

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

Paper No. 32

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM A. FRUTIGER

Appeal No. 1999-1451
Application No. 08/481,593

ON BRIEF

Before JERRY SMITH, RUGGIERO, and DIXON, **Administrative Patent Judges**.
DIXON, **Administrative Patent Judge**.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-3, 5-15, 17-22, and 61-66. Claims 4 and 16 are objected to as dependent on rejected parent claims and would be allowable if rewritten in independent form. These are all of the claims pending in this application.

We REVERSE.

BACKGROUND

The appellant's invention relates to an electrostatic wafer clamp. An understanding of the invention can be derived from a reading of exemplary claim 1, which is reproduced below.

1. Apparatus for electrostatic clamping of a workpiece, comprising:

a platen including at least three platen sections, said at least three platen sections comprising a conductive material and being electrically isolated from each other;

a dielectric material disposed on said at least three platen sections, said dielectric materials having a clamping surface for receiving a workpiece; and

means for applying a polyphase clamping voltage to said platen, said at least three platen sections being connected to different phases of said polyphase clamping voltage so that the workpiece is electrostatically clamped in a fixed position on said clamping surface by electrostatic force between the workpiece and said platen sections, said electrostatic clamping apparatus being operable to clamp the workpiece to said clamping surface in vacuum.

The prior art references of record relied upon by the examiner in rejecting the appealed claims are:

Klass et al. (Klass)	3,197,682	Jul. 27, 1965
Briglia	4,184,188	Jan. 15, 1980
Lewin	4,554,611	Nov. 19, 1985

Claims 1, 2, 7-14, 19-22, and 61-66 stand rejected under 35 U.S.C. § 103 as being unpatentable over Klass. Claims 3 and 15 stand rejected under 35 U.S.C. § 103 as being

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unpatentable over Klass in view of Lewin. Claims 5, 6, 17, and 18 stand rejected under 35 U.S.C. § 103 as being unpatentable over Klass in view of Briglia.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellant regarding the above-noted rejections, we make reference to the Office action setting forth the rejection (Paper No. 15, mailed June 23, 1997) and the examiner's answer (Paper No. 24, mailed Aug. 4, 1998) for the examiner's reasoning in support of the rejections, and to the appellant's brief (Paper No. 23, filed Jun. 15, 1998) and reply brief (Paper No. 26, filed Oct. 8, 1998) for the appellant's arguments thereagainst.

OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellant's specification and claims, to the applied prior art references, and to the respective positions articulated by the appellant and the examiner. As a consequence of our review, we make the determinations which follow.

At the outset we note that the examiner has repeatedly referenced many of the Office actions throughout the answer. Rather than remand this case for a proper statement of the rejection and answer to the arguments in a single document, we have referenced the prosecution history as the examiner has argued through the answer, and we find that

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throughout the prosecution history, the examiner has not set forth a prima facie case of obviousness in the written record.

The examiner maintains that the structure of Klass will function as a wafer chuck without the presence of the electrofluid material which changes viscosity due to the application of the electric field because the remaining structure is a conventional chuck. (Office action at pages 2-3 and 6.) Appellant argues that the examiner's rejection is based upon speculation and hindsight. (Brief at pages 10-11.) We agree with appellant. Appellant argues that the system of Klass could not be used in a vacuum as claimed. (See brief at page 10.) We agree with appellant. The examiner maintains that the rejection is based "upon sound principles." (See Office action at page 6.) The examiner maintains that Klass discloses a conventional chuck and it will work in a vacuum to attract wafers. Furthermore, the examiner maintains that the examiner has set forth reasons that Klass will work and it is up to applicant to prove that such will not perform as reasonably set forth by the examiner. (See answer at page 6.) We disagree with the examiner. The initial burden is upon the examiner to establish a *prima facie* case of obviousness. Specifically, the examiner must establish a motivation or convincing line of reasoning why the skilled artisan would have been motivated to modify the teachings of Klass to remove the electrofluid and to use the apparatus in a vacuum. The examiner maintains that the structure is the same as a conventional electrostatic chuck, yet the examiner does not set forth a convincing line

