

NOTE: This opinion is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**IN RE CLAUDE NOUVEL**

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2011-1526

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Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences in Serial No. 11/785,758.

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Decided: August 29, 2012

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BENJAMIN L. KIERSZ, Pillsbury Winthrop Shaw Pittman, LLP, of McLean, Virginia, argued for appellant. With him on the brief was JACK S. BARUFKA.

JOSEPH G. PICCOLO, Associate Solicitor, Office of the Solicitor, United States Patent and Trademark Office, of Alexandria, Virginia. With him on the brief were RAYMOND T. CHEN, Solicitor, and SYDNEY O. JOHNSON, JR., Associate Solicitor.

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Before NEWMAN, CLEVINGER, and BRYSON, *Circuit Judges.*

Opinion for the court filed by *Circuit Judge* CLEVENGER.  
Dissenting opinion filed by *Circuit Judge* BRYSON.

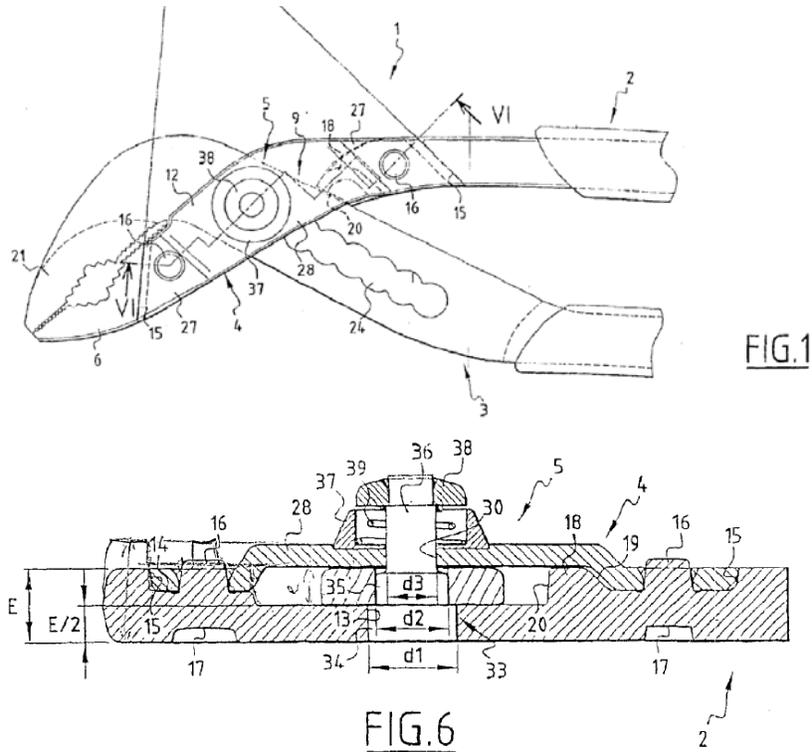
CLEVENGER, *Circuit Judge*.

Claude Nouvel (“Nouvel”) appeals the decision of the United States Patent and Trademark Office Board of Patent Appeals and Interferences (“Board”) affirming the examiner’s rejection of claims 1–19 of U.S. Pat. App. No. 11/785,758 (filed Apr. 19, 2007) (“the ’758 application”) as obvious in view of U.S. Patent No. 6,019,020 (issued Feb. 1, 2000) (“Liou”) and U.S. Patent No. RE4,917 (reissued May 28, 1872) (“Herbert”). We vacate and remand for further proceedings.

