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TRIGGER DEVICE FOR GUNS.

APPLICATION FILED MAR. 27, 1909.

987,514. Patented Mar. 21, 1911.

Fig. 1.

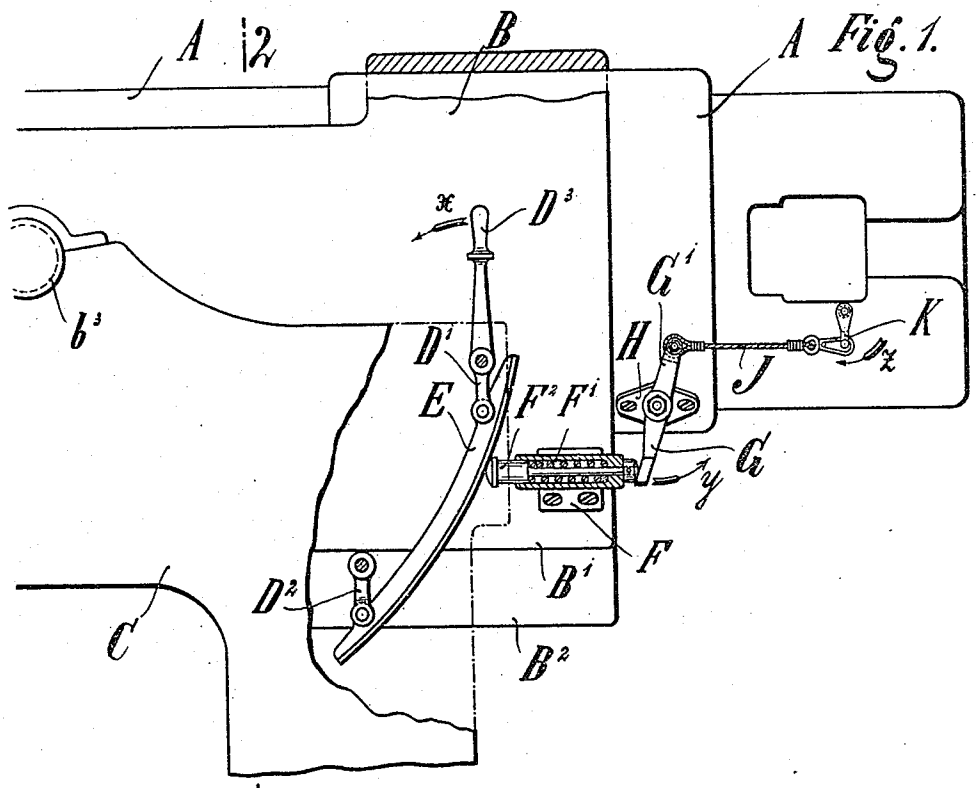
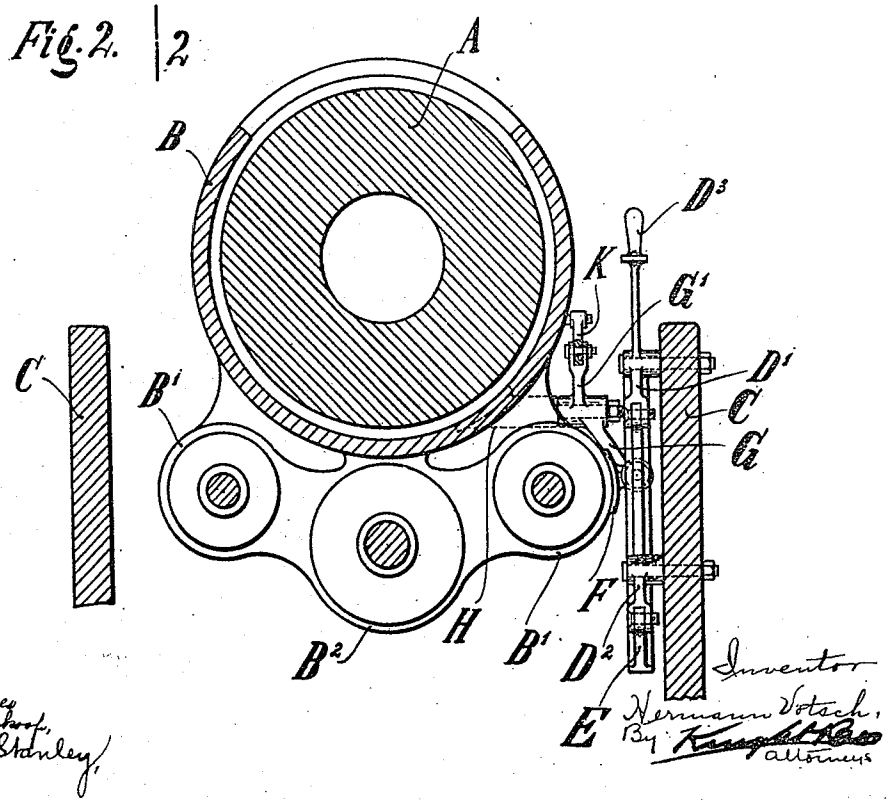


Fig. 2.



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TRIGGER DEVICE FOR GUNS.

987,514. Specification of Letters Patent. **Patented Mar. 21, 1911.**

Application filed March 27, 1909. Serial No. 486,147.

