assembly

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Select Fire™ Trigger Assembly

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US008087343B2

(12) **United States Patent**
Landies et al.

(10) **Patent No.: US 8,087,343 B2**
(45) **Date of Patent: Jan. 3, 2012**

(54) **M240 RIFLE WITH SELECT FIRE MECHANISM FOR SELECTIVE FULLY-AUTOMATIC AND SEMI-AUTOMATIC OPERATION**

(75) Inventors: **Robert I. Landies**, Chardon, OH (US); **Thomas M. Hardman**, Chesterland, OH (US); **Daniel L. Albright**, Chardon, OH (US); **Joshua G. Hershberger**, Concord Township, OH (US)

(73) Assignee: **Ohio Ordnance Works, Inc.**, Chardon, OH (US)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 203 days.

(21) Appl. No.: **12/687,561**

(22) Filed: **Jan. 14, 2010**

(65) **Prior Publication Data**

US 2011/0168008 A1 Jul. 14, 2011

(51) **Int. Cl.**
F41A 19/33 (2006.01)

(52) **U.S. Cl.** **89/140**; 89/139; 89/132; 89/128

(58) **Field of Classification Search** 89/139, 89/140, 129.01, 132, 142, 148, 128
See application file for complete search history.

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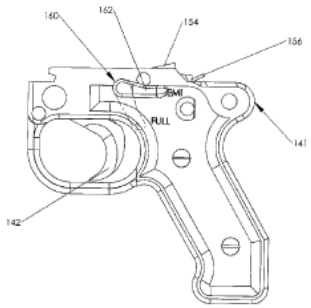
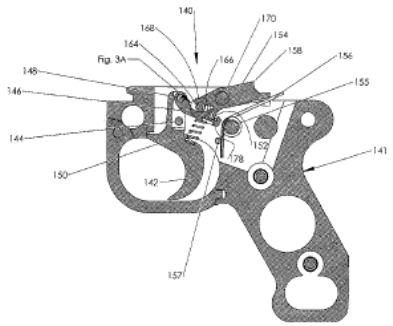
Primary Examiner — Michael David
(74) *Attorney, Agent, or Firm* — Renner Kenner Greive Bobak Taylor & Weber

(57) **ABSTRACT**

A trigger assembly for a trigger housing for an M240 Assault Rifle is provided having a switch accessible at the outside of the trigger housing for changing the firing of the rifle between semi-automatic and fully-automatic fire.

3 Claims, 6 Drawing Sheets





US 20120144992A1

(19) **United States**
(12) **Patent Application Publication**
Landies et al.

(10) **Pub. No.: US 2012/0144992 A1**
(43) **Pub. Date: Jun. 14, 2012**

(54) **M249 RIFLE WITH SELECT FIRE MECHANISM FOR SELECTIVE FULLY-AUTOMATIC AND SEMI-AUTOMATIC OPERATION**

(76) Inventors: **Robert I. Landies**, Chardon, OH (US); **Thomas M. Hardman**, Chesterland, OH (US); **Daniel L. Albright**, Chardon, OH (US); **Joshua G. Hershberger**, Concord Township, OH (US)

(21) Appl. No.: **13/023,083**

(22) Filed: **Feb. 8, 2011**

Related U.S. Application Data

(60) Provisional application No. 61/302,335, filed on Feb. 8, 2010.

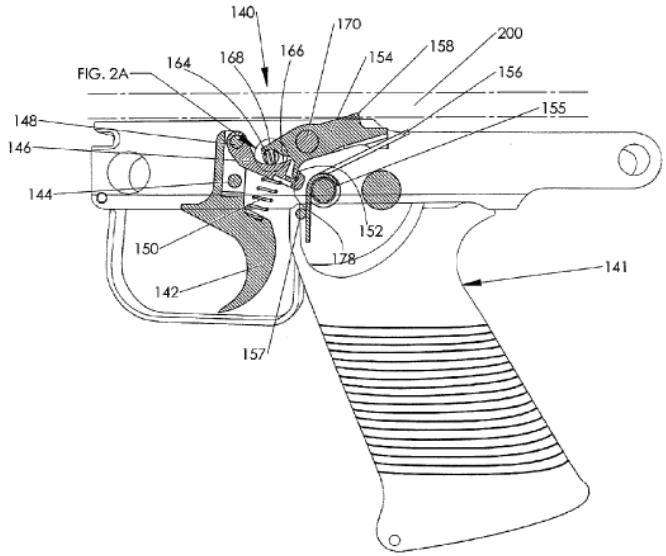
Publication Classification

(51) **Int. Cl.**
F41A 19/06 (2006.01)
F41A 19/10 (2006.01)

(52) **U.S. Cl.** **89/128**

(57) **ABSTRACT**

A trigger assembly for a trigger housing for a, M249 fully automatic rifle is provided having a switch accessible at the outside of the trigger housing for changing the firing of the rifle between semi-automatic and fully-automatic fire.



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Research and Development

- Developed from the idea that machine gunners needed a way to conserve ammunition during zeroing procedures and when tactically advantageous in combat to use a semi-automatic mode.
- A 3 position selector similar to the configuration in the M-16/M-4 was explored, however was not possible without major changes to the design. Incorporating the Safety into the Selector would produce a less safe product than the existing sliding block style Safety.
- Would not require any modification to host weapon, and would be able to be used by any M240 regardless of manufacturer, date of manufacture, or configuration. All safeties intact and trigger weights would be IAW MIL-M-63314.
- Based on design of OOW240-SLR Trigger Group (Semi-Automatic Only 240 Variant).
- Initial guideline for weight was no more than 6 oz heavier than original. Standard group= 15.2 oz, Select Fire= 15.68 oz.

