

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

ATRIUS DEVELOPMENT GROUP CORP.

v.

ABC IP LLC

Patent Owner

Inter Partes Review No.: 2025–1473

DECLARATION OF MALCOLM BROWN
IN SUPPORT OF
PETITION FOR *INTER PARTES* REVIEW OF
U.S.P.N. 12,038,247

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Patent Trial and Appeal Board
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	[1b] “a trigger member having a sear and adapted to be mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”	58
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	[1h] “whereupon in said forced reset semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set	

position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.”	61
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[4d] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”	63
[4e] “a disconnecter having hook for engaging said hammer and mounted in said housing to pivot on said trigger member pin,”	64
[4f] “a cam having a cam lobe and mounted in said housing to pivot on said cam pin, said cam being pivotable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”	64
[4g] “a safety selector adapted to be mounted in the fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”	64
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[9e] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”	66
[9f] “a disconnecter having a hook for engaging said hammer and mounted in said fire control mechanism pocket to pivot on said transverse trigger member pivot axis,”	66
[9g] “a cam having a cam lobe and mounted in said fire control pocket to pivot on a transverse cam pivot axis, said cam being pivotable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”	66
[9h] “a safety selector mounted in said fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”	67
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from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”	67
[9j] “whereupon in said forced reset semi-automatic position, rearward movement of said bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.	67
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[14b] “a trigger member having a sear and adapted to be mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”	69
[14c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”	69

[14d] “a disconnecter having a hook for engaging said hammer and adapted to mounted in the fire control mechanism pocket to pivot on said transverse trigger member pivot axis, and”	69
[14e] “a cam having a cam lobe and adapted to movably mounted in the fire control mechanism pocket, said cam being movable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”	69
[14f] “a safety selector adapted to be mounted in the fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”	69
[14g] “whereupon in said standard semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and movement of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, but prior to reaching said set position said disconnecter hook catches said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to move to said first position, at which time a user manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”	69
[14h] “whereupon in said forced reset semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and movement of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.”	70
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[15b] “a trigger member having a sear and adapted to mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”	70
[15c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member, a hook for engaging said hammer and adapted to be mounted in the fire control mechanism pocket to pivot on said transverse disconnecter pivot axis, and”	70
[15d] “a cam having a cam lobe and adapted to movably mounted in the fire control mechanism pocket, said cam being movable between a first position and a second position in said second position said cam lobe forces said trigger member towards said set position,”	70
[15e] “whereupon in a standard semi-automatic mode, said cam is in said first position, rearward movement of the bolt carrier causes rearward pivoting of said hammer such that said disconnecter hook catches said hammer hook, and thereafter the bolt carrier moves forward into battery, at which time a user must manually release said trigger member to free said hammer	

from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”	71
[15f] “whereupon in a forced reset semi-automatic mode, said cam is in said second position, thereafter the bolt carrier moves forward into battery, at which time the user can pull said trigger member to fire the firearm.”	71
[16pre] “The trigger mechanism of claim 15, further comprising:”	71
[16a] “a housing having a first pair of transversely aligned openings with a hammer pin therethrough and a second pair of f transversely aligned openings with a trigger member pin.”71	
[16b] “said hammer mounted on said hammer pin, said trigger member and disconnecter mounted on said trigger member pin.”	71
[17] “The trigger mechanism of claim 15, further comprising a spring which biases said trigger member towards said set position.”	71
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[19] “The trigger mechanism of claim 15, wherein the trigger member pivot axis and disconnecter pivot axis are coaxial.”	72
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[20pre] “A firearm trigger mechanism comprising:”	72
[20a] “a hammer having a sear catch and a hook for engaging a disconnecter and adapted to mounted in a fire control mechanism pocket of a receiver to pivot on a transverse hammer pivot axis between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”	72
[20b] “a trigger member having a sear and adapted to mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”	72
[20c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,.....	72
[20d] “a [sic-said] disconnecter having a hook for engaging said hammer and adapted to mounted in the fire control mechanism pocket to pivot on said a transverse disconnecter pivot axis,”	72
[20e] “a cam having a cam lobe and adapted to movably mounted in the fire control mechanism pocket, said cam being movable between a first position at which said cam lobe does not force said trigger member into said set position and a second position at which said cam lobe does force said trigger member into said set position,”	72
[20f] “a safety selector adapted to be movably mounted in the fire control mechanism pocket to move between safe, standard semi- automatic, and forced reset semi-automatic positions,”.....	73
[20g] “whereupon in said standard semi-automatic position, said cam is in said first position, rearward movement of the bolt carrier causes rearward pivoting of said hammer such that said disconnecter hook catches said hammer hook, and thereafter the bolt carrier moves forward into battery, at which time a user must manually release said trigger member to free said hammer	

from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”	73
[20h] “whereupon in a forced reset semi-automatic mode, said cam is in said second position, rearward movement of the bolt carrier causes rearward pivoting of said hammer such that said disconnecter hook is prevented from catching said hammer hook, and, thereafter the bolt carrier moves forward into battery, at which time the user can pull said trigger member to fire the firearm.”	73
[21] “The trigger mechanism of claim 20, wherein said cam is not a part of said safety selector.”	73
[22] “The trigger mechanism of claim 20, wherein said safety selector moves between safe, standard semi-automatic, and forced reset semi-automatic positions by rotation.”	73
[23] “The trigger mechanism of claim 20, wherein the trigger member pivot axis and disconnecter pivot axis are coaxial.”	73
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I. INTRODUCTION

1. I am making this declaration at the request of Atrius Development Group Corp. (“Atrius”) in the proceeding of the inter partes review (“IPR”) of U.S.P.N. 12,038,247, Ex. 1001 (“Blakely ’247”).
2. I am over the age of eighteen (18) and otherwise competent to make this declaration, which is based upon facts and matters within my own personal knowledge or on information I have reviewed.
3. I am employed by Atrius and am being compensated at my normal salary for my work in this matter, which is \$12,500 per month. I am being paid for my time, regardless of the facts I know or discover and regardless of the conclusions or opinions that I reach and express. My compensation is not contingent on the outcome of this proceeding or the specifics of my testimony.
4. I have been asked to provide my technical expertise, analysis, insights, and opinions regarding Blakely ’247 and prior art, and whether certain prior art references disclose, teach, or suggest features recited in claims 1-23 (the “Challenged Claims”). In forming the opinions expressed in the declaration, I relied upon my education and experience in the relevant field of the art and have considered the viewpoint of a person having ordinary skill in the relevant art (“POSITA”) at the time of the alleged invention of claims 1-13 on September 8, 2022, and of claims 14–23 on May 30, 2023. My opinions directed at the invalidity of the Challenged Claims are based, at least in part, on the patents, applications, and/or publications identified and discussed further below, which I have been instructed by Atrius’ counsel constitute prior art.

II. MY BACKGROUND, QUALIFICATIONS, AND PROFESSIONAL EXPERIENCE

5. My qualifications and professional experience for forming the opinions set forth in this declaration are summarized here and explained in more detail in my *curriculum vitae*, which is included as part of exhibit ???.
6. I have not testified at deposition, hearing, or trial during the past four years.
7. I have been gunsmithing and working on guns for 15 years.

8. I have extensive experience and proficiency with multiple weapon systems due to my Marine Corps training as well as interests pre- and post-service.
9. I have personally built, repaired, and worked on over 1000 Armalite-style rifles chambered in multiple calibers.
10. Forced Reset technology has been around for a while, in various forms, but really took off around the time of the bump stock. While the bump stock doesn't function like a forced reset trigger or a forced reset selector, it accomplishes the same goal; complete reset of the trigger caused by the firing cycle. Since then, various designs have come out to accomplish the same result; some are good and forgiving, others are decent but unreliable. There has been an ongoing need for innovation in this space of the industry, which is essentially a compliance space much akin to that of the AR Pistol Brace.
11. I have been in the firearms industry since 2018. I was a product specialist for Strike industries before shifting to an engineering position that differed from that of my peers. I was essentially the bridge between the engineering aspect of designing gun parts, as well as the product viability and actual use, when measured against the projected needs of our end users. Basically, I advised which concepts to push through, and which concepts weren't practical. I also assisted all engineers with design obstacles in their projects; troubleshooting is what I am particularly gifted at.
12. I have also designed several products, my most popular being the Universal Blast Shield sold by Strike Industries. I have been to multiple trade shows such as NASGW and Shot show over the years and have built a strong network of relationships with people that share my fervor for innovating in this space instead of just printing product.
13. I have been a product specialist, Range Safety Officer, Firearms Instructor, Salesperson (at shows, generally giving in depth technical information on product to interested parties), customer service, IP (one of my duties at strike industries was to go over patent/ trademark correspondence and work with our attorneys on proper responses. I

have also drafted multiple patents for Strike Industries, as well as my own patents.

III. MATERIALS CONSIDERED

14. In preparing this declaration and formulating my opinions, I have considered, relied upon, and applied my own knowledge, background and experience in the relevant field. I have also considered the viewpoint of a POSITA in the field, as of the relevant time frames. I also reviewed Blakely '247 (Ex. 1001), the file history of Blakely '247 (Ex. 1002), and each of the documents cited herein, and I have considered these documents in light of the general knowledge in the art as of September 8, 2022, and May 30, 2023.
15. Among other things, the documents and materials I reviewed and considered include:

<i>Exhibit #</i>	<i>Description</i>
1001	U.S.P.N. 12,038,247 (“Blakely ’247”)
1002	Prosecution History of Blakely ’247
1003	Provisional 63/374,941 relied upon by Blakely ’247 (“Blakely Prov”)
1004	Declaration of Malcolm Brown (“Brown Decl”)
1005	Bingly, Radian Mod for Tommy Trigger upgrade kit, YouTube video June 5, 2022 (available at https://www.youtube.com/watch?v=Kj2S8gfTWew) (“Bingly_1”)
1006	Bingly, Tommy Trigger's Alamo 15 and Rare Breed FRT/E3 Safety Selector Guide, YouTube video June 29, 2022 (available at https://www.youtube.com/watch?v=00mQ2mfjqfU) (“Bingly_2”)
1007	Bingly, Tommy Trigger 3 Selector Install for Alamo 15, YouTube video August 1, 2022 (available at https://www.youtube.com/watch?v=PSvjkaUGJ3Q) (“Bingly_3”)
1008	<i>Rare Breed, et al. v. Strbac, et al.</i> , 1:22-cv-00280 (N.D. Ohio) Complaint (“Tommy”)
1009	U.S.P.N. 7,398,723 (“Blakely ’723”)

1010	U.S.P.N. 2,056,975 (“Michal ’975”)
1011	U.S.P.N. 4,023,465 (“Inskip ’465”)
1012	U.S.P.N. 3,045,555 (“Stoner ’555”)
1013	U.S.P.N. 9,952,012 (“Fellows ’012”)
1014	Applicant appeal brief from prosecution history of Blakley ’723
1015	U.S.P.N. 10,514,223 (“Rounds ’223”)
1016	Red line comparison of Blakley ’247 specification to Blakely provisional application 63/374,941

IV. RELEVANT LEGAL STANDARDS

16. I am not a lawyer, and therefore I offer no opinions on the law. Nonetheless, I have been informed and understand that certain legal standards are relevant to my analysis. In preparing and expressing my opinions and considering the subject matter of Blakely ’247, I rely on certain basic legal principles that Aris’ counsel have explained to me, as summarized below.

A. Patent and Prosecution History

17. I have been informed that a patent includes a specification, one or more drawings, and one or more claims. I have been informed that the specification provides a written description of the patented invention, the drawings illustrate the invention, and the claims define the scope of the invention. I understand that the file history includes the back-and-forth communication between a patent applicant and the United States Patent and Trademark Office (“USPTO” or “Patent Office”) during the application process, including the application itself as well as office actions filed by the USPTO examiner and responses filed by the applicant.
18. I have been informed and understand that a patent is to be understood from the perspective of a POSITA. Such an individual is considered to possess normal skills and knowledge in a particular technical field (as opposed to being a genius). I have been informed and understand that in considering what the claims of a patent require, what was known

prior to that patent, what a prior art reference discloses, and whether an invention is obvious or not, one must use the perspective of such a POSITA.

B. Presumption of Validity and Burden of Proof

19. I have been informed and understand that an issued patent claim is presumed to be valid. I have further been informed that establishing a patent claim to be unpatentable in an *inter partes* review proceeding requires proof by “preponderance of the evidence,” which I understand means proof that it is more likely than not (i.e., more than 50%) that the claim is unpatentable.

C. Claim Construction

20. I have been informed and understand that the first step in an unpatentability analysis involves construing claims, as necessary, to determine their scope. Counsel has informed me that claim terms are given their plain and ordinary meaning as would be understood by one of ordinary skill in the relevant art. Because the meaning of a claim term may not be readily apparent, I understand that I should look at those sources available to the public that show what a POSITA would have understood a claim term to mean. These include, in order of importance, the words of the claims themselves, the patent specification, the prosecution history, and, finally, evidence outside the patent like dictionaries, textbooks, or other resources that may inform the meaning of the claim terms.

D. Prior Art

21. I am told that the second step in an unpatentability analysis involves comparing the construed claim language against the disclosures of the prior art.
22. I have been informed that prior art to Blakely '247 includes patents and printed publications in the relevant art that predate the priority date. For purposes of this declaration, I have been asked to apply September 8, 2022, the filing date of Provisional application No. 63/374,941, to which Blakely '247 claims priority, as the priority date for claims 1–13, and May 30, 2023, the filing date of Blakely '247 for claims 14–23.

23. I have further been informed and understand that a POSITA is presumed to have knowledge of all the relevant prior art.
24. I have been informed and understand that a patent claim may be declared unpatentable, if it is rendered obvious in view of the prior art.

E. Obviousness

25. Atrius' counsel has informed me that a patent claim is not patentable, if the differences between the patent claim and the prior art are such that the claimed subject matter, as a whole, would have been obvious to a POSITA, at the time the claimed invention was made over the relevant art. Obviousness, as I have been informed and understand, is based on the scope and content of the prior art, the differences between the prior art and the claim, the level of ordinary skill in the art, and, to the extent that they exist, certain objective indicia of non-obviousness.
26. I have been informed that whether there are any relevant differences between the prior art and the claimed invention is to be analyzed from the view of a POSITA in the relevant art at the time of the invention. As such, my opinions below as to a POSITA are as of the time of the invention, even if not expressly stated as such; for example, even if stated in the present tense.
27. In analyzing the relevance of the differences between the claimed invention and the prior art, I have been informed that I must consider the impact, if any, of such differences on the obviousness or non-obviousness of the invention, as a whole, not merely some portion of it. A POSITA can use their experience and available prior art to address a problem.
28. I have been informed and understand that a single prior art reference can render a patent claim obvious, if any differences between that reference and the claims would have been obvious to a POSITA. Alternatively, I have been informed and understand that a prior art reference may be combined with other references to disclose each element of the invention under. Thus, the teachings of two or more references may be combined in the same way as disclosed in the claims, if such a combination would have been obvious to one having ordinary skill in the art. I have been informed and understand that a reference

may also be combined with the knowledge of a person of ordinary skill in the art, and that this knowledge may be used to combine multiple references.

29. I understand that a precise teaching in the prior art directed to the subject matter of the claimed invention is not needed. Counsel has further informed me that one may consider the inferences and creative steps that a person of ordinary skill in the art would have employed in reviewing the prior art at the time of the invention. For example, if the claimed invention combined elements known in the prior art and the combination yielded results that were predictable to a person of ordinary skill in the art at the time of the invention, then this evidence would make it more likely that the claim was obvious. On the other hand, if the combination of known elements yielded unexpected or unpredictable results, or if the prior art teaches away from combining the known elements, then this evidence would make it more likely that the claim that successfully combined those elements was not obvious.
30. I have been informed that there are recognized, exemplary, rationales for combining or modifying references to show obviousness of claimed subject matter. Some of the rationales include the following:
 - combining prior art elements according to known methods to yield predictable results;
 - simple substitution of one known element for another to yield predictable results;
 - use of a known technique to improve a similar device (method or product) in the same way;
 - applying a known technique to a known device (method or product) ready for improvement to yield predictable results;
 - choosing from a finite number of identified, predictable solutions, with a reasonable expectation of success;
 - known work in one field of endeavor may prompt variations of it for use in either the same field or a different one based on design incentives or other market forces if the variations are predictable to a POSITA; and

- some teaching, suggestion, or motivation in the prior art that would have led one of ordinary skill to modify the prior art reference or to combine prior art teachings to arrive at the claimed invention.
31. Atrius' counsel has additionally informed me that objective indicia can be important evidence regarding whether a patent is obvious or nonobvious, if it has an appropriate nexus to the claimed invention, i.e., is a result of the merits of a claimed invention (rather than the result of design needs or market-pressure advertising or similar activities). Such indicia include: commercial success of products covered by the patent claims; a long-felt need for the invention; failed attempts by others to make the invention; copying of the invention by others in the field; unexpected results achieved by the invention as compared to the closest prior art; praise of the invention by the infringer or others in the field; the taking of licenses under the patent by others; expressions of surprise by experts and those skilled in the art at the making of the invention; and the patentee proceeded contrary to the accepted wisdom of the prior art.

