E. FLUES.

SAFETY MECHANISM FOR BREAKDOWN GUNS.

APPLICATION FILED MAR. 20, 1912.

1,071,994.

Patented Sept. 2, 1913.

Fig-1-

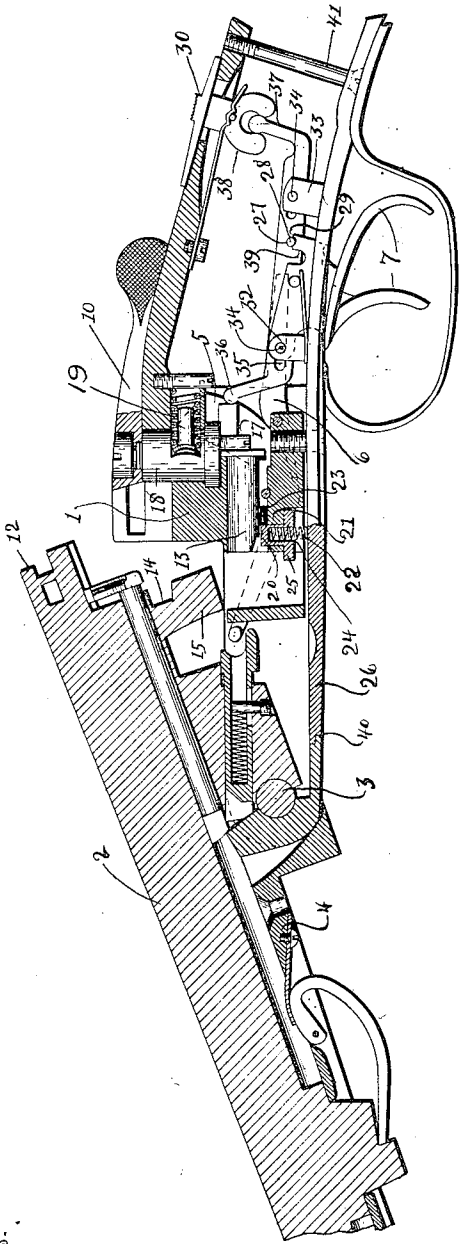
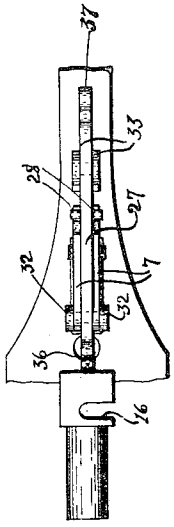


Fig-2-



WITNESSES:

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UNITED STATES PATENT OFFICE.

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SAFETY MECHANISM FOR BREAKDOWN GUNS.

1,071,994. Specification of Letters Patent. Patented Sept. 2, 1913.

Original application filed November 19, 1909, Serial No. 528,855. Divided and this application filed March 20, 1912. Serial No. 685,086.

To all whom it may concern:

Be it known that I, EMIL FLUES, of Ithaca, in the county of Tompkins and State of New York, have invented a certain new and useful Safety Mechanism for Breakdown Guns, of which the following is a specification.

My invention has for its object the production of a particularly simple and efficient safety mechanism for breakdown guns; and it consists in the combinations and constructions hereinafter set forth and claimed.

In describing this invention reference is had to the accompanying drawing in which like characters designate corresponding parts in all the views.

Figure 1 is a longitudinal sectional view of a portion of a gun equipped with my safety mechanism. Fig. 2 is a plan of a portion of the trigger plate and contiguous parts.

1 is the frame, 2 are the barrels pivoted at 3 to the frame, and 4 is the fore-end of a break-down gun. 5, 6 and 7 are, respectively, the hammers, sears and triggers of the firing mechanism of the gun. The main and sear springs which are not illustrated may be of any suitable construction.

10 is the thumb lever of the means for locking the barrels and frame together and normally preventing the breaking of the gun. The locking means also includes the usual catch which coöperates with a rearwardly extending lug 12 on the barrel, and also a sliding bolt 13 movable in a horizontal guide extending lengthwise of the frame and into and out of a notch or recess 14 formed in the depending barrel lug 15. The bolt is suitably connected to the thumb lever 10, and is here shown as formed with a slot 16, Fig. 2, in which works an eccentric 17, Fig. 1, provided on the vertical spindle 18 upon which said thumb lever is mounted. The bolt 13 is drawn rearwardly by the throwing of the thumb lever, and is moved into operative position by a spring 19 acting eccentrically upon the vertical spindle 18.

