

United States Court of Appeals  
for the Federal Circuit

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ALLIED ERECTING AND DISMANTLING CO., INC.,  
*Appellant*

v.

GENESIS ATTACHMENTS, LLC,  
*Appellee*

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2015-1533

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Appeal from the United States Patent and Trademark  
Office, Patent Trial and Appeal Board in No. 95/001,352.

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Decided: June 15, 2016

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DANIEL H. BREAN, The Webb Law Firm, Pittsburgh,  
PA, argued for appellant. Also represented by RICHARD L.  
BYRNE, JAMES G. PORCELLI.

RYAN WAYNE MASSEY, Harness, Dickey & Pierce, PLC,  
Troy, MI, argued for appellee.

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Before NEWMAN, DYK, and WALLACH, *Circuit Judges*.  
WALLACH, *Circuit Judge*.

Allied Erecting and Dismantling Co., Inc. (“Allied”)  
appeals the United States Patent Trial and Appeal

Board’s (“PTAB”) decision, on inter partes reexamination, concluding that claims 1–21 of U.S. Patent No. 7,121,489 (“the ’489 patent”) would have been obvious over German prior art reference DE 297 15 490 U1 (“Caterpillar”) (J.A. 131–44) and U.S. Patent No. 4,283,866 (“Ogawa”) (J.A. 145–51). *See Genesis Attachments, LLC v. Allied Erecting & Dismantling Co.*, No. IPR2014-001006, 2014 WL 7274949 (P.T.A.B. Dec. 19, 2014); (PTAB decision denying rehearing) (J.A. 2–8). For the reasons set forth below, we affirm the PTAB’s decision.

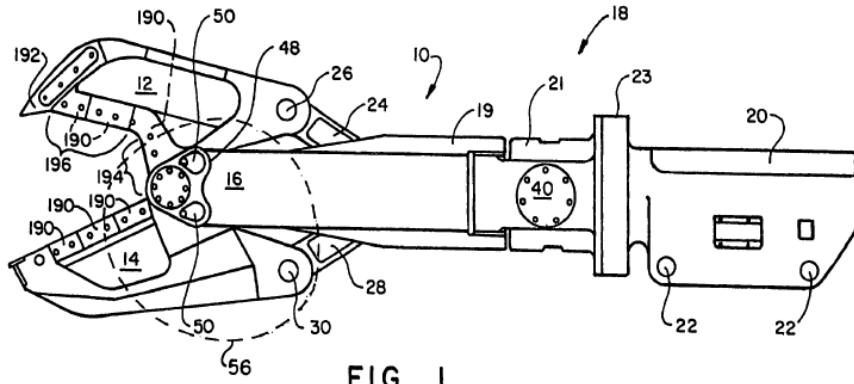
## BACKGROUND

### I. The ’489 Patent

The ’489 patent, entitled “Multiple Tool Attachment System,” is directed to heavy machinery tools used for construction and demolition that can be attached to a universal body, which in turn can be attached to “multiple tools, such as a heavy-duty metal cutting shear, a plate shear, a concrete crusher, [or] a grapple.” ’489 patent col. 1 ll. 22–24. Traditionally, such tools (i.e., shears, crushers, grapples, etc.) were designed independently, such that “one type of tool associated with each body [] can have the greatest possible utility and application.” *Id.* col. 1 ll. 60–62. According to the ’489 patent, this approach did “not provide a system for easily changing tools or a system which allows complete[ly] separate tools to efficiently share a common structure.” *Id.* col. 2 ll. 30–32. As a result, one purpose of the ’489 patent is “to provide a multiple tool attachment system which is easily converted between a plurality of distinct tools.” *Id.* col. 2 ll. 44–46. To achieve this objective, the ’489 patent describes a “quick change feature[]” that enables different demolition tools to be efficiently substituted for one another. *Id.*, Abstract.

Figure 1 of the ’489 patent (illustrated below) is illustrative of the claimed invention. It depicts a shear (10)

attached to a body (18), which is then attached to a piece of demolition equipment, such as a backhoe (not illustrated). Body (18) is referred to as a “universal body . . . because it remains common to a series of tools or tool units [i.e., jaw sets] in the attachment system.” *Id.* col. 5 ll. 60–61.