F. LEVEL OF ORDINARY SKILL IN THE ART

32. I have been informed and understand that a POSITA is a hypothetical person who is presumed to be aware of all pertinent prior art, thinks along with conventional wisdom in the art, and is a person of ordinary creativity.
33. I understand there are multiple factors relevant to determining the level of ordinary skill in the pertinent art, including (1) the levels of education and experience of persons working in the field at the time of the invention; (2) the sophistication of the technology; (3) the types of problems encountered in the field; and (4) the prior art solutions to those problems.
34. I have been informed by counsel that the earliest priority date for Blakely '247 is September 8, 2022, for claims 1–13 and May 30, 2023, for claims 14–23.
35. Based on the technologies disclosed in Blakely '247, I believe that a POSITA would include someone who had, at the priority date would

have associate's degree in gunsmithing or two years of experience working in the field of firearms or gunsmithing and specifically would have a working understanding of the AR-15 and/or M-16. An individual with less technical experience but more education, such as an engineering degree, or some mix of some technical formal training and hands-on training, could also qualify.

36. Based on this criteria, as of the relevant time frame for Blakely '247, I possessed at least such experience and knowledge of a POSITA and am qualified to opine on Blakely '247.
37. For purposes of this declaration, in general, and unless otherwise noted, my statements and opinions, such as those regarding my experience and the understanding of a POSITA generally (and specifically related to the references I consulted herein), reflect the knowledge that existed in the field as of September 8, 2022 (claims 1–13) and May 30, 2023 (claims 14–23). Unless otherwise stated, when I provide my understanding and analysis below, it is consistent with, refers to, and applies the level of a POSITA as of the priority date of Blakely '247.

V. OVERVIEW OF BLAKELY '247

G. Background of FRT's

38. Blakely'247 relates to AR-pattern firearms (e.g., AR-15) which is a civilian, semi-automatic version of the fully automatic M-16 used by our military since 1964. At that time, civilians were allowed to own fully automatic firearms (i.e., machine guns). In 1986, the National Firearms Act ("NFA") was amended to prevent the further manufacture of machine guns for the civilian market. As the supply of pre-1986 machine guns dwindled, the price of the existing supply of machine guns that civilians could legally own skyrocketed. Currently, a pre-1986 M-16 sells for around \$20,000, whereas, an AR-15 can be had for under \$1,000.
39. Consequently, there have been several innovations designed to mimic fully-automatic fire, while not running afoul of the NFA. For example, a bump stock is an accessory that replaces a standard rifle (e.g., AR-15) stock, and it allows the firearm to recoil back and forth, using the recoil energy to cycle the trigger more rapidly than a shooter could typically pull it. Another such innovation is a binary trigger which doubles the

rate of fire by firing when the trigger is pulled and firing against when the trigger is released. While there are many other such innovations, for our purposes, the last one of note is the forced reset trigger (“FRT”) which is what the ’247 patent and all the prior art references specifically relate to. In an FRT, the reciprocating bolt carrier group (“BCG”) of the AR-15 is used to force the trigger to reset very rapidly. So, rapidly that as the bolt chambers the next round, the trigger may be pulled again. Thus, by applying a steady backward pressure on the trigger the firearm will continue firing at rate very close to a machine gun (e.g., 800 rounds per minute in an AR-15), while resetting the trigger completely between every single round, to avoid being classified as an illegal machinegun.

40. Forced reset triggers have been around for decades. For example, U.S.P.N. 2,056,975 discloses a forced reset trigger for a Colt 1911 handgun. Ex.1010 (“Michal ’975”). The patent describes the invention as a “machine-gun” because in 1934, when Michal ’975 was filed, the NFA had just been passed and for the first time legally defined the term “machine gun,” but in fact, Michal ’975 is a FRT.
41. U.S.P.N. 4,023,465 discloses a forced reset trigger for use with a semi-automatic rifle. Ex.1011 (“Inskip ’465”).
42. U.S.P.N. 7,398,723 discloses a forced reset trigger for use in an AR-15. Ex.1009 (“Blakely ’723”).
43. While FRT’s have been known for a long period of time, the Bureau of Alcohol Tobacco Firearms Explosives (“ATF”), the federal agency responsible for regulating firearms, took the position that FRT’s were “machine guns” as defined by the NFA. Consequently, there was no market for them. However, this changed last year when a court ruled that FRT’s are not “machine guns” as defined by NFA. The ATF settled the case, agreeing to halt its actions against FRT’s and FRT manufacturers.
44. A POSITA almost certainly would be aware of the ATF’s changed position on FRT’s, which has created quite a buzz in the industry. Likewise, all the litigations that have been brought by Rare Breed

against FRT manufacturers and the ATF would be well known to a POSITA.

H. How a Standard M-16 Functions

45. The M-16 (fully-automatic) and AR-15 (semi-automatic) were invented by Eugene “Gene” Stoner in 1959. Shortly thereafter, the M-16 was adopted by all branches of the U.S. military and remains the current assault rifle used by most branches of the service. The AR-15 remains the most popular rifle for the U.S. civilian population. Any POSITA would understand how these firearms function. Mr. Stoner obtained patents on various portions of these weapons, we focus on his trigger patent for the M-16. Ex. 1012 (Stoner ’555). I am not relying upon Stoner ’555 as prior art, but rather as evidence of how these firearms operate, as would have been known to a POSITA.
46. An excellent video, “How An AR-15 Rifle Works: Part 2, Function,” correctly and accurately depicts the inner workings of an AR-15 and later an M-16. Ex.1017 (“AR-15 Video”). It demonstrates what a POSITA would have known about the functioning of an AR-15 and M-16.

1. Safe mode

47. As shown in Figs. 1–3, when safety selector switch 120 is pointing forward, the firearm is in safe mode.¹ Ex.1012 (Stoner ’555) at 3:35–39. As shown in Fig.3, a wide semi-circular portion of safety selector 120 contacts the top of trigger 50, as well as the top of disconnecter 68.² Ex.1012 at 3:40-50. As the trigger is trapped between the upper portion of fire control pocket 22 and selector switch 120, it cannot rotate, and the firearm cannot be fired.

¹ The safety selector switch is generally machined from one piece. In the diagrams throughout two colors were used to make how the switch interfaces with the trigger and disconnecter more visible.

² Stoner ’555 refers to disconnecter 68 as “intermediate sear,” I have used the terminology of Blakely ’247 to avoid confusion.

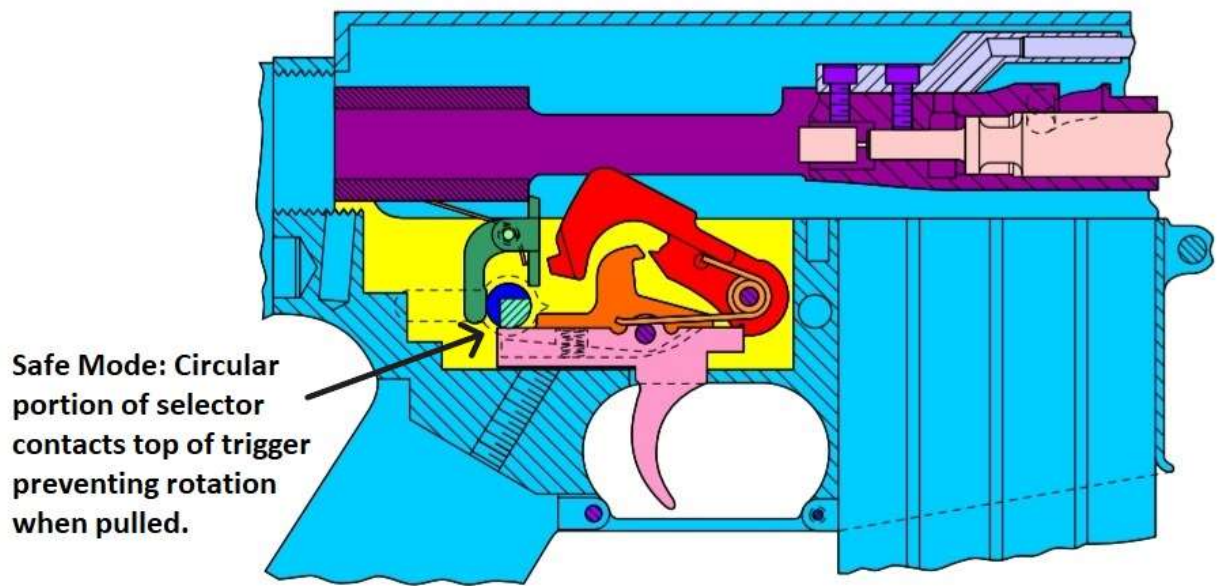


FIG. 2

Stoner '555, Fig.2

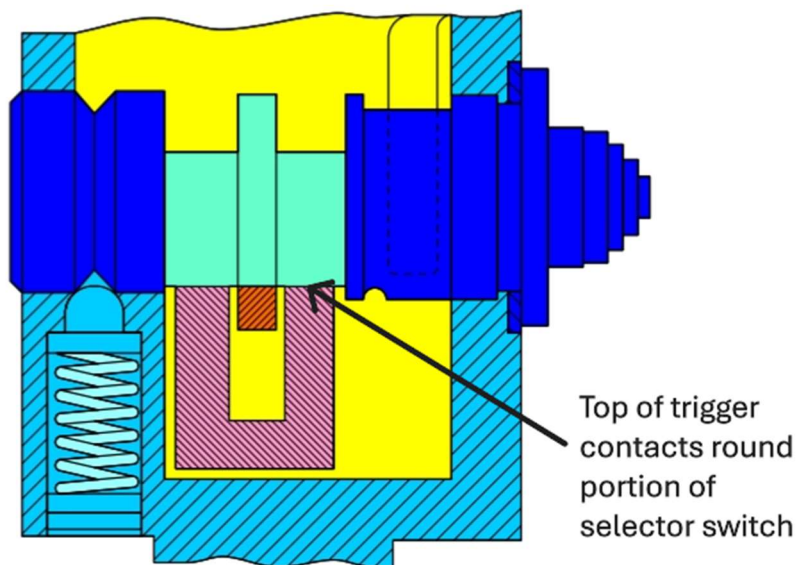


FIG. 3

Stoner '555, Fig.3

2. Semi-automatic Mode

48. As shown in Figs. 5–6, when the selector 120 is pointing upward, the firearm is in semi-automatic mode (i.e., each pull of the trigger will result in one round being fired and the firearms automatically reloading after each shot). Ex.1012 at 3:64–68. Note that in the figures, the trigger has already been pulled back, and in figure 5 the bolt has cycled back causing the hammer to engage the disconnecter.

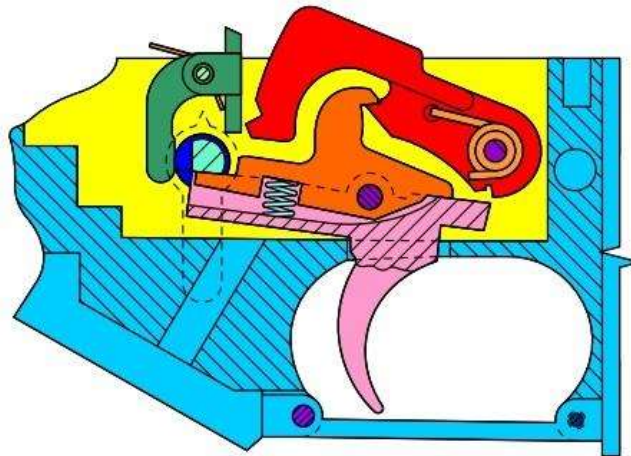


FIG. 5

Stoner '555, Fig.5

49. This is made possible as safety selector 120 has a wide flat portion which is now above trigger 50. This allows trigger to rotate. Ex.1012 at 3:68–4:2; Fig.6 (Note the space below trigger 50. In the figure, the trigger is pulled to the rear. When the trigger is released, the space would be between the top of trigger 50, now in its set position, and safety selector 120).

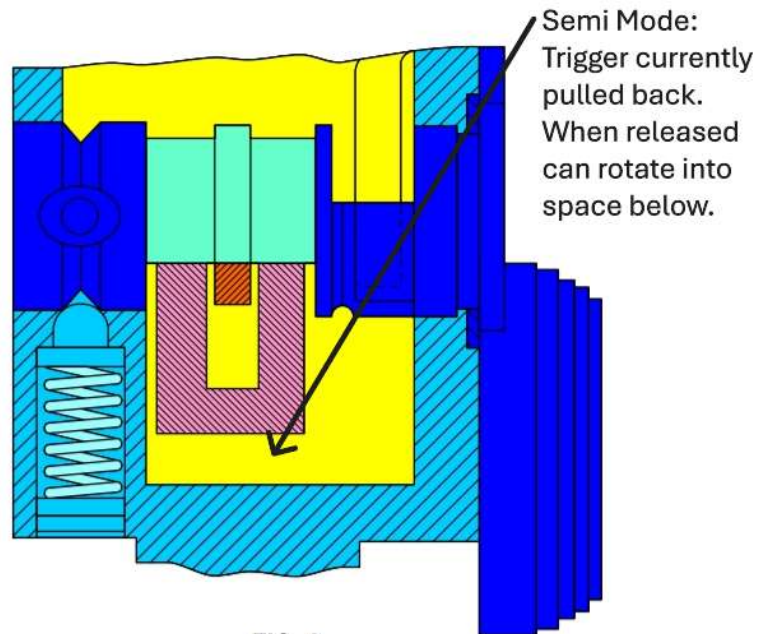


FIG. 6

Stoner '555, Fig.6

50. As trigger 50 is pulled rearward trigger sear 56 rotates away from sear catch 60 of hammer 62, until contact is lost and hammer 62 is released. Ex.1012 at 4:16–20. As hammer 62 is spring loaded it will rotate about hammer pin 82 and hammer 62 will strike a firing pin impacting a primer on the chambered cartridge (not shown). Ex.1012 at Fig.4.

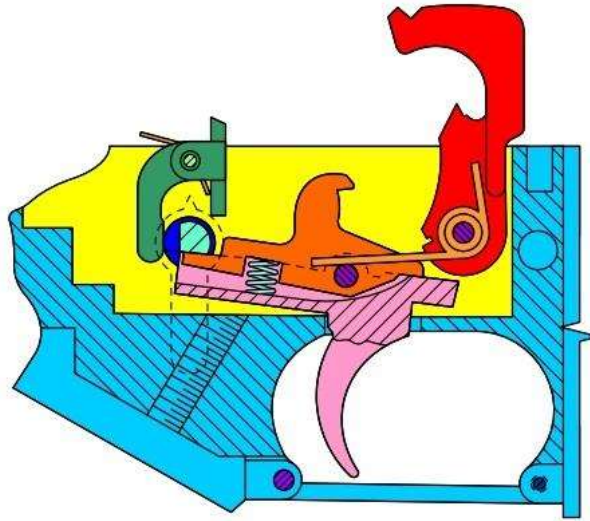


FIG. 4

Stoner '555, Fig.4

51. While not shown in Stoner '555, the primer in turn ignites the gunpowder contained in the cartridge causing a small explosion which propels a bullet down the barrel of the rifle. As the bullet nears the end of the barrel it will pass by a small hole (gas port) allowing some explosive gas to exit through a gas tube which begins at the gas port and the end of which mates with a gas key on the bolt carrier assembly. This rearward gas enters a gas key and causes bolt carrier assembly to be propelled rearward toward the rifle butt. These functions are shown in Ex.1017 (AR-15 Video).
52. Bolt carrier assembly strikes the head of hammer 62 causing it to pivot counter-clockwise. Hook 76 on hammer 62 will engage with hook 74 of disconnecter 68,³ thus, locking hammer 62 rearward. Ex.1012 (Stoner '555) at 4:20–24; Fig.5.
53. As shown in Ex. 1017 (AR-15 Video), as the bolt carrier assembly moves back, it will eject the spent cartridge through an ejection port on the right side (from the shooter's perspective) of the rifle. As the bolt carrier assembly continues rearward, it will strike buffer tub and spring

³ Disconnecter 60 is spring biased 72 such that it can rotate slightly counterclockwise when hammer hook 76 rubs past it. The spring then forces disconnecter hook 74 into engagement with hammer hook 76.

contained in the stock of the rifle. The buffer assembly acts as a shock absorber, halting the rearward motion of the bolt carrier assembly. The buffer spring then propels the bolt carrier assembly forward. As the bolt carrier moves forward it will pick up the next round from the magazine.

