W. J. WHITING.

BARREL FASTENING FOR AUTOMATIC PISTOLS.

APPLICATION FILED JULY 20, 1914. RENEWED NOV. 23, 1915.

1,168,985.

Patented Jan. 18, 1916.

2 SHEETS—SHEET 1.

Fig. 1.

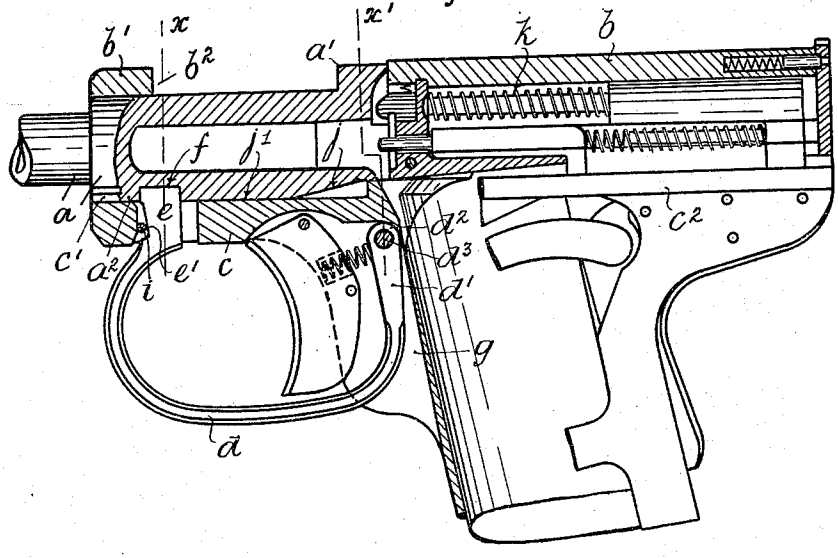
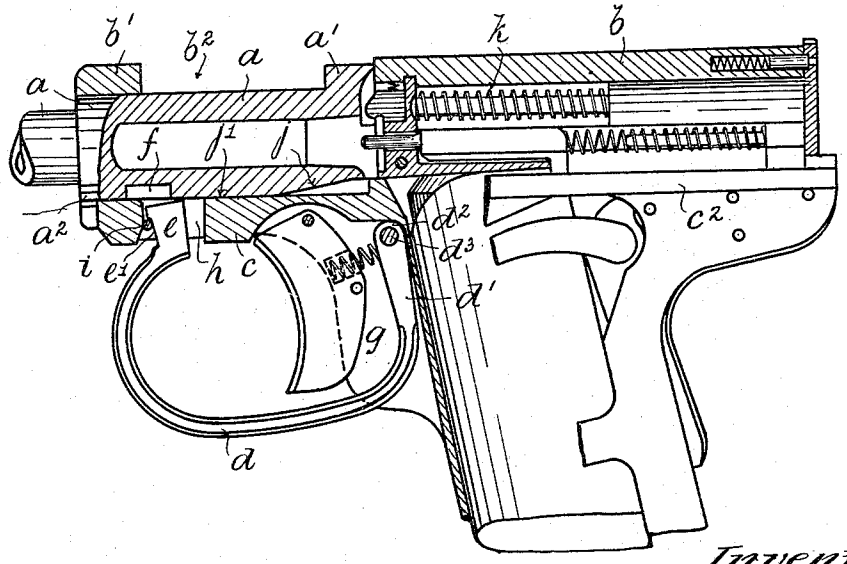


Fig. 2.



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2 SHEETS—SHEET 2.

Fig. 3.

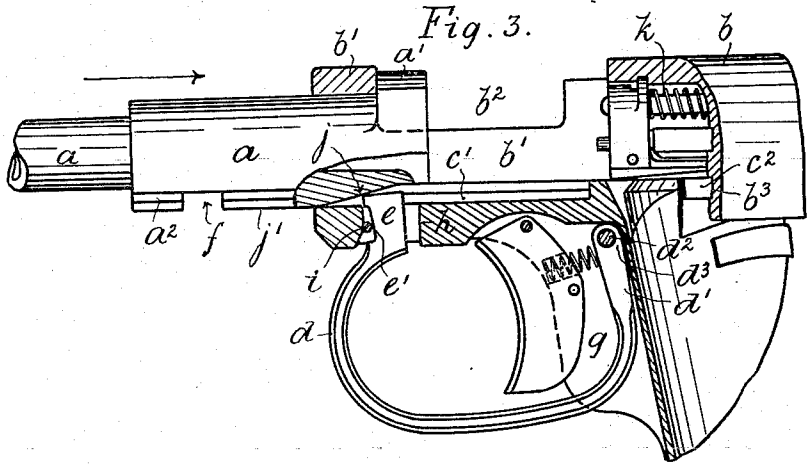


Fig. 4.

