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PATENTED NOV. 27, 1906.

J. T. S. SCHOUBOE.

TRIGGER MECHANISM FOR AUTOMATIC FIREARMS.

APPLICATION FILED AUG. 7, 1905.

3 SHEETS—SHEET 1

FIG. 1.

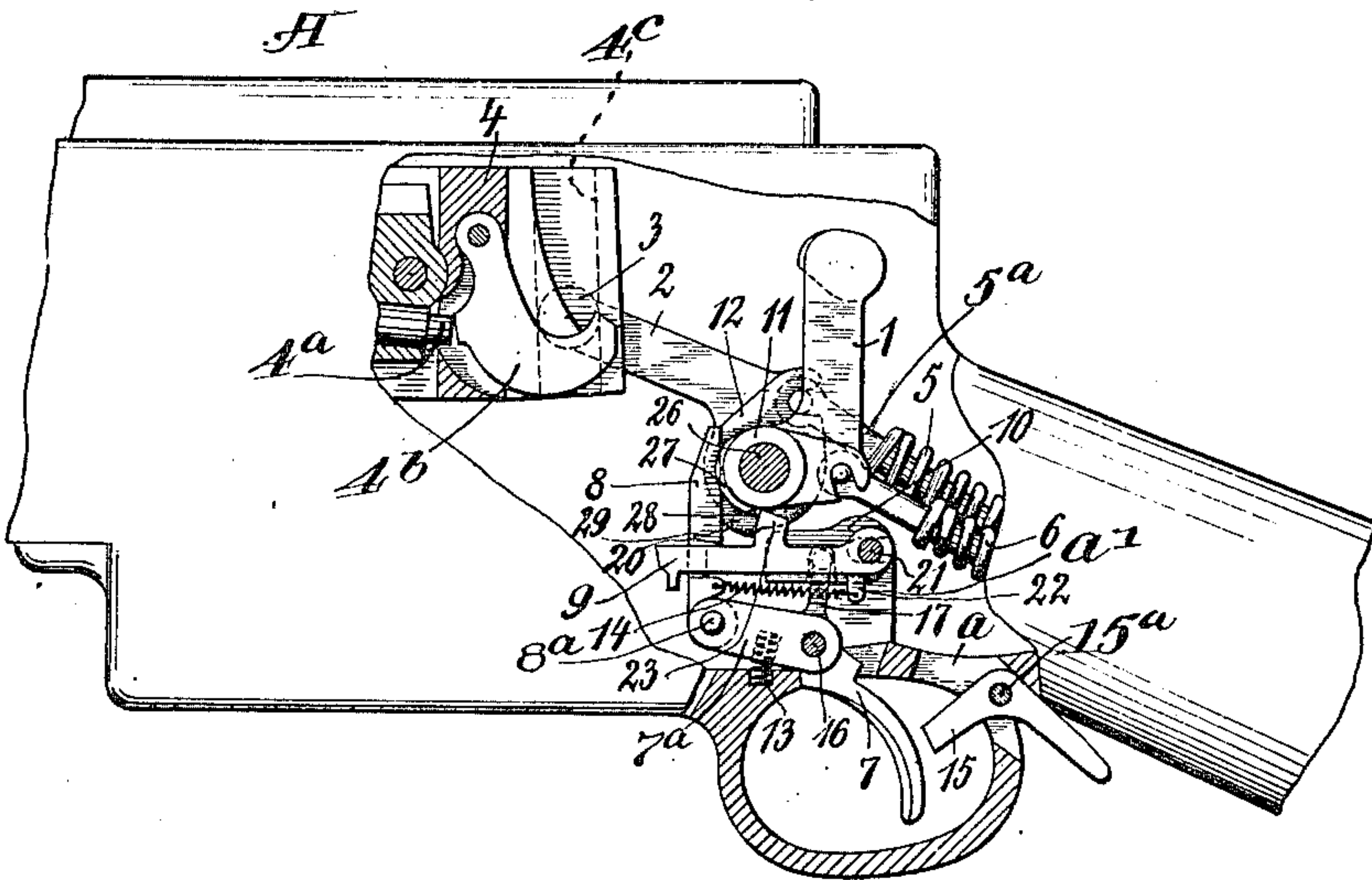
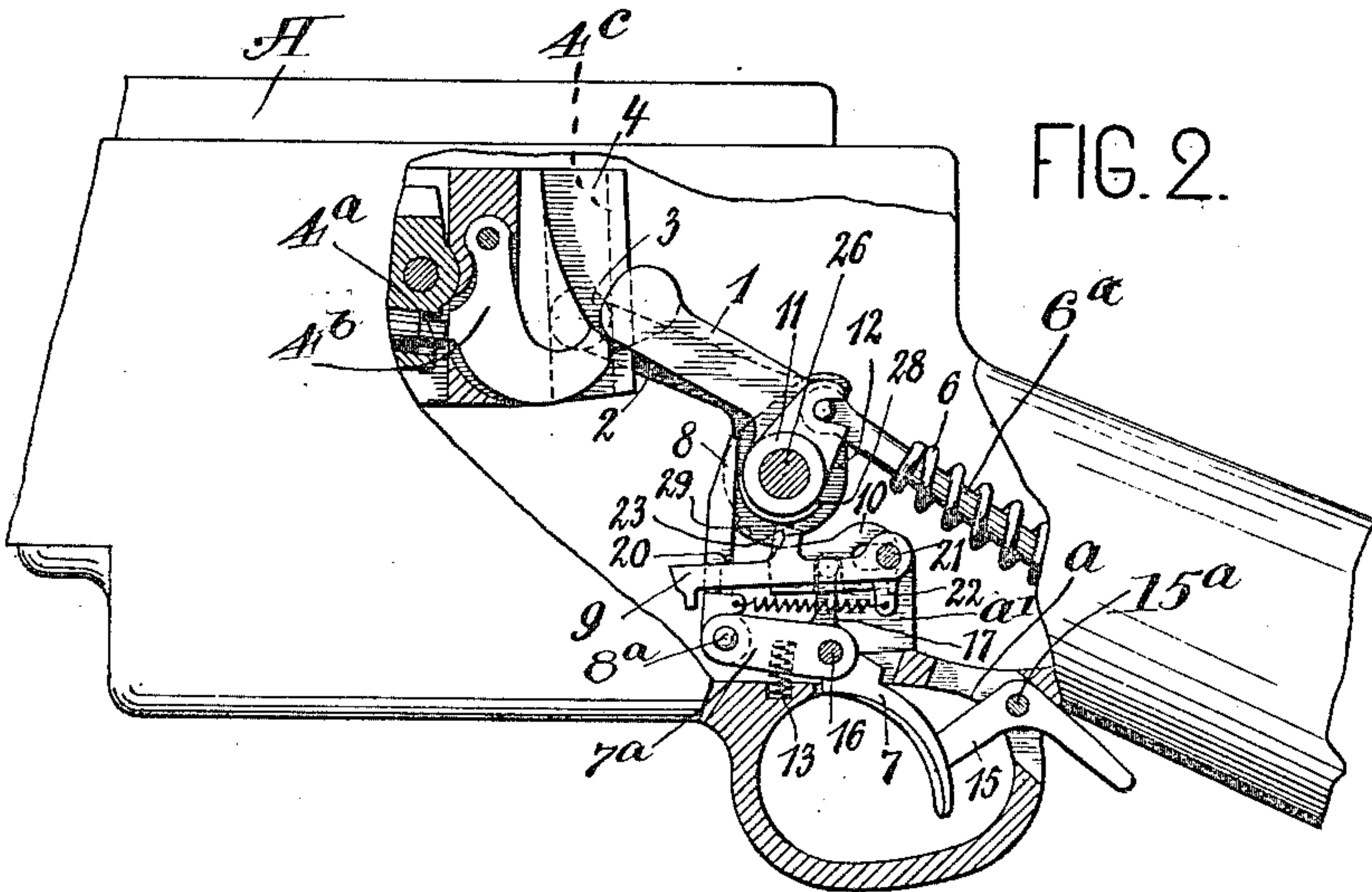