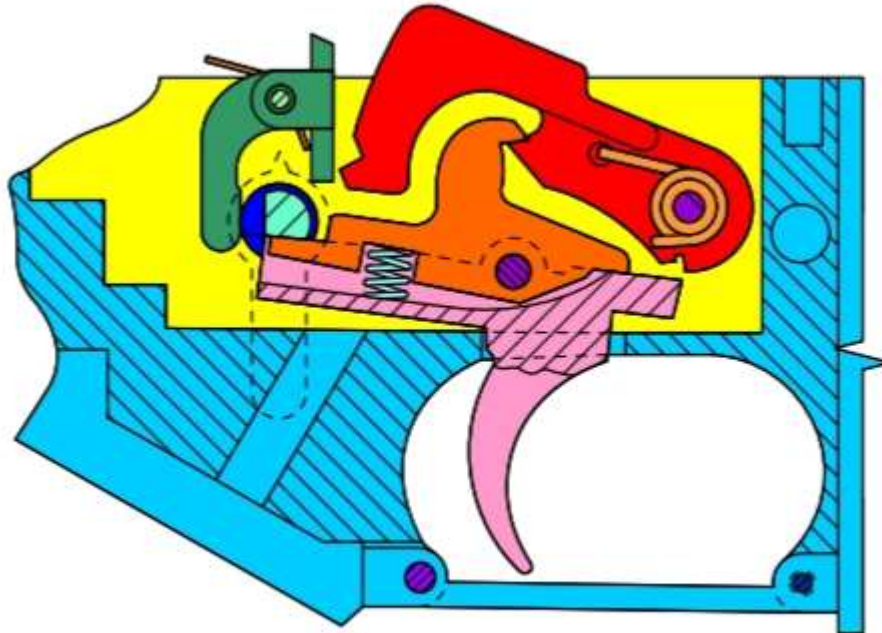


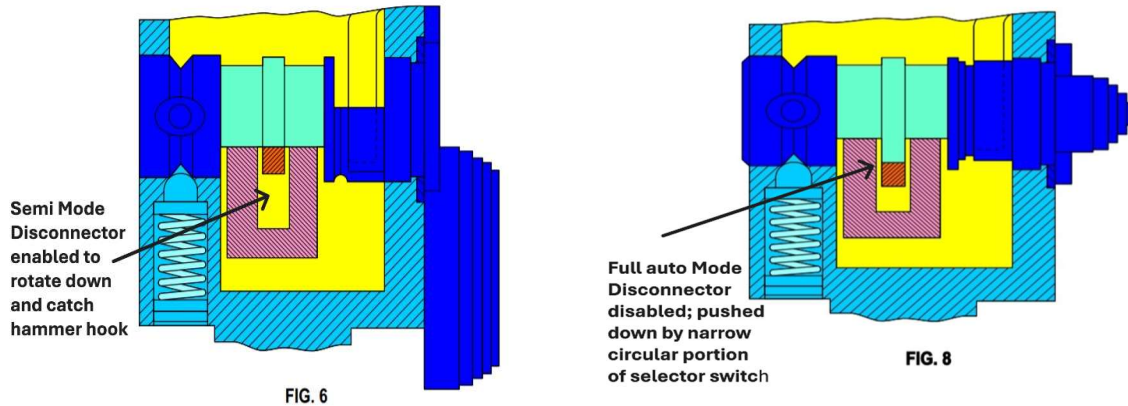
FIG. 5

Stoner '555, Fig.5

54. At this point the shooter must let off trigger blade 88 and allow spring loaded trigger member 50 to rotate such that sear 60 engages with sear catch 64 of hammer 62 and hook 74 of disconnector 68 is no longer engaged with hammer hook 76. Ex.1012 (Stoner '555) at 4:9–15; Fig.5.

3. Fully-automatic Mode

55. When safety selector switch 120 is pointing rearward, the firearm is in fully-automatic mode. Ex.1012 at 4:25–28; Figs. 7–9. Safety selector has a narrow semi-circular portion which only extends downward into the channel of the trigger, thus, engaging the tail of disconnector 68 preventing it from engaging hook 76 of hammer 62. Ex.1012 at 4:28–41; *Compare* disconnector 68 in Fig.6 *with* that in Fig.8.



Stoner '555, Figs. 6 & 8

56. The initial sequence of operations mirrors that of semi-automatic mode. Trigger 50 is rotated until sear 60 comes out of engagement with sear catch 64; and hammer 62 falls setting off a round. Now, however, as the bolt carrier cycles rearward and strikes hammer 62, disconnect 68 is held back by safety selector 120 and cannot engage hook 76 of hammer 62. As the bolt carrier continues rearward it rotates auto sear 102 which engages sear abutment 92 of hammer 62, thus preventing the hammer from rotating forward. Ex.1012 at 4:42–47. In this respect, the auto sear serves a role like that of disconnect 68. However, when the bolt carrier reverses directions and begins moving forward it strikes auto sear 102 causing it to rotate clockwise back to its starting position and in doing so, it releases hammer 62 which strikes the next round and the cycle continues, until the shooter releases trigger 50. Ex.1012 at 4:47–56. So, the firearm will continue firing, so long as trigger 50 is held rearward.

**Full auto Mode:
disconnecter disabled by
selector switch; auto sear
holds hammer back.**

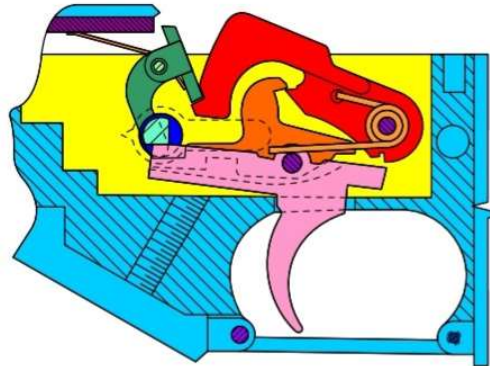


FIG. 7

Stoner '555, Fig.7

57. Therefore, full-auto mode requires disabling the disconnecter and providing another disconnecter-type mechanism which holds the hammer back and releases when the bolt carrier is almost in battery. This is very similar to how an FRT operates with the exception that the disconnecter-type mechanism (the cam) must also reset the trigger to avoid being classified as an illegal machinegun. If the FRT does not have a semi-automatic mode, the disconnecter can be eliminated.

I. How a Standard AR-15 Functions

58. A standard AR-15 functions in the same way as an M-16 with the exception that it does not contain an auto sear. So, its safety-selector switch only needs two modes (safe and semi). Because the disconnecter never needs to be disabled, some manufacturers shortened the disconnecter so it would be more difficult to convert an AR-15 into an illegal machinegun.⁴

⁴ In a similar way, manufactures pressured by the ATF have, at various times, made other small changes to the AR-15 designed to make converting it to full-auto more difficult. However, in more recent years, the ATF has backed away from this



J. '247 Patent Disclosure

59. On April 25, 2003, Brian Blakely filed U.S.P.N. 7,398,723 for forced reset trigger for use in an AR15. Ex. 1009 (“Blakely ’723”). The ’247 patent builds upon the Blakely ’723 by adding a three-position selector switch to allow the shooter to choose between safety on, semi-automatic fire, and forced reset fire. Three-position selector switches were widely known. As discussed, the original M-16 had one to provide the user safe, semi-automatic, and fully-automatic modes of fire. *See* Ex.1012 (Stoner ’555). Likewise, most binary triggers have 3-position selector switches (i.e., safe, semi, and binary modes). *See e.g.*, Ex.1013, (U.S.P.N. 9,952,012 (“Fellows ’012”)).

position and an AR-15 may legally have parts identical to that of an M-16 apart from an auto sear.

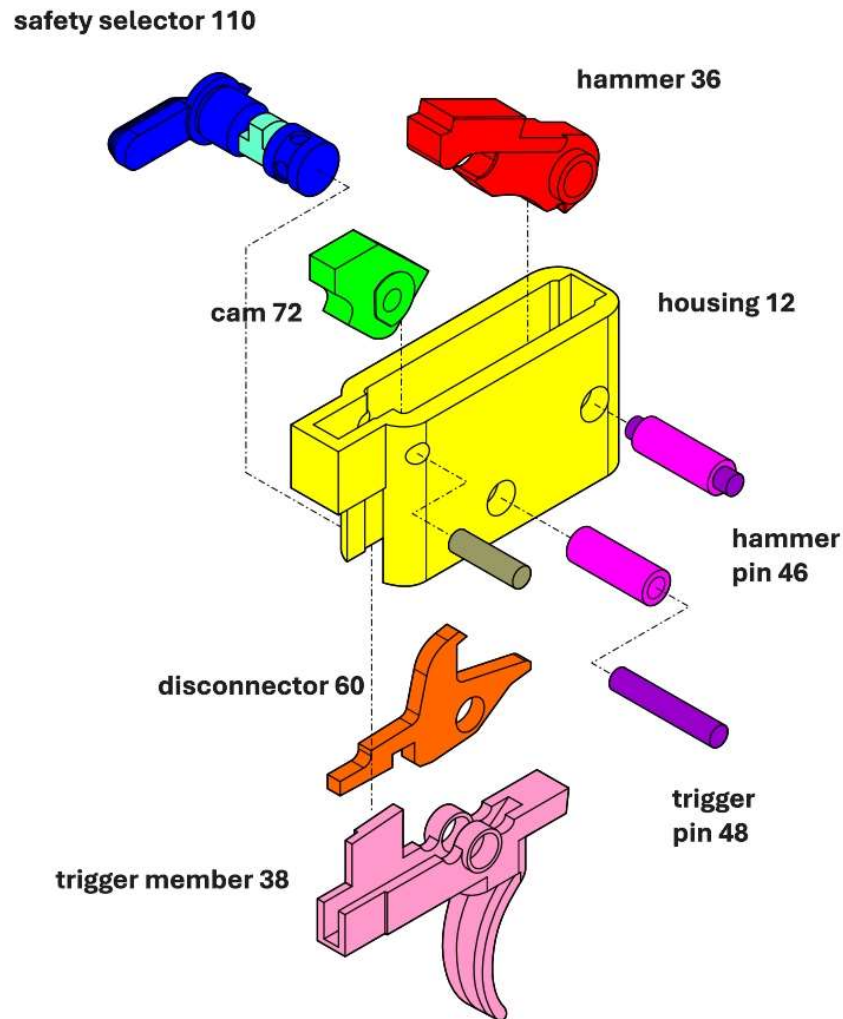


FIG. 3

Ex. 1001 (Blakely '247), Fig.3⁵

⁵ Colorized figures from patents throughout my report were supplied by counsel. I have compared them to the patent figures, and they are identical with the exception that the reference numbers have been removed and replaced, in some instances with labels, and colors have been added.

4. 3-Position Safety Selector Description

a. Safe Mode

60. As can be ascertained from Figs. 4A & 4B, when safety selector 110 is set to safe mode, wide semi-circular portion 112 of safety selector 110 prevents trigger 38 from being pulled rearward to fire the weapon. Ex.1001 (Blakely '247) at 8:43–48. Specifically, safety selector 110 is in contact with the tail portion of trigger member 38, effectively locking trigger 38 in place. Ex.1001 at 8:45–48. This is identical to how a standard, prior art safety selector functions in safe mode.

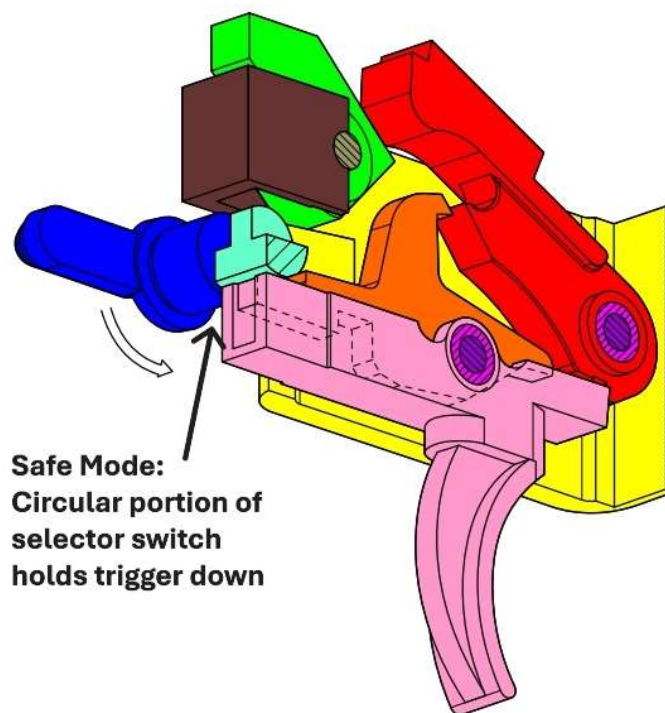


FIG. 4B

Blakely '247, Fig.4B

b. Semi-automatic Mode

61. Figs. 5A & 5B depict safety selector 110 in semi-automatic mode. Flat portion 114 of safety selector 110 now allows trigger 38 to be pulled and weapon fired. Flat portion 114 provides a gap between the tail portion of trigger member 38. Spring-loaded disconnecter 60 is free to rotate down when struck by the hammer hook allowing it to engage

hammer hook. Thus, both trigger 38 and disconnecter 60 can function. Ex.1001 at 8:48–54. That is to say, when hammer 36 is caused to rotate counterclockwise, hook 64 of disconnecter 60 temporarily engages hook 53 of hammer 36. As trigger 38 is released, disconnecter 60 rotates allowing hammer 36 to begin to fall, until sear catch 52 of hammer 36 engages sear 56 of trigger 38. At that point, hammer 36 and trigger 38 are back to their set positions and the weapon may be fired. *Id.* This too is how a standard safety selector functions in semi-automatic mode.

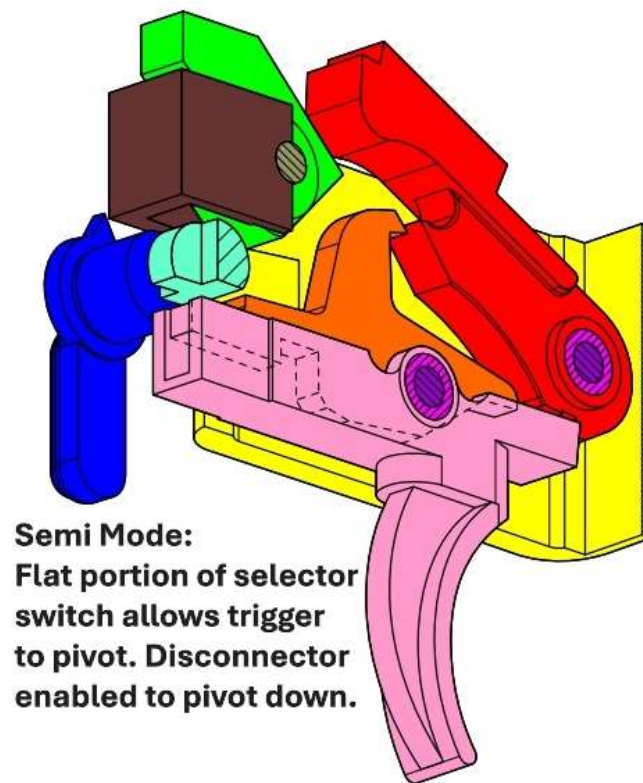


FIG. 5B

Blakely '247, Fig.5B

c. FRT Mode

62. Lastly, Figs. 6A & 6B show safety selector 110 in FRT mode. Narrow semi-circular portion 116 of safety selector 110 allows the tail portion of trigger member 38 to move on both sides of narrow portion 116, thus, allowing trigger 38 to rotate. However, narrow portion 116

contacts tail 66 of disconnecter 60, thus preventing disconnecter hook 64 from engaging hammer hook 53. Ex.1001 at 8:54–65. The way the disconnecter is disengaged is identical to that of a standard M-16 in auto mode.