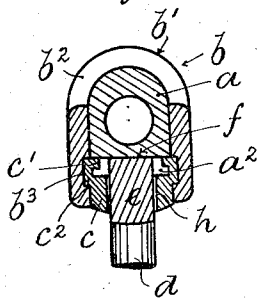


Fig. 5.

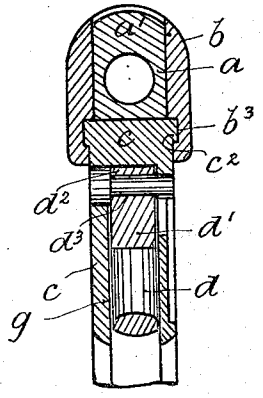
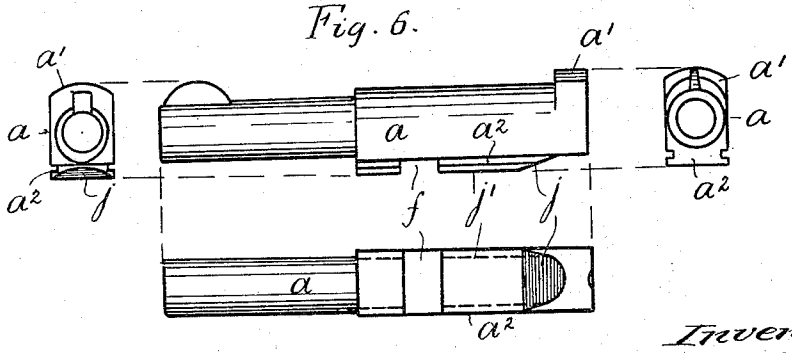


Fig. 6.



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UNITED STATES PATENT OFFICE.

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BARREL-FASTENING FOR AUTOMATIC PISTOLS.

1,168,985. Specification of Letters Patent. Patented Jan. 18, 1916.

Application filed July 20, 1914, Serial No. 851,998. Renewed November 23, 1915. Serial No. 63,138.

To all whom it may concern:

Be it known that I, WILLIAM JOHN WHITING, subject of the King of Great Britain, residing at 111 Antrobus road, Handsworth, Birmingham, England, director of Public Company, have invented certain new and useful Improvements in Barrel-Fastenings for Automatic Pistols, of which the following is a specification.

This invention has relation to barrel-fastenings for automatic pistols of the recoiling breech-sleeve type, and consists in an improved arrangement wherein the detachable barrel and the recoiling breech-sleeve are fastened or anchored to the body or frame of the pistol through the medium of a spring trigger-guard which is also adapted to serve or function as a spring buffer or cushioning device for taking up or minimizing the shock occasioned by the impact of the said breech-sleeve against the sleeve-stop on the barrel at the end of the sleeve recoil movement.

The object of the said invention, which is a development of the invention described in the specification of my former Letters Patent No. 863,770 is to provide a combined trigger-guard barrel-fastening and shock-absorbing system which can be readily disengaged when it is required to dismount the barrel and breech sleeve from the frame and is adapted to automatically reëngage with the said barrel on the latter being replaced, with the sleeve, upon the frame.

Figure 1 of the accompanying drawings is a longitudinal vertical section, partly in elevation, of a hammerless automatic pistol provided with a trigger-guard barrel-fastening and buffer-stop arrangement constructed and applied in accordance with the present invention. This view shows the spring guard in its normal or barrel-locking position. Fig. 2 is another view similar to Fig. 1, but showing the position assumed by the guard when the same is disengaged from the barrel of the arm. Fig. 3 is a further view of the pistol showing the guard in the position it assumes when the detachable barrel is withdrawn from the frame that carries the guard. It also shows the barrel in the act of being slid rearwardly onto the frame for restoring the same to its normal position in which it is secured by the guard. Fig. 4 is a transverse vertical section of Fig. 1, taken on the dotted line x, and Fig. 5 is another transverse section taken on the dotted line x^1. Fig. 6 shows four different views of the barrel used in conjunction with the trigger-guard arrangement shown in Figs. 1 to 5.

The same letters of reference indicate corresponding parts in the several figures of the drawings.

