This invention relates to shock absorbers for guns. It has for its objects to provide for cushioning and absorbing the usual kick resulting from the recoil of the gun when fired, without taking from the efficiency of the gun, and yet prevent the usual discomfort at the shoulder or other part of the body against which the butt of the gun is supported by the user; to provide for simplicity of structure and to facilitate its application to the gun; and to attain certain advantages as will more fully appear in the following description.

The invention consists in the novel construction of the device, its parts and combinations and arrangements of parts, and in the peculiar application thereof to the gun, all as hereinafter described and pointed out with particularity in the appended claims.

In the accompanying drawings illustrating a practical adaptation of the invention,—

Fig. 1 is a fragmentary view, in side elevation, of the breech and stock portion of an ordinary gun with the shock absorber applied thereto;

Fig. 2 is a fragmentary view, on an enlarged scale, the shock absorber being shown in longitudinal section and applied to the gun stock;

Fig. 3 is an outer end elevation of the shock absorber;

Fig. 4 is a section taken on or about the line 4—4 of Fig. 2;

Fig. 5 is a section on the line 5—5 of Fig. 3; and

Fig. 6 is a view, in side elevation, illustrating a modification of the device.

Referring now to the drawings, the numeral 10 designates the breech portion of an ordinary firearm, such as a shot gun or a rifle, having the usual stock 11, hand grip 12, and a hammer and trigger mechanism, which latter is shown only conventionally and designated generally by the reference numeral 13.

The device of the present invention is applied to the butt end of the stock 11 of the gun, this being done either at the factory where the gun is manufactured, or at a time later, as a special attachment. In the former case the butt end of the stock may be obviously prepared for the attachment of the device substantially as shown in the drawings, while in the latter case, the regular finishing plate or ferrule as usually provided on a gun may be removed and the stock readily prepared for the reception of the shock absorber.

As shown in the drawings, the device comprises, preferably, an inner plate 14 and an outer plate 15 which are normally spaced apart and have springs 16 interposed between them, said springs being respectively secured, as by soldering, welding, or other approved means or method of attachment, to the adjacent inner faces of said plates.

In order that the plates 14, 15, may be of light weight, yet sufficiently rigid to withstand the usage thereof, they are preferably provided with inwardly extending, continuous, marginal flanges 17 and 18, respectively. Preferably, the marginal flange 18 of the outer plate 15 is somewhat deeper than the flange 17 of the inner plate 14, this being because the plate 14 is firmly supported on the end portion of the gun stock 11 in the manner to be presently described, whereas, the outer plate 15 having no such solid support, requires a deeper flange to give it the necessary rigidity. In practice, the depth of the flanges 17 and 18 may be varied according to structural conditions and depending somewhat upon the normal distance between the meeting faces of the two plates 14 and 15 and the required clearance between the meeting edges of the marginal flanges 17 and 18 to permit the due compression of the springs 16 when functioning to absorb the recoil of the gun.

The inner plate 14 is preferably provided near its opposite ends with apertures 19 for the reception of screws 20 by which it is attached to the end of the gun stock 11, the surface of which latter, of course, is planed or otherwise prepared so that said plate 14 rests in supporting contact therewith throughout. Preferably, the respective apertures 19 are arranged in triangular relation at each end of the plate 14, one of the apertures nearest the end of the plate being centrally disposed and the two other apertures being disposed transversely of the plate and
located respectively near the margins thereof.

In order to facilitate the application and removal of the screws 20, in applying and detaching the device, the outer plate 15 is provided with apertures 21 somewhat larger in diameter than said apertures 20 in the plate 14, this enlargement of the apertures 21 being to permit the passage of the screws freely therethrough and also to permit the insertion of a screw driver in applying and removing screws.

As shown in the drawings, the plates 14 and 15 are provided with protuberances 22 on their inner faces, which are located and correlated so as to afford means for readily positioning the respective springs 16 and serving to support said springs laterally to a considerable advantage, said springs being preferably soldered or spot-welded to the plates in the region of the respective protuberances. These protuberances 22 may be provided on the plates in any approved or desirable manner, but it is preferable to provide them as shown by embossing or punching the plates from the opposite faces thereof.

In most cases, the plates 14 and 15 will be substantially flat throughout the entire extent thereof, but, obviously, in some instances the outer plate 15 may be curvilinear or given the special contour sometimes provided at the butt end of the stock of the firearms. A modification of this character is illustrated in Fig. 6 of the drawings, wherein the outer plate 15 of the shock absorber is provided on its outer face with a supplemental conformed plate 23 which may be of metal, compressed fibre, wood or any other suitable material.

From the foregoing specification it is readily apparent that a simple and effective device may be produced and readily applied to a gun for the purposes intended, and, obviously, the structure admits of considerable modification and alterations without departing from the spirit and scope of the invention as defined by the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent is:

1. The herein described shock absorber for guns and the like, comprising an inner and an outer plate in normally spaced relation to each other, said plates having relatively low inwardly extended marginal stiffening flanges, the inner plate having provision for its attachment directly to the butt end of a gun stock, and interposed spring elements yieldably connecting said inner and outer plates.

2. The herein described shock absorber for guns and the like, comprising an inner plate having perforations for the application of attaching screws, an outer plate normally spaced from said inner plate and having registering perforations of larger diameter than the perforations of said inner plate, each of said plates having embossments affording seating abutments on its inner face, and spring elements interposed between said inner and outer plates and being attached in seated relation to the embossments thereof for yieldably supporting said plates in cooperative relation to each other, said plates having opposed turned marginal stiffening flanges.

3. The herein described shock absorber for guns and the like, comprising an inner plate and an outer plate in normally spaced relation to each other, and coil springs interposed between said plates and attached at their ends to the respective plates, said plates having sets of correlated protuberances on their inner faces affording seats for locating and laterally supporting said spring elements.

4. A shock absorber for guns and the like comprising an integral unitary attachment including, in combination, an inner plate adapted to be attached directly to the butt end of the gun stock, an outer plate, said plates having opposed sets of embossments producing seating abutments on their inner faces, and helical springs secured at their ends to said plates in the seating portions of the latter as defined by said embossments.

In testimony whereof I have signed my name to this specification.

SAMUEL R. PRUYN.