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MONOLITHIC SUPPRESSOR FOR A GUN

Abstract

A suppressor for a gun is compatible with expanding projectiles (e.g., shot shells, pepper balls, bean bags, etc.). The suppressor includes a core configured to attached to a barrel of the gun and extend forward from the barrel. One or more baffles extend radially from an external surface of the core to the housing. A housing generally surrounds the baffle and core. An end cap attaches to a front of the core at the front of the suppressor. The core has slots therethrough in a helical or spiral pattern about a longitudinal axis of the suppressor.

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Background/Summary

CROSS-REFERENCE TO RELATED APPLICATIONS [0001] This application is a continuation of and claims priority to U.S. patent application Ser. No. 18/516,643 entitled “MONOLITHIC SUPPRESSOR FOR A FIREARM” filed Nov. 21, 2023, which is a non-provisional application of and claims priority to U.S. Provisional Patent Application No. 63/427,010 entitled “MONOLITHIC SUPPRESSOR FOR A FIREARM” filed Nov. 21, 2022.

FEDERALLY SPONSORED RESEARCH AND DEVELOPMENT

[0003] Not Applicable

BACKGROUND OF THE INVENTION

[0004] The present invention relates generally to sound suppression devices. More particularly, the present invention relates to sound suppression for guns for use with projectiles other than bullets (e.g., shot shells, less than lethal projectiles, etc.).

[0005] Suppressors for guns, especially firearms are used to reduce noise levels and/or suppress or hide muzzle flash. Suppressors may be used on firearms or other guns such as air powered guns, especially pre-charged pneumatic guns. Suppressors use baffles and expansion chambers to reduce the noise emitted by a gun as the projectile exits the gun. Pistols and rifles shoot projectiles (i.e., bullets) that do not expand until impact with a target. That is, they maintain diameter when exiting a muzzle of the gun and passing through a suppressor affixed or integrated with the gun. Because the projectile maintains its diameter, baffles in the suppressor need only have a bore at least as large as the projectile and aligned with the path of travel of the projectile. The baffles only need to manage expanding gases, not any solid object impacts, and the baffles are therefore relatively thin and straight to minimize weight and material usage.

[0006] Suppressing guns that utilize expanding projectiles (e.g., shot shells, less lethal rounds, bean bags, pepper balls, etc.) is more challenging than typical ball ammunition or hollow point ammunition guns because the projectile diameter may increase as the projectile leaves the muzzle of the gun and travels through the suppressor. The suppressor must therefore limit projectile expansion within the suppressor to prevent the projectile from excessively impacting the baffles in the suppressor, destroying the projectile and the suppressor. At present, there are three ways to keep the projectile from expanding in the suppressor. The first way is to use baffles that are trumpet or bell shaped as shown in U.S. Pat. No. 11,774,205 to uniformly recompress an expanding projectile as it traverses the suppressor. Trumpet or bell shaped baffles are expensive to manufacture and can wear relatively quickly, but they allow good expansion of gases into the chambers in the suppressor created by the baffles. The second way is to use guide rods spaced about the circumference of the bore of the suppressor to keep the projectile diameter consistently constrained to its initial diameter as it traverses the suppressor. These rods allow good expansion of gases into the chambers between baffles, but the rods also allow expansion of areas of the projectile such that the expanded areas contact the baffles between the rods. The third way to limit projectile expansion within the suppressor is to use a perforated tube (which essentially forms a barrel extension) with baffles outside the tube. Perforated tubes are good at maintaining the dimeter of the projectile but tend to limit the expansion of gases into the chambers of the suppressor between the baffles because too holes or holes that are too large will result in a weak tube that is subject to failure.

SUMMARY OF THE INVENTION

[0007] Aspects of the present invention provide a suppressor having a monolithic core compatible

with a gun launching expanding projectiles (e.g., shot shells, pepper balls, bean bags, etc.). The suppressor includes a core configured to attached to a barrel of the gun and extend forward from the barrel. One or more baffles extend radially from an external surface of the core to the housing. A housing generally surrounds the baffle and core. An end cap attaches to a front of the core at the front of the suppressor. The core has slots therethrough in a helical or spiral pattern about a longitudinal axis of the suppressor.

