Oct. 21, 1941. D. W. KING 2,259,569

PISTOL BALANCE

Filed Jan. 24, 1938

Fig. 1.

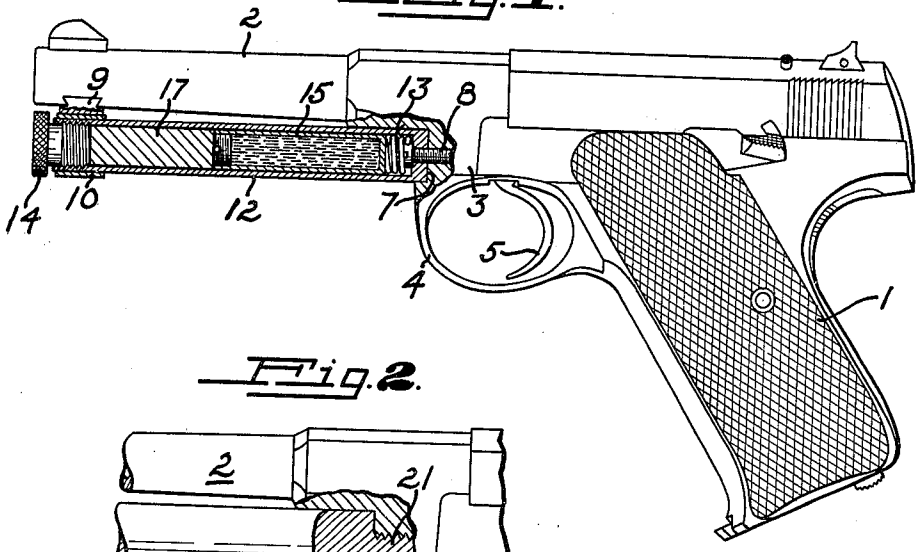


Fig. 2.

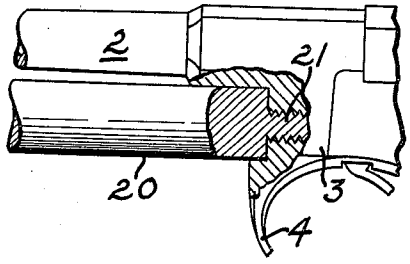
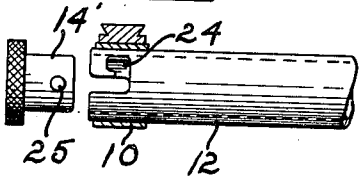


Fig. 3.



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PISTOL BALANCE

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4 Claims. (Cl. 42—1)

This invention relates to pistols (including revolvers) and particularly to target pistols and such others as are used where a particularly high degree of accuracy is required.

Given a weapon which is constructed with sufficient amount of accuracy to permit of fine shooting, the score which an individual marksman will make depends not only upon his steadiness and eye-sight but upon the "balance" of the weapon, i. e., upon the distribution of its weight. When it is fired the recoil tends to throw the muzzle upward, and a portion of this throw occurs before the bullet has left the muzzle. This must be allowed for by the marksman. A large part of his skill consists in knowing how to allow for this throw, and the amount of the throw, in turn, depends in part at least upon the balance.

Since this matter of allowing for the recoil is so largely a matter of personal skill, it follows that different marksmen will have very different ideas as to what constitutes a proper balance, depending in part, perhaps, upon the particular weapon with which their previous shooting has been done, or their technique in bringing the sights upon the target. Almost universally, however, good marksmen prefer to have the weight well forward toward the muzzle of the barrel, but when it comes to the question of how far forward it should be their ideas differ widely. A rough test of the balance is to hang the pistol from a forefinger inserted through the trigger guard. Some marksmen prefer that the weight be so far forward that the muzzle dips below the horizontal when this is done; others prefer to have it hang horizontal, or to point it slightly upward.

The primary object of this invention is to provide a means whereby the balance of any pistol may be adjusted accurately to the requirements of any marksman. With this end in view other objects are: To provide a balancing device which adds, rather than detracts from the appearance of the weapon; to provide a device which in no way affects the other factors which are necessary for accuracy; to provide a device which does not set up stresses in the barrel, whether the latter be hot or cold; and to provide a balancing device in which adjustment of balance can be made with a great degree of accuracy and very quickly.

Other objects of my invention will be apparent or will be specifically pointed out in the description forming a part of this specification, but I do not limit myself to the embodiment of the invention herein described, as various forms may be adopted within the scope of the claims.

Referring to the drawing:

Figure 1 is a view in elevation showing my device as applied to a popular type of automatic pistol, a portion of the frame of the pistol and the invention itself being shown in section.

Figure 2 is a fragmentary view, also partially in section, showing a slight modification of my invention at its point of attachment to the pistol frame.

