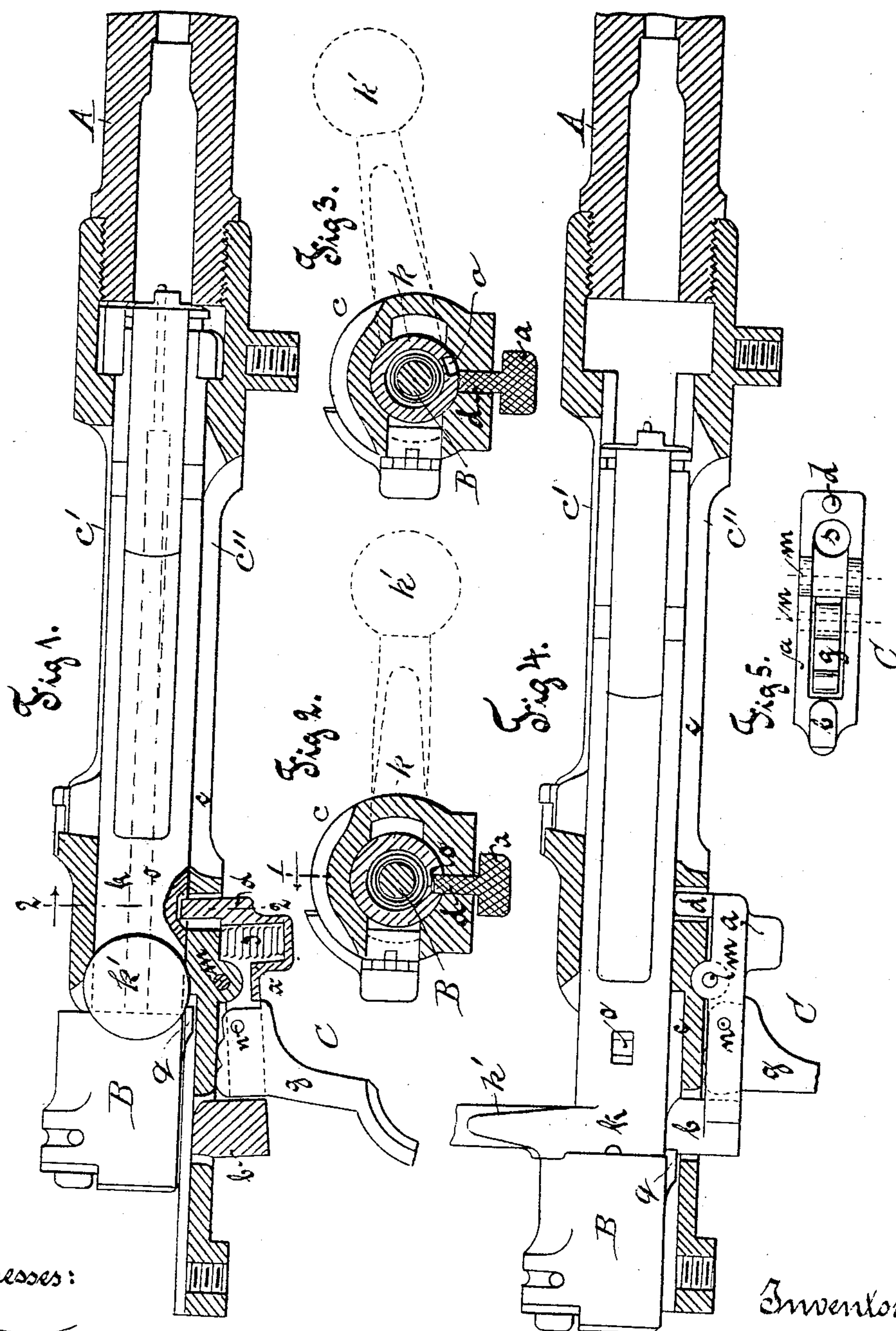


(No Model.)

P. MAUSER.
SAFETY TRIGGER FOR BREECH LOADING BOLT GUNS.
No. 488,694.
Patented Dec. 27, 1892.



Witnesses:

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UNITED STATES PATENT OFFICE.

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SAFETY-TRIGGER FOR BREECH-LOADING BOLT-GUNS.

SPECIFICATION forming part of Letters Patent No. 488,694, dated December 27, 1892.

Application filed April 30, 1892. Serial No. 431,300. (No model.)