## I

Nouvel’s ’758 application is a broadening reissue application of U.S. Patent No. 6,880,434 (issued Apr. 19, 2005) (“the ’434 patent”). Claims 1–10 of the ’758 application were reproduced without amendment from the ’434 patent, whereas claims 11–26 of the ’758 application were added during reissue examination. Both the reissue application and the original patent claim adjustable “transversely retained multiple slip-joint pliers” capable of gripping differently-sized objects by shifting the pliers’ two arms relative to one another and locking them in place. Each arm of Nouvel’s pliers comprises a jaw, a handle, and an intermediate “articulation region.” ’758 application claim 1. When the tool is assembled, the articulation region of Nouvel’s second arm fits into a depression carved into the articulation region of Nouvel’s first arm, and a metal plate holds the two arms together. Nouvel’s metal plate 4, when viewed laterally, has a general  $\Omega$ , or “Omega,” shape. *See id.* fig. 6. The ends of Nouvel’s metal plate are riveted to the first arm, and the

middle portion of the metal plate curves away from the first arm creating a space through which the second arm is disposed:



*Id.* figs. 1 & 6. Claim 1, reproduced below, is illustrative of the claimed subject matter:

1. Interengaged multigrip pliers comprising:

an interengaging arm having a first jaw, a first intermediate articulation region, and a first handle, the first intermediate articulation region defining a depression, and a step on either side of the depression;

an interengaged arm having a second jaw, a second intermediate articulation region, and a second handle, the second articulation region being received so as to be movable in rotation, and selectively in translation, in the depression; and

a plate for holding the second articulation region in the depression, ends of the plate being positioned on the steps, respectively,

wherein the plate has an outer generally  $\Omega$  shape when viewed from a side thereof.

*Id.* claim 1.

The examiner rejected claims 1–19, at issue in this appeal, as obvious in view of Liou combined with Herbert. Liou claims adjustable pliers having a first arm 10 riveted to a restraining panel 30 (i.e., a metal plate). A recess 14 carved into first arm 10 creates a space through which a second arm 20 is threaded and held in place by restraining panel 30. The examiner asserted, and Nouvel has not disputed, that Liou teaches all elements of Nouvel's claims with the exception of the Omega-shaped metal plate. Instead, Liou's figures depict restraining panel 30 as visibly flat rather than Omega-shaped. *See* Liou fig. 2. A flat plate can overlie both of Liou's arms, according to the examiner, because recess 14 is no deeper than the thickness of arm 20 and so the two arms lie flush when the tool is assembled:

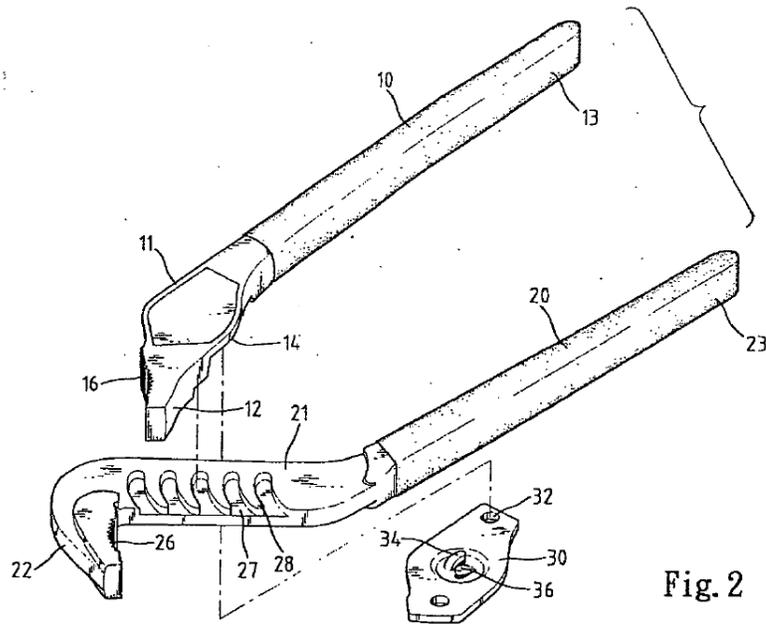
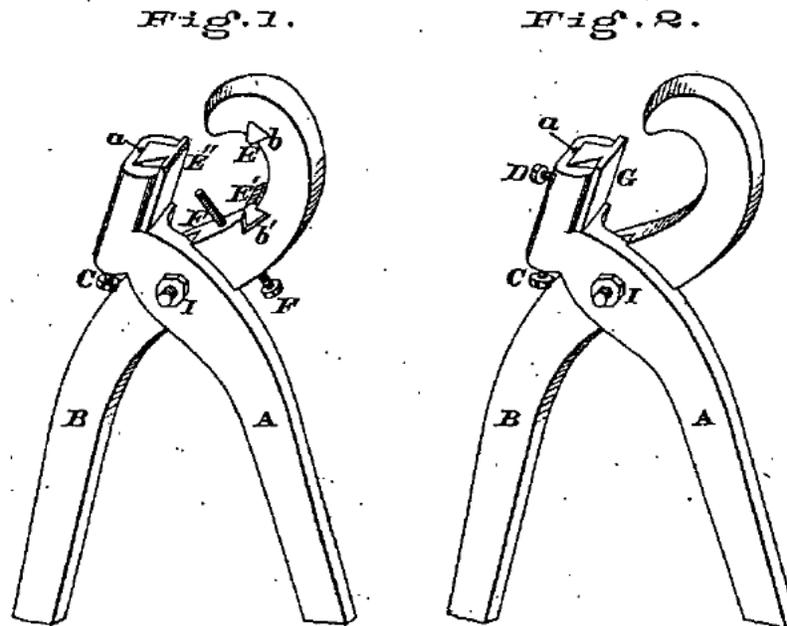


