

NOTE: This disposition is nonprecedential.

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

METSO MINERALS, INC.,
Plaintiff-Appellee,

v.

**POWERSCREEN INTERNATIONAL
DISTRIBUTION, LIMITED (now known as Terex
GB Limited), POWERSCREEN NEW YORK, INC.
AND EMERALD EQUIPMENT SYSTEMS, INC.,**
Defendants-Appellants,

AND

TEREX CORPORATION,
Defendant-Appellant.

2011-1572, 2012-1168, -1169

Appeals from the United States District Court for
the Eastern District of New York in No. 06-CV-1446,
Judge Arthur D. Spatt.

Decided: May 14, 2013

MICHAEL C. STUART, Cozen O'Connor, of New York, New York, argued for the plaintiff-appellee. With him on the brief were LISA A. FERRARI and MARILYN NEIMAN.

JON R. TREMBATH, Merchant & Gould, PC, of Denver, Colorado, argued for the defendants-appellants, Powerscreen International Distribution, Limited, et al. With him on the brief were DANA P. JOZEFczyk; RACHEL C. HUGHEY and DINA GRINSHPUN, of Minneapolis, Minnesota; and JOHN M. WHEALAN, of Chevy Chase, Maryland. Of counsel was NATHAN LANE, III, of Squire Sanders (US) LLP, of San Francisco, California.

VINCENT ALFIERI, Bryan Cave, LLP, of New York, New York, for defendant-appellant, Terex Corporation. With him on the brief were MICHAEL G. BIGGERS and JOSEPH J. RICHETTI.

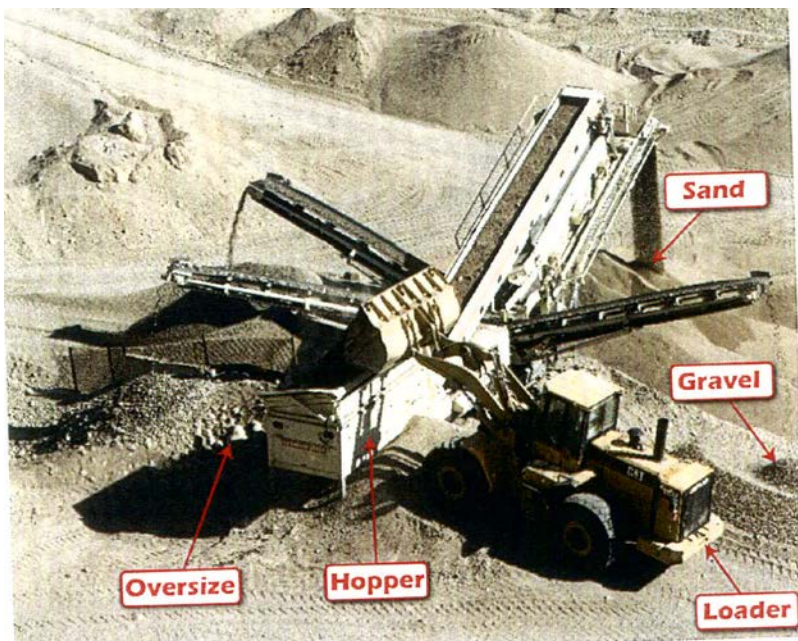
Before DYK, MAYER, and REYNA, *Circuit Judges*.

DYK, *Circuit Judge*.

Appellants Powerscreen International Distribution, Ltd., Powerscreen New York, Inc., and Emerald Equipment Systems, Inc. (collectively “Powerscreen”), and Terex Corporation (“Terex”) appeal from a judgment of the United States District Court for the Eastern District of New York. That judgment was based on a jury verdict that Powerscreen had infringed U. S. Patent No. 5,577,618 (“the ’618 Patent”) owned by appellee Metso Minerals, Inc. (“Metso”), and its finding that the asserted claims would not have been obvious. Because we conclude that the ’618 Patent would have been obvious as a matter of law, we reverse.