[0008] In another aspect, a suppressor for a gun configured to launch a projectile from a barrel of the gun includes a core, a baffle, a housing, and an end cap. The core is configured to extend longitudinally. The core has a rear end configured to attach to the barrel of the gun and a front end opposite the rear end. The baffle is configured to attach to an external surface of the core between the rear end of the core and the front end of the core. The housing is configured to extend longitudinally about the core and the baffle. The end cap defines a front end of the suppressor and is configured to attach to a front end of the housing.

[0009] In another aspect, a gun is configured to launch a projectile. The gun includes a receive, a barrel, and a suppressor. The receiver is configured to initiate launching the projectile. The barrel is configured to convey the projectile from a rear end of the barrel at the receiver forward to a muzzle of the barrel. The suppressor for a gun configured to launch a projectile from a barrel of the gun includes a core, a baffle, a housing, and an end cap. The core is configured to extend longitudinally. The core has a rear end configured to attach to the barrel of the gun and a front end opposite the rear end. The baffle is configured to attach to an external surface of the core between the rear end of the core and the front end of the core. The housing is configured to extend longitudinally about the core and the baffle. The end cap defines a front end of the suppressor and is configured to attach to a front end of the housing.

[0010] In another aspect, a suppressor for a gun configured to launch a projectile from a barrel of a gun includes a core, a housing, and a baffle. The core is configured to extend longitudinally. The core has a read end configured to attach to the barrel of the gun and a front end opposite the rear end. The housing is configured to extend longitudinally about the core. The baffle extends radially between the core and the housing.

[0011] In another aspect, a gun configured to launch a projectile includes a receiver, a barrel, and a suppressor. The receiver is configured to initiate launching the projectile. The barrel is configured to convey the projectile from a rear end of the barrel at the receiver forward to a muzzle of the barrel. The suppressor is configured to launch a projectile from the barrel of the gun. The suppressor includes a core, a housing, and a baffle. The core is configured to extend longitudinally. The core has a read end configured to attach to the barrel of the gun and a front end opposite the rear end. The housing is configured to extend longitudinally about the core. The baffle extends radially between the core and the housing.

Description

BRIEF DESCRIPTION OF DRAWINGS

[0012] FIG. **1** is a side perspective view of a gun including a suppressor according to one embodiment of the invention.

[0013] FIG. **2** is a side cutaway view of the gun and suppressor of FIG. **1** showing a shot shell exiting the suppressor.

[0014] FIG. **3** is a side perspective view of the monolithic core or cage of the suppressor of FIG. **1**.

[0015] FIG. **4** is an isometric view of the suppressor of FIG. **1**.

[0016] FIG. **5** is an isometric partially exploded view of a core for a suppressor, according to a second embodiment of the invention.

[0017] FIG. **6** is an isometric view of the core of FIG. **5**.

[0018] FIG. **7** is a side cutaway view of a gun including the suppressor of FIGS. **5** and **6** firing a shot shell.
[0019] FIG. **8** is an isometric partially exploded view of a core for a suppressor according to a third embodiment of the invention.
[0020] FIG. **9** is an isometric view of the suppressor core of FIG. **8**.
[0021] FIG. **10** is a side cutaway of a gun including the suppressor of FIGS. **8** and **9** firing a shot shell.
[0022] FIG. **11** is a front isometric view of a barrel and suppressor core according to one embodiment of the invention.
[0023] FIG. **12** is a front isometric view of the barrel and suppressor of FIG. **11**.
[0024] FIG. **13** is a side perspective view of the barrel and suppressor of FIG. **12**.
[0025] FIG. **14** is a side cutaway view of the barrel and suppressor of FIG. **12**.
[0026] FIG. **15** is a side perspective view of the suppressor core of FIG. **11**.
[0027] FIG. **16** is a side cutaway view of the suppressor core of FIG. **15**.
[0028] FIG. **17** is a side perspective view of a variation of the suppressor core of FIG. **11**.
[0029] Reference will now be made in detail to optional embodiments of the invention, examples of which are illustrated in accompanying drawings. Whenever possible, the same reference numbers are used in the drawing and in the description referring to the same or like parts.

