

S. A. HUNTLEY.
AUTOMATIC FIREARM.
APPLICATION FILED FEB. 26, 1901.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

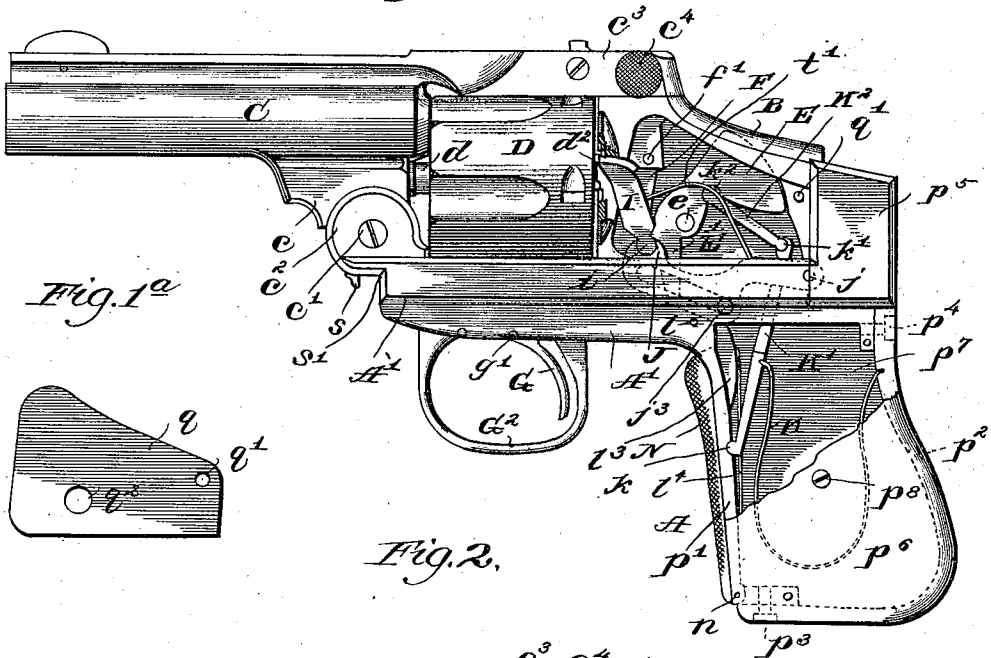


Fig. 1a

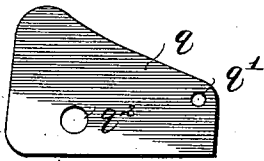
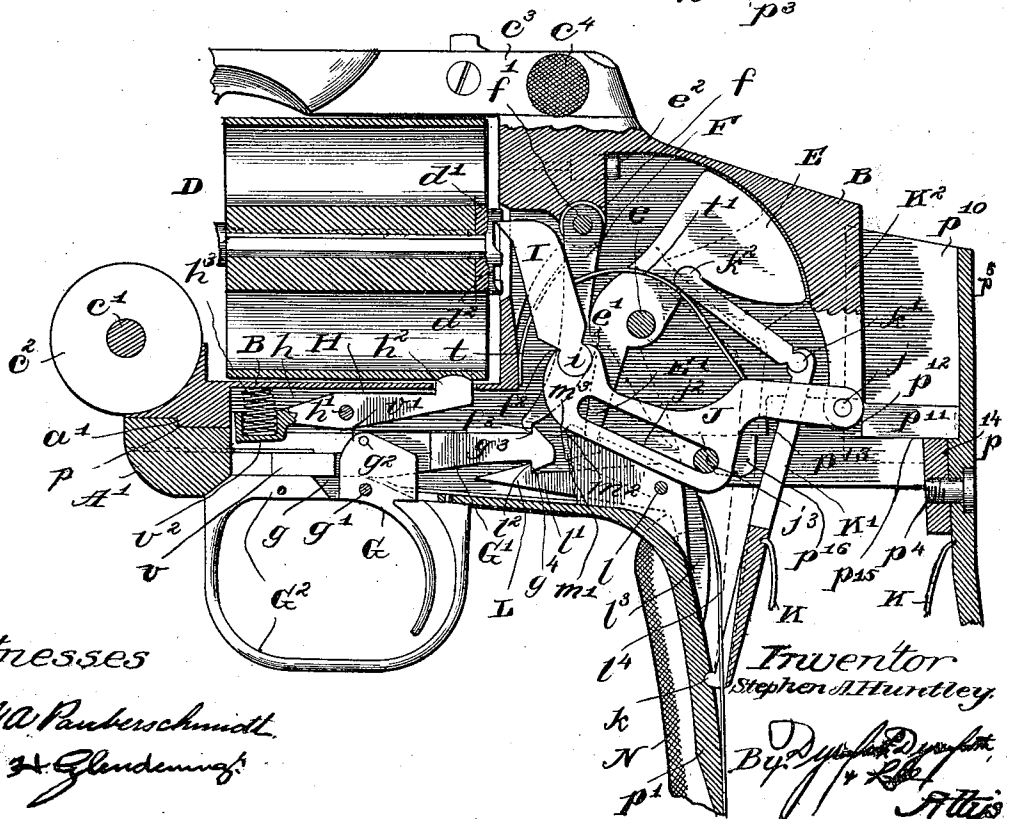