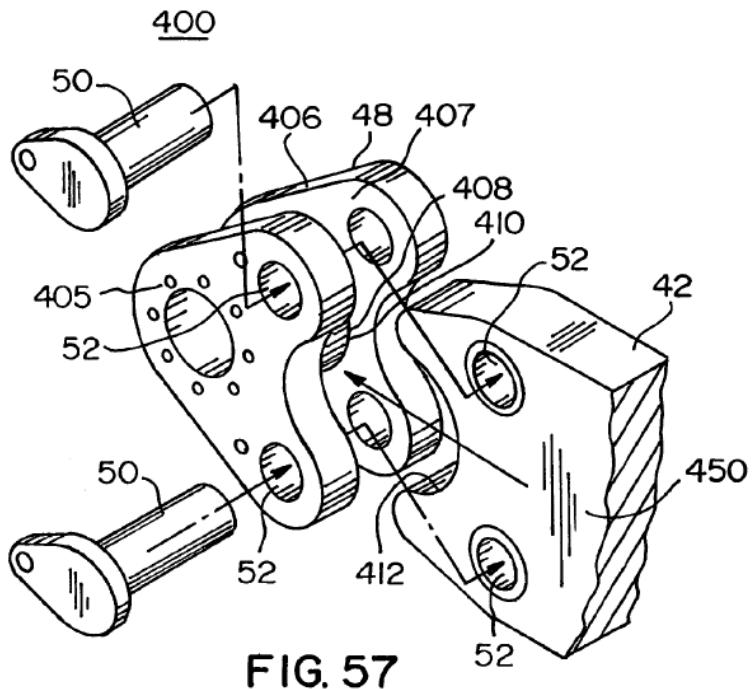


*Id.* fig 1; J.A. 80.

The body (18) depicted above in Figure 1 is referred to as a “universal body . . . because it remains common to a series of tools or tool units [i.e., jaw sets] in the attachment system.” *Id.* col. 5 ll. 59–61. As illustrated in Figure 1, each jaw set of the shear has a main pin (16) about which jaws (12 and 14) can rotate. “A bridge housing 48 surrounds the main pin 16 and is utilized for quickly and easily attaching the main pin 16 and the associated jaw set to the universal body 18.” *Id.* col. 6 ll. 56–59.

Figure 57 (depicted below) of the '489 patent illustrates the structure of the bridge housing. Sides (19) of universal body (18), (see Figure 1) terminate at receiving member (42) that fits between two bridge housing plates (405 and 406). Receiving member (42) has a curved surface (412) formed via a cutaway that engages with cylindrical sleeve (408), and surrounds main pin (16) (see Figure 1). When receiving member (42) is engaged with sleeve (408), apertures (52) will be aligned and keeper

pins (50) can be inserted to attach the bridge housing to the universal body. *Id.* col. 6 ll. 63–65.



*Id.* fig.57.

Independent claim 1 (as amended) is representative of the claimed invention and recites:

A tool set for coupling to the receiving member of a body having hydraulically powered blades, the tool set comprising:  
*a pair of movable blades pivoted together about a main pivot pin;*  
*a bridge housing encasing the main pivot pin,*  
*wherein the bridge housing is separate from the movable blades;*  
*wherein the blades are movable relative to the*

*bridge housing;*

wherein the bridge housing with the main pivot pin intact therein is adapted to be detachably connected to the receiving member and the pair of movable blades is adapted to be detachably connected to at least one hydraulic cylinder *such that the tool set may be removed from or attached to the body without the need to disengage or engage the main pivot pin from the blades, thereby providing a quick release system* for attaching the tool set to the body; and

wherein the bridge housing has an aperture adapted to be mated with a matching aperture of the receiving member through a removable keeper pin to secure the bridge housing to the receiving member.

*Id.* col. 15 ll. 26–44 (emphases added to reflect disputed claim language); *see J.A.* 124 (amendment to claim 1).

