(No Model.)

W. P. SANGER.

SPRING RECOIL PAD FOR PISTOLS.

No. 552,334. Patented Dec. 31, 1895.

Fig. 1.

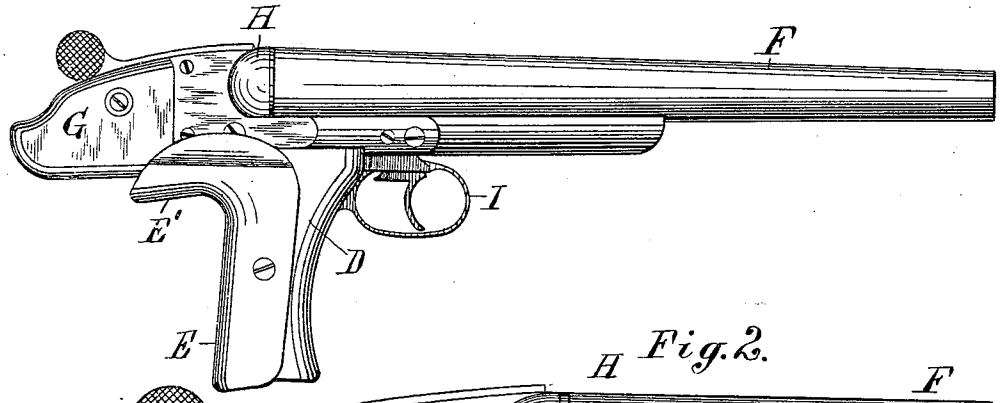

Fig. 2.

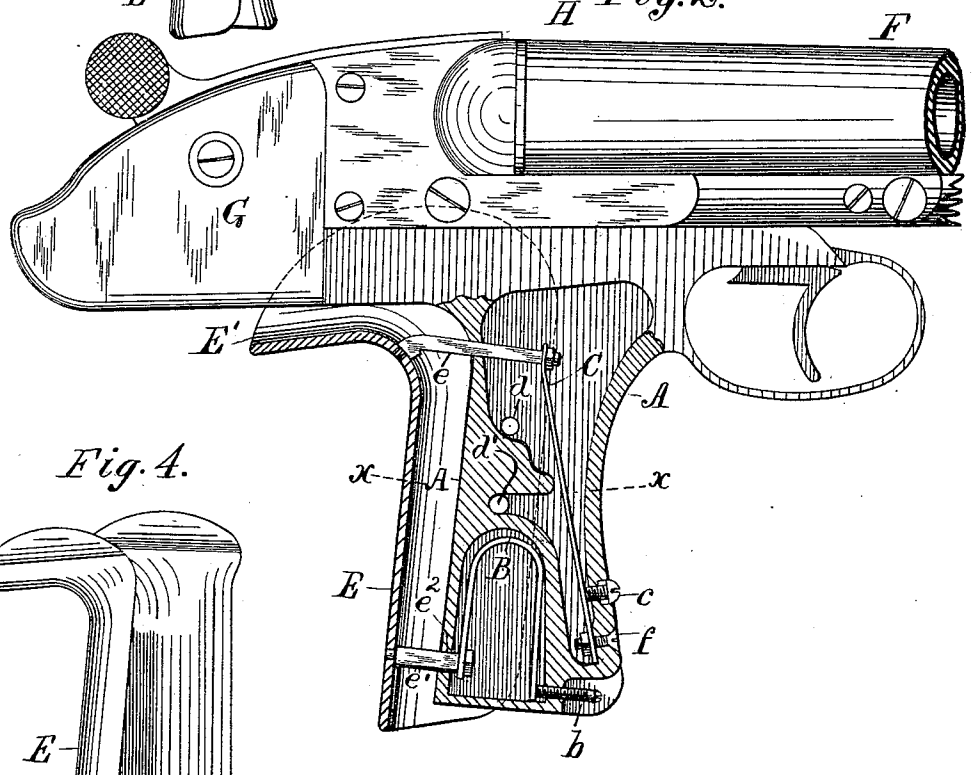

Fig. 4.

