No. 886,929. PATENTED MAY 5, 1908.

A. BOBBERT & H. ZELLER.

BREECH CLOSING DEVICE FOR GUNS.

APPLICATION FILED NOV. 26, 1906.

3 SHEETS—SHEET 1.

Fig.1.

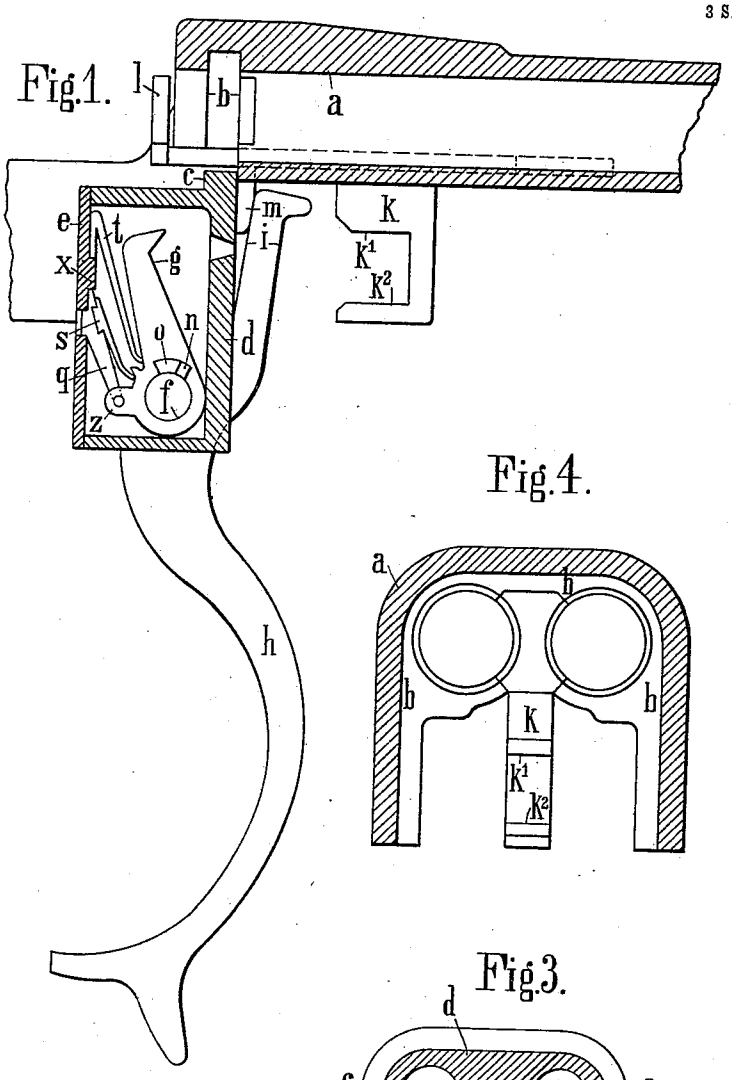


Fig.4.

Fig.3.

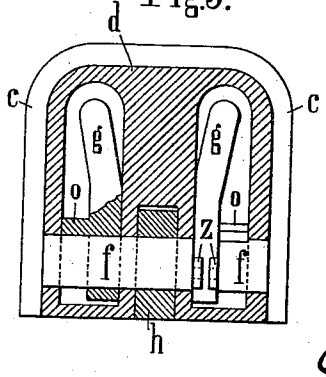
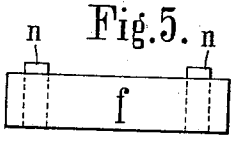


Fig.5.



Witnesses:
J. Stephen Kinsella
Percy H. Moore

Inventors:
A. Bobbert and
H. Zeller
by Williamson & Fisher
their attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

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3 SHEETS—SHEET 2.

Fig. 7.

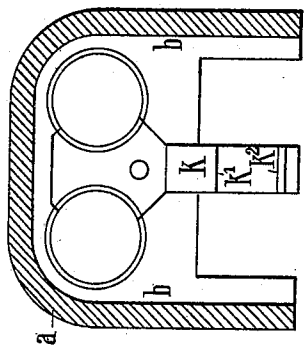


Fig. 6.

