Dec. 7, 1948. H. E. OPPOLD 2,455,438

RECOIL ABSORBER FOR FIREARMS

Filed Aug. 26, 1946

Fig. 1.

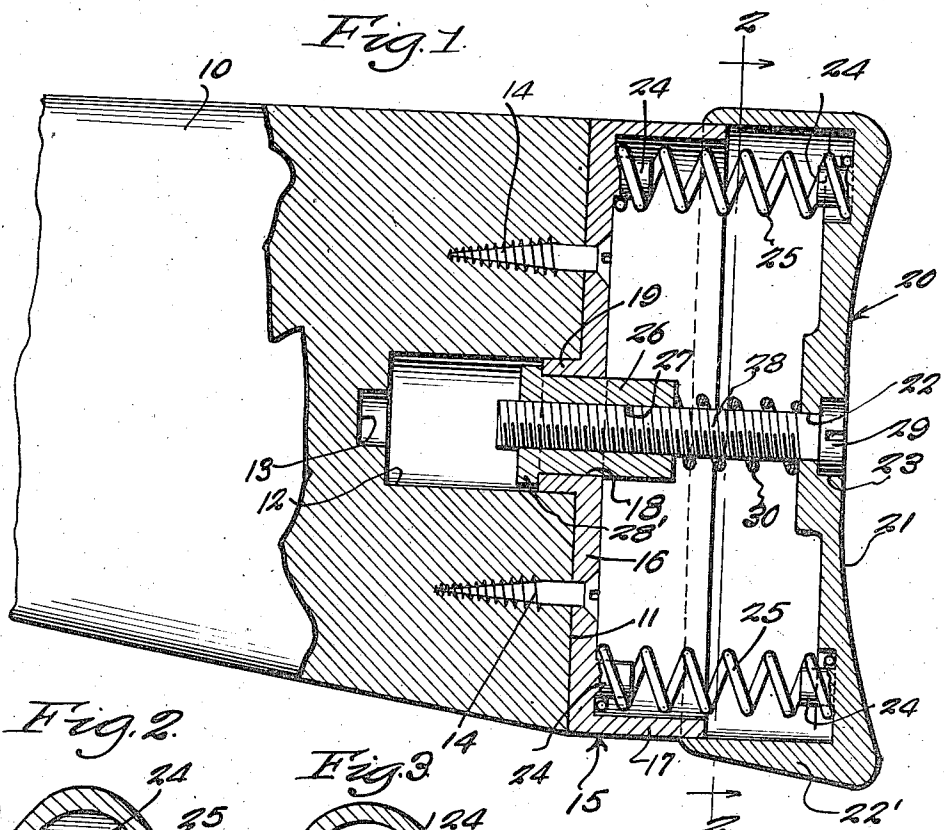


Fig. 2.

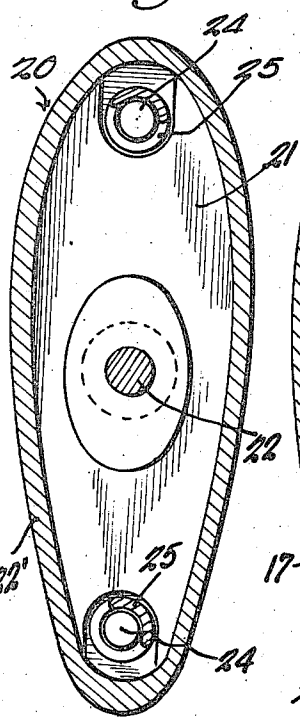


Fig. 3.

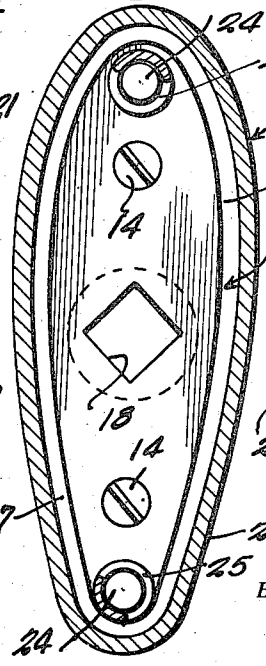


Fig. 4.



Fig. 5.

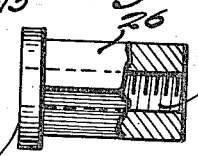


Fig. 6.



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RECOIL ABSORBER FOR FIREARMS

Harry Edward Oppold, Sterling, Ill.

Application August 26, 1946, Serial No. 693,047

1 Claim. (Cl. 42—74)

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This invention relates to a butt plate for a gun stock and has for its primary object to extend or reduce the distance between the shoulder plate and the gun grip in order to contribute to the comfort and accuracy of the marksman.

Another object is to cushion the recoil of the gun's butt against the shoulder of the marksman.

The above and other objects may be attained by employing this invention which embodies among its features a guide adapted to be attached to the end of a gun stock, a shoulder plate telescopically associated with the guide, means between the guide and shoulder plate yieldingly to hold them in spaced relation and means to regulate the distance between the end of the gun stock and the shoulder plate.