FIG. 2.



Witnesses
C. H. Crawford
L. Waldman

Inwchlo
Jens Theodor Suter Schoubo
by B. Singer Attorney

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3 SHEETS—SHEET 2.

FIG. 3.

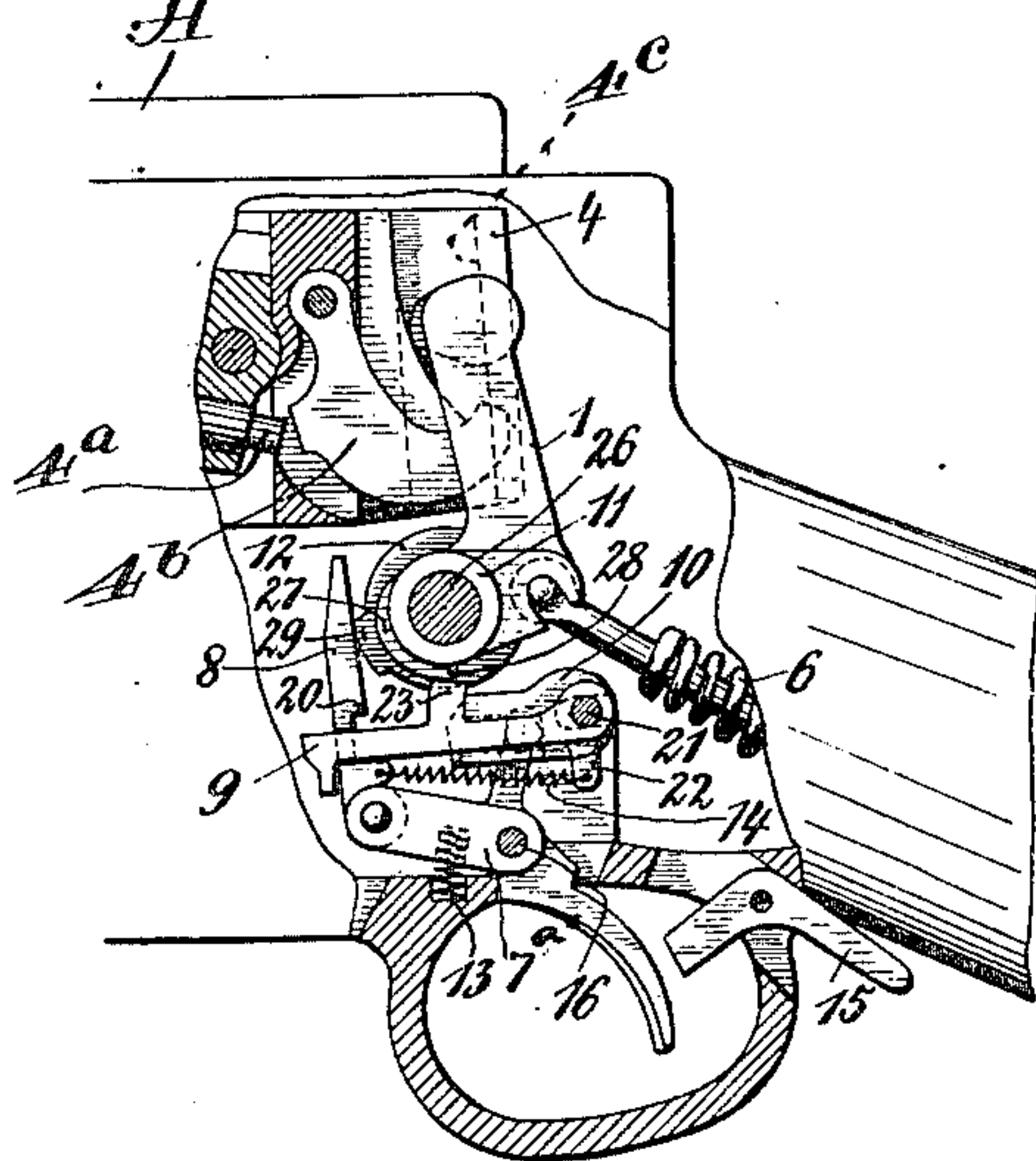


FIG. 4.

