Paper No. 14

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Ex parte ERNEST C. NICHOLS
and
LEO L. MALMIN

Appeal No. 2000-1482
Application No. 08/995,706

ON BRIEF

Before COHEN, McQUADE, and NASE, Administrative Patent Judges.

NASE, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 19 to 24 and 28 to 33, which are all of the claims pending in this application.

We AFFIRM-IN-PART and REMAND.

BACKGROUND

The appellants' invention relates to wafer transfer machines (specification, p. 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

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

Yap et al. (Yap) 5,246,218 Sept. 21, 1993

H-Square Publication, 1994-1995 Edition

Claims 19 to 24 and 28 to 33 stand rejected under 35 U.S.C. § 103 as being unpatentable over the H-Square Publication in view of Yap.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejection, we make reference to the final rejection (Paper No. 6, mailed March 29, 1999) and the answer (Paper No. 11, mailed December 3, 1999) for the examiner's complete reasoning in support of the rejection, and to the brief (Paper No. 10,

filed September 1, 1999) and reply brief (Paper No. 12, filed February 7, 2000) for the appellants' arguments thereagainst.

OPINION

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

In rejecting claims under 35 U.S.C. § 103, the examiner bears the initial burden of presenting a case of obviousness. See In re Rijckaert, 9 F.3d 1531, 1532, 28 USPQ2d 1955, 1956 (Fed. Cir. 1993). A case of obviousness is established by presenting evidence that the reference teachings would appear to be sufficient for one of ordinary skill in the relevant art having the references before him to make the proposed combination or other modification. See In re Lintner, 458 F.2d 1013, 1016, 173 USPQ 560, 562 (CCPA 1972). Furthermore, the conclusion that the claimed subject matter is prima facie

obvious must be supported by evidence, as shown by some objective teaching in the prior art or by knowledge generally available to one of ordinary skill in the art that would have led that individual to combine the relevant teachings of the references to arrive at the claimed invention. See In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Rejections based on 35 U.S.C. § 103 must rest on a factual basis with these facts being interpreted without hindsight reconstruction of the invention from the prior art. The examiner may not, because of doubt that the invention is patentable, resort to speculation, unfounded assumption or hindsight reconstruction to supply deficiencies in the factual basis for the rejection. See In re Warner, 379 F.2d 1011, 1017, 154 USPQ 173, 178 (CCPA 1967), cert. denied, 389 U.S. 1057 (1968).

With this as background, we analyze the prior art applied by the examiner in the rejection of the claims on appeal.

H-Square Publication discloses twelve models of horizontal wafer transfer machines. Each horizontal wafer

transfer machine includes a base plate having a first portion upon which a send cassette is supported and a second portion upon which a receive cassette is supported; a first axial slot/positioner disposed on the first portion of the base; and a second axial slot/positioner disposed on the second portion of the base and a transfer arm operatively coupled to the base and moveable along a longitudinal axis at least over the first portion of the base. In addition, Figures 1-4 of Model WT-6HL shows the base plate having positioning dots and four axial slot/positioners to permit the horizontal wafer transfer machine to be used with various combinations of high profile cassettes and low profile cassettes. Figures 1-4 of Model WT-3456 shows the base plate having adjustable positioning dots and eight axial slot/positioners to permit the horizontal wafer transfer machine to quickly convert for use with most H-bar 3, 4, 5 and 6 inch high profile cassettes.

Yap's invention relates to an apparatus for securing an automatically loaded wafer cassette on a wafer processing equipment, wherein the apparatus allows maximized positional displacement of the wafer cassette being loaded on the

apparatus. Figures 3 and 4 of Yap are perspective views of a wafer cassette holder for securing a wafer cassette on a platform of a wafer processing equipment according to Yap's preferred embodiment. As shown therein, a wafer cassette holder 30 is mounted on a platform 31 of a wafer processing equipment (not shown) for holding and securing a wafer cassette 32 on platform 31 within a predefined target area 60. The wafer cassette holder 30 of Yap includes two guiding members 30a and 30b screw-mounted separately onto platform 31 to define the predefined target area 60. Yap teaches (column 8, line 64, to column 9, line 12) that