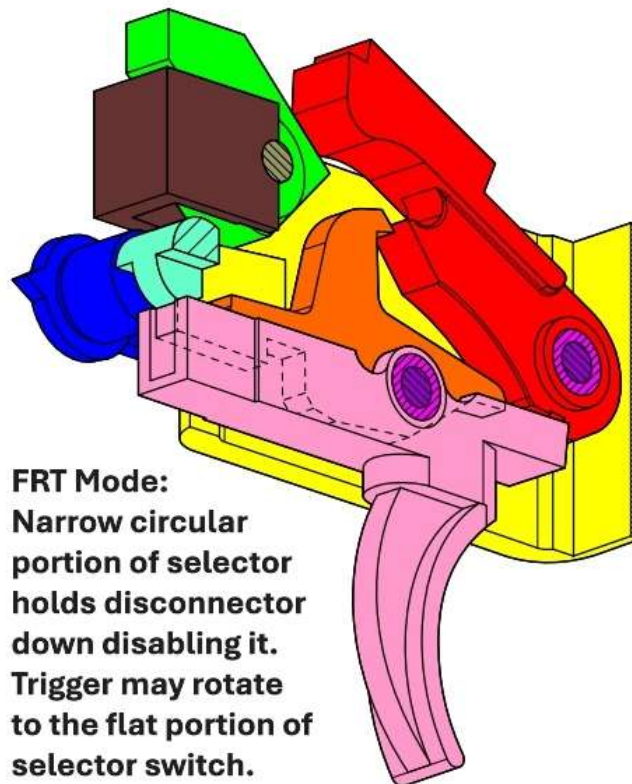


FIG. 6B

Blakely '247, Fig.6B

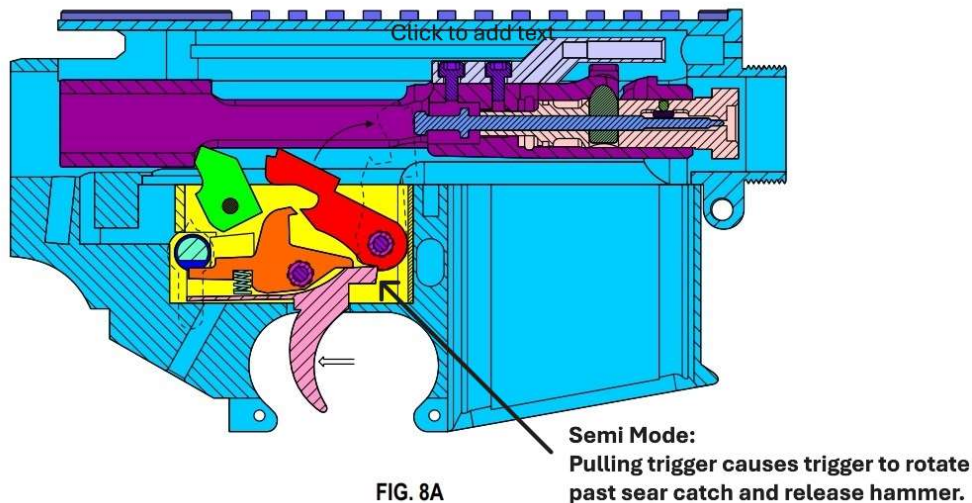
5. Blakely '247 Operating Mounted in AR-15

a. Safe Mode

63. Blakely '247 may be better understood in the context of a firearm (e.g., AR-15). Fig.7 shows the trigger mechanism mounted in an AR-15 and in safe mode. The figure is only a partial view of the AR-15. The barrel of the rifle would extend to the reader's right, while the butt stock would extend to the left. Blakely '247 safe mode is the same as a standard AR-15/M-16. Ex.1001 at 8:43–48.

b. Semi-automatic Mode

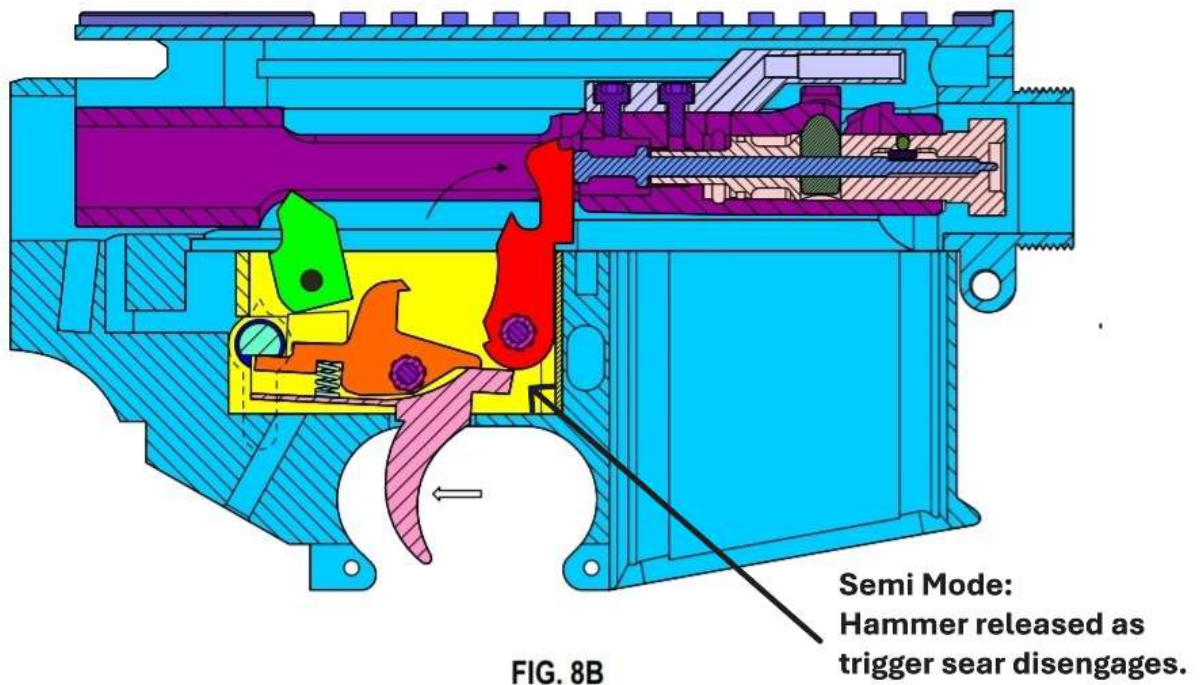
64. Fig.8A depicts safety selector 110 in semi-automatic mode. As trigger blade 54 of trigger member 38 is pulled rearward by the shooter's finger, trigger member 38 pivots on trigger pin 48. Eventually, sear 56 of trigger member 38 will rotate past sear catch 52 of hammer 36. Ex.1001 (Blakely '247) at 8:66–9:6.



Blakely '247, Fig.8A

65. While not shown,⁶ as hammer 36 is spring loaded it will rotate about hammer pin 36 and hammer head 50 will strike firing pin 99 impacting a primer on the chambered cartridge. Ex.1001 at 9:6–10; Fig.8B. The primer in turn ignites the gunpowder contained in the cartridge causing a small explosion which propels a bullet down the barrel of the rifle. As the bullet nears the end of the barrel it will pass by a small hole (gas port) allowing some explosive gas to exit through a gas tube which begins at the gas port and the end of which is depicted in Fig.8C. This rearward gas enters a gas key and causes bolt carrier assembly 92 to be propelled backward toward the rifle butt. As bolt carrier assembly 92 moves back, it will eject the spent cartridge through an ejection port on the right side (from the shooter's perspective) of the rifle.

⁶ These steps are inherent in the disclosure of Blakely '247 and were also well known to a POSITA.



Blakely '247, Fig.8B

66. Bolt carrier assembly 92 strikes head 50 of hammer 36 causing it to pivot counter-clockwise. Hook 53 on hammer 36 will engage with hook 64 of disconnecter 60,⁷ thus, locking hammer 36 rearward. As bolt carrier assembly 92 continues its rearward motion, it will strike first contact surface 82 of cam 72⁸ causing the cam to rotate about cam pin 74 which in turn causes cam lobe 78 to interact with cam follower 58 to pivot trigger member 38 counter-clockwise, however, as hammer 36 is held back by disconnecter 60, trigger member 38 will not reset. Ex.1001 at 9:10–20.

⁷ Disconnecter 60 is spring-biased (not shown) such that it can rotate slightly counterclockwise when hammer hook 53 rubs past it. The spring then forces disconnecter hook 64 into engagement with hammer hook 53.

⁸ Blakely '247 uses the term “cam,” and will follow suit. I prefer the “locking block” terminology used in the '223 patent which I think is more accurate.

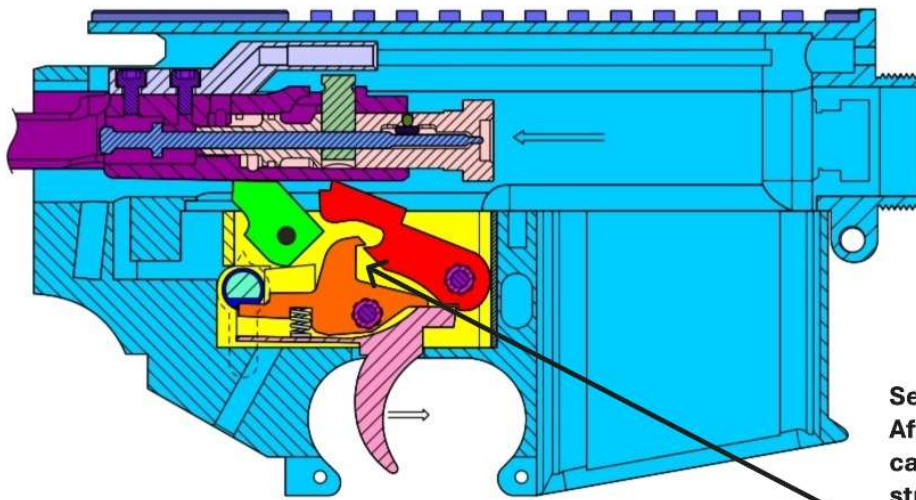


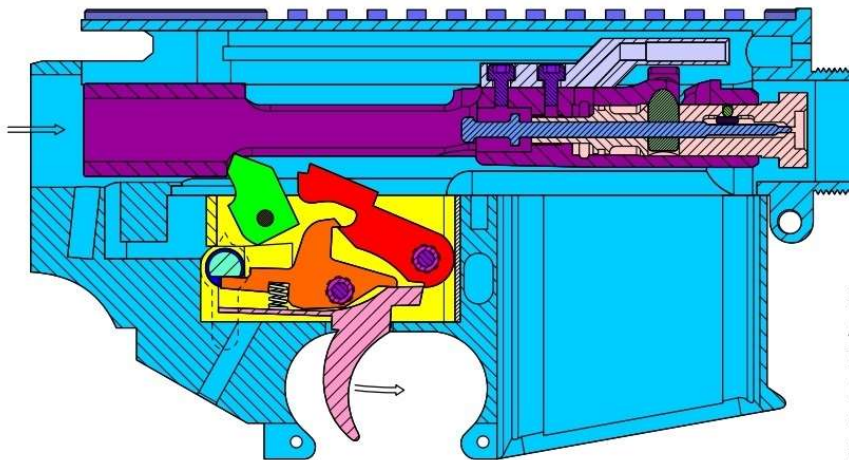
FIG. 8C

Semi Mode:
After round fired, bolt carrier moves rearward striking hammer which engages disconnector. Cam does not reset trigger.

Blakely '247, Fig.8C

67. While not shown,⁹ as bolt carrier assembly 92 continues rearward, it will strike buffer tub and spring contained in the stock of the rifle. The buffer assembly acts as a shock absorber, halting the rearward motion of bolt carrier assembly 92. The buffer spring then propels bolt carrier assembly 92 forward. As bolt carrier 92 moves forward, it will pick up the next round from the magazine.
68. Bolt carrier continues moving forward and strikes second contact surface 84 of cam 72 causing cam 72 to rotate clockwise. At this point, the shooter must let off trigger blade 54 and allow spring loaded trigger member 38 to rotate such that sear 56 engages with sear catch 52 of hammer 36 and hook 64 of disconnector 60 is no longer engaged with hammer hook 53. Ex.1001 at 9:20—27; Fig.8D. Blakely '247 semi mode is the same as a standard AR-15/M-16.

⁹ These steps are inherent in the disclosure of Blakely '247 and were also well known to a POSITA.



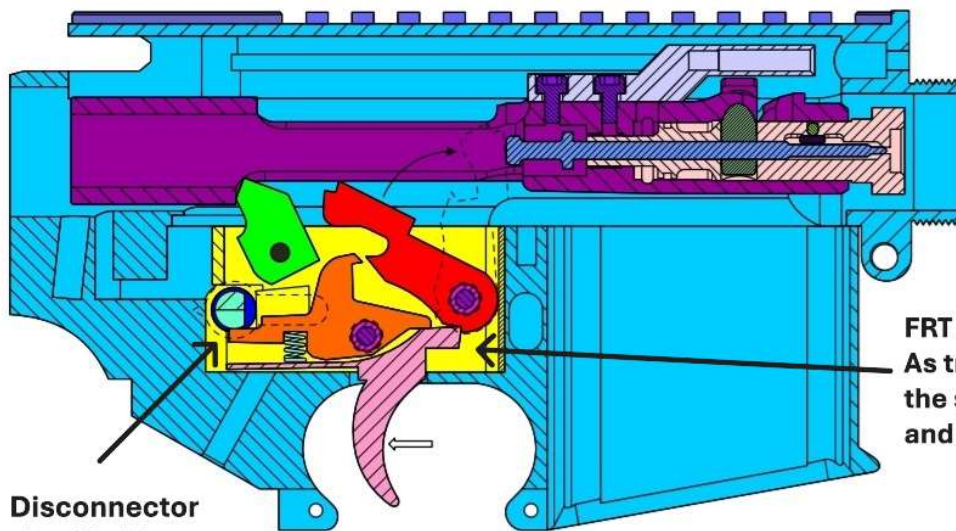
Semi Mode:
As bolt moves forward
it strikes cam but does
not reset trigger because
disconnecter enabled.
Shooter must release trigger
to reset it.

FIG. 8D

Blakely '247, Fig.8D

c. FRT Mode

69. Fig.9A demonstrates the starting position while in forced reset trigger mode. As trigger blade 54 of trigger member 38 is pulled rearward, trigger member 38 pivots until the trigger sear 56 is no longer engaged with sear catch 52 of hammer 36. Ex.1001 (Blakely '247) at 9:28–31. At which time hammer 36 falls setting off a round. Fig.9B.



FRT Mode:
As trigger is pulled,
the sear disengages
and the hammer falls.

Disconnecter
disabled by
selector switch

FIG. 9A

Blakely '247, Fig.9A

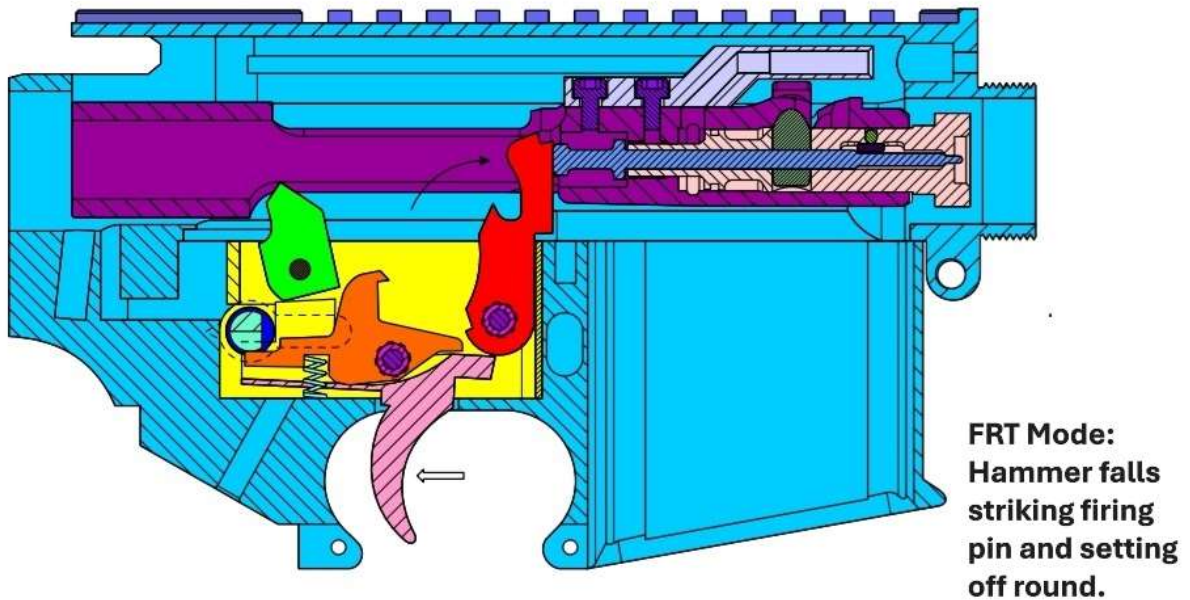


FIG. 9B

Blakely '247, Fig.9B

70. As bolt carrier assembly 92 moves rearward, it strikes hammer head 50. Fig.9C. However, unlike the semi-automatic mode, disconnecter 60 is not in position to engage hammer hook 53, as the narrow semi-circular portion 116 is in contact with tail 66 of disconnecter 60. As bolt carrier 92 continues moving rearward, it contacts first surface 82 of cam 72 causing it to rotate. Cam lobe 78 strikes cam follower 58 of trigger member 38 forcing trigger to rotate back to the set position wherein sear 56 engages sear catch 52. Ex.1001 at 9:31—60. As bolt carrier assembly 92 moves forward, it contacts second contact surface 84 of cam 72, allowing the trigger to be pulled. Thus, if the shooter applies a constant rearward pressure on trigger blade 54, the firearm will fire immediately after bolt carrier 92 returns to battery, closely simulating a fully-automatic rate of fire.

