

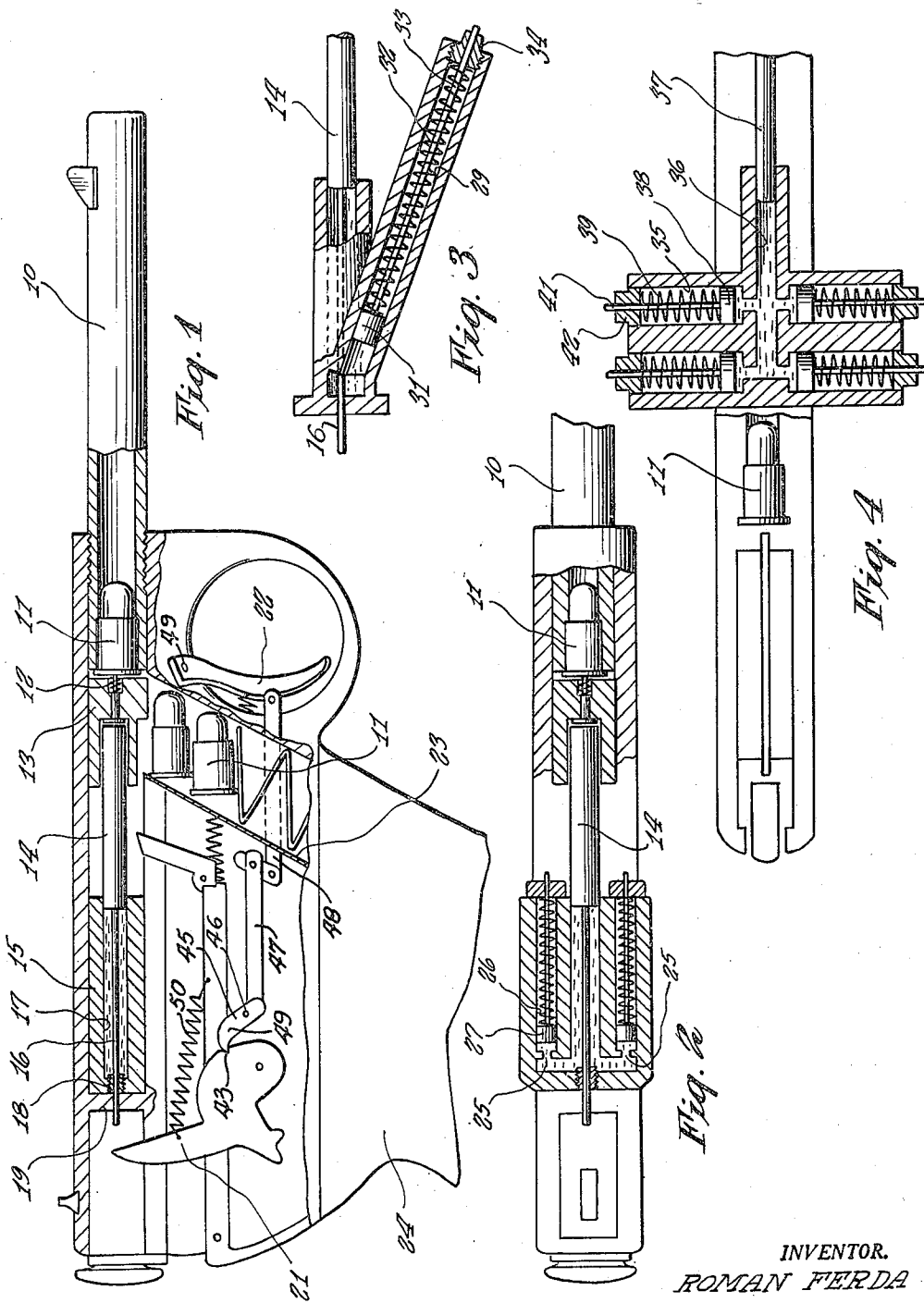
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PISTOL SHOCK ABSORBING DEVICE

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PISTOL SHOCK ABSORBING DEVICE

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3 Claims. (Cl. 89—198)

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This invention relates to guns and more particularly to a hydraulic shock absorbing device therefor.

It is an object of the present invention to provide a shock absorbing device for a pistol or gun which is of the hydraulic type adapted to receive the back pressure of the shell to cause fluid to be throttled through an opening and against spring biased fluid return plungers.

Other objects of the present invention are to provide a hydraulic shock absorber for guns or pistols wherein the fluid receiving chambers are inclined downwardly so that the fluid is forced into downwardly extending cylinders in such a manner as to prevent the gun from rising each time that it is fired.

Other objects of the present invention are to provide a shock absorbing device for guns or pistols which is of simple construction, easy to install within the gun, inexpensive to manufacture and efficient in operation.

For other objects and for a better understanding of the invention, reference may be had to the following detailed description taken in connection with the accompanying drawing, in which

Fig. 1 is a side elevational view of a pistol with a portion broken away to show the shock absorbing device therewithin and the interior working parts of the pistol.

Fig. 2 is a top plan view of the pistol shown in Fig. 1 with portions broken away and shown in section.

Fig. 3 is a side elevational view of the shock absorbing mechanism with downwardly extending chambers to prevent the gun from rising when fired.