Bridge housing (48), which allows for various jaw sets to be quickly and easily attached and detached, is an embodiment of the bridge housing recited in claim 1 of the '489 patent. The attachment and detachment method provides for main pin (16) and its surrounding bearing structure, including the bridge housing, which encases the main pin, to remain attached to the jaw set when it is removed from the universal body. *Id.* col. 6 l. 67–col. 7 l. 3. At issue is whether the PTAB was correct in holding that Caterpillar and Ogawa, when combined, render obvious the claimed invention as a whole.

## II. Prior Art

### A. Caterpillar

The operation of demolition tools requires the replacement of its jaws, “either because the blades or their cutting edges have become worn or because other, more appropriate jaws must be installed to demolish different

materials.” J.A. 133. The prior art required the labor-intensive process of first dismantling the swivel bearing and then individually uninstalling the jaws of the tool set from the housing. J.A. 133. To overcome this disadvantage, Caterpillar teaches a system where “the jaws can be replaced as a unit in a simple manner.” J.A. 134. Caterpillar discloses a demolition tool with a housing that can be attached to a piece of construction equipment such as an excavator, and has “two jaws that work together [that] can be pivoted relative to each other.” J.A. 132.

The “first jaw is detachably connected to the housing by means of [a] first and second mounting device[].” J.A. 132. The first jaw is attached to the housing by two pins and does not move with respect to the housing during operation. J.A. 137. The second jaw “is connected on one hand by means of the swivel bearing to the first jaw and on the other hand is held by the drive device, which is preferably a hydraulic cylinder which is mounted on the housing.” J.A. 134. By making the “first and second mounting devices . . . independent of the swivel bearing,” the swivel bearing “functions only as the mutual swivel mounting of the two jaws and does not function as their attachment to the housing.” J.A. 134. Accordingly, by immobilizing the first jaw, Caterpillar decouples the pivot pin from the mounting mechanism as suggested by other prior art. *See* J.A. 134. Caterpillar’s design thereby enables the quick-change functionality of the jaw sets.

