

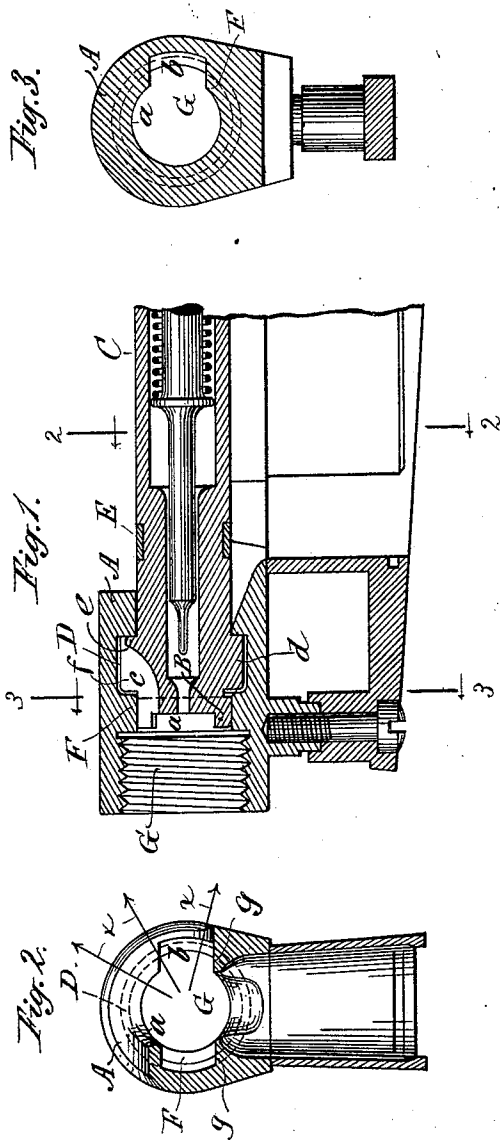
(No Model.)

2 Sheets—Sheet 1.

P. MAUSER.
SAFETY GAS VENT FOR BOLT GUNS.

No. 579,994.

Patented Apr. 6, 1897.



WITNESSES:

Fred White
Thomas F. Wallace

INVENTOR:

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By his Attorneys

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UNITED STATES PATENT OFFICE.

PAUL MAUSER, OF OBERNDORF, GERMANY, ASSIGNOR TO THE WAFFEN-FABRIK MAUSER, OF SAME PLACE.

SAFETY GAS-VENT FOR BOLT-GUNS.

SPECIFICATION forming part of Letters Patent No. 579,994, dated April 6, 1897.

Application filed September 6, 1895. Serial No. 561,653. (No model.) Patented in England August 13, 1895, No. 15,232; in Belgium August 13, 1895, No. 117,087; in Switzerland August 15, 1895, No. 10,951; in Austria September 20, 1895, No. 45/3,359, and in Hungary December 21, 1895, No. 4,951.

To all whom it may concern:

Be it known that I, PAUL MAUSER, a subject of the King of Würtemberg, residing in Oberndorf-on-the-Neckar, in the Kingdom of Würtemberg, Germany, have invented certain new and useful Improvements in Safety Breech-Cases for Breech-Loading Bolt-Guns, of which the following is a specification.

This invention is the subject of Letters Patent in England, No. 15,232, dated August 13, 1895; in Belgium, No. 117,087, dated August 13, 1895; in Austria, No. 45/3,359, dated September 20, 1895; in Hungary, No. 4,951, dated December 21, 1895, and in Switzerland, No. 10,951, dated August 15, 1895.

This invention relates to improvements in breech-loading bolt-guns, and aims to provide means for preventing the escape of gases at the breech end of such and analogous arms in case of the tearing or impairment of a cartridge and for avoiding the danger of damage to the arm or to the user thereof from the escape of such gases.

Notwithstanding the many improvements introduced in the manufacture of cartridge-cases, it sometimes happens that some are not strong enough for the high pressure of gases in modern arms, and these burst during firing, the consequence being that a large amount of the gases of explosion escapes through the breech and forms a danger to the user of the arm, and is also liable to damage the weapon. My present invention is designed to obviate this disadvantage or to reduce to a minimum these injurious occurrences or the disadvantageous results therefrom.

