

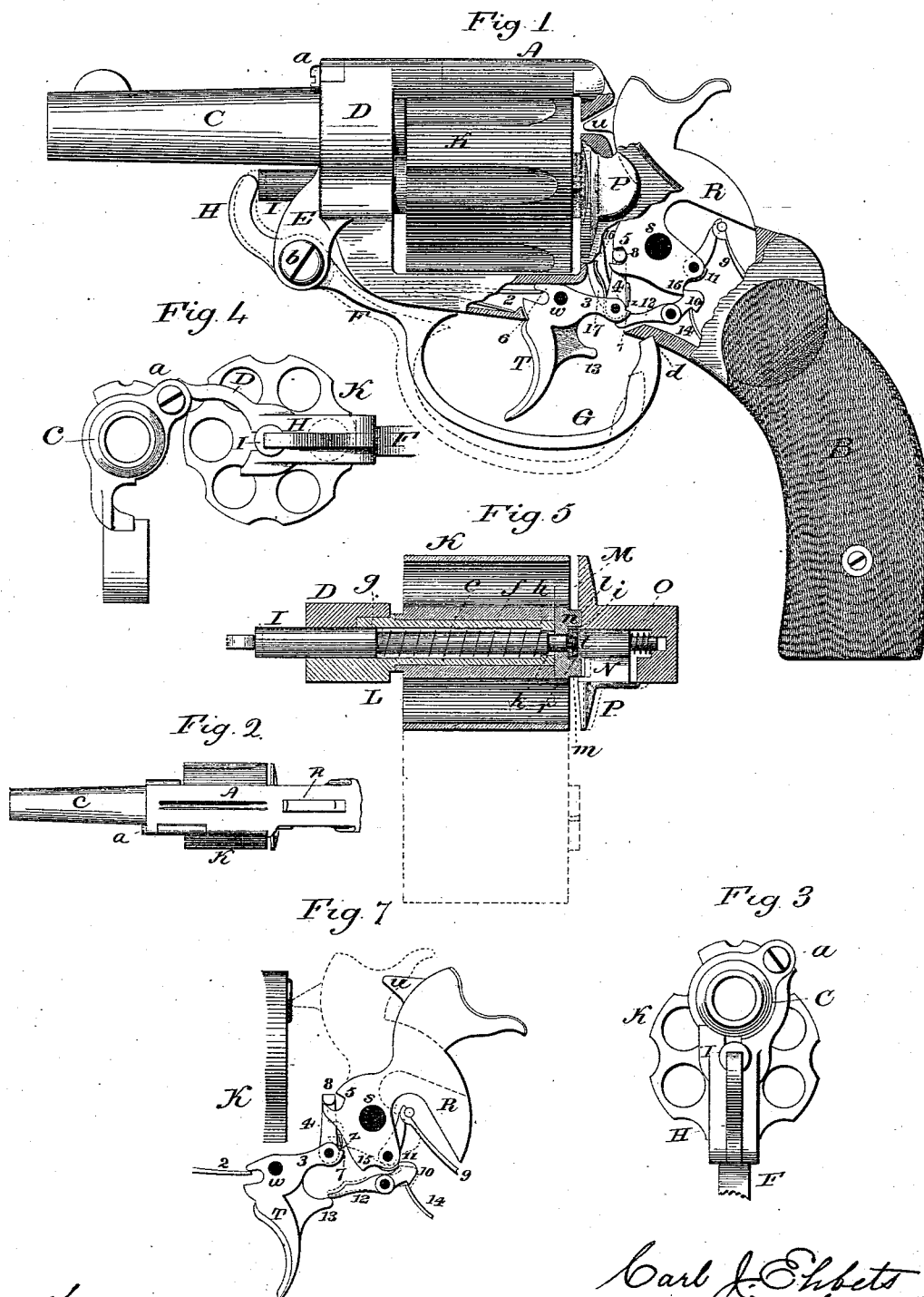
(No Model.)

2 Sheets—Sheet 1.

C. J. EHBETS.
LOCK FOR REVOLVERS.

No. 303,827.

Patented Aug. 19, 1884.



Witnesses,
J. R. Chumway
J. S. Carle

Carl J. Ehbets
Inventor
By Atty
J. S. Carle

(No Model.)