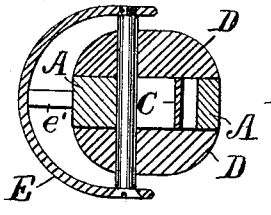

Fig. 3.

Attest:
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UNITED STATES PATENT OFFICE.

WHITING P. SANGER, OF EAST ORANGE, NEW JERSEY, ASSIGNOR TO FRANK W. SANGER, OF NEW YORK, N. Y.

SPRING RECOIL-PAD FOR PISTOLS.

SPECIFICATION forming part of Letters Patent No. 552,334, dated December 31, 1895.

Application filed May 11, 1895. Serial No. 548,913. (No model.)

To all whom it may concern:

Be it known that I, WHITING P. SANGER, a citizen of the United States, residing at East Orange, Essex county, New Jersey, have invented certain new and useful Improvements in Spring-Cased Handles for Pistols, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to such weapons as pistols, which are supported entirely by one hand in aiming and firing, and the object of the present improvement is to obviate the effects of recoil and to thereby permit the use of a larger bore and heavier charge in a weapon of this class. To effect this object, I set the handle of the pistol farther forward than is usually done in such constructions, locating it directly or nearly under the breech-plug against which the charge reacts, and I also provide the handle upon the rear side with a casing attached movably to the handle by springs. By locating the handle under the breech-plug, I find that the tendency of the barrel to kick upward is largely obviated, and the aiming of the marksman is thus more perfectly preserved, while the provision of a yielding casing upon the rear side of the handle prevents the transmission to the hand of the blow which is caused by the explosion. In a weapon held entirely in one hand the weight rests largely upon the upper side of the hand, and as the casing sustains a great portion of the weight I provide the same at the top with a projecting shield which rests upon the top of the hand, and thus assists not only to sustain the weight, but to diffuse such part of the strain as is transmitted to the shield.

The invention will be understood by reference to the annexed drawings, in which—

Figure 1 is a side view of a breech-loading pistol, drawn upon a reduced scale and provided with my improvements. The drawing is intended to represent a weapon having a bore of No. 12 caliber to carry a heavy load of buckshot. Fig. 2 is a side elevation of the butt of the pistol with the casing and the handle-frame and its casing in section upon the longitudinal center line where hatched. Fig. 3 is a cross-section of the same on line $x\,x$ in Fig. 1, and Fig. 4 is a view of the hand-casing in perspective.

F denotes the barrel of the pistol, G the stock, and H the breech-plug which closes the bore.

A is the metallic frame for the handle, formed in one piece with the trigger-guard I. Wooden cheeks D, rounded externally, as shown in Fig. 3, are secured upon opposite sides of the handle-frame A by a screw d. (Shown in section in Fig. 2.) The frame A is formed internally with recesses to receive a reflexed leaf-spring B and a straight leaf-spring C, from the free ends of which studs $e\ e'$ are projected through holes e^2 in the rear side of the frame and secured to the casing E. The spring C is attached near the lower end of the frame A by a screw f, and is pressed toward the casing by a set-screw c, and the leaf-spring B is supported at one end upon an adjustable set-screw b, so that the outward pressure of both studs can be adjusted. The studs project from the handle-frame near its upper and lower ends, and the yielding casing is thus adapted to tip toward either the top or bottom of the handle by a yielding of the spring attached to the upper or lower stud.

The casing E is applied to the outer ends of the studs, which are provided with pins fitted to suitable holes in the casing, and the casing is held elastically upon the studs by a transverse pin d', which extends through the handle in contact with the rear end of a slot or recess i formed in the frame A.

The casing and pin are so adjusted to the slot that the springs require a slight compression to insert the pin d', which thus holds the springs slightly under compression.

The studs hold the casing at a suitable distance from the rear side of the handle to avoid concussion therewith during the firing of the pistol. When thus adjusted, it is obvious that a pressure upon the casing at either of the studs compresses the spring attached to such stud, and rocks the casing slightly upon the pin d' as a fulcrum, the other spring then reacting and pressing the other stud outward in the same degree that the first stud is compressed. The upper end of the shield is formed with a backwardly-projecting shield E′ having upwardly-projecting flanges E^2, by

which construction the shield is rounded at every point where it comes in contact with the hand, and is enabled easily to support the weight.