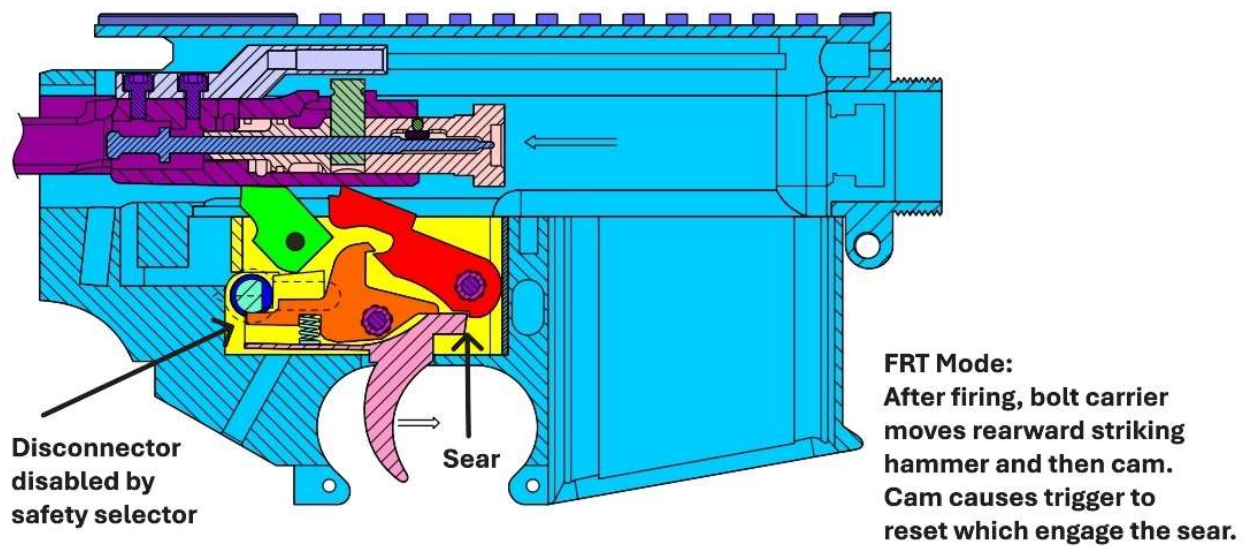


FIG. 9C

Blakely '247, Fig.9C

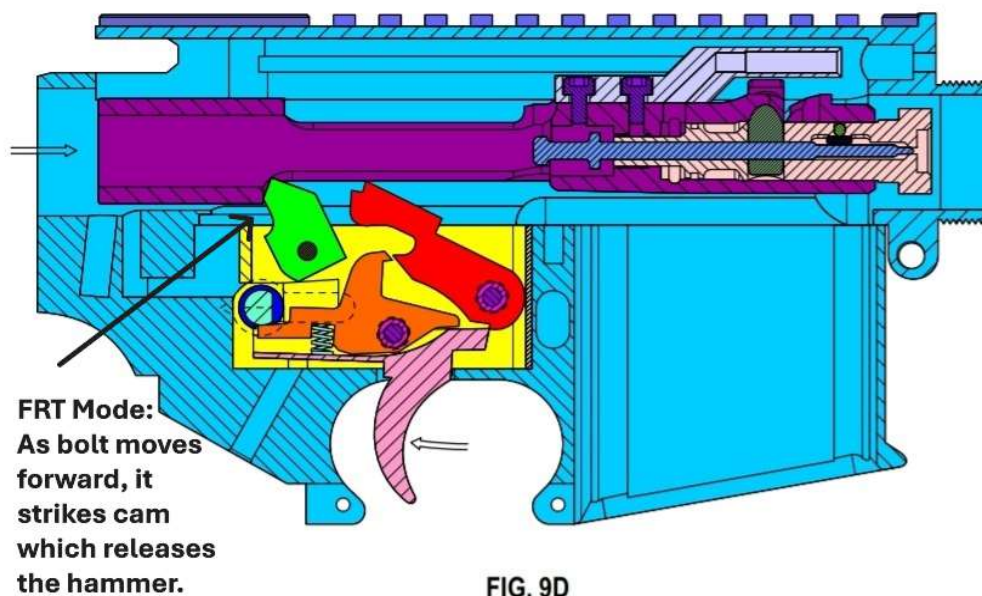


FIG. 9D

Blakely '247, Fig.9D

K. Prosecution History

71. Provisional application No. 63/374,941 was filed on September 8, 2022. Ex.1003 ("Blakely Prov"). Blakely '247 was filed on May 20, 2023, and claims priority to the provisional application. For claims 1–13, I have assumed the priority date claimed by Blakely '247 for the

purposes of this IPR. For claims 14–23, I have used the filing date of May 30, 2023, because new matter was added when Blakely ’247 was filed and claims 14–23 capture the new matter. These claims and new matter appear to be directed at capturing a product, The Super Safety, which was on the market prior to the filing of Blakely ’247.

72. Through the entirety of the provisional application, the cam is always described as “pivotably mounted” to “pivot between” a first and second position. Likewise, all the figures only show a pivotable cam mounted on an axis like an auto sear of a machine guns, or the locking block disclosed in Rounds ’223. Ex. 1003 (Blakely Prov).
73. As shown in the redline comparison of Blakely’s ’247 specification and that of his provisional application, when the ’247 specification was filed, new matter was added. Ex.1016 (Redline). Specifically, 5:21–25 was added to have the cam “movably mounted” and “movable between” a first and second position. Ex.1016 at p. 10. Blakely made the same addition at 8:3. *Id.* at 16. Then, 8:12–14 was added to describe that cam 72 “can be slidably mounted to the housing.” *Id.* at 16. Unlike claims 1–13 which require the cam to be “cam being pivotable between a first” and second position, claims 14–23 require only that the cam “cam being movable between a first” and second position.
74. It is my understanding that when new matter is added to a patent application, claims which encompass the new matter are not entitled to the earlier priority date, instead they have the priority date matching when the new matter was added.
75. The Examiner allowed the Blakely ’247 claims in his initial action. Ex.1002 at p. 23. The Examiner found Blakely ’723 to be the closest prior art, as it discloses all the elements of a FRT, however, it did not disclose a 3-position safety selector switch and consequently had no semi-automatic mode. Ex.1002 at pp. 23–25 (“Blakely [’723] does not show, however, a safety selector ... to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions.”) Applicant failed to disclose to Examiner that it was aware that Tommy Triggers had been selling an FRT with a 3-position safety selector switch nearly a year before Blakely’s ’247 priority date. Moreover, ABC IP, the

assignee of the Blakely '247 had released a video of its FRT-E3 which is an FRT with a 3-position safety.¹⁰ In my opinion, had Examiner known of this prior art, he would not have allowed the claims of Blakely '247 because the FRT-E3 combines an FRT with a 3-position safety selector, the very thing the Examiner found missing from Blakely '723.

VI. Level of Ordinary Skill in the Art

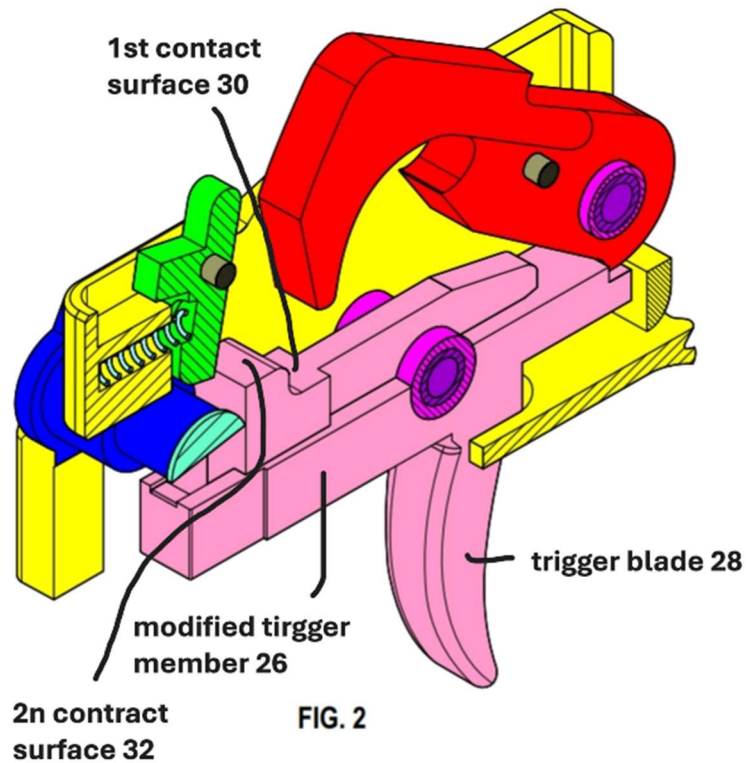
76. A person of ordinary skill in the art ("POSITA") would have an associate's degree in gunsmithing or two years of experience working in the field of firearms or gunsmithing, and specifically would have a working understanding of the AR-15 and/or M-16. An individual with less technical experience but more education, such as an engineering degree, or some mix of some technical formal training and hands-on training, could also qualify.

VII. Claim Construction

77. I have been informed and understand that, for the purposes of this IPR, I submit that the terms of Blakely '247 should be given their plain and ordinary meaning as understood by a POSITA. To understand the meaning of the claims, I have reviewed Blakely '247 (Ex.1001) and its prosecution history (Ex.1002). I have applied the plain and ordinary meaning of the claim terms of Blakely '247 in my analysis. No specific construction of any claim term is required because the prior art references that I rely on in this declaration meet or disclose each of the claim terms under any reasonable construction *with one exception*. While the term "trigger member" as used by POSITA is a broad generalized terms to refer to that portion of a firearm that the shooter pulls with his finger to fire the weapon, I have been informed that Patent Owner may attempt to construe this term narrowly to require the trigger member be comprised of only one piece.
78. I have been informed that the specification 'is always highly relevant to the claim construction analysis, and usually dispositive; it is the single best guide to the meaning of a disputed term.

¹⁰ <https://www.youtube.com/watch?v=ZJ0lWi2kfc0> (DeMonico FRT15E3 video).

79. Blakely '247 only discloses one embodiment, and as shown in Fig.5, trigger member 38 is formed as one unitary piece. As will be discussed later in more detail, prior art reference Blakely '723 trigger member is comprised of two pieces: trigger 22 and trigger extender 90. The question is whether the term “trigger member” may be composed of more than one part. This question, however, is clearly answered by the specification of Blakely '247.
80. Blakely '247 incorporates by reference the entirety of U.S.P.N. 10,514,223, Ex.1015 (“Rounds '223”). Ex.1001 (Blakely '247) at 1:65–2:1. I have been informed that this means the specification of Rounds '223 forms a part of the Blakely's '247 specification, as if it were written into it.
81. The trigger member in Rounds '223 consists of two parts: trigger blade 28 and modified trigger module 26. The specification of Rounds '223 (which forms part of Blakely's '247 specification), makes clear that the two pieces constitute the “trigger member” which the specification treats as synonymous with “trigger.”



Rounds '223 Fig.2

82. For example, “modified trigger member 26 ... may include a trigger blade portion 28 ... [which] is part of trigger member 26,” makes clear that “trigger member” includes both structures. Ex.1015 at 3:51–54; *see also* 4:1–7 (“trigger member 26 can include first and second upwardly extended rear contact surfaces 30, 32.”); 5:35–43 (“contact surface 30 *of* the trigger member 26 forces the trigger to pivot (arrows in FIG.5) toward and to its reset position. While trigger member 26 points to the lower trigger blade 28, it is clearly being used to refer to both pieces, as if they were one; in fact, the upper piece has no name or numeral assigned to it as a whole, and contact surfaces 30 and 32 are said to be “part of” trigger member 26. At the same time, as trigger member 26 is reset, the biasing spring 70 moves the trigger member 26 is reset, the biasing spring 70 moves the lower end of the locking bar 62 into a second position (FIG.5) in which it blocks pivotal movement of the trigger 26, including by finger pressure applied (or reapplied) to the trigger blade 28.”) Also, “bolt carrier is cycled, causes the trigger to be

forcibly rest by contact between the hammer and a surface *of* the trigger member. Once reset, movement of the trigger is blocked by a locking bar and cannot be pulled” Ex. 1015 (Rounds ’223) at 2:39–43. As is evident from Fig.3, the hammer contacts the surface of a piece separate from the lower trigger blade 28, so trigger module 26 also referred to as the “trigger member” is both pieces.

83. Therefore, a POSITA reading the specification of Blakely ’247 which incorporates Rounds ’223 would understand that “trigger member” as used in the claims can encompass a single unitary structure like the embodiment of Blakely ’247 or a two-piece structure like that in Rounds ’223 and prior art reference Blakely ’723.
84. Thus, trigger member as used in Blakely ’247 may be one or two pieces and would encompass the trigger member of Blakely ’723.

VIII. OVERVIEW OF THE PRIOR ART

L. Blakely ’723 (Ex. 1009)

1. FRT Mode

85. Blakely ’723 teaches a FRT for a semi-automatic rifle (e.g., AR-15 as partially depicted in Fig.5). Ex.1009 (Blakely ’723) at 6:37–40; 8:27–34. It appears to teach a standard 2-position safety selector switch. *See e.g.*, Ex.1009 at 3:3–9; Fig.1.

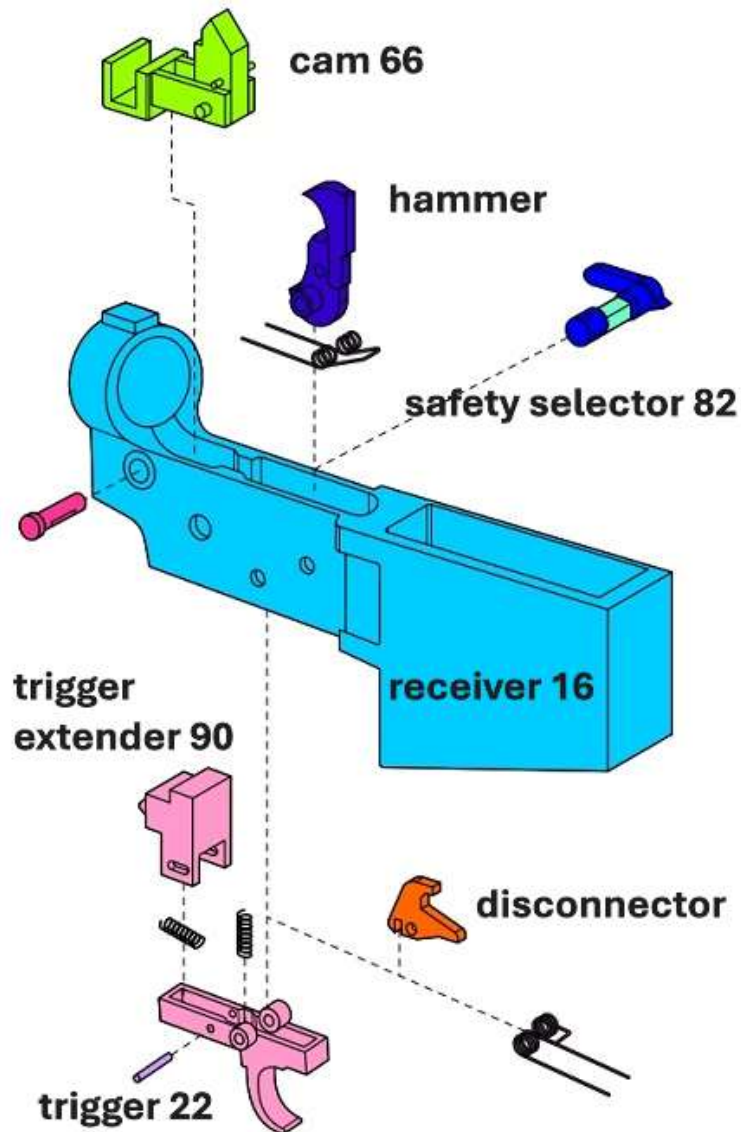
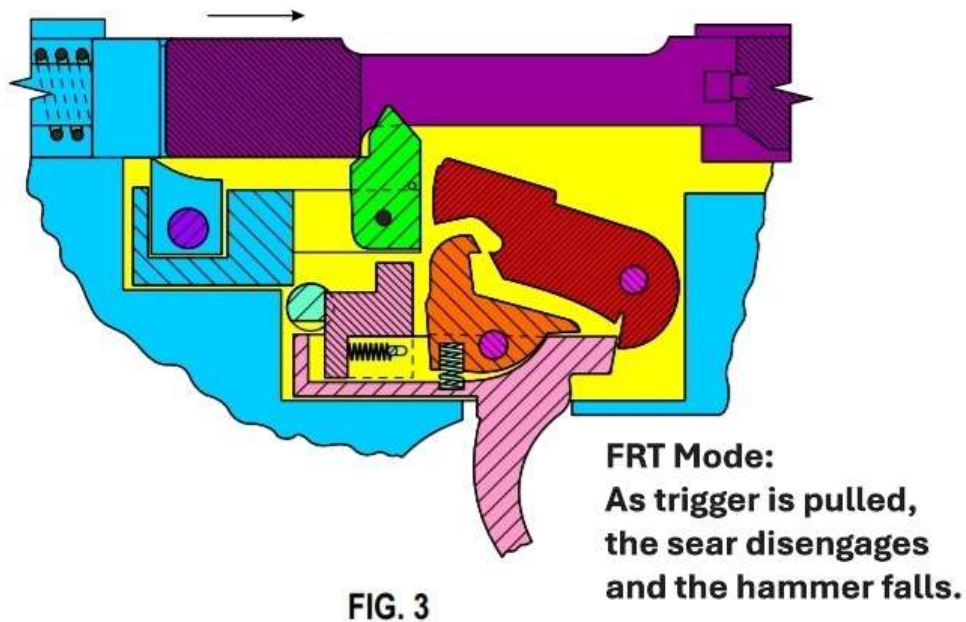


