

Breech-loading.

Upward Tilting Breech.

Locks, Single Trigger.

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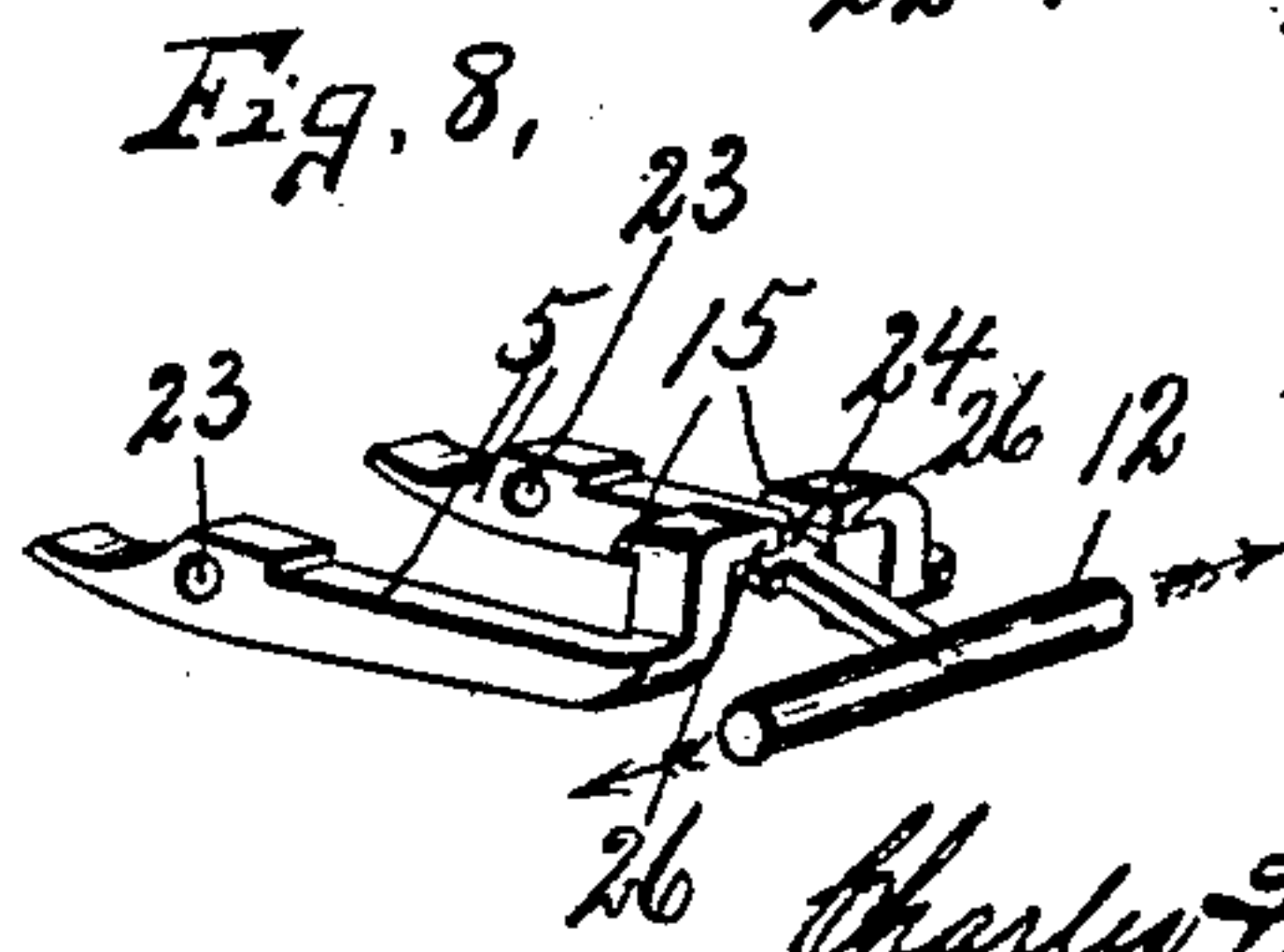
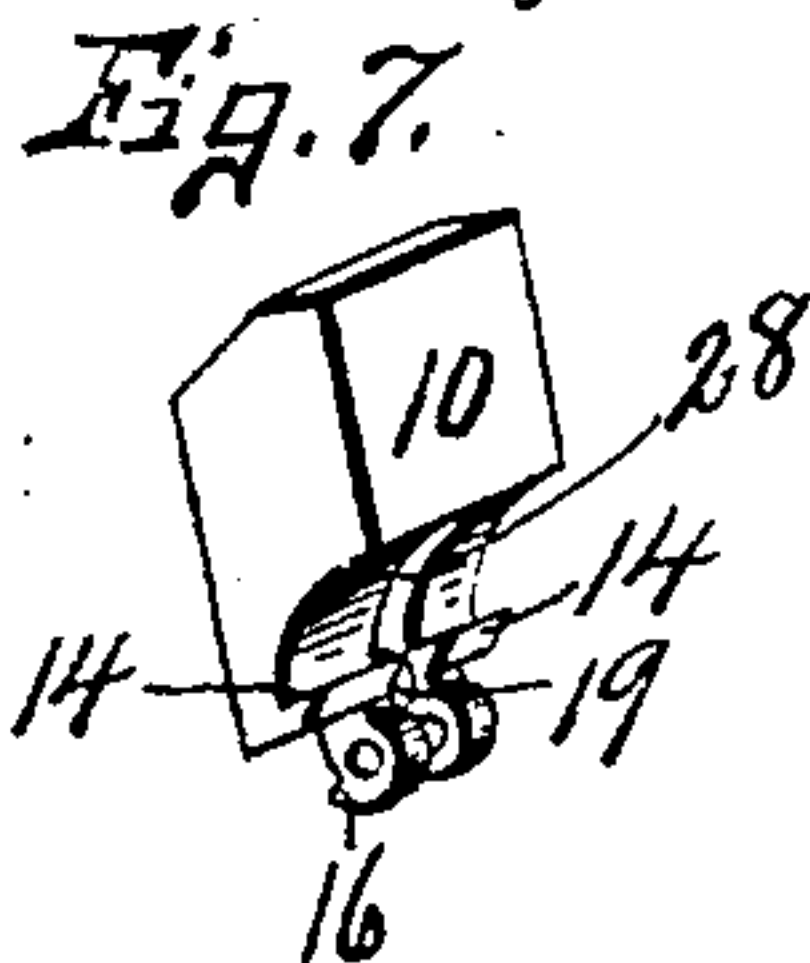