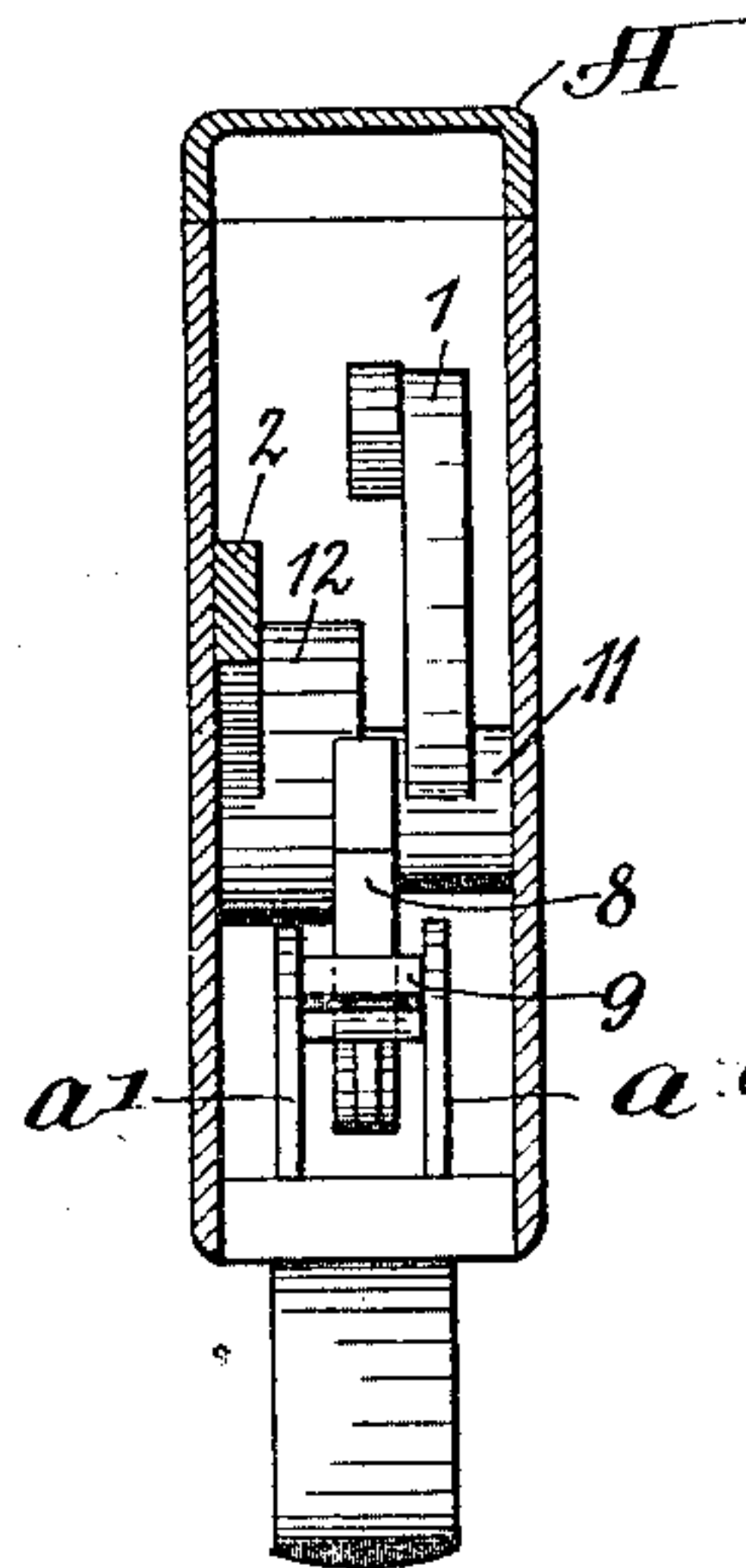
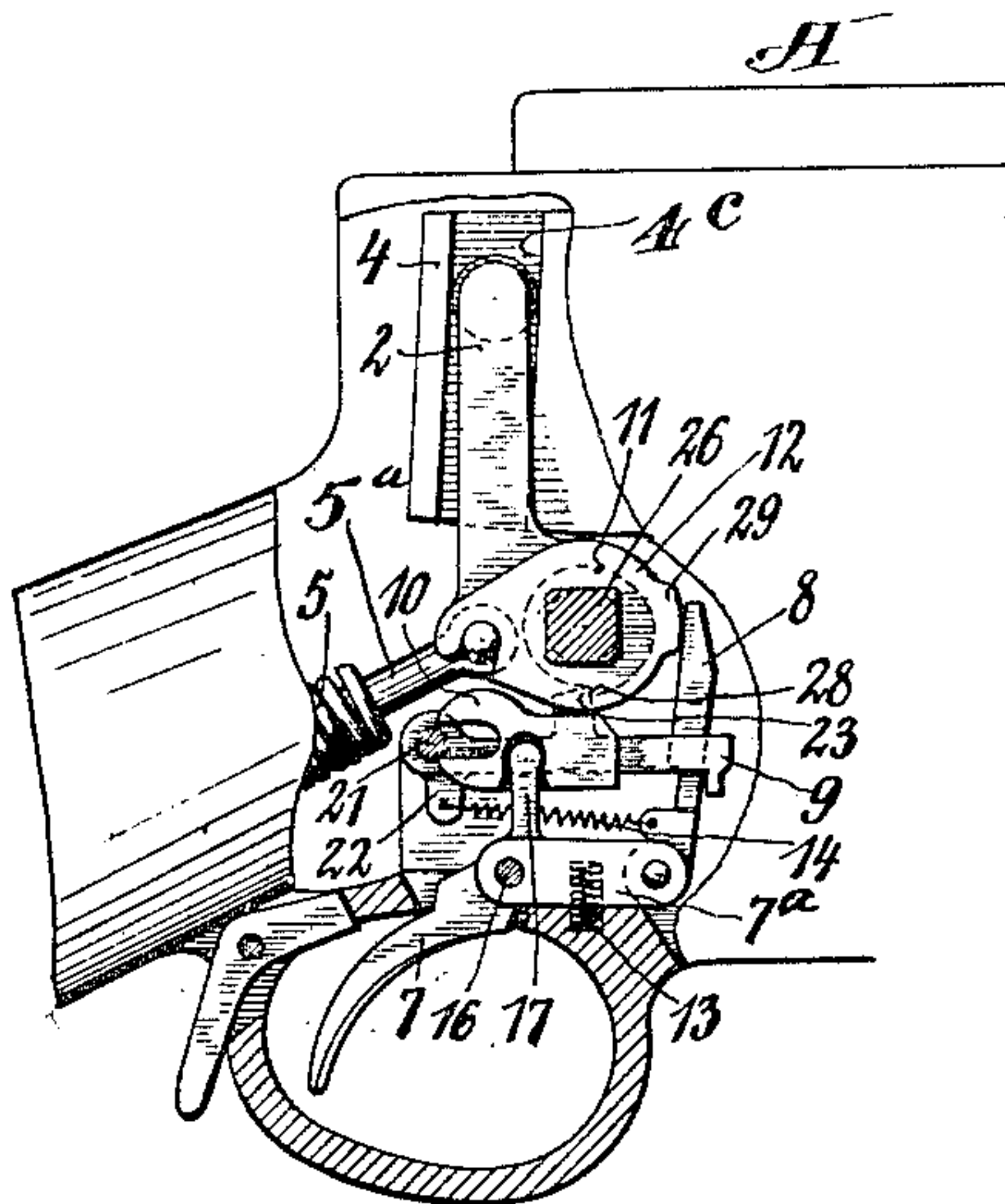