FIG. 5

Blakely '723, Fig.5

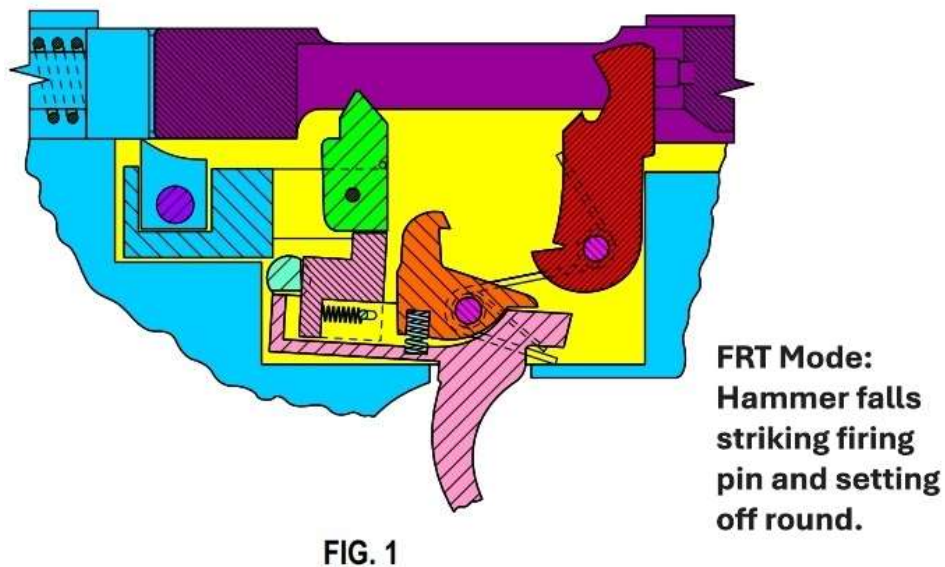
86. In Blakely '723, Fig.3 demonstrates the starting position while in forced reset trigger mode.¹¹

¹¹ Technically, Fig.3 is a fraction of second before the set position as the bolt is still moving forward and has not yet contacted the cam. However, it will suffice for illustrative purposes.



Blakely '723, Fig.3

87. As trigger blade 24 of trigger member 22 is pulled rearward, trigger member 22 pivots about the trigger pin until trigger sear 34 disengages from sear catch 44 of the hammer. At which time, the spring-loaded hammer falls setting off a round. Ex.1009 at Fig.1.



Blakely '723, Fig.1

88. As bolt carrier assembly 20 moves rearward, it strikes hammer head 56 causing the hammer to rotate rearward and engage disconnecter 44 for tiny fraction of a second (serving no functional purpose). Ex.1009 at 10:34–38. As bolt carrier 20 continues moving rearward, it contacts the forward face of cam 66 causing it to rotate counterclockwise. Cam lobe 69 strikes the trigger extender of trigger member 34 forcing trigger 34 to rotate back to the set position wherein sear 34 engages sear catch 44. Ex.1009 at 10:38–47; Fig.2. In this position, cam lobe 69 is in contact with the trigger extender and the top portion of cam 66 is in contact with bolt carrier 20 making it impossible for the shooter to pull the trigger. Ex.1009 at 10:47–50.

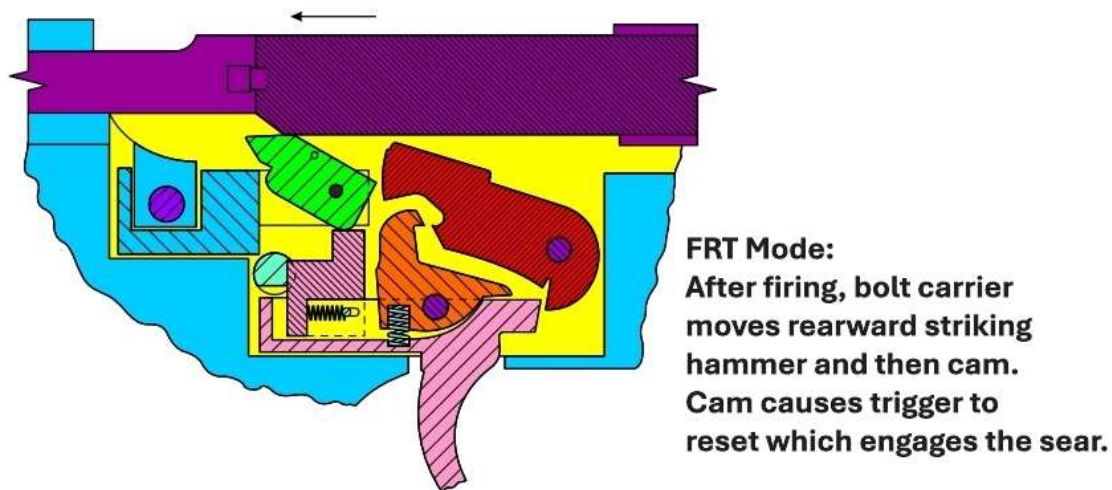
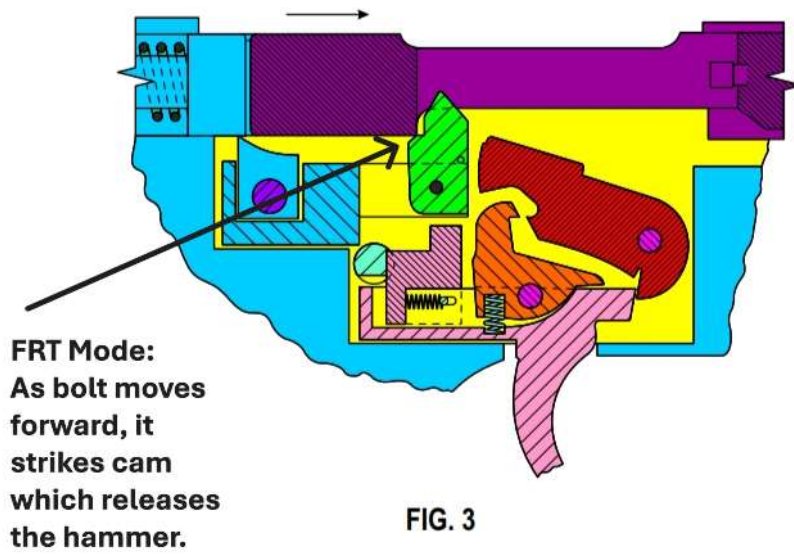


FIG. 2

Blakely '723, Fig.2

89. As bolt carrier assembly 20 reverses direction and moves forward, it contacts the rearward contact surface of cam 66. Ex.1009 at 8:12–26; 10:58–65; Fig.3. In this position, the flat portion of the bottom of cam 66 provides a gap above trigger extender of trigger 22, thus allowing trigger 22 to be pulled. Thus, if the shooter applies a constant rearward pressure on trigger blade 24, the firearm will fire immediately after bolt carrier 20 returns to battery, closely simulating a fully-automatic rate of fire. Ex.1009 at 8:26–43; 10:64–11:5.



Blakely '723, Fig.3

90. Blakely '723 appears to have a 2-position safety selector switch (i.e., safe and FRT modes) and would not have a semi-automatic mode which is standard on AR 15's and M-16's. However, Ex.1009, 11:11–25, suggests that Blakely '723 contemplated a three-position safety selector enabling semi-automatic mode. However, the figures and specification do not clearly support this contention. I assume, this language was prophetic and while it does not specifically describe what Blakely had in mind, it does provide motivation to add a 3-position selector switch.

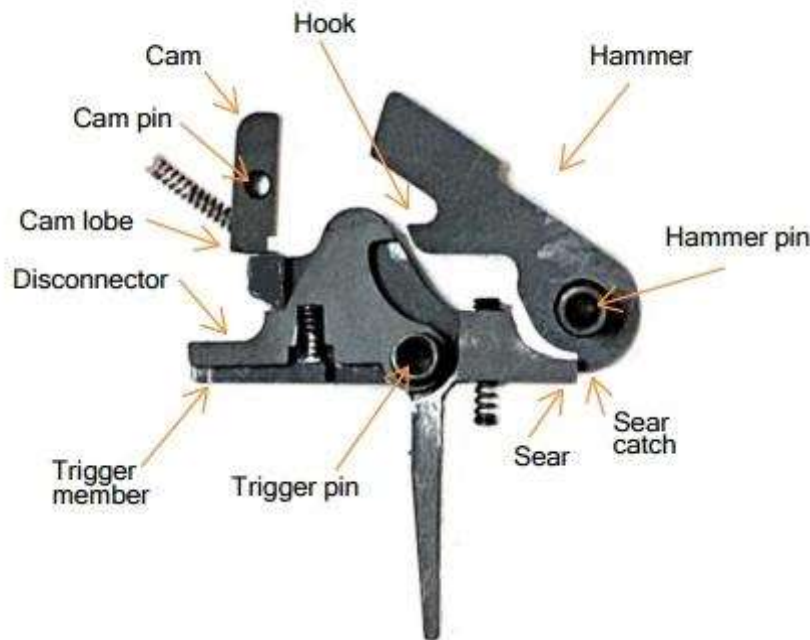
M. Complaint (Ex. 1008)

91. ABC filed a complaint against Tommy Triggers (“Complaint”) on February 21, 2022, which is a publicly available, printed publication which I am told qualifies as prior art under.¹² At that time, ABC IP and Rare Breed had filed several patent infringement suits against several companies. Rare Breed was also very vocal about its fight against the

¹² The complaint was filed in the publicly accessible docket of the N.D. Ohio. *Rare Breed, et al. v. Strbac, et al.*, 1:22-cv-280 (Feb. 21, 2022), Dkt. 1.

ATF over whether FRT's were illegal machine guns. Anyone in the industry would have known about Rare Breeds lawsuits including the one against Tommy Triggers. A POSITA would have known that only a handful of FRT manufacturers were making FRT's at that time, due to concerns with the ATF, they consisted of PBG's Alamo-15, BDU's WOT, RB's FRT-15, and Tommy Triggers FRT-15-3MR. Tommy Triggers made kits to convert those FRT's such that they could be used with a 3-position safety selector switch.

92. Complaint explains how a standard AR-15 trigger functions. Ex.1008 (Complaint) at 5–7. It contrasts this to how an FRT works. Ex.1008 at pp. 8–9. Complaint also states ABC has “been developing a ‘three-position’ FRT which a safety selector switch can change the mode of operation between” safe, semi-automatic, and FRT modes. Ex.1008 at pp. 9, 12. Thus, providing a clear motivation to combine an FRT with a 3-position safety selector. Complaint contains photos of an FRT with a 3-position selector, the FRT-15-3MD, providing additional motivation for the combination. Ex.1008 at p. 11. Complaint shows the inner workings of an FRT which may be used with a 3-position selector. Ex.1008 at p. 12 (duplicated below). Complaint makes clear that the FRT-15-3MD is designed to be placed into the fire control pocket of an AR-15. Ex.1008 at pp. 16–17. The sear on the trigger member and the sear notch on the hammer are clearly seen. Ex.1008 at p. 17. Complaint demonstrates the set and released positions of the hammer and trigger. Ex.1008 at pp. 17–18. The sear is clearly depicted and contains a hook for engaging a hook on the hammer. Ex.1008 at p. 18. Complaint teaches a cam that pivots about an axis. Ex.1008 at p. 19.



Ex.1008 at 12 (labels added).

93. Complaint also discloses that an owner of a Rare Breed FRT-15 which came with a 2-position safety selector, can by replacing the trigger, disconnecter, and hammer turn the FRT into one that will work with a 3-position safety selector (“The Ultimate Upgrade for the Rare Breed Trigger”). Ex.1008 at p. 13.

N. Bingly Videos (Exs. 1005–1007)

2. Bingly videos constitute printed publications

94. Bingly posted three related videos on YouTube with posting dates of June 5, 2022 (Ex.1005), June 19, 2022 (Ex.1006), and August 1, 2022 (Ex.1007). I have been told to consider them prior art which may be considered in this IPR.
95. I understand that during an IPR, the Board may only consider printed publications and patents, thus, the I relies upon a series of three videos

pertaining to Tommy Triggers' FRT to be used with a 3-position selector switch. Exs.1005–1007. The videos also demonstrate how to fashion your own 3-position selector switch for use with an FRT. Additionally, ABC's complaint against Tommy Triggers contains a detailed description of how these devices work. Ex.1008. To be clear, I am relying upon the videos and complaint—not the underlying product made by Tommy Trigger.

96. In my opinion, a POSITA could locate these videos by using a search engine and looking for Tommy Trigger, Alamo 15, Rare Breed FRT, FRT with 3-position selector, FRT/E3 or other similar searches. All three videos contain "Tommy Trigger" in the title; two contain "Alamo" of "Alamo 15;" and one also contains "Rare Breed FRT/E3 Safety Selector." A POSITA "exercising reasonable diligence" could have readily located the videos. Once one is located, it would be obvious to look at Bingly's other videos; in Bingly_2 he references Bingly_1. I located the videos within minutes by running such searches. In my experience, it is common for POSITA to look on-line and especially watch videos to learn how to make simple modifications to firearms.

3. Bingly video disclosures

97. Bingly_3 demonstrates the installation of a Tommy Trigger for use with a 3-position selector.¹³ Ex.1007 (Bingly_3). Bingly_2 demonstrates how a 3-position selector switch works in conjunction with an FRT. Ex.1006 (Bingly_2) at 3:20–14:57.¹⁴ Bingly_2 provides a source for purchasing a 3-position selector switch for use with an FRT, as well as showing a homemade one. Ex.1006 at 5:34–6:20; 8:51–13:30.¹⁵ He demonstrates two FRT's, a Rare Breed FRT-15 and a PBG Alamo-15

¹³ The so called, "Ultimate Upgrade Kit," but in the video it's being installed on an Alamo-15 FRT, as opposed to the Rare Breed FRT-15.

¹⁴ Bingly_2 was divided into three parts for submission to PTAB due a 25Mb upload limit. I've used citations to the full video and will include a footnote reference to the three-part version as well. Here, Ex.1006-PT1, 3:20 to Ex.1006-PT3, 2:12.

¹⁵ Ex.1006-PT2, 0:33–1:45; Ex.1006-PT2, 3:48–Ex.1006-PT3, 2:12.

FRT, both having Tommy Triggers upgrade kits installed in them, so that they can be used with a 3-position selector. Ex.1006 at 1:36–1:42.¹⁶ He explains how the FRT with the Tommy Trigger kit works. Ex.1006 at 3:24–8:50. Specifically, he points out that there are three positions on the safety selector. The first position is safe mode in which a wide semi-circular portion contacts the trigger and disconnecter¹⁷ and does not allow them to rotate. Ex.1006 at 5:37–5:43.¹⁸ The second mode is semi-automate mode which provides a wide flat portion above the trigger and disconnecter allowing them both to rotate and thus, function. Ex.1006 at 5:44–5:49.¹⁹ The third mode is the FRT mode where the selector has a narrow semi-circular portion on the right which pushes down on the disconnecter disabling it, and a narrow flat portion on the left allowing the trigger to rotate. Ex.1006 at 5:50–6:20.²⁰ He sets out the basics of making your own 3-position safety selector from a 2-position safety selector which will work with an FRT. Ex.1006 at 8:50–12:20.²¹ Bingly_2 states: “it’s really easy,” “it’s not complicated,” “if I can do it, anyone can do it.” Ex.1006 at 14:00–14:09.²²

98. Bingly_1 demonstrates in more detail how to convert a standard 2-position selector switch into a 3-position selector switch for use with an FRT. Ex.1005. Bingly_1 states, “anyone can do this.” Ex.1006 at 3:19–3:34.
99. “PP_FRT-15-3MD” is being used to refer to Complaint (Ex.1008) and Bingly videos (Exs.1005–1007) publications individually, as each

¹⁶ Ex.1006-PT1, 1:36–1:42.