Fig. 2.



Witnesses

S. A. Pauberschmitt
G. H. Glendenning

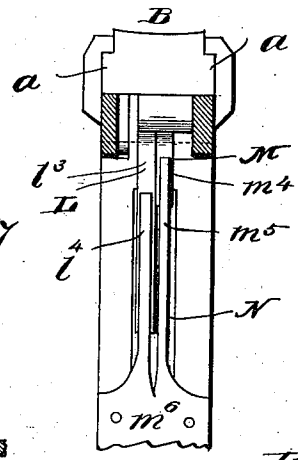
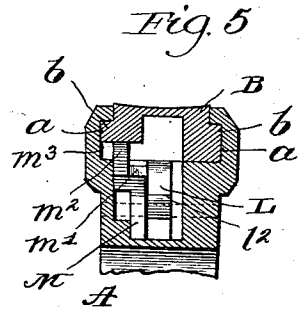
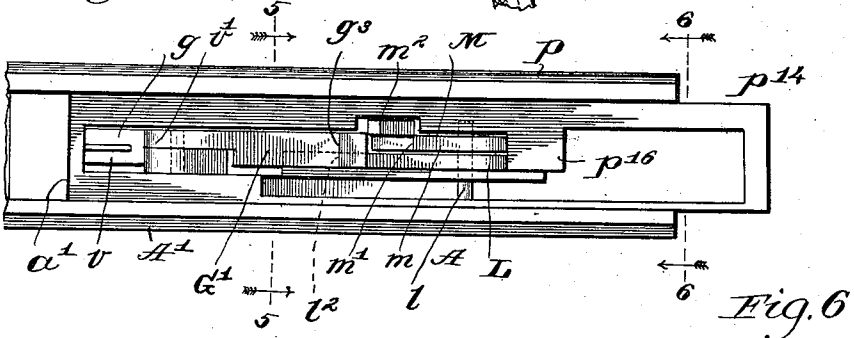
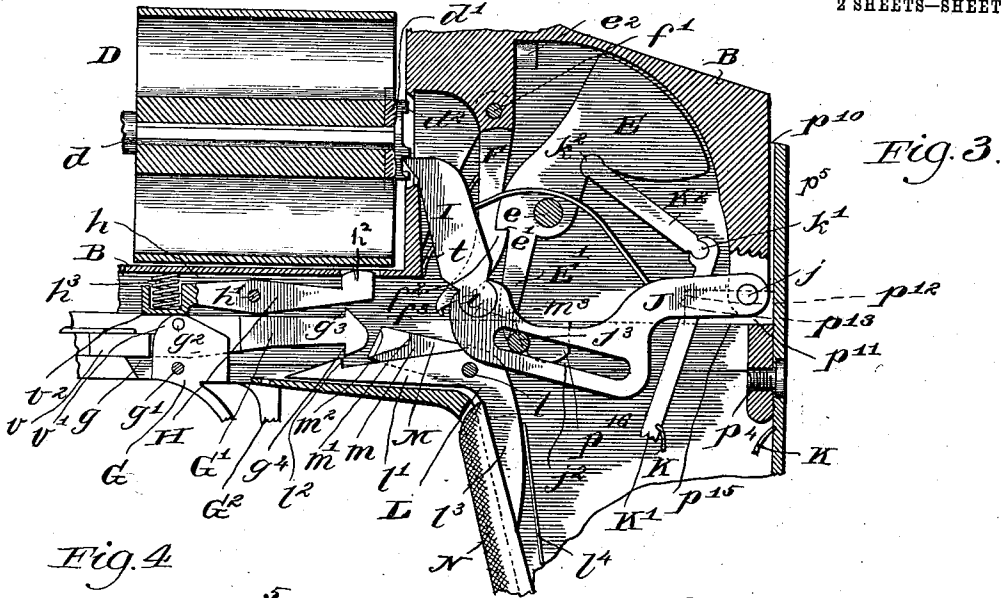
Inventor
Stephen A. Huntley