FIG.5.



Witnesses:-
C. H. Crawford
L. Waldman

Inwitness:
Jens Theodor Suhr Schouboe
by B. Yinger Attorney

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3 SHEETS—SHEET 3.

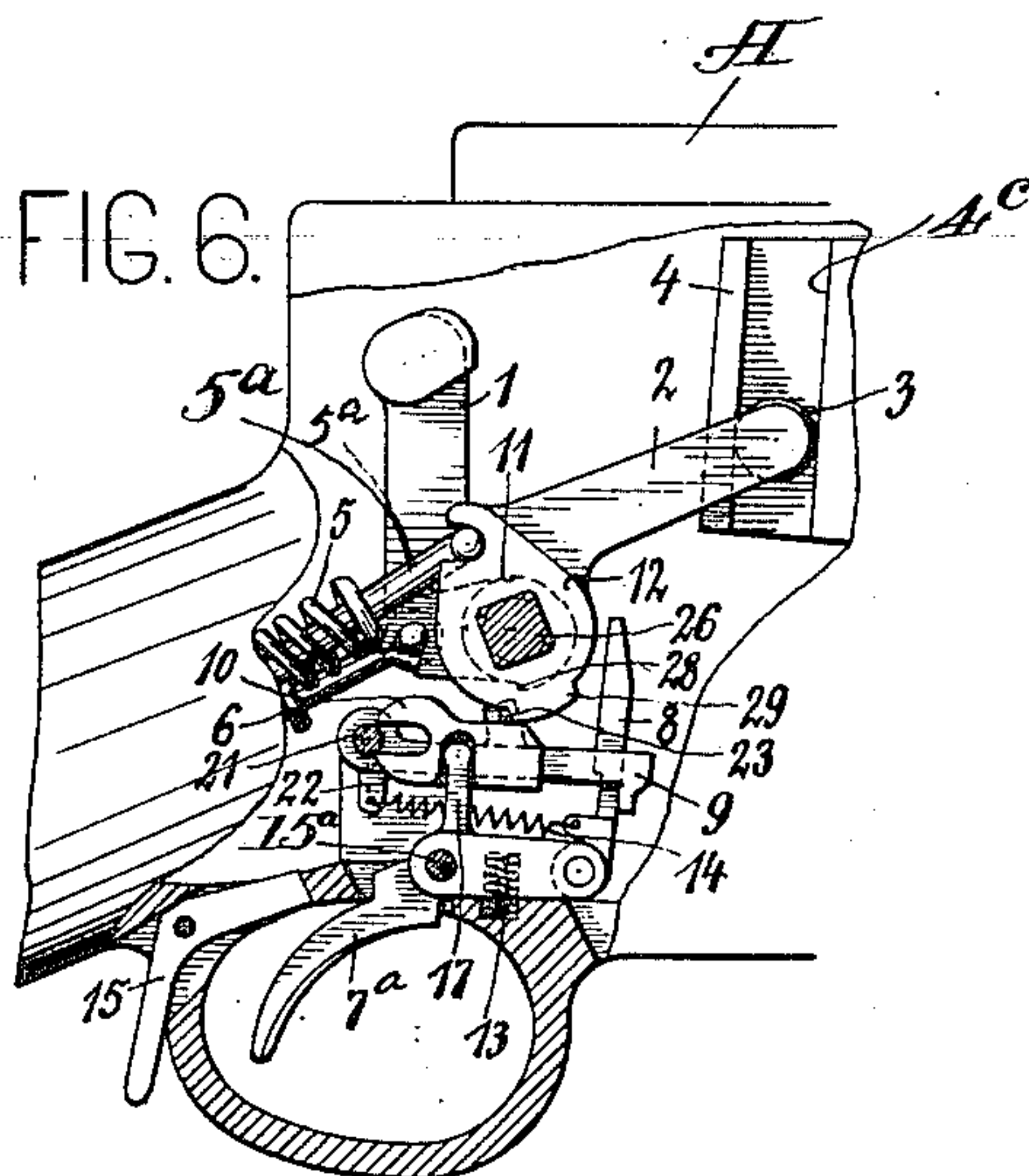


FIG. 7.

