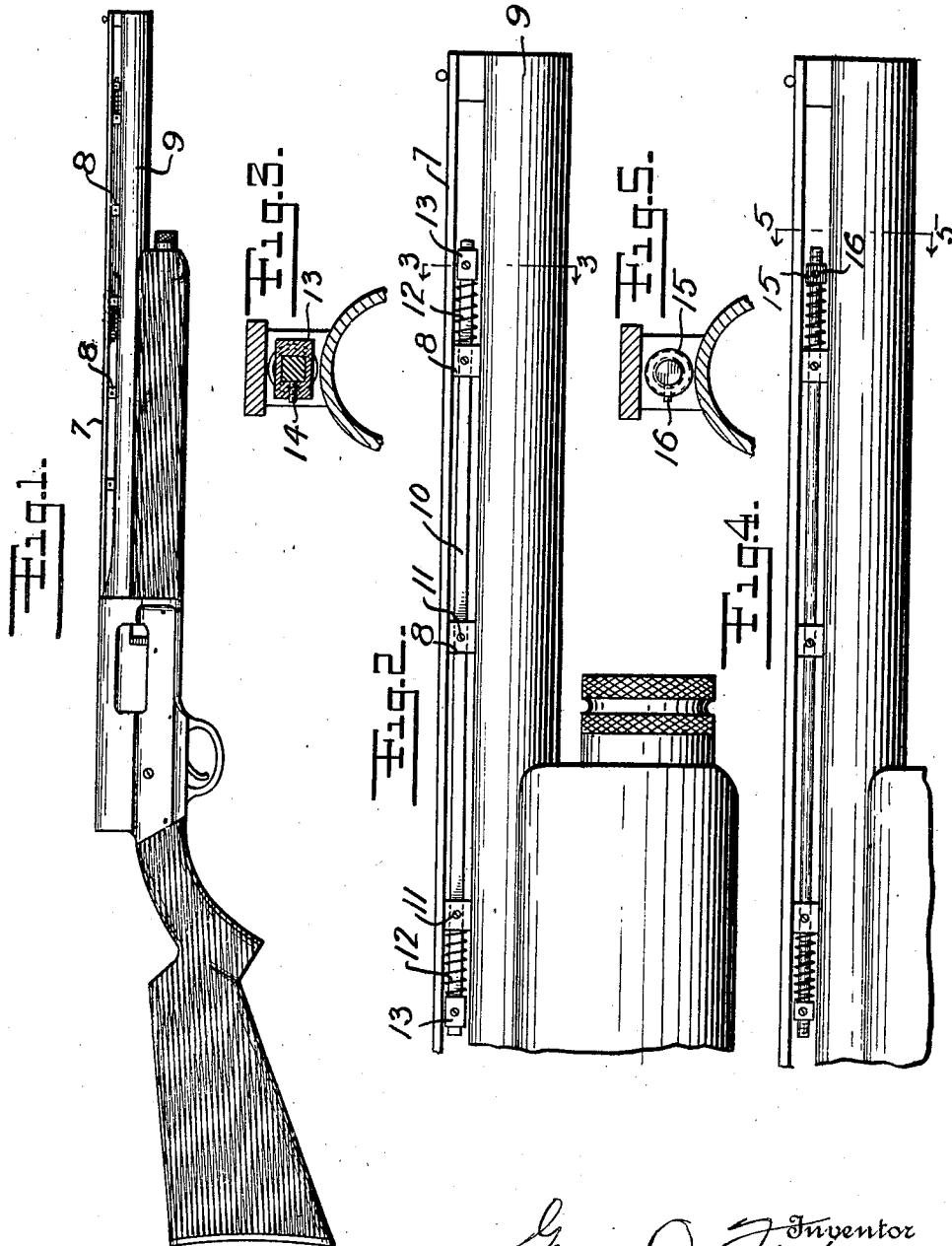


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 BALANCING AND RECOIL ATTACHMENT FOR GUNS.
 APPLICATION FILED MAR. 3, 1920.

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 By his Attorney
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UNITED STATES PATENT OFFICE.

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BALANCING AND RECOIL ATTACHMENT FOR GUNS.

Application filed March 3, 1920. Serial No. 363,004.

To all whom it may concern:

Be it known that I, GEORGE O. FISHER, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Balancing and Recoil Attachments for Guns, of which the following is a specification.

My present invention relates more particularly to recoil mechanism and balancing means for guns of the type employed for trapshooting and hunting purposes.

The objects of the invention are to provide simple and effective means for balancing the gun, which will be adjustable to suit the requirements of different individuals and which also will operate as a recoil absorber.

Stated generally, the invention comprises a balancing element which is slidably mounted and cushioned to take up the recoil and which is adjustable to vary the balance of the gun.

The invention involves other novel features of construction, combinations and arrangements of parts, all of which will appear as the specification proceeds.

In the accompanying drawing forming a part of the specification, I have illustrated the invention embodied in two different forms, but wish it understood that the same is susceptible of further modification without departure from the true spirit and scope of the invention as defined and claimed herein.

In the drawing referred to, Figure 1 is a view in side elevation of the invention as applied to a repeating shotgun of the automatic type.

Figure 2 is a broken and enlarged view of the muzzle end of the gun to better illustrate the details of construction.

Figure 3 is a cross sectional view of the same as taken on substantially the plane of line 3—3 of Figure 2.

Figures 4 and 5 are views similar to Figures 2 and 3 of a slightly modified form of the invention.