By *D. J. Dyer*
Att'y

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NO MODEL.

2 SHEETS—SHEET 2.



Witnesses
D. A. Paulschmitt,
J. H. Glendinning

Inventor
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Att'y

UNITED STATES PATENT OFFICE.

STEPHEN A. HUNTLEY, OF SIOUX CITY, IOWA, ASSIGNOR TO ED. SPATZ,
JOHN SPATZ, J. GRIFFIN CONLY, AND ART. B. CONLY.

AUTOMATIC FIREARM.

SPECIFICATION forming part of Letters Patent No. 747,073, dated December 15, 1903.

Application filed February 26, 1901. Serial No. 48,894. (No model.)

To all whom it may concern:

Be it known that I, STEPHEN A. HUNTLEY, a citizen of the United States, residing at Sioux City, in the county of Woodbury and State of Iowa, have invented a new and useful Improvement in Firearms, of which the following is a specification.

My invention relates to recoil-actuated firearms, and particularly to that class of firearms of this description wherein is employed an automatically-actuated rotary cartridge-cylinder.

My primary object is to simplify firearms of this description and overcome certain deficiencies heretofore existing, particular attention being paid to prevention of undue wear from shock of recoil and to securing a positive and certain actuation of the cartridge-cylinder.

A further object is to provide additional safeguards against accidental discharge of the weapon.

In the preferred construction I employ a stock or handle, a resiliently-held recoil-actuated reciprocating frame mounted thereon and which carries the barrel and cartridge-cylinder, means for cocking the hammer during the recoil or rearward movement of said frame, and a cylinder-actuating device connected with said stock and frame and retracted during the rearward movement of said frame and extended to actuate the cylinder during the return movement of said frame.

My invention is illustrated in its preferred form in the accompanying drawings, showing the invention embodied in a revolver or small-arm.

In the drawings, Figure 1 is a view principally in side elevation, a portion of the handle being broken away and a plate of the sliding frame being removed; Fig. 1^a, a view of said detached plate; Fig. 2, an enlarged broken vertical longitudinal section; Fig. 3, a similar section, but showing the sliding frame in its retracted position; Fig. 4, a plan view of the principal portion of the stock or handle, showing the guides with which the sliding frame engages; Fig. 5, a transverse section taken approximately as indicated at line 5 of Figs. 3 and 4; Fig. 6, a section taken as indicated at line 6 of Fig. 4; Fig. 7, a broken

vertical longitudinal section at the lower front portion of the handle and showing a grip device for actuating the safety-locks; and Fig. 8, an end view of the rear extremity of the sliding frame.