In the pistol shown in the said drawings, a is the barrel and b is the recoiling breech-sleeve member, the forward part b^1 of which is adapted to fit over or inclose the rear or breech part of the barrel and is provided with an opening b^2 whose front wall is adapted to engage the shouldered enlargement a^1 formed at the rear end of the said barrel, said enlargement thus serving as a stop for limiting the rearward or recoiling movement made by the sleeve relative to the barrel and frame when the pistol is discharged. The barrel has an inverted T-sectioned base a^2 which is adapted to fit, in the known manner, in an open-fronted groove c^1 of corresponding section that is machined along the forward part of the topside of the frame c, while the breech sleeve is provided internally with horizontal and open-ended grooves or channels b^3 in which fit the external horizontal ribs or feathers c^2 of the said frame; the arrangement being such that the parts a, b can be slid onto and removed from the frame c by way of the front end of the latter, while when the barrel member is locked to the said frame by means of the trigger-guard fastening hereinafter described, the said barrel serves to keep the breech sleeve in its prescribed position on the frame but leaves the said sleeve free to slide relatively to the barrel and frame (to the extent permitted by the stop a^1) for making its recoiling and return movements.

In order to attain the special object of the present invention, I propose to employ, as the barrel-fastening, a spring steel trigger-guard d the rear end of which is continued or extended into an upright arm or lever d^1 terminating in a knuckle or eye d^2 to take a pivot or fulcrum pin d^3 that is carried in the frame, while the other or forward end of the said guard is formed with an enlarged head e which is adapted to engage in a recess or clearance f cut across the base a^2 of the barrel.

The front of the pistol body or frame c, immediately behind the trigger, is formed with an upright clearance or chamber g to

receive the upright arm or lever extension of the guard; the top of this clearance being shaped to fit around, or serve as a supporting seating for, the pivoted knuckle end d^2 of the said lever, which is capable of making a slight angular movement within the frame-clearance g during the disengagement and engagement of the forward end of the guard from and with the barrel.

The forward end of the barrel-supporting part of the frame is formed with a slot or opening h, the front side of which is fitted with a hardened steel pin i that is adapted to function as a guard-tensioning cam, while the barrel-fastening head e of the guard, which normally extends or projects through this opening into the recess f in the barrel-base as shown in Fig. 1, has an inclined or undercut front side e^1 which bears against the said cam-pin in the frame-opening. Further, the said opening is made longer than the head e so as to provide, behind the latter, a clearance which permits the same to play or yield in the rearward direction when the guard is functioning for cushioning or buffering the barrel and breech-sleeve.

In fitting or attaching the guard to the frame of the pistol, the lever extension is first introduced into its frame-clearance and secured there by its pivot, and then the front end or barrel-engaging head e is forced or sprung through the opening h in the top of the frame. This has the effect of putting the spring bowed part of the guard under a tension whereby the undercut front of the head is kept in engagement with the cam-pin in the frame opening while the head itself is held in the position in which it projects into the barrel-seating c' of the frame, as shown in Fig. 3.

The base a^2 of the barrel is, as has already been explained, shaped to fit into the said frame-seating c^1 and the part rearward of the transverse recess f with which the guard-head e engages has a flat underside but is formed with an inclined or beveled surface j at its rear end, so that when—in assembling the pistol—the said barrel is slid rearwardly into the seating c^1, the said beveled end j comes against and rides over the projecting end of the guard (see Fig. 3) and displaces or depresses the same, while as the head moves downwardly, its inclined front side wipes over the stationary frame-cam i, which forces the said head rearwardly and further tensions the spring front of the guard. After the inclined end of the barrel base has thus displaced the guard, the flat underside j^1 of the said base engages and travels over the head (see Fig. 2) and keeps the guard under the increased tension until the said barrel has been pushed home into its prescribed position on the frame, whereupon the transverse recess f in the said base comes over the head and the latter is raised or sprung back into its barrel-locking engagement with the said recess (see Fig. 1) and is retained in such engagement by the normal tension of the guard, while the clearance at the back of the said head admits of the latter playing or yielding rearwardly within the frame opening so that the tensioned guard may function as a buffer or cushioning device to take up or minimize the shocks which are transmitted from the breech sleeve to the spring-anchored barrel when the front of the said sleeve impinges against the barrel-stop a^1 at the end of its recoiling stroke.