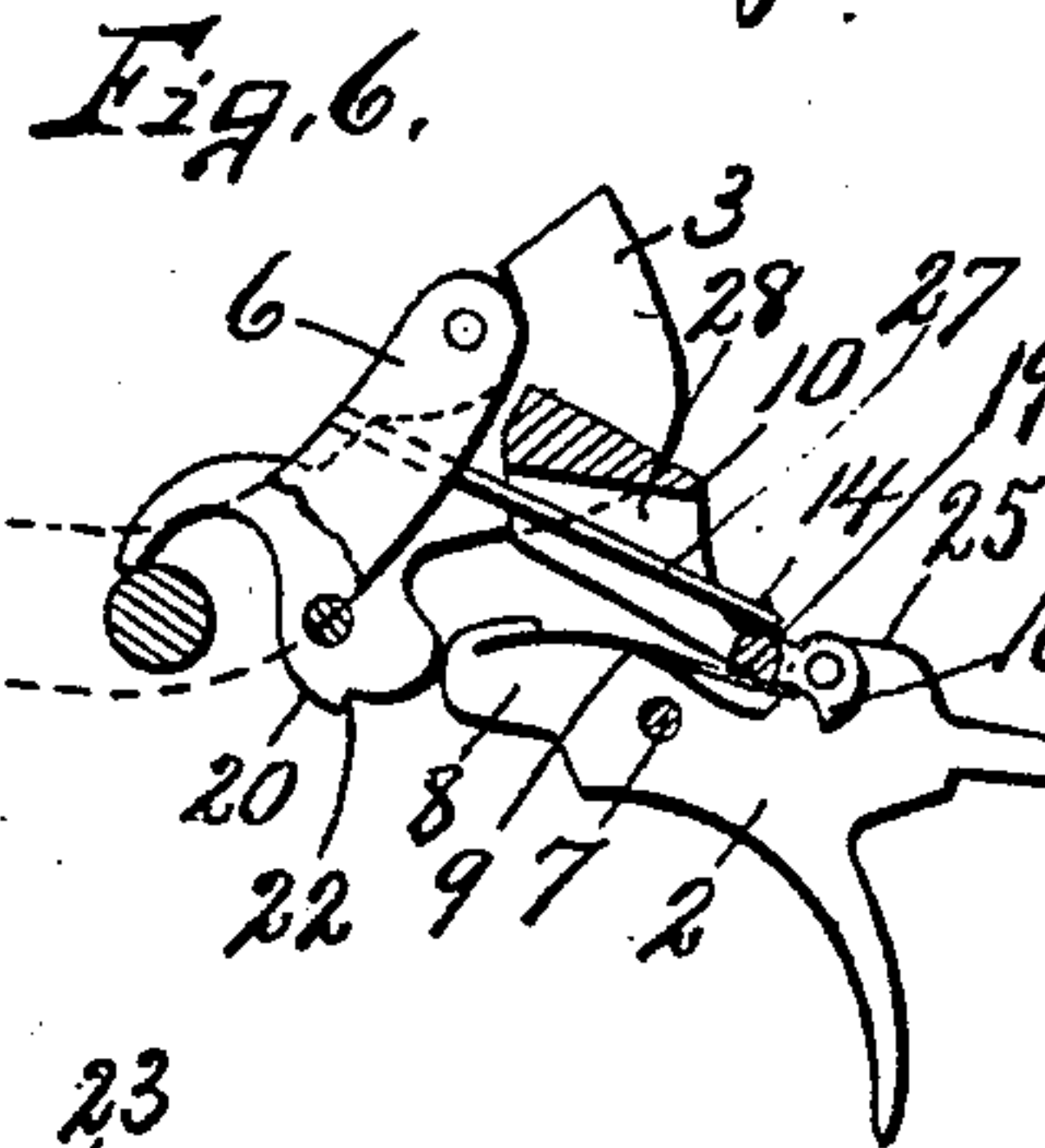
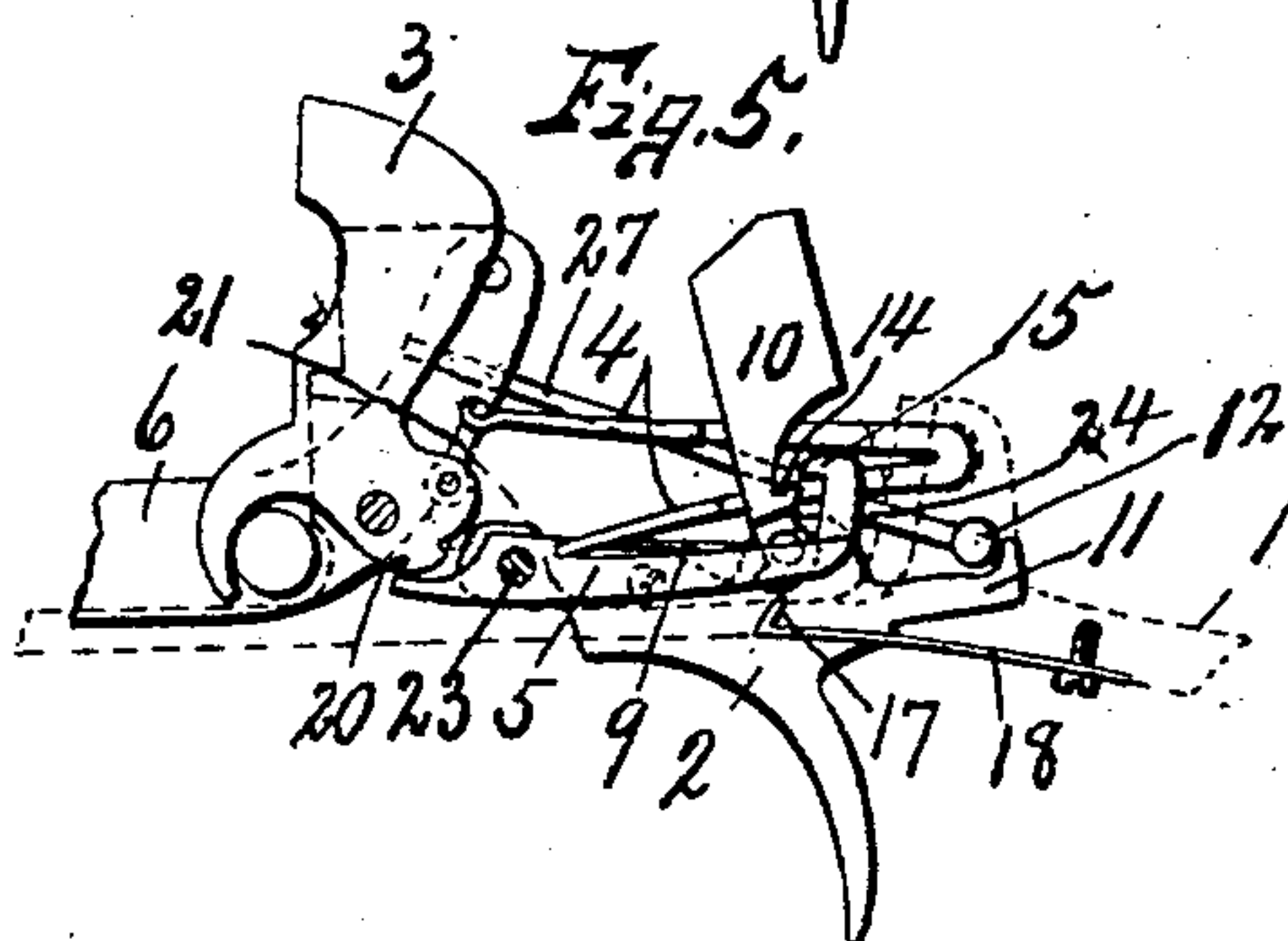