I have found by experience that with the handle located beneath the breech-plug, as shown in Fig. 1, the effects of the recoil are very much diffused and do not operate to throw up the muzzle of the barrel as in other cases. I have also found that the connection of the casing E with the yielding springs by studs at its upper and lower ends enables the casing to equalize the effect of the blow upon the hand, and to hold the pistol in the required line during the operation of firing. In firing the weapon the shield and handle are grasped firmly together, thus compressing the springs in a slight degree, and both the springs thus tend normally to bring the weapon back to its initial position when displaced by any force.

By locating the handle substantially beneath the breech-plug, I find that the discharge produces first a blow upon the upper part of the casing adjacent to the shield E′, thus slightly compressing the spring C; but the reaction of the spring B, I have found in practice, occurs so quickly that the weapon is brought again to its initial position without any conscious effort of the holder. This effect is produced by the reaction of the explosion against the breech-plug before the charge leaves the muzzle of the barrel, and the tension of the springs is maintained, by the grasp of the hand, in such a condition that they serve in practice to bring the weapon to its initial position after the first shock, so as to preserve the line of aim in the desired manner. The operation of the springs upon a pistol-handle which is located entirely at one side of the barrel is wholly different from that where they operate upon a cushion-plate at the butt of a gun-stock, in which latter situation they are equally exposed to the force of the blow and do not in any way operate to restore the aim by their reaction against one another.

When holding a weapon entirely in one hand the grip is much stronger at the upper than at the lower part of the hand, as the thumb is next to the stock of the pistol; but this is an advantage, as the shock of the blow is felt most at the upper part of the handle adjacent to the stock, and the means of adjustment which I have provided with my springs B and C enables me to give to each spring the tension required to resist the grip of the hand and to restore the aim of the pistol when momentarily displaced by the initial shock of the discharge.

I am aware that adjusting-screws have been used in connection with a spring-plate attached to the butt of a gun-stock; but such screws are made adjustable solely for the purpose of extending the stock or canting the gun in a direction to suit the marksman's convenience.

In my construction the adjustability of the springs is solely for the purpose of varying their tension in relation to one another and to the muscular effort which is exerted by different persons in gripping the handle. The adjusting set-screws *b* and *c* therefore furnish the means of enabling the operator of the pistol to adjust the springs to his own grip, and also to vary the resistance of the springs to the weight of the charge which is to be used.

From the above description it will be seen that the spring C, which receives the first blow, is adjusted by its screw to properly resist the same, and a part of the force is thus transmitted to the spring B, which is adjusted to properly counterpoise the other. The two independent springs thus act one against the other to diffuse the force of the blow, thus counterpoising the effects of the blow completely and enabling the hand to sustain the shock of a much greater charge than is possible with other constructions.

Having thus set forth the nature of the invention, what I claim herein is—

1. The combination, with a pistol handle, of a casing sustained upon the rear side of the same by yielding supports, and provided at the top with the projecting shield E′, as herein set forth.

2. A pistol handle, comprising the metallic frame A recessed internally, two leaf springs secured within said recesses and provided with adjusting screws, as set forth, the rounded cheeks D secured upon opposite sides of the frame to form the handle therewith, and the casing E embracing movably the rear side of the handle, and attached to the springs by studs *e*, *e′*, substantially as herein set forth.

3. A pistol handle, comprising the metallic frame A recessed internally, the rounded cheeks D secured upon opposite sides of the frame to form the handle therewith, the leaf spring C secured within the lower part of the frame and provided with adjusting screw *c*, the reflexed leaf spring B sustained by adjusting screw *b*, the casing E embracing movably the rear side of the handle, and having shield E′ at the top, and the studs *e*, *e′*, attached to the springs and casing and extended through holes in the rear side of the frame A, as and for the purpose set forth.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WHITING P. SANGER.

Witnesses:
ELLA A. CAMRICK,
THOMAS S. CRANE.