BACKGROUND

This case concerns industrial machines known as “screeners” that use progressively smaller openings to sort rocks and other forms of aggregate material into piles of similarly-sized material, such as sand or gravel. An illustration of a screener with all of its components is shown below.



Screeners may be mounted on wheels or tracks; each form of mobile mounting offers different advantages and disadvantages relating to the screeners' portability. When the screener is in use, a loader drops raw, unsorted material into the screener's input hopper. The screener contains a central (or internal) conveyor that accepts the material from the input hopper and directs that material to a so-called "screen box" to be sorted and deposited onto the appropriate hoppers and lateral conveyors for distribution. *See* '618 patent col. 4 ll. 30-48 & fig. 2. The central conveyor extends longitudinally along the screener's

chassis. *Id.* When the screener is used at a worksite, the lateral conveyors are unfolded into an “operative position” to facilitate distribution of sorted material of different sizes (these conveyors are sometimes referred to as “wing conveyors,” given that they protrude from the screener like wings, as shown in the diagram above). When screeners are transported along roadways to reach a work site, the lateral conveyors are folded in a “transport position,” so that they may travel along roadways in compliance with relevant regulations and permit requirements.

Metso asserted that screeners built and sold by Powerscreen infringed claims 1, 2, 3, 7, and 9 of the '618 patent. Claim 1 of the '618 Patent, the only independent claim in suit, recites:

A mobile, road-hauled aggregate material processing plant comprising:

a wheel mounted chassis extending in a longitudinal direction;

a plant support frame mounted on the chassis;

a raw material input hopper mounted on the plant support frame;

a material processing means mounted on the plant support frame and fed from the input hopper and having an outlet;

processed material outfeed delivery means mounted on the plant support frame and fed from the material processing means;

at least one lateral delivery conveyor incorporated in the outfeed delivery means, said conveyor comprising:

a conveyor frame tail section;

a conveyor frame head section;

a tail articulation means connecting the tail section to the support frame in such a way that at least part of the tail section is movable relative to the plant support frame from an operative position extending laterally of the chassis with respect to the longitudinal direction for outfeed of processed material, to a transport position extending substantially upright above the chassis and positioned with respect to the input hopper and material processing means so that it does not project laterally beyond the chassis;

a head articulation means connecting the head section to the tail section in such a way that the head section is movable from an operative position to a transport position with the head section extending longitudinally above the chassis and positioned with respect to the input hopper and material processing means so that it does not project laterally beyond the chassis;

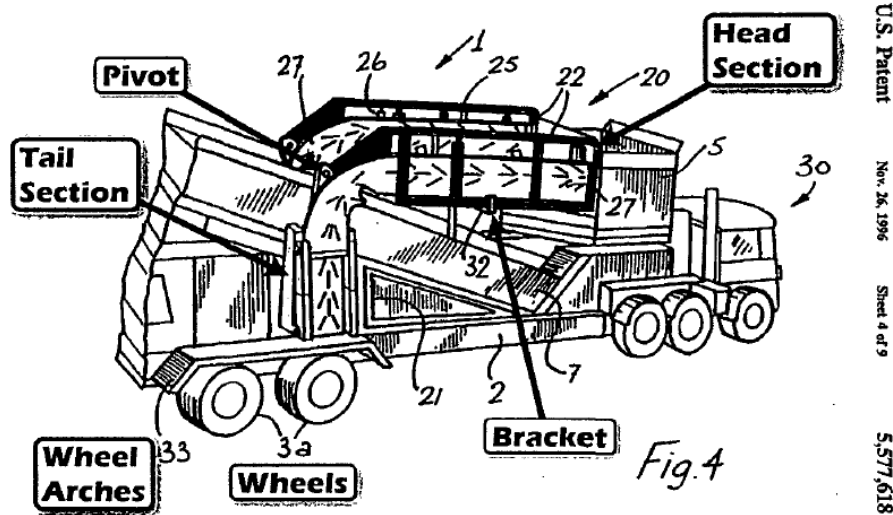
a plurality of rollers mounted on the conveyor frame; and

an endless conveyor belt mounted on the rollers to complete the assembly of a lateral delivery conveyor having tail and head sections, said belt defining a conveyor plane.