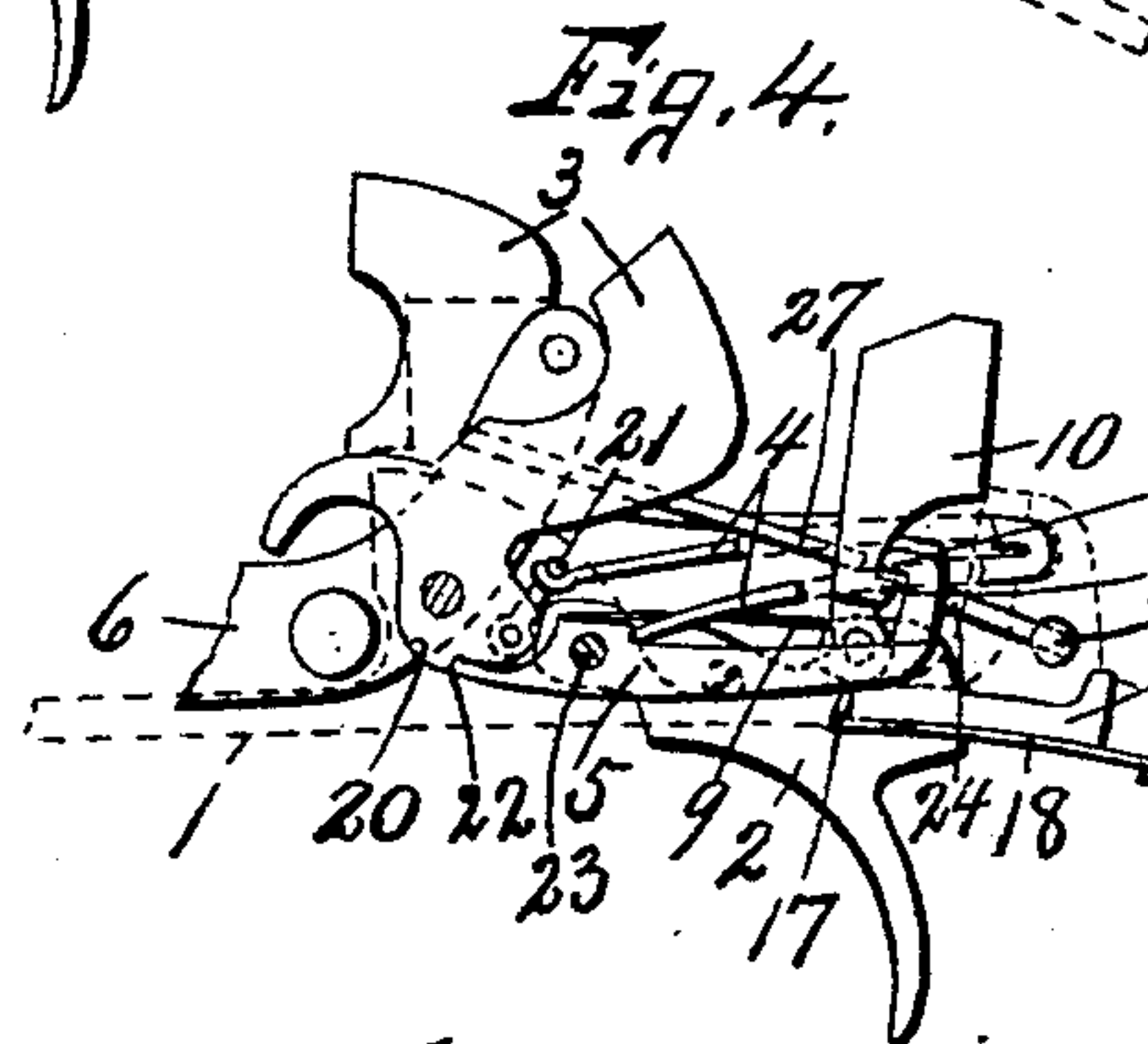
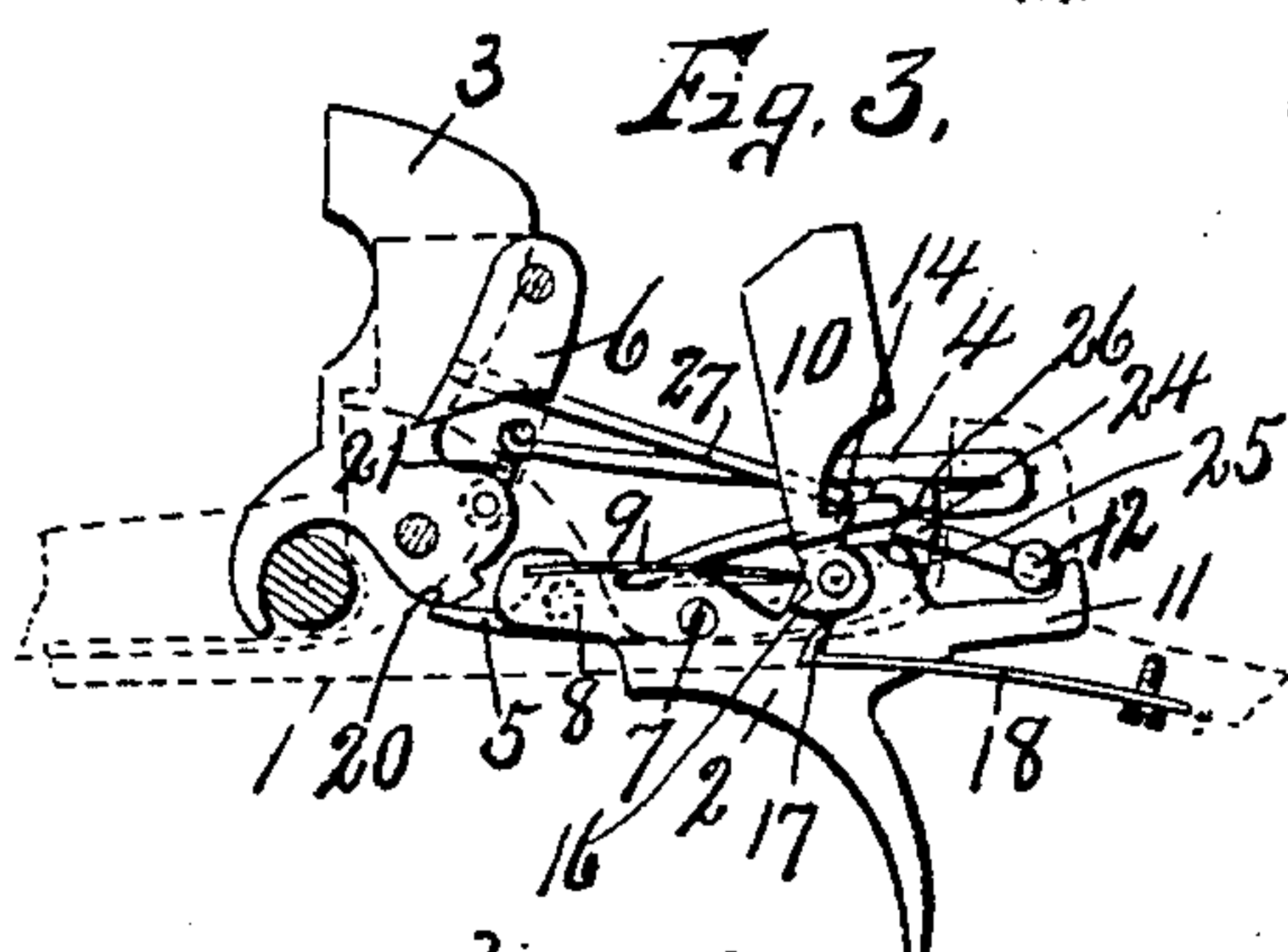