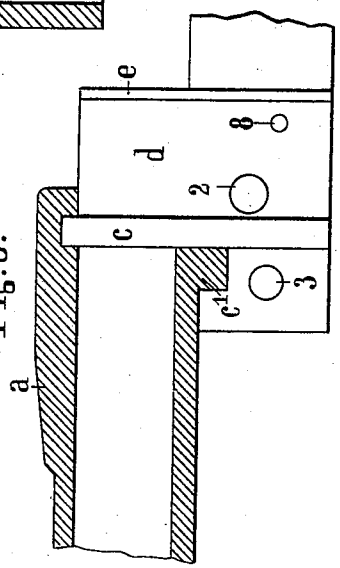
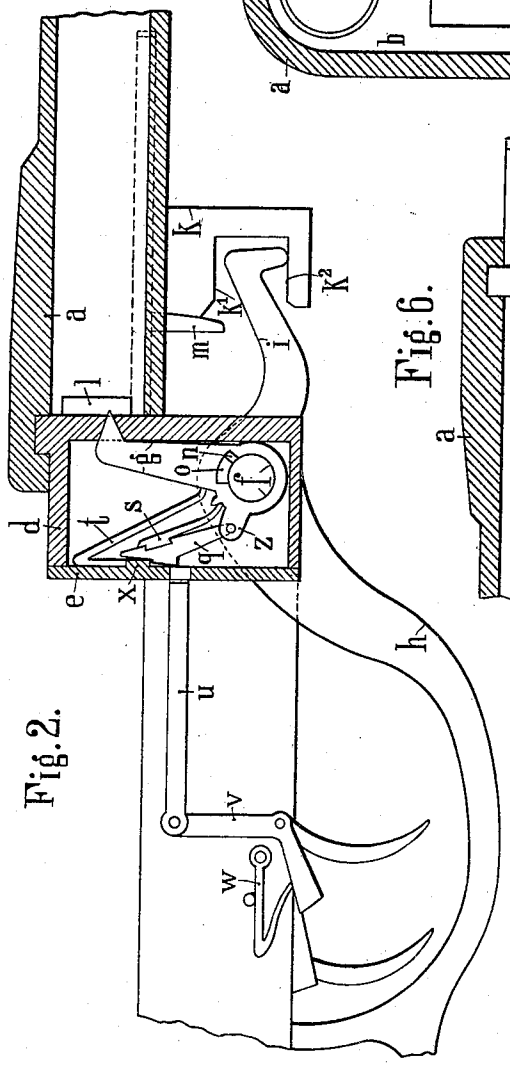


Fig. 2.



Witnesses:
Stephen Sinnott
Percy H. Moore

Inventors:
A. Bobbert and
H. Zeller
By Wilkinson & Fisher
their Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

No. 886,929. PATENTED MAY 5, 1908.

A. BOBBERT & H. ZELLER.

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3 SHEETS—SHEET 3.

Fig.8.

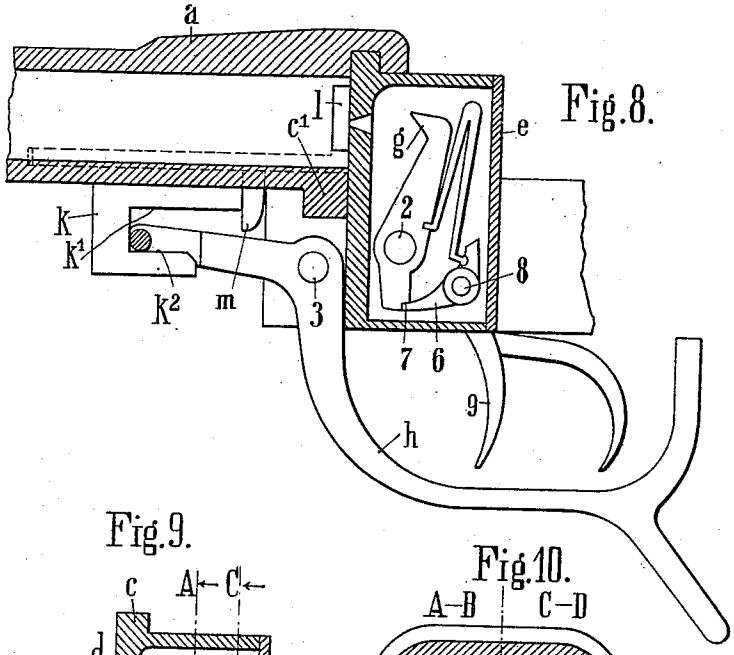


Fig.9.

