Comments on **docket number ATF 2017R-22**

## Comments

I would like to present some of the reasons why I do not agree with your plan to classify bump-fire stocks as machine guns (**ATF 2017R-22**, https://www.federalregister.gov/documents/2018/03/29/2018-06292/bump-stock-type-devices). A condensed version of your argument is found in the following quote from **ATF 2017R-22** (I will be placing such verbatim quotes between <<< and >>> to make it easier to find in case my formatting is deleted):

*<<<"bump fire" stocks, slide-fire devices, and devices with certain similar characteristics (bump-stock-type devices) are "machineguns" as defined by the National Firearms Act of 1934 (NFA) and the Gun Control Act of 1968 (GCA), because such devices allow a shooter of a semiautomatic firearm to initiate a continuous firing cycle with a single pull of the trigger. >>>*

For the duration of my argument whenever I refer to a bump fire stock I will be specifically talking about the bump fire stock as defined in the United States Patent No. 6,101,918. Main reason for that the details of operation of this bump fire stock are documented in the patent.

A semiautomatic firearm uses the energy from the fired cartridge to load a new round and then to position itself for another shot, completing one firing cycle. Unless it is broken in any way, it would not satisfy your original definition of a machine gun because it cannot fire another round. The user has to first reset the trigger by moving it forward until it releases the sear (the fact long range competitive shooters will only allow the trigger move forward just enough to reset is beyond this discussion) and then once again press the trigger to fire the loaded round and repeat the entire process. The recoil energy not used for performing the firing cycle is wasted either on the user's shoulder or used by a muzzle break if available to attenuate the "kick" on the shoulder.

Let's define Bump fire:

1. Requires both hands: trigger and non trigger hand.
2. Non trigger hand holds the firearm such that both are immobile (in a coordinate system's standpoint) with respect to each other.
3. Trigger hand is not immobile with respect to the firearm. In fact it is allowed to move; this is the hardest part of the bump fire learning curve.
4. Trigger finger, part of the trigger hand, presses trigger.
5. Once trigger is pressed, trigger finger stays immobile with respect to trigger hand.
6. Using recoil energy that would be absorbed by the shoulder, non trigger hand is allowed to move linearly with respect to the trigger hand. In other words, non trigger arm acts as a spring causing the distance between the trigger and the non-trigger hand change during firing cycle. This distance change between trigger and non-trigger hands causes the trigger to be operated in the same manner as in normal semiautomatic mode.

Item 6 above is what makes bump fire possible. By adjusting the amount of elbow muscle force applied by the non trigger arm to the firearm, the user can control the speed the rifle recoils to an extent. Think of the non-firing elbow as a spring.

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If we now examine the bump fire stock patent (United States Patent No. 6,101,918), the two things it adds to bump firing are

1. Provides a place where the firing hand can grip like it would in a semiauto rifle without the bump fire stock. However, that is but a convenience to address item 3 in the bump fire definition above. It could be removed completely with no adverse effect besides forcing lazy users to keep their trigger hand loose.

2. Limits the movement of the rifle to one dimension: the main axis of the rifle. That causes the recoil energy force vector to be parallel to this axis which minimizes wasted energy that would otherwise not be applied to the non-firing forearm + hand + rifle system (just as in normal bump firing both are fixed with respect to each other. The non-firing arm still flexes around the elbow as that is the spring in the system). It must be stated that when using the bump fire stock, the increased rate of fire is still achieved by events outlined in item 6 in the bump fire definition, namely the non trigger arm acts as a spring causing the distance between the trigger and the non-trigger hand change during firing cycle, and that causes the trigger to be pulled. The non-firing elbow still needs to act as a spring and, as a result, apply force for the system to work.

The bump fire stock as defined in the United States Patent No. 6,101,918 has no means of gathering the recoil energy because to do so would require the stock to have a way to store this energy. Without having a means to store energy, the bump fire stock cannot do work (force x displacement), which for **ATF 2017R-22** would mean resetting the trigger without physical manipulation of the trigger by the user. Contrasting to that, in the Atkins Accelerator energy is stored in a spring.

Therefore, the following excerpt from **ATF 2017R-22**,

<<< the Department proposes to clarify that the definition of a "machinegun" includes a device that allows semiautomatic firearms to shoot more than one shot with a single pull of the trigger by harnessing the recoil energy of the semiautomatic firearm to which it is affixed so that the trigger resets and continues firing without additional physical manipulation of the trigger by the shooter (commonly known as bump-stock-type devices). >>>

Must be correct by removing the string "(Commonly known as bump-stock-type devices)" for a bump fire stock as defined in the United States Patent No. 6,101,918 cannot be classified as a machine gun because it does not harness the recoil energy to reset the trigger; the user's non-firing elbow is what is harnessing the recoil energy (to cause the distance between non-firing and firing hands to change which then resets the trigger by physical manipulation).

If ATF would like to disagree with my demonstration, it must prove that a bump fire stock as defined in the United States Patent No. 6,101,918 has a means to store recoil energy in itself, not in the user. As Abraham Lincoln said once, "**Calling a tail a leg doesn't make it a leg."**

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**Miscellaneous Thoughts**

Now we addressed the main point of **ATF 2017R-22**, for the sake of entertainment let's now comment on other points you made on **ATF 2017R-22**:

1. Second Amendment and Bump Fire Stocks: On "**IV. Advance Notice of Proposed Rulemaking"**, you stated that

   <<< The Supreme Court in District of Columbia v. Heller, 554 U.S. 570 (2008), noted that the Second Amendment does not extend to "`dangerous and unusual weapons'" not in "`common use.'" Id. At 627. >>>

   In this paragraph will ignore the argument whether a bump fire stock is a 'dangerous and unusual weapon'; we already talked about this in a different location in this letter. From the numbers presented on **ATF 2017R-22** table 2, you estimate between 280,000 and 520,000 bump fire stocks to have been sold since 2010. I would think that would qualify as common use (there are successful firearms/cars/etc that were not sold in such large numbers), which means per your own quote that a bump fire stock is covered under the Second Amendment.

2. 5th Amendment and Bump Fire Stocks: from **ATF 2017R-22** tables 3 and 4, you estimate around $64 million been spent on bump fire stocks since 2010. That is a lot of money. The Just Compensation Clause in the Fifth Amendment to the United States Constitution states that no "private property be taken for public use, without just compensation." **ATF 2017R-22** expects for American Citizens to surrender 64 million dollars worth of previously legal property without any compensation by simply declaring something that has been legal for almost a decade **retroactively** illegal. Once again, that is a lot of money.