The gun is also provided with means for holding the bolt 13 in its retracted or unlocked position, this means being automatically operable by the barrels to release the bolt as the barrels approach their normal or closed position. As here illustrated, said means comprises a spring-pressed catch 20 movable in a vertical guide 21 formed in the frame 1 beneath the horizontal guide for the bolt 13, and opening into said horizontal guide. This catch 20 is movable by a spring 22 into the horizontal guide for the bolt 13, in front of a depending shoulder 23 on said bolt, and is provided with a part projecting into the path of the barrel lug 15 in order to be engaged and depressed by said lug to move the upper end of the catch out of the path of the shoulder 23 for permitting the bolt 13 to be moved forwardly into the recess 14 of the barrel lug 15 by the spring 19, as said recess 14 moves into registration with the guide for the bolt 13.

The catch 20, as here shown, comprises a central body and a flange at the lower end of the body, the body being formed with a central recess 24 opening through its lower end face, and in which the spring 22 extends, and the flange 25 is annular in form and a portion thereof projects into the path of the barrel lug 15. Said flange 25 also engages contiguous parts of the frame to limit the movement of the catch 20. The lower end of the spring 22 bears against the removable trigger plate 26 and the catch is arranged so that it is removable upon the detaching of the trigger plate.

The locking means shifts the safety mechanism of the gun into position to prevent the operation of the firing mechanisms, and as here illustrated the safety mechanism includes a longitudinally movable member 27 arranged between the firing mechanism and having laterally extending shoulders 28 normally engaging upwardly-facing surfaces 29 on the triggers for preventing the operation of the triggers, the member 27 having its front end arranged in the path of the bolt 13 and its rear end engaged by a slide 30 arranged on the upper tang 31 of the frame. Said member 27 is supported by front and rear pairs of lugs 32, 33 projecting upwardly from the removable trigger plate, the rear pair of lugs 33 engaging opposite sides of the member 27, and the front pair of lugs 32 forming pivotal supports for the triggers 7 and engaging the outer faces of said triggers, the triggers being arranged on opposite sides of the member 27. Both pairs of the lugs 32, 33 are provided with pins 34 extending through slots 35 formed in said member 27, the pin 34 carried by the front pair of lugs 32 serving as the pivot for the

triggers 7. The safety member 27 is also formed with angularly arranged arms 36 and 37 extending upwardly at its front and rear ends, the front arm 36 projecting into the path of the rear end of the bolt 13, in order to be engaged and pushed rearwardly by the bolt, when said bolt is being shifted to unlock the barrels, the movement rearwardly of the member 27 carrying the shoulders 28 into engagement with the upwardly facing surfaces 29 of the triggers 7 and thus locking said triggers. The rear arm 37 of the safety member 27 is engaged by a fork 38 engaged with front and rear faces of said arm 37 and provided on the slide or finger-piece 30, and consequently when the finger-piece 30 is moved forwardly, the fork 38 and the arm 37 move the safety member 27 forwardly to carry the shoulders 28 out of engagement with the upwardly facing surfaces 29 of the triggers and into alinement with the cutouts or slots 39 in the triggers, and thereby release said triggers from the safety member. Obviously, when the gun is broken the triggers will be automatically locked from movement.

The trigger-plate is detachably connected to the frame at 40 as by the screw 41 so that when the plate is detached the triggers and safety member will be removed therewith and the arms 36, 37 of the member 27 disengage themselves from their coacting parts 13 and 38 during the removal of the trigger plate.

The hammers and cocking members shown herein form the subject matter of my application, Sr. No. 528,855, filed November 19, 1909, and this application is a division of said application.

What I claim is:

1. In a break-down gun, the combination with a frame including a detachable trigger-plate, a barrel hinged to the frame, firing mechanism supported by the frame and including a trigger pivoted to the trigger-plate, and locking means for normally holding the frame and the barrel from relative movement; of safety mechanism comprising a longitudinally movable member having its front end supported on the pivot for the trigger, and formed with a lengthwise slot for receiving said pivot, and having its rear end slidably supported by the trigger-plate at the rear of said pivot, the front end of the longitudinally movable member detachably coacting with the locking means, and a movable hand-piece carried by the frame and detachably coacting with the rear end of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose described.