> In one preferred embodiment, front wall 41, side wall 42, and rear guider 43 are mounted on base bar 40 and front wall 51, side wall 52, and rear guider 53 are mounted on base bar 50. In this embodiment, the predefined target area 60 can be adjusted by re-positioning (1) front wall 41, side wall 42, and rear guider 43 on base bar 40 and (2) front wall 51, side wall 52, and rear guider 53 on base bar 50 such that the predefined target area 60 can accommodate wafer cassette 32 of various sizes. In other words, when front walls 41 and 51, side walls 42 and 52, and rear guiders 43 and 53 are mounted on base bars 40 and 50, respectively, to define the predefine target area 60 for a four inch wafer cassette 32, the position of front walls 41 and 51, side walls 42 and 52, and rear guiders 43 and 53 can be adjusted on base bars 40 and 50 to define the predefined target area 60 for a six inch wafer cassette or an eight inch wafer cassette, etc.

Claim 19

We will not sustain the rejection of claim 19 under 35 U.S.C. § 103.

Claim 19 recites a convertible wafer transfer machine, comprising, inter alia, a base plate having a first portion upon which transferor carriers are supported and a second portion upon which receiver carriers are supported; a first axial positioner removably disposed on the first portion of the base plate; a second axial positioner removably disposed on the second portion of the base plate; a third axial positioner removably disposed on the second portion of the base plate; and transverse positioners attached to opposing sides of the base plate.

The appellants argue that the applied prior art does not suggest the claimed subject matter. We agree. Specifically, the applied prior art does not teach or suggest transverse positioners attached to opposing sides of the base plate. In that regard, while both the H-Square Publication and Yap do

teach transverse positioners attached to the base plate, they do not teach or suggest using transverse positioners attached **to opposing sides** of the base plate. To supply this omission in the teachings of the applied prior art, the examiner made a determination (answer, page 3) that this difference would have been obvious to an artisan. However, this determination has not been supported by any evidence that would have led an artisan to arrive at the claimed invention.

For the reasons set forth above, the decision of the examiner to reject claim 19 under 35 U.S.C. § 103 is reversed.

Claims 20 and 21

We will not sustain the rejection of claims 20 and 21 under
35 U.S.C. § 103.

Claim 20 recites a wafer transfer machine comprising, inter alia, a base having a first portion upon which transferor carriers are supported and a second portion upon which receiver carriers are supported; a transfer arm moveable

along a longitudinal axis at least over the first portion of the base; a first axial positioner disposed on the first portion of the base; and a second axial positioner disposed on the second portion of the base wherein the second axial positioner is moveable between a first position closer to the transfer arm and a second position farther from the transfer arm.

The appellants argue that the applied prior art does not suggest the claimed subject matter. We agree. Specifically, the applied prior art does not teach or suggest the second axial positioner being moveable between a first position closer to the transfer arm and a second position farther from the transfer arm. In that regard, while both the H-Square Publication and Yap do teach axial positioners attached to the base plate, they do not teach or suggest making the second axial positioner of the H-Square Publication moveable between a first position closer to the transfer arm and a second position farther from the transfer arm. To supply this omission in the teachings of the applied prior art, the examiner made a determination (answer, page 3) that this

difference would have been obvious to an artisan. However, this determination has not been supported by any evidence that would have led an artisan to arrive at the claimed invention.

For the reasons set forth above, the decision of the examiner to reject claim 20, and claim 21 dependent thereon, under 35 U.S.C. § 103 is reversed.

Claim 22

We will not sustain the rejection of claim 22 under 35 U.S.C. § 103.

Claim 22 recites a wafer transfer machine comprising, inter alia, a base having a first portion upon which transferor carriers are supported and a second upon which receiver carriers are supported; a transfer arm moveable along a longitudinal axis at least over the first portion of the base; and a wafer contact surface selectively defined by interchangeable first and second wafer transfer plates mountable to the transfer arm, the second transfer plate

defining a wafer contact surface longer than the wafer contact surface defined by the first transfer plate.

The appellants argue that the applied prior art does not suggest the claimed subject matter. We agree. Specifically, the applied prior art does not teach or suggest interchangeable first and second wafer transfer plates mountable to the transfer arm. In that regard, while both the H-Square Publication and Yap do teach transfer arms, they do not teach or suggest using interchangeable first and second wafer transfer plates mountable to the transfer arm. To supply this omission in the teachings of the applied prior art, the examiner made a determination (answer, page 3) that this difference would have been obvious to an artisan. However, this determination has not been supported by any evidence that would have led an artisan to arrive at the claimed invention.