To all whom it may concern:

Be it known that I, PAUL MAUSER, a subject of the King of Württemberg, German Emperor, residing at Oberndorf am Neckar, in the Kingdom of Württemberg, German Empire, have invented certain new and useful Improvements in Safety-Triggers for Breech-Loading Bolt-Guns, of which the following is a specification.

10 This invention relates to breech-loading guns having a movable bolt. In such guns, the bolt usually has both oscillatory and reciprocal movements in the breech-case, and is moved against the barrel to place the cartridge therein, and then oscillated to lock it in this position, which is known as the "closed" or firing position. After firing to remove the spent cartridge and replace a new one, the bolt is oscillated to unlock it, and is then moved backward, during which time it is said to be in the "open position." In such guns, the firing pin is usually carried by and extends through the bolt, traveling with it throughout most of its reciprocal movements, but being held back by the trigger as the bolt is moved to the closed position, whereby the gun is cocked ready for firing upon the release of the firing-pin by the operation of the trigger. Heretofore, to prevent premature firing of the gun, the bolt and firing-pin have been constructed with reciprocal provisions adapted when the bolt is in the closed position to permit the operation of the trigger to fire the gun, and when the bolt is moved from said position to prevent such operation of the trigger, whereby the gun can only be fired when the bolt is in the proper position therefor.

My invention aims to improve such guns, and to this end consists of certain structural features of improvement which will be hereinafter fully set forth.

My invention is applicable to various styles of breech-loading guns having movable bolts, but I will illustrate and describe it as applied to the particular type of gun of that general class which is known as the Mauser bolt gun.

In the accompanying drawings, which show the invention as applied to a bolt-gun of the Mauser type, Figure 1 is a fragmentary ver-

tical axial section of the breech-case, barrel and trigger of a bolt gun, the bolt being in elevation and in the closed position, the firing-pin in the fired position, and the trigger tilted; Fig. 2 is a cross-section on the line 2—2 looking in the direction of the arrow 2, showing the parts in the position occupied in Fig. 1; Fig. 3 is a cross-section on the same line as Fig. 2 and looking in the same direction, but showing the bolt slightly oscillated from the closed position and the trigger restored; Fig. 4 is a horizontal cross-section similar to Fig. 1, showing the trigger in fragmentary elevation, and the bolt and firing-pin moved back, the latter being engaged by the trigger; and Fig. 5 is a detached plan view of the trigger.

Referring to the drawings, let A indicate the gun barrel, c the breech-case, k the bolt, k' its handle, B the firing-pin, and C the trigger as a whole.

The barrel A, breech-case c and firing-pin B may be of any usual or well known construction. The breech case shown is constructed with the ordinary top opening c' and bottom opening c''. It engages the bolt k to permit its oscillatory movement and its longitudinal reciprocatory movement, and to lock it in the closed position, all according to a well known construction.

The firing-pin B has the usual spindle, shown in dotted lines in Fig. 1, traversing the bolt k interiorly from the front to the back end thereof, terminating in the usual firing-point at the front end of the bolt, and the usual pin-nut, provided with the usual trigger-beak q at the rear end of the bolt. The firing-pin travels with the bolt throughout its reciprocatory movements, except when the pin is engaged and held back by the trigger as the bolt is moved to the closed position. The bolt k may be of any well known or convenient construction which shall be movable into and out of the closed position in the operation of the gun, and the trigger C may be of any desired construction which will serve to hold the firing-pin retracted and release it when the gun is to be fired. The well known interengaging provisions are provided between the bolt and the trigger constructed to permit the operation of the latter to fire the

gun when the bolt is in the closed position, but to prevent such operation when the bolt is moved. These consist of reciprocal, inter-engaging or abutting faces, shoulders or projections between the bolt and trigger, adapted to co-operate when the bolt is in the closed position to permit the operation of the trigger, and when the bolt is moved to prevent the operation of the trigger. It is usual to employ the construction shown in the drawings, wherein the bolt *k* is constructed with a peripheral recess *o*, and the trigger *C* is provided with a projection *d*, the recess being located on the bolt to occupy juxtaposition relatively to the stop when the bolt is in the closed position, to permit the stop to enter the recess as the trigger is tilted while the parts are thus situated. In this construction the bolt *k* is substantially cylindrical peripherally adjacent to the stop *d*, whereby when it is moved from the closed position its cylindrical periphery is interposed against the stop or projection *d* and prevents the movement thereof, and consequently of the trigger carrying the stop.