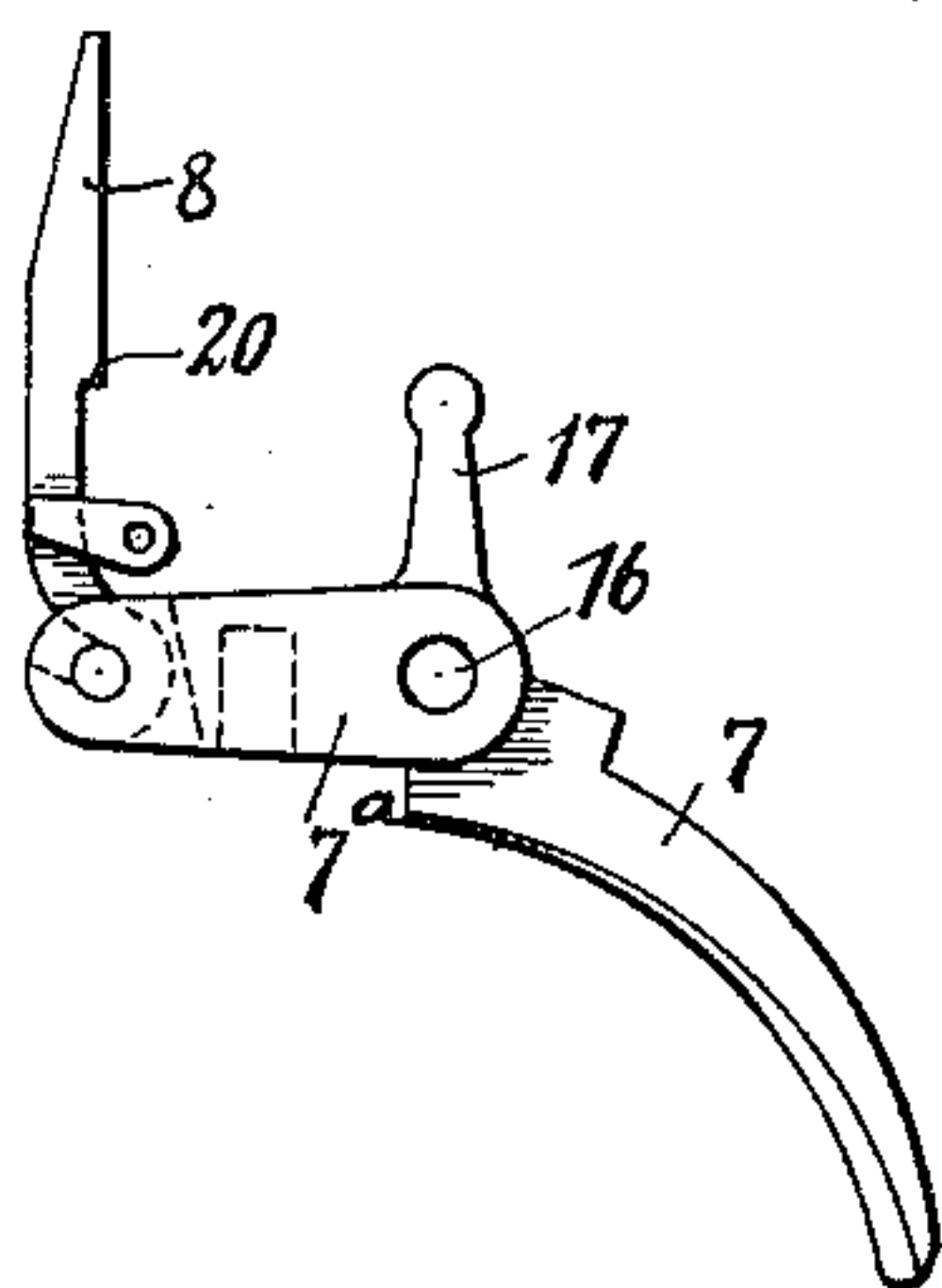
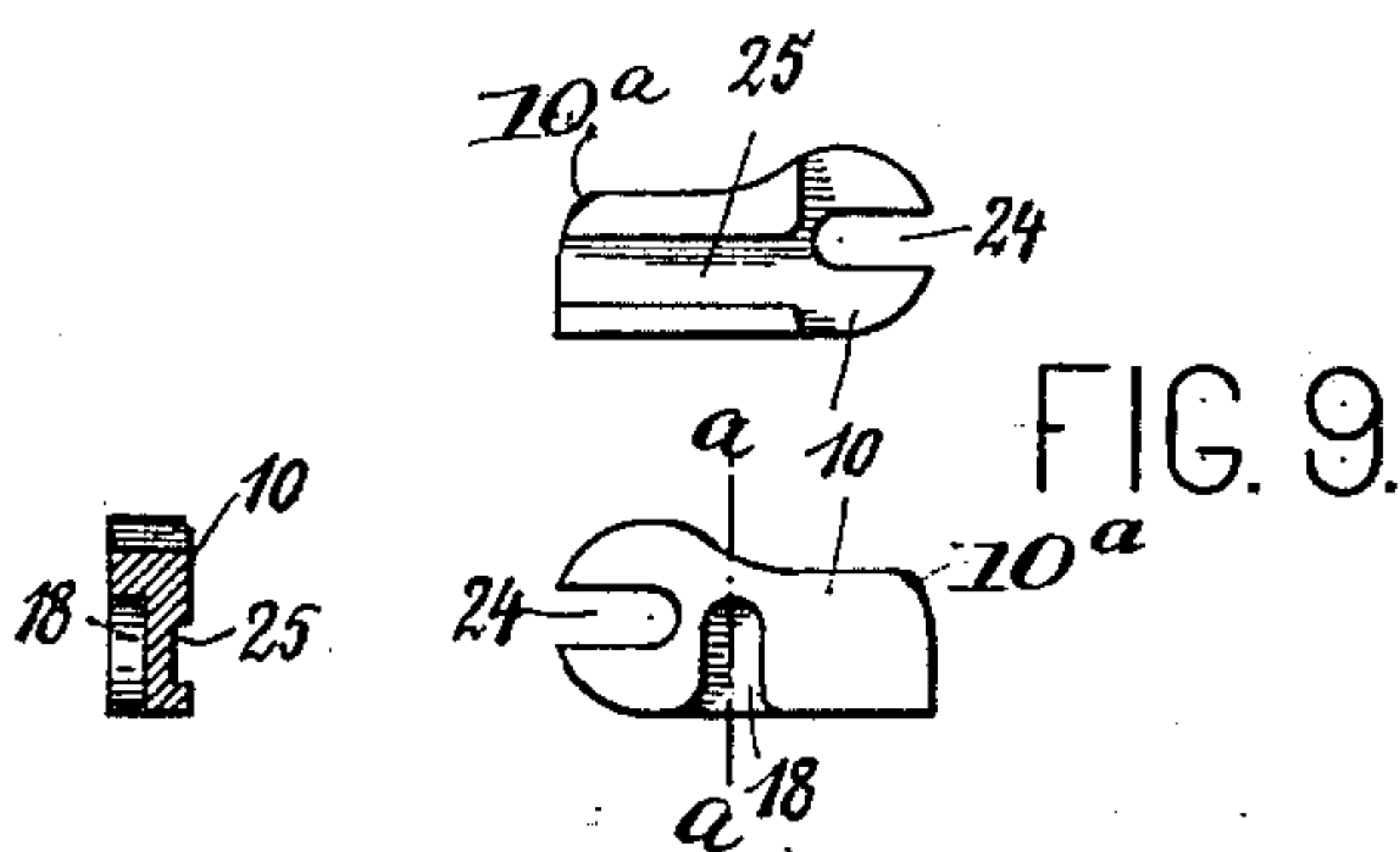