¹⁷ Bingly, like Stoner ’555, refers to a “sear” which in the language of Blakely ’247 is a “disconnecter.”

¹⁸ Ex.1006-PT1, 3:20–Ex.1006-PT2, 3:05.

¹⁹ Ex.1006-PT2, 0:00–0:16.

²⁰ Ex.1006-PT2, 0:17–1:18.

²¹ Ex.1006-PT, 3:48–Ex.1006-PT3, 2:00.

²² Ex.1006-PT3, 3:52–4:00.

discloses enough information to enable a POSITA to build the selector switch disclosed. To be clear, I am not relying upon the actual product, but rather the description of the product contained in the printed publications (i.e., Complaint and three videos). I understand that I may not rely upon the actual underlying product as prior art in this IPR.

100. The functioning of 3-position safety selector switch works identically to that of Blakely '247 described above. As the safety selectors of PP_FRT-15-3MD and Blakely '247 in safe and semi modes is identical to a standard M16 selector, a POSITA would already know how they function in those modes.

4. Safe Mode

101. As can be ascertained from FRT-15-3MD, when the safety selector is set to safe mode, the wide semi-circular portion of the safety selector prevents the trigger from being pulled rearward to fire the weapon. Ex.1005 (Bingly_1), 0:00–2:09; Ex.1006 (Bingly_2), 5:37–5:43;²³ Ex.1007 (Bingly3), 3:55–8:00; Ex.1008 (Complaint), 6–9. Specifically, the safety selector will be in contact with the tail portion of the trigger member, effectively locking the trigger in place.

5. Semi-automatic Mode

102. When the safety selector is in semi-automatic mode, the flat portion of the safety selector allows the trigger to be pulled and the weapon fired. The flat portion will provide a space between the tail portion of the trigger, as well as tail of disconnector (both of which extend beyond the housing), thus, allowing both trigger and disconnector to function. That is to say, when the hammer is caused to rotate counterclockwise, the hook of the disconnector temporarily engages the hook of the hammer. As the trigger is released, the disconnector rotates allowing the hammer to begin to fall until the sear catch of the hammer engages the sear of the trigger. At that point, the hammer and the trigger are back to their set positions and the weapon may be fired. Ex.1005, 0:00–2:09;

²³ Ex.1006–PT2 (Bingly_2), 0:35–0:39.

Ex.1006, 3:20–4:53; 5:44 –6:20; 6:35–13:43;²⁴ Ex.1007, 3:55–8:00; Ex.1008, 11-13.

6. FRT Mode

103. Lastly, when the safety selector is in FRT mode, a narrow semi-circular portion of the safety selector allows the tail portion of the trigger member to rotate, thus, allowing the trigger to be pulled. However, the narrow portion contacts the tail of the disconnecter, which is sticking out of the housing, thus preventing the disconnecter hook from engaging the hammer hook. *Id.*
104. In PP_FRT15-3MR, the safety selector in FRT mode has a narrow circular portion on the right to disable the disconnecter and a narrow flat portion on the right to allow the trigger to rotate. In Blakely '723, he appears to be using a standard AR-15 trigger, so the narrow circular portion to disable the disconnecter would need to be in the center with flat portions on either side to allow the trigger to rotate.
105. A POSITA would only need to see the shape of 3-position selector switch to appreciate and be able to practice the invention. The safe and semi-automatic modes on the selector switch are created by a wide semi-circular portion and a flat portion, respectively. Ex.1005, 0:00–2:09; Ex.1006, 3:20–4:53; 5:44 –6:20; 6:35–13:43;²⁵ Ex.1007, 3:55–8:00; Ex.1008, 11-13. A standard selector switch for an AR 15 or M 16 has the same two portions to serve the same two functions. Ex.1006, 5:54– 5:32²⁶ (referred to as a “neutered safety” because it does not allow for FRT mode). The 3-position safety has one more portion which is of a narrow semi-circular shape on the right which engages the tail of disconnecter, effectively disabling it when in FRT mode, and a narrow flat surface on the left which provides clearance for the trigger to rotate. *Id.* A POSITA, observing the geometries of the hammer, disconnecter, trigger, and safety selector, would have readily understood that adding a narrow semi-circular portion to a standard 2-

²⁴ Ex.1006-PT1, 3:20 to Ex.1006-PT3, 3:38.

²⁵ Ex.1006-PT1, 3:20 to Ex.1006-PT3, 3:38.

²⁶ Ex.1006-PT1, 4:54–5:08.

position safety selector would result in a 3-position selector switch for use with an FRT. *Id.* This is more obvious given it is essentially how an M-16 functions; in the auto mode the tail of the disconnecter is held down by a narrow semi-circular portion of the safety selector. In the words of Blakely, “it is to be realized that the optimum dimensional relationships for the parts of the invention, to include variations in size, materials, shape, form, function and manner of operation, assembly and use, are deemed readily apparent and obvious to one skilled in the art, and ...numerous modifications and changes will readily occur to those skilled in the art, it is not desired to limit the invention to the exact construction and operation shown and described.” Ex.1009 (Blakely ’723) at 12:4–15. Stated succinctly, this ain’t rocket science. Even without the PP_FRT-15-3MR disclosures, a POSITA would have been able to build a three-position selector switch to work with Blakely ’723 or any other FRT.

O. Rationale to Combine

106. It would have been obvious to a POSITA to combine Blakely ’723 with the three-position safety selector switch disclosed in PP_FRT-15-3MR. Blakely ’723 suggested such a combination. Ex.1009, 11:11–25. This would have resulted in a firearm capable of safe, semi, and FRT modes, thus, mimicking an M-16 which the goal of an FRT. Shooters want a semi-automatic mode for improved accuracy. Also, some ranges restrict the rate of fire. Shooting only in FRT mode can raise safety concerns depending upon the shooting environment. In addition, ammunition cost associated with FRT rate of fire can be quite substantial. Always firing in FRT mode also increases wear on the firearm. It follows that for many reasons, shooters prefer to have the ability to select their rate of fire, as evidenced from the M-16.
107. Without question, a POSITA having the PP_FRT15-3MR disclosure would be able and motivated to combine it with Blakely ’723. PP_FRT15-3MR teaches lengthening the tail the disconnecter such that it can be disabled by the safety selector switch, much like an M-16 and the original AR-15 disconnecter.²⁷ To engage the disconnecter, the

²⁷ Blakely ’723, Fig.5 shows an AR-15 trigger 22 which has a closed back. On the M-16 trigger the back is left open so the disconnecter tail can extend under the

safety switch needs a FRT position in which it has a narrow semi-circular portion that holds the disconnecter down while allowing flat portions to allow the trigger to move.

108. The disclosure of Blakely '723 shows trigger 32 with groove 30 in the middle which is where disconnecter 38 resides. Ex.1009 (Blakely '723) at Figs. 4–5. Disconnecter 38 is missing its tail portion, as compared to an M-16 disconnecter. By lengthening the disconnecter tail or possibly just using a standard M-16 disconnecter and trigger, it could be made to fall under the safety selector. The safety selector could be modified in a manner like that disclosed in PP_FRT15-3MR, so it could disable the disconnecter while allowing the trigger to rotate. A POSITA would be readily enabled to do this given the disclosures of Blakely '723 and PP_FRT15-3MR. This combination would be one of familiar elements according to known methods to do no more than yield predictable results.
109. The disclosure of PP_FRT15-3MR teaches an FRT with a 3-position safety selector, however, the FRT cam functions only to keep the hammer from following the bolt when in FRT mode, it does not also function to reset the trigger. Rather the hammer strikes the top of the trigger causing it to reset. Ex.1008 (Complaint) at p. 18. As a POSITA would recognize, this has several disadvantages. First, it causes the hammer to wear prematurely. Second, the downward force on the trigger can be felt by the shooter and is considered unpleasant and distracting.
110. Lastly, when the hammer is struck by the bolt carrier, it pivots back, striking and resetting the trigger. The bolt then contacts and rotates the cam, to lock the hammer to the rear. The bolt then contacts and rotates the cam, so as to lock the hammer to the rear. The timing of this sequence must be precise, and is complicated by manufacturing tolerances across various AR 15's.

safety selector switch such that it can be disabled in auto mode. A POSITA would understand you would need to use an M-16 style trigger when using an extended disconnecter.

111. It would have been obvious to have the cam also reset the trigger as taught by Blakely '723. In distinguishing Blakely '723 over the prior art, applicant stated:

Inskip, therefore, uses two distinct mechanisms to accomplish the two distinct tasks, moving the trigger forward, and holding it forward until the firearm is ready to again be fired.

The fact that the two fundamental functions are performed independently, by two different apparatuses, is a critical weakness in Inskip. The tolerances and timing required to allow two independent apparatuses to cooperate, to move, and then to hold the trigger forward, presents significant design and manufacturing obstacles. Ex.1014 at p. 6.

112. Thus, a POSITA would have been motivated to combine Blakely's cam for locking the hammer back in FRT mode, as well as resetting the trigger. For instance, changing the cam in PP_FRT15-3MR to one like that disclosed in Blakely '723 which serves both functions. Modifying Blakely's FRT for use with the safety selector disclosed in PP_FRT15-3MR or vice versa would require routine experimentation in a predictable technology.

IX. THE CHALLENGED CLAIMS ARE UNPATENTABLE

A. Ground 1: Claims 1-23 are Obvious over Blakely '723 in view of PP_FRT15-3MR

1. Claims 1-3

[1pre] "A firearm trigger mechanism comprising:"

113. Blakely '723 pertains to a trigger mechanism for use in a semi-automatic firearm. Ex.1009 (Blakely '723) at 1:56-64. Specifically, it describes a FRT for use in an AR-15. Ex.1009 at 3:46-50; 6:33-36; Fig.5.

[1a] “a hammer having a sear catch and a hook for engaging a disconnecter and adapted to be mounted in a fire control mechanism pocket of a receiver to pivot on a transverse hammer pivot axis between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”

114. As shown in Fig.5, hammer has sear catch 52 and hook 54 for engaging disconnecter 38. The hammer is adapted to be (and depicted as) mounted in a fire control pocket of an AR-15 receiver 16. *See e.g.*, Ex.1009 at Fig.5. When bolt carrier 20 moves rearward, it strikes face 56 of the hammer which then pivots about pin 58 which necessarily means it pivots about a transverse (i.e., side-to-side) axis between set and released positions. Ex.1009 at 2:23–26; 8:1–11. The hammer pivots between set (Fig.2) and released (Fig.1) positions.

[1b] “a trigger member having a sear and adapted to be mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”

115. Blakely '723 teaches trigger member 22/90 with sear 34. The “trigger member” is comprised of trigger 22 and trigger extender 90. Said trigger member 22/90 is adapted to be (and depicted as) mounted in a fire control pocket. Trigger member 22/90 pivots on pin 46, and thus, pivots on a transverse axis between set and released positions. Ex.1009 at 5:13–27; 5:35–38; 7:9–11; Figs.1 and 2.

[1c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”

116. Trigger sear 34 engages hammer sear 52 in set position. As trigger member 22/90 is pulled rearward, it pivots about trigger pin 46 until sear engagement is lost, at which point the hammer spring will rotate hammer into released position where hammer face 56 strikes the firing pin. Ex.1009, 5:44–50; 7:9–11; Fig.3A.

[1d] “a disconnecter having adapted to be mounted in the fire control mechanism pocket to pivot on said transverse trigger member pivot axis,”

117. Blakley '723 teaches disconnecter 38 having hook 54 for engaging the hammer. Disconnecter pivots on trigger pin 36, and thus, transverse trigger member pivot axis. Disconnecter 38 is adapted to be (and

depicted as) mounted in the fire control pocket via trigger pin 46.
Ex.1009 at Figs.1, 2, and 5.

[1e] “a cam having a cam lobe and adapted to be mounted in the fire control pocket to pivot on a transverse pivot axis, said cam being pivotable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”

118. Cam 66 has cam lobe 69 and is to be mounted in fire control pocket, as seen in Fig.5. Cam 66 pivots on pin 74, and thus, a transverse pivot axis, between a first position (Fig.3A) in which it does not force a trigger reset and a second position (Fig.2) in which it does.

[1f] “a safety selector adapted to be mounted in the fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”

119. Blakely '247 does not clearly teach a 3-position safety selector, however, PP_FRT15-3MR does.²⁸ The safety selector disclosed in PP_FRT15-3MR, pivots between safe, semi-automatic, and FRT positions.
120. It would have been obvious to a POSITA to combine the 3-position safety selector of PP_FRT15-3MR with the FRT of Blakely '723. Having a 3-position selector dates back to the original M-16 which had safe, semi-automatic, and fully-automatic modes. As an FRT aims to simulate fully-automatic fire, it would have been desirable for a shooter to have the option of selecting semi-automatic mode for instances needing more accuracy, not wasting ammunition, or shooting in an environment where shooting at a high rate of speed would be unsafe or forbidden. This combination would be one of familiar elements according to known methods to do no more than yield predictable results. Both Blakely '723 and PP_FRT15-3MR teach FRT's for use with an AR-15 rifle, and are thus, interrelated teachings. Modifying Blakely's FRT for use with the safety selector disclosed in PP_FRT15-3MR or vice versa would require routine experimentation in a predictable technology. This is especially true given the PP_FRT15-

²⁸ .See discussion above re PP_FRT15-3MR beginning at 18.

3MR disclosure which teaches lengthening the tail of the disconnecter such that it can be disabled by the safety selector when set to FRT mode.

[1g] “whereupon in said standard semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member towards said set position but prior to reaching said set position said disconnecter hook catches said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time a user must manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”

121. Blakely '723 does not clearly teach the standard semi-automatic mode, however, as discussed above, PP_FRT-15-3MR does. It would have been obvious to a POSITA to add the semi-automatic mode of PP_FRT-15-3MR to the FRT mode of Blakely '723 for the reasons stated above.
122. It is well-known to a POSITA and inherent in PP_FRT-15-3MR that in semi-automatic mode, after a round is fired, the bolt carrier moves rearward, striking the hammer and causing it to pivot back and latch on the disconnecter hook. As the bolt carrier continues rearward, it strikes the cam, which is rotated rearward, however, because the disconnecter is engaged, the trigger cannot reset. As the bolt carrier reverses direction and moves forward it again strikes the cam resetting it back to its original position. The bolt carrier moves into battery. The shooter must release the trigger to free the hammer from the disconnecter, but before the hammer can fall, it resets itself when the hammer sear catch mates with the sear on the trigger.
123. Combining Blakely '723 with PP_FRT15-3MR would have resulted in an FRT which when operating in semi-auto mode would have resulted in rearward movement of the bolt carrier, after firing a round, which would cause rearward pivoting of the hammer, followed by rearward pivoting of the cam from the first position to the second position. The cam lobe would force the trigger member towards the set position but prior to reaching the set position, the disconnecter hook would catch the

hammer hook. As the bolt carrier reversed direction and moved forward, it would strike the cam causing it to pivot back to the first position. At that time the shooter would need to manually release the trigger, thus freeing the hammer from the disconnecter and allowing the hammer and trigger member to pivot back to their set positions so that the firearm could be fired again.

[1h] “whereupon in said forced reset semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.”

124. In FRT mode, Blakely '723 teaches, after the trigger is pulled (Fig.1), bolt carrier 20 moves rearward striking face 56 of the hammer causing to pivot rearward (Fig.2). The disconnecter catches the hammer for a tiny fraction of a second because it is not disabled. As bolt carrier 20 continues rearward it strikes the forward face of cam 66 causing it to pivot from a first position (shown in Fig.1) to a second position (shown in Fig.2). As cam 66 rotates, cam lobe 69 pushes down on trigger extender 90 causing trigger member 22/90 to reset. Ex.1009, 8:12–19.
125. Once bolt carrier 20 reverses directions and moves forward, it strikes the rearward surface of cam 66 causing it to pivot back to its first position (Fig.3A), at which time the user can pull the trigger. As cam 66 forced the trigger to reset, the user need not manually release the trigger. Ex.1009, 8:20–26.
126. Thus, Blakely '247 does not disclose “safety selector preventing said disconnecter hook from catching said hammer hook.” For reasons that are unclear, but likely related to the ATF, Blakely includes a disconnecter which appears to serve no function. Almost immediately after the disconnecter engages the hammer, the bolt strikes the cam which resets the trigger. So, the disconnecter serves no apparent function, as Blakely '247 does not have a semi-automatic mode. However, it would have been obvious to a POSITA to combine Blakely

'247 with the safety selector taught by PP_FRT15-3MR. Doing so would allow the shooter to choose between FRT and semi-automatic mode. This combination would have been obvious given the disclosure of PP_FRT15-3MR teaches a 3-position safety selector for use with an FRT. The PP_FRT15-3MR disclosure teaches that the safety selector, when set in FRT mode, disables the disconnecter while allowing the trigger to rotate and reset automatically via the cam.