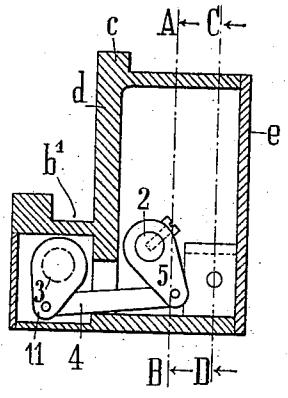


Fig.10.

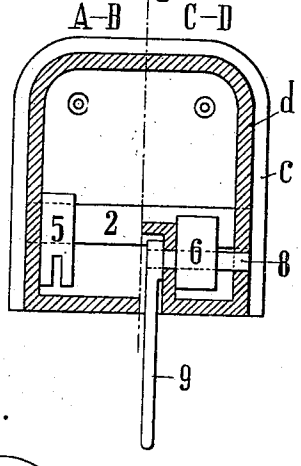
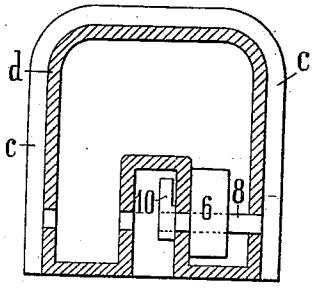


Fig.11.



Witnesses:
Stephen Sinsta.
Percy H. Moore

Inventors:
A. Bobbert and
H. Zeller
By Williamson & Fisher
their Attorneys

THE NORRIS PETERS CO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

ANTON BOBBERT, OF HANOVER, AND HERMANN ZELLER, OF PADERBORN, GERMANY.

BREECH-CLOSING DEVICE FOR GUNS.

No. 886,929. Specification of Letters Patent. Patented May 5, 1908.

Application filed November 26, 1906. Serial No. 345,195.

To all whom it may concern:

Be it known that we, ANTON BOBBERT, engineer, of 33 Humboldtstrasse, in the city of Hanover, Germany, and HERMANN ZELLER, manufacturer, residing at Paderborn, Germany, both subjects of the German Emperor, have invented new and useful Improvements in or Relating to Breech-Closing Devices for Guns, of which the following is a specification.

This invention relates to an adjustable breech block closing device for guns with one or more fixed barrels, that is to say barrels which cannot move relatively to the stock.

Guns with several barrels have been built hitherto almost exclusively with tipping barrels, that is to say, with barrels which, when opening, turn about a hinge. This hinge has to withstand the pressure of the powder gases, and has been found much too weak, especially when smokeless powder is used. Consequently, it has been attempted to remove this drawback by arranging transverse bolts on the extended barrel support. It is, however, on the one hand, very difficult and expensive to manufacture these complicated breeches in such manner that all the bolts etc. should fit into the "system box", and that they should all take up the pressure of the gases simultaneously, and, on the other hand, it has been impossible to go beyond given dimensions for the bolt, that is to say, those of the pressure-receiving surfaces. This drawback is obviated by the present invention by making the support for the breech block not as hitherto in the "system box", whereby the pressure receiving surface is limited, but by surrounding the block by grooves arranged all round the barrel so that the block cannot get loose.

The whole has been designed in such manner that single parts can be produced by machinery without any difficulty and that small inaccuracies in the manufacture do not affect the working. In this way, unlike in the present better-class guns, which are almost entirely of very careful hand work, the cost of manufacturing is considerably reduced, while at the same time they are rendered much steadier.

The breech block according to this invention may be easily applied to guns with three barrels. In this construction the third (or ball) barrel would be arranged at the top, and the breech block surrounded all round by grooves in front of the ball barrel. It is evident, the ball barrel may also be arranged under the shot barrels.