Fig. 2

*Id.*

The examiner's other cited reference was an 1872 patent to Herbert for a particular type of adjustable pipe wrench. Herbert's wrench does not employ a metal plate; instead, Herbert's arm A rests in a depression carved into arm B and the two are fastened together using a bolt and a nut. The novel aspect of Herbert's pipe wrench is a "bit" or "tooth" disposed within the wrench's jaws for carving a groove as the wrench is rotated around a pipe. The examiner cited Herbert not because of this "tooth," but because the embodiments shown in Herbert's figures 1 and 2 depict the wrench having an arm A that is noticeably thicker than the depression carved into arm B. Consequently, unlike Liou's pliers, Herbert's wrench has two arms which do not lie flush together when the tool is fully assembled:



Herbert figs.1 &amp; 2.

## II

To judge the correctness of the Board's rejection of Nouvel's patent for obviousness, the prosecution of the patent must be understood. In the first office action, the examiner allowed claims 1-10, but rejected claims 11-12. Nouvel amended claims 11-12 and introduced claims 13-26.

In the second office action, the examiner rejected all of the claims, noting that Liou meets all the limitations of claims 1 and 13 except for the plate having an outer generally Omega shape when viewed from the side. The examiner observed that Herbert's pliers depict an arm A noticeably thicker than the depression in which it sits. From that observation, the examiner posited that Liou's

second arm 20 could be thickened. According to the examiner, such thickening would impart higher strength and structural integrity to the pliers. The examiner then opined that if the thickening process were implemented, it "would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Liou with an Omega-shaped plate to accommodate a second arm having thicker dimension." The examiner did not explain why one of ordinary skill in the art would have modified only one arm of Liou's pliers to impart greater strength and structural integrity.

The applicant responded arguing that Herbert did not teach an Omega-shaped plate. The examiner was unmoved. Conceding that Herbert did not teach an Omega-shaped plate, the examiner argued that Herbert is otherwise relevant because it shows that the arm received in the depression (arm A in Herbert; arm 20 in Liou) is thicker than the space defined by the other arm, and thus extends out of the depression. Again, citing purported greater strength and structural integrity, the examiner concluded that it would have been obvious to thicken arm 20 of Liou, and accordingly produce the need to convert Liou's flat plate to an Omega-shaped plate.