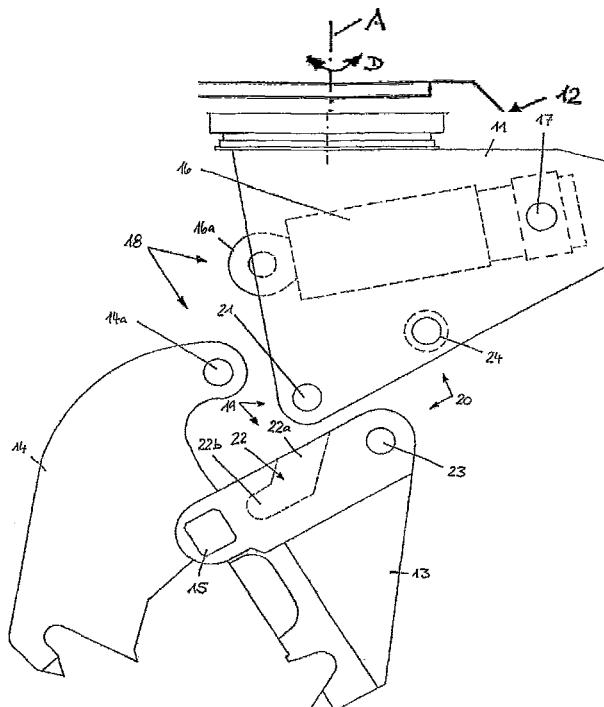


FIG. 1

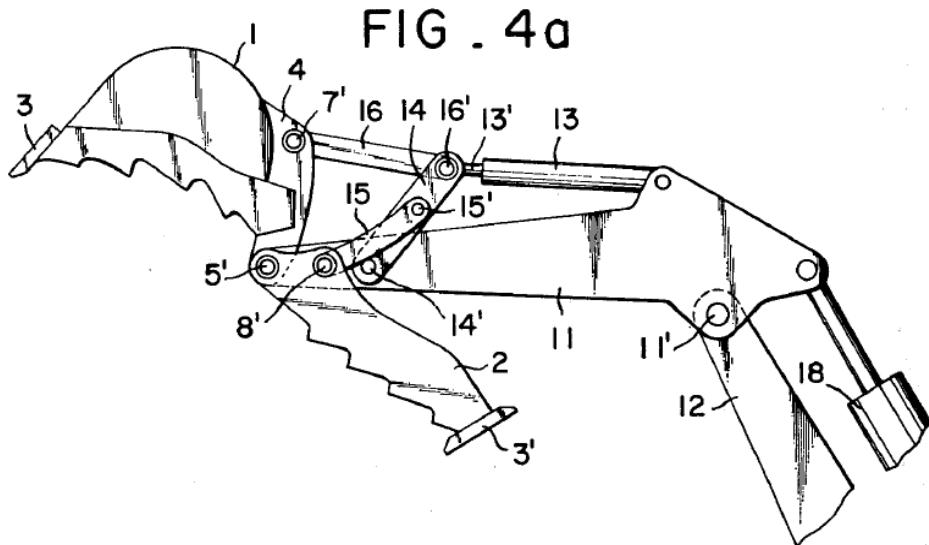
J.A. 142 (fig.1).

Figure 1 of Caterpillar (depicted above) depicts a lateral view of a scrap metal shear with housing (11) to which first jaw (13) and second jaw (14) are attached. J.A. 142. First jaw (13) is attached to housing (11) by means of mounting devices (19) and (20). J.A. 137. The first jaw (13) includes a pair of opposing side walls (13a) (not shown in Fig. 1) having mounting devices (19) and (20) which are used to attach first jaw (13) to housing (11). J.A. 137. Mounting device (19) includes grooves (22) with receptacle segment (22b) in the side walls (13a) for receiving pin (21), and mounting device (20), which includes bore hole (23) in side walls (13a) for receiving locking pin (25). J.A. 137-38. Via swivel bearing (15), first jaw (13) supports second jaw (14), which is coupled with hydraulic cylinder (16) at bearing (18). J.A. 137. "The jaws are removed [by] . . . releas[ing] the first jaw 13 from . . . housing 11, [and] only [] socket pin 25 must be

extracted, whereupon [] pin 21 can be easily extracted from [] groove[] 22." J.A. 138. The opening and closing of the shear is achieved by actuation of hydraulic cylinder (16), which allows for second jaw (14) to be swiveled around swivel bearing (15) relative to both first jaw (13) and housing (11). J.A. 137.

### B. Ogawa

Ogawa discloses "[a] convertible bucket attachment for excavation and clasping." Ogawa, Abstract. Figure 4a (reproduced below) depicts a side view of the bucket attachment, including bucket proper (1) and sub-bucket (2). *Id.*, fig.4a. Both buckets are pivotally connected to the distal end of arm (11) via a main pin (5') such that a hydraulic cylinder can cause both buckets to rotate. *Id.* col. 2 ll. 2–17; *id.* col. 2 l. 59–col. 3 l. 47. Through a linkage system, a single hydraulic cylinder is able to rotate and operate both buckets. *Id.* col. 1 ll. 6–14.



*Id.* fig.4a; see also *id.* col. 4 ll. 13–40.

One purpose of Ogawa is to provide for a greater degree of movement between the back and fore buckets of the apparatus. See *id.* col. 1 ll. 49–55 (stating that in the

prior art, “provision of a cylinder actuator between the back and the fore bucket . . . imposed a substantial limitation on the distance of range in which both bucket members can be operatively moved relative to each other, and prevented the range of angular movement of the members from being as wide as 180 [degrees]”).

### III. Procedural History

On May 5, 2010, Genesis Attachments, LLC (“Genesis”) filed a petition for inter partes reexamination, asserting the ’489 patent was unpatentable because it was anticipated and obvious over different prior art references. During reexamination, Allied amended claims 1, 7, and 17–19, and added new claims 20 and 21. *See J.A. 124–30.* The amendments and new claims recited, *inter alia*, that the bridge housing “encas[ed]” the main pivot pin, and both blades were “movable” relative to the bridge housing. *See J.A. 124, 127–28.* A United States Patent and Trademark Office (“PTO”) examiner allowed the amended claims, withdrew his initial rejections, *see J.A. 2087* (rejecting claims 1, 2, 4, 6–8, 10, and 12–19 of the ’489 patent as anticipated by Ogawa), and confirmed the patentability of claims 1–21, *see J.A. 1579–80.* Genesis appealed the examiner’s decision to the PTAB. *See J.A. 37–75* (“Decision on Appeal”).

