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THIS OPINION WAS NOT WRITTEN FOR PUBLICATION

The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 30

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

~~Ex parte~~ AKIRA UEHARA, ISAMU HIJIKATA
and MITSUAKI MINATO

Appeal No. 95-2466
Application 08/006,162¹

ON BRIEF

Before STONER, Chief Administrative Patent Judge, and MEISTER and ABRAMS, Administrative Patent Judges.

MEISTER, Administrative Patent Judge.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 7 and 8.² We reverse.

¹ Application for patent filed January 19, 1993. According to the appellants, the application is a continuation of Application 07/791,035, filed November 12, 1991, abandoned; which is a division of Application 07/406,796, filed September 13, 1989, now U.S. Patent No. 5,083,896, issued January 28, 1992.

² Claims 7-10 remain pending in the application. Claim 8 was amended subsequent to final rejection by an amendment filed on October 4, 1993 (Paper No. 20) and, in view of this amendment,
(continued...)

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The appellants' invention pertains to a method and system for exchanging a processed wafer with an unprocessed wafer. Independent claims 7 and 8 are further illustrative of the appealed subject matter and copies thereof, as they appear in the appendix to the appellants' brief, are appended to this opinion.

The references of record relied on by the examiner are:

Hassan et al. (Hassan)	3,874,525	Apr. 01, 1975
Abbe et al. (Abbe)	4,897,015	Jan. 30, 1990
Uehara et al. (Japan) ³	58-60552	Nov. 04, 1983
Kawada (Japan) ⁴	62-136439	Jun. 19, 1987

Claim 7 stands rejected under 35 U.S.C. § 103 as being unpatentable over either Japanese reference 62-136439 or Japanese reference 58-60552 in view of Hassan and Abbe.

²(...continued)

the examiner expressly withdrew the final rejection of claim 8 under 35 U.S.C. § 112, second paragraph, (see answer, page 1). On page 1 of the answer the examiner additionally expressly withdrew the final rejection of claims 7-10 under obviousness-type double patenting in view of the terminal disclaimer filed on October 4, 1993 (Paper No. 21). While the examiner has never expressly stated the status of claims 9 and 10, there are no other outstanding rejections of these claims and the examiner has stated on page 1 of the answer "[t]his appeal involves claims 7 and 8" and has indicated on pages 2-4 of the brief that the only rejections "applicable to the appealed claims" are those of claims 7 and 8 under 35 U.S.C. § 103. Accordingly, only claims 7 and 8 remain for our consideration.

³ A copy of equivalent U.S Patent No. 4,550,239 is attached.

⁴ Translation attached.

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Claim 8 stands rejected under 35 U.S.C. § 103 as being unpatentable over Hassan in view of Abbe.

The examiner's rejections are explained on pages 3 and 4 of the answer. Rather than reiterate the arguments of the appellants and the examiner in support of their respective positions, reference is made to the brief, reply brief, supplemental reply brief, answer and supplemental answer for the full exposition thereof.

OPINION

As a preliminary matter, we base our understanding of the appealed claims upon the following interpretation of the terminology appearing in the claims. In line 23 of claim 7, as it appears in the appendix to the appellants' brief, we interpret "to selectively extending and contracting" to be -- to selectively extend and contract --.

We have carefully reviewed the appellants' invention as described in the specification, the appealed claims, the prior art applied by the examiner and the respective positions advanced by the appellants in the brief, reply brief and supplemental reply brief and by the examiner in the answer and supplemental answer. This review leads us to conclude that the prior art relied on by the examiner fails to establish the obviousness of claims 7 and 8 within the meaning of 35 U.S.C. § 103, accordingly, we will not sustain the above-noted rejections.

