

DEVICE FOR DEFLECTING LINKS AND TURRET EQUIPPED WITH SUCH A
DEFLECTOR DEVICE

The technical field of the invention is that of turrets
5 equipped with a weapon with a dual feed for ammunition belts
formed by links and devices for deflecting links mounted on
such turrets.

Weapons with a dual ammunition feed are known, for
example from patent EP129457. They make it possible to fire
10 two different types of ammunition, for example piercing
ammunition and explosive ammunition.

The ammunition is brought to the weapon by corridors and
connected to one another by belts made up of links.

During the insertion of an ammunition item into the
15 chamber of the weapon, the link is ejected and it is expelled
outside the turret. Most often, the link is steered and
oriented by fixed sheet metal plates that cause it to fall
toward a storage magazine. For example, patent EP2107329 may
be considered, which discloses a device making it possible to
20 separate the various links and which comprises deflectors
orienting the separated links vertically toward the ground.

One problem encountered with dual-feed weapons is that
the links leaving one of the ejection orifices are ejected
toward the other ejection orifice. This results in a risk of
25 clogging of one of the ejection orifices, leading to firing
incidents.

Furthermore, the space separating the ejection orifices
is most often limited, which complicates the placement of a
fixed deflector.

30 It is the aim of the invention to propose a device for
deflecting links that does not have such drawbacks.

The invention also relates to a turret equipped with a
dual-feed weapon for ammunition equipped with such a device
for deflecting links.

Thus, the device and the turret according to the invention make it possible to discharge the links coming from one or the other firing path without there being any accumulation or obstruction of one or the other path by the firing residue.

Thus, the invention relates to a device for deflecting links intended to equip a turret equipped with a weapon with a dual feed for ammunition belts formed by links, which device is characterized in that it comprises a deflector flap that is intended to be disposed between two orifices for ejecting links out of the turret, which flap is intended to be connected to the weapon by a fixing means comprising a ball joint connection disposed towards the front of the weapon, on the one hand, and a horizontal slide connection disposed towards the rear of the weapon, on the other hand, the flap thus being able to be pushed towards one orifice by the links leaving through the other orifice.

According to one specific embodiment, the device is characterized in that the flap is secured to a support intended to allow it to be fixed to the turret, which support comprises two strips connected by spacers, the flap extending between the two strips and being articulated relative to the two strips, the flap being connected to a first strip by the ball joint connection and being connected to the second strip by the slide connection.

The slide connection may have a travel of at least 20 mm on either side of a median position.

The invention also relates to a turret equipped with a weapon with a dual feed of ammunition belts formed by links, which turret comprises a first and a second orifice for ejecting links disposed in its rear part and substantially across from one another, which turret comprises at least one flap deflecting links disposed in the vicinity of one of the

orifices for ejecting links, which turret is characterized in that it comprises a device for deflecting links according to the invention.

5 The invention will be better understood upon reading the following description, the description being done in reference to the appended drawings and in which:

- 10 - Figure 1 is a rear perspective view of a turret according to the invention, this view making it possible to locate the deflector device according to the invention;
 - Figure 2 is a partial and enlarged view of the turret showing the deflector according to the invention;
 - Figure 3 is a perspective view of one embodiment of the deflector according to the invention, the deflector being shown isolated from the turret;
 - 15 - Figures 4a, 4b and 4c are three views of this deflector, figure 4a being a top view, figure 4b a side view and figure 4c a rear front view;
 - Figure 5 is a schematic top view of the deflector showing the extreme positions of the flap.
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In reference to figures 1 and 2, a turret 1 according to the invention comprises a weapon 2, the figure showing the tube 2a and the rear breech casing 2b. This weapon is a tubular weapon with a dual ammunition feed. Such a weapon is disclosed by patent EP129457. The ammunition is in belts and is brought from two magazines 3a and 3b via corridors, not visible in the figures, and that are connected to the weapon below the rear cover 4.

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Figure 2 more precisely shows the rear of the breech casing 2b, which bears the two ejection orifices of the links 5a and 5b. This figure 2 shows links M leaving the weapon.

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The turret 1 includes metal guide sheets 6a and 6b that are arranged below each orifice 5a and 5b and that guide the links in a direction inclined toward the ground.

Furthermore, a lower metal sheet 7 (figure 1) forms an
5 apron that orients the links M toward the rear of the turret 1.

The turret 1 includes a device 8 for deflecting links according to the invention, which device comprises a deflector flap 9 that is intended to be disposed between the
10 two ejection orifices 5a and 5b.

As shown more specifically in figure 3 and figures 4a, 4b and 4c, the flap 9 is secured to a support 10 that is intended to allow it to be fixed to the turret 1 by conventional means that are not shown, such as screws and
15 nuts. The support 10 thus comprises two strips 10a and 10b that are connected by spacers 11.

