EJECTOR FOR FIREARMS

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1. In fire-arms firing on the forward stroke, par-
ticularly of the mass or inertia locked type, it is
impossible for reasons connected with the lock-
ing system itself to extract the cartridge shell
from the weapon by means of the usual resilient
extractors. It has, therefore, been necessary to
entrust the function of extraction to a so-called
claw, that is to say a lip-shaped projection of the
breech-block head engaging below the rim
of the cartridge shell. This lip-shaped projec-
tion, however, is incapable alone of holding the
shell to be ejected on the breech-block but on
the contrary it is only able to engage the shell
on one side. With this lip-shaped projection alone,
therefore, the shell, which during the re-
coll of the breech-block may have a tendency to
drop out of the claw under the influence of lateral
forces or in consequence of its own weight, can
not be carried with certainty to the ejector and
hence removed from the weapon. It has been
attempted to overcome this difficulty, for example,
by employing two resilient cartridge shell gri-
pping members provided above the claw and on
the right and left sides on the breech-block head.
This construction, besides being rather compli-
cated, however, cannot be used to an unlimited
extent.

The present invention relates to a novel con-
struction of the breech casing guiding the
breech-block body, in which the above-men-
tioned disadvantages are eliminated by the fact
that the breech casing is provided with a cross-
piece extending immediately behind the car-	ridge chamber transversely to the shell ejecting
direction, and the cartridge shell being released
from engagement by the claw is supported at its
forward edge on said cross-piece until the breech-
block has carried the shell directly against the
ejector.

In the accompanying drawing which shows, by
way of example, one embodiment of the inven-
tion:

Figure 1 shows the position of the cartridge
shell upon being extracted from the cartridge
chamber.

Figure 2 shows the cartridge shell at the mo-
moment of coming into contact with the ejector,
and

Figure 3 shows the cartridge shell in the tilted
position during ejection.

1 is the barrel fixed in the breech casing 2. 1a
is the cartridge chamber at the rear end of the
barrel. The breech block 6 with a lip-shaped
projection or claw 5 is longitudinally movable in
the breech casing 2. Immediately behind the car-
tridge chamber 1a is a cross-piece or plate 3 cover-
ing a part of the existing ejection slot 2a in the
breech casing 2. The cartridge shell 4 is pro-
vided at its rear end with a groove 4a into which
a lip 5a of the claw 5 is adapted to enter. An
ejector for the shells is shown at 1, and as will
be seen from the drawing, the ejector is removed
from the chamber 1a by a distance considerably
greater than the length of the shell.

The operation of the device is as follows: When
after firing a shot the breech-block 6 has
started to recoil and at the same time extracted
the cartridge shell 4 from the cartridge cham-
ber 1a, the shell is as yet only held by the lip 5a
of the claw. This support is however not suffi-
cient in every case to hold the cartridge shell 4
in position in the breech-block-axis. Under the
action of gravity and also of the one-sided pull
on the cartridge shell rim 4a, as the lip or ex-
tractor 5a engages in the groove 4a at its lower
portion, cartridge shell 4 sometimes moves with
its front end in a direction towards the ejection
slot 2a. This movement is stopped by the cross-
piece 3 before the cartridge shell 4 is able to
become released from the engagement by the
claw lip 5a. Premature jumping of the cartridge
shell 4 out of the claw 5 is thereby prevented.

For the satisfactory operation of the type of fire-
arm shown, all the cartridge shells must abut
against the ejector 7 and receive from the latter
an impact expelling the cartridge shell which
 tilts downwardly out of the breech casing.

Figure 2 shows the position of the parts at
the moment at which the front end of the car-
tridge shell has left the cross-piece 3 and the
base of the cartridge has reached the ejector 7.