DETAILED DESCRIPTION OF THE INVENTION

[0030] While the making and using of various embodiments of the present invention are discussed in detail below, it should be appreciated that the present invention provides many applicable inventive concepts that can be embodied in a wide variety of specific contexts. The specific embodiments discussed herein are merely illustrative of specific ways to make and use the invention and do not delimit the scope of the invention.
[0031] To facilitate the understanding of the embodiments described herein, a number of terms are defined below. The terms defined herein have meanings as commonly understood by a person of ordinary skill in the areas relevant to the present invention. Terms such as “a,” “an,” and “the” are not intended to refer to only a singular entity, but rather include the general class of which a specific example may be used for illustration. The terminology herein is used to describe specific embodiments of the invention, but their usage does not delimit the invention, except as set forth in the claims.
[0032] As described herein, an upright position is considered to be the position of apparatus components while in proper operation or in a natural resting position as described herein. As used herein, the upright position of a gun and suppressor are when fully assembled and held in a position ready to shoot generally horizontally. Vertical, horizontal, above, below, side, top, bottom and other orientation terms are described with respect to this upright position during operation unless otherwise specified. The term “when” is used to specify orientation for relative positions of components, not as a temporal limitation of the claims or apparatus described and claimed herein unless otherwise specified. The terms “above”, “below”, “over”, and “under” mean “having an elevation or vertical height greater or lesser than” and are not intended to imply that one object or component is directly over or under another object or component.
[0033] The phrase “in one embodiment,” as used herein does not necessarily refer to the same embodiment, although it may. Conditional language used herein, such as, among others, “can,” “might,” “may,” “e.g.,” and the like, unless specifically stated otherwise, or otherwise understood within the context as used, is generally intended to convey that certain embodiments include, while other embodiments do not include, certain features, elements and/or states. Thus, such conditional language is not generally intended to imply that features, elements and/or states are in any way required for one or more embodiments or that one or more embodiments necessarily include logic for deciding, with or without operator input or prompting, whether these features, elements and/or states are included or are to be performed in any particular embodiment.

[0034] Referring now to FIGS. **1-10**, a gun **101** includes a suppressor **100**. The gun **101** includes a receiver **102** and a barrel **103**. The receiver **102** is configured to initiate launching a projectile **105**. The barrel **103** is configured to convey the projectile **105** forward from a rear end of the barrel at the receiver **102** to a muzzle of the barrel **103** at a forward end of the barrel **103**.
[0035] The suppressor **100** includes a core **300**, a baffle **501**, a housing **503**, and an end cap **505**. The core **300** is configured to extend longitudinally. That is, the core **300** extends forward from the front end or muzzle of the barrel **103** along a longitudinal axis or bore axis of the barrel **103** when the gun **101** and suppressor **100** are assembled. The core has a rear end **301** configured to attach to the barrel **103** and a front end **303** opposite the rear end **301**. In one embodiment, the core **300** is configured to attach to the barrel **103** via a barrel bushing **107**. In one embodiment, the barrel bushing **107** is threaded onto the barrel **103**, and the core **300** is threaded onto the barrel bushing. In another embodiment, the barrel bushing **107** is threaded into the barrel **103** and the core is threaded onto the barrel bushing **107**. In another embodiment, a rear end of the core **300** is beveled complementary to a front end of the barrel bushing **107** such that when the core **300** is pressed against the complementary bevel in the barrel bushing **107** by the end cap **505** and housing **503**, the core **300** is retained in position relative to the barrel bushing **107**. In one embodiment, the barrel bushing **107** is threaded into a handguard surrounding the barrel to retain the barrel bushing **107** at the muzzle of the barrel **103**.
[0036] The baffle **501** is configured to attach to an external surface **307** of the core **300** between the rear end **301** and the front end **303** of the core **300**. The baffle(s) **501** extend radially outward to an inner surface of the housing **503**, creating expansion chambers between the baffles **501**, core **300**, and housing **503**. In one embodiment, the suppressor **100** includes a plurality of baffles **502**, and the baffles **501** are configured to thread onto the core **300**.
[0037] The housing **503** is configured to extend longitudinally about the core and the baffle(s) **501**. The end cap **505** defines a front end of the suppressor **100** and is configured to attach to a front end of the housing **503**. In one embodiment, the housing **503** threads onto the barrel bushing **503**, and the end cap **505** threads into the housing **503**. In one embodiment, the forward end **303** of the core contacts the end cap **505** to support the forward end **303** of the core **300**. In one embodiment, the end cap **505** includes a plurality of teeth **313** extending forward of the housing **503**. The teeth **313** can be used to engage a door hinge or latch to use the gun **101** as a breaching tool.
[0038] Referring especially to FIGS. **2-4**, in one embodiment, the core **300** includes a plurality of annular segments **309** and rails **311**. The plurality of annular segments **309** are spaced apart from one another and supported by the plurality of rails **311**. The plurality of annular segments **309** are attached to and supported by the plurality of rails **311**. In one embodiment, the plurality of rails **311** and the plurality of annular segments **309** are integrally formed. In one embodiment, a rear end of each of the annular segments **309** is beveled such that a rear edge **315** of the annular segment has a larger diameter than a minimum diameter of the annular segment, and the minimum diameter of the annular segment is approximately equal to a bore diameter of the barrel **103** of the gun **101**. In one embodiment, an annular segment **309** includes threads forming the external surface **307** of the core **300**. The baffle **501** is configured to engage the threads **307** such that the baffle **501** is retained radially and longitudinally relative to the annular segment **309**. In one embodiment, the rails **311** are radially spaced from the longitudinal axis (i.e., the bore axis) the same distance as an outer diameter of the rear edge **315**. That is, the projectile **105** should not normally expand to contact the rails **311** between annular segments **309**, but the rails **311** will prevent any expansion beyond the maximum diameter of the annular segments **309** if an irregular operation occurs or a defective projectile **105** is launched.
[0039] Referring especially to FIGS. **5-7**, in one embodiment, the core **300** includes annular segments **309** and rails **311** forming a cage (e.g., a monolithic core). The core **300** further includes a plurality of bushings **357**. The plurality of bushings **357** engage a radially inward surface **359** of the cage. The plurality of bushings **357** are longitudinally spaced from one another when the