Figure 3 is another fragmentary view showing a modification of the closure at the muzzle end of the device.

The general features of the invention are clearly shown in Figure 1, which indicates in elevation a pistol having a butt 1, a barrel 2, frame 3, trigger guard 4, and trigger 5, all of well known types. The balancing device of my invention is secured to the frame parallel and below the barrel. The device itself is essentially a cylindrical weight, and my preferred method of attaching this weight is to form a circular recess 7 in the frame immediately in front of the trigger guard, as, for example, by the use of an end mill. A tapped hole for receiving a screw 8 is centered within this recess. I prefer to secure the outer end of the weight by means of a dove-tail mounting 9, similar to a sight mount, positioned at the outer end of the barrel below the sight. This abutment carries a band 10, which has the same internal diameter as does the recess 7.

In its preferred form the weight comprises a tubular casing 12, the bottom of which is apertured to pass the screw 8. The casing is therefore rigidly secured to the frame by the screw 8 at its rear or butt end, but is slidably mounted in the band 10 at its outer or muzzle end. This prevents any stresses being set up within the barrel of the weapon due to differential expansion when the latter becomes heated from shooting.

Within the tubular casing are mounted one or more slidable cylindrical poises or weight portions. These fit within the tubular casing, and bear at one end against a helical spring 13 which is secured to the head of the screw 8, and which, when compressed, fits around the head of this screw. The muzzle end of the casing is threaded to receive a closure or plug 14, which forces the poises against the spring to prevent their shifting.

I prefer to provide several poises and to make these poises of materials having different densities. Thus the poise 15 is shown as a steel tube filled with mercury, whereas the poise 17 is a solid steel cylinder. I also prefer to supply additional poises of aluminum and lead.

It will be seen that the casing itself, and any

poise at all placed therein, will move the center of mass of the weapon thus equipped toward the muzzle. The amount of this movement of the center of mass is determined by the particular materials chosen for the weight portions or poises. As the device is shown, a heavy mercury weight is placed adjacent to the trigger guard, and its moment is therefore relatively small, the much lighter steel poise being nearer to the muzzle in this case. Interchanging the position of these two poises would move the center of mass still more forward toward the muzzle. It would, of course, be possible to use a single long poise filled with mercury, which would give the maximum forward shift to the center of mass, or, for another marksman, the mere empty casing itself might add sufficient muzzle weight. With more poises of the materials mentioned, i. e., mercury, steel, lead, and aluminum, nine variations of balance in very small increments may be obtained.

The variable feature, although very valuable, is not an essential feature of the invention. It is possible to use a simple weight, comprising a single solid rod **20**, as shown in Figure 2. This rod may itself bear a threaded tang **21**, thus eliminating the necessity of providing the additional screw **8**.

It is also clearly obvious that other forms of closure may be used than the threaded one shown in Figure 1, the bayonet catch comprising the J-slots **24**, formed in the muzzle end of the tubular casing **12'** (as shown in Fig. 3), and cooperating with the pins **25** on the plug or closure **14'** being one modification.

In the specification and claims of this application the weight has been spoken of as "cylindrical." It is desirable that it be truly cylindrical, since this more readily permits attachment to the pistol. It may, however, be a polygonal prism of hexagonal, octagonal, or other desired form, these forms being "substantially cylindrical" within the meaning of the claims.

I claim:

1. In combination with a pistol having a barrel and a frame, a tubular casing mounted beneath and substantially parallel with said barrel means for securing said casing at its butt end within a cylindrical recess in said frame, a weight slidably fitting within said casing and comprising a plurality of coextensive portions of different density and interchangeable in position, and a closure for said casing bearing against the end of said weight and removable to permit said weight to be changed or removed.

2. In combination with a pistol having a frame and a barrel mounted thereon, a cylindrical weight mounted below said barrel and engaged within a cylindrical recess formed in said frame, said weight comprising a tubular casing having a closed rear end centrally apertured, a screw passing through said aperture and tapped into said frame, a helical spring surrounding and secured to the head of said screw, a poise within said casing, and a closure for the muzzle end of said casing for forcing said poise against said spring.

3. In combination, a pistol having a barrel and a frame, a cylindrical recess in the forward end of said frame below said barrel, a band suspended below said barrel at the muzzle end thereof and in alinement with the aforementioned cylindrical recess and a cylindrical weight having one end supported in said band, and means for anchoring the other end in said recess.

4. In combination, a pistol having a barrel and a frame, a cylindrical recess in the forward end of said frame below said barrel, a band suspended below said barrel by a dove tail connection therewith at the muzzle end thereof and in alinement with the aforementioned cylindrical recess, and a cylindrical weight having one end anchored in said cylindrical recess and its other end supported in said band.

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