

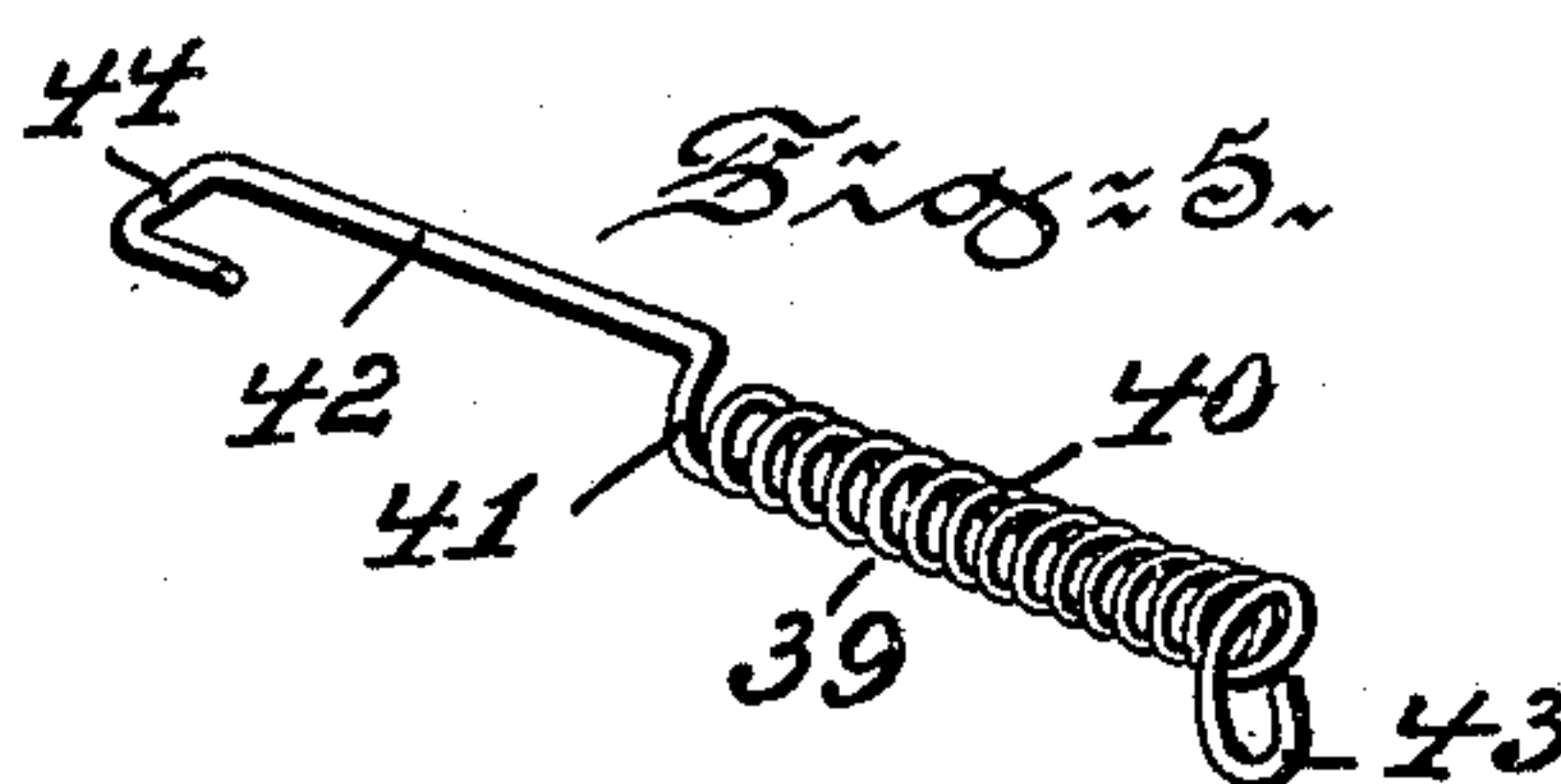
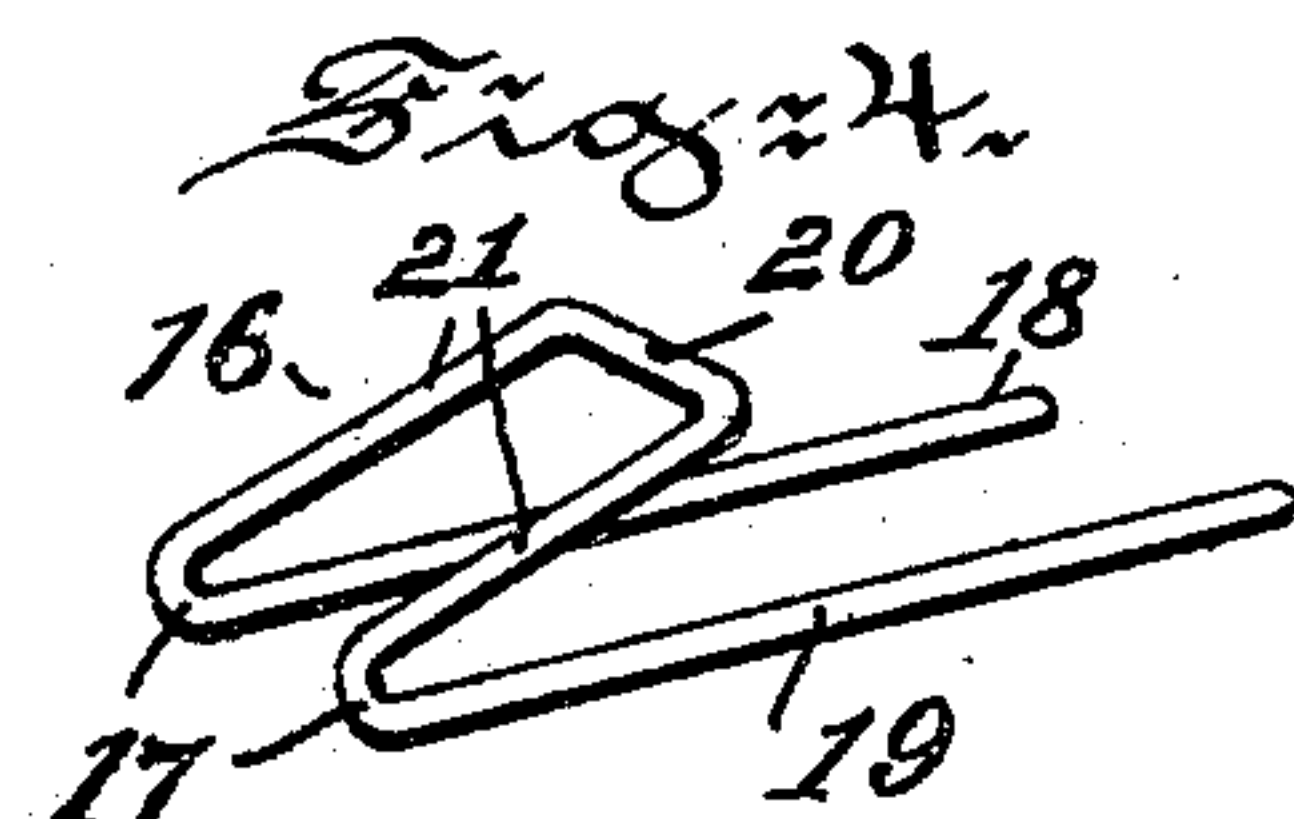