When it is required to detach the barrel and breech sleeve, it is merely necessary to apply a downward pressure to the front of the guard so as to disengage the locking head e from the base-recess f and bring the top side of the said head flush with the bottom of the barrel-seating, whereupon both the barrel and the breech-sleeve are moved forward under the influence of a thrust that is transmitted to them from the sleeve-return spring k of the pistol, which movement takes the flat underside of the barrel base over the head e and holds the latter in its depressed position as shown in Fig. 2. The barrel and breech-sleeve can then be withdrawn forwardly from the frame and the head springs back to its projecting position (Fig. 3) as soon as it is cleared by the flat underside of the barrel-base.

Instead of providing a cam-pin in the front of the frame aperture h to serve as a means of increasing the tension on the spring guard when the barrel-engaging head is depressed, I may arrange for the forward side of the said head to engage with a cam or projection that is machined upon the front of or fitted within, the said aperture and is adapted to function in the same manner as the cam-pin shown in the drawing.

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

1. In an automatic pistol of the kind herein described, the combination of a sliding, detachable barrel having a lower cam surface; a frame provided with a cam; and a combined barrel-fastening and cushioning device comprising a spring trigger guard applied in a tensioned condition to said frame and having a barrel-engaging head which coacts with the barrel cam and is formed with a cam surface for coaction with the frame cam, whereby, when the guard is depressed to release the barrel, the coaction between the cam on said head and the said frame cam will further tension said guard, said head automatically assuming its normal position after the barrel has been removed, and when said barrel is slid

back into said frame the coaction between its cam and the said head will again subject said guard to further tension, so that when the barrel reaches its prescribed position in said frame it will be automatically re-engaged by said head.

2. In an automatic pistol of the kind herein described, the combination of a sliding, detachable barrel whose base is formed with a recess and with a cam surface at the rear thereof; a frame having an aperture whose front wall is provided with a cam; and a combined barrel-fastening and cushioning device comprising a spring trigger guard applied in a tensioned condition to said frame and provided at its front end with a head which projects through said aperture and is adapted to enter said recess when the barrel occupies its prescribed position in said frame, said head having a cam-shaped front surface for coaction with the cam in said aperture, whereby, when the guard is depressed to withdraw said head from said recess, such coaction will further tension said guard, said head automatically assuming its original position after the barrel has been removed, and when said barrel is slid back into said frame, the cam on said barrel will engage the top of said head and again subject said guard to further tension, so that said head will automatically re-enter said recess when said barrel reaches its said prescribed position.

3. In an automatic pistol of the kind herein described, the combination of a sliding barrel having a recess; a frame wherein said barrel is mounted; and a barrel-fastening device comprising a spring trigger guard applied in a tensioned condition to said frame and having a locking head adapted to enter said recess when said barrel is in its prescribed position in said frame, said frame and head having coacting means for subjecting the guard to increased tension when depressed to withdraw said head from said recess, whereby said head will automatically assume its original position after the barrel has been removed, and said head and barrel having coacting portions for depressing the former and again subjecting the guard to increased tension when the barrel is slid back into said frame, whereby said head will be caused to automatically re-enter said recess when said barrel reaches its said prescribed position.

4. In an automatic pistol of the kind herein described, the combination of a sliding barrel having a recess; a frame wherein said barrel is mounted having a seat at the back of the trigger; and a barrel-fastening and cushioning device comprising a spring trigger guard applied in a tensioned condition to said frame and having its front end provided with a locking head adapted to enter said recess when said barrel is in its prescribed position in said frame, and its rear end extended to form an upright arm which is pivoted in said seat, said frame and head having coacting means for subjecting the guard to increased tension when depressed to withdraw said head from said recess, whereby said head will automatically assume its original position after the barrel has been removed, and said head and barrel having coacting portions for depressing the former and again subjecting the guard to increased tension when the barrel is slid back into said frame, whereby said head will be caused to automatically re-enter said recess when said barrel reaches its said prescribed position.

5. An automatic pistol of the kind herein referred to, comprising a detachable barrel having flat bottomed base which is formed with a recess and an inclined or beveled rear end, a body or frame having a cam-fronted aperture in the barrel-supporting part, and a spring trigger-guard that serves as a barrel-fastening and as a buffer or cushioning device having its rear end pivoted to the frame and its forward end formed with a barrel-engaging head, the face of which is held, by the normal spring tension of the guard, in contact with said cam in said aperture the arrangement being such that the said head is capable of both a rearward and downward movement within said aperture to permit the fastening and releasing of the barrel to be effected, and also to admit of the guard performing its cushioning or shock-absorbing function when the barrel is fastened to the frame.

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

WILLIAM JOHN WHITING.

Witnesses:
ARTHUR SADLER,
E. J. REEVE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."