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of reasoning to remove the electrofluid in light of the discussion throughout Klass that the fluid forms the holding force. Klass discloses that the use of three phase power is convenient and provides improved holding power. (Klass at col. 2, lines 58-62.) Klass further discloses that the “holding power of the device is dependent upon the number of electrodes employed, the number of phases of the potential employed, the magnitude of the applied potential, and the nature of the electrofluid film. Conventional electrofluids adapted for use in alternating potential fields may be employed to secure the chuck and object to be held together.” (Klass at col . 3, lines 40- 45.) The examiner maintains that the operation in a vacuum is discussed in paper number 15, page 6, paragraph 7, but that portion of the Office action neither provides any line of reasoning to remove the electrofluid nor to use the apparatus in a vacuum. Therefore, the examiner has not established a ***prima facie*** case of obviousness with the proposed modification of Klass.

In the answer at page 3 the examiner incorporates the rejection set forth in paper number 15. The examiner further relies on the fact that Klass is classified in class/subclass 361/234 where electrostatic chucks may be classified. This argument is not persuasive as a motivation for skilled artisans to modify the teachings of Klass to remove the electrofluid absent some teaching or line of reasoning. The mere fact that this may be done and that the structure would then be arguably the same structure as a conventional electrostatic chuck is immaterial to the analysis and conclusion with respect to obviousness without any additional evidence by the examiner. This is merely

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unsupported speculation on the part of the examiner that the skilled artisan would have been motivated with the teachings of Klass alone to remove the electrofluid which Klass discusses solely with respect to the holding force. The examiner has made no showing of any motivation to remove the electrostatic material from the chuck. Klass discloses the material as providing the clamping force and not the field. Klass does not disclose that the electrofluid is an enhancing medium. The Examiner has not provided a line of reasoning to remove the fluid. Furthermore, appellant submitted a declaration by Mr. Reuel B. Liebert, where Mr. Liebert states that the fact that Klass employs an electrofluid would prevent its use in a vacuum. (Declaration at page 3.) We agree with appellant.

The examiner maintains at page 5 of the answer that the declaration by Mr. Liebert has simply provided no proof that the structure of Klass minus the electrofluid will not function as an electrostatic chuck. Therefore, this argument is not persuasive since we find that the examiner has not set forth a *prima facie* case of obviousness with respect to Klass alone. The examiner cites various prior art references at pages 5 and 6 of the answer in a discussion of the level of skill in the art, but the examiner has not applied/relied upon any other teaching besides Klass in the rejection of the claims. Here, the examiner appears to find that the relevant prior art is electrostatic chucks, as claimed, rather than electrofluid chucks as disclosed by Klass. Here, the skilled artisan would be starting from the teaching of Klass to modify the teachings, rather than using the electrostatic chuck as a beginning point of the analysis. Therefore, the examiner's argument is not persuasive.

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With respect to claim 12, the examiner maintains that the use of Klass with wafers would have been obvious once the electrofluid was removed (Office action at page 4), while Klass merely discloses the use with a test object which is non-magnetic, stainless-steel rectangular test object extending coextensive with the fluid film. (See Klass at col. 4.) Again, we find that the examiner has not set forth a ***prima facie*** case for the use of Klass alone with wafers.

With respect to dependent claims 3,15, 5, 6, 17 and 18, the examiner has not relied upon the teachings of Lewin and Briglia to modify the basic teachings of Klass with respect to the removal of the electrofluid. Therefore, these combinations do not remedy that which is lacking in Klass alone to establish a prima facie case of obviousness.

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CONCLUSION

To summarize, the decision of the examiner to reject claims 1-3, 5-15, 17-22, and 61-66 under 35 U.S.C. § 103 is reversed.

REVERSED

JERRY SMITH)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JOSEPH F. RUGGIERO)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JOSEPH L. DIXON)	
Administrative Patent Judge)	

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