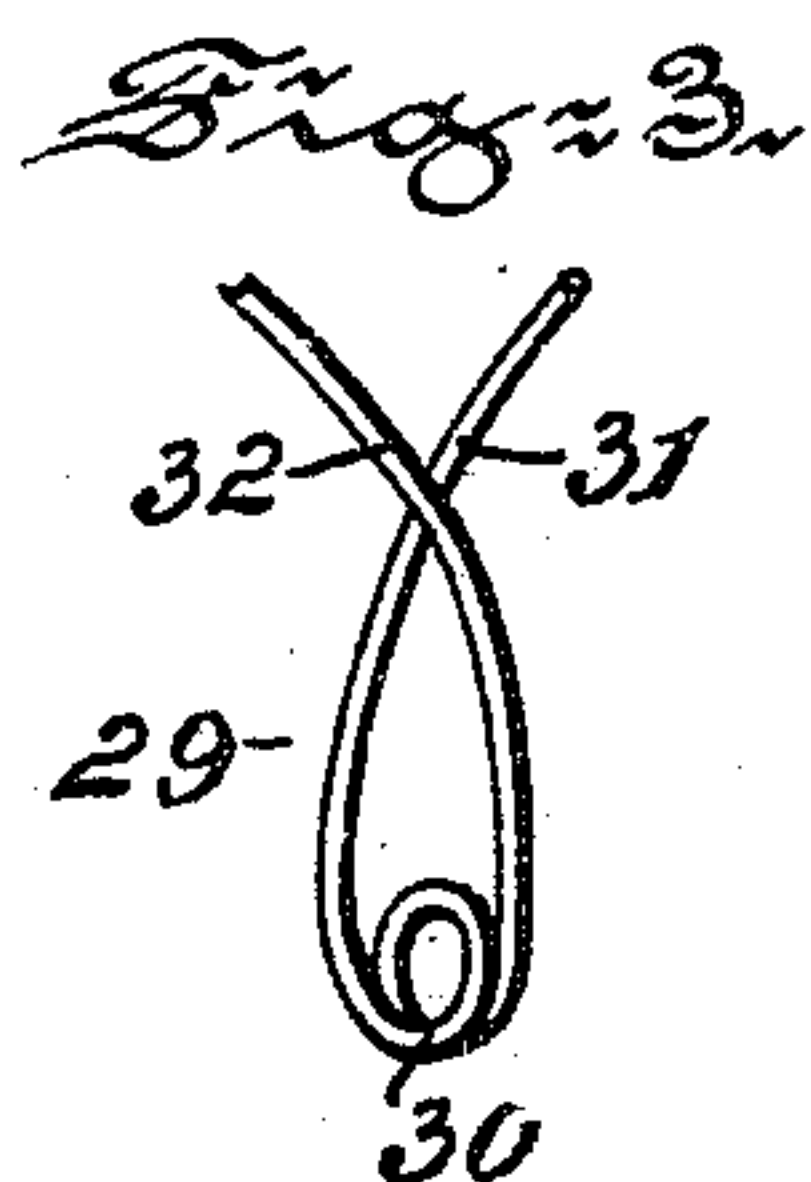
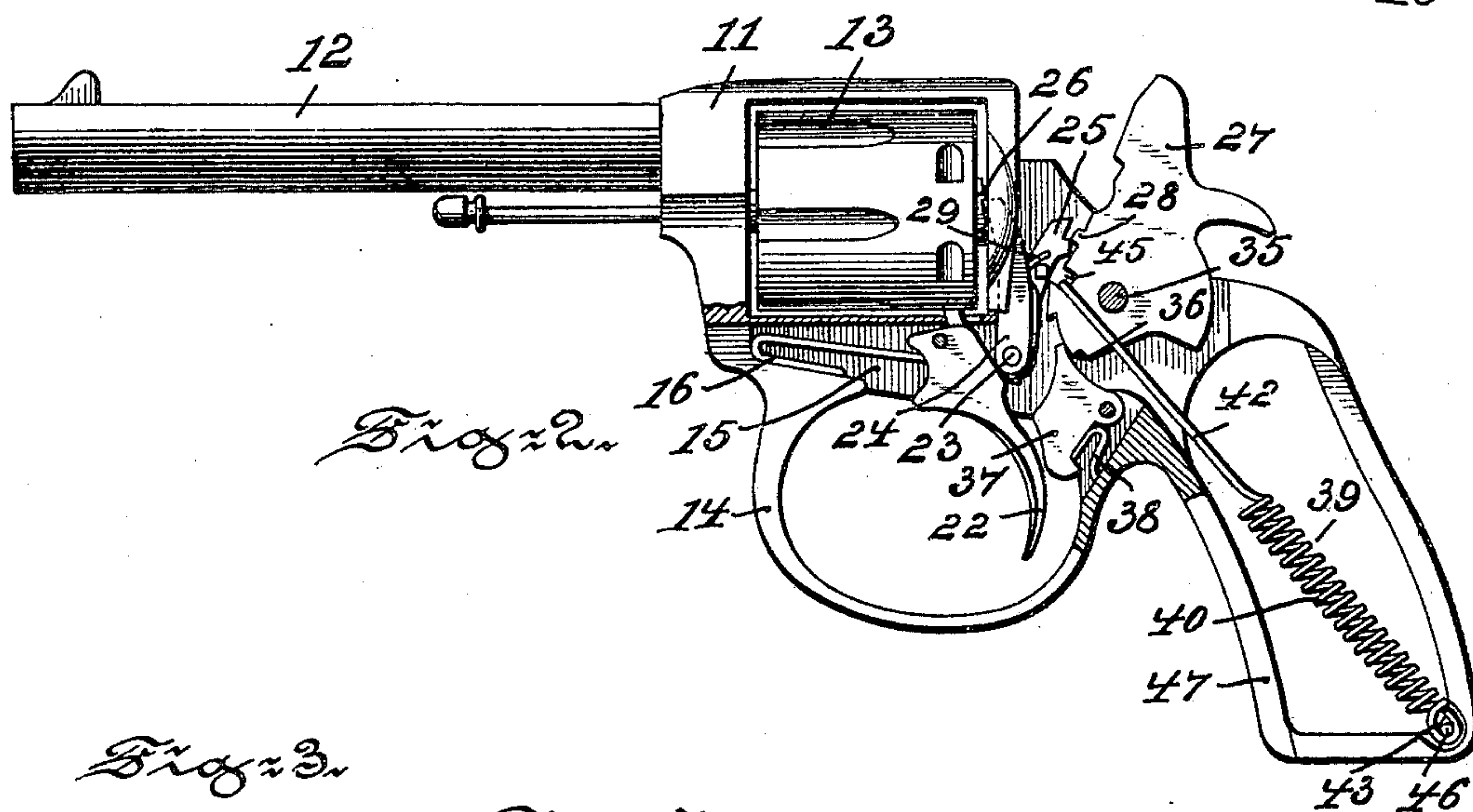