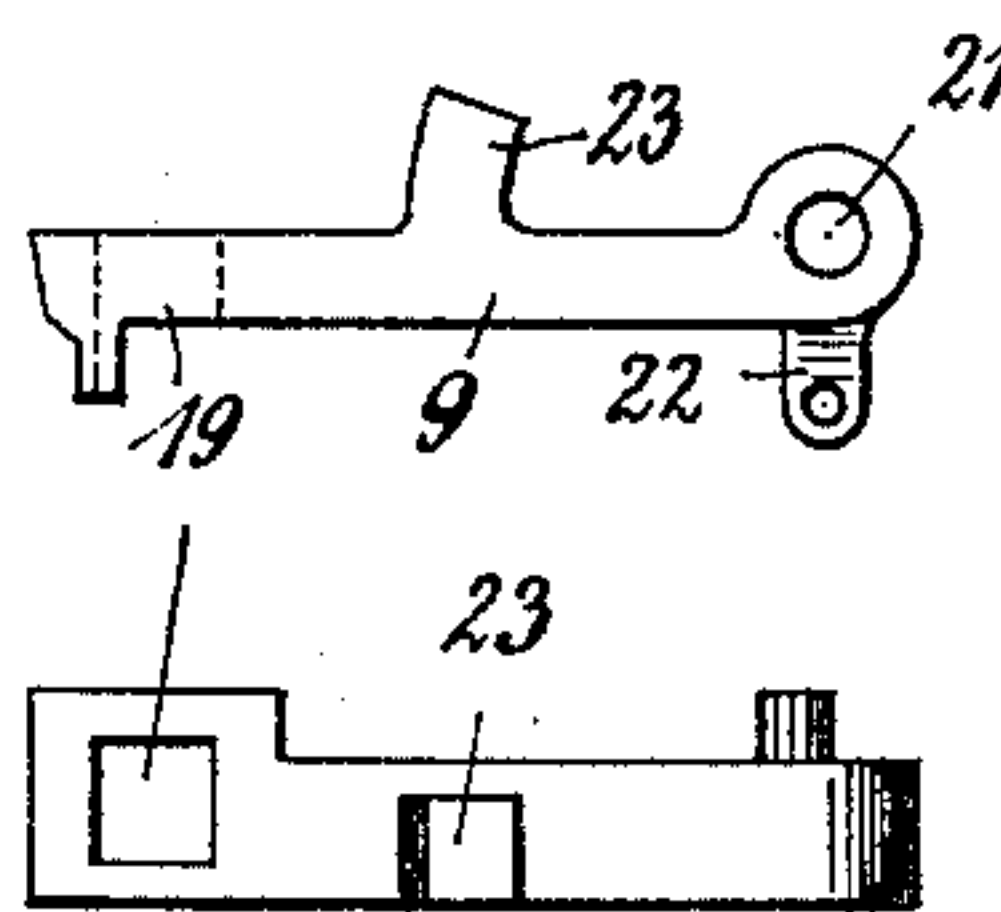


