

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES

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*Ex parte* EDUARD I. KHVICHIA,  
KHVICHIA D. EDUARDOVICH,  
And KHVICHIA G. EDUARDOVICH

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Appeal 2008-2346  
Application 10/399,795  
Technology Center 3600

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Decided: May 28, 2008

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Before THOMAS A. WALTZ, KAREN M. HASTINGS, and  
MICHAEL P. COLAIANNI, *Administrative Patent Judges*.

COLAIANNI, *Administrative Patent Judge*.

DECISION ON APPEAL

Appellants appeal under 35 U.S.C. § 134 the final rejection of claims 3 and 5. We have jurisdiction over the appeal pursuant to 35 U.S.C. § 6(b).

We AFFIRM.

INTRODUCTION

Appellants claim a plastic case cartridge comprising, in relevant part, a thin-walled cup-shaped member having three successively arranged side

wall portions defined by three successively arranged conical frustum portions of length and taper increasing from the bottom part, and a dam-diaphragm (Figure 1, ref. no. 7) having a thickness between about 0.2 mm and 0.5 mm (claim 3).

Claim 3 is illustrative:

3. A plastic cartridge case comprising:

a thin-walled cup-shaped member, said cup-shaped member having a cylindrical external surface, and an internal surface including a bottom part and three successively arranged side wall portions defined by three successively arranged conical frustum portions of length and taper increasing from the bottom part;

an opening in the bottom part to outside of said cup-shaped member for primer installations; and

a dam-diaphragm arranged between the opening in said bottom part and an internal space of said cup-shaped member to block said opening, said dam-diaphragm having a thickness between about 0.2 mm and 0.5 mm.

The Examiner relies on the following prior art references as evidence of unpatentability:

King	3,611,938	Oct. 12, 1971
Hendricks	3,732,820	May 15, 1973
Vollers	4,315,462	Feb. 16, 1982

The rejection as presented by the Examiner is as follows:

1. Claims 3 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hendricks in view of King and Vollers.

Appellants separately argue independent claim 3 only. Claim 5, accordingly, stands or falls with our assessment of the rejection of claim 3 over Hendricks in view of King and Vollers.

The Examiner finds that Hendricks and King both disclose generally the features of claim 3 (Ans. 3-6). The Examiner finds that Hendricks discloses a rupturable thin membrane (i.e., a dam-diaphragm) (Ans. 3). The Examiner finds that King discloses a tapered side wall increasing in taper from the bottom to the top of the tube so as to biaxially orient the tube and provide strength to the thin wall (Ans. 5). The Examiner concludes that it would have been *prima facie* obvious to combine King's tapered sidewalls with Hendricks' cartridge case to obtain a plastic cartridge case that had increased biaxial orientation strength, had a thinner wall at the top for crimping and was easier to remove from the die (Ans. 6).

The Examiner finds that neither King nor Hendricks discloses a thin membrane having a thickness of about 0.2 mm to 0.5 mm (Ans. 6). The Examiner finds that Vollers' figures suggest a membrane having such a thickness (Ans. 6-7). The Examiner further finds that Appellants have not disclosed that the specific thickness is for any specific reason, solves any stated problem, or is for any particular purpose such that the claimed thickness is nothing other than a matter of design choice and it appears that the invention would perform equally well with a thin membrane that is close to the claimed thickness (Ans. 7 and 10). The Examiner concludes that it would have been obvious to make Hendricks' membrane have a thickness in the range disclosed in Vollers to obtain a cartridge having a separate primer so that it is easier to manufacture as suggested by Vollers (Ans. 8).

OPINION

Appellants argue Hendricks in view of King and Vollers fail to teach or suggest “a thin-walled cup-shaped member which has an internal surface including a bottom part and three successively arranged side wall portions defined by three successively arranged conical frustum portions of length and taper increasing from the bottom part” (i.e., the taper claim feature), or a dam-diaphragm having a thickness of 0.2-0.5 mm (Br. 5). Appellants contend that King discloses a uniform taper from top to bottom, not three portions of increasing taper (Br. 7). Appellants contend that the Examiner’s interpretation of King’s and Hendricks’ disclosures as having three portions of increasing taper is contrary to the intent of the inventors (Br. 7-8). Appellants contend that if a taper increases, it inherently must create a new taper and it inherently must include multiple tapers, and that King’s increasing diameter does not imply the presence of an increasing taper (Reply Br. 2).

Regarding the dam-diaphragm thickness, Appellants contend that the Examiner improperly relies on Vollers’ figures, which are not indicated as being drawn to scale, to determine specific values for the dam-diaphragm from the figures (Br. 8-10).

Appellants argue that the Khvichia Declaration filed January 17, 2006, establishes that the combination of the three side wall portions of length and taper increasing from the bottom, and the dam-diaphragm having a thickness between about 0.2 and 0.5 mm, are necessary for more consistent shot speeds and maximum powder pressures (i.e., unexpected results) (Br. 11).

We have considered all of Appellants' arguments and evidence, and are unpersuaded for the reasons below.

The Examiner bears the initial burden of establishing a *prima facie* case. *In re Oetiker*, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

Regarding the taper claim feature, we agree with the Examiner that King discloses an increase in the internal diameter of the blank 10 from the bottom of the blank to the top (Ans. 5). We also agree with the Examiner's analysis that the claims do not require any indication on the cartridge case as to where the three portions might be and do not require the three portions to be distinguishable from each other such that arbitrary lengths may be set along King's blank 10 to correspond to the "three portions" (Ans. 8). Accordingly, in our view, when King's blank 10 is partitioned into three portions, each portion will have a larger diameter on top when compared to the bottom of the portion, which constitutes an increasing taper as claimed.