A represents the stock or handle provided at its upper portion with a forward extension A', having internal longitudinal guide-grooves *a* and provided at its front end with a transverse shoulder or stop *a'*, the latter serving to limit the forward movement of the sliding frame; B, a frame provided laterally at its base with longitudinal flanges *b*, engaging the grooves *a*, and recessed at its rear portion to receive the hammer and attendant parts; C, a barrel provided with a downward extension *c*, pivotally connected at *c'* with a grooved lug *c''*, with which the frame is provided at its forward end, and having also a rearward extension or barrel-strap *c'''*, connected by a locking device *c''''* of a common form to the adjacent upper portion of the frame B; D, a cartridge-cylinder journaled on a cylinder-pin at *d*, projecting from the rear portion of the downward extension *c* and provided with a common form of ejector *d'*, equipped with the usual cylinder-revolving ratchet *d''*; E, a hammer journaled on a pivot *e*, supported in the frame B and provided with a downward extension *E'*, through the medium of which the hammer is cocked, said hammer being provided with a sear-engaging shoulder *e'* and serving to actuate the firing-pin *e''*; F, a sear pivoted at its upper end in a slot *f*, with which the upper forward extension of the frame B is provided, on a stud *f'* and provided with a hammer-engaging shoulder *f''* and a trigger-extension-engaging shoulder *f'''*; G, a trigger pivoted in a slot *g* of the frame extension A' of the handle on a pin *g'*; G', a rearwardly-projecting trigger extension pivotally connected by a pin *g''* to the upper portion of the trigger and provided with a sear-engaging shoulder *g'''* and a safety-lock-engaging shoulder *g''''*; G², a trigger-guard secured in the slot *g*; H, a lever-form cylinder-stop pivoted in a slot *h* in the lower forward portion of the frame B on a pin *h'* and equipped at its rear end with a cylinder-engaging lug *h''*, which is held in engagement with the cylinder by a spring

h^3 , engaging the front end of the lever or stop; I, a cylinder-actuating pawl engaging the ratchet d^2 and pivotally connected at its lower end at a point i with a pawl-actuating link J, connected by pivotal pin j to the lower rear portion of the frame B and provided with an inclined slot j^3 , which engages a pin j^3 , with which the handle or stock A is provided; K, a mainspring for the weapon which serves both to restore the frame to its advanced position after recoil and to actuate the hammer; K', a link having pivotal connection at its lower end at a point k with the handle A; K², a link having a pivotal bearing k' at the upper end of the link K' and a pivotal bearing k^3 at the hammer E; L, a bell-crank lever pivoted in the upper portion of the handle A on a pin l and having a forwardly-projecting arm l' , provided with a trigger-extension-engaging shoulder l^2 , and having also a depending arm l^3 , upon which bears a spring l^4 , carried by the handle; M, a bell-crank lever pivoted on said last-named pin and provided with a forwardly-projecting arm m , having a hammer-engaging shoulder m' and a frame-locking shoulder m^2 for engaging a shoulder m^3 on the frame B, and provided also with a downwardly-projecting arm m^4 , upon which bears a spring m^5 , said spring being shown in Fig. 6 to lie parallel to the spring l^4 and to project from a common base m^6 therewith, and N a grip-arm lying substantially parallel to the front portion of the grip of the handle and pivotally connected by a pin n to said handle, said arm being received by a slot in the front wall of the handle and bearing at its rear upper portion against the depending arms l^3 m^4 of the bell-crank levers L M. Said arm projects or is raised above the front wall of the grip of the handle, so that when the handle is firmly gripped during aiming the arm N is pressed rearwardly and moves said bell-crank levers to unlock the trigger, hammer, and sliding frame.