suppressor **100** is assembled. In one embodiment, each bushing **357** of the plurality of bushings is beveled such that a rear edge **315** of the bushing **357** has a larger diameter than a minimum diameter of the bushing **357**, and the minimum diameter of the bushing **357** is equal to or larger than the bore diameter of the barrel **103** of the gun **100**. That is, the minimum diameter of the core **300** is approximately equal to the diameter of the barrel **103** and an outer diameter of the projectile **105**.

[0040] Referring especially to FIGS. **8-10**, in one embodiment, the core **300** includes a plurality of bushings **357** having a rear edge **315** that forms a hyperbolic paraboloid. Thus, instead of having annular spaces between the bushing **357**, the spaces between the bushings have a shape that varies areas of the projectile **105** that could expand as the projectile passes between bushings **357** which will help to limit expansion of the projectile **105** and friction with the bushings **357** without hindering expansion of gases propelling the projectile **105** into the chambers between the baffles **501**. In one embodiment, the rear edge **315** of the bushing **357** is generally flush with an inner surface of the rail **311** of the cage.

[0041] Referring especially to FIGS. **11-17**, another embodiment of the suppressor **100** includes the core **300**, the housing **503**, and the baffle **501**. The core is **300** is configured to extend longitudinally. In one embodiment, the core **300** is generally cylindrical. The core **300** has a rear end **301** configured to attach to the barrel **103** of the gun **101** and a front end **303** opposite the rear end **301**. The core **300** extends along a longitudinal axis **709** (e.g., the bore axis of the barrel **103**). The core **300** has an external surface **307** or wall **705** (i.e., sidewall). The wall **705** of the core **300** has a slot **707** therethrough. The slot **707** has a length longer than a width. The slot **707** may have rounded ends or square ends. The slot **707** is not parallel to the longitudinal axis **709** (i.e., a line along the length of the slot **707** is not parallel to the longitudinal axis **709**), and the slot does not extend radially about the longitudinal axis **709** (i.e., a plane through the length of the slot **707** is not perpendicular to the longitudinal axis **709**). In one embodiment, the slot **707** (e.g., a line along the length of the slot **707**) spirals about the longitudinal axis **709** along the wall **705** of the core **300**. In another embodiment, the slot **707** (e.g., a line along the length of the slot **707**) is helical with respect to the longitudinal axis **709** along the wall **705** of the core **300**. In one embodiment, the slot **707** (i.e., a line through the length of the slot **707**) extends askew the longitudinal axis **709** (e.g. neither intersects nor is perpendicular or parallel). In one embodiment, the slot **707** has at least one support **733** extending across the slot **707** (see FIG. **17**).

[0042] The housing **503** is configured to extend longitudinally about the core **300**. In one embodiment, the housing **503** is configured to attach to the core by threading onto the core **300** at the front end **303** of the core **300**. In one embodiment, the housing **503** has a reduced diameter at the one or more baffles **501**. In one embodiment, the housing **503** includes a plurality of segments threadingly engaging one another. In one embodiment, a first portion **713** of baffle **501** extends radially inward from the housing **503** when the suppressor **100** is assembled.