One of the special features of my invention is the mounting of the balance and recoil mechanism on the barrel and beneath the sighting rib usually provided in guns of the type illustrated. This sighting rib which I have designated 7 is usually supported on posts or studs 8 spaced above the

gun barrel 9. The mechanism of my invention is preferably supported on these posts and in the space referred to so as to be entirely protected and out of the way and so as not to mar the appearance of the gun.

The balancing element or weight is illustrated in the nature of a rod 10 and the same is shown as longitudinally slidable in passages provided therefor in the supporting posts 8. This rod is of such a weight as to give a proper balance to the gun and may be adjusted longitudinally in the passages provided therefor to meet the special requirements as to balance desired by different users. This weighting element may have a sliding movement in the supports therefor, or if desired, may be secured when adjusted, in fixed relation on the gun, this latter result being secured, for instance, by means of set screws 11 on the posts 8 which can be turned in to clamp the weight in any desired relation.

For recoil absorbing purposes I prefer that the weight shall have a certain limited and cushioned sliding movement. Therefore, the balance rod is preferably left free to slide in the supports and is cushioned in the particular case illustrated by coil springs 12 engaged about opposite end portions of the rod and bearing at their inner ends on the supporting posts and confined at their outer ends by the abutments 13. These abutments are shown as longitudinally adjustable on the rod for the purpose of varying the tension of the recoil springs and the adjustment of these abutments serves a further purpose in that it varies the weight and hence the balancing function exerted by the rod. For this latter purpose the abutments 13 may be made relatively heavy so as to exert an appreciable weighting effect.

The adjustment of the weights 13 may be accomplished in different ways. For instance, I have shown these weights in the first form illustrated, as secured adjustably on the balancing rod by set screws 14 and in the second form illustrated, I have shown the weights in the form of nuts 15 screw-threaded on the ends of the rod and held in their adjusted relation by set screws 16.

The construction disclosed assists materially in absorbing the shock of discharge and enables the user to balance the gun to suit individual taste and requirements. Va-

rious different effects may be obtained by varying the tension exerted by the springs operating in opposite directions. This effect might be obtained by using springs of
 5 different weight or tension at the opposite ends of the rod or by provision of suitable devices whereby the adjustment of the tension of the spring at one end would not effect the adjustment of the spring at the opposite end of the rod.
 10

What I claim is:

1. The combination with a gun, of means for balancing the same comprising a longitudinally shiftable balancing rod yieldingly
 15 mounted on the barrel portion of the gun.

2. The combination with a gun, of means for balancing the same comprising a longitudinally shiftable weight element resiliently supported on the barrel portion of the gun.

20 3. The combination with a gun, of means for balancing the same comprising a longitudinally shiftable weight element resiliently supported on the barrel portion of the gun and means for altering the weighting effect
 25 of said resiliently supported element.

4. The combination with a gun, of a balancing rod slidably mounted thereon and spring means cushioning the sliding movements of said rod.

30 5. The combination with a gun, of a balancing rod slidably mounted thereon, spring means cushioning the sliding movements of said rod and means for securing the rod against sliding movement.

35 6. The combination with a gun, of a balancing rod slidably supported thereon and recoil compensating springs operating on the opposite ends of said rod.

40 7. The combination with a gun, of a balancing rod slidably supported thereon, recoil compensating springs operating on the opposite ends of said rod and weights adjustable on the ends of the rod and forming abutments for the springs aforesaid.

45 8. The combination with a gun, of a balancing rod slidably supported thereon, recoil compensating springs operating on the opposite ends of said rod, weights adjustable on the ends of the rod and forming abutments for the springs aforesaid and means
 50 for securing the rod in fixed relation.

9. The combination with a gun provided with a sighting rib and with posts supporting the same on the barrel of the gun, of a
 55 balancing rod slidably engaged with said posts and means for yieldingly limiting the sliding movement of said rod.

10. The combination with a gun provided with a sighting rib and with posts supporting the same on the barrel of the gun, of a
 60 balancing rod slidably engaged with said posts and means for cushioning the sliding movements of said balancing rod.

11. The combination with a gun provided with a sighting rib and with posts supporting the same on the barrel of the gun, of a
 65 balancing rod slidably engaged with said posts, means for cushioning the sliding movements of said balancing rod and means for varying the cushioning effect on said rod.
 70

12. The combination with a gun provided with a sighting rib and with posts supporting the same on the barrel of the gun, of a
 75 balancing rod slidably engaged with said posts, means for cushioning the sliding movements of said balancing rod and means for varying the cushioning effect and for adjusting the weighting effect of said rod.

13. The combination with a gun provided with a sighting rib and with supporting
 80 posts therefor, of a balancing rod slidably engaged in said posts and springs on the opposite end portions of said rod bearing on the adjacent supporting posts.

14. The combination with a gun provided
 85 with a sighting rib and with supporting posts therefor, of a balancing rod slidably engaged in said posts, springs on the opposite end portions of said rod bearing on the adjacent supporting posts and abutments
 90 for said springs longitudinally adjustable on the rods.

15. The combination with a gun provided with a sighting rib and with supporting
 95 posts therefor, of a balancing rod slidably engaged in said posts, springs on the opposite end portions of said rod bearing on the adjacent supporting posts and means for fixedly securing the balancing rod.

16. The combination with a gun, of a balancing weight slidably mounted on the gun
 100 and springs operating on said weight with variable force and in opposite directions.

17. The combination with a gun, of a balancing weight slidably mounted on the gun,
 105 and springs of unequal tension operating on said weight in opposite directions.

18. The combination with a gun, of means for balancing the same comprising a weight
 110 element resiliently and adjustably supported on the barrel portion of the gun.

In testimony whereof I affix my signature.

GEORGE O. FISHER.