

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte MARK S. JOHNSON and TODD O. BOLKEN

Appeal 2008-5816
Application 10/894,675
Technology Center 2800

Decided: November 26, 2008

Before JOSEPH F. RUGGIERO, ROBERT E. NAPPI, and CARLA M. KRIVAK, *Administrative Patent Judges*.

NAPPI, *Administrative Patent Judge*.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 6(b) of the final rejection of claims 1 through 22.¹

We reverse the Examiner's rejections of these claims.

¹ A hearing directed to the appeal of these claims was held on November 18, 2008.

INVENTION

The invention is directed towards a method of overmold encapsulation of an electronic device. See page 1 of Appellants' Specification. Claim 1 is representative of the invention and reproduced below:

1. A method of encapsulating an article having opposing first and second sides, comprising:
 - positioning the article on a temporary carrier such that at least a portion of the first side contacts the temporary carrier;
 - positioning a portion of the temporary carrier carrying the article within a mold;
 - forming a seal between the mold and the temporary carrier;
 - filling the mold with an encapsulating material in a manner so as to cover at least the second side;
 - removing the portion of the temporary carrier carrying the article from the mold; and
 - separating the article from the temporary carrier.

REFERENCE

Khandros US 5,679,977 October 21, 1997

REJECTION AT ISSUE

The Examiner has rejected claims 1 through 22 under 35 U.S.C. § 102(b). The Examiner's rejection is on pages 3 through 9 of the Answer².

ISSUES

Appellants argue on pages 4 through 8 of the Brief and pages 2 through 5 of the Reply Brief³, that the Examiner's rejection is in error as the

² Throughout the opinion we refer to the Answer mailed October 19, 2007.

³ Throughout the opinion, we make reference to the Brief, received July 16, 2007, and the Reply Brief, received December 20, 2007.

prior art does not teach all of the limitations of independent claims 1 and 12. Specifically, on pages 6 and 7 of the Brief, Appellants argue that Khandros does not teach positioning an article on a temporary carrier as claimed. Further, Appellants argue on page 4 of the Reply Brief that Khandros does not teach the step of separating the article from the temporary carrier as claimed.

Thus, Appellants' contentions with respect to the rejections based upon 35 U.S.C. § 102(b) present us with the issue: did the Examiner err in finding that Khandros teaches positioning an article on a temporary carrier, encapsulating the article, and separating the article from the temporary carrier as claimed?

FINDINGS OF FACT

1. Khandros teaches a method of making a semiconductor assembly, where a semiconductor chip is attached to a flexible sheet having terminals electrically connected to contacts on the chip. Col. 3, ll. 38-40.
2. Khandros teaches that the semiconductor chip is placed on a tape (figure 17, item 8381, which includes securement elements item 8361, and interposer item 8336). Col. 22, ll. 42-51.
3. This tape has voids ("slots" item 8367 in figures 16 and 17). Leads (item 8374) are placed across these slots. These leads connect contacts in the interposer and securement elements to contacts on the chip. Khandros, col. 23, ll. 53-60, col. 24, ll. 6-15.
4. The tape also has waste or trim areas. Khandros, col. 22, ll. 53-56.

5. After the chip is electrically connected to the leads in the tape, the chip and tape are placed in a mold and encapsulated. Khandros, col. 24, ll. 35-41.
6. Then, after the encapsulation process, the assembly is separated from the tape. Khandros, col. 24, ll. 41-45.

ANALYSIS

Appellants' contentions have persuaded us that the Examiner erred in finding that Khandros teaches positioning an article on a temporary carrier, encapsulating the article, and separating the article from the temporary carrier as claimed. Claim 1 recites "positioning the article on a temporary carrier such that at least a portion of the first side contacts the temporary carrier," performing several steps relating to encapsulating the article and "separating the article from the temporary carrier." Independent claim 12 includes similar limitations. Thus, the scope of the independent claims includes an article placed on a temporary carrier, encapsulated and then removed from the temporary carrier.

Initially, we note that it is not clear from the Examiner's rejection if the Examiner considers Khandros' chip (item 8320 figure 16, (un-numbered in figure 17)), or Khandros' assembly of chip, interposer, securement elements as shown in figures 16 and 17, to be the claimed assembly. Nonetheless, we do not find any either of these elements meets the claimed assembly. Khandros teaches that a chip is placed on a portion of a tape which has slots with electrical leads that transverse the slots and are connected to electrical contacts on the chip. Facts 2 and 3. The tape and chip are encapsulated together. Fact 5. Khandros further teaches that the tape is separated from the assembly after encapsulating. Fact 6. We find

that one skilled in the art would recognize that Khandros is referring to the assembly as the chip, interposer, and securement element. Thus, coupled with Khandros' teaching that the tape has waste areas, we find the skilled artisan would have recognized that separating the tape after encapsulating involves removing the assembly from the waste areas (i.e. cutting the encapsulated chip, interposer securement elements, and leads from the tape).

Thus, if we were to consider the chip (item 8320) of Khandros to be the claimed assembly, and the tape on which it is placed to be the claimed temporary carrier, the claim limitations are not met as Khandros does not teach removing the tape from the chip (i.e., the interposer and securement element which are part of the tape upon which a surface of the chip is placed remain attached to the chip). Alternatively, if we were to consider Khandros' assembly of the chip, interposer, securement element, and leads to be the claimed assembly (i.e., the part of the tape with chip encapsulated thereon and not the waste area); we do not find that Khandros teaches that one side of the assembly is positioned such that a side contacts the temporary carrier. Thus, we do not find that Khandros teaches all of the limitations of independent claims 1 and 12. Accordingly we will not sustain the Examiner's rejection of claims 1 through 20.

ORDER

The decision of the Examiner is reversed.

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REVERSED

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