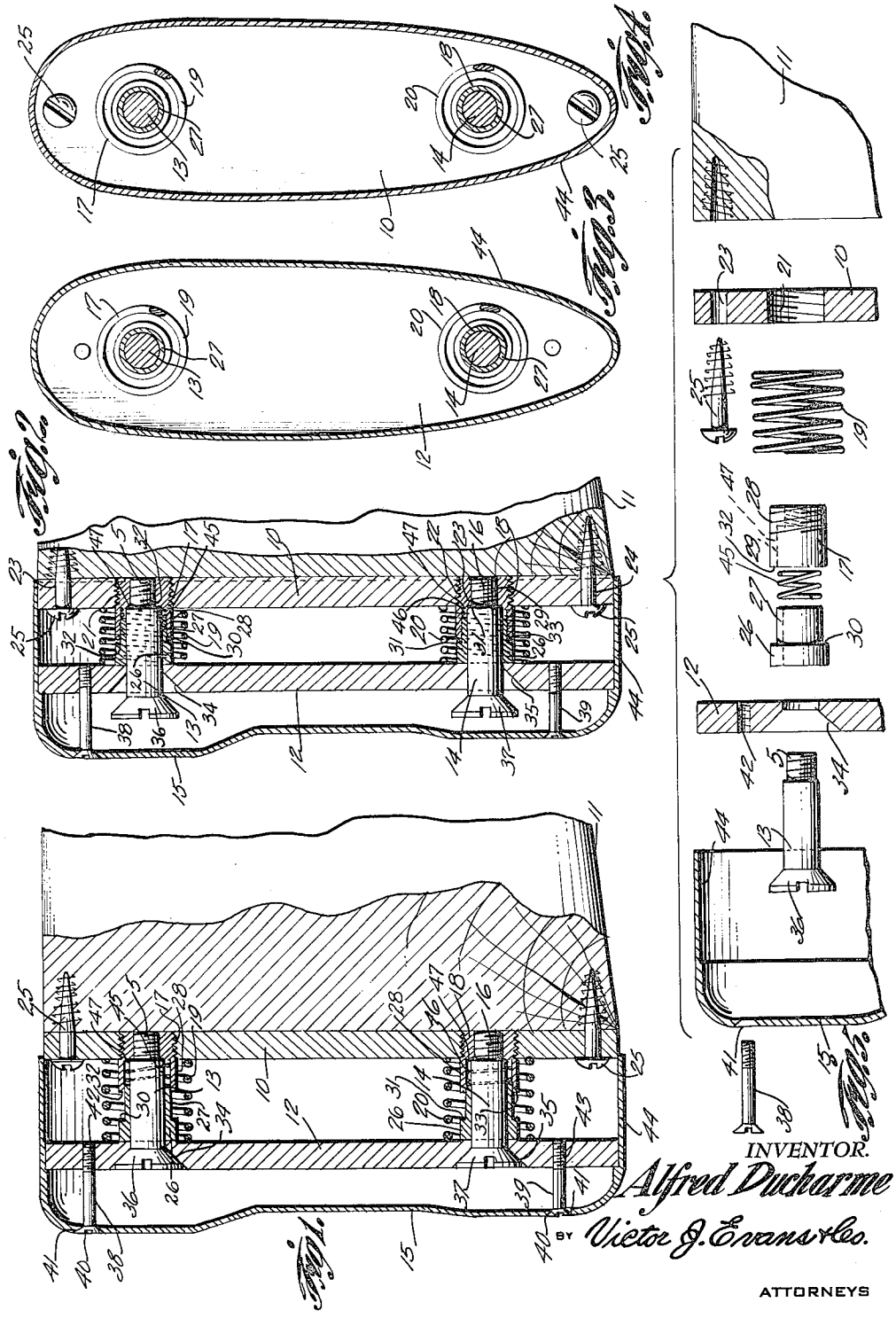
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RECOIL ABSORBER FOR A FIREARM

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RECOIL ABSORBER FOR A FIREARM

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This invention relates to shock and recoil absorbers, such as used in stocks of firearms, and in particular a telescoping shell positioned over a pair of plates with a stationary or base plate secured to the end of a stock of a firearm and with a traveling plate carried by spaced studs extended through the plate and threaded in the baseplate, and with springs around the studs and between the plates whereby the recoil of a gun in the stock on which the absorber is positioned compresses the springs permitting the flange of the shell to telescope over the stock relieving the shoulder of a person firing the gun from shock.

The purpose of this invention is to provide an improved absorber and recoil for firearms to prevent the shock load being taken by the shoulder of a person firing the gun.

Various types of resilient devices have been provided for absorbing the shock load of firearms and although some of such devices are incorporated in the stocks of the firearms it is difficult to evenly distribute the load so that a shoulder is completely relieved of shock. With this thought in mind this invention contemplates a firearm shock absorber wherein a traveling plate is carried by studs extended from a stationary or base plate with a telescoping shell enclosing the plates and with the traveling plate urged away from the stationary plate by spaced springs.

The object of this invention is to provide a shock absorber for firearms in which the recoil load is evenly distributed over the end surface of the stock of the firearm.

Another object of the invention is to provide a shock absorber for firearms in which an absorber may be installed on stocks of firearms now in use without changing the stocks or firearms.

A further object of the invention is to provide a shock and recoil absorber for firearms in which the absorber is of a simple and economical construction.

With these and other objects and advantages in view the invention embodies a firearm recoil and shock absorber including spaced parallel plates having studs extended through openings in one of the plates and threaded into the other plate, with springs extended around the studs and positioned between the plates and with a shell enclosing the plates and positioned to slide over the end portion of the stock upon which the stationary plate is mounted.