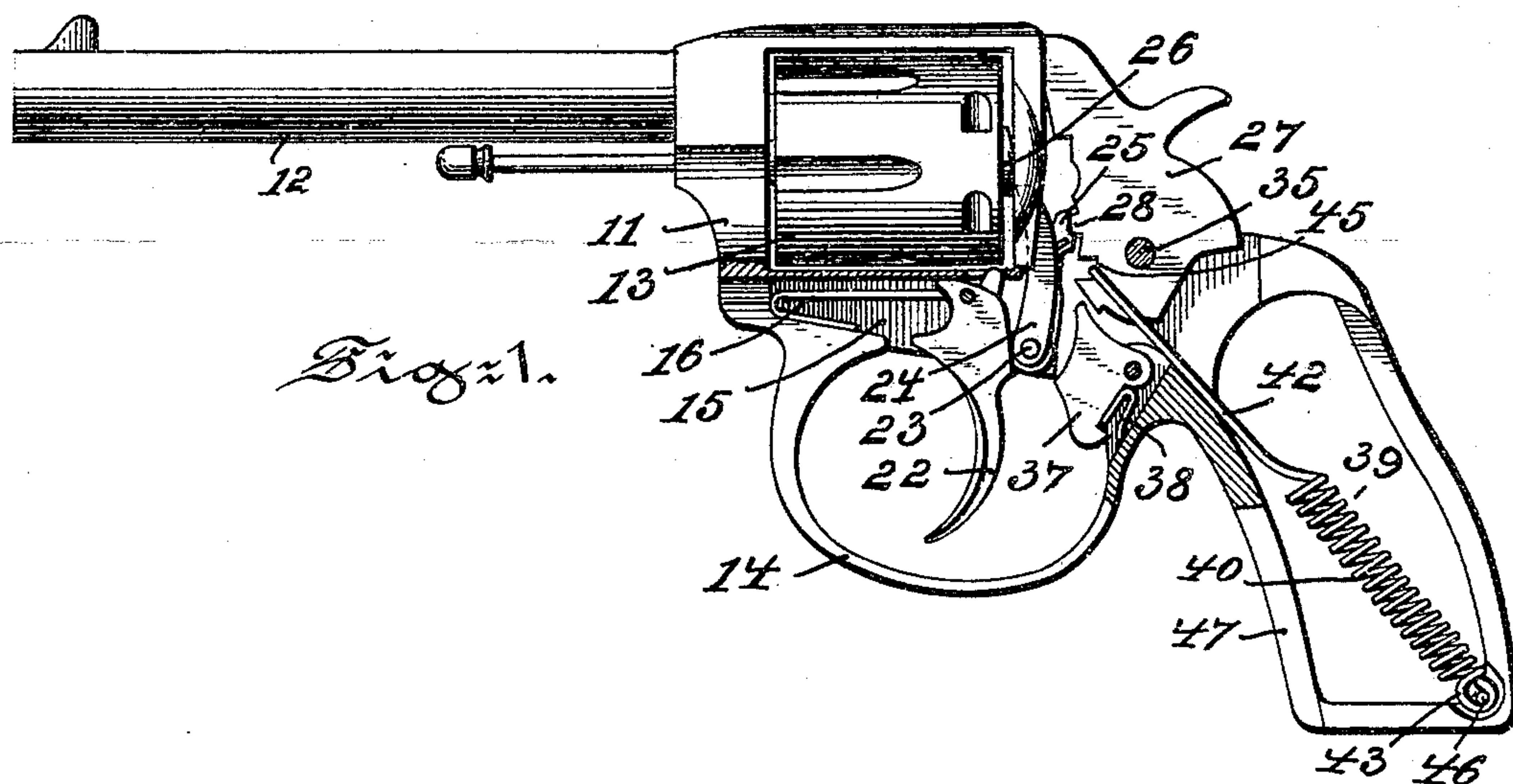
No. 845,274.