Fig. 4 is a fragmentary top plan view of a pistol utilizing a modified form of shock absorbing device.

Referring now particularly to Figs. 1 and 2, 10 represents the barrel of a gun into which a bullet 11 may be extended to be fired by a firing pin 12. This firing pin is retained in a carriage 13 and is engaged by a plunger 14 of my shock absorbing device indicated generally at 15. This plunger has a rod 16 thereon extending through a chamber 17 in which the plunger 14 works and this rod 16 extends through a fitting 18 in the rear of the chamber 17 and through a wall partition 19 of the gun. The rear end of the rod 16 will be engaged by a lever 21 when trigger mechanism 22 has been operated.

The lever 21 is pivoted on a pivot 21' secured in the housing of the gun and is equipped with a notch 43 which receives one end 44 of a double

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lever 45 which also is pivoted at 46. The other arm of the double lever 45 is secured to a link 47 which in turn is pivoted to a double link 48 the front end of which is pivoted to the trigger 22. The latter turns on a pivot 49 of the gun housing. A spring 50 tends to move the lever 21 into its most forward position. The lever 21 is, however, kept in a rearward position, upon being moved into said position by means of the rod 16, when the end 44 of the double lever 45 enters the notch 43 of the lever 21. Upon operating the trigger 23, the lever 21 is released from the double lever 45. The plunger 14 is accordingly moved forwardly and will engage the firing pin 12 to fire the bullet 11. Other bullets 11 lie in a magazine 23 extending upwardly through a handle 24 of the gun.

As the gun is fired, the shock will cause the carriage 13 to move rearwardly and the plunger 14 will be extended through the chamber 17 to cause fluid therein to be throttled through a small opening 25 at the side of the chamber 17. There are preferably two of these openings 25 one at each side of the chamber 17. These openings cause the fluid to be throttled upon passing to a chamber 26 in which there is provided a spring biased plunger 27 against which the fluid will act to cause the plunger to be moved forwardly in the chamber 26 so that the fluid can be passed to the chambers 26 and so that the plunger 27 after the shock has been absorbed will cause the fluid to be returned through the openings 25 to the chamber 17, to advance the plunger 14 into a position whereby to receive the shock of another bullet. While the carriage 13 has been moved rearwardly, a second bullet 11 will have been advanced to the barrel. The shell of the first bullet will have been extracted from the gun.

In Fig. 3, the chambers are disposed in a downwardly inclined position on the exterior of the gun. The chamber is indicated at 29 and has a plunger 31 which is urged rearwardly by a spring 32 surrounding a rod 33 and slidable through a fitting 34 in the forward end of the chamber 29. With oil or fluid passing to the chamber 29, and with the chamber extending downwardly, the tendency for the gun to rise as the same is fired will be overcome. The shock absorbing means thus also serves as a device to keep the gun down. The downward and forward thrust of the pistons 31 and the application of fluid pressure on the chamber wall 29 provides a resultant force acting forwardly on the gun to

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tend to overcome forces acting upwardly and resulting from the firing of the gun.

In Fig. 4 there is shown a multiple arrangement about chambers 35 with two on each side and in communication with a chamber 36 in which is worked a shock absorbing plunger 37. In each chamber 35 is a piston 38 which is backed up by a spring 39 and which has a rod 41 which is extended through a fitting 42. The gun with which my shock absorbing device, as shown in Fig. 4, is used may be of slightly different construction than the gun shown in Figs. 1 and 2.

It should now be apparent that there has been provided a shock absorbing mechanism which is particularly adapted for use with guns or pistols and which is of the hydraulic type whereby to give a smoother shock absorbing action and to eliminate the necessity for having large recoil or shock absorbing springs within the gun which are difficult to assemble to the gun.

While various changes can be made in the detail construction, it shall be apparent that such changes shall be within the spirit and scope of the present invention as defined by the appended claims.

Having thus set forth and disclosed the nature of this invention, what is claimed is:

1. A shock absorbing device for guns and pistols comprising a plunger adapted to be pressed rearwardly upon the gun being fired, a chamber in which said plunger may be worked, a fluid receiving chamber adjacent the plunger chamber having communication with the plunger chamber, a fluid medium operable in said chambers, and a spring biased plunger in said receiving chamber for returning the fluid and the plunger into a position to again receive the shock of a second bullet, a throttle opening disposed in said communication between the two chambers whereby the fluid is throttled when passing be-

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tween the chambers, said plunger being adapted to engage a firing pin to effect its actuation upon a bullet, a rod extending rearwardly of the plunger and through the fluid chamber wall for engagement with a lever controlled by a trigger mechanism.

2. A shock absorbing device as defined in claim 1, and a third chamber corresponding to the second chamber in throttling communication with the plunger chamber, a biased plunger fluid return element in the last mentioned chamber, said fluid being similarly operable in said third chamber.

3. A shock absorbing device for guns and pistols comprising a housing having a plunger chamber therein, a plunger adapted to be worked in the plunger chamber and to be extended so as to receive the shock of a bullet when fired, pairs of chambers within the housing extending respectively from opposite sides of the plunger chamber and in communication therewith, and said chambers being adapted to receive the fluid as the plunger is forced into its chamber, fluid return elements in the several fluid receiving chambers.

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