2 Sheets—Sheet 2.

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Fig. 6

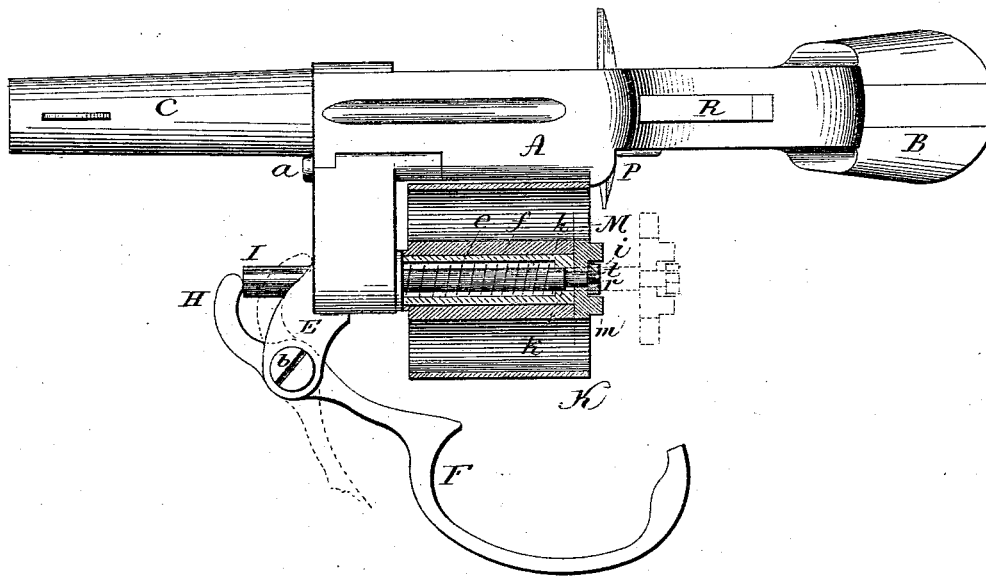
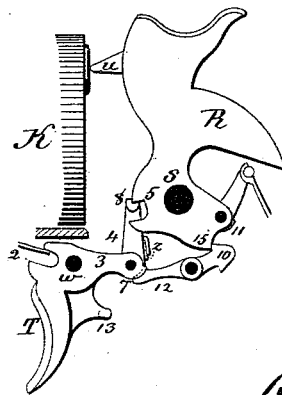


Fig. 8



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UNITED STATES PATENT OFFICE.

CARL J. EHBETS, OF HARTFORD, CONNECTICUT, ASSIGNOR TO COLTS PATENT FIRE ARMS MANUFACTURING COMPANY, OF SAME PLACE.

LOCK FOR REVOLVERS.

SPECIFICATION forming part of Letters Patent No. 303,827, dated August 19, 1884.

Application filed May 21, 1884. (No model.)

To all whom it may concern:

Be it known that I, CARL J. EHBETS, of Hartford, in the county of Hartford and State of Connecticut, have invented a new Improvement in Revolvers; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view, parts broken away to show the lock mechanism; Fig. 2, a top view, reduced scale; Fig. 3, a front end view; Fig. 4, a front end view showing the cylinder as turned outward; Fig. 5, a longitudinal section through the cylinder; Fig. 6, a top view showing the cylinder in longitudinal section as turned to the position seen in Fig. 4; Figs. 7 and 8, detached views of the lock mechanism to illustrate its operation.

This invention relates to an improvement in that class of revolvers in which the cylinder is hinged to the frame upon a pintle parallel with the axis of the cylinder, and so that the cylinder may be turned to one side from its recess in the frame for the purpose of introducing or ejecting the cartridge, and is an improvement upon the invention for which application for Letters Patent was filed April 7, 1884, Serial No. 126,909. In that invention the hinge on which the cylinder turns in its outward or inward movement is below the axis of the cylinder, and forward of the cylinder a lever is arranged, extending beneath the barrel, as a convenient handle for moving the cylinder, and which handle serves as a lever to operate the ejector.

The object of my invention is, first, to adapt the trigger-guard as the lever by which the cylinder may be turned to or from its place in the frame, and also to operate the ejector.

My invention also has for its object to provide a simple device to cause the retreat of the hammer after it has delivered its blow, as well as to lock the hammer in its retreated position, whereby an accidental discharge is avoided; and the invention consists in the construction as hereinafter described, and more particularly recited in the claims.

A represents the frame of the revolver, to

which the usual handle, B, is applied at the rear, and the barrel C at the front.