At no point in the office actions did the examiner rely on any notion that common sense would spur one of ordinary skill to modify Liou by thickening arm 20. Instead, the examiner repeatedly asserted that Herbert's teaching would motivate one of ordinary skill in the art to improve the strength and structural integrity of the pliers by thickening only one arm of the pliers, the arm that sits in the depression of the other arm.

The applicant then proceeded with his appeal to the Board, directly challenging the examiner's rationale. The

applicant questioned why an ordinary artisan would have thickened only Liou's second arm 20 when Liou teaches a flat plate that only works if the thickness of arm 20 is the same as the depth of the depression 14 in the first arm 10. Nothing in Herbert, the applicant contended, would lead an artisan to so modify Liou's design. Thus, the applicant argued that one of ordinary skill in the art would not be motivated to thicken only one arm of Liou's pliers; instead he would be motivated to thicken all related structures proportionally, which would not result in any change to Liou's flat plate. With no apparent reason to thicken only one arm of Liou's pliers, the applicant asserted that impermissible hindsight motivated the examiner's conclusion.

The examiner responded to the applicant's appeal. The examiner did not dispute that Liou teaches that the depression 14 should be as deep as the mating arm 20 is thick. Instead, the examiner argued that Herbert "suggests" pliers having channels with a depth that is less than the thickness of the mating arm. From that suggestion, the examiner shifted gears from the previous position that one of ordinary skill would thicken the second arm 20 to strengthen the structural integrity. On brief to the Board, the examiner said the ordinary artisan would have modified the first arm 10, whose depression 14 presumably weakened arm 10 relative to arm 20, to "avoid unduly weakening the first arm." The examiner did not explain this change of heart, moving from a suggested thickening of second arm 20 (as stated in the office actions) to a suggested beefing up of presumably weaker first arm 10. The examiner responded to the hindsight challenge by noting that "any judgment on obviousness is in a sense necessarily a reconstruction based on hindsight reasoning." The examiner did not rely on common sense to support the conclusion that the claims fail section 103.

The applicant filed a brief in reply to the examiner's brief. He pointed out that the examiner agreed that Liou teaches that the depression 14 has the same depth as the second arm 20 connected to the first arm 10, and that Herbert teaches nothing about the association between the thickness of one arm of the pliers and the depth of a mating depression in the other arm.

The Board affirmed the examiner's rejection. *Ex parte Nouvel*, No. 2011-005007, 2011 WL 1806469, at \*3 (B.P.A.I. May 9, 2011). The Board's decision recited that the prior art recognizes both a flush arm configuration (one, like Liou, in which an intermediate articulation region of one arm has a thickness substantially equal to the depth of the recess in the intermediate articulation region of the other arm), and a raised or offset arm configuration (one, like Herbert, in which the intermediate articulation region of the one arm exceeds the depth of the recess in the intermediate articulation region of the other arm). The Board expressly noted that neither Liou nor Herbert attribute any significance to the depth of the recess relative to the thickness of the intermediate articulation region of the other arm. The Board then turned to the issue of thickening one of Liou's arms. Without explanation, the Board paid no attention to the proposal, introduced in the examiner's brief to the Board, that one of ordinary skill would be motivated to increase the strength of arm 10, instead of arm 20 as the examiner originally proposed. Having accepted that nothing in the prior art taught any significant reason for increasing the size (and presumably the strength) of only one arm of pliers, the Board asserted that doing so would involve "only a rudimentary understanding of mechanics" and "is a simple matter of common sense." Finally, the Board concluded that modifying Liou's panel 30 to accommodate the thickening of one arm of the pliers with an Omega-

shaped plate “would involve only ordinary creativity, and would not be challenging to a person of ordinary skill in the art.”

The Board also ignored Liou’s teaching of equal thickness of the two arms and rejected the applicant’s assertion that one of ordinary skill setting about to strengthen the pliers would strengthen both arms, not simply one arm. According to the Board, but without explanation, Nouvel’s view that both arms would need to be thickened to increase strength “incorrectly presumes that a person of ordinary skill in the art is a mere automaton, not a person of ordinary creativity.”