FIG. 8.



Witnesses:

C. M. Crawford
L. Waldman

Inventor
Jens Theodor Suhr Schouboe
by B. Singer Attorney

UNITED STATES PATENT OFFICE.

JENS THEODOR SUHR SCHOUBOE, OF HOLTE, DENMARK.

TRIGGER MECHANISM FOR AUTOMATIC FIREARMS.

No. 836,713.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed August 7, 1905. Serial No. 273,087.

To all whom it may concern:

Be it known that I, JENS THEODOR SUHR SCHOUBOE, a subject of the King of Denmark, residing at Holte, Denmark, have invented new and useful Improvements in Trigger Mechanism for Automatic Firearms, of which the following is a specification.

This invention relates to an improved trigger mechanism for recoil-firearms whereby either continuous or single discharges can be effected by the extent of movement imparted to the trigger.

According to my invention there is employed the usual recoil and percussion elements or members adapted to cooperate with an improved movable sear and sear-block, preferably carried by the sear, the foregoing parts being operatively connected and cooperating in the performance of their function with the trigger through the medium of an engaging or hook member carried thereby. In order to limit the movement of the trigger where a single discharge of the weapon is desired, an improved detent or locking device is provided, which is movably mounted in such a manner as to permit the same to be swung out of operative relation to the trigger when continuous firing is desired.

The invention will be more fully described in connection with the accompanying drawings and will be more particularly pointed out and ascertained in and by the appended claims.

In the drawings, Figure 1 shows a view from the left of a firearm provided with the improved trigger mechanism embodying the main features of my invention with parts broken away and parts in section, the said mechanism being shown in a cocked position. Fig. 2 is a similar view showing the parts in the position they assume when the weapon has been discharged and prior to recoil of the parts. Fig. 3 is a similar view showing the parts in the position they assume subsequent to the discharge and during the recoil movement, the trigger being pulled to effect discharge of a single load. Fig. 4 is a section on line 4 4 of Fig. 1. Fig. 5 is a view similar to Figs. 1 to 3, inclusive, viewed from the right and showing the parts in the position they would assume at the extreme recoil movement, the trigger being pulled to effect continuous firing. Fig. 6 is a view similar to Fig. 5, showing the parts in the position they would assume when the recoil elements have been returned and illustrating the manner in

which continuous firing is effected, the trigger being shown in the same position illustrated in Fig. 5. Fig. 7 illustrates side and end elevations of the trigger and hook member carried thereby. Fig. 8 illustrates side and plan views of the sear. Fig. 9 illustrates opposite side views and a sectional view on line *a a* of one of the side views of the sear-block.

As shown, the stock is indicated by A and is broken away to show the recoiling elements, consisting of the breech-block 4, the percussion-pin 4^a, and the percussion-block 4^b. The breech-block 4 is provided with a vertically-disposed slot 4^c, as clearly shown in Figs. 5 and 6. The transversely-disposed bolt 26 is fixed in the breech end of the stock and is provided with a cylindrical portion carrying a percussion element in the form of a lever 1. Said lever is operated in the performance of its function by a spring 6 through the medium of a spring-rod 6^a, which operatively engages said lever 1. The hub 11 of said lever 1 is provided with a cam-shaped enlargement 27, terminating in a percussion-shoulder 28, the purpose of which will hereinafter more fully appear. A recoil element in the form of a lever 2, provided with a hub 12, is revolubly mounted on said bolt 26, said lever having at one end an enlargement seated and operating in the slot 4^c of the breech-block. Said lever is normally held in a forward position and returns the recoil elements from a recoiling to a normal position by means of a spring 5, which operates on said recoil-lever through the medium of a spring-rod 5^a. Said lever 2 is provided with a hub 12, having on its lower face a recoil projection 29.

The trigger 7 is mounted on a bolt 16 and comprises a finger-piece projecting outwardly through the stock and an integral forwardly-projecting carrying member 7^a. Said trigger 7 is held in a normal position by a spring 13, seated at one end in a recess formed in said stock and at its other end in a recess formed in said carrying member 7^a. The trigger is provided with a finger 17, adapted to operatively engage a sear-block, hereinafter described, and is also provided with an engaging or hook member 8, having a sear-shoulder 20, which member is pivotally mounted to the trigger at 8^a. A trigger detent or locking device in the form of a bell-crank lever 15 is pivotally mounted at 15^a and is adapted, when adjusted in the position shown in Figs.

1, 2, and 3, to engage the finger-piece of the trigger and limit the rearward movement thereof, and when adjusted in a non-operating position, as shown in Figs. 5 and 6, said
 5 detent is adapted to enter a suitable recess *a* in the stock to permit the extreme rearward movement of the trigger. Suitable standards *a'* are provided, in which a bolt 21 is
 10 mounted, said standards extending upwardly from the lower wall of the stock in parallel relation. A sear 9 is pivotally mounted on said bolt 21 at one end and at its other
 end is adapted to be operatively engaged by the shoulder 20 of said member 8, the said sear
 15 preferably being apertured at 19 and permitting passage of said member 8, said aperture being of sufficient size to allow said member to be thrown into and out of operative relation with the sear. A lug 23, formed on said
 20 sear and preferably near the central portion thereof, is adapted for engagement with the percussion-shoulder 28 of the lever 1. In order to normally retain the lug in engagement with said shoulder 28 when the lever is thrown
 25 into cocked position, I provide a spring 14, which in the present construction is connected at one end to a lug formed on the member 8 and at its other end to a lug 22 formed on the
 30 sear 9. In connecting the spring in the manner set forth the same performs the dual function of holding the sear in engaging proximity to the percussion-lever and also holding the member 8 in a position to effect engagement between the shoulder 20 and the
 35 sear 9. A sear-block 10 is preferably slidably mounted upon the sear, said block having a slot 25, adapted to embrace a portion of the upper and lower faces of the sear and one side face thereof and being held in sliding engagement
 40 upon the sear by means of one of the standards *a'*. The rear end of said block is provided with a jaw 24, adapted to straddle the bolt 21. The opposite face of said block 10 is provided with a recess 18, adapted to receive the fingers 17. Said block is provided
 45 on its forward face with a cam-surface 10^a to permit the projection 29 to ride upon and depress said block in a manner to be hereinafter described.