At the forward end the part D of the frame is hinged to the fixed part A, as at *a*. This part D, as seen in Fig. 4, is of a shape corresponding to a recess or cut-away portion in the frame, as seen in Fig. 4, and so that it extends down around the barrel when in its closed position, as seen in Figs. 1 and 3. To complete that portion of the frame, this part D is constructed with a downwardly-projecting arm, E, to which the lever is hung upon a fulcrum or pivot, *b*. The longer arm F of the lever extends beneath the frame, and forms the trigger-guard G, its extreme rear end entering a notch, *d*, upon the under side of the frame, where it may be held by any suitable latching mechanism, or be held by the spring of the spindle, as hereinafter described. The other arm, H, of the lever extends forward and upward and terminates against the forward end of the spindle I. This spindle I is supported in the swinging part D of the frame.

The part D of the frame is constructed with a projecting hollow or tubular pin, L, which extends rearward and forms the support for the cylinder K, as seen in Fig. 5, and upon which the cylinder will be rotated by the lock mechanism of the arm in the usual manner. Through this tubular pin L the spindle I extends to the extreme rear, its rear portion reduced in diameter, and so as to leave a space, *e*, around it, in which a helical spring, *f*, is arranged, as seen in Fig. 5, which at its forward end bears against a shoulder, *g*, on the spindle I, and at its rear end against an internal shoulder, *h*, in the pin L, and so that the tendency of the spring is to force the spindle I forward. At the rear end of the cylinder the usual star-ejector, M, is arranged, and through it the extreme rear end of the spindle I passes upon the outside end at the rear. The spindle I is constructed with a head, *i*, which bears against the outer surface of the ejector, so that the spring *f* tends to hold the ejector to its place on the cylinder. On the spindle and forward of the front face of the ejector is a shoulder, *k*, which permits a certain rear movement of the spindle I without effect upon the ejector. In the frame in rear of the cylinder is a slide, N, arranged for longitudinal

movement. In rear of it a spring, O, is placed, the action of which is to force the slide N forward. This slide N carries that part, P, of the shield which is on the left-hand side of the pistol, or on the same side as the hinge *a*. In the frame, in rear of the cylinder, a recess, *l*, is formed, corresponding to the ratchet *m* on the rear end of the cylinder, and within which the extreme rear end of the ratchet will stand when the parts are in their closed or normal position, as seen in Fig. 5. A part of this recess *l* is in the slide N, and so that if the slide N be moved rearward, as indicated in broken lines, Fig. 5, then that side of the recess in which the ratchet stands will be open, and so that the cylinder may be turned from its place in the frame. When the cylinder is turned from its place, then the spring O will force the slide N and the shield forward and close the recess, with the cylinder outside. Then, that the return of the cylinder may automatically force the slide N backward to open the recess, the front face of the part P of the shield is inclined outward and rearward, as seen in Fig. 5, and so that the ratchet will strike this inclined front face and automatically force the slide rearward until the ratchet shall reach the recess. Then the slide N, under the influence of the spring O, automatically returns, and, like a latch, closes the recess upon the ratchet. This slide, carrying the shield and the inclined front face whereby the return of the cylinder makes the operation of the slide automatic, is the invention of another. The ratchet *n* is made a part of the ejector, and concentrically in its rear face is a recess, *r*, in which the head *i* of the spindle I stands; but the depth of this recess is greater than the thickness of the head *i*, and so that a space is left in rear of the head *i*. On the front face of the slide N is a projecting stud, *t*, which, when the slide is in its forward position, enters the recess *r* as a bolt to lock the cylinder in its closed position. The first movement to turn the cylinder from its place is to depress the trigger-guard G and turn the lever, as indicated in broken lines, Fig. 1. This movement, through the arm H of the lever, imparts a rear movement to the spindle I, as seen in broken lines, Fig. 5, which rear movement forces the stud *t*, the slide N, and its portion P of the shield rearward, as seen in broken lines, to release the cylinder from its latch-like engagement. Then the trigger-guard, serving as a handle, is turned to the left and upward, as seen in Figs. 4 and 6, taking with it the cylinder into a position to open the chambers at the rear, and as indicated in Figs. 4 and 6. In this position the trigger-guard lever is then turned upon its fulcrum outward, as seen in broken lines, Fig. 6, forcing the spindle to the rear. The shoulder *k* strikes the ejector and forces that rearward, as seen in Fig. 6, to eject the shells or cartridges in the cylinder, and in the usual manner of star-ejectors. After the lever is returned, as seen in Fig. 6, which return may be under the in-

fluence of the spring *f*, as that forces the spindle against the arm H, then the cylinder may be returned to its place, and in such return the ratchet strikes the inclined face of the shield P, and forces the slide N rearward to permit the entrance of the cylinder to its place in the frame. The extreme rear end, *d*, of the trigger-guard extends up into a notch in the under side of the frame, as seen in Fig. 1. The rounded under side of the frame forms the incline, which, as the cylinder is returned to its place, will turn the trigger-guard downward to pass over that rounded surface until it arrives at the notch in the under side of the frame. Then the spring-spindle I throws the lever into the said notch, where it is held under the influence of the spring *f*, aided by the spring O; or, as before stated, any suitable latching device may be employed.