PATENTED FEB. 26, 1907.

M. STERN.  
REVOLVER.

APPLICATION FILED JULY 27, 1906.

2 SHEETS—SHEET 1.



WITNESSES:

Wilhelm Vogt  
Thomas M. Smith.

INVENTOR  
Maurice Stern,  
BY  
J. Walter Duglin  
ATTORNEY.

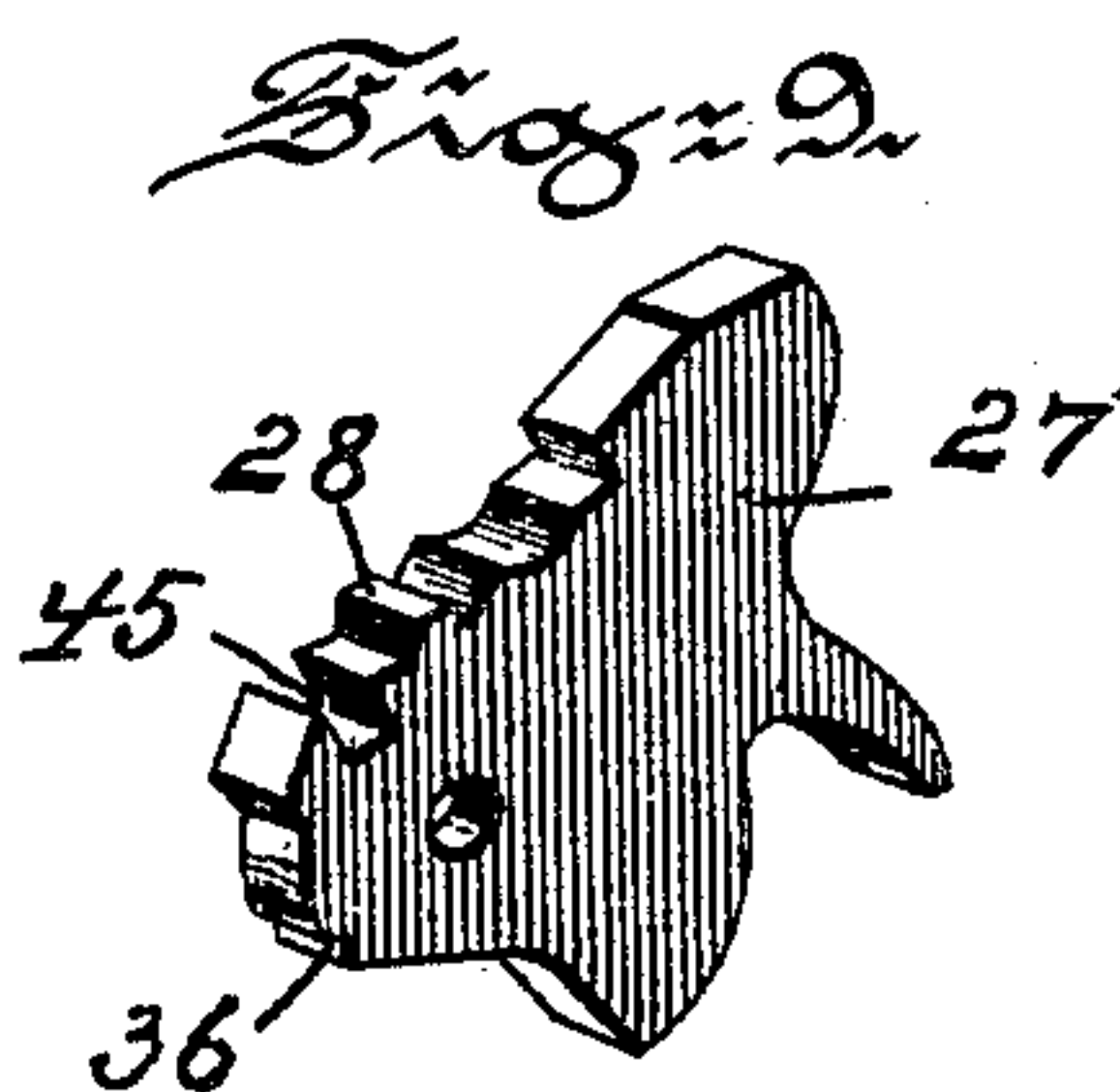
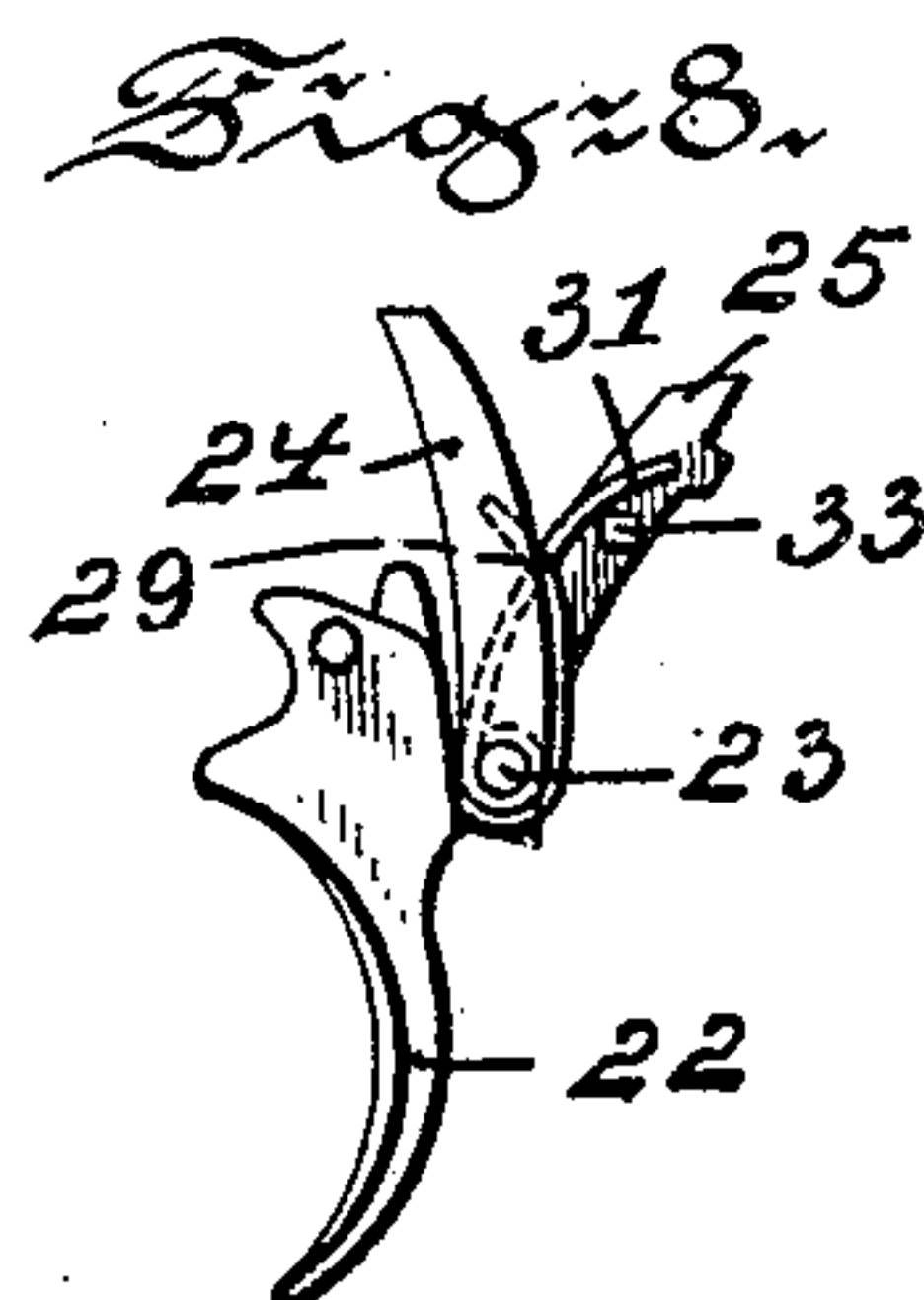
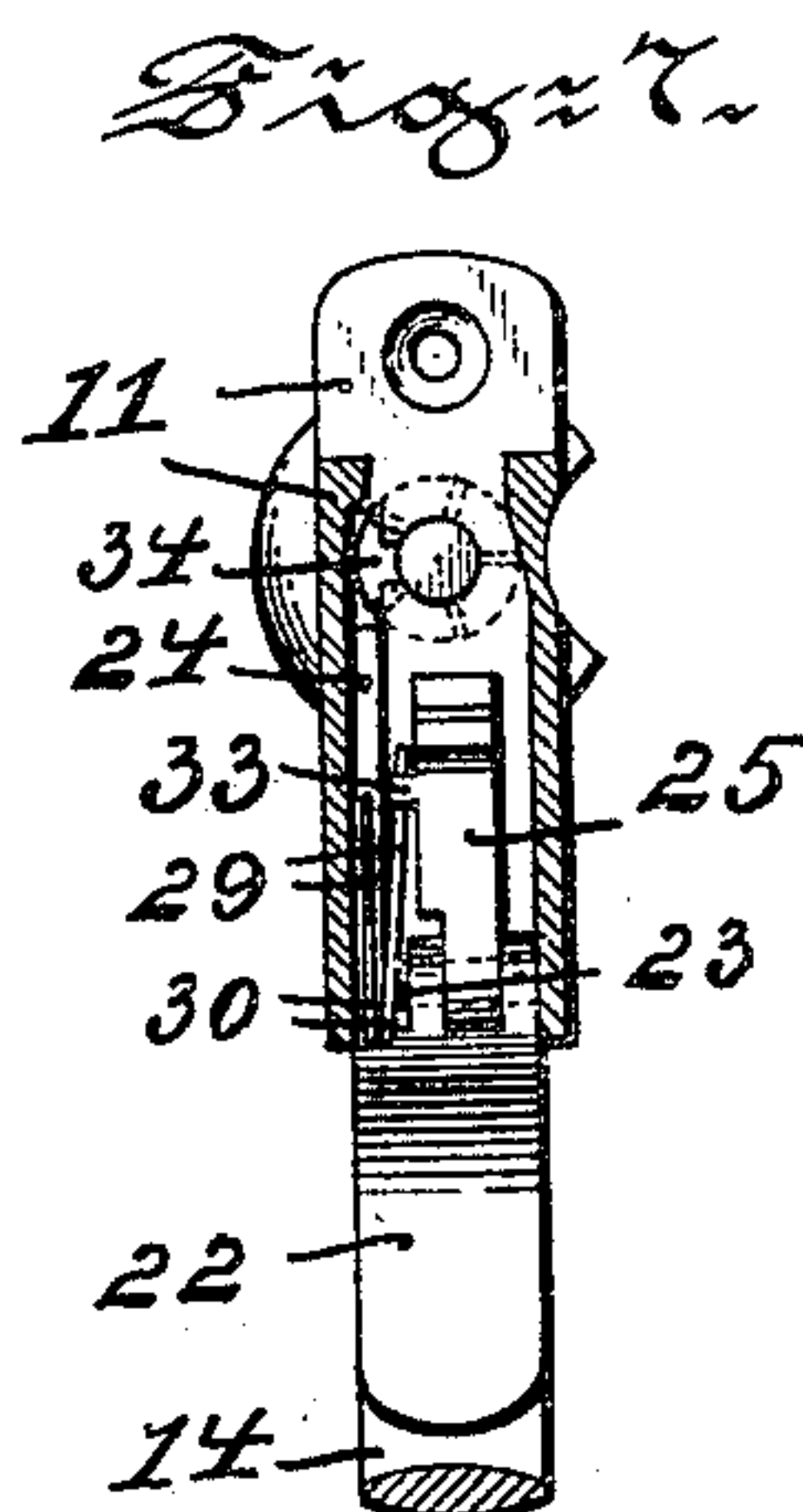
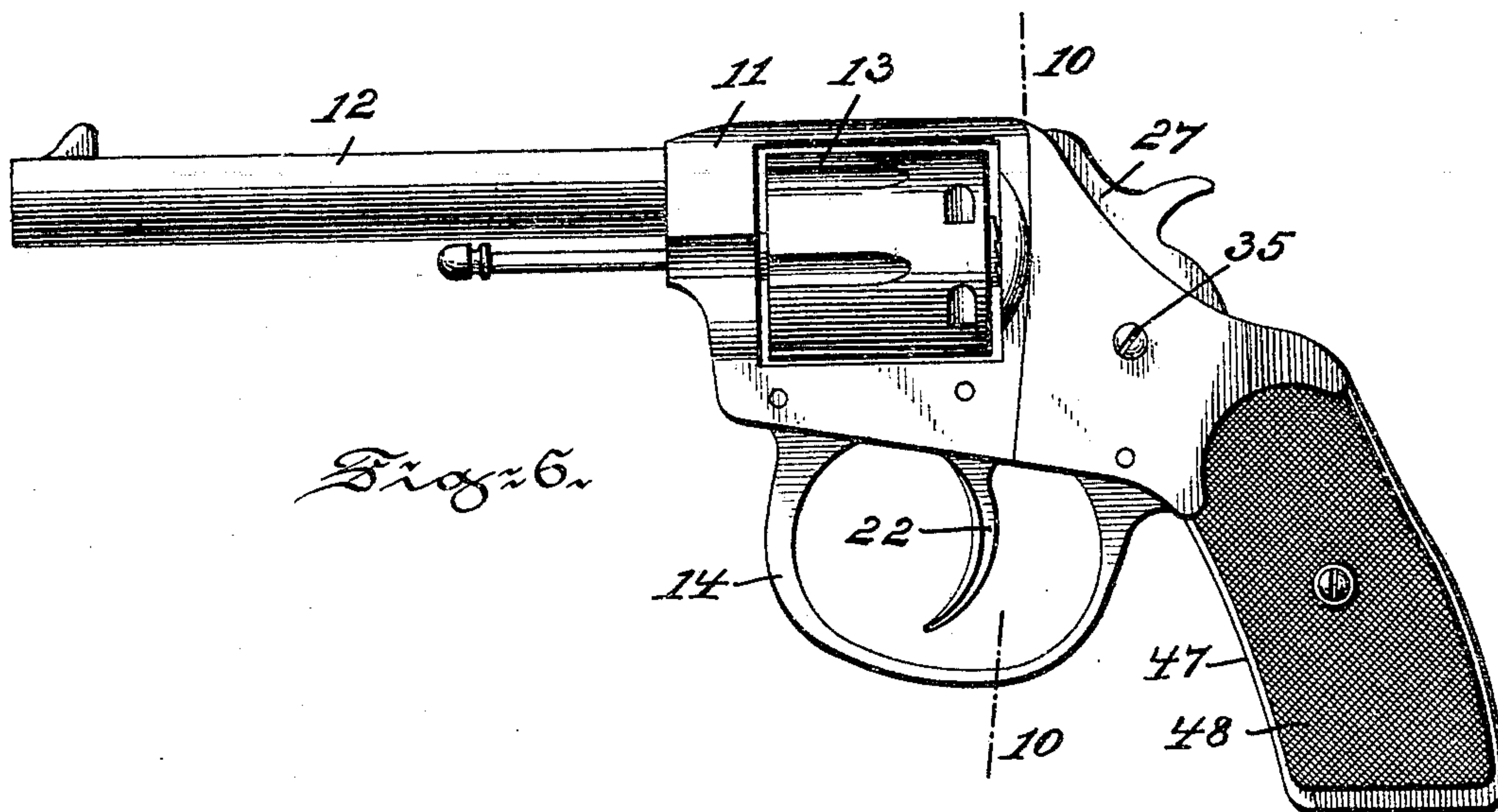
No. 845,274.