In the drawings:

Figure 1 is a fragmentary sectional view through a gun stock equipped with my improved butt plate,

Figure 2 is a vertical sectional view, taken substantially on the line 2—2 of Figure 1 and looking in the direction of the arrows,

Figure 3 is a transverse sectional view taken on the line 2—2 but looking in the direction opposite the arrows,

Figure 4 is a side view of the adjusting screw,

Figure 5 is a side view of the bushing partially in section, and

Figure 6 is an end view of Figure 5.

Referring to the drawings in detail a gun stock 10 is provided with a squared or flattened end 11, and extending into the gun stock 10 from the flattened end 11 is a chamber 12 of relatively large diameter which is provided at its inner end with an axial bore 13 which extends into the gun butt 10 to accommodate the inner end of the adjusting screw as will be more fully hereinafter explained.

Secured as by attaching screws 14 to the flattened end 11 of the gun butt 10 is a guide designated generally 15 which comprises a base plate 16 conforming in shape to the cross section of the gun butt 10 at the squared end 11. This plate 16 is provided with a peripheral flange 17 and an axial substantially centrally located rectangular opening 18 which aligns axially with the chamber 12. Projecting from the base plate 16 from the face opposite the flange 17 is an annular collar 19, the outer face of which is adapted snugly to fit within the chamber 12 as will be readily understood with reference to Figure 1.

Telescopically associated with the guide 15 is a shoulder plate designated generally 20 which comprises a main body portion 21 formed with

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a peripheral flange 22', the inner wall of which conforms in size and shape to the flange 17 so that the shoulder plate may slide over the guide as shown. Formed in the base plate 21 of the shoulder plate 20 in axial alignment with the opening 18 is an opening 22 the outer end of which is countersunk as at 23 to accommodate the head of the adjusting screw as will be more fully hereinafter explained.

Carried by both base plates 16 and 21 are opposed lugs 24 forming guides for the opposite ends of compression coil springs 25 which when the device is assembled exerts pressure against the respective base plates, yieldingly to urge the shoulder plate 20 away from the guide 15.

Mounted for longitudinal sliding movement in the opening 18 is a bushing 26 provided with an axial internally screw threaded bore 27 and carrying at one end a stop flange 28' which under normal conditions bears against the inner end of the collar 19 as illustrated in Figure 1. The bushing 26 is rectangular in cross section to correspond to the cross-sectional shape of the opening 18 so that it will be held against turning movement relative to the plate 16, but may slide axially of the opening 18. An adjusting screw 28 provided with a threaded shank of a size to fit the threaded opening 27 is also formed with a head 29 adapted when the parts are assembled to rest in the countersink 23. A compression coil spring 30 surrounds the adjusting screw 28 and one end of this spring bears against the outer end of the bushing 26, while the opposite end of the spring bears against the inner face of the plate 21 adjacent the opening 22. It will thus be seen that the pressure of the spring 30 tends to urge the plate 20 and bushing 26 apart.

In use it will be understood that the adjusting screw 28 when turned in one direction will cause the shoulder plate 20 to advance toward the gun stock and consequently shorten the distance between the shoulder plate and the gun grip. Reversing the direction of rotation of the screw 28 will allow the springs 25 and 30 to urge the shoulder plate away from the gun stock and thus lengthen the distance between the shoulder plate and the gun grip. In this manner, the gun may be adjusted to suit the convenience and comfort of the marksman without requiring the production of stocks of different lengths. Due to the fact that the shoulder plate 20 is yieldingly supported relative to the plate 16 it will be obvious that much of the recoil resulting from the firing of a gun equipped with this improved butt plate will be absorbed by the

springs **25** and **30** and hence this device will materially contribute to the comfort of the marksman or user of the gun. It will be obvious that as the recoil takes place with the shoulder plate **20** held against the shoulder of the marksman the guide **15** will slide longitudinally of the bushing **26**, thus compressing the spring **30**, and part of the energy of the recoil will be absorbed by the spring **30**, while a much greater part will be absorbed by the springs **25**. In this way only a portion of the shock of the recoil is transmitted to the shoulder plate **20** thus contributing to the comfort of the marksman.

While in the foregoing there has been shown and described the preferred embodiment of this invention it is to be understood that minor changes in the details of construction, combination and arrangement of parts may be resorted to without departing from the spirit and scope of the invention as claimed.

What I claim as my invention is:

A butt plate for a gun stock comprising a base plate, a perpendicular guide flange on said plate at its perimeter, said base plate having a centrally located rectangular opening extending therethrough, a rectangular internally screw threaded bushing slidably mounted in said rectangular opening, a stop flange on the bushing adjacent the face of the base plate remote from the guide flange, a shoulder plate, a perpendicular guide flange on the shoulder plate at its perimeter, said flange on the shoulder plate telescopically receiving the flange on the base plate to form a chamber between the plates, compression coil springs within the chamber bearing on the plates yieldingly to urge said plates apart, a headed screw extending through the center of the shoulder plate and threadedly engaging the threads in the bushing to hold the plates together against the effort of the springs, a compression coil spring surrounding the screw and bearing at one end on the inside of the shoulder plate and at its opposite end on the end of the bushing remote from the stop flange yieldingly to hold the bushing and shoulder plate in spaced relation and means detachably to hold the butt plate on a gun stock.

HARRY EDWARD OPPOLD.

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