

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JOACHIM JOHANNES NIEWELS and
ZBIGNIEW ROMANSKI

Appeal 2007-3190
Application 10/830,435
Technology Center 1700

Decided: November 21, 2007

Before CHARLES F. WARREN, THOMAS A. WALTZ, and
CATHERINE Q. TIMM, *Administrative Patent Judges*.

WALTZ, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on an appeal under 35 U.S.C. § 134 from the Primary Examiner's final rejection of claims 1-20, 26, and 27. The remaining claims pending in this application are claims 21-25, which stand allowed by the Examiner (Br. 4; Final Office Action dated June 1, 2006, page 6). We have jurisdiction pursuant to 35 U.S.C. § 6(b).

According to Appellants, the invention is directed to a method and apparatus in which active material elements are used in injection molding machine equipment in order to aid in ejecting the molded part from the mold core (Br. 6). Independent claim 1 is illustrative of the invention and a copy of this claim is reproduced below:

1. Apparatus for separating a molded article from a mold portion in an injection molding machine, comprising:

an active material actuator disposed adjacent the mold portion and configured to change dimension when an electrical signal is applied thereto; and

structure configured to provide the electrical signal to said active material actuator to cause the molded article to separate from the mold portion.

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

Wright	US 4,243,995	Jan. 6, 1981
Ogino	US 2004/0112139 A1	Jun. 17, 2004
Kao	US 2004/0142057 A1	Jul. 22, 2004

ISSUES ON APPEAL

Claims 1-3, 7, 8, 17, and 26 stand rejected under 35 U.S.C. § 102(e) as anticipated by Kao (Ans. 3).

Claims 6, 9-15, and 18-20 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kao in view of Ogino (Ans. 4). Claims 5 and 27 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kao (Ans. 5).

Claims 4 and 16 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Kao in view of Wright (*id.*).

Appellants contend that the Examiner has erred by refusing to consider the claimed functions performed by the claimed structure in the apparatus claims (Br. 12; Reply Br. 6). Appellants further contend that the Examiner has merely stated, without support, that Kao is “capable” of performing the claimed function whereas Appellants have presented evidence which shows that the apparatus disclosed by Kao does not necessarily possess the characteristics of the claimed apparatus (Br. 15-17; Reply Br. 4-5).

The Examiner contends that the structure disclosed by Kao is the same as the claimed subject matter, and as long as it is capable of causing any separation of the article from the mold then Kao teaches a “substantially identical structures [sic]” and the claimed functional language does not provide further structural limitations (Ans. 8).

Accordingly, we determine that the dispositive issue presented from the record in this appeal is whether the Examiner has met the initial burden of establishing that the actuator material disclosed by Kao would have been capable of meeting the claimed limitation “to cause the molded article to separate from the mold portion” (*see* claim 1 on appeal).

We determine that the Examiner has not met the initial burden of establishing a *prima facie* case of anticipation in view of Kao essentially for the reasons stated in the Brief, Reply Brief, and those reasons set forth below. We also determine that the secondary references to Ogino and Wright were applied to show features of the dependent claims and thus do not remedy the deficiencies discussed below (Ans. 4-6). Therefore we REVERSE all grounds of rejection presented in this appeal essentially for

the reasons stated in the Brief, Reply Brief, and those reasons set forth below.

OPINION

As correctly found by the Examiner, and not contested by Appellants, Kao discloses an apparatus for making a molded article (12) in a cavity (25), including an active material actuator (piezoelectric actuator (31)) that is connected to a movable core (24) and configured to receive signals to change the dimension of the actuator (Ans. 3; Reply Br. 4-5). The dispositive issue is whether, as noted above, the Examiner has met the initial burden of establishing that the actuator material (31) disclosed by Kao would have been capable of meeting the claimed function “to cause the molded article to separate from the mold portion.”

As held by our reviewing court in *In re Schreiber*, 128 F.3d 1473, 1477-78 (Fed. Cir. 1997):

A patent applicant is free to recite features of an apparatus either structurally or functionally. [Citation omitted]. Yet choosing to define an element functionally, i.e., by what it does, carries with it a risk. As our predecessor court stated in *Swinehart*, 439 F.2d at 213, 169 USPQ at 228:

[W]here the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact, be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.

However, the facts in this appeal differ from *Schreiber* in that the court concluded that the Examiner cited evidence (drawings) and “was justified in concluding that the opening of a conically shaped top as disclosed by Herz is

inherently of a size sufficient to ‘allow several kernels of popped popcorn to pass through at the same time’” and also of a shape to permit dispensing by the claimed functional language. *In re Schreiber*, 128 F.3d at 1478. In this appeal, we determine that the Examiner has failed to cite any convincing evidence or technical reasoning to support the conclusion that the piezoelectric actuator (31) of Kao would have been capable of moving the molded article a sufficient distance to separate the article from the mold portion.¹

To the contrary, the evidence in this record supports Appellants’ argument that the actuator material (31) disclosed by Kao does not move a sufficient distance to separate the molded article from the mold portion. We determine that Kao teaches movement of the piezoelectric actuator “to move the movable component and to adjust the pressure in the cavity” (Abstract; ¶ [0013]). We determine that Kao teaches the use of positive or negative voltage so that the piezoelectric actuator (31) actuates the movable core (24) to move towards or away, respectively, from the stationary core (23), thus increasing or decreasing the pressure in the cavity (25) (¶ [0033]). We also determine that Kao teaches that the actuator (31) moves the movable core (24) “by a dimension order which is smaller than a tolerance of thickness of the molded article to be formed” in the cavity (25) (*id.*). We determine that Kao exemplifies this dimension order as 10^{-9} m so that “the accuracy of the size of the molded article **12** will not be affected by the adjustment of the pressure in the cavity **25**” (¶ [0041]).²

¹ Thus we determine that the burden of proof has not been shifted to Appellants. See *In re Schreiber*, 128 F.3d at 1478.

² We also note that Kao teaches use of ejector rods and ejector plates to eject the molded article from the mold portion (¶¶ [0038] and [0045]).

Appeal 2007-3190
Application 10/830,435

Accordingly, from the findings set forth above, we determine that the Examiner has failed to establish that movement of the actuator material “by a dimension order” of 10^{-9} m (one-billionth of a meter) would be capable of meeting the functional language in question in claim 1 on appeal. We also determine that the Examiner has failed to establish that movement of the actuator material, which is connected to and moves only the movable core, would have caused any separation, much less the needed separation, of the molded article from the core portion (*see* Figs. 8-13 of Kao).

For the foregoing reasons and those stated in the Brief and Reply Brief, we reverse all grounds of rejection presented in this appeal. The decision of the Examiner is reversed.

REVERSED

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PATENT ADMINISTRATOR
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