A complicating factor in the Examiner's and Appellants' discussion of the claims is the Specification's failure to sufficiently illuminate the meaning of increasing taper. Moreover, Appellants' Figure 1 shows that the tapering appears to be substantially identical to King's Figure 11, for example. Accordingly, Appellants' argument that King only teaches a uniform taper is not persuasive because it appears that Appellants' taper is the same as King's taper.

Appellants' arguments regarding how increasing taper inherently must create a new taper and how King's increasing diameter of the tapered surface does not imply an increasing taper are not persuasive because Appellants fail to define what they mean by increasing taper in their Specification. Appellants seek to introduce a definition of "taper" (Br. 6-7).

However, like the Examiner, we fail to see how King's taper does not satisfy the definition and taper claim feature. Appellants have not provided any objective evidence that demonstrates a difference between King's taper and Appellants' taper. Based on the Examiner's findings regarding King and Appellants' failure to illuminate the meaning of the taper claim feature, we agree with Examiner that King teaches or suggests the taper claim feature.

Regarding the dam-diaphragm claim feature, we agree with Appellants that the Examiner may not rely on the drawings for particular sizes where there is no indication that the drawings are to scale. However, the Examiner has also indicated that regarding the selection of a particular dam-diaphragm thickness, it appears that the invention would perform equally well with any equally thin membrane (Ans. 10). We understand the Examiner's alternative position to be that the thickness of the membrane is a result-effective variable that would have been readily optimized to include Appellants' claimed dam-diaphragm thicknesses as the Examiner explained in a previous Non-final Office Action mailed October 11, 2005. We agree with the Examiner's alternative position.

Hendricks discloses a ball anvil primer for shotgun shells (Hendricks, col. 1, ll. 9-11). Hendricks discloses the invention casing has a primer cavity 26 with an end wall 28 (Hendricks, col. 2, ll. 25-29). The end wall 28 has a seat or support means for receiving the anvil 30 and interstices 34 between the support means (Hendricks, col. 2, ll. 29-44; Figure 3). Hendricks discloses that the interstices 34 are of a thin-walled membrane construction (Hendricks, col. 2, ll. 42-44).

Hendricks discloses a Figures 5-9 embodiment where the primer is formed separately from the cartridge (Hendricks, col. 3, ll. 26-35).

Hendricks further discloses that a casing 14' has a central annular bore 60 which has a post 72 supported by web parts 74 within the bore (Hendricks, col. 3, ll. 51-53). The interstices 76 between the web parts 74 are closed by rupturable thin end wall parts or membranes 78 (Hendricks, col. 3, ll. 54-57).

Vollers discloses that using plastic facilitates molding of a thin skin or thin layer over the flash hole at the bottom of the primer, which prevents entry of powder, moisture, or other substances from the shell into the primer cup (Vollers, col. 1, ll. 53-57; col. 3, ll. 6-11).

These disclosures indicate that Hendricks and Vollers recognize that the thickness of the membranes or thin layer is an art recognized result effective variable such that it would have been obvious for an artisan with ordinary skill to develop workable or even optimum ranges for such art-recognized, result-effective parameters. *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *In re Boesch*, 617 F.2d 272, 276 (CCPA 1980); *In re Antonie*, 559 F.2d 618, 620 (CCPA 1977), *In re Aller*, 220 F.2d 454, 456 (CCPA 1955). Specifically, Hendricks recognizes that the membranes must be thin enough to rupture upon discharge of the cartridge, and Vollers recognizes that the layer or skin must be thin, but must also prevent entry of powder, moisture and other substances from the shell into the primer cup. Based on these teachings, it would have been obvious to one of ordinary skill to determine the optimum range of thicknesses of the membrane or thin layer to include Appellants' claimed range so as to perform the stated rupturing and prevent material transfer functions.

Accordingly, we determine that the Examiner has established a prima facie case of obviousness. Accordingly, the burden shifted to Appellants to rebut the prima facie case. *Oetiker*, 977 F.2d at 1445.

Appellants provide a declaration under 37 C.F.R. § 1.132 (hereinafter the Khvichia Declaration) filed January 17, 2006, which allegedly shows unexpected results achieved by the combination of the taper claim feature and the dam-diaphragm thickness. The Examiner finds the provided evidence is not persuasive because the Khvichia Declaration fails to provide the actual thicknesses of the dam-diaphragms that are less than 0.2 mm thick (Group I) and greater than 0.5 mm thick (Group III) used in the comparison. In other words, the Examiner finds that the data does not show the criticality of the claimed dam-diaphragm range with the taper claim feature because it is unclear what the actual thicknesses are that are outside the claimed range as compared to the dam-diaphragm thicknesses falling within the claimed range (i.e., 0.2-0.5 mm). As the Examiner correctly indicates, the values within the test Group I (i.e., dam-diaphragms with a thickness of less than 0.2 mm) may include values of 0.01 mm and the values of Group III (i.e., dam-diaphragms with a thickness greater than 0.5 mm) may include values of 5 mm (Ans. 10), values far outside the range. Accordingly, the data in the Khvichia Declaration is not persuasive.

Therefore, based on the totality of the record, by a preponderance of the evidence with due consideration to persuasiveness of argument, we sustain the Examiner's § 103 rejection of claims 3 and 5.

#### DECISION

The Examiner's decision is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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