127. Therefore, combining the FRT of Blakely '723 with a three-position selector switch using the teachings of PP_FRT15-3MR, would have resulted in the disconnecter being disabled in FRT mode, so that the hammer would not engage the disconnecter when it is struck by the bolt carrier. Instead, the cam would serve the role of the disconnecter holding the hammer back until the bolt carrier moved forward far enough to strike the cam again, thus, release the hammer.

[2] “The trigger mechanism of claim 1, wherein said safety selector has a protuberance thereon which, when said safety selector is in said forced reset semi-automatic position, contacts said disconnecter preventing said disconnecter hook from catching said hammer hook.”

128. PP_FRT15-3MR teaches a safety selector with a protuberance (i.e., a narrow semi-circular area) which in FRT prevents the disconnect from catching the hammer hook.

[3] “The trigger mechanism of claim 1 further including a spring which biases said trigger member towards said set position.”

129. Blakely '723 discloses a trigger member 22/90 which is biased by a spring. Ex.1009, Fig.1.

2. Claims 4–8

[4pre] “A firearm trigger mechanism comprising:”

130. See [1pre].

[4a] “a housing adapted to be installed in a fire control mechanism pocket of a receiver and having a first pair of transversely aligned openings for receiving a hammer pin, a second pair of transversely aligned openings for receiving a trigger pin, and a third pair of transversely aligned openings for receiving a cam pin,”

131. While Blakely '723 does not explicitly teach this limitation, it was well known in the industry that an AR-15 trigger can either be mounted directly into the fire control pocket, or it can be placed into a housing which is then installed into the fire control pocket. Placing the components into a housing makes it easier for a novice to install on the firearm.
132. PP_FRT15-3MR explicitly discloses a housing adapted to be install into an AR-15 receiver with two standard pins (i.e., one passing through the hammer and the other through the trigger and disconnecter). *See e.g.*, Bingly_3. It would have been obvious to combine the housing disclosed in PP_FRT15-3MR with Blakely '723 as it is well known in the industry and to a POSITA for easing installation of a trigger mechanism.

[4b] “a hammer having a sear catch and a hook for engaging a disconnecter and mounted in said housing to pivot on a said hammer pin between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”

133. Blakley '247 teaches the hammer, but it is not mounted in a housing. *See* [1a]. However, PP_FRT15-3MR teaches a housing. *See* [4a].

[4c] “a trigger member having a sear and mounted in said housing to pivot on a transverse trigger member pivot pin between set and released positions,”

134. Blakley '247 teaches the trigger member, but it is not mounted in a housing. *See* [1b] at . However, PP_FRT15-3MR teaches a housing. *See* [4a].

[4d] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”

135. *See* [1c].

[4e] “a disconnecter having hook for engaging said hammer and mounted in said housing to pivot on said trigger member pin,”

136. Blakley '247 teaches the disconnecter, but it is not mounted in a housing. *See* [1d] at . However, PP_FRT15-3MR teaches a disconnecter mounted in a housing. *See* [4a].

[4f] “a cam having a cam lobe and mounted in said housing to pivot on said cam pin, said cam being pivotable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”

137. Blakley '247 teaches the cam, but it is not mounted in a housing. *See* [13] at . However, PP_FRT15-3MR teaches a cam mounted in a housing. *See* [4a].

[4g] “a safety selector adapted to be mounted in the fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”

138. *See* [1f].

[4h] “whereupon in said standard semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member towards said set position but prior to reaching said set position said disconnecter hook catches said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time a user must manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”

139. *See* [1g].

[4i] “whereupon in said forced reset semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.”

140. *See* [1h].

[5] “The trigger mechanism of claim 4, wherein said safety selector has a protuberance thereon which, when said safety selector is in said forced reset semi-automatic position, contacts said disconnecter preventing said disconnecter hook from catching said hammer hook.”

141. *See* [2].

[6] “The trigger mechanism of claim 4, wherein said first and second pairs of transversely aligned opening in said housing are adapted to be aligned with first and second pairs of transversely aligned assembly pin opening in the fire control mechanism pocket.”

142. Blakely '247 does not teach a housing, but PP_FRT15-3MR does. The disclosure of PP_FRT15-3MR teaches a housing adapted to mounted to an AR-15 fire control pocket by placing two pins through the holes of the AT-15 receiver and the aligned holes in the housing. *See e.g.*, Ex.1008 at pp. 16, 17.

[7] “The trigger mechanism of claim 4 further including a spring which biases said trigger member towards said set position.”

143. *See* [3].

[8] “The trigger mechanism of claim 7 wherein said spring is a torsion spring.”

144. Blakely '723 discloses a trigger member 22/90 which is biased by a torsion spring. Ex.1009, Fig.1.

3. Claims 9–13

[9pre] “A firearm comprising:”

145. *See* [1pre].

[9a] “a receiver having a fire control mechanism pocket therein,”

146. Blakely '247 teaches an AR-15 receiver with a fire control mechanism pocket. Ex.1009, Fig.5.

[9b] “a reciprocating bolt carrier,”

147. Blakely '247 teaches a reciprocating bolt carrier 20. Ex.1009 at Figs.1–3, 2A–2C.

[9c] “a hammer having a sear catch and a hook for engaging a disconnecter and mounted in said fire control mechanism pocket to pivot on a transverse hammer pivot axis between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”

148. *See* [1a].

[9d] “a trigger member having a sear and mounted in said fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”

149. *See* [1].

[9e] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”

150. *See* [1c].

[9f] “a disconnecter having a hook for engaging said hammer and mounted in said fire control mechanism pocket to pivot on said transverse trigger member pivot axis,”

151. *See* [1d].

[9g] “a cam having a cam lobe and mounted in said fire control pocket to pivot on a transverse cam pivot axis, said cam being pivotable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”

152. *See* [1e].

[9h] “a safety selector mounted in said fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”

153. *See* [1f].

[9i] “whereupon in said standard semi-automatic position, rearward movement of said bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member towards said set position but prior to reaching said set position said disconnecter hook catches said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time a user must manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”

154. *See* [1g].

[9j] “whereupon in said forced reset semi-automatic position, rearward movement of said bolt carrier causes rearward pivoting of said hammer and pivoting of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.

155. *See* [1h].

[10pre] “The firearm of claim 9 further comprising:”

156. *See* [1pre].

[10a] “a housing having a first pair of transversely aligned openings with a hammer pin therethrough and a second pair of transverse aligned openings with a trigger member pin therethrough,”

157. *See* [4a].

[10b] “said hammer mounted on said hammer pin, said trigger member and disconnecter mounted on said trigger member pin.”

158. *See* [4a].

[11pre] “The firearm of claim 10 further comprising:”

159. *See* [1pre].

[11a] “said receiver having a first pair of transversely aligned assembly pin openings and a second pair of transversely aligned assembly pin openings,”

160. *See* [6].

[11b] “said housing first pair of openings coaxial with said receiver first pair of openings and said housing second pair of openings coaxial with said receiver second pair of openings,”

161. *See* [6].

[11c] “a first assembly pin passing through said receiver first pair of openings and through said housing first pair of openings, and”

162. *See* [6].

[11d] “a second assembly pin passing through said receiver second pair of openings and through said housing second pair of openings.”

163. *See* [6].

[12] “The firearm of claim 10 further comprising a spring which biases said trigger member towards said set position.”

164. *See* [3].

[13] “The firearm of claim 11 wherein said spring is a torsion spring.”

165. *See* [8].

4. Claim 14

[14pre] “A firearm trigger mechanism comprising:”

166. *See* [1pre].

[14a] “a hammer having a sear catch and a hook for engaging a disconnecter and adapted to be mounted in a fire control mechanism pocket of a receiver to pivot on a transverse hammer pivot axis between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”

167. *See* [1a].

[14b] “a trigger member having a sear and adapted to be mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”

168. *See* [1b].

[14c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,”

169. *See* [1c].

[14d] “a disconnecter having a hook for engaging said hammer and adapted to mounted in the fire control mechanism pocket to pivot on said transverse trigger member pivot axis, and”

170. *See* [1d].

[14e] “a cam having a cam lobe and adapted to movably mounted in the fire control mechanism pocket, said cam being movable between a first position at which said cam lobe does not force said trigger member towards said set position and a second position at which said cam lobe does force said trigger member towards said set position, and”

171. *See* [1e].

[14f] “a safety selector adapted to be mounted in the fire control mechanism pocket to pivot between safe, standard semi-automatic, and forced reset semi-automatic positions,”

172. *See* [1f].

[14g] “whereupon in said standard semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and movement of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, but prior to reaching said set position said disconnecter hook catches said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to move to said first position, at which time a user manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”

173. *See* [1g].

[14h] “whereupon in said forced reset semi-automatic position, rearward movement of the bolt carrier causes rearward pivoting of said hammer and movement of said cam from said first position to said second position such that said cam lobe forces said trigger member to said set position, said safety selector preventing said disconnecter hook from catching said hammer hook, and thereafter forward movement of the bolt carrier causes said cam to pivot to said first position, at which time the user can pull said trigger member to fire the firearm without manually releasing said trigger member.”

174. *See* [1h].

5. Claims 15–19

[15pre] “A firearm trigger mechanism comprising:”

175. *See* [pre1].

[15a] “a hammer having a sear catch and a hook for engaging a disconnecter and adapted to mounted in a fire control mechanism pocket of a receiver to pivot on a transverse hammer pivot axis between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”

176. *See* [1a].

[15b] “a trigger member having a sear and adapted to mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”

177. *See* [1b].

[15c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member, a hook for engaging said hammer and adapted to be mounted in the fire control mechanism pocket to pivot on said transverse disconnecter pivot axis, and”

178. *See* [1c] and [1d].

[15d] “a cam having a cam lobe and adapted to movably mounted in the fire control mechanism pocket, said cam being movable between a first position and a second position in said second position said cam lobe forces said trigger member towards said set position,”

179. *See* [1e].

[15e] “whereupon in a standard semi-automatic mode, said cam is in said first position, rearward movement of the bolt carrier causes rearward pivoting of said hammer such that said disconnecter hook catches said hammer hook, and thereafter the bolt carrier moves forward into battery, at which time a user must manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”

180. *See* [1g].

[15f] “whereupon in a forced reset semi-automatic mode, said cam is in said second position, thereafter the bolt carrier moves forward into battery, at which time the user can pull said trigger member to fire the firearm.”

181. *See* [1h].

[16pre] “The trigger mechanism of claim 15, further comprising:”

182. *See* [1pre].

[16a] “a housing having a first pair of transversely aligned openings with a hammer pin therethrough and a second pair of f transversely aligned openings with a trigger member pin.”

183. *See* [4a].

[16b] “said hammer mounted on said hammer pin, said trigger member and disconnecter mounted on said trigger member pin.”

184. Blakely '247 teaches a hammer mounted on hammer pin 58. Ex.1008 at Fig.1. Blakley '247 discloses the trigger 22 and disconnecter 38 being mounted with a trigger pin. *Id.*

[17] “The trigger mechanism of claim 15, further comprising a spring which biases said trigger member towards said set position.”

185. *See* [3].

[18] “The trigger mechanism of claim 17 wherein said spring is a torsion spring.”

186. *See* [8].

[19] “The trigger mechanism of claim 15, wherein the trigger member pivot axis and disconnecter pivot axis are coaxial.”

187. *See* [16b].

6. Claims 20–23

[20pre] “A firearm trigger mechanism comprising:”

188. *See* [1pre].

[20a] “a hammer having a sear catch and a hook for engaging a disconnecter and adapted to mounted in a fire control mechanism pocket of a receiver to pivot on a transverse hammer pivot axis between set and released positions, said hammer adapted to be pivoted rearward by rearward movement of a bolt carrier,”

189. *See* [1a].

[20b] “a trigger member having a sear and adapted to mounted in the fire control mechanism pocket to pivot on a transverse trigger member pivot axis between set and released positions,”

190. *See* [1b].

[20c] “wherein said sear and sear catch are in engagement in said set positions of said hammer and trigger member and are out of engagement in said released positions of said hammer and trigger member,

191. *See* [1c].

[20d] “a [sic-said] disconnecter having a hook for engaging said hammer and adapted to mounted in the fire control mechanism pocket to pivot on said a transverse disconnecter pivot axis,”

192. *See* [1d].

[20e] “a cam having a cam lobe and adapted to movably mounted in the fire control mechanism pocket, said cam being movable between a first position at which said cam lobe does not force said trigger member into said set position and a second position at which said cam lobe does force said trigger member into said set position,”

193. *See* [1e].

[20f] “a safety selector adapted to be movably mounted in the fire control mechanism pocket to move between safe, standard semi- automatic, and forced reset semi-automatic positions,”

194. *See* [1f].

[20g] “whereupon in said standard semi-automatic position, said cam is in said first position, rearward movement of the bolt carrier causes rearward pivoting of said hammer such that said disconnecter hook catches said hammer hook, and thereafter the bolt carrier moves forward into battery, at which time a user must manually release said trigger member to free said hammer from said disconnecter to permit said hammer and trigger member to pivot to said set positions so that the user can pull said trigger member to fire the firearm, and”

195. *See* [1g].

[20h] “whereupon in a forced reset semi-automatic mode, said cam is in said second position, rearward movement of the bolt carrier causes rearward pivoting of said hammer such that said disconnecter hook is prevented from catching said hammer hook, and, thereafter the bolt carrier moves forward into battery, at which time the user can pull said trigger member to fire the firearm.”

196. *See* [1h].

[21] “The trigger mechanism of claim 20, wherein said cam is not a part of said safety selector.”

197. Blakely '247 teaches cam 66 is not part of safety selector 82. Ex.1008 at Fig.5.

[22] “The trigger mechanism of claim 20, wherein said safety selector moves between safe, standard semi-automatic, and forced reset semi-automatic positions by rotation.”

198. *See* [1f].

[23] “The trigger mechanism of claim 20, wherein the trigger member pivot axis and disconnecter pivot axis are coaxial.”

199. Blakely '723 teaches trigger member 22 and disconnecter 38 are mounted using trigger pin 46. Ex.1008 at Fig.1. As such, the trigger pivot axis and the disconnecter pivot axis are coaxial.

II. CONCLUSION

200. The findings and opinions set forth in this declaration are based on my work and examinations to date. I may continue my examinations. I may also receive additional documentation and other factual evidence over the course of this proceeding that will allow me to supplement and/or refine my opinions. I reserve the right to add to, alter, or delete my opinions and my declaration upon discovery of any additional information. I reserve the right to make such changes as may be deemed necessary.
201. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board(“PTAB” or “Board”) of the USPTO.
202. I also recognize that I may be subject to cross-examination in the case. If cross-examination is required of me, I will appear for cross-examination, during the time allotted for cross-examination.
203. I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

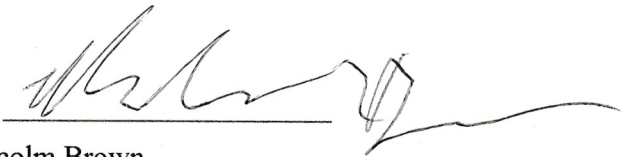
Dated: August 14, 2025

Malcolm Brown

II. CONCLUSION

200. The findings and opinions set forth in this declaration are based on my work and examinations to date. I may continue my examinations. I may also receive additional documentation and other factual evidence over the course of this proceeding that will allow me to supplement and/or refine my opinions. I reserve the right to add to, alter, or delete my opinions and my declaration upon discovery of any additional information. I reserve the right to make such changes as may be deemed necessary.
201. In signing this declaration, I recognize that the declaration will be filed as evidence in a contested case before the Patent Trial and Appeal Board("PTAB" or "Board") of the USPTO.
202. I also recognize that I may be subject to cross-examination in the case. If cross-examination is required of me, I will appear for cross-examination, during the time allotted for cross-examination.
203. I declare that all statements made herein on my own knowledge are true and that all statements made on information and belief are believed to be true, and further, that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code.

Dated: August 14, 2025


Malcolm Brown