On appeal, the PTAB concluded that claims 1–3, 13, 14, and 17–20 would have been obvious over Caterpillar in view of Ogawa. *See J.A. 72–73.* Because the PTAB reversed the examiner’s decision finding the amended claims patentable, it noted that its decision constituted a new ground of rejection and allowed Allied to reopen prosecution or request rehearing. *See J.A. 68* (citing 37 C.F.R. § 41.77(a)–(b)).<sup>1</sup> The PTAB then remanded to the

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<sup>1</sup> 37 C.F.R. § 41.77(b) (2012) recites:

examiner to determine whether claims 4–12, 15–16, and 21 of the ’489 patent would have also been obvious over Caterpillar in view of Ogawa and in further view of U.S. Patent No. 5,546,683 (“Clark”). J.A. 69.

Allied elected to reopen prosecution and submitted a second round of amendments to claims 1, 7, and 17–19. *See* J.A. 124–28. The examiner found the amendments did not overcome the PTAB’s ground of rejection based on Caterpillar and Ogawa, J.A. 1250–51, and that claims 4–12, 15–16, and 21 were “unpatentable over Caterpillar in view of Ogawa and further in view of Clark,” J.A. 1251.

The PTAB then issued a new decision affirming the examiner’s rejections. *See* J.A. 10–35 (New Decision). Like its Decision on Appeal, the PTAB again found that “Caterpillar ‘teaches one of ordinary skill in the art the desirability of simplifying disassembly of jaws, and discloses a mechanism for doing so.’” J.A. 19 (quoting J.A. 65). The PTAB also found that Ogawa provides two movable blades to enable a wide range of angular movement. *See* J.A. 19. Accordingly, the PTAB concluded that

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Should the [PTAB] reverse the examiner’s determination not to make a rejection proposed by a requester, the [PTAB] shall set forth in the opinion in support of its decision a new ground of rejection . . . . Any decision which includes a new ground of rejection . . . shall not be considered final for judicial review. When the [PTAB] makes a new ground of rejection, the owner, within one month from the date of the decision, must exercise one of the following two options with respect to the new ground of rejection to avoid termination of the appeal proceeding as to the rejected claim: . . . 1) *Reopen prosecution . . . ; [or]* (2) *Request rehearing.*

37 C.F.R. § 41.77(b) (emphasis added)

based on these disclosures, a person of ordinary skill in the art could have modified Caterpillar to provide for a “wide range of angular movement.” J.A. 20.

Allied submitted a Request for Rehearing. J.A. 1113–23. The PTAB denied this request and reaffirmed the rejections. *See* J.A. 2–8. This appeal followed. This court has jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) (2012).

## DISCUSSION

### I. Standard of Review and Legal Framework

Obviousness under 35 U.S.C. § 103 (2006) is a mixed question of law and fact. *See Harmonic Inc. v. Avid Tech., Inc.*, 815 F.3d 1356, 1363 (Fed. Cir. 2012). The PTAB’s ultimate determination of obviousness is a legal conclusion, which we review de novo. *In re Baxter Int’l, Inc.*, 678 F.3d 1357, 1361 (Fed. Cir. 2012). We review the PTAB’s underlying factual findings, including what a reference teaches and the differences between the prior art and the claimed invention, for substantial evidence. *See id.* (citing *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1, 17–18 (1966)). We also review the PTAB’s “finding of a motivation to combine [] for substantial evidence.” *In re Kahn*, 441 F.3d 977, 985 (Fed. Cir. 2006) (citation omitted). “A finding is supported by substantial evidence if a reasonable mind might accept the evidence to support the finding.” *K/S Himpp v. Hear-Wear Techs., LLC*, 751 F.3d 1362, 1364 (Fed. Cir. 2014) (citation omitted).

A patent claim is unpatentable as obvious “if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention

was made to a person having ordinary skill in the art.”<sup>2</sup> 35 U.S.C. § 103 (2006).