'618 patent col. 7 ll. 13-53.

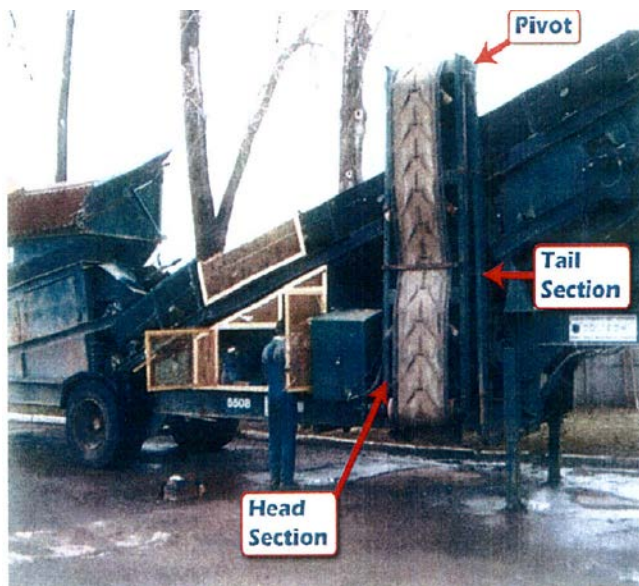
As the claim makes clear, each lateral delivery conveyor claimed in the '618 patent is a single conveyor that comprises its own head and tail section. The head and tail sections are connected by a pivot that allows each conveyor to be folded in a different configuration depending on whether the lateral delivery conveyor is in the operative position or the transport position. In the transport position, the head and tail sections are folded at their pivot such that the tail section is positioned vertically (perpen-

dicular to the screener's chassis) and the head section is folded to the side (extending along the length of the chassis), creating an L-shaped structure. According to the language of representative Claim 1, neither the head nor tail sections of a lateral delivery conveyor may "project laterally beyond the chassis" when the screener is in the transport position. '618 patent col. 7 ll. 39-40, 46-47. Two such conveyors, shown in the transport position, are depicted in Figure 4 of the '618 patent, reproduced below:

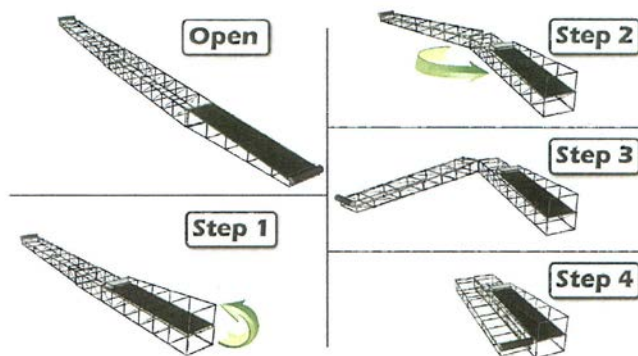


At trial, Metso argued that many of Powerscreen's screeners infringed the '618 patent either literally or under the doctrine of equivalents. In addition to arguing that the accused screeners were not covered by the claims, Powerscreen argued that the '618 Patent's claims would have been obvious in light of two prior-art screeners designed by the inventor of the '618 patent, Malachy Rafferty. One of these pieces of prior art, a screener called the Masterskreen Dominator, contained lateral delivery conveyors that folded such that the head section of the conveyor folded over the tail section of the conveyor when the screener was in the transport position (so that the two sections of the lateral conveyors were stored in an I-

shaped formation, as opposed to the L-shaped formation claimed in the '618 patent). This vertical fold is depicted below:



