

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

SIG SAUER INC.,
Petitioner,

v.

LONE STAR FUTURE WEAPONS, INC.,
Patent Owner.

Case No. IPR2025-00410
U.S. Patent No. 8,919,238

**PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY
RESPONSE TO PETITION**

TABLE OF EXHIBITS

Exhibit No.	Description
1001	U.S. Patent No. 8,919,238 (“the ’238 Patent”)
1002	Prosecution History of U.S. Patent No. 8,919,238 (“Prosecution History”)
1003	Declaration of John Nixon, EUR ING
1004	Curriculum Vitae of John Nixon, EUR ING
1005	U.S. Patent No. 2,223,004 (“Holek”)
1006	U.S. Patent No. 6,343,536 (“Rossier”)
1007	George M. Chinn, <i>The Machine Gun</i> , Vol. 5 (1987)
1008	Declaration of Dr. Sylvia D. Hall-Ellis
1009	Curriculum Vitae of Dr. Sylvia D. Hall-Ellis
1010	Attachment 1A to Declaration of Dr. Sylvia D. Hall-Ellis - Library of Congress MARC Record for Chinn
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The Petition demonstrates how the prior art references disclose the claimed limitations by Holec (EX1005) and Rossier (EX1006). Patent Owner's ("PO") arguments to the contrary in PO's Preliminary Response (Paper 9, "POPR") fail for at least the reasons explained below.

I. Holec Discloses the Elements Identified in PO's Response

First, PO argues that Holec fails to teach that the impulse of the fired round does not teach stopping the forward momentum of the operating group (the op-rod assembly, the bolt assembly, and the barrel extension). POPR at 11. PO specifically argues that Holec teaches that the forward movement of a fired round in Holec is not stopped because Holec teaches that "the energy of the parts which are moving forward overcomes the energy of the recoil resulting from the firing." POPR at 13 (quoting EX1005, p. 2, col. 2, ll. 42-45). PO's argument inappropriately cherry-picks from Holec, because the *very next sentence* recites that "[t]he barrel with the casing of the breech mechanism recoil ***without reaching the foremost fixed stops.***" EX1005, p. 2, col. 2, ll. 45-47 (emphasis added).

Holec's teaching that the barrel with the casing "recoil[s] ***without reaching*** the foremost fixed stops" necessarily teaches that the forward momentum of the barrel and casing stops prior to reaching the fixed stops due to the impulse of the fired round. In other words, if PO's argument that Holec does not teach that the forward momentum of the operating group is stopped were true, then that group would

necessarily make contact with the *foremost fixed stops*, contrary to Holek's explicit teaching to the contrary.

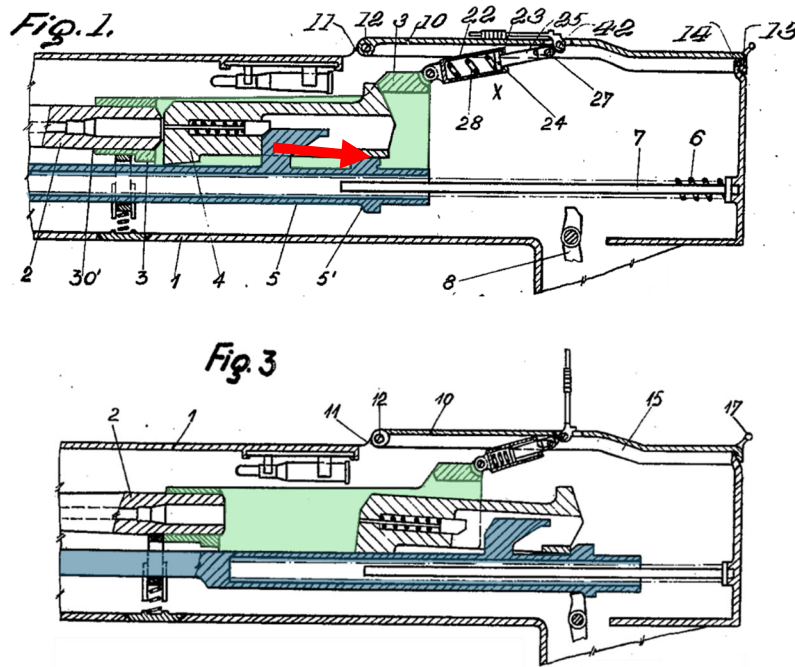
Second, PO argues that Holek does not disclose "an operating rod (op-rod) assembly at least partially housed and arranged to axially translate within the barrel extension in the charged condition" as recited in claim 1 of the '238 Patent. POPR at 15-18. PO argues that Figure 3 of Holek depicts the charged condition. *Id.* at 16. PO's interpretation is incorrect because Figure 3 illustrates Holek at the beginning of the firing condition, not the charged condition.