## II. The ’489 Would Have Been Obvious in Light of Caterpillar and Ogawa

At issue is whether it would have been obvious to modify Caterpillar to make both blades movable as taught by Ogawa, while retaining Caterpillar’s quick change functionality. Allied argues that “[n]o substantial evidence in the record exists that would allow the [PTAB] to conclude that [Caterpillar and Ogawa] taught the elements of the claimed invention or rendered it obvious.” Allied Br. 29. Allied presents two distinct arguments in support of its position. First, Allied challenges the PTAB’s finding of a motivation to combine Caterpillar and Ogawa. Specifically, Allied argues that “the [PTAB] relied on improper hindsight, in the absence of any valid reasoning or supporting evidence, for its obviousness conclusion.” *Id.* (capitalization modified). Second, Allied contends that “Caterpillar expressly teaches away from combining its teachings with Ogawa.” *Id.* at 32 (capitalization modified). Specifically, Allied argues that the PTAB’s “reasoning would fundamentally redesign and reconstruct Caterpillar to change its principle of operation and [thus] result in an inoperable device.” *Id.* at 38 (capitalization modified). We address each of these arguments in turn.

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<sup>2</sup> The Leahy-Smith America Invents Act (“AIA”) amended § 103. See Pub. L. No. 112-29, § 3(c), 125 Stat. 284, 287 (2011). However, because the application that led to the ’489 patent was filed before March 16, 2013, the version of 35 U.S.C. § 103 that applies here is the one in force preceding the changes made by the AIA. See *id.* § 3(n)(1), 125 Stat. at 293.

#### A. Substantial Evidence Supports the PTAB’s Finding of a Motivation to Combine Caterpillar and Ogawa

According to Allied, contrary to the PTAB’s assertion, “making the second jaw in Caterpillar movable involves a massive, nonobvious reconstruction of the device that not only changes its principle of operation, but renders the device inoperable as a result.” *Id.* at 40. Allied contends that the modification of Caterpillar in view of Ogawa would not only “result [in] substantial redesign and reconstruction,” *id.* at 44, but also “would [not] have been obvious to a [person having ordinary skill in the art],” *id.* at 45.

Although the PTAB acknowledged that its “suggested modification to Caterpillar would entail design and structural changes,” J.A. 67, it nonetheless determined:

it would have been obvious to one of ordinary skill in the art to apply the teaching of Ogawa with respect to articulation of both grasping members and wide range of angular movement to thereby modify Caterpillar so that the first jaw 13 with the teeth thereon also pivots about the swivel bearing 15 like second jaw 14, while also maintaining the simplified mounting and disassembly via the [side] walls 13a with their [mounting devices] 19, 20 so that the jaws can be disassembled in a simple manner as specifically taught therein.

J.A. 66 (citation omitted).

Contrary to Allied’s position, “it is not necessary that [Caterpillar and Ogawa] be physically combinable to render obvious the [’489 patent].” *In re Sneed*, 710 F.2d 1544, 1550 (Fed. Cir. 1983); *see also In re Etter*, 756 F.2d 852, 859 (Fed. Cir. 1985) (en banc) (“Etter’s assertions that Azure cannot be incorporated in Ambrosio are basically irrelevant, the criterion being not whether the references could be physically combined but whether the

claimed inventions are rendered obvious by the teachings of the prior art as a whole.”). “The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference,” *In re Keller*, 642 F.2d 413, 425 (CCPA 1981). *See also In re Mouttet*, 686 F.3d 1322, 1332 (Fed. Cir. 2012) (citing *In re Keller*, 642 F.2d at 425), but rather whether “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the claimed invention,” *Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007).