2. In a break-down gun, the combination with a frame including a detachable trigger-plate, a barrel hinged to the frame, firing mechanism supported by the frame and including a trigger pivoted to the trigger-plate, a lug rising from the trigger-plate at the rear of the pivot for the trigger and provided with an engaging pin, and locking means for normally holding the frame and the barrel from relative movement; of safety mechanism comprising a longitudinally movable member having its front and rear ends supported respectively on the pivot for the trigger and on the engaging pin of the lug, and formed with lengthwise slots for receiving said pivot and pin, the front end of the longitudinally movable member detachably coacting with the locking means, and a movable hand-piece carried by the frame and detachably coacting with the rear end of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose specified.

3. In a break-down gun, the combination with a frame including a detachable trigger-plate, a barrel hinged to the frame, firing mechanism supported by the frame and including a trigger pivoted to the trigger-plate, and locking means for normally holding the frame and the barrel from relative movement; of safety mechanism comprising a longitudinally movable member having its front and rear ends terminating in upturned arms, the front arm detachably coacting with the locking means, the front end of the portion of the member between said arms being supported on the pivot for the trigger and formed with a lengthwise slot for receiving said pivot, and the rear end of said portion being slidably supported by the trigger-plate at the rear of said pivot, and a movable hand-piece carried by the frame and detachably coacting with the rear arm of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose set forth.

4. In a break-down gun, the combination with a frame including a detachable trigger-plate, two pairs of lugs rising from the trigger-plate and spaced apart in a direction lengthwise thereof, the lug of each pair being united by a pin, barrel hinged to the frame, firing mechanism supported by the frame and including a trigger pivoted on the pin uniting the front pair of lugs, and locking means for normally holding the frame and the barrel from relative movement; of safety mechanism comprising a longitudinally movable member having its front end supported on the pivot pin for the trigger and formed with a lengthwise slot for receiving said pivot pin, and having its

rear end slidably supported on the pin uniting the rear pair of lugs, the front end of the longitudinally movable member detachably coacting with the locking means, and a movable hand-piece carried by the frame and detachably coacting with the rear end of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose described.

5. In a break-down gun, the combination with a frame including a detachable trigger-plate, a pair of lugs rising from the trigger-plate and united by a pin, a barrel hinged to the frame, firing mechanism supported by the frame and including a pair of triggers pivoted on said pin, and locking means for normally holding the frame and the barrel from relative movement; of safety mechanism comprising a longitudinally movable member having its front end supported on said pin between the triggers and formed with a lengthwise slot for receiving the pin, and having its rear end slidably supported by the trigger-plate at the rear of said pivot, the front end of the longitudinally movable member detachably coacting with the locking means, and a movable hand-piece carried by the frame and detachably coacting with the rear end of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose specified.

6. In a break-down gun, the combination with a frame including a detachable trigger-plate, two pairs of lugs rising from the trigger-plate and spaced apart in a direction lengthwise thereof, the lugs of each pair being united by a pin, a barrel hinged to the frame, firing mechanism supported by the frame and including two triggers pivoted on the pin uniting the front pair of lugs, and locking means for normally holding the frame and the barrel from relative movement; of safety mechanism comprising a longitudinally movable member having its front and rear ends terminating in upturned arms, the front arm detachably coacting with the locking means, the front end of the portion of the member between said arms being arranged between the triggers and supported on the pivot pin therefor, and being formed with a lengthwise slot for receiving said pivot pin, and the rear end of said portion of the longitudinally movable member being guided between the rear lugs and provided with a lengthwise slot for receiving the pin connecting said lugs, and a movable hand-piece carried by the frame and detachably coacting with the rear arm of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose set forth.

7. In a break-down gun, the combination with a frame including a detachable trigger-plate, a barrel hinged to the frame, firing mechanism supported by the frame and including a trigger pivoted to the trigger-plate, and locking means for normally holding the frame and the barrel from relative movement, the locking means including a forwardly and rearwardly movable bolt supported by the frame above the axis for the trigger; of safety mechanism comprising a longitudinally movable member having its front end terminating in an upturned arm detachably engaging the rear end of said bolt, said member being slidably supported on the pivot for the trigger in proximity to the base of said arm and having its rear end slidably supported by the trigger-plate at the rear of said pivot, and a movable hand-piece carried by the frame and detachably coacting with the rear end of the longitudinally movable member, said member being detachable from the locking means and the hand-piece by the detaching movement of the trigger-plate, substantially as and for the purpose described.

In testimony whereof, I have hereunto signed my name in the presence of two attesting witnesses, at Ithaca, in the county of Tompkins, in the State of New York, this 14th day of March, 1912.

EMIL FLUES.

Witnesses:
GEO. W. PARKER,
JNO. A. HASENJAGER.