As noted above, the Board rejected the examiner’s proposal that one of ordinary skill in the art might have been motivated to strengthen the relative weaker arm of Liou, and having done so would have necessitated modification of the flat plate by an Omega configuration. But in sustaining the examiner’s obviousness determination, the Board introduced the ground that common sense (rather than Herbert’s teaching) would have driven one of ordinary skill to modify Liou as originally proposed by the examiner. Indeed, we read the Board’s conclusion of obviousness to rest on its view that only rudimentary skills are necessary to thicken an arm of the pliers and to modify a flat plate to an Omega configuration, and common sense supplies the reason to thicken arm 20 of Liou’s pliers. Our reading is compelled because the Board itself eschewed any reliance on Herbert to direct an ordinary artisan to address the depth of the recess in one arm relative to the thickness of the intermediate articulation region of the other arm. In other words, the Board used common sense, not teachings from prior art, to support modification of Liou’s arm 20. As noted above, a common sense explanation for modifying one arm of the pliers was

not advanced by the examiner at any stage in the proceedings.

Nouvel timely appealed the Board's final decision that the claims in suit are obvious. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A).

### III

This court reviews the Board's determination of obviousness de novo and the Board's factual findings for substantial evidence. *In re Gartside*, 203 F.3d 1305, 1316 (Fed. Cir. 2000). Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Consol. Edison Co. v. N.L.R.B.*, 305 U.S. 197, 229, 59 S.Ct. 206, 83 L.Ed. 126 (1938). The Board's judgment must be reviewed on the grounds upon which the Board actually relied. *See Sec. & Exch. Comm'n v. Chenery Corp.*, 332 U.S. 194, 196, 67 S.Ct. 1575, 91 L.Ed. 1995 (1947); *In re Sang-su Lee*, 277 F.3d 1338, 1345-46 (Fed. Cir. 2002). Alternative grounds supporting the Board's decision are not considered. *See id.* at 1346. "The [Board] must set forth its findings and the grounds thereof, as supported by the agency record, and explain its application of the law to the found facts." *Id.* at 1342. Whether the Board relied on a new ground for rejection is a legal question that we review de novo. *See In re Pacer Tech.*, 338 F.3d 1348, 1349 (Fed. Cir. 2003).

### IV

Nouvel's appeal takes dead aim on the Board's conclusion that one of ordinary skill in the art would have been prompted by common sense to modify Liou by thickening the second arm at the joinder of the first arm. Faced with

the opportunity to challenge the Board's common sense ground for the first time here on appeal, Nouvel in essence calls the Board's reasoning nonsense. To start, Nouvel notes that even the Board granted that nothing in the prior art relied on by the examiner suggests a reason to change the thickness of Liou's second arm. Indeed, Nouvel argues that thickening Liou's arm 20 confers no net benefit and in fact has considerable downside. Nouvel's artisan would never thicken only one arm of a two-armed tool, because doing so would not strengthen the tool's overall gripping power. Rather, the artisan would recognize that just as "a chain is only as strong as its weakest link," a pair of two-armed pliers is only as strong as its weakest arm. Because gripping forces are distributed equally between both arms of a pair of pliers, Nouvel contends that a tool having one stronger and one weaker arm is no stronger than a tool having two weaker arms. Thickening only one of Liou's arms, Nouvel argues, would only add undesirable weight and material cost to Liou's pliers without actually strengthening them, and so the Board's approach would be contrary to a skilled artisan's goals. Nouvel reasons that the only commonsensical way to thicken and thereby strengthen Liou's pliers would be to enlarge both arms 10 and 20 proportionally. But this approach would not only thicken arm 20, but also increase the depth of the recess 14 carved into Liou's arm 10, thus retaining Liou's "flush-arm" configuration and eliminating any need to reshape Liou's flat panel 30.