50 When a single discharge is to be fired, the detent 15 is adjusted in the position shown in Figs. 1 to 3, inclusive, and the parts being in the position shown in Fig. 1 operate as follows: Upon pulling the trigger the carrying
 55 member 7^a is depressed, carrying with it the member 8, which engages and depresses the sear 9, throwing the lug 23 out of engagement with the percussion-shoulder 28. The lever 1 is released from the cocked position
 60 (shown in Fig. 1) and is thrust forward by a spring 6 to engage the percussion-block 4^b, as shown in Fig. 2. When the shell is discharged, the consequent recoil throws the parts in the position shown in Fig. 3, the cam
 65 enlargement 27 engaging the lug 23 and de-

pressing the sear 9 against the action of spring 14 until the lever 1 attains the position shown in Fig. 5, wherein the lug 23 engages the percussion-shoulder 28. The projection 29, Fig. 3, is shown engaging the
 70 member 8, thrusting the same outwardly in the slot 19 of the sear 9, this operation being hereinbefore described in connection with the adjustment of parts for continuous firing. After the lug 23 has engaged the percussion-
 75 shoulder and locked the lever 1 in a cocked position the spring 5 returns the recoil parts to a normal position through the lever 2, the lug 29 releasing the member 8 and permitting it to return to the position shown in Fig. 80
 1, wherein the shoulder 20 is locked upon the sear 9. In order to effect continuous firing, the detent 15 is swung into the position shown in Figs. 5 and 6 and the trigger 7 is thrust rearwardly until the carrying portion
 85 7^a lies flat upon the upper face of the lower wall of the stock, as shown in said figures, or in a substantially horizontal position. This operation, through shoulder 20, depresses the sear 9 and releases the percussion-lever, as
 90 hereinbefore described, and after discharging the shell the parts recoil. The lug 29 throws member 8 forwardly, releasing engagement between the shoulder 20 and the sear 9. The spring 14 serves to raise the sear and engage
 95 the lug with the percussion-shoulder 28 to temporarily hold the percussion-lever in a cocked position until the recoiling parts have been returned to a normal position. It will now be understood that when said recoiling
 100 parts have returned to normal position it is desired to automatically fire the button without again pulling the trigger, and to this end it is necessary to automatically depress the sear 9 and release the lever 1. It will be
 105 noted that in the extreme movement of the trigger 7 the finger 17 will have thrust the sear-block 10 forwardly to the position shown in Figs. 5 and 6. Thus after the parts have been returned from a recoiling to a normal
 110 position the lug 29 will ride upon the upper surface of the cam-block, depressing the sear 9 and releasing engagement between the shoulder 28 and the lug 23 and causing the percussion-lever 1 to automatically engage
 115 the percussion-block 4^b through spring 6.

It will be obvious that as long as the trigger is held in the position shown in Figs. 5 and 6 the lug 29 will upon return movement of the recoiling parts engage the cam-block
 120 and automatically depress the sear and, further, that if the trigger is released an appreciable extent to permit the cam-block 10 to return out of engaging proximity with the lug 29 the spring 14 will cause the sear 9 to
 125 rise, engaging the lug 23 and shoulder 28 and cocking the lever 1 until the trigger is again pulled.

I claim—

1. A trigger mechanism for recoil-guns 130

comprising in combination a trigger, an engaging member movably mounted thereon and provided with a shoulder, a movably-mounted sear adapted to be engaged by said shoulder, a spring connected with said engaging member and sear, a slidably-mounted sear-block, and a recoil-lever having a projection adapted to cooperate with said engaging member and sear-block.

2. A trigger mechanism for recoil-guns comprising in combination a trigger, an engaging member movably mounted thereon and provided with a shoulder, a movably-mounted sear adapted to be engaged by said shoulder, a spring connected with said engaging member and sear, a slidably-mounted sear-block, a recoil-lever having a projection adapted to cooperate with said engaging member and sear-block, and a detent for said trigger.

3. A trigger mechanism for recoil-guns comprising in combination a trigger member, an engaging member movably mounted thereon and provided with a shoulder, a movably-mounted sear adapted to be engaged by said shoulder, means yieldingly connecting said engaging member and sear, a sear-block slidably mounted on said sear, and means effecting operation of said engaging member and sear-block.

4. A trigger mechanism for recoil-guns comprising in combination a trigger member, an engaging member movably mounted thereon, a movably-mounted sear adapted to be engaged by said member, a slidably-mounted sear-block, a recoil-lever having a projection adapted to engage said member and block, and a percussion-lever adapted to be engaged by said sear.

5. A trigger mechanism for recoil-guns comprising in combination a trigger member provided with a finger, a movably-mounted sear provided with a lug, a sear-block slidably mounted on said sear and engaged by said finger, an engaging member mounted on said trigger, a spring connecting said engaging member and sear, a recoil-lever provided with a projection adapted to engage said member and sear-block, and a percussion-lever adapted to be engaged by said lug.

6. A trigger mechanism for recoil-guns comprising in combination a trigger member, a sear, a sear-block operatively connected with said trigger member, a recoil-lever cooperating with said sear-block, and an engaging member carried by said trigger member and cooperating with said sear and recoil-lever.

7. A trigger mechanism for recoil-guns comprising in combination a trigger member provided with an engaging member, a movably-mounted sear adapted to be operatively connected with said engaging member, a percussion-lever adapted to be engaged by said sear, a spring connecting said engaging member and sear, a sliding sear-block operatively connected with said trigger member, and a recoil-lever provided with a projection adapted to engage said sear-block and engaging member.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JENS THEODOR SUHR SCHOUBOE.

Witnesses:

A. MEACHEN,
ALBER D. MICHELSON.