The shape of the grooves and lugs, or projections according to the present invention may vary greatly. It may, for instance, be simply square, stepped, triangular etc.: for instance, several equal grooves with corresponding lugs may be arranged one behind another, they may be interrupted or made with interrupted portions. The breech block may also be made to surround the barrel. The grooves with the lugs or projections may be arranged in front or behind the cartridge chamber, taking the stock as the starting point. Moreover, the block may be introduced by a rectilinear or rotary movement.

Constructions according to the present invention are illustrated, by way of example, in the accompanying drawing, of which,—

Figure 1 is a longitudinal section through a barrel, the breech being open, and the lock cocked. Fig. 2 is the same longitudinal section with trigger device. The gun is closed, the lock uncocked. Fig. 3 is a cross-section through the block and the breech lever. The right hand hammer is shown in elevation, the left hand one partly in section. Fig. 4 is a cross-section through the grooves of the barrels. Fig. 5 is a bolt for the breech lever. Fig. 6 is a longitudinal section through a barrel illustrating a modified form of construction to that shown in Figs. 1 to 4. Fig. 7 is a cross-section through Fig. 6 corresponding to the cross-section shown in Fig. 4. Fig. 8 is a longitudinal section through the barrels and the breech of another form of construction. Fig. 9 is a longitudinal section through the block shown in Fig. 8. Figs. 10–11 are cross-sections through the block *d* of the construction shown in Fig. 8.

The barrel *a* is provided with grooves *b* with which engage corresponding projections or lugs *c* of the block *d*. The block is closed by a cover *e*. On the bolt *f* are mounted the hammers *g*. An arm *i* of a lever *h* coöperates with a hook *k* secured to the gun barrel, for operating the lock and the breech block. The cartridge pushing device *l* is provided with a projection *m*. The hammers *g* are mounted loose on the bolt *f* and coöperate with the lugs *n* by means of the projections *o* rigid with the hammers. The lever *h* in the construction shown in Figs. 1 to 4 is rigidly secured to the bolt *f*.

The hammers g are provided with projections z to which are pivotally mounted sears q which keep the hammers cocked.

s is a spring for the sear q, shown in Fig. 1, and t a spring for the hammer g.

At $u\ v\ w$ is shown a device which releases the sear for firing.

If the breech be open, and the hammer cocked (Fig. 1), then, when the lever h is turned from right to left looking at Fig. 1, its arm i, after the cartridge pushing device l has been introduced into the barrel, engages with the bottom slide face k^2 of the hook k. The block is brought upwards, the barrels are closed, the hammers g are free to strike, as they remain standing while the bolt f with the projection n is turned back away from the lugs o. The gun is ready for firing. On the trigger device $u\ v\ w$ Fig. 2 being operated, the rod u presses against the sear q. The latter leaves the notch x, and the hammer flies forward, so that the whole comes into the position shown in Fig. 2. For the purpose of cocking, the projection n presses against the projection o of the hammer g, drives it during the rotation of the lever h until the sear q engages with the notch x, and thus the hammer is cocked. For opening, the lever h is depressed, the arm i engages with the upper slide face k^1 of the hook k, and the gun is opened. After the opening movement has been completed, the cartridge-pushing device l is brought out, the arm i of the lever h pressing against projection m during continued rotation.

Another construction is shown in Fig. 6. Here, in addition to the block-holding device shown in Figs. 1 to 5 there is arranged on the barrel another lug c^1 engaging with a corresponding groove of the block d.

Figs. 8 to 11 show the same construction or arrangement of grooves and lugs as in Fig. 6.

In Fig. 8, the upper arm of the lever h is forked, the hammer g is mounted on the bolt 2, and the lever h on the bolt 3 in the block. The lever h is rigidly secured to the bolt 3, and the hammers g, as in the former construction, are mounted loose on the bolt 2 and are operated by the said bolt 2 for the purpose of cocking, in the same way as in Figs. 1 to 3. The movement of the lever, however, is in this case transmitted, as will be seen from Fig. 9, from the bolt 3, by means of a rod 4 and arms 5 and 11, to the bolt 2 and hammers g (Figs. 8 to 11). In this case (Fig. 8) the bottom end of the hammer g is provided with a notch 7 with which the sear 6 engages. The sear 6 is secured to or made in one piece with the trigger 9, so that a transmission device, as used in the construction shown in Figs. 1 and 2, is no longer necessary. The sear 6 and the trigger 9 are rigidly secured to the bolt 8. The bolt 8 is supported in the block casing, in such manner that when the trigger device is operated, the whole breech device remains closed in an air-tight manner, and no rain or dust can get in.

