

The opinion in support of the decision being entered today was not written for publication in a law journal and is not binding precedent of the Board.

Paper No. 26

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DALE BUERMANN

Appeal No. 2004-0595
Application No. 09/747,201

ON BRIEF

Before KIMLIN, DELMENDO and PAWLIKOWSKI, Administrative Patent Judges.

KIMLIN, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-22. Claims 23-28, the other claims remaining in the present application, stand withdrawn from consideration. Claims 1 and 11 are illustrative:

1. An apparatus for handling, positioning and examining a flat object delivered in a cassette that holds the flat object in an X-Y plane, the apparatus comprising:

- a) a mounting means for mounting the cassette;
 - b) an X-Y stage having an X-drive, a Y-drive, and a bed, wherein the bed is movable in an X direction and a Y direction by the X-drive and the Y-drive respectively;
 - c) an effector for handling the flat object, the effector being attached to the bed and being rotatable about a Z-axis with respect to the bed, the X-Y stage being disposed relative to the mounting means such that the X-Y stage causes the effector to pull the flat object from the cassette mounted in the mounting means; and
 - d) a chuck for receiving and holding the flat object for measurements, the chuck being attached to the bed and disposed such that the effector places the flat object onto the chuck, wherein movements of the bed in the X direction and the Y direction allow the measurements at at least two points on the flat object.
11. An X-Y stage for handling, positioning and examining flat objects, comprising:
- a) an X-drive;
 - b) a Y-drive;
 - c) a bed attached to the X-drive and Y-drive such that the bed is movable in an X direction and a Y direction by the X-drive and the Y-drive respectively;
 - d) an effector for handling the flat objects, the effector being attached to the bed and being rotatable about a Z-axis with respect to the bed; and
 - e) a chuck disposed on the bed for receiving and holding the flat objects for measurements, the chuck being attached to the bed and disposed such that the effector places the flat object onto the chuck, wherein movements of the bed in the X and Y directions allow the measurements at at least two points on the flat objects.

Appeal No. 2004-0595
Application No. 09/747,201

The examiner relies upon the following references as evidence of obviousness:

Schram, deceased et al. (Schram)	4,818,169	Apr. 4, 1989
Wooding et al. (Wooding)	4,886,412	Dec. 12, 1989
Mallory et al. (Mallory)	4,907,931	Mar. 13, 1990

Appellant's claimed invention is directed to an apparatus for handling, positioning and examining flat objects, such as semiconductor wafers and printed circuit boards, that are delivered in a cassette. The apparatus comprises, inter alia, a robotic arm, or effector, that is rotatable about a Z-axis with respect to a bed to which it is attached. The bed is movable in the X and Y directions and includes a chuck which receives the flat objects transported by the effector.

Appealed claims 1-9, 11-19, 21 and 22 stand rejected under 35 U.S.C. § 103 as being unpatentable over Schram in view of Wooding. Claims 10 and 20 stand rejected under 35 U.S.C. § 103 as being unpatentable over the stated combination of references further in view of Mallory.

Appellant submits at page 7 of the Brief that the claims in the following two groups stand or fall together: (I) claims 1-10, 21, 23, 24, 26 and 27; (II) claims 11-20, 22, 25 and 28. However, inasmuch as claims 23-28 have been withdrawn from

Appeal No. 2004-0595
Application No. 09/747,201

consideration, the following two groups of claims stand or fall together: (I) claims 1-10 and 21; (II) claims 11-20 and 22.¹

We consider first the examiner's § 103 rejection of claims 1-10 and 21. Appellant maintains that the examiner has improperly found that effectors 50 and 52 are mounted on stage 12 because, in fact, the effectors are mounted on trolley 42, which movement is completely separate from the X and Y movement of stage 12. The examiner responds that claims 1 and 21 only require that the effector be "attached to the bed." The examiner offers the following explanation:

Nowhere do the claims require the same X-Y drives that move the bed to be the same drive means which cause the effector(s) to pull the wafers from the cassettes. Thus, the fact that the effectors of Schram et al are moved by separate X and Y drives does not preclude the reference from reading on the claim language. Further, despite appellant's assertion to the contrary, the effectors of Schram et al are "attached to" the bed, as broadly claimed, via guide rods 58 and support blocks 59, as disclosed in col. 6, lines 36-40. The claim language is simply not specific enough to preclude such an interpretation [page 5 of Answer, first paragraph].

The flaw in the examiner's reasoning is that claims 1 and 21 are not so broad that they allow for the effector to be moved in the X and Y directions by a drive means separate from the bed,

¹ As noted by the examiner, the examiner's withdrawal of claims 23-28 from consideration is a petitionable matter that is outside the scope of review of this Board. Likewise, the examiner's treatment of appellant's IDS is a petitionable matter.

Appeal No. 2004-0595
Application No. 09/747,201

such as the trolley 42 of Schram. Rather, the claim language specifically requires that the X-Y stage of the bed "causes the effector to pull the flat object from the cassette mounted in the mounting means." Manifestly, the X-Y movement of Schram's bed does not cause effectors 50 and 52 to pull the flat objects from the cassette. Since Mallory, relied on by the examiner for the separate rejection of dependent claim 10, does not cure this deficiency, we cannot sustain the examiner's rejections of claims 1-10 and 21.

The examiner's § 103 rejections of claims 11-20 and 22 are another matter. Independent claims 11 and 22, directed to the X-Y stage only, do not require that the X-Y movement of the bed causes the movement of the effectors. The claims only require "the effector being attached to the bed and being rotatable about a Z-axis with respect to the bed." As properly explained by the examiner, the effectors of Schram are attached to the bed. While the examiner appreciates that Schram does not disclose that the effectors are rotatable about the Z-axis, we concur with the examiner that Wooding evidences that imparting such rotating movement to the effectors of Schram would have been a matter of obviousness for one of ordinary skill in the art. Although

Appeal No. 2004-0595
Application No. 09/747,201

appellant contends that the effector of Wooding is a conventional, large robotic arm, we are convinced that one of ordinary skill in the art would have found it obvious to size the effectors appropriately to accomplish the task at hand. As noted by the examiner, it is not necessary for a finding of obviousness that the features of one reference be physically incorporated into the features of another reference. We are satisfied that one of ordinary skill in the art would have been motivated to incorporate well-known rotary movement in the effectors of Schram in order to "increase throughput by allowing faster and more precise movement off the wafer onto the chuck" (examiner's Final Rejection, Paper No. 5, page 6, paragraph three). We note that appellant has proffered no objective evidence of nonobviousness, such as unexpected results, to rebut the prima facie case of obviousness.

Appellants have not offered a separate substantive argument for the § 103 rejection of claim 20 over Schram and Wooding further in view of Mallory.

In conclusion, based on the foregoing, the examiner's § 103 rejections of claims 1-10 and 21 are reversed, whereas the § 103 rejections of claims 11-20 and 22 are affirmed. Accordingly,

Appeal No. 2004-0595
Application No. 09/747,201

the examiner's decision rejecting the appealed claims is affirmed-in-part.

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

AFFIRMED-IN-PART

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Administrative Patent Judge)	
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ROMULO H. DELMENDO)	BOARD OF PATENT
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Appeal No. 2004-0595
Application No. 09/747,201

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