[0043] The baffle **501** is configured to extend radially between the core **300** and the housing **503**. In one embodiment, the baffle **501** is one of a plurality of baffles. Each baffle **501** extends radially between the core **300** and the housing **503** when the suppressor **100** is assembled. In one embodiment, the suppressor **100** includes a plurality of baffles **501** and a plurality of slots **707**. The baffles **501** longitudinally separate one or a plurality of slots **707**. That is, the baffles **501** are between the slots **707**. In one embodiment, a second portion **715** of baffle **501** extends radially outward from the core **300** to the first portion **714** of the baffle **501** when the suppressor **100** is assembled.

[0044] In one embodiment, the suppressor **103** further comprises an end cap **505** at a front end **701** of the suppressor **100**. In one embodiment, the end cap **505** defines the front end **701** of the suppressor **100**. The end cap **505** is configured to attach to the front end **303** of the core **300** when the suppressor **100** is assembled by threading onto the core **300**.

[0045] In one embodiment, the suppressor **100** further includes a barrel bushing **107**. The barrel

bushing **107** attaches to the barrel **103** of the gun **101** by threading onto/into the barrel **107** muzzle. The housing **503** attaches to the core **300** by threading onto the core **300** at the front end **303** of the core **300**. In one embodiment, the end cap **505** acts as a jam nut securing the housing **503** in place on the core **300** (e.g. preventing rotation of the housing **503** relative to the core **300**).

[0046] This written description uses examples to disclose the invention and also to enable any person skilled in the art to practice the invention, including making and using any devices or systems and performing any incorporated methods. The patentable scope of the invention is defined by the claims, and may include other examples that occur to those skilled in the art. Such other examples are intended to be within the scope of the claims if they have structural elements that do not differ from the literal language of the claims, or if they include equivalent structural elements with insubstantial differences from the literal languages of the claims.

[0047] It will be understood that the particular embodiments described herein are shown by way of illustration and not as limitations of the invention. The principal features of this invention may be employed in various embodiments without departing from the scope of the invention. Those of ordinary skill in the art will recognize numerous equivalents to the specific procedures described herein. Such equivalents are considered to be within the scope of this invention and are covered by the claims.

[0048] All of the compositions and/or methods disclosed and claimed herein may be made and/or executed without undue experimentation in light of the present disclosure. While the compositions and methods of this invention have been described in terms of the embodiments included herein, it will be apparent to those of ordinary skill in the art that variations may be applied to the compositions and/or methods and in the steps or in the sequence of steps of the method described herein without departing from the concept, spirit, and scope of the invention. All such similar substitutes and modifications apparent to those skilled in the art are deemed to be within the spirit, scope, and concept of the invention as defined by the appended claims.

[0049] Thus, although there have been described particular embodiments of the present invention of a new and useful MONOLITHIC SUPPRESSOR FOR A GUN it is not intended that such references be construed as limitations upon the scope of this invention except as set forth in the following claims.

Claims

1. A suppressor for a gun configured to launch a projectile from a barrel of the gun, said suppressor comprising: a core configured to extend longitudinally, said core having a rear end configured to attach to the barrel of the gun and a front end opposite the rear end; a housing configured to extend longitudinally about the core; and a baffle extending radially between the core and the housing when the suppressor is assembled.

2. The suppressor of claim 1, wherein: the suppressor further comprises an end cap at a front end of the suppressor when the suppressor is assembled, said end cap configured to attach to a front end of the core.

3. The suppressor of claim 1, wherein: the suppressor further comprises an end cap at a front end of the suppressor, said end cap configured to attach to a front end of the core; and the end cap attaches to the front end of the core by threading onto the core.

4. The suppressor of claim 1, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; the slot does not extend parallel to the longitudinal axis; and the slot does not extend radially about the longitudinal axis.

5. The suppressor of claim 1, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; and the slot extends askew the longitudinal axis.

6. The suppressor of claim 1, wherein: the core comprises a wall; the wall of the core has a slot

therethrough; the core extends longitudinally along a longitudinal axis; and the slot is helical about the longitudinal axis along the wall of the core.

7. The suppressor of claim 1, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; and the slot spirals about the longitudinal axis along the wall of the core.