Testing

- 2 Phases of Endurance Testing conducted. Phase I with 1,000 rounds fired in semi-auto mode only. Phase II with 10,000 rounds fired in both semi and full-auto modes. In both Phases, zero failures attributed to Trigger Assembly. Trigger pull pre-test was 12.25 lbs in Semi, 10 lbs in Full-Auto. Post-test Semi was 11.5 lbs, and Full-Auto was 9.75 lbs.
- The Selector was cycled 10,000 times with Selector resistance weight measured post-test. Weight Pre-Test=29 oz, Post-test=24 oz.
- Drop Tests were conducted from two meters on all six sides of weapon.
- Vibration Tests were conducted after failure mode identified where Sear would reset during long strings of sustained full auto fire. It was found that as the Sear leg contacted the Safety, vibration would travel through Disconnector and dislodge Sear. Sear leg was shortened slightly and design change was verified that sustained full auto fire would not trip Sear.
- Double Tap Testing was conducted with Rigid Buffer/Backplate and 3rd gas position at ~900rpm. No double taps were experienced.

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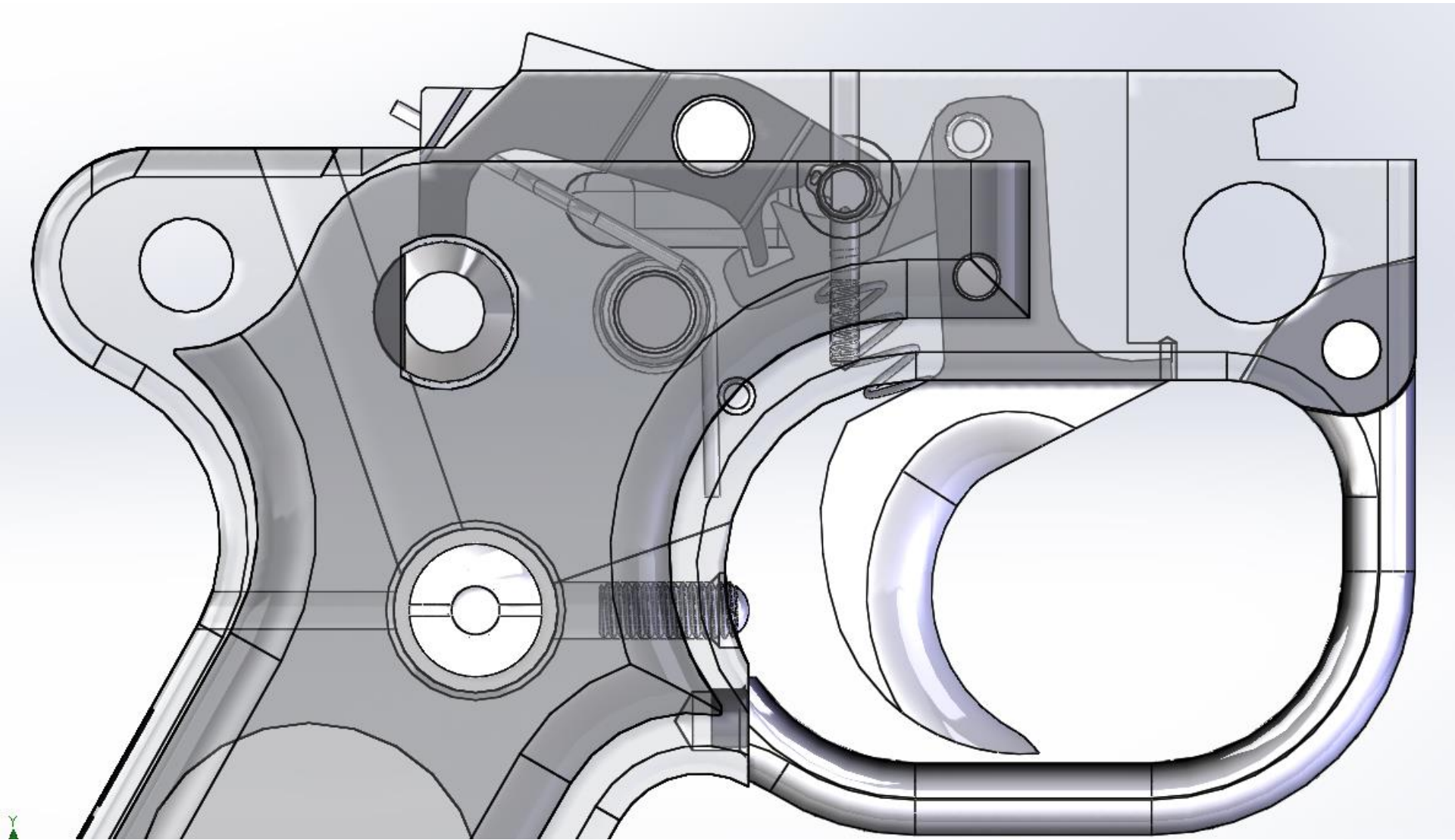

Future Improvements

- Explore further weight reduction through the use of alternative materials and manufacturing processes without reduction in performance or reliability.
- Component improvements and new designs to match the modularity of advancing accessories.

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With the combination of our in house manufacturing resources and our robust quality system we are able to produce a superior product for our customers.

We stand behind all of our products 100%.

Thank you for your time.