May 6, 1941. W. L. SWARTZ 2,240,681

FIREARM BALANCER

Original Filed Dec. 4, 1936

Fig. 1

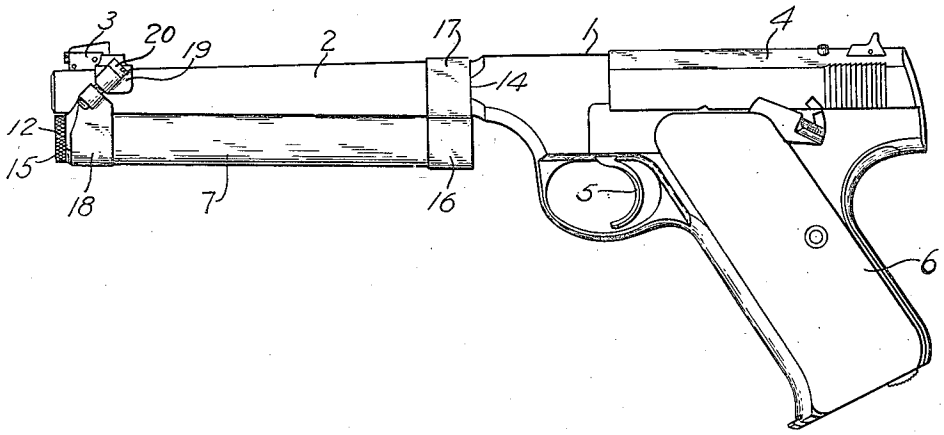
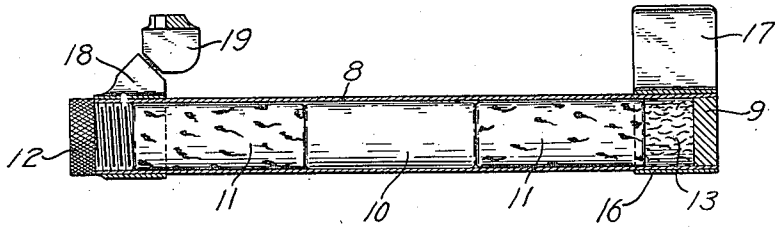



Fig. 2

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Patented May 6, 1941 2,240,681

# UNITED STATES PATENT OFFICE

2,240,681

## FIREARM BALANCER

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Original application December 4, 1936, Serial No. 114,210. Divided and this application June 2, 1938, Serial No. 211,441

4 Claims. (Cl. 42—1)

The purpose of the invention is to provide a construction whereby the center of gravity of a firearm can be changed. The balance or "feel" of a firearm is largely controlled by the location of its center of gravity, and users of firearms differ in their preferences as to this balance or feel.

The primary object of the invention is to provide a firearm with a balancer located adjacent and beneath the barrel and which includes balancing means adjustable to change the balance characteristics of the combined firearm and balancer. From the following specification other objects and advantages of the invention will be apparent to those skilled in the art.

This application is a division of my co-pending application Serial No. 114,210, filed December 4, 1936, which has matured into Patent No. 2,140,945, issued December 20, 1938.

In the accompanying drawing I have shown the embodiment which I now deem preferable, but it will be understood that the drawing is intended for illustrative purposes only and is not to be relied upon as limiting or defining the scope of the invention, the claims forming a part of the specification being relied upon for that purpose.

In the drawing:

Fig. 1 is a side view of a firearm with a balancer incorporating the principles of the invention attached thereto.

Fig. 2 is an enlarged cross sectional view taken through the longitudinal axis of the balancer.

The invention is not limited to any particular type of firearm, but for the purpose of this specification I have illustrated it in conjunction with an automatic pistol. The automatic pistol generally indicated at 1 comprises a barrel 2, front sight 3, breech bolt 4, trigger 5, and grip 6. As the particular type of firearm does not constitute any part of this invention, any further detailed description thereof is not necessary.

Located adjacent and beneath the barrel 2 is a balancer 7 which preferably is an independent unit constructed separately from the firearm 1, but as to this I do not limit myself. A tubular member 8 is provided which is closed at its rearward end by a plug 9. Within and preferably enclosed by the tubular member are balancing weight means which are readily removable from the tubular member and adjustable to change the balance characteristics of the combined firearm and balancer. In the particular form of the invention illustrated the balancing weight means includes a relatively heavy member 10 and one or more relatively lighter members 11, all of which are loosely received within the tubular member 8. The members 11 primarily function as spacing members and are preferably formed of a material such as cork for instance. A readily removable closure, such as a threaded cap 12, is provided at the forward end of the tubular member for holding the balancing means therewithin.

In the now preferred form of the invention, resilient means is provided within the tubular portion operable to absorb shocks incident to firing and to prevent any unrestrained movement of the balancing weight means when the closure 12 is in place. I have indicated such a means at 13 which in the illustrated construction comprises a plug of resilient material such as felt. It will be apparent that this resilient plug not only functions to absorb shocks and to prevent unrestrained movement of the balancing weight means, but also serves to exert a thrust against the closure 12 to prevent accidental turning thereof.

It is obvious that by removing the closure 12 the member 10 and members 11 may be readily removed from the tubular member 8 and reinserted therein in different relative positions so as to effectively change the balance characteristics of the entire assembly.

When the balancer is made in the form of an attachment as illustrated, means are provided for securing it to the firearm. The form of attaching means which I now prefer comprises two supports 14 and 15 adjacent the rearward and forward ends, respectively, of the tubular member. The rear support 14 comprises a body portion 16 which is secured to the tubular member in any desired manner and two arm portions 17 which partially surround the barrel, the ends of the arms being spaced apart sufficiently to permit the support to slide by the front sight. The forward support 15 comprises a body part 18 surrounding and secured to the tubular member and a second part 19 adapted to fit over the top of the barrel. Screws 20 serve to secure the two parts together to thus clamp the balancer securely to the barrel.

It should be understood that many changes in the specific construction illustrated may be made within the scope of the invention as defined in the appended claims.

What I claim is:

1. A balancer for a firearm having a barrel, said balancer comprising a tubular portion lo-

cated adjacent and beneath the barrel, readily removable balancing weight means loosely received within the tubular portion and adjustable to change the balance characteristics of the combined firearm and balancer, and a removable closure secured to the forward end of said tubular portion.

2. A balancer for a firearm having a barrel, said balancer comprising a tubular portion located adjacent and beneath the barrel, readily removable balancing weight means loosely received within the tubular portion and adjustable to change the balance characteristics of the combined firearm and balancer, a removable closure secured to the forward end of said tubular portion, and resilient means within said tubular portion operable to prevent any unrestrained movement of said balancing weight means when said closure is in place.

3. A balancer for a firearm having a barrel, said balancer comprising a tubular member located adjacent and beneath the barrel, a readily removable balancing weight within the tubular member, a readily removable spacer member within the tubular member and of less weight than said balancing weight, said balancing weight and spacer member being positionally interchangeable to change the balance characteristics of the combined firearm and balancer, and a removable closure secured to the forward end of said tubular member.

4. A balancer for a firearm having a barrel, said balancer comprising a tubular member located adjacent and beneath the barrel, a readily removable balancing weight within the tubular member, a readily removable spacer member within the tubular member and of less weight than said balancing weight, said balancing weight and spacer member being positionally interchangeable to change the balance characteristics of the combined firearm and balancer, a removable closure secured to the forward end of said tubular member, and resilient means within said tubular member operable to prevent any unrestrained movement of said balancing weight when said closure is in place.

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