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BREECH LOADING GUN

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Hitherto known types of breech loading guns have proved to possess important defects, one of which is that the axis about which the barrel is rotated on breaking the gun is disposed below the said barrel, resulting in uneven distribution of the stress on the breech lock. In multi-barrel rifles moreover, the barrels are soldered together or are bored from a single piece of material so that the wall thickness of the barrels is not the same around their entire circumferences. Uniform vibration of the barrels is consequently impossible and the uniformity of the shots is thus impaired. The arrangement of the breech lock is also unsatisfactory, since on account of its construction, it can be made by the skilled workmen only and nevertheless, soon begins to display weakness in that its parts no longer fit together with the necessary precision. Finally the safety devices, which act on the triggers only, are insufficient and are not adapted to the arrangement whereby the striker impacts at an angle on the bases of the cartridges. Apart from all these defects however, the parts of guns of this type are secured together by a number of screws each of which in itself is a source of danger and lessens the safety of handling the gun. The special difficulties of stripping and assembling such guns must also be mentioned in addition to the failings enumerated.

The object of the present invention is to obviate these defects in guns of the type set forth.

One embodiment of the invention is illustrated by way of example in the accompanying drawings in which:

Figs. 1 and 2 are longitudinal sections, perpendicular to each other, of a part of the gun. Fig. 3 is a plan of the breech lock.
Figs. 4 and 5 illustrate in longitudinal and cross sections respectively the arrangement of the sight bar.
Figs. 6, 7, 8 and 8a are cross sections on the lines xx, yy, zz and vv in Fig. 1 respectively.
Figs. 9, 10, 11 and 12 show the hinge member in side elevation, plan, end view and cross section on the line tt in Fig. 9, respectively.
Figs. 13, 14, 15 and 16 are a side elevation plan and end views respectively of the mounting with its trunnions, for the barrels and
Figs. 17, 18, 19, 20 and 21 illustrate the lock-body in side elevation, plan, end views and section on the line uu of Fig. 17 respectively.

The embodiment of the invention illustrated is a double-barrelled gun in which the rear ends of the barrels 1 are fitted into bores in a mounting block 2. The said mounting block has side cheeks 3 to which the wood sheathing 5 is secured by catches and an adjustable bolt 4 and is also provided with a horizontal rib 6 which maintains the barrels 1 at the desired distance from each other.

Each of the two side faces of the mounting block is provided with a trunnion, the axis of which intersects the dividing line between the barrels at right angles. The said trunnions serve for the mounting of the mounting block in the slots 8 in the side cheeks 9 of the hinge member 10. The barrels 1 are maintained at a definite distance from each other as far as their muzzles and are secured together by front and rear releasable straps 12, 11.

The sight bar 13 is mounted loosely on the upper barrel, is provided with recesses 14 in its lower surface, and is prevented from longitudinal movement both by the rim of the strap 11 and by the fact that its reduced ends 15, 16 are inserted in corresponding recesses in the mounting block 2 and the strap 12 (Figs. 4 and 13).

The closure of the breeches is effected by piston-like members or bolts 17 which fit in the ends of the bores of the mounting block 2 and are guided in chambers 18 (Fig. 9) in the hinge member 10 in such a manner that, at the extreme limit of their movement away from the mounting block, they emerge from the latter and allow the barrels to be dropped.

The bolts 17 and the transverse wall 19 between the chambers 18 of the hinge member 10 are bored coaxially to accommodate the locking cylinder 21 which is fitted with a locking lever 20 and is secured to the lower side of the hinge member 10 by means of an eccentric fastening 22 or the like. The bore in each bolt 17 is specially shaped for a purpose which will be explained below, exhibiting a step 23, corresponding to a projection 24 on the locking cylinder, and an inclined surface 25 which abuts, when the bolt is drawn back, on a surface 26 on the locking cylinder. In the locking position the arcuate cylindrical portions 27, 28 of the cylinder bear tightly against corresponding co-axial surface faces in the bores of the bolts.