To this end in carrying out this invention I provide certain features of improvement, which will be hereinafter fully set forth, with reference to the accompanying drawings, in which—

Figure 1 is a fragmentary axial section of the bolt, receiver, and some of the parts of a breech-loading bolt-gun. Fig. 2 is a fragmentary cross-section thereof, cut on the line 2 2 in Fig. 1 and looking in the direction of the arrow, the bolt being omitted. Fig. 3 is a fragmentary cross-section cut on the line

3 3 in Fig. 1 and looking in the direction of the arrow, the bolt being omitted. Fig. 4 is a fragmentary horizontal section of the barrel and receiver, showing a cartridge in place and the bolt and extractor in plan in the closed position. Fig. 5 is a cross-section thereof, cut on the line 5 5 in Fig. 4, looking in the direction of the arrow, and showing the end of the bolt and extractor in elevation; and Fig. 6 is a cross-section cut on the line 6 6 in Fig. 4, looking in the direction of the arrow, showing the bolt and extractor in section just in front of the lugs.

Referring to the drawings, let A indicate the breech end or receiver of a breech-loading gun; C, the bolt thereof; B, the bolt-head; c, the left-hand locking-nipple; d, the right-hand locking-nipple, and D the receiving-socket formed in the breech end A for these nipples.

E is the extractor carried by the bolt.

II is the barrel, and I is a cartridge therein.

According to my present improvements, I provide a cylindrical head B on the end of the bolt in front of the nipples c d and a ring-shaped or partly-cylindrical flange F, having a partly-cylindrical recess a in the interior of the receiver A immediately behind the barrel, within which flange the bolt-head B enters, which according to my invention is constructed to make a tight fit throughout as much of this recess as possible immediately at rear of the cartridge-holding portion of the barrel of the gun. In the construction shown a recess b is formed in one of the side walls of the recess a, in which recess is located the claw of the extractor for removing the empty cartridge, which extractor snugly fits the said recess, and thus substantially closes communication therethrough.

The head B and the extractor, which together close the aperture through the flange F—that is, the recess a and recess b—prevent the gases due to the tearing of a cartridge from freely passing through the breech. In any event not more than a very small portion of the gases of explosion can escape through the breech by passing through any small opening or spaces that may exist around

these parts. Such escape will be immaterial, and the gases so escaping will pass off in the direction of the arrows *x* in Fig. 2 and cannot produce the dangerous effect of a rear flame.

A further feature of the present invention resides in constructing the left-hand locking-nipple *c* with a full, or substantially full, wall *e* at rear, instead of being cut entirely through, so that here also the passage formerly existing through which gases might escape is interrupted. This nipple according to my present invention is substantially solid, except for the recess *f* traversing its forward part and interrupted by the wall *e*, which recess is the usual slot into which a cartridge-ejector can pass to eject an empty shell when the bolt is withdrawn, and which is of well-known construction, except that it is so shallow at rear that its rear is closed by the adjacent wall of the receiver, so no gas can escape through it.

I prefer to make the recess *b* on a line with one of the pathways *g* for the locking-nipples.

A further advantage of my invention is that it avoids the necessity of the groove in the lower bearing of the gun-barrel for the passage of the right-hand locking-nipple, thereby not only enlarging the bearing-surface of the locking-nipple and bringing it nearer the axis of the breech-bolt, but at the same time blocking the passage of the gases to the magazine of the rifle, and thus securing the latter against damage.

In operation when the bolt is moved to the closed position the head *B* enters and closes the recess *a*. When the bolt is oscillated and moved to the open position, its head is withdrawn from the recess and there exists the ordinary communication through the latter.

It will be seen that my invention provides improvements which can be advantageously

availed of, and it will be understood that the invention is not limited to the particular details of construction and arrangement set forth and shown, as it may be employed according to such modifications as circumstances or the judgment of those skilled in the art may dictate without departing from the spirit of the invention.

In the construction shown the construction of the receiver and of the bolt is essentially the same as that in ordinary use, and well known, except that the receiver is constructed with the neck or portion *F* having cylindrical walls partially cut away to permit entrance of the end of the extractor carried by the bolt, that the bolt is constructed with a head *B* having substantially cylindrical walls fitting the walls of the neck and having an extractor-slot *f*, partly closed at rear by the wall *e*, which avoids any opening for the escape of gas at the rear of the cartridge.

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

The combination with a barrel, of a receiver *A* having locking-groove *D*, and slideways *g*, of a bolt *C* having locking-nipple *c* having an ejector-groove *f* and a rear wall *e* partly closing said groove and preventing leakage therethrough, 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:

WM. HAHN,
LUDWIG HOFFMANN.