To all whom it may concern:

Be it known that I, HERMANN VÖTSCH, a subject of the Emperor of Germany, and a resident of 5 Schillerstrasse, Essen-on-the-Ruhr, Germany, have invented certain new and useful Improvements in Trigger Devices for Guns, of which the following is a specification.

The present invention relates to a trigger device for guns, the operating handle of which does not change its position with the elevation of the gun barrel.

One embodiment of the invention is shown in the accompanying drawings by way of example.

Figure 1 is a side view of the rear part of a barrel-recoil gun provided with the improved trigger device, some parts being broken away, and Fig. 2 is a section on line 2—2, Fig. 1, looking from the left.

The gun barrel A, which has a wedge-closure provided with a percussion-lock, is mounted to slide in the cradle B in the known manner. The cradle B, which is made integral with the brake-cylinders B^1 and the recuperator-housing B^2, rests with the horizontal trunnions b^3 in the side walls C of the mount. Between the cradle and the mount is interposed an elevating mechanism (not shown in the drawings), by means of which the cradle can be swung about the axis of the horizontal trunnions b^3.

Two arms D^1 and D^2 are rotatably mounted in one of the side-walls C of the mount. An arcuate trigger-rail E is jointed to the ends of the arms D^1 and D^2 in such a manner that the rail E, the arms D^1 and D^2, and the adjacent side-wall C of the mount form a link-parallelogram. The arm D^1 is provided with a handle D^3 which is located near the operating member of the elevating mechanism. That face of the rail E which is toward the breech of the gun barrel is curved in an arc which has its center of curvature coinciding with the axis of the horizontal trunnions when the rail is in the position of rest shown in Fig. 1.

On the outer wall of the brake-cylinder B^1, which is adjacent to the rail E, is secured a bearing F in which a bolt F^2, which is under the action of a spring F^1, can slide within certain limits in the manner shown in Fig. 1. When the rail E and the bolt F^2 are in their position of rest shown in Fig. 1, that end of the bolt F^2 which is toward the rail E is in slight contact with the rail E. As the center of the arc of curvature of the rail in this instance is located in the axis of the horizontal trunnions, the bolt F^2 remains in slight contact with the rail E at any elevation of the gun barrel. A double-armed lever G G^1, which is pivoted to a bearing block H secured on the gun barrel A, has one arm (G) lying against the other end of the bolt F^2. Through the medium of a cord J, the other arm (G^1) of the lever G G^1 is connected with the trigger K of the percussion-lock, the trigger being swingingly mounted in the known manner in a recess in the lower wall of the breech opening of the gun barrel.

When the gun is to be fired, the operating handle D^3 is turned from its position of rest in the direction of the arrow *x*, Fig. 1. The trigger-rail E then moves rearwardly and forces the bolt F^2 toward the right against the action of the spring F^1, and it is immaterial to what elevation the gun barrel is adjusted as the bolt F^2, before the turning movement of the handle D^3 commences, is located immediately in contact with the rail E at any elevation. The displacement of the bolt F^2 causes the lever G G^1 to turn in the direction of the arrow *y*, whereby the trigger-lever K is turned in the direction of the arrow *z* and the percussion lock is released in the known manner. The operator then lets go his hold on the handle D^3 whereupon the trigger-rail E is returned to its position of rest by its own weight and the bolt F^2 is returned to its position of rest by the spring F^1. After the gun is fired, the gun barrel recoils in the cradle and after the recoil movement is completed the gun barrel is returned to firing position by the recuperator-device. While this takes place, the lever-arm G first separates from the bolt F^2 as the bearing H, in which the lever G G^1 is mounted, must partake of the movement of the gun barrel. At the end of the counter-recoil of the gun barrel, the lever-arm G again comes into abutment with the bolt F^2, so that the trigger-device is again ready for use.

Having thus described the invention, what is claimed as new and desired to be secured by Letters Patent is:

1. In a gun, the combination with the gun barrel and its mounting, of firing mechanism having one element thereof not partak-

ing of the elevating of the gun barrel and comprising a movably mounted rail, another element partaking of such elevation and adapted to lie in the path of said rail at different angles of elevation of the gun barrel, and a means for actuating the said movable rail and causing the part in the path thereof to effect firing.

2. In a gun, the combination with the gun barrel, a part not partaking of the elevation of the gun barrel and a part partaking of the elevation of the gun barrel, of a trigger mounted on the gun barrel, a member movably mounted on the part not partaking of the elevation of the gun barrel, a shiftable member mounted on the part partaking of the elevation of the gun barrel and located in the path of movement of said first-named member, a connection between said shiftable member and the trigger, and means whereby said first-named member may be moved to actuate the shiftable member and cause the trigger to fire the gun.

3. In a gun, the combination with the gun barrel having horizontal trunnions, a part not partaking of the elevation of the gun barrel and a part partaking of the elevation of the gun barrel, of a trigger mounted on the gun barrel, a rail movably mounted on the part not partaking of the elevation of the gun barrel and curved in an arc having its center lying in the axis of the horizontal trunnions when the rail is in its position of rest, a shiftable member mounted on the part partaking of the elevation of the gun barrel and located in the path of movement of the rail, a connection between said member and the trigger, and means whereby said rail may be shifted to actuate said member and cause the same to operate the trigger.

The foregoing specification signed at Barmen, Germany, this 23rd day of February, 1909.

HERMANN VÖTSCH. [L. S.]

In presence of—
OTTO KÖNIG,
KARL MÜLLER.