The second piece of prior art raised by Powerscreen at trial, the Masterstock 70/80 stand-alone conveyor, was sometimes used in conjunction with screeners to distribute sorted materials. This Masterstock 70/80 conveyor, which was also invented by Mr. Rafferty, contained separate sections that could be folded at various pivot points, as the diagram below illustrates:



Unlike the Dominator, which only taught a vertical, over-the-top I-shaped fold, the Masterstock conveyor also taught a side-folding mechanism. The Masterstock 70/80 conveyor contained two hinges, the first of which allowed one section to fold over a middle section, as illustrated in Step 1—this fold is akin to the over-the-top fold of the Dominator described above. However, another hinge allowed a section of the conveyor to fold sideways (which one can analogize to the “head section” of the ’618 patent’s lateral conveyor) alongside the other folded components of the conveyor assembly (which one can analogize to the “tail section” of the ’618 Patent’s lateral conveyor), as shown in Steps 2 and 3. The entirety of the folded Masterstock conveyor is shown in Step 4. One can see clearly from Step 3 that the Masterstock conveyor taught a side fold, and Metso did not dispute this.

At trial, and in its post-trial filings, Metso argued that even though the Masterstock conveyor taught a side fold, it had no “stopping” mechanism to lock a side fold into an L-shaped configuration (such as the configuration shown in Step 3). Metso urged that “even if one of ordinary skill were motivated to combine the [Masterstock conveyor with the Dominator],” Powerscreen “could not establish that there was any reason to keep the conveyor of the Masterstock 80 unfolded at a 90° angle (i.e., in an L configuration) while being transported on a road,” or that there was any “disclosure or suggestion to use a physical stopping mechanism to retain the conveyor at that 90° orientation.” J.A. 11,829.

Immediately prior to the jury instruction conference, and in light of this prior art, Powerscreen moved for judgment as a matter of law (JMOL) on obviousness, but the court denied the motion and held that it would “reserve decision” on obviousness and “charge obviousness” to the jury. *See* J.A. 17,648.

The case then was submitted to the jury. On the issue of obviousness, over Powerscreen's objection, the jury was instructed that Powerscreen must "prove by clear and convincing evidence" that any applicable prior art machine "was fully operational and functional" prior to September 7, 1993. J.A. 12,953. The jury determined that "[c]laims 1 to 7 and 9 of [Metso's] '618 patent [we]re not invalid as obvious under 35 U.S.C. § 103 in view of the prior art." J.A. 3. It also found that all of Powerscreen's accused screeners infringed claims 1, 2, 3, 7, and 9 of the '618 patent either literally or equivalently, that Terex was liable for Powerscreen's infringement as its alter ego, and that the defendants willfully infringed the '618 patent. Accordingly, the jury awarded Metso \$15,800,000 in damages. The court doubled the damage award to \$31,600,000 due to Powerscreen's "willful infringement and ostrich-like behavior" with regard to the '618 patent. *Metso Minerals, Inc. v. Powerscreen Int'l Distrib. Ltd.*, 833 F. Supp. 2d 333, 341 (E.D.N.Y. 2011). The court also granted Metso a permanent injunction against any future infringement by Powerscreen.

After trial, the district court denied Powerscreen's post-trial motions, including its post-verdict JMOL motion and its motion for a new trial. *See Metso Minerals, Inc. v. Powerscreen Int'l Distrib. Ltd.*, 833 F. Supp. 2d 282 (E.D.N.Y. 2011). Though the court admitted that its jury instruction on obviousness requiring prior art to be fully functional and operational was in error, it reasoned that the error did not "result[] in substantial prejudice" because "the clear implication of [the trial] testimony [was] that the[] [relevant prior art] conveyors were fully operational and functional," and that a new trial was not warranted because "there was still sufficient evidence from which the jury could conclude that the '618 patent was not obvious in view of" the prior art. *Id.* at 304.