The locking-stud *t* may be employed with the part P of the shield fixed—that is, supposing the front face of the shield to be, as indicated in broken lines, Fig. 5, so far in rear of the cylinder as to permit the ratchet *n* to pass freely out and in, then the stud *t* will stand in the center as a bolt to enter the recess *r* and lock the cylinder in its place, and from which it will be released by the rear movement of the spindle I, as before described. While therefore preferring the slide N and the part of the shield P attached thereto, I do not wish to be understood as limiting this part of my invention to so making that part of the shield movable.

R is the hammer, of usual form, hung upon a pivot, S, and constructed with its nose *u* of usual shape to pass through an opening in the frame to strike the head of the cartridge in the cylinder; T, the trigger, hung upon a pivot, *w*; 2, a spring arranged forward of the pivot of the trigger, the action of which is to throw the trigger forward. On the trigger, in rear of the pivot, is an arm, 3, to which a strut, 4, is hinged. The upper end of this strut is constructed to enter a notch, 5, in the hammer as it stands in the position seen in Fig. 1, and which is in the position of rebound or retreat—that is to say, the nose of the hammer thrown so far to the rear as to prevent its striking the head of the cartridge. The trigger forward of the pivot, as at 6, strikes a shoulder or fixed surface in the frame, as seen in Fig. 1, to prevent a further downward movement of the arm 3. Therefore, when engaged, as seen in Fig. 1, forward movement of the hammer is impossible. If, with the hammer thus engaged, the trigger be pulled to the rear, as seen in Fig. 7, the hammer will be turned backward so long as the strut 4 is engaged with the notch 5 of the hammer; but as the hammer approaches its extreme rear or cocked position a shoulder, 7, on the trigger strikes a corresponding shoulder, *z*, on the strut, and turns it forward until the nose 8 of the strut escapes from the notch 5 of the hammer. Then the hammer is free to fly forward under the reaction of the mainspring 9.

To set the hammer at full-cock under the pull of the trigger, a sear, 10, is provided, which will engage a shoulder, 11, on the hammer, if permitted so to do when the hammer has been thrown to full-cock, as seen in Fig.

7. An arm, 12, from this sear extends forward of its pivot and into the path of a shoulder, 13, on the trigger. The arrangement of this sear is such that just before the nose 8 of the strut 4 escapes from the notch 5 of the hammer the sear 10, under the action of its spring 14, engages the full-cock notch or shoulder 11, and as seen in Fig. 7, and this engagement occurs before the shoulder 13 on the trigger reaches the forward arm, 12, of the sear. If stopped in this position, the hammer will remain at full-cock. Then, if the trigger be further pulled to turn the sear, as indicated in broken lines, Fig. 7, the hammer will escape from its full-cock position and fly forward to strike the cartridge in the cylinder.

Instead of operating as a self-cocking pistol, the hammer may be cocked with the thumb by turning the hammer until the full-cock notch 11 is engaged with the sear 10. In such turning of the hammer the under side of the notch 5 in the hammer bears upon the under side of the nose 8 of the strut, and carries the trigger with it, so that the trigger will stand in a position as seen in Fig. 7, and ready for discharge. When the trigger is pulled and the hammer flies forward, as before described, it reaches its extreme forward position, as indicated in Fig. 7, broken lines, and before the trigger can return. As soon as the trigger is released, the sear is free to act under the influence of its spring 14. When the hammer arrives at its extreme down position, a shoulder, 15, on the hammer engages the sear, as seen in Fig. 8, and which engagement, under the influence of the mainspring 9, causes the forward arm, 12, of the sear to turn upward, and will there stand until the trigger returns to its normal position, and during the last part of such return the rear end of the arm 3 will strike upon the forward end of the arm 12 of the sear and bear thereon under the influence and power of the trigger-spring 2. At this time—that is, with the hammer down—the force of the mainspring is exhausted, the power of the trigger-spring 2, acting through the trigger upon the longer arm 12 of the sear, will cause the sear to turn upon its pivot as a fulcrum, and, acting like a lever upon the shoulder 15 of the hammer, which is below the hammer-pivot, will turn the hammer backward and so as to take its nose to the rear, as seen in Fig. 1. In this position the strut 4 turns upon its pivot and so that its nose enters the notch 5 in the hammer, from which it escaped at full-cock, and there stands as a brace to prevent a possible forward movement of the hammer from that position.