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Considering first the rejection of claim 8 under 35 U.S.C. § 103 as being unpatentable over Hassan in view of Abbe, according to the examiner it

would have been obvious to one having ordinary skill in the art at the time of applicants' invention to use an articulated arm similar to that in Abbe for each arm in Hassan since both types of arms are conventional and both provide the same straight line movement of an article, i.e., they are obvious equivalents. (see answer, page 4)

We must point out, however, it is well settled that equivalency does not establish obviousness. See *In re Scott*, 323 F.2d 1016, 139 USPQ 297 (CCPA 1963) and *In re Flint*, 330 F.2d 363, 141 USPQ 299 (CCPA 1964). It is the teachings of the prior art taken as a whole which must provide the motivation or suggestion to combine the references. See *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 837 F.2d 1044, 5 USPQ2d 1434 (Fed. Cir. 1988); *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 227 USPQ 543 (Fed. Cir. 1985) and *In re Deminski*, 796 F.2d 436, 230 USPQ 313 (Fed. Cir. 1986). Here, Hassan discloses a pair of unitary telescoping arms which are fixedly attached by means of a hub 86 to a **single** drive shaft 87 in order that the arms may simultaneously be rotated through 180°. Abbe shows a single articulated arm which is formed of members 16, 14, 12, but this arm, together with a pulley 24 which controls articulation of the members 14, 12 via belts 36, is mounted on a **single** drive shaft

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22. Not only is not apparent why one of ordinary skill in this art would have been motivated to modify the device of Hassan so as to include a pair articulated arms of the type shown Abbe, but it is totally unclear how two such arms could be mounted on the single drive shaft of Hassan and still be articulated in the manner taught by Abbe. It appears that substantial modification of both devices would be required. In our view, the examiner has impermissibly relied upon the appellants' own teachings in arriving at his conclusion of obviousness. As the court in *Uniroyal*, 837 F.2d at 1051, 5 USPQ2d at 1438 "it is impermissible to use the claims as a frame and the prior art references as a mosaic to piece together a facsimile of the claimed invention." Moreover, even if the references to Hassan and Abbe were combined in the manner proposed by the examiner, the claimed invention would not result since there is nothing in the combined teachings of these two references which would suggest the step of independently contracting the arms as expressly required by claim 8. Accordingly, we will not sustain the examiner's rejection of claim 8 based on the combined disclosures of Hassan and Abbe.

Turning to the rejections of claim 7 under 35 U.S.C. § 103 as being unpatentable over Japanese reference 62-136439 or Japanese reference 58-60552 in view of Hassan and Abbe, it is basically the examiner's position that it would have been obvious to substitute in either of the Japanese references for their

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wafer handling devices the wafer handling device of Hassan, and then to further modify the substituted article handling device of Hassan by providing a pair of articulated arms in view of the teachings of Abbe. Even if we were to agree with the examiner that, as a broad proposition, it would have been obvious to substitute in either of the Japanese references for their wafer handling devices the wafer handling device of Hassan, we cannot agree that it would further have been obvious to modify the wafer handling device of Hassan in view of the teachings of Abbe for the reasons stated above with respect to the rejection of claim 8.

Additionally, even if the references were combined in the manner proposed by the examiner, we find nothing in the combined teachings of the relied on prior art which would suggest a drive link means for rotating the second arm member and hand to **selectively** extend and retract the first and second arm means as expressly required in lines 22-24 of this claim. The wafer handling devices of Japanese reference 62-136439 and Japanese reference 58-60552 have no extension and retraction of their arm means whatsoever while the wafer handling device of Hassan only has arm means which act simultaneously to extend and retract the arm means in unison. The device of Abbe only has a single arm means. Thus, there is nothing in the combined teachings of these references which would suggest the **selective** extension and

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retraction of the first and second arm means as the claim requires. In the supplemental answer the examiner takes the position that

claim 7 sets forth only one drive means, i.e., a first drive shaft means, in line 15. Thus, with only one drive means and a drive link means for each arm means the claim is broad enough to include the arrangement wherein one drive means drives a drive link means for a first and second arm means, i.e., each drive link means selectively moves its respective arm means when the drive means is actuated with the drive link means for each arm moving in conjunction with the drive link means for the other arm. (see pages 1 and 2)

We agree with the examiner that the recitation "a first drive shaft means" is broad enough to read on "only one drive means" (e.g., a single drive shaft rather than two concentric drive shafts disclosed by the appellants). We cannot agree, however, it necessarily follows that if a drive link means is provided for each arm means (i.e., two drive link means), and these drive link means are driven by the "one drive means," the arm means can be considered to be **selectively** extended and contracted as required by claim 7. Noting "selective" is defined by the Random House dictionary⁵ as -- 1. having the function or power of selecting; making a selection. --, we observe the suggested "arrangement"

⁵ The Random House Dictionary of the English Language, Second Edition-Unabridged, published by Random House Inc., New York, N.Y.