8. The suppressor of claim 1, wherein: the core comprises a wall; the wall is generally cylindrical; the core is configured to attach to the barrel of the gun via a barrel bushing; the suppressor further comprises the barrel bushing; the barrel bushing is configured to attach to the barrel of the gun by threadingly engaging the barrel of the gun; and the housing is configured to attach to the core by threading onto the core.

9. The suppressor of claim 1, wherein: the core comprises a wall; the wall of the core has a plurality of slots therethrough; the wall of the core is generally cylindrical; the core extends longitudinally along a longitudinal axis; the slots of the plurality of slots do not extend parallel to the longitudinal axis; the slots of the plurality of slots do not extend radially about the longitudinal axis; the suppressor comprises a plurality of baffles extending radially between the core and the housing when the suppressor is assembled; the baffle is a baffle of the plurality of baffles; and the plurality of baffles are longitudinally between slots of the plurality of slots.

10. The suppressor of claim 1, wherein: the core comprises a wall; the wall of the core has a plurality of slots therethrough; the wall of the core is generally cylindrical; the core extends longitudinally along a longitudinal axis; the slots of the plurality of slots do not extend parallel to the longitudinal axis; the slots of the plurality of slots do not extend radially about the longitudinal axis; the suppressor comprises a plurality of baffles extending radially between the core and the housing when the suppressor is assembled; the baffle is a baffle of the plurality of baffles; the plurality of baffles are longitudinally between slots of the plurality of slots; a first portion of each baffle extends radially outward from the wall of the core; and a second portion of each baffle extends radially inward from the housing to a corresponding first portion of the baffle.

11. A gun configured to launch a projectile, said gun comprising: a receiver configured to initiate launching the projectile; a barrel configured to convey the projectile from a rear end of the barrel at the receiver forward to a muzzle of the barrel; and a suppressor configured to launch a projectile from the barrel of the gun, said suppressor comprising: a core configured to extend longitudinally, said core having a rear end configured to attach to the barrel of the gun and a front end opposite the rear end; a housing configured to extend longitudinally about the core; and a baffle extending radially between the core and the housing when the suppressor is assembled.

12. The gun of claim 11, wherein: the suppressor further comprises an end cap at a front end of the suppressor when the suppressor is assembled, said end cap configured to attach to a front end of the core.

13. The gun of claim 11, wherein: the suppressor further comprises an end cap at a front end of the suppressor, said end cap configured to attach to a front end of the core; and the end cap attaches to the front end of the core by threading onto the core.

14. The gun of claim 11, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; the slot does not extend parallel to the longitudinal axis; and the slot does not extend radially about the longitudinal axis.

15. The gun of claim 11, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; and the extends askew the longitindal axis.

16. The gun of claim 11, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; and the slot is helical about the longitudinal axis along the wall of the core.

17. The gun of claim 11, wherein: the core comprises a wall; the wall of the core has a slot therethrough; the core extends longitudinally along a longitudinal axis; and the slot spirals about

the longitudinal axis along the wall of the core.

18. The gun of claim 11, wherein: the core comprises a wall; the wall is generally cylindrical; the core is configured to attach to the barrel of the gun via a barrel bushing; the suppressor further comprises the barrel bushing; the barrel bushing is configured to attach to the barrel of the gun by threadingly engaging the barrel of the gun; and the housing is configured to attach to the core by threading onto the core.

19. The gun of claim 11, wherein: the core comprises a wall; the wall of the core has a plurality of slots therethrough; the wall of the core is generally cylindrical; the core extends longitudinally along a longitudinal axis; the slots of the plurality of slots do not extend parallel to the longitudinal axis; the slots of the plurality of slots do not extend radially about the longitudinal axis; the suppressor comprises a plurality of baffles extending radially between the core and the housing when the suppressor is assembled; the baffle is a baffle of the plurality of baffles; and the plurality of baffles are longitudinally between slots of the plurality of slots.

20. The gun of claim 11, wherein: the core comprises a wall; the wall of the core has a plurality of slots therethrough; the wall of the core is generally cylindrical; the core extends longitudinally along a longitudinal axis; the slots of the plurality of slots do not extend parallel to the longitudinal axis; the slots of the plurality of slots do not extend radially about the longitudinal axis; the suppressor comprises a plurality of baffles extending radially between the core and the housing when the suppressor is assembled; the baffle is a baffle of the plurality of baffles; the plurality of baffles are longitudinally between slots of the plurality of slots; a first portion of each baffle extends radially outward from the wall of the core; and a second portion of each baffle extends radially inward from the housing to a corresponding first portion of the baffle.