For the reasons set forth above, the decision of the examiner to reject claim 22 under 35 U.S.C. § 103 is reversed.

Claims 23, 24, 28 and 29

We will not sustain the rejection of claims 23, 24, 28 and 29 under 35 U.S.C. § 103.

Claims 23 and 24 include the limitation "a pair of positioners at opposing sides of the base." Claim 28 includes the limitations that a first transverse positioner is convertibly coupled to a first side of the plate and a second transverse positioner is convertibly coupled to a second side of the plate. Claim 29 includes the limitation that a first pair of lateral positioners and a second pair of lateral positioners are selectively coupled to sides of the plate.[1]

Similar to claim 19 discussed above, the applied prior art does not teach or suggest positioners located on the **sides** of the base plate as set forth in the above-noted limitations. Accordingly, the decision of the examiner to reject claims 23, 24, 28 and 29 under 35 U.S.C. § 103 is reversed.

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[1] It appears to us that this limitation is not shown in the drawings as required by 37 CFR § 1.83(a). The appellants should take appropriate action to ensure that every claimed feature is shown in the drawings.

Claim 30

We will not sustain the rejection of claim 30 under 35 U.S.C. § 103.

Claim 30 reads as follows:

> A method for accommodating different size wafer carriers with one wafer transfer machine, the method comprising:
> providing a wafer transfer machine having a plurality of axial carrier positioners disposed on a base of the machine; and
> converting the carrier positioners from a first configuration that accommodates a first size wafer carrier to a second configuration that accommodates a second size wafer carrier.

The appellants argue that the applied prior art does not suggest the claimed subject matter. We agree. Specifically, the applied prior art does not teach or suggest converting the axial carrier positioners from a first configuration that accommodates a first size wafer carrier to a second configuration that accommodates a second size wafer carrier. In that regard, while both the H-Square Publication and Yap can accommodate different size wafer carriers, they do not teach or suggest converting the axial carrier positioners of

the H-Square Publication from a first configuration that accommodates a first size wafer carrier to a second configuration that accommodates a second size wafer carrier. To supply this omission in the teachings of the applied prior art, the examiner made a determination (answer, page 3) that this difference would have been obvious to an artisan. However, this determination has not been supported by any evidence that would have led an artisan to arrive at the claimed invention.

For the reasons set forth above, the decision of the examiner to reject claim 30 under 35 U.S.C. § 103 is reversed.

Claim 31

We sustain the rejection of claim 31 under 35 U.S.C. § 103.

Claim 31 reads as follows:

> A method for accommodating different size wafer carriers with one wafer transfer machine, the method comprising:
> providing a wafer transfer machine having a pair of transverse wafer carrier positioners disposed opposite one another across a base of the machine; and
> converting the carrier positioners from a first configuration that accommodates a first size wafer carrier to a second configuration that accommodates a second size wafer carrier.

The appellants argue that the "converting" limitation of claim 31 is not suggested or taught by the applied prior art. We do not agree. The H-Square Publication does teach all the limitations of claim 31. In that regard, model WT-3456 of the H-Square Publication does accommodate different size wafer carriers with one wafer transfer machine, does provide a pair of transverse wafer carrier positioners disposed opposite one another across a base of the machine (note the various positioning dots located on opposite sides of the cassettes) and does convert the carrier positioners (the positioning dots) from a first configuration that accommodates a first size wafer carrier to a second configuration that accommodates

a second size wafer carrier (see Detail A and Figures 1 and 2).

As noted above, model WT-3456 of the H-Square Publication does teach all the limitations of claim 31. A disclosure that anticipates under 35 U.S.C. § 102 also renders the claim unpatentable under 35 U.S.C. § 103, for "anticipation is the epitome of obviousness." Jones v. Hardy, 727 F.2d 1524, 1529, 220 USPQ 1021, 1025 (Fed. Cir. 1984). See also In re Fracalossi, 681 F.2d 792, 794, 215 USPQ 569, 571 (CCPA 1982); In re Pearson, 494 F.2d 1399, 1402, 181 USPQ 641, 644 (CCPA 1974). Thus, the decision of the examiner to reject claim 31 is affirmed.