In Fig. 11, an arm 10 is rigidly secured to the sear 6 and the bolt 8 for the purpose of controlling a hammer similar to or the same as that shown in Fig. 2.

For arranging the slide faces k^1 and k^2 with which the lever engages, it is immaterial whether they be arranged directly under the barrel as in the construction illustrated, or, for instance, on or in the stock. The breech lever will then be correspondingly varied in construction but similar in principle. Thus, for instance, the present arm i may be arranged towards the stock. The breech lever may also be operated by connecting the arm i to the barrels or to the stock by means of a pin or hinge instead of finding a point of rest on the slide faces. The slide faces k^1 and k^2 may either be arranged parallel, or at an angle to each other, or to the plane of the axis of the bore.

Claims.

1. In a gun provided with a barrel having grooves, and two slide faces, the combination of a breech closing device comprising an adjustable breech block having projections engaging said grooves; a lever adapted to engage said faces one at a time, and to move said block; a hammer carried by said block; and having a lug o, and a bolt for said hammer having a lug n, said lugs adapted to engage and cock said hammer when said lever is operated, substantially as described.

2. In a gun provided with a barrel having grooves, and two slide faces, the combination of a breech closing device comprising an adjustable breech block having projections engaging said grooves; a lever adapted to engage said faces one at a time, and to move said block; a hammer provided with a lug o, carried by said block; and a bolt provided with a lug n, on which said hammer is loosely mounted; said lever pivoted on said bolt and adapted to cock said hammer, after being disengaged from said faces, substantially as described.

3. In a gun provided with a barrel having grooves and slide faces, the combination of a breech closing casing constituting a breech block and having lugs engaging said grooves; a pivoted lever adapted to engage said faces one at a time, and to operate said block; a hammer pivotally mounted in said casing; a bolt having a projection on which said hammer is mounted; a sear; a spring coacting with said hammer, said casing completely inclosing at all times said hammer, sear and hammer spring, and connections whereby when the lever is operated the hammer is ready for firing, substantially as described.

4. In a gun provided with a barrel having grooves and slide faces, the combination of a breech closing casing constituting a breech

block and having lugs engaging said grooves; a pivoted lever adapted to engage said faces one at a time, and to operate said block; a hammer pivotally mounted in said casing; a bolt having a projection on which said hammer is mounted, as well as said lever; a sear; a notch in said casing with which said sear engages; a spring coacting with said hammer, said casing completely inclosing at all times said hammer, sear and hammer spring, and connections whereby when the lever is operated the hammer is ready for firing, substantially as described.

5. In a gun provided with a barrel having grooves and slide faces, the combination of a breech closing casing constituting a breech block and having lugs engaging said grooves; a pivoted lever adapted to engage said faces one at a time, and to operate said block; a hammer pivotally mounted in said casing; a bolt having a projection on which said hammer is mounted; a sear; a notch in said casing with which said sear engages; a sliding rod for tripping said sear; a spring coacting with said hammer, said casing completely inclosing at all times said hammer, sear and hammer spring; and connections whereby when the lever is operated the hammer is ready for firing, substantially as described.

6. In a gun provided with a barrel having grooves and slide faces, the combination of a breech closing casing constituting a breech block and having lugs engaging said grooves; a pivoted lever adapted to engage said faces one at a time, and to operate said block; a hammer pivotally mounted in said casing; a bolt having a projection on which said hammer is mounted; a sear; a notch in said casing with which said sear engages; a sliding rod for tripping said sear, said casing being provided with a hole through which said rod passes; a spring W, and a trigger for controlling said rod; a spring coacting with said hammer, said casing completely inclosing at all times said hammer, sear and hammer spring; and connections whereby when the lever is operated the hammer is ready for firing, substantially as described.

In testimony, that we claim the foregoing as our invention, we have signed our names in presence of two witnesses, this 12th day of November, 1906.

ANTON BOBBERT.
HERMANN ZELLER.

Witnesses:
PAUL R. THOMPSON,
ROBERT J. THOMPSON.