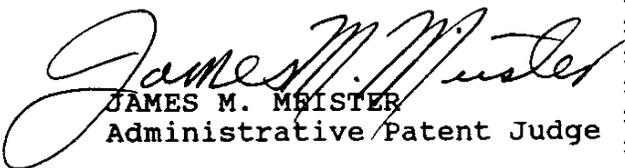
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described by the examiner appears to result in simultaneous movement of the arm means with no selectivity whatsoever.

In view of the foregoing, we will not sustain the examiner's rejections of claim 7 under 35 U.S.C. § 103.

The decision of the examiner is reversed.

REVERSED

)	
BRUCE H. STONER, JR.) Chief	
Administrative Patent Judge)	
)	
JAMES M. MEISTER)	BOARD OF PATENT
Administrative Patent Judge)	APPEALS
)	AND
NEAL E. ABRAMS)	INTERFERENCES
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APPENDIX

7. A system for transferring semiconductor wafers to and from a plasma processor comprising:

(a) a first cassette for storing unprocessed semiconductor wafers;

(b) a second cassette, spaced apart from said first cassette, for storing processed semiconductor wafers;

(c) a transfer table disposed between said first and second cassettes and capable of temporarily receiving any one of said unprocessed semiconductor wafers to be transferred thereon from said first cassette and said processed semiconductor wafers to be transferred therefrom to said second cassette; and

(d) a rotatable semiconductor wafer handling device disposed between said transfer table and plasma processor and rotatable between first and second positions, said wafer handling device including first and second arm means and first drive shaft means, each of said first and second arm means comprising a first arm member having a proximal end fixed to said drive shaft means for rotational movement with said drive shaft means, a second arm member having a proximal end pivotally coupled to a distal end of said first arm member, a hand for holding an object and having a

APPENDIX CONT'D

proximal end pivotally coupled to a distal end of said second arm member, and drive link means for rotating said second arm member and hand to selectively extending and contracting the respective arm means, whereby in the first position said arm means picks a first semiconductor wafer from said plasma processor while said second arm means concurrently picks a second semiconductor wafer from said transfer table, and in the second position said first arm means places said first semiconductor wafer on said transfer table while said second arm means concurrently places said second semiconductor wafer in said plasma processor.

8. In a semiconductor wafer processing environment, a method for exchanging a processed wafer with an unprocessed wafer, said wafers residing coplanar at a first and a second station respectively, said stations being disposed 180° apart, and wherein an apparatus having at least one drive shaft means and at least two extendable arm means is disposed between said stations, said method comprising the steps of:

(a) simultaneously extending said arm means in opposite directions along substantially linear paths;

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(b) simultaneously grasping said processed wafer from said first station and said unprocessed wafer from said second station with said arm means wherein each said arm means include a first arm member having a proximal end fixed to said drive shaft means for rotational movement with said drive shaft means, a second arm member having a proximal end pivotally coupled to a distal end of said first arm member, a hand having wafer grasping means at its distal end and having a proximal end pivotally coupled to a distal end of said second arm member, and drive link means for rotating said second arm member and hand for selectively extending and contracting the respective arm means;

(c) independently and simultaneously contracting said arm means in opposite directions along substantially linear paths;

(d) simultaneously rotating said arm means through 180°;

(e) simultaneously extending said arm means in opposite directions along substantially linear paths; and

(f) simultaneously releasing said wafers from said grasping means while placing said processed wafer on said second station, and said unprocessed wafer on said first station.