According to my invention the trigger is composed of an elongated frame *a* pivoted at *m* to the under side of the breech-case *c*, and provided at one end and at one side of its pivotal point with the stop *d* projecting through an aperture in the breech-case and toward the bolt *k*, and provided at its other end at the opposite side of its pivotal point with the usual trigger-nose *b* passing through an aperture in the breech-case, and movable into the path of the trigger-beak *q* of the firing-pin to engage and retain the latter in the cocked position. Preferably a spring *s* is provided tending normally to tilt the trigger to throw its nose toward the firing-pin. Preferably a finger-piece *g* is fulcrumed to the frame *a* of the trigger at *n*, and bears against the under side of the breech-case, serving as a lever for tilting the trigger as heretofore. The frame *a* is shown as a hollow frame, the finger-piece *g* being pivoted between its side walls.

The trigger-nose *b* and projection or stop *d* are relatively constructed in the form shown to present the abutting end or face of the stop flush with the periphery of the bolt *k* when the trigger-nose *b* is in the path of the trigger-beak of the firing-pin, and being rigidly connected together through the frame *a*, this relative arrangement serves as heretofore to prevent the withdrawal of the trigger-nose from such position in case the periphery of the bolt *k* is interposed against the end of the stop *d*, to prevent its corresponding movement in the opposite direction, therefore under such circumstances the trigger cannot be operated, since its frame *a* cannot be tilted. The peripheral face of the bolt *k* coming adjacent to the end of the stop *d* while the bolt is in the open position, is constructed to be in such proximity to the stop that the latter cannot move inwardly at any time during the

open position of the bolt. Therefore during all such time the trigger must remain stationary with its nose in the path of the trigger-beak of the firing-pin. The recess *o* in the bolt is located in the periphery thereof to come directly opposite the end of the stop *d* when the bolt reaches the fully closed position, whereupon free motion of the trigger is permitted by reason of the fact that as its finger-piece *g* is moved to tilt the frame *a* to withdraw the nose *b* from the front of the beak *q*, the stop *d* at the opposite end of the frame is free to pass into the recess *o* in the bolt sufficiently to permit the complete operation of the trigger necessary to free the firing-pin in order that the latter may shoot forward and fire the gun. The frame *a* is shown as constructed integral with its nose *b* and stop *d*, but this is not essential.

In operation, the gun having been fired, the bolt *k* is turned by its handle *k'* a quarter of a revolution, thus bringing its recess *o* away from the stop *d* and presenting the cylindrical face of its periphery against the end of the stop. It can be thus turned as soon as the stop has been removed from the recess by the tilting of the trigger under tension of its spring *s*, when its finger-piece is released. The bolt is then drawn back carrying the firing-pin with it, the gun is re-loaded and the bolt moved again toward the closed position. As the bolt moves toward the closed position, the trigger-beak *q* catches on the trigger-nose *b*, and thereby the firing-pin is prevented from further forward movement, while the movement of the bolt is continued, and when in proper position it is oscillated to lock it in the closed position. Up to the time that the bolt is completely oscillated, the stop *d* bearing against its periphery prevents operation of the trigger to free its nose *b* from the beak of the firing-pin, but as soon as the bolt reaches the completely closed position, its recess *o* is opposite to the stop, and thereupon the trigger can be operated to fire the gun.

It will be understood that my invention is not limited to the particular construction and details set forth and shown, nor to application to the particular type of gun shown, as it may be variously availed of without departing from its essential features, and may be applied to other types of movable bolt-guns with such changes as are within the knowledge of those skilled in the art.

What I claim is, in breech-loading bolt-guns, the following defined novel features and combinations substantially as hereinbefore set forth, namely:—

1. A safety trigger for bolt guns consisting of a hollow rectangular frame *a* having a pivotal point *m* for attachment to the breech-case of a gun, and having a trigger-nose *b* at one side of its pivotal point constructed to engage the trigger-beak of a firing pin, and having a projection *d* at the opposite side of its pivotal point constructed to engage the

pivotal point of a gun, in combination with a finger-piece *g* entering said hollow frame, pivotally connected thereto at *n*, and constructed when tilted to operate said frame, substantially as and for the purpose set forth.

2. A safety trigger for bolt guns consisting of a hollow frame *a* having projection *d* at front, pivotal connection *m* to the rear of said projection, and trigger-nose *b* at rear, in combination with finger-piece *g* entering said frame and pivotally connected thereto at *n*

for operating it to depress its trigger-nose, and spring *s* seated in said frame for operating it to raise said nose, substantially as and for the purpose set forth.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

PAUL MAUSER.

Witnesses:

CARL T. BURRHARDT,
RICHARD H. KORN.