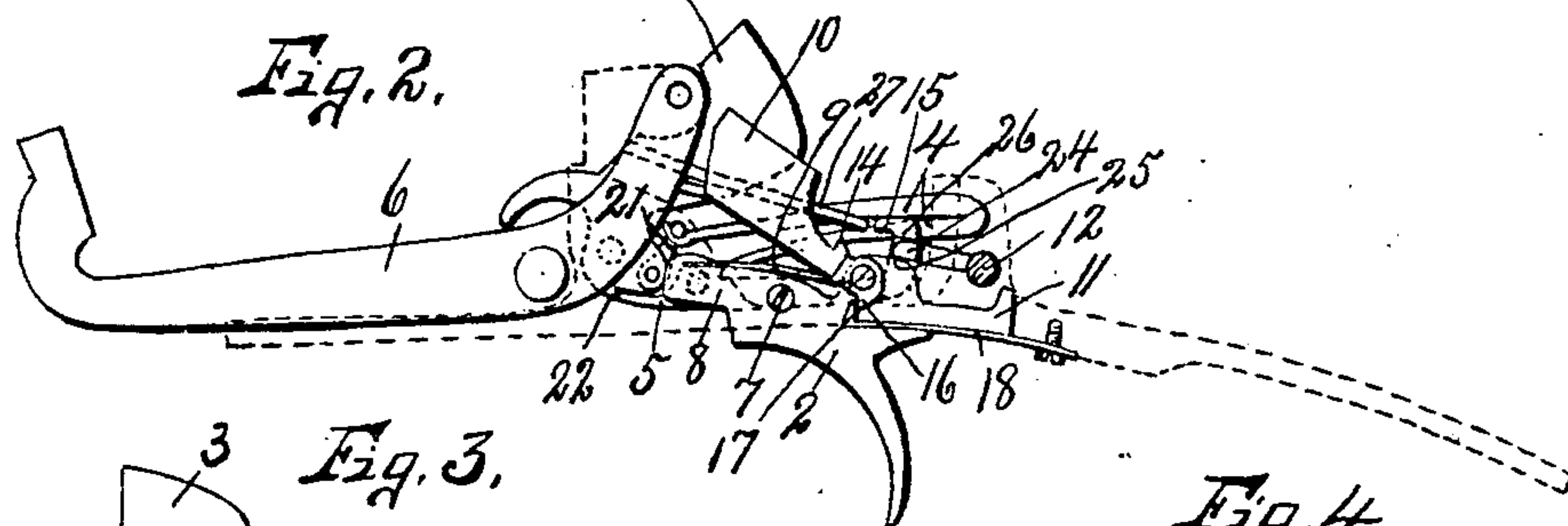
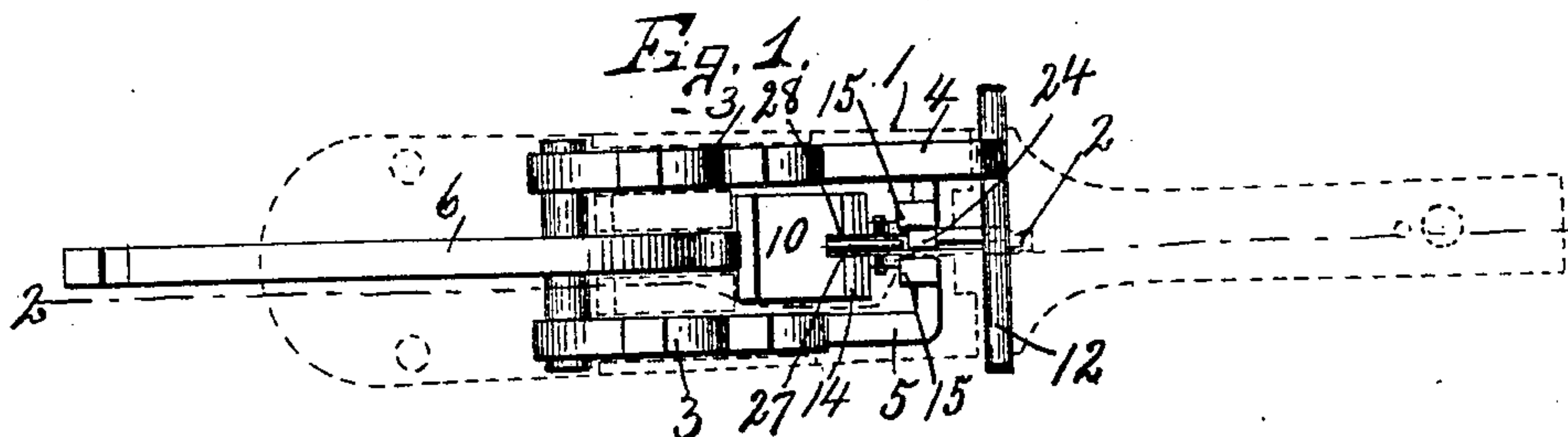
No. 810,871.