The district court also denied the defendants' renewed motion for JMOL on obviousness, noting that it "previous-

ly rejected” the defendants’ argument “that the claimed invention in [the ’618 patent] was a combination of familiar elements which yielded no unexpected results,” and that it saw “no reason to . . . disturb a decision that was properly in the province of the jury.”¹ *Id.* at 305. In denying the motion for a new trial, the district court relied on the fact that “the combination [of prior art references] omitted any teaching of a stop to prevent the head section of the folded lateral conveyor from folding beyond 90°,” and that a question of fact existed as to whether the addition of such a “stop” in the ’618 patent rendered the patent non-obvious. *Id.* at 304. Powerscreen timely appealed. We have jurisdiction under 28 U.S.C. § 1295(a)(1).

DISCUSSION

On appeal, Powerscreen, inter alia, challenges the instruction on obviousness and contends as well that the district court should have granted JMOL on the issue of obviousness.

I

Powerscreen first argues that we should reverse the jury’s finding of non-obviousness and remand for a new trial because the district court gave a jury instruction requiring that relevant prior art bearing on obviousness be “fully functional.”²

¹ The district court also rejected Powerscreen’s laches and inequitable conduct defenses, see *Metso Minerals, Inc. v. Powerscreen Int’l Distribution Ltd.*, 833 F. Supp. 2d 321 (E.D.N.Y. 2011), but neither of those defenses is at issue in this appeal.

² The instruction, in relevant part, reads:

For any machine that you may determine is prior art, the defendants must prove by clear and convincing evidence how that particular machine op-

We agree with Powerscreen that the district court's instruction was erroneous. A prior art reference does not need to be fully functional to qualify as prior art; indeed, a prior art reference "need not work" and may even be "inoperative." *Geo M. Martin Co. v. Alliance Machine Sys. Int'l LLC*, 618 F.3d 1294, 1302 (Fed. Cir. 2010) (quoting *Beckman Instruments, Inc. v. LKB Produkter AB*, 892 F.2d 1547, 1551 (Fed. Cir. 1989)).

This error was not harmless. The district court's error is only harmless if the erroneous jury instruction "could not have changed the result." *CytoLogix Corp. v. Ventana Med. Sys., Inc.*, 424 F.3d 1168, 1174 (Fed. Cir. 2005) (quotation marks omitted); *Sulzer Textil A.G. v. Picanol N.V.*, 358 F.3d 1356, 1364 (Fed. Cir. 2004) (quotation marks omitted). Therefore, the relevant question is whether the jury would have been compelled to conclude that the prior art references were fully functional (meaning that the jury would have considered the prior art in its obviousness analysis regardless of the erroneous instruction). However, a reasonable jury could have determined that the evidence in the record did not provide clear and convincing evidence that the prior art was functional.³ Thus, the jury could have believed that it was

erated before September 7, 1993, in the manner that the defendants allege is pertinent to the claims of the '618 Patent, and that that machine, if any was *fully operational and functional* in that respect.

J.A. 18,253 (emphasis added).

³ There was no evidence of functionality. The testimony cited in Metso's brief that it contends bears on the functionality issue only indicates that the prior art Dominator screener and Masterstock conveyor were purchased prior to the critical date, not that they were fully func-

required to ignore these prior art references, and the instruction was harmful error. At minimum, a new trial on obviousness is therefore required. *See CytoLogix*, 424 F.3d at 1174 (noting that a prejudicial jury instruction error—i.e., one that is not harmless—requires a new trial).