More specifically, claim 1 of the '238 Patent recites "an operating group configured to operate the weapon system *through a charged condition*, a firing condition, and a recoil condition." EX1001, cl. 1 (emphasis added). As the text of claim 1 itself discloses, a charge condition represents a condition that the operating group moves through, *i.e.*, the condition in which the operating group is being charged.

This understanding is consistent with other portions of the '238 Patent. The '238 Patent describes that "drive spring 670 ... engages and biases the op-rod assembly 370 forward such that the op-rod assembly 370 may be *translated in a rearward direction to charge the weapon system and initiate the firing cycle.*" EX1001 at 9:57-62. *See also id.* at 1:45-47 ("The weapon system includes a receiver and an operating group configured to operate the weapon system *through*

a charged condition”) (emphasis added); 8:4-7 (“The charging handle 371 enables an operator to translate the op-rod assembly 370 in a *rearward direction to charge the weapon system 10 in preparation for firing*”) (emphasis added).

The process of moving through the charging condition is illustrated in Holek with the operating group moving between the depictions in Holek Figure 1 to Holek Figure 3. The operating rod assembly of Holek (highlighted in blue in Fig 1, below) moves axially within the barrel extension (highlighted in green) between the various operating states (loaded, firing, recoiling) as further illustrated in Figures 1 and 3.



Holek, Figs. 1, 3 (annotated)

The axial movement of this operating rod assembly (blue) moves within the barrel extension (green). EX1005 at Figs. 1, 3. As shown, the upwardly projecting

element of the operating rod assembly moves within the barrel extension as the operating rod moves through the charged condition. As the operating rod is charged, this upwardly projecting element moves through the barrel extension as Holek transitions through the charged condition to the firing condition.

II. Rossier Discloses the Elements Identified in PO's Response

First, PO argues that Rossier does not disclose that “the op-rod assembly and the bolt assembly are locked to the barrel extension during the firing condition. POPR at 19. However, PO's own annotated figures depict a bolt assembly (yellow) and op-rod assembly (blue) being located within, and locked to, the barrel extension. POPR at 20-21 (providing annotated figs. 6 and 11 of Rossier).

PO argument improperly re-construes the limitation as requiring that the front of the op-rod assembly and the bolt assembly contact the barrel extension directly. However, there is no such requirement in the plain text of claim 1, which states “the op-rod assembly and bolt assembly are locked to the barrel extension” and does not specify that the locking be at the forward-most point of the op-rod assembly and the bolt assembly. Rather, as depicted in Fig. 11, these structures are explicitly locked to the barrel extension laterally. The specification of Rossier further confirms this relationship, stating, in its description of Fig. 11, that “[t]he bolt assembly 42 is in its forward and *locked position within the barrel extension 60.*” EX1006 at 8:22-23 (emphasis added); *id.* at Figs. 6, 11.

Second, PO argues that Rossier does not disclose a bolt assembly “at least partially housed within a barrel extension.” POPR at 23. However, 1) the PO’s own description concedes that the bolt assembly of Rossier “is housed within an op-rod assembly,” 2) PO’s annotated Figure 6 of Rossier depicts the bolt assembly (yellow) within the op-rod assembly (blue), and 3) PO’s annotated Figure 6 of Rossier depicts the op-rod assembly (blue) as being housed within the barrel extension (green). *Id.* Thus, the dispute between the parties thus centers on whether being housed within a structure which is, itself, housed within another structure is covered by the limitation.

The claims of the '238 Patent use open-ended transitional phrases and language indicating that the claim does not exclude additional elements or steps. *Mars Inc. v. H.J. Heinz Co.*, 377 F.3d 1369, 1376, (Fed. Cir. 2004) (“like the term ‘comprising,’ the terms ‘containing’ and ‘mixture’ are open-ended.”). Moreover, the claims do not include any additional limiting language such as “housed directly” or “housed without any intermediate structure” that would indicate that indirect housing is not included within the claim language. As such, the evidence cited by PO confirms that Rossier teaches this limitation.

Respectfully submitted,

Dated: June 6, 2025

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that on June 6, 2025 true and correct copies of the foregoing PETITIONERS' REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE TO PETITION were served electronically on Patent Owner's lead and backup counsel at PTAB@sternekessler.com and at the following addresses:

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