On swinging the locking lever 20 out of its normal locking position into the position shown in dotted lines in Fig. 3, the locking cylinder is rotated and the projection 24
withdraws the bolts 17 from the mounting block due to the striking of the said projection against the steps 23 on the bolts. On swinging the locking lever back into locking position, the bolts are moved forward by the cooperation of the surfaces 26, 25 which slide on each other, thus locking the mounting block 2, and simultaneously pressing on the bases of the cartridges.

The bolts 17 and the locking cylinder 21 are bored co-axially with the barrels, and the co-axially arranged members 29 and 30 which press resiliently against each other and conjointly form the strikers are disposed and guided in the bores. The object of this arrangement is to obtain firstly axial striking movement of the strikers and secondly a certain safety action due to the fact that striking of the members 30 on the members 29 can only occur when they are exactly axially aligned, that is, only when the mounting block 2 is locked.

The lock is mounted directly on the hinge member 10 and consists of a lock body 31 in which are guided hammers 32 which strike the striker members 30 through openings 33 in the rear wall of the said hinge member. A setting or cocking plate 35 under the influence of a spring is mounted on a swallow tail guide 34, (Figs. 19 and 20) on the rear side of the lock body. On rearward movement of the setting plate, projections 36 thereon contact with projections 37 on the hammers 32, thus setting the latter.

The said rearward movement of the setting plate is effected by the rod 38 which is guided in a longitudinal bore 39 (Fig. 9) in one of the side cheeks of the hinge member 10. The forward end of the said rod is within the reach of one arm of a spring controlled crank lever 40, which is pivotally mounted on the wood sheathed bar 41 in such a manner that, on closing the barrels, one arm of the lever presses back the rod 38, thus setting the hammers.

The trigger rods 43, operated by trigger arms 44 on the triggers mounted in the lock, are disposed in a chamber in the lock body accessible through an upper opening 42.

The safety action proper of the gun is a direct action on the trigger rods. For this purpose the upper end of the locking cylinder 21 is provided with an eccentric recess 45 (Fig. 3) in which lies the end of a spring bolt 46 which is guided in the hinge member 10. On opening the lock and rotating the locking cylinder the end wall of the recess 45 presses back the bolt 46 which strikes a slidable mounted bar 47 to which an arm 48 on a stop member 49 is flexibly connected. The latter is rotatable about the trigger pivot 50 and projects through the rear wall of the lock body by means of arms 51 into the paths of the trigger rods. The position of the stop member 49 is fixed by a detent member 52 which is slidably mounted in the stop member 49 and is pressed against a notched projection 53 on the lock body.

When the lock is open the parts of the safety device occupy the positions indicated in dotted lines in Fig. 1. If the gun is then locked, the safety action on the trigger rods can be released by movement of the bar 47 by means of the usual press member 54.

The trigger guard 55 is secured at its forward end by the previously-mentioned eccentric fastening or catch 23, that element having a lateral projection which engages a groove in the forward end of the guard and also secures the locking cylinder 21 to the lower side of the hinge member 10 with the aid of another eccentric projection. Its rear end is loosely pivoted to the tail 56 of the lock and supports a bar 57 which engages in a slide 58 mounted in the lock tail. In its assembled position the end of the slide 58 abuts against a plate 59 secured in the stock.

The embodiment described makes it clear that, firstly, the gun is composed of members which can be manufactured by machinery in quantity and without any finishing operations by hand, and, secondly, that it is only necessary to release the two connections 4 and 23 in order to be able to strip the gun in a simple manner.

I claim:

1. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks, the inner faces whereof are slotted; a mounting block disposed between said cheeks and provided at opposite sides with laterally-projecting trunnions which are journeled in said slots; and a barrel having its breech end fitted in said block.

2. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks, the inner faces whereof are slotted; a mounting block pivotally journeled between said cheeks and provided at opposite sides with laterally-projecting trunnions which are journeled in said slots; and a pair of barrels having their breech ends fitted in the block, said block having means for maintaining the barrels a predetermined distance from each other.

3. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks, the inner faces whereof are slotted; a mounting block pivotally journeled between said cheeks and provided at opposite sides with laterally-projecting trunnions which are journeled in said slots; a pair of superposed barrels having their breech ends fitted in the block, said barrels being free of contact with each other throughout their entire length; and removable straps for securing the barrels together.

4. In a breech loading gun, a hinge member secured to the stock of the gun and provided
with forwardly-extending cheeks; a mounting block pivotally journaled between said cheeks; a pair of superposed barrels having their breech ends fitted in the block, said barrels being free of contact with each other throughout their entire length; removable front and rear straps for securing the barrels together, the front strap and the front face of the mounting block having recesses therein; and a detachable sight bar mounted upon the upper barrel and having its ends disposed in said recesses.

5. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks and with a horizontal chamber at the rear end thereof; a mounting block pivotally journaled between said cheeks and having a horizontal bore in line with such chamber; a barrel having its breech end fitted in the bore; a breech-closing bolt adapted to fit in the end of said bore; and a locking member passing perpendicularly through said bolt for forcing it alternatively into said bore or into said chamber.

6. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks and with a horizontal chamber at the rear end thereof; a mounting block pivotally journaled between said cheeks and having a horizontal bore in line with such chamber; a barrel having its breech end fitted in the bore; a breech-closing bolt adapted to fit in the end of said bore; and means associated with said bolt for forcing it into said bore or withdrawing it from the same into said chamber to release said block.

7. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks and with a horizontal chamber at the rear end thereof; a mounting block pivotally journaled between said cheeks and having a horizontal bore in line with such chamber; a barrel having its breech end fitted in the bore; a breech-closing bolt adapted to fit in the end of said bore; and a rotatable member associated with said bolt for forcing it into said bore or withdrawing it from the same into said chamber to release said block, said member and bolt having coaxing cam surfaces.

8. In a breech loading gun, a hinge member secured to the stock of the gun and provided with forwardly-extending cheeks and with a horizontal chamber at the rear end thereof; a mounting block pivotally journaled between said cheeks and having a horizontal bore in line with such chamber; a barrel having its breech end fitted in the bore; a breech-closing bolt adapted to fit in the end of said bore; a member associated with said bolt to move it alternatively into said bore or from the same into said chamber to release said block; and actuating striker members mounted in openings in said bolt and bolt-moving member.

9. In a breech loading gun, a hinge member secured to the stock of the gun; a block pivotally mounted thereon; a barrel having its breech end mounted in said block; a lock body for the barrel mounted directly on the hinge member; a hammer on said body; a trigger rod associated with the hammer and likewise mounted on the lock body; a cocking rod operated automatically by the act of breaking the gun; and a plate for setting the trigger rod actuated by the automatic operation of the cocking rod.

10. In a breech loading gun, a hinge member secured to the stock of the gun; a mounting block carried thereby; a barrel having its breech end mounted in said block; a lock for said barrel; a trigger; a trigger guard; a catch on said lock engaging one end of said guard; a plate secured in said stock; and a slide whereby the other end of the guard is connected adapted to abut against said plate when in position.

11. In a breech loading gun, a hinge member secured to the stock of the gun; a mounting block carried thereby; a barrel having its breech end mounted in said block; a lock for the barrel; a pivotally-mounted trigger; a support mounted to rock on the trigger pivot; a hammer; a trigger rod associated with the hammer; an arm on said support for locking the trigger rod; and means under the control of said lock for moving the locking arm into active position when the breech is opened.

12. A gun, according to claim 11, in which a pressure member is provided for returning the locking arm to inactive position when the breech is closed.

In testimony whereof I have signed my name.

ALOIS TOMISKA.