

THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 23

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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Ex parte YESHAYAHU S. A. GOLDSTEIN  
and MELVIN WIDNER

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Appeal No. 96-2652  
Application No. 08/329,755<sup>1</sup>

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ON BRIEF

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Before CALVERT, ABRAMS, and CRAWFORD, Administrative Patent Judges.

CRAWFORD, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on an appeal from the examiner's final rejection of claims 28, 31, 35, 38 and 40-42. Claims 1-27 and 36-37 are allowed. Claims 29-30, 32-34 and 39 are objected to as being dependant upon a rejected base claim but would be allowable if rewritten in independent form.

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<sup>1</sup> Application for patent filed October 26, 1994.

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Appellants' invention is an apparatus for accelerating a projectile in a gun barrel with high pressure plasma. Claim 28 is exemplary of the subject matter on appeal and recites:

28. Apparatus for accelerating a projectile in a gun barrel comprising an electric discharge device including an electrode for establishing a high pressure plasma with sufficient energy to accelerate the projectile in the barrel, the high pressure plasma flowing via a flow path from the discharge device to the projectile to accelerate the projectile axially along the barrel, a confining structure for the plasma, the plasma having sufficient pressure so it tends to flow axially of the barrel out of the confining structure into contact with the electrode in a direction opposite from the direction of projectile acceleration in the barrel and thereby tends to establish an undesirable electrical connection between the electrode and another part of the discharge device, the confining structure including a chamber located axially behind the electric discharge device, a soft non-electrically conductive material in the chamber, the soft material expanding radially and being compressed axially against walls of the chamber to form a seal for overcoming the tendency of the plasma to flow out of the confining structure into contact with the electrode to prevent the undesirable electrical connection from being established.

#### THE REFERENCES

The following references were relied on by the examiner in support of the final rejection:

Hunting	161,514	Mar. 30, 1875
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Mortensen

5,444,208

Aug. 22, 1995  
(filed March 29, 1993)

THE REJECTION

Claims 28, 31, 35, 38 and 40-42 stand rejected under 35 U.S.C. § 103 as being unpatentable over Mortensen in view of Hunting.

Rather than reiterate the respective positions of the examiner and the appellants in support of their respective positions, reference is made to the examiner's answer (Paper No. 18) and the appellants' brief (Paper No. 16) and reply brief (Paper No. 19) for the full exposition thereof.

We have carefully reviewed the appellants' invention as described in the specification, the appealed claims, the prior art applied by the examiner, and the respective positions advanced by the appellants and the examiner. As a consequence of this review, we make the determinations which follow.

We find that Mortensen discloses an apparatus for accelerating a projectile 16 in a barrel which includes an electric discharge device with an electrode 34 for

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establishing a plasma with sufficient energy to accelerate the projectile 16 in the barrel (Fig. 1; Col. 6, lines 8-23). The plasma flows via a flow path from the discharge device to the projectile to accelerate the projectile.

Hunting discloses a cartridge shell for breech-loading firearms. The cartridge includes a head B. A rubber disk C is placed on the inner side of head B and is held by a plate D to prevent powder from blowing out at the breech.

The examiner states:

At the time the invention was made, Mortensen disclosed or described an apparatus as claimed with the difference that the subject matter of the confining structure was not set forth. However, at that time, Hunting taught such confining structures, rubber disk C held by plate D, and the advantages thereof, right column lines 1-2 and 13-14. From such teachings, it would have been obvious to a person having ordinary skill in this art that Mortensen may be provided with such a confining structure for the purpose of securing the advantages of Hunting. Accordingly, the claimed subject matter as a whole is rejected as obvious. [Examiner's Answer at page 3].

We reverse. We are at a loss to understand the examiner's reasoning. First, Hunting teaches that the rubber disk C prevents powder from blowing out at the breech. The injection device in Mortensen does not include powder nor has

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the examiner directed our attention to any suggestion in Mortensen or Hunting to modify Mortensen to include any sort of confining structure. As such, we find no motivation to combine the teachings of Mortensen and Hunting and conclude that the only motivation must stem from the appellants' own disclosure.

In addition, we agree with the appellants that it is not clear how the two reference teachings could be combined. The examiner's "example" of a possible location for the confining structure is not logical because, as pointed out by the appellants, case 12 is positioned to prevent any blow out without the addition of rubber disk C.

In addition, there is no disclosure in either reference of the establishment of a plasma with sufficient pressure so that it tends to flow axially of the barrel into contact with an electrode in a direction opposite from the direction of a projectile acceleration and thereby tends to contact the electrode or establish an undesirable electrical connection between the electrode and another part of the discharge device as required by the claims.

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The decision of the examiner is reversed.

REVERSED

IAN A. CALVERT	)	
Administrative Patent Judge	)	
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	)	BOARD OF PATENT
NEAL E. ABRAMS	)	APPEALS
Administrative Patent Judge	)	AND
	)	INTERFERENCES
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MURRIEL E. CRAWFORD	)	
Administrative Patent Judge	)	

MEC/gjh

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***GJH***

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APJ CRAWFORD

APJ CALVERT

APJ ABRAMS

REVERSED

Prepared: September 20, 1999