Upon determining that side walls 13a of Caterpillar serve a similar quick release function as the bridge housing of the ’489 patent, it would have been obvious to a person of ordinary skill in the art to modify the immobilized jaw of Caterpillar (first jaw 13) in order to provide for a wider range of motion as taught by Ogawa, to make the jaw set more efficient. For example, a wider range of motion would augment the jaw sets’ grasping capabilities. *See* J.A. 66 (asserting a skilled artisan would seek to modify the jaws of Caterpillar in order to provide a “wide range of angular movement”); *see also* J.A. 23 (referring to the “desirability of allowing for wide openings” (citation omitted)). Although modification of the movable blades may impede the quick change functionality disclosed by Caterpillar, “[a] given course of action often has simultaneous advantages and disadvantages, and this does not necessarily obviate motivation to combine.” *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1165 (Fed. Cir. 2006) (citation omitted). As articulated by the PTAB, a skilled artisan could modify Caterpillar in view of Ogawa by treating the first jaw like the second. That is, by pivoting the first jaw around the swivel bearing. *See* J.A. 20. Such a design allows for a greater degree of movement between the jaws, without impacting the quick change functionality (i.e., the ability to mount and disassemble the jaw in a

simple manner) provided by the holding fixtures via side walls 13a. *See J.A. 20.*

#### B. Caterpillar Does Not Expressly Teach Away from Ogawa

Allied also argues that Caterpillar expressly teaches away from Ogawa because “the main pivot pin function[s] as *both* the pivot point for the jaws and the means for attaching the jaws to the frame.” Allied Br. 33 (emphasis added). According to Allied, because “the teachings of Ogawa would encourage a [person having ordinary skill in the art] to do exactly what Caterpillar says they should not do—have the main pivot pin for both jaws also mount the jaws to the frame,” *id.* at 37, “Caterpillar undisputedly teaches away from the combination with Ogawa,” *id.* at 38 (citation omitted).

In its decision denying rehearing, the PTAB took the same position it articulated in its New Decision. *See J.A. 3–4.* The PTAB stated that “it is well known in the art to provide tools with jaws wherein only one of the jaws is movable and the other is fixed . . . or wherein both of the jaws are movable. . . .” J.A. 4 (citations omitted). Accordingly, the PTAB determined “it would have been obvious to . . . apply the teachings of Ogawa with respect to articulation of both grasping members and wide range of angular movement to thereby modify Caterpillar to allow the blades to be opened wider or to minimize movement of the object as it is grasped.” J.A. 22–23 (internal quotation marks and citation omitted).

Caterpillar does not expressly teach away from Ogawa. “A reference may be said to teach away when a person of ordinary skill, upon reading the reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant.” *In re Gurley*, 27 F.3d 551, 553 (Fed. Cir. 1994). Contrary to Allied’s contention that the PTAB incorrectly relied on

Ogawa because its precise structure (i.e., *two* separate hydraulic cylinders) is criticized by Caterpillar, the disadvantage underscored by Caterpillar does not militate against finding the combination proper. Caterpillar expresses doubt as to whether an *optimal* design feature may have the main pivot pin for both jaws also mount the jaws to the frame in order to effect the quick change functionality. *See* J.A. 133 (asserting that the “design possibilities of the pin structure are severely restricted on account of its dual function as a swivel bearing and as a detachable mounting of the jaws, which in turn means that an *optimum* design with regard to both desired functions can be achieved only with *very great difficulty, if at all*” (emphases added)); *see also* Allied Br. 34 (asserting that “Caterpillar specifically teaches that having both jaws pivotally mounted to the frame via the main pivot pin is expected to work poorly”). There is no teaching away from the combination of Caterpillar and Ogawa because the combination does not utilize the pivot pin attachment mechanism of Ogawa. There is no teaching away in Caterpillar from using the Ogawa feature of two movable jaws.

In any event, the PTAB grounded its modification of Caterpillar on Ogawa’s teaching of two movable blades and “wide range of angular movement.” J.A. 20. Thus, contrary to Allied’s contention, Ogawa’s disclosure of the need for two separate cylinders is extraneous to the PTAB’s decision. According to the PTAB, “the claims of the ’489 patent [would have been] obvious whether only a single . . . or two cylinders are used.” J.A. 29.

We have considered Allied’s remaining arguments and find them unpersuasive.

#### CONCLUSION

Because we find that substantial evidence supports the PTAB’s finding of a motivation to combine and that Caterpillar does not expressly teach away from Ogawa,

we affirm the PTAB's determination that the '489 patent would have been obvious in view of Caterpillar and Ogawa. The decision of the United States Patent Trial and Appeal Board is

**AFFIRMED**