II

Powerscreen contends that a new trial is unnecessary because the claims are obvious as a matter of law, and JMOL therefore should have been granted. “We review the denial of a motion for JMOL de novo.” *Harris Corp. v. Ericsson Inc.*, 417 F.3d 1241, 1248 (Fed. Cir. 2005). Obviousness is a question of law we review de novo based on underlying findings of fact. *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1237, 1248 (Fed. Cir. 2010). Powerscreen argues that the district court’s denial of its JMOL motion on obviousness was improper and that “[t]he combination of Dominator and Masterstock 70/80 conveyors renders all asserted claims of the ’618 patent obvious as a matter of law.”⁴ Powerscreen Br. 75.

tional; none of Metso’s cited testimony explicitly addresses the functionality question.

⁴ Metso argues that “defendants failed to move pre-verdict for JMOL that the claims of the ’618 patent were obvious . . . and thus waived[] their right to move for [post-verdict] JMOL on this issue.” Metso Br. 46. We disagree. Powerscreen moved pre-verdict for JMOL on obviousness, the district court made rulings, and Metso’s counsel admitted that “[he] thought [that] the court . . . ruled that obviousness goes to the jury,” *see* J.A. 17,647. The district court stated that it had “denied [Powerscreen’s] motion with regard to obviousness” and “reserve[d] decision” on obviousness pre-verdict, J.A. 17,648, and it noted post-verdict that it had “previously rejected” the argument that the ’618 patent “was a combination of

As we have held, “[a] patent is invalid for obviousness ‘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 to which said subject matter pertains.’” *Wyers*, 616 F.3d at 1237 (quoting 35 U.S.C. § 103). Two inquiries—the prima facie case and secondary considerations—therefore guide a determination of obviousness. *See id.* (citing *Graham v. John Deere Co. of Kan. City*, 383 U.S. 1 (1966)). Here, the parties dispute the strength of the prima facie case of obviousness, and Metso argues that various secondary considerations including commercial success, unexpected results, and alleged copying counsel against an overall obviousness finding. We address first the question of whether there was a prima facie case of obviousness.

A

As noted above, the relevant prior art that Powerscreen introduced for its obviousness argument was the Masterskreen Dominator and the Masterstock 70/80 conveyors. Metso does not appear to dispute that both of these pieces of prior art were sold in the United States

familiar elements which yielded no unexpected results,” *Metso*, 833 F. Supp. 2d at 305. The district court made no determination that the issue had not been properly presented, and indeed assumed that it had been. Given this record, and considering that “even a cursory motion suffices to preserve an issue on JMOL,” *W. Union Co. v. MoneyGram Payment Sys., Inc.*, 626 F.3d 1361, 1367 (Fed. Cir. 2010) (citing *Blackboard, Inc. v. Desire2Learn Inc.*, 574 F.3d 1371, 1379-80 (Fed. Cir. 2009)), we hold that Powerscreen’s pre-verdict JMOL motion was sufficient to preserve the obviousness question for post-verdict JMOL in this case.

prior to September 7, 1993, which is the critical date of the '618 Patent. *See Baker Oil Tools v. Geo Vann, Inc.*, 828 F.2d 1558, 1563 (Fed. Cir. 1987) (noting that the critical date is “the date one year before the filing date of the patent application”); '618 patent, at [22] (noting that the filing date of the '618 Patent application was September 7, 1994).

Metso does not argue that the cited prior art combination does not meet the limitations of the relevant claims of the '618 patent, with one exception. Metso argues that Powerscreen “failed to establish that the combination of the two machines would be claim 1” because they “failed to establish that there was any reason to keep the conveyor of the Masterstock conveyor unfolded at a 90° angle (i.e., in an L configuration) while being transported on a road, or that there was a mechanism to retain the conveyor at a 90° orientation [i.e., a ‘stop’ feature].” Metso Br. 48. However, the absence of this feature is pertinent only if the claims require the feature. *See Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007) (noting that a patented invention is obvious when “a skilled artisan would have been motivated to combine the teachings of the prior art references to achieve the *claimed* invention” (emphasis added)).

Here, the asserted claims of the '618 patent do not require that the head section of a lateral delivery conveyor (the “head articulation means”) be locked into place, and the district court’s claim construction of that