The handle A is hollow at the gripping portion to receive the mainspring and the lower end of the link K'. Preferably it is formed of the part p , (shown in Fig. 4.) upon which part the sliding frame P is mounted and which part is provided with a downward extension p' , Fig. 2, which forms the front wall of the hollow handle, a part p^2 forming the bottom and rear walls of the handle and detachably connected with the part p' by screws p^3 p^4 , the part p^2 being provided at its upper end with a housing p^5 , which receives the rear portion of the frame B during the recoil, and side plates p^6 p^7 , which conform to the outline of the metallic portion of the grip of the handle and are detachably connected together with a screw p^8 . As shown in Figs. 2, 3, and 8 particularly the housing p^5 has between its sides a recess p^{10} for receiving the rear end of the frame B during the recoil, and at the base of said recess are lugs p^{11} , one of which affords at its forward end a shoulder p^{12} for

engaging a shoulder p^{13} on the frame B to limit the rearward movement of said frame. The lugs p^{11} bear upon the top of a rearward extension p^{14} , Fig. 4, with which the part p is provided, the line of separation being indicated at p^{15} . The side walls of the housing p^5 extend low enough to embrace the upper portions of the lateral walls of the rear extension p^{14} , while the rear wall of said housing embraces the rear wall of said extension. The part p is provided internally, Figs. 3 and 4, with a lateral projection p^{16} , located in the rear of the downward extension E' of the hammer and serving to engage said extension during the recoil, thereby to cock the hammer.

The frame B is integrally formed with the exception of the removable side plate, (designated as q .) The rear portion of the frame (inside said plate) is suitably recessed or chambered to receive the mechanism located at the breach. When the plate q is secured in place, as at points q' q^2 , the rear portion of the frame B presents two smooth lateral walls, which project but slightly into the housing p^5 when the frame is in its advanced position and which telescope with said housing when the frame is retracted by the recoil. The frame is provided, Fig. 2, at its front lower portion with a shoulder r , which engages the shoulder a' on the handle extension A', thereby limiting the forward movement of the frame.

An ejector-actuating device of common construction is provided at the pivotal connection between the downward extension c of the barrel and the slotted lug c^2 of the frame B. The only portion of this device which appears in the drawings is a lug s , which is engaged by the shoulder s' adjacent thereto when the frame is disengaged from the rearward extension of the barrel c^2 and swung by its pivotal point to eject the shells.

The trigger extension is provided with a forward projection v , which bears upon the adjacent portion of the trigger-guard, and at the pivotal point g^2 is an enlargement v' , which engages an enlargement v^2 on the forward portion of the lever H during the forward movement of the frame B, thereby unlocking the cylinder. During the return movement of the frame the cylinder is actuated as stated.

The operation is exceedingly simple. Assuming the parts to be assembled in their operative position, which can readily be accomplished by one having a reasonable knowledge of the art, and assuming the cylinder to have its chambers charged with cartridges, it is only necessary to grip the revolver in the usual manner to hold the same firmly during the firing operation, when the weapon can be discharged in the same manner as revolvers of ordinary construction. The act of gripping the handle serves to move the arm N rearwardly about its pivotal point, thereby moving the bell-crank levers L M and unlocking the trigger ex-

tension, the hammer extension, and the sliding frame, as heretofore explained. When a cartridge is discharged by operating the trigger in the usual manner, the recoil action forces the frame B and the barrel and cylinder supported thereon rearwardly, compressing the main spring K. During the rearward movement the hammer extension E' encounters the lug p^{16} , with which the handle is equipped, thereby moving the hammer to the cocked position, where it is engaged by the sear, a spring t (shown in Fig. 2) serving to actuate said sear. After the recoil the frame is restored from its retracted position to its advanced position by the mainspring K, acting through the medium of the links K' K² and hammer E. During the rearward movement of the frame the link J of the cylinder-actuating device is carried with said frame and is caused by its engagement with the pin j^3 to swing downwardly about its pivotal point j . This depresses or retracts the pawl I (spring-held by a spring t') to bring the same into engagement with a new tooth on the ratchet-wheel d^2 . During the restoring movement of the frame the link J is again swung upwardly, thereby causing the pawl I to actuate the cylinder. It will be observed that owing to the connections between the cylinder-actuating device with the frame and handle said device is so constrained as to be positively depressed or retracted during the rearward movement of said frame and to be positively extended or restored to its former position during the forward movement of said frame. It thus appears that the mainspring serves through the medium described to actuate the cylinder during the restoring movement of the main frame.