PATENTED FEB. 26, 1907.

M. STERN.  
REVOLVER.

APPLICATION FILED JULY 27, 1906.

2 SHEETS—SHEET 2.



WITNESSES:

Wilhelm Vogt  
Thomas M. Smith.

INVENTOR  
Maurice Stern,  
BY  
J. Walter Douglas,  
ATTORNEY.



# UNITED STATES PATENT OFFICE.

MAURICE STERN, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO LOUIS MOSKOWITZ, OF PHILADELPHIA, PENNSYLVANIA.

## REVOLVER.

No. 845,274.

Specification of Letters Patent.

Patented Feb. 26, 1907.

Application filed July 27, 1906. Serial No. 327,995.

*To all whom it may concern:*

Be it known that I, MAURICE STERN, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Revolvers, of which the following is a specification.

My invention has relation to revolvers; and in such connection it relates particularly to the formation and constructive arrangement of springs, whereby through the uniform action derived therefrom the operative is permitted to establish and maintain steady aim, and hence to derive more reliable results in firing cartridges from such revolver.

The principal objects of my invention are, first, to replace the leaf-spring hitherto employed in revolvers, with its many objectionable features, and to provide springs which by the formation and constructive arrangement of the same for use in connection with certain operative parts of a revolver will not readily, as has been the case in the use of leaf-springs, break in bent portions and also will not increase resistance proportionately to the degree of compression as to interfere with the aim of an operative in the use of the revolver and during firing thereof; second, to provide a revolver with springs composed wholly of tempered wire, which after bending or coiling into form for use, in connection with certain operative parts of the revolver, will not snap or readily break, but split only under abnormal strain or undue action of the operative parts of the revolver therewith, and thereby avoiding disarrangement of the operative parts with which such spring are connected and prolonging thereby the extent of practical usefulness of the parts in connection with such type of springs; third, to provide an integrally-formed wire spring with arms for actuating the trigger, whereof in the event of splitting or disarrangement of one of the arms of the spring the other will still be operative in connection with the trigger; fourth, to provide a revolver with a wire-formed spring for actuating the trigger of the revolver, the spring having arms united to each other, one of which in the event of breaking will still enable the unbroken arm of the spring to be operative, assisted by the non-split portion of the spring; fifth,

to provide a revolver with a lever and lifter wire spring of a shape or formation in which tension of this spring, in connection with such parts, is uniformly distributed and a uniformly-defined action is obtained, so as to eliminate unequal resistance hitherto obtained when a leaf-spring was employed in connection with such parts of a revolver; sixth, to provide a revolver with a wire spring having combined a hook and coil for controlling actuation by connection with the hammer of a revolver in which pressure is lessened during lifting of the hammer and increased during striking of the hammer to permit the operative to maintain a steady aim while lifting, and, seventh, to so shape the hook and eye of the hammer-controlled spring with respect to the coiled portion of the spring as to hold the same in a central longitudinal position within the handle of the revolver.

