The possibility of a cartridge firing due to cook off may have disastrous consequences in battlefield and police situations. The involuntary detonation of ammunition has resulted in injury or loss of life in such instances. Therefore, it would be desirable to provide systems and methods for facilitating improved firearm function.

BRIEF SUMMARY

According to a first aspect, there is provided a trigger group, including: a dual use trigger, including: a trigger sear configured to engage a hammer notch of a standard hammer; and a light pull sear configured to engage a hammer post of a light pull hammer; and a single disconnect configured to operate with both the standard hammer and the light pull hammer.

According to a second aspect, there is provided a firearm including the above trigger group and configured to receive the standard hammer or the light pull hammer.

According to a third aspect, there is provided a firearm, including: a dual use trigger including: a trigger sear configured to engage a hammer notch of a standard hammer; and a light pull sear configured to engage a hammer post of a light pull hammer, wherein the firearm is configured to receive the standard hammer or the light pull hammer; and a trigger prop configured to prop a rear portion of the dual use trigger in a fully automatic open bolt mode of operation.

According to a fourth aspect, there is provided a firearm, including: a dual use trigger including: a trigger sear configured to engage a hammer notch of a standard hammer; and a light pull sear configured to engage a hammer post of a light pull hammer, wherein the firearm is configured to receive the standard hammer or the light pull hammer; and a selector operable to select a semi-automatic closed bolt mode of operation or a safe mode for the firearm.

According to a fifth aspect, there is provided a method of making the above firearm, the method including: receiving a selected one of the standard hammer or the light pull hammer; assembling the trigger group including the trigger and the selected one of the standard hammer or the light pull hammer; and inserting the trigger group into a lower receiver of the firearm.

In accordance with embodiments further described herein, features are provided that may be advantageously used in one or more firearm designs. More specifically, in accordance with an embodiment, a firearm is provided that fires fully automatic from the open bolt position to prevent cook off and have greater controllability, and fires semi-auto from a closed bolt position for accuracy. Furthermore, in accordance with an embodiment, a simple and reliable selector mechanism is provided for selection of mode of operation (e.g., semi-auto closed bolt or fully automatic open bolt) of the firearm. According to an embodiment, a selective fire firearm having a fully automatic mode and a semi-automatic mode may be provided with a trigger group having a trigger prop that, in the automatic mode, functions to ensure that, when the trigger is released following fully automatic fire, the firearm will cease fire in an open bolt position. In this way, the risk of cook off due to a cartridge chambered in a hot barrel after fully automatic fire may be reduced or eliminated.

For controllable full auto we use a variation of the Davis Recoilless Gun Principal that shot a bullet out the front and a sandbag out the rear so all the recoil was in the weight of the sandbag, none in the gun, no matter what the gun weighed. Instead of the sandbag we use the weight of the bolt carrier group and buffer and instead of throwing them out the back, we gave them enough room and spring force to gradually stop them before they hit a rear wall. Our gun is therefore not recoilless, but it delivers the lowest possible recoil force stretched out over the longest possible time (the time between one shot and the next) and it doesn't matter what the gun weighs. It does however require that each cycle be the same and should deliver half the recoil impulse while the cycling weight is decelerating rearward and half as the spring is accelerating the weight forward. If the second half of the first cycle is omitted from first shot of a full auto burst (as do most Assault Rifles), the first shot of the burst has up to twice the recoil impulse of subsequent shots which reduces full auto controllability of that burst.

Since changing the selector from closed bolt semi-auto to open bolt full auto will not cock the cycling weights rearward to open bolt position, the trigger mechanism provides two options. The user may use the cocking handle to cock the weights rearward or save time by immediately