Nouvel thus argues that common sense cannot serve as the rationale for obviousness in this case. Further, Nouvel asserts the Board should also be reversed because substantial evidence does not support the finding that one of ordinary skill in the art would be led by Herbert to increase the thickness of Liou's arm 20, in order to create the need for an artisan to conduct the ordinary step of

converting Liou's flat plate 30 to an Omega configuration. At the very least, Nouvel requests a remand to the Board on the ground that the Board's common sense rationale was introduced as a new ground for rejection without giving Nouvel an opportunity to respond.

## V

Obviousness analysis permits an examiner to rely upon "common sense" or the knowledge of the skilled artisan to bridge gaps in prior art's explicit teachings. *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. 398, 420-21, 127 S.Ct. 1727, 167 L.Ed.2d 705 (2007) ("Common sense teaches ... that familiar items may have obvious uses beyond their primary purposes, and in many cases a person of ordinary skill will be able to fit the teachings of multiple patents together like pieces of a puzzle."). We have long held that an examiner's reasoning "may include recourse to logic, judgment, and common sense available to a person of ordinary skill that do not necessarily require explication in any reference or expert opinion." *See Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1328-29 (Fed. Cir. 2009); *In re Bozek*, 416 F.2d 1385, 1390 (CCPA 1969) (an examiner may rely upon "common knowledge and common sense of the person of ordinary skill in the art without any specific hint or suggestion in a particular reference"). But "the mere recitation of the words 'common sense' without any support adds nothing to the obviousness equation." *Mintz v. Dietz & Watson*, 679 F.3d 1372, 1377 (Fed. Cir. 2012). Thus, we have required that rejections grounded in "common sense" must contain explicit and clear reasoning providing some rational underpinning why common sense compels a finding of obviousness. *See KSR*, 550 U.S. at 418; *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006) ("[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated

reasoning with some rational underpinning to support the legal conclusion of obviousness.”).

To this end, the Board regularly reverses obviousness rejections when an examiner’s “common sense” reasoning is insufficiently supported by a rational underpinning. *See, e.g., Ex parte Graham*, No. 2010-009680, 2011 WL 478699, at \*4 (B.P.A.I. Feb. 8, 2011); *Ex parte Ito*, No. 2009-008457, 2010 WL 4378372, at \*3-4 (B.P.A.I. Nov. 3, 2010); *Ex parte Khoo*, No. 2009-003966, 2010 WL 674312, at \*3-4 (B.P.A.I. Feb. 24, 2010); *Ex parte Zhang*, No. 2009-003920, 2009 WL 2978842, at \*4-5 (B.P.A.I. Sept. 17, 2009).

These cases demonstrate that the Board can be vigilant in policing the use of common sense by examiners in making obviousness rejections, and they reflect the Board’s view of proper application of the common sense test. Each of the cases explains that common sense is not a hovering omnipresence. Instead, there must be an articulated rational reason why the common sense of an ordinary artisan would be awakened to modify prior art in such a way as to lead to an obviousness rejection.

## VI

The Director’s brief to this court betrays the weakness in his case. First, the Director frames the question before us as “in view of these prior art references [Liou and Herbert], a skilled artisan who makes pliers would be exercising only ordinary skill to make pliers having two arms held together by a step connector.” But this is not the question. Nouvel does not doubt that an ordinary artisan knows how to thicken (or thin down) a piece of metal, or that an ordinary artisan, faced with a non-flush configuration (such as Herbert) would know a number of

different ways to connect the arms of the pliers, including with an Omega-shaped connector. The question before us, as it was before the Board, is why one of ordinary skill would think to thicken one arm of pliers but not the other when strengthening the pliers was the goal. Once the Board conceded that the prior art does not teach or suggest such a modification, the Board was left with common sense for its rationale. The Director makes no attempt to justify the Board's common sense rationale, nor does he respond to Nouvel's plea for at least a remand to present its counterargument to the Board.