16 is the pawl, which is also hinged to the arm 3 of the same pivot as the strut 4, and between the strut and the pawl is a spring, 17, which acts for both—that is, to turn the strut

rearward and the pawl forward. The strut 4 may be employed to hold the hammer in its withdrawn or rebounded position independent of the sear. In that case, after firing and after the trigger has been released to bring the strut to its down position, the hammer may be turned backward by hand until the strut will fall into its notch, and there will hold the hammer beyond the possibility of accidental contact with the head of the cartridge in the cylinder, and for the reason that the trigger has taken a bearing at 6 forward of its pivot to resist any force applied to the hammer.

I claim—

1. In a revolver, the combination of the part D of the frame, hinged above the axis of the cylinder and upon a pintle parallel with said axis, said part D carrying the center-pin, the cylinder K, arranged on said center-pin for rotation, the spindle I, longitudinally through said center-pin, a lever hung to said hinged part D, below the axis of the cylinder, one arm, F, extending rearward to form the trigger-guard, the other arm, H, forward and so as to bear against the forward end of said spindle, said spindle provided with a spring which acts to force it forward, and an ejector, M, at the rear end of the cylinder and in connection with said spindle, substantially as described.

2. In a revolver, the combination of the part D of the frame, hinged above the axis of the cylinder and upon a pintle parallel with said axis, provided with a center-pin, the cylinder K, arranged on said center-pin for rotation, the spindle I, longitudinally through said center-pin, a lever hinged to said part D, below the axis of the center-pin, one arm, F, extending rearward to form the trigger-guard, the other arm, H, extending forward and upward to bear against the forward end of the spindle I, a spring arranged to force said spindle I forward, the cylinder constructed with a recess, *r*, at the rear, and a central spring-stud, *t*, in the frame at the rear and in axial line with the spindle I, and so as to enter said recess in the rear end of the cylinder as a lock to hold the parts in their working condition, and from which they are released by the first movement of the trigger-guard lever, substantially as described.

3. In a revolver, the combination of the part D of the frame, hinged above the axis of the cylinder and upon a pintle parallel with said axis, and provided with a center-pin, the cylinder K, arranged on said center-pin for rotation, the spindle I, arranged longitudinally through said center-pin, a lever hung to said part D, below the axis of the cylinder, one arm extending rearward to form the trigger-guard, the other upward to bear against the forward end of said spindle, a spring arranged to bear upon said spindle to force it forward, the slide N, arranged in the frame at the rear, and carrying the part P of the shield and central stud, *t*, the front face of said part P of the shield inclined outward and rearward, a recess around said center-pin corre-

sponding to the ratchet *n* of the cylinder, said ratchet constructed with a central recess, *r*, corresponding to said stud *t*, said stud in line with said spindle *I*, and a spring, *O*, in rear of said slide *N*, substantially as and for the purpose described.

4. The combination of the hammer *R*, hung upon a pivot, *S*, and constructed with the notch 5 forward of its pivot, the trigger *T*, hung upon a pivot, *w*, the spring 2, arranged to turn the trigger forward, an arm, 3, extending from the trigger in rear of its pivot, the strut 4, hinged to the said arm, its nose arranged to engage with the said notch 5, and a bearing in the frame forward of the trigger, and against which the trigger will strike, the said notch 5 and the nose of the strut in relation to each other substantially as described, and whereby the engagement between the two is made when the hammer is drawn backward from its extreme forward stroke, substantially as specified.

5. The combination of the hammer *R*, hung upon the pivot *S*, and constructed with the notch 5 forward of its pivot, the trigger *T*, constructed with an arm, 3, extending to the rear, a spring arranged to turn the trigger forward, the strut 4, hung to the arm 3 of the trigger, and arranged to engage the notch 5 of the hammer, and the sear 10, arranged to engage the notch 15 of the hammer when at its full downstroke, the forward arm of the sear extending beneath the arm of the trigger, and whereby on the return of the trigger under the action of its spring the said sear will be turned and correspondingly turn the hammer backward, substantially as described.

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Witnesses:

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