Other features and advantages of the invention will appear from the following description taken in connection with the drawing, wherein:

FIGURE 1 is a longitudinal section through a shock absorbing unit on the end of a stock or a firearm, showing the unit in the free position.

FIGURE 2 is a longitudinal section similar to that shown in FIGURE 1 showing the unit in the compressed position.

FIGURE 3 is a cross-section through the intermediate part of the absorber showing springs on studs connecting plates of the absorber, the section being taken looking toward the traveling plate of the absorber.

FIGURE 4 is a cross-section taken on substantially the same line as that of FIGURE 3 looking in the opposite direction, showing the mounting and base plate of the absorber.

FIGURE 5 is an exploded view showing the parts of the enclosed recoil absorber and showing the parts in their relative positions.

Referring now to the drawing wherein like reference characters denote corresponding parts, the improved recoil absorber of this invention includes a stationary or base plate 10 designed to be mounted on the end of a stock 11 of a firearm, a traveling plate 12 spaced from and parallel to the base plate 10, studs 13 and 14 having threaded ends 5 and 16, respectively, threaded in bushings 17 and 18 positioned in the base plate 10, springs 19 and 20 extended around the studs and positioned between the plates 10 and 12 and a shell 15 that provides a cover that is adapted to telescope over the base plate 10 and adjoining portion of the stock 11.

The plate 10 is provided with threaded openings 21 and 22 in which the bushings 17 and 18 are threaded, respectively, and openings 23 and 24 through which screws 25 extend for mounting the base plate on the stock 11 of the firearm. The screws are threaded into the end portion of the stock, as shown in FIGURES 1 and 2.

The studs 13 and 14 have sleeves 26 provided with portions 27 of a reduced diameter slidably mounted thereon and the bushings 17 and 18, which are provided with threaded outer surfaces 28, are provided with counterbores 29 into which the sections 27 of the sleeves 26 extend, as shown in FIGURES 1 and 2. The sleeves 26 are provided with shoulders 30 and 31 that engage shoulders 32 and 33 of the bushings 17 and 18 to limit inward movement of the travelling plate 12 on the sleeves 26 on the studs 13 and 14. Therefore since the plate 12 moves with the sleeves 26 the inward movement of the plate 12 is also limited in the same manner as is the inward movement of the sleeves 26.

The traveling plate 12 is provided with counter-sunk openings 34 and 35 in which frusto-conical-shaped heads 36 and 37 of the studs are positioned with the parts in free positions. The heads 36 and 37 limit outward movement of the traveling plate 12.

The shell 15 is secured to the traveling plate 12 by screws 38 and 39, heads 40 of which are positioned in openings 41 in the end surface of the shell 15 and the opposite or threaded ends of which are threaded in openings 42 and 43 of the traveling plate 12.

The shell or cover 15 is provided with a continuous flange 44 that slides over the peripheral surface of the base plate 10 and adjoining portion of the stock 11 when a shock load or the recoil of the firearm compresses the springs 19 and 20.

The recoil absorber is also provided with booster springs 45 and 46 that extend around the studs 13 and 14 and that are positioned in the bushings 17 and 18. One of the ends of the springs 45 and 56 bears against shoulder 47 in the bushings 17 and 18 and the opposite ends bear against the ends of the sections 27 of the sleeves 26. The booster springs provide means for urging the sleeves 26 against the inner surface of the plate 12.

With the parts assembled as illustrated and described, and installed on the end of the stock of a firearm the recoil resulting from firing the firearm drives the base plate 10 rearwardly compressing the springs 19 and 20 whereby the springs absorb the load or shock and the shoulder of the person firing the firearm is, consequently, protected.

The improved shock load and recoil absorber of this invention provides cushioning means in the stock of a firearm whereby substantially all shock loads are eliminated.

It will be understood that modifications, within the scope of the appended claims, may be made in the design and arrangement of the parts without departing from the spirit of the invention.

What is claimed is:

1. In a recoil absorber for a firearm, the combination

which comprises a mounting plate, means for attaching the mounting plate to the end of a stock of a firearm, bushings threaded in said mounting plate, studs threaded in said bushings and positioned normal to the mounting plate, a traveling plate slidably mounted on said studs, sleeves slidably mounted on the studs, movable with and in unison with the travelling plate and positioned between the mounting and traveling plates, said bushings having counter bores therein and said sleeves having a reduced portion thereon that are receivable in the bores in said bushings, springs extended around the sleeves and bushings and positioned between the plates, coacting shoulders on said bushings and said sleeves for limiting the inward travel of said traveling plate, enlarged heads on said studs for limiting the outward movement of said travelling plate, a cover positioned over said plates and springs, and mounted to slide over the adjacent portion of the stock of a firearm upon which the absorber is mounted, and means for securing the cover to the traveling plate.

2. In a recoil absorber for a firearm, the combination which comprises a plate designed to be positioned on the end of a stock of a firearm, said plate having openings therethrough for screws for securing the plate in position upon the stock of a firearm, said plate having spaced internally threaded openings therein, bushings threaded in the openings of the plate, studs threaded in the bushings and extended in parallel relation and normal to the plate,

a traveling plate having openings therein for receiving the studs slidably mounted on the studs and positioned in parallel relation to the plate in which the studs and bushings are mounted, sleeves slidably mounted on the studs and movable with the travelling plate, springs extended around the sleeves and positioned between the plates, the studs having heads on extended ends thereof for limiting outward movement of the traveling plate, coacting shoulders on said sleeves and said bushings for limiting the inward movement of said travelling plate, a shell having a flange enclosing the plates and springs and mounted to slide over a stock of a firearm upon which the absorber is mounted, and screws extended through the shell and threaded in the traveling plate for securing the shell in position on the absorber.

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