Changes in details of construction within the spirit of my invention may be made by those skilled in the art. Hence no limitation is to be understood from the foregoing detailed description except as shall appear from the appended claims. For instance, the cylinder-actuating device may be variously modified and connected with the frame and handle to secure the positive action indicated, the mainspring still serving through its medium to actuate the cylinder.

What I claim as new, and desire to secure by Letters Patent, is—

1. In a firearm, the combination with a stock or handle, a reciprocating recoil-actuated frame mounted thereon, a barrel, and a revoluble cartridge-cylinder carried by said frame, and means for restoring said frame to its advanced position, of a cylinder-actuating device connected with said stock and frame and moved by the relative movement between the same during the restoring action, and serving during said restoring action to positively rotate the cylinder to bring a loaded cartridge into alinement with the barrel, substantially as described.

2. In a firearm, the combination with a stock or handle, a reciprocating recoil-actu-

ated frame mounted thereon, a barrel, and a revoluble cartridge-cylinder carried by said frame, and means for restoring said frame to its advanced position, of a cylinder-actuating device connected with said frame and stock and retracted during the rearward movement of said frame and extended to actuate said cylinder during the restoring movement, substantially as described.

3. In a firearm, the combination with a stock or handle, a reciprocating recoil-actuated frame mounted thereon, a barrel, a revoluble cartridge-cylinder carried by said frame, and means for restoring said frame to its advanced position, of a cylinder-actuating device connected with said frame and stock, said actuating device having pivotal connection with one of said last-named members and cam connection with the other of said last-named members, whereby it is retracted during the rearward movement of said frame and extended to actuate the cylinder during the restoring movement of said frame, substantially as described.

4. In a firearm, the combination with a stock or handle, a reciprocating recoil-actuated frame mounted thereon, a barrel, and a revoluble cartridge-cylinder carried by said frame, and means for restoring said frame to its advanced position, of a cylinder-actuating device connected with said frame and stock, said actuating device having pivotal connection with said frame and cam engagement with said stock, whereby it is retracted during the rearward movement of said frame and extended to actuate the cylinder during the forward movement of said frame, substantially as described.

5. In a firearm of the nature described, a frame-locking bell-crank lever pivoted at the upper portion of the front wall of the handle-grip and having a forwardly-projecting frame-locking arm and having also a downturned arm, a spring for actuating the same, a handle having its front wall slotted throughout its length and a grip-arm for actuating said lever, said grip-arm engaging said downturned arm and being partially sheathed within the slotted front wall of the handle and pivoted at base thereof, substantially as and for the purpose set forth.

6. In a firearm, the combination with a stock, a recoil-actuated frame mounted thereon, a spring acting to restore the parts after recoil, a barrel connected with said frame, a hammer pivoted in said frame and provided beneath its pivot with an integral downward extension located in the vertical plane of the hammer, a lug carried on said stock wholly beneath the plane of the hammer-pivot in the rear of said extension and projecting into the path thereof, and serving to cock the hammer during the recoil, a sear, and a trigger, substantially as described.