To repeat, the key question in this appeal (as well as before the Board) is why an ordinary artisan would thicken only one arm of Liou's pliers. Nothing in Liou or Herbert teach or suggest anything about relative thickness of the arms in Herbert, and indeed at oral argument, the Director conceded that Herbert's non-flush configuration is apparently achieved by carving a recess into one of two equally thick arms. In other words, Herbert's configuration is arguably achieved by thinning rather than thickening one of its two arms. As such, Herbert can stand for no more than the proposition that a pliers' arm may extend beyond the depth of the recess in which it sits.

Without any teaching in the prior art that a reason exists to thicken Liou's arm 20 (so as to necessitate the conversion of a flat plate to an Omega shape), we are left with the Board's common sense explanation. As shown, Nouvel challenges that explanation. In its briefs and at oral argument, Nouvel provided multiple reasons, grounded in mechanics, why an ordinary artisan aiming to increase strength by increasing size would enlarge both arms of the pliers. The Director urges us to ignore Nouvel's reasons, saying they are mere "attorney argument."

The Director misses the point. Nouvel's arguments to this court are the ones it would have made to the Board had the examiner's original rejection been grounded in the common sense of an ordinary artisan instead of Herbert's teachings. Nouvel cannot be faulted for pointing out that there is at least an open question whether it is common sense, or nonsense, to thicken only arm 20 of Liou's pliers.

In sum, because the prior art standing alone does not provide substantial evidence that one of ordinary skill in the art would enlarge only one arm of Liou, only common sense properly applied could support the Board's final decision. But because common sense was introduced as a new ground by the Board, our precedent instructs that we vacate the Board's decision and remand to afford Nouvel the opportunity to respond to the common sense rationale. *See In re Stepan Co.*, 660 F.3d 1341, 1346 (Fed. Cir. 2011); *In re Leithem*, 661 F.3d 1316, 1321 (Fed. Cir. 2011).

#### CONCLUSION

For the foregoing reasons, we vacate and remand.

#### **VACATED AND REMANDED**

#### COSTS

No costs.

NOTE: This disposition is nonprecedential.

**United States Court of Appeals  
for the Federal Circuit**

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**IN RE CLAUDE NOUVEL**

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2011-1526

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Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences in Serial No. 11/785,758.

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BRYSON, *Circuit Judge*, dissenting.

Because I do not interpret the decision of the Board of Patent Appeals and Interferences to be based on a new ground for rejecting Nouvel’s claims, I respectfully dissent.

The majority asserts that “the key question in this appeal . . . is why an ordinary artisan would thicken only one arm of Liou’s pliers.” Nouvel similarly argues that one of ordinary skill in the art would never thicken just one arm of the pliers, because to do so without thickening the other arm would not increase the overall strength of the pliers. I disagree that the question in this case is whether (or why) one of ordinary skill in the art would thicken only one arm of a pair of pliers. The invention is not thickening one arm of a pair of pliers while not altering the thickness of the other. The invention is using an

omega-shaped plate to cover the portion of a pliers arm that protrudes above the level of the recess in which it is received. Because the claims would read on a pair of pliers in which both arms protrude beyond the recesses in which they are received, or in which the strength of the nonprotruding arm is made equal to the strength of the protruding arm by the support provided by the plate, it is irrelevant whether there would be any reason to strengthen one arm of a pair of pliers without strengthening the other.

The examiner's analysis, like the Board's, was based on the two principal references, Herbert and Liou. The Herbert reference, cited by the examiner and the Board, discloses a pair of pliers with a first arm that protrudes above the depth of the recess in the second arm. The Liou reference, also cited by the examiner and the Board, discloses a plate covering the recess in the second arm and the portion of the first arm contained within that recess. The question before the examiner and the Board was therefore whether it would be obvious to a person of ordinary skill in the art to cover the thickened arm of Herbert with the plate of Liou by modifying the shape of the plate to accommodate the protruding portion of the first arm. The examiner and the Board both found that modifying the plate of Liou by raising the center of the plate in order to accommodate the protruding portion of the first arm would be obvious to a person of skill in the art. As the Board put it, "the corresponding modification of Liou's panel . . . to provide an offset in the central portion thereof to accommodate the thickness of the intermediate section . . . extending beyond the recess . . . in the raised or offset arm configuration would involve only ordinary creativity, and would not be uniquely challenging to a person of ordinary skill in the art."