Claims 32 and 33

Claims 32 and 33 which depend from claim 31 have not been separately argued by appellants as required in 37 CFR § 1.192(c)(7) and (8)(iv). Accordingly, we have determined that claims 32 and 33 must be treated as falling with independent claim 31. See In re Nielson, 816 F.2d 1567, 1572, 2 USPQ2d 1525, 1528 (Fed. Cir. 1987). Thus, it follows that

the decision of the examiner to reject claims 32 and 33 is also affirmed.

REMAND

We remand this application to the examiner for consideration of the following two issues.

First, the examiner should determine whether or not claim 30 is patentable under 35 U.S.C. §§ 102 and 103 over U.S. Patent No. 4,449,885 to Hertel et al. (Hertel) and/or U.S. Patent No. 5,153,841 to Goff et al. (Goff).[2]

Hertel discloses a cassette holder 200 in Figures 7-9 that is used in the wafer transfer system of Figures 2-4. Hertel teaches (column 6, line 65+) that the cassette holder 200 includes a cassette adaptor 222 attached to a housing 220 by quick release fasteners 242 and that upon release of the fasteners 242, the cassette adaptor 222 can be easily removed from the housing 220 and replaced with a cassette adaptor for

[2] Copies attached.

different size cassettes. As shown in Figure 7 of Hertel, the cassette holder 200 includes two sets of support blocks 232, 233, 234, 235 which provide support for cassettes 110, 111.

Goff discloses in Figure 2 a wafer cassette transfer platform located on top of the system of Figure 1, having a quartz cassette positioned thereon. Goff teaches (column 5, line 50+) that upper surface 61 of cabinet 11 has an opening 62 formed therein within which is positioned a wafer cassette transfer platform 63. As shown, the opening 62 includes peripheral mounting edges 64 within which can be received a cassette transfer platform 63 having a plurality of different configurations in order to accept wafer cassette carriers of different configurations. Goff provides that this enables his system to be readily adapted to handling various cassettes and/or different carriers having a variety of spacing between wafers and/or wafer support bar configurations. The modular, removable framework of the cassette transfer platform 63 is positioned within the opening 62 in the upper surface 61 of the cabinet 11. The platform 63 includes a generally planar

body section 63A and a pair of longitudinally extending bars 74 and 75 into which
are formed a pair of recesses 76 and 77 of longitudinal and transverse dimensions precisely aligned to receive the lower edges of the longitudinally extending quartz wafer cassette bars 67. A plurality of securement pins 63B secure the platforms 63 within the mounting edges 64 and relative to the horizontal drive array 21.

Second, the examiner should determine whether or not any of the pending claims are rejectable under the judicially created doctrine of double patenting over any one of the claims in U.S. Patent No. 5,730,575 which issued from this application's parent application.[3]

CONCLUSION

To summarize, the decision of the examiner to reject claims 19 to 24 and 28 to 30 under 35 U.S.C. § 103 is reversed

[3] According to the appellants, the application under appeal is a continuation of Application No. 08/631,381, filed April 11, 1996, now U.S. Patent No. 5,730,575.

and the examiner to reject claims 31 to 33 under 35 U.S.C. § 103 is affirmed.

In addition to affirming the examiner's rejection of one or more claims, this decision contains a remand. 37 CFR § 1.196(e) provides that

> [w]henever a decision of the Board of Patent Appeals and Interferences includes or allows a remand, that decision shall not be considered a final decision. When appropriate, upon conclusion of proceedings on remand before the examiner, the Board of Patent Appeals and Interferences may enter an order otherwise making its decision final.

Regarding any affirmed rejection, 37 CFR § 1.197(b) provides:

> (b) Appellant may file a single request for rehearing within two months from the date of the original decision . . . .

The effective date of the affirmance is deferred until conclusion of the proceedings before the examiner unless, as a mere incident to the limited proceedings, the affirmed rejection is overcome. If the proceedings before the examiner does not result in allowance of the application, abandonment

or a second appeal, this case should be returned to the Board of Patent Appeals and Interferences for final action on the affirmed rejections, including any timely request for rehearing thereof.

This application, by virtue of its "special" status, requires immediate action, see MPEP § 708.01 (Seventh Edition, Rev. 1, Feb. 2000).

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; REMANDED

IRWIN CHARLES COHEN Administrative Patent Judge	)	
JOHN P. McQUADE Administrative Patent Judge	)	BOARD OF PATENT APPEALS AND INTERFERENCES
JEFFREY V. NASE Administrative Patent Judge	)	

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