The distance of the cross-piece from the lon-
gitudinal axis of the fire-arm determines the angle
of inclination which the cartridge shell assumes
after leaving the cartridge chamber upon the re-
coll of the breech-block. For requirements of
reliability of withdrawal by the claw, the above-
mentioned distance should not exceed one-
quarter of the length of the cartridge shell.

In order to hold the cartridge shell 4 as long
as possible in the position maintained by the
cross-piece 3, the length of the cross-piece is pro-
portioned so that the distance from the end edge
of the cross-piece to the tip of the ejector only
slightly exceeds the length of the cartridge shell.
The short distance over which the cartridge shell,
released by the cross-piece, travels until it abuts
against the ejector does not permit any substi-
tial alternation in the position of the shell, so that
it also reaches the ejector in the same position in which it slides along the cross-piece.

It is possible, in place of a separately inserted cross-piece to construct the breech casing in such a manner that its wall performs the function of the cross-piece.

Having now particularly described and ascertained the nature of the said invention and in what manner the same is to be perforated, I declare that what I claim is:

1. In a fire-arm, a breech casing, a barrel supported in said casing and having a cartridge chamber dimensioned to receive a cartridge of a given shell length, a breech-block movable toward and away from said chamber, said breech-block having means for releasably engaging a cartridge shell, an ejector spaced rearwardly of the chamber by a distance considerably greater than the length of the cartridge shell, and a cross-piece positioned behind the cartridge chamber and parallel to the longitudinal axis of the barrel and transversely to the direction of ejection of the cartridge shell for supporting the forward edge of the latter as it is withdrawn by the breech-block, there being an opening at the bottom of the breech casing to the rear of the cross-piece and below the ejector for the downward discharge of the shell, and the distance between the rear edge of the cross-piece and the ejector being sufficient to enable the cartridge shell to fall through said opening, but being of such reduced extent that the cross-piece underlies the forward edge of the shell up to substantially the moment that the shell strikes the ejector.

2. A fire-arm as claimed in claim 1, wherein the distance of the cross-piece from the longitudinal axis of the weapon is at the most one-quarter the length of the cartridge shell.

3. In a fire-arm, a breech casing having a forward and a rear section, a barrel positioned in the forward section of the breech casing and having a cartridge chamber dimensioned to receive a cartridge of a given shell length, a stationary ejector in the rear section of said breech casing and above the longitudinal axis of the barrel, a breech block slidably positioned within said breech casing, means on the breech block for releasably engaging the bottom rear edge of a cartridge shell, and a supporting member extending parallel to the longitudinal axis of the barrel and positioned behind the cartridge chamber in the forward section of said breech casing and at a level below the cartridge chamber for limiting the downward drop of the free end of the with- drawn shell, the breech casing having an opening in its bottom between the rear edge of the supporting member and the ejector for the discharge of the cartridge shells, the distance between said edge and the ejector being such that the member underlies the forward edge of a withdrawn shell up to substantially the moment that it strikes the ejector.

4. In a fire-arm, a breech casing, a cartridge chamber in said casing, said chamber being dimensioned to receive a cartridge of a given shell length, a stationary ejector member in said breech casing positioned rearwardly of the cartridge chamber and above the longitudinal axis thereof, a breech-block slidably positioned within said breech casing, said breech-block having a single claw extractor member arranged to engage the bottom rear edge of a cartridge shell, and a cross-piece positioned transversely to the direction of ejection of a cartridge shell and below the level of the cartridge chamber, the rear edge of the shell projecting above the breech block and said cross-piece being arranged for supporting the forward end of the tilted cartridge shell during its extraction until the breech block has carried the shell rearwardly into contact with the ejector member, the ejector member engaging the upper portion of the rear face of the shell and thereby causing the shell to tilt downwardly with the extractor member as a pivot, the breech casing having an opening in its bottom between the supporting member and the ejector for the discharge of the cartridge shells, the distance between said edge and the ejector being such that the member underlies the forward edge of a withdrawn shell up to substantially the moment that it strikes the ejector.

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