7. In a firearm, the combination with a stock, a recoil-actuated frame mounted thereon, a spring acting to restore the parts after

recoil, a barrel connected with said frame, a hammer pivoted in said frame and provided with a downward extension, a lug carried on said stock in rear of said extension and projecting into the path thereof, and serving to cock the hammer during the recoil, a sear, a trigger in advance of said sear, said trigger having sear-engaging means, which falls short of connection with the sear while the trigger is retracted after the sear has reached its advanced position after firing but reaches operative engagement therewith when the trigger is released after firing, substantially as described.

8. In a firearm, the combination with a stock, a recoil-actuated frame mounted thereon, a spring acting to restore the parts after recoil, a barrel connected with said frame, a hammer pivoted in said frame and provided beneath its pivot with a downward extension, a lug carried on said stock wholly beneath the plane of the hammer-pivot and in rear of said extension and projecting into the path thereof, and serving to cock the hammer during the recoil, a sear, a trigger in advance of said sear, said trigger having a rearwardly-extending sear-engaging device pivotally connected therewith and provided at its rear end with a shoulder which falls short of engagement with said sear after the latter has reached its advanced position after recoil while the trigger is retracted but operatively engages said sear, when the trigger is released, substantially as and for the purpose set forth.

9. In a recoil-actuated firearm, a hammer, a sear engaging therewith, a trigger provided with a rearward extension serving to engage said sear, said extension being provided with a bell-crank-engaging shoulder, a bell-crank engaging said extension and provided with a depending arm and a grip-arm movably connected with the handle of the weapon and serving to move the bell-crank when the handle is gripped, substantially as described.

10. In a firearm of the nature described, having a handle and a reciprocating frame mounted thereon carrying the barrel, a hammer provided with a downward extension, and a locking device for said hammer comprising a bell-crank lever and a grip-arm movably connected with the handle and actuated by the gripping of the handle, said last-named arm serving to disengage said bell-crank from said hammer extension, substantially as described.

11. In a weapon of the character described, having a handle and a reciprocating frame carrying a barrel, a hammer having a downward extension, a sear engaging said hammer, a trigger provided with a rearward extension for engaging said sear, bell-cranks

lockingly engaging said trigger extension, said hammer extension and said frame, and a grip-arm connected with the handle and actuated when the handle is gripped and serving to disengage said bell-cranks from the parts which they serve to lock, substantially as described.

12. In a weapon of the character described, having a handle and reciprocating frame mounted thereon and carrying a barrel and a rotary cartridge-cylinder, a cylinder-locking device confined between said cylinder and handle and engaged by a part carried by said handle during the rearward movement of the frame to unlock the cylinder, substantially as described.

13. In a weapon of the character described, having a handle and reciprocating frame mounted thereon and carrying a barrel and a rotary cartridge-cylinder, and a cylinder-locking lever provided at its rear end with a lug engaging said cylinder and having its forward end moved in a path to engage a part carried by said handle, during the rearward movement of said frame, whereby the cylinder is unlocked to permit it to be turned, substantially as described.

14. In a weapon of the character described, having a handle and a reciprocating frame mounted thereon and carrying a barrel, cylinder, hammer, and sear, a link having a pivotal bearing in said handle, a mainspring confined within said handle and bearing upon said link, a link having a pivotal bearing in the upper end of said first-named link, and a trigger provided with sear-engaging means, substantially as described.

15. In a weapon of the character described, having a reciprocating frame and a barrel supported therein, a handle upon which said frame is slidably mounted comprising an upper forward part having groove-and-slot connection with said frame and a detachable grip portion provided with a housing receiving the rear end of said frame during recoil, substantially as described.

16. The combination with a handle, a mainspring, a reciprocating frame mounted on said handle and normally held in its advanced position by said mainspring, a barrel and a rotary cartridge-cylinder carried by said frame, of a cylinder-actuating device comprising a pawl adjacent to the rear end of the cylinder and a pawl-actuating link connected with said handle, whereby the mainspring serves to actuate the cylinder, substantially as and for the purpose set forth.

STEPHEN A. HUNTLEY.

In presence of—

DANIEL W. LEE,
ALBERT D. BACOL.