The Board explained that neither Herbert nor Liou attributed any significance or criticality to the depth of the recess in the first arm relative to the thickness of the intermediate section of the second arm. Accordingly, the Board stated, the option to select either the non-protruding second arm of Liou or the protruding second arm of Herbert would have been obvious to a skilled artisan. The Board added that to recognize that thickening the intermediate section on Liou's first arm without increasing the depth of the recess in Liou's second arm "would produce a stronger [first arm] without weakening or requiring additional thickness in the [second arm] involves only a rudimentary understanding of mechanics and is a simple matter of common sense, well within the technical grasp of a person of ordinary skill in the art."

In light of those well-supported findings, this case cries out for the application of the principles of *KSR International Co. v. Teleflex Inc.*, 550 U.S. 398 (2007). There are only a "finite number of identified, predictable solutions" to strengthen a metal component. *Id.* at 402-03. One such approach—one that the Board found would be obvious to a person of skill in the art—would be to make the metal arm thicker. And in fact that is the exact arrangement contemplated by Herbert, which describes a set of pliers in which an arm is thicker than the recess provided for it.

The majority concludes that remand is required because the Board introduced "common sense" as a new ground of rejection. The majority asserts that the examiner's rejection of Nouvel's claims was grounded solely in the teachings of Liou and Herbert, and that the Board substituted "common sense" for the Herbert reference as a reason why, in combination with the teachings of Liou,

the claims were obvious. I disagree with that characterization of the Board's decision.

The Board's reference to "common sense" was not a new ground of rejection, but simply a way of describing matters that would be plain to a person of ordinary skill in the art. As the Board put it, recognizing that thickening one arm without making the other arm thinner would increase the strength of the first arm without weakening the second "involves only a rudimentary understanding of mechanics and is a simple matter of common sense, well within the technical grasp of a person of ordinary skill in the art." As the full quotation makes clear, the Board's use of the term "common sense" was simply a way of emphasizing that the knowledge required to understand the effect of thickening one arm without reducing the thickness of the other is not only well within the knowledge of a skilled artisan, but is "rudimentary." The Board's analysis thus uses the term "common sense" in the context of its focus on the understanding of a person of ordinary skill in the art. And in so doing, the Board followed the same analytical path as the examiner, who wrote that it "would have been obvious to one of ordinary skill in the art, at the time the invention was made, to modify the invention of Liou with an Omega shaped plate to accommodate a second arm having thicker dimension" in an application requiring higher strength or structural integrity. Implicit in that comment is that in order to increase the strength of a metal component, the common sense approach—particularly to one of skill in the art—would be to increase its thickness.

Common sense, used in connection with the knowledge of a person skilled in the art, is an inherent component of an examiner's consideration of an application. As we have explained, "the sources of information for a

properly flexible obviousness inquiry . . . include . . . the background knowledge, creativity, and common sense of the person of ordinary skill.” *Perfect Web Techs., Inc. v. InfoUSA, Inc.*, 587 F.3d 1324, 1329 (Fed. Cir. 2009). The examiner’s analysis “may include recourse to logic, judgment, and common sense available to a person of ordinary skill that do not necessarily require explication in any reference or expert opinion.” *Id.* Here, both the examiner and the Board relied on the sensible and uncontroverted proposition that in order to strengthen a metal component, a person of ordinary skill would increase its thickness. Because both the examiner’s rejection and the Board’s decision were based on principles known to persons of skill in the mechanical arts in conjunction with the teachings of the Herbert and Liou references, the Board’s decision does not contain a new ground of rejection. I would affirm the Board’s determination.