PATENTED JAN. 23, 190

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SINGLE TRIGGER MECHANISM FOR DOUBLE BARREL GUNS.

APPLICATION FILED FEB. 14, 1903.



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SINGLE-TRIGGER MECHANISM FOR DOUBLE-BARREL GUNS

No. 810,871.

Specification of Letters Patent.

Patented Jan. 21,

Application filed February 14, 1903. Serial No. 143,287.

To all whom it may concern:

Be it known that we, CHARLES F. LEFEVER and DANIEL M. LEFEVER, of Syracuse, in the county of Onondaga, in the State of New York, have invented new and useful Improvements in Single-Trigger Mechanism for Double-Barrel Guns, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description.

This invention relates to improvements in single-trigger mechanism for double-barrel breech-loading guns.

The primary object of these improvements is to prevent the accidental or premature firing of either of the barrels of the gun by the recoil or rebound incidental to the discharge of the other barrel and to enable the operator to control the operation of the hammers as positively and safely as though each hammer were controlled by a separate trigger.

Another object is to provide means under the control of the operator whereby the same (either right or left hand) barrel may be fired first after each successive breaking and closing of the gun.

Referring to the drawings, Figure 1 is a top plan of my improved trigger mechanism, showing the parts in their normal position assumed when the gun is closed and both hammers ready to be fired. Fig. 2 is a sectional view taken on line 2-2, Fig. 1. Fig. 3 is a sectional view similar to Fig. 2, the hammer, trigger, and sear-operating pawl being shown in the fired position. Fig. 4 is a side elevation of the parts seen in Fig. 1, the right-hand hammer and its sear being shown in the fired position, while the left-hand hammer is in the position to be fired, the position of the trigger being normal. Fig. 5 is an elevation similar to Fig. 4, showing the hammers, sears, trigger, and pawl in their fired positions. Fig. 6 is a sectional view similar to Fig. 2, except that the sear-operating pawl is shown in section and the mainsprings and sears are removed. Fig. 7 is a perspective view of a weighted sear-operating pawl. Fig. 8 is a perspective view of the sears and the shoulder which is movable into and out of operative engagement with the sears.

Similar reference characters indicate corresponding parts in all the views.

In carrying out the objects of the invention we provide a trigger-plate 1, upon which is mounted a trigger 2, hammers 3 and 4, springs 5 and 6, sears 7 and 8, and a cock 9, all of which parts perform the functions and are adapted to cooperate with the remaining features of our invention as fully and entirely described.