Figures 3 to 5 identify the ejection orifices 5a and 5b as well as the front AV and the rear AR of the weapon.

The flap 9 therefore extends between the two strips 10a
20 and 10b and it is articulated relative to the two strips. More specifically, the flap 9 is connected to the first strip 10a (that disposed toward the front AV of the weapon) by a ball joint connection 12, and it is connected to the second strip 10b (that disposed toward the rear AR of the weapon) by
25 a slide connection 13.

From a structural perspective, the flap 9 bears two clamps 14 and 15 that are fixed to each upper end of the flap 9. A front clamp 14 bears a rod with a spherical end (not shown) that is engaged in a complementary seat fixed to the
30 first strip 10a. The rod and seat form the ball joint 12. A rear clamp 15 bears a rod 15a that circulates in a horizontal groove 16 arranged in the second strip 10b. The rod 15a and the groove 16 form the slide connection 13.

The ball joint 12 thus forms a fixed fastening point P of the flap on the first strip, which fastening point is disposed toward the front AV of the weapon and in the vicinity of which the flap 9 can *a priori* pivot in all
 5 directions.

The pivoting capability of the flap 9 is limited by the slide connection 13, which only allows a translation of the rod 15a in the groove 16 and a pivoting of the flap 9 about its axis 17, which is the straight line connecting the point
 10 P to the rod 15a. The axis 17 practically follows the upper edge of the flap 9. The axis 17 can therefore pivot in a limited manner about an axis 18 perpendicular to the axis 17. The axis 18 is substantially vertical and passes through the sphere of the ball joint 12.

Figure 5 schematically shows the possible extreme positions 17a and 17b for the axis 17 of the flap 9. In these positions, the axis 17 of the flap forms an angle β relative to its median position 17m.
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The groove 16 has a length of substantially 40 mm, which
 20 allows a movement of the rod 15a of at least 20 mm on either side of a median position 17m of the axis 17.

Furthermore, in each position of the flap 9, the latter can also pivot about its axis 17 and adopt an incline by angle α (figure 4c).

Owing to the invention, when a link M is ejected through one of the ejection orifices, it pushes the flap 9, which then approaches the other ejection orifice.
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One thus avoids the clogging of one orifice by the links ejected from the other orifice.

The flap remains free to pivot about its axis 17 and adopts, during the impact from the links, an orientation that is favorable to a deflection of the links, both towards the rear of the turret 1 (owing to the angle β) and towards the
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bottom (owing to the angle α), towards the lower metal sheet 7.

When another feed path of the weapon is used, the links are ejected via the other ejection orifice and the flap 9 5 assumes a position symmetrical to the previous one.

In all cases, the flap adopts the position most favorable to the ejection of the links from one or the other path, while preventing the closing off of the opposite path, and in a minimal bulk.

10 As a variant, it is possible to secure the flap 9 to a ball joint and a slide that are directly connected to the weapon, without defining a specific support.

CLAIMS

1- A device (8) for deflecting links intended to equip a turret (1) equipped with a weapon (2) with a dual feed for ammunition belts formed by links, which device is **characterized in that** it comprises a deflector flap (9) that is intended, in use, to be disposed between two orifices (5a, 5b) for ejecting links (M) out of the turret, and a fixing means configured to connect, in use, the flap (9) to the weapon, the fixing means comprising a ball joint connection (12) arranged so as to be disposed, in use, towards a front (AV) of the weapon, on the one hand, and a horizontal slide connection (13) arranged so as to be disposed, in use, towards a rear (AR) of the weapon, on the other hand, the flap (9) thus being able, in use, to be pushed towards either one of the orifices (5a, 5b) by the links (M) leaving through the other of the orifices (5a, 5b).

2- The device for deflecting links according to claim 1, which device is characterized in that the flap (9) is secured to a support (10) configured to fix, in use, the flap (9) to the turret (1), wherein the support (10) comprises two strips (10a, 10b) connected by spacers (11), the flap (9) extending between the two strips (10a, 10b) and being articulated relative to the two strips (10a, 10b), the flap (9) being connected to a first one of the two strips (10a) by the ball joint connection (12) and being connected to a second one of the two strips (10b) by the slide connection (13).

3- The device for deflecting links according to one of claims 1 or 2, which device is characterized in that the slide connection (13) has a travel of at least 20 mm on either side of a median position.

4- A turret (1) equipped with a weapon with a dual
feed of ammunition belts formed by links (M), which turret
(1) comprises a first orifice (5a) and a second orifice (5b)
both for ejecting links, the first and second orifices (5a,
5 5b) being disposed in a rear part of the turret (1) and
substantially across from one another, which turret (1)
comprises at least one flap (9) deflecting links disposed in
a vicinity of one of the first and second orifices (5a, 5b),
which turret (1) is **characterized in that** the turret (1)
10 comprises a device (8) for deflecting links according to one
of claims 1 to 3.