The nature and scope of my present invention will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part hereof, in which—

Figure 1 is a view illustrating, partly in side elevation and partly in section, a revolver showing the arrangement and connection of a wire spring with the frame and trigger and of a hook and coiled mainspring with the handle and hammer, a lifter and lever controlled by a wire spring arranged between the same, and a notch in the hammer for the reception of the hook of the coiled mainspring for holding the same normally in position below the fulcral point of the hammer, all embodying main features of my said invention. Fig. 2 is a similar view illustrating the trigger, hammer, sear, lever, and lifter in certain operative positions as to the said parts defined of the revolver. Figs. 3, 4, and 5 are views in detail, perspectively shown and illustrating the several wire springs of my said invention as to formation and constructive arrangement for actuating, respectively, the lifter and lever, the trigger, and the hammer of the revolver. Fig. 6 is a side elevational view of the revolver. Fig. 7 is a vertical sectional view of the revolver on line 10 10 of Fig. 6. Fig. 8 is a detail view of the trigger, the lever and lifter connected with the revolver, and of the spring located be-



tween the lever and lifter parts of the revolver; and Fig. 9 is a view in detail, perspective shown, of the hammer as to particular formation thereof for engaging the hook member of the main coiled spring therewith.

Referring to the drawings, 11 represents the frame of the revolver to support the barrel 12, cylinder 13, and the guard 14. In the trigger-chamber 15 of the frame 11 is arranged a trigger-spring 16, consisting of a single wire, which is first bent into a U shape and then again bent, as at 17, to form two substantially V-shaped arms 18 and 19, united with each other by a straight shank 20, as shown in Fig. 4. The wire, preferably consisting of steel, is tempered prior to bending into the shape as shown in Fig. 4 in order to permit of detection of imperfections, which otherwise would cause the splitting of the spring 16 at the points 17 after comparatively little use of the same. The straight coupling-shank 20 of the spring 16 holds the same in proper position within the trigger-chamber 15 and permits the arms 18 and 19 thereof to uniformly engage the trigger 22. When the trigger 22 is manually actuated, the pressure exerted by the spring 16 will hold the coupling-shank 20 thereof in engagement with the guard 14 and slightly lift the portion 21 of the arms 18 and 19 from the same. If, however, one of the arms 18 or 19 splits at the point 17, the shorter portion 21 of the split arm, relieved from the pressure exerted thereon by the long portion, will rest flat against the guard 14, and thus by being held under pressure by the unsplit arm remaining in action will assist the same in resisting the manual movement of the trigger 22. Thus the pressure of the spring 16 will only be slightly decreased if one of the arms is thrown out of action through splitting at the point 17, and by maintaining the split arm in its proper position danger otherwise caused by the broken portion of the spring coming in contact and jamming between the moving parts of the revolver will be effectually prevented. However, the even tempering and uniform thickness of the wire of which the spring 16 is made renders the same more elastic, and thus more durable. To the trigger 22 by means of a bolt 23 are movably secured a lever 24 and lifter 25, which are respectively held in engagement with the ratchet-teeth 26 of the cylinder 13 and with a projection 28 of the hammer 27 by a spring 29. As shown in Fig. 3, the spring 29 likewise is formed of a piece of tempered steel wire, which is bent intermediate of its ends into an eye 30, from which extends two upwardly and outwardly bent arms 31 and 32, the arm 31 of which is adapted to engage a projection 33 of the lifter 25, while the arm 32 engages the lever 24 by terminating in an opening formed therein. Thus the arms 31 and 32 by engaging the lever 24 and

lifter 25 adjacent to their upper ends tend to spread the same apart at these ends and owing to their integral connection with each other by the eye 30 exert a uniform pressure against movement of the same. The bolt 23, connecting the lever 24 and lifter 25 with the trigger 22, also serves to securely hold the spring 29 in position between the same, as shown in Fig. 7.

When the trigger 22 is actuated, its movement by means of the lever 24 and the ratchet-teeth 26 is utilized to rotate the cylinder 13 for the distance of one cartridge-chamber from the other by passing with its free end through an opening 34, arranged in the frame 11, as shown in Fig. 7. The lifter 25, being likewise actuated by the trigger 22, by engaging the projection 28 of the hammer 27 turns the same on its bolt 35 into the position shown in Fig. 2 until its projection 36 is engaged by the sear 37, actuated by a spring 38, and is held by the same in its locked or full-cocked position against the tension of the mainspring 39. As shown in Fig. 5, the mainspring 39 consists of a wire having a coiled portion 40 terminating by a curved portion 41 into a hook 42, which is held by this portion beyond the plane of the coiled portion 40, and at its other end the coiled portion 40 terminates in an eye 43. The right-angular bent end 44 of the hook 42 engages a notch 45, arranged in the hammer 27, while the eye 43 by engaging a pin 46, secured to the handle 47, connects the coiled portion 40 with the handle. The formation of the eye 43 and hook 42 is such as to hold the mainspring 39 in a central longitudinal position in the handle-frame 47, in which the same is held out of engagement with the stock or cover-plate 48, secured to the handle-frame in the usual well-known manner. The notch 45 by being arranged in front and below the bolt 35 of the hammer 27 is raised by the upward movement of the hammer, and thus lessens the pressure exerted by the mainspring 39 by bringing the hook portion 42 thereof in proximity to the bolt 35, forming the fulcral point of the hammer 27. Thus the decrease in pressure by the mainspring 39 will compensate for any increase in pressure offered by trigger-spring 16 during the latter portion of the movement of the trigger, and the raising of the hammer 27 by the lifter 25 will be accomplished against a uniform pressure exerted by the springs 16 and 39, which permits the operative to maintain a steady aim as taken. At or near the completion of the movement of the trigger 22 the same contacts with the sear 37 and brings the trigger out of engagement with the projection 36 of the hammer 27, thereby permitting the same under the influence of the spring 39 to strike a blow, which explodes the cartridge held in proper position by the cylinder 13. The blow of the



hammer 27 owing to the engagement of the hook portion 42 of the mainspring 39 in the notch 45, located in front and in the cocked position of the hammer, still slightly below the bolt 35, will be delivered with gradually-increasing force, which will be greatest at the point of contact with the frame 11. This increase in force is due to the change of position of the notch 45 with respect to the bolt 35, which is relieved of the pressure of the spring 39 in proportion to the advance in the downward movement of the notch 45 of the hammer 27. The right-angular bent end 44 of the hook portion 42 of the mainspring 39 by engaging the hammer 27 at the notched portion 45 forms in conjunction therewith a swivel-joint which offers no resistance to the movements of the hammer 27 and portion 44 against each other.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a revolver, a frame, and a cylinder carried by the frame, a trigger and hammer connected with the frame, a lever and a lifter, a bolt for pivotally connecting the same with said trigger, a spring for holding the lever in engagement with the cylinder and the lifter with the hammer, said spring, consisting of a wire bent to form an eye surrounding said bolt and two curved arms extending therefrom and engaging respectively the lever and the lifter.