The trigger 2 is pivoted at 10 between its front and rear ends and is provided with a forwardly-extending arm 11, to which is secured one end of a light spring 12, the other end extending rearwardly beyond the trigger 2 for carrying a weighted sear-operating pawl 13. This trigger 2 is located substantially midway between the hammers 3 and 4. The hammer 3 is provided with a rearwardly-extending arm 14, which is adapted to engage a shoulder 15 on the pawl 13 for limiting its upward movement rather than for limiting the rearward movement of the finger-piece of the trigger. The pawl 13 is pivotally mounted upon the trigger-plate 1 and is provided with teeth or shoulders 16 which are movable into and out of operative engagement with similar teeth or shoulders 17, respectively, upon the rear ends of the sears 7 and 8, said pawl being weighted in such a manner that the recoil of the gun, with its own inertia, coacts to separate the pawl from its shoulders 14 and 15—in other words, the pawl is automatically forced to its inoperative position when either of the barrels is discharged. The purpose of this weighted pawl is to prevent the accidental or premature firing of one of the barrels at the time of the discharge of the other and also to prevent the simultaneous discharge of both barrels.

It is well known that when the gun is fired the operator is voluntarily pulling the trigger and that the recoil rearwardly and the forwardly are almost instantaneous. When the operator takes place the finger-piece of the trigger, it recedes from the finger of the operator, which admits the trigger to instantly assume its normal position, and the rebound being instantaneous produces an involuntary firing of the trigger by the operator, which causes the firing of the other barrel. This is due for the fact that the pawl is instantly forced to its inoperative position at the time of the discharge of the first barrel, on account of its inertia cannot possibly

the position at the rebound in
engagement with the sear when the
recoil takes place. In order that
the trigger against the accidental dis-
engagement may be further carried out,
the pawl with a second tooth or
shoulder which automatically interlocks
with tooth or shoulder 17 of a spring-
shoulders being adapted to in-
terlock with each other when the recoil takes
place the rebound will not affect the
engagement of further explanation of this
feature may be stated that the teeth
14 and 15 of the pawl and sears,
are so positioned relatively to
each other that when the involuntary pull
upon the trigger takes place which would re-
move the pawl 16 from the detent-shoulder
14 is elevated above the
position that they cannot interlock
until the pull upon the trig-
ger whereupon the tooth 14 drops
into its operative position for engaging and op-
erating when the trigger is voluntary
this is an important feature of
the invention and it is apparent from the
drawings that the time between the
pull of the gun upon the dis-
charge port to permit the pawl 10 to
move into its operative position in time to be-
hind the involuntary pull upon the
trigger at the rebound.

The trigger, which is secured at one end
to engage a shoulder 19 upon
the side of its pivot and serves to
hold it in its operative position when
in holding engagement with the
spring 7, this spring being very light,
offers little resistance as possible
to the movement of the pawl to its inoperative
position the function of this spring be-
hind the pawl to its position for en-
gaging the shoulders 15 of the sears.

In the sear of the fired hammer
where with the operation of the
other hammer, we provide each
sear with a cam-face or shoulder
upon the forward end of the
hammer is released and holds
the sear in its elevated inoper-
ative position out of the path of movement of
the hammer being operated to trip the
hammer the mainsprings 4 operate their
hammers and sears, one arm of
each being connected to a stirrup 21,
the heel of the hammer, and the
spring engages the sear at the rear of its
elevated point of the sear into hold-
ing position with a sear-notch 22 of the
sears being pivoted at 23 to the

it is desirable to fire the same
gun at each break and close of the
recoil therefore provide means to opera-

tively connect the trigger with each of the
sears separately from the other sear, said
means consisting in this instance of a later-
ally-movable shoulder 24, which is adapted
to be moved manually between a shoulder 25
on the trigger and a similar shoulder 26 on
the sear, each sear being provided with one
of these shoulders 26, which project toward
each other from the heel of the sear. Any
desired means may be employed for moving
this shoulder 24 laterally into and out of reg-
istration with the shoulders 26; but we have
here shown said shoulder as mounted upon
the pin 12, which is movable endwise or lat-
erally in suitable bearings provided in the
trigger-plate, the opposite ends of said sliding
pin being visible when the parts of the gun
are assembled, so that the operator may read-
ily determine or ascertain the position of the
shoulder 24 with reference to the shoulders
26. The shoulder 24 forms the connection
between the trigger and the sear with which
said shoulder is registered, and said sear is
actuated by the shoulder 24 irrespective of
the pawl 10, which is normally in its inoper-
ative position when the hammers are cocked,
said pawl serving only to operate the sear
which is not in engagement with the shoul-
der 24.

In order to prevent the simultaneous dis-
charge of both barrels through the medium
of the pawl 10 and shoulder 24, it is neces-
sary to provide some means for forcing the
pawl to its inoperative position during each
break and close of the gun, and we therefore
provide the cocking-lever 6 with a rear-
wardly-projecting arm 27, which extends
through a slot 28 in the pawl and engages the
shoulder 19, also formed upon the pawl in
such position that when the cocking-lever is
rocked upwardly in the act of cocking the
hammers the arm 27 simultaneously rocks
the pawl to its inoperative position, as seen
in Figs. 2 and 6.

In the operation of our invention, assum-
ing that the hammers are in their cocked po-
sition, as seen in Fig. 2, at which time the
pawl 10 is thrown forward and the trigger is
normal and it is desired to fire the right-hand
hammer first, then the pin 12 is shifted later-
ally to throw the shoulder 24 between the
trigger and right-hand sear and out of aline-
ment with the left-hand sear. Now when
the trigger is pulled the right-hand sear is
tripped to release the right-hand hammer,
and during this operation the pawl 10 is ele-
vated by the trigger to disengage the shoul-
der 16 from the detent 17. When this ham-
mer is fired, the cam-face 20 operates upon
the forward end of the sear to elevate the
rear end of the sear to prevent engagement
therewith by the shoulder 14 when the trigger
is operated to trip the other sear, it being un-
derstood that when the trigger is held and

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the spring 9 rocks the pawl 10 to its operative position the shoulder 14 is above the shoulder 15 of the left-hand sear and immediately upon the firing of the hammer, as described, the pawl 10 is returned to its inoperative position by the recoil and its own inertia and may be held in this position by the detent 17. Now if it is desired to fire the left-hand hammer it is necessary to draw the trigger back to disengage the shoulders 16 and 17 and then to release the trigger, so that the shoulder 14 may ride under the shoulder 15 of the left-hand sear, and when the trigger is again drawn back the left-hand sear is operated to release the left-hand hammer. Both hammers being now fired, it is desired to recock the same, which is done in the usual manner by breaking the gun to operate the cocking-lever 6, which simultaneously returns the pawl 10 to its inoperative position ready for a repetition of the firing, as just described. If it is desired to fire the left-hand hammer first after each break and close of the gun, it is simply necessary to slide the pin 12 endwise to register the shoulder 24 with the shoulder 26 of the left-hand sear.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

1. In a single-trigger mechanism for double-barrel guns, the combination with the hammers, mainsprings and sears, of a trigger, a weighted pawl pivoted on the trigger to engage and trip the sear, a spring on the trigger operating to force the pawl into position to engage the sears, and a detent engaging and holding the pawl in its cocked position against the action of said spring, and means brought into action by the breaking of the gun to force the pawl into position to be engaged by the detent.

2. In combination with the hammers, mainsprings and sears, of a double-barrel breech-loading gun, of a trigger, a movable element actuated by the trigger and means to force said element into position to engage and trip one of the sears when the trigger is pulled, said element being disengaged from the sear by its own inertia and the recoil of the gun, a cocking-lever operatively connected to move said element to its inoperative position when the gun is "broken," and a detent to hold said element in its inoperative position while the gun is closed.

3. The combination with the hammers, mainsprings and sears of a breech-loading double-barrel gun, of a trigger, a weighted pawl actuated by the trigger to trip one of the sears, the inertia of the pawl and the recoil of the gun coacting to disengage the pawl and sear from each other when the gun is fired, and a detent for holding the pawl in its inoperative position.

4. The combination with the hammers,

mainsprings and sears of a breech-double-barrel gun, of a trigger, a pawl trigger to trip the sear when the trigger is pulled, said pawl being weighted to return automatically from the sear-engaging position, the inertia of the pawl and the recoil of the gun coacting to separate the faces of the pawl and sear when the gun is fired, and a spring-detent for holding the pawl in its inoperative position.

5. The combination with the hammers, mainsprings and sears of a breech-double-barrel gun, of a trigger, a movable element actuated by the trigger to engage and trip the sear for one barrel, and a cocking-lever connected to the pawl to its inoperative position after each break of the gun.

6. The combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, means to connect the trigger to either sear separate from the other, whereby either barrel may be fired first and from the other after each break of the gun, and mechanism brought into action by the trigger whereby said other sear is tripped to fire said other barrel, said mechanism including a sear-engaging pawl, for forcing it to its operative position against the action of a spring, and a detent for holding it in its inoperative position, the pawl being thrown to its inoperative position by its own inertia and the recoil of the gun.

7. The combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, a pawl actuated by the trigger to trip the sears, said pawl being movable into and out of operative position irrespective of the trigger, and a lever operatively connected to cock the hammers and to simultaneously move the pawl to its inoperative position when the gun is broken.

8. In combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, a trigger-plate, a pawl pivoted on the trigger and actuated to trip the sears, a spring on the trigger operating to force the pawl into position to trip the sears as the trigger is operated, the recoil of the gun coacting with the inertia of the pawl operating to force the pawl from said position against the action of the spring.

9. In combination with the hammers, mainsprings and sears of a double-barrel breech-loading gun, of a trigger, a trigger-plate, a pawl pivoted on the trigger and actuated to trip the

g on the trigger operating to hold the in position to trip the sears as the trigger operated, the recoil of the gun and interference of the pawl operating to force the pawl said position against the action of the trigger, and a spring-detent on the trigger-to engage and hold the pawl away from sears.

In witness whereof we have hereunto set our hands this 11th day of February, 1903. 10

CHARLES F. LEFEVER.
D. M. LEFEVER.

Witnesses:

H. E. CHASE,
MILDRED M. NOTT.