2. In a revolver, a frame, and a cylinder carried by the frame, a trigger and hammer connected with the frame, a lever and a lifter, a bolt for pivotally connecting the same with said trigger, a spring for holding the lever in engagement with the cylinder and the lifter with the hammer, said spring, consisting of a wire bent to form an eye surrounding said bolt and two curved arms extending therefrom and engaging respectively the lever and the lifter, and a second spring for normally holding the trigger and by the same the lever and lifter in an operative position.

3. In a revolver, a frame, a cylinder carried by the frame, a trigger, a hammer, each having a bolt for pivotally connecting the same with said frame, a notch arranged in the hammer in front and below the bolt thereof, a lever and a lifter pivotally connected with said trigger, a spring for holding the trigger and by the same the lever and the lifter in an operative position, a second spring for holding the lever in engagement with the cylinder and the lifter in engagement with said hammer, and a mainspring for automatically actuating the hammer, said mainspring consisting of a wire bent to form a hook for engaging the notch of the hammer and an eye for engaging the frame and a coil connecting the hook with said eye, the notch in the hammer arranged when the

same is raised by the trigger and the lifter to swing the hook of the mainspring toward the bolt of said hammer.

4. In a revolver, a frame, a cylinder carried by the frame, a trigger, a hammer, each having a bolt for pivotally connecting the same with said frame, a notch arranged in the hammer in front and below the bolt thereof, a lever and a lifter pivotally connected with said trigger, a spring for holding the trigger and by the same the lever and the lifter in an operative position, a second spring for holding the lever in engagement with the cylinder and the lifter in engagement with said hammer, and a mainspring for automatically actuating the hammer, said mainspring consisting of a wire bent to form a hook for engaging the notch of the hammer and an eye for engaging the frame and a coil connecting the hook with said eye, the notch in the hammer arranged when the same is raised by the trigger and the lifter to swing the hook of the mainspring toward the bolt of said hammer and when released to move away from said bolt to decrease the pressure exerted on the hammer by the coil at the upward movement and to increase the same at the downward or striking movement of said hammer.

5. In a revolver, a frame, a cylinder and a guard carried by the frame, a trigger movably connected with the frame, a lever and a lifter pivotally connected with the trigger, a spring for normally holding the trigger and by the same the lever and the lifter in an operative position, said spring consisting of a wire bent to form substantially V-shaped arms united to each other by a shank, said arms adapted to engage the trigger, and said shank and a portion of said arms said guard, a hammer, a bolt connecting the hammer with said frame, a notch arranged in said hammer in front and below the bolt thereof, a sear connected with said frame, a second spring for holding the lever in engagement with said cylinder and the lifter in engagement with said hammer, and a mainspring for returning said hammer to normal position, when lifted by the trigger and the lifter and released by said sear, said mainspring consisting of a wire bent to form a hook for engaging the notch of said hammer and an eye for engaging said frame and a coil connecting said hook with said eye, the notch in said hammer arranged when the same is raised to swing the hook of said mainspring toward the bolt and when the hammer descends to move away from said bolt to decrease the pressure exerted by the coil thereof on said hammer, when raised and to increase the pressure when the same descends.

6. In a revolver, a frame, a cylinder and a guard carried by the frame, a trigger movably connected with the frame, a lever and a lifter, a bolt for pivotally connecting the same with said trigger, a spring for normally



holding the lever and lifter in an operative position, the spring consisting of a wire bent to form substantially V-shaped arms united with each other by a shank, said arms adapted to engage the trigger and the shank and a portion of said arms said guard, a hammer, a sear connected with said frame, a second spring for holding the lever in engagement with said cylinder and the lifter in engagement with said hammer, said second spring, consisting of a wire bent to form an eye surrounding the bolt and arranged between the lever and the lifter, connected by the same with said trigger, and two curved arms extended therefrom and adapted to exert on said lever and said lifter an even pressure, and a mainspring.

7. In a revolver, a frame, a cylinder and a guard carried by the frame, a trigger movably connected with the frame, a lever and a lifter, a bolt for pivotally connecting the same with said trigger, a spring for normally holding the lever and the lifter in an operative position, the spring, consisting of a wire bent to form substantially V-shaped arms united with each other by a shank, said arms adapted to engage the trigger, and the shank and a portion of said arms said guard, a hammer, a bolt connecting said hammer with said frame, a notch arranged in said hammer in front and below the bolt thereof, a sear

connected with said frame, a second spring for holding the lever in engagement with said cylinder and the lifter in engagement with said hammer, said second spring, consisting of a wire bent to form an eye surrounding the bolt and arranged between the lever and the lifter connected by the same with said trigger, and two curved arms extended therefrom and adapted to exert on said lever and said lifter an even pressure, and a mainspring formed of a wire for returning the hammer to normal position, when lifted by the trigger and the lever and released by the sear, said mainspring provided with a hook for engaging the notch of said hammer and with an eye for engaging the frame and a coil connecting the hook with said eye, the notch in the hammer arranged when raised to swing the hook of said mainspring toward the bolt and when the hammer descends to move the same away from said bolt to decrease the pressure exerted by the coil on said hammer when raised, and to increase the pressure, when said hammer descends.

In witness whereof I have hereunto affixed my signature in the presence of two subscribing witnesses.

MAURICE STERN.

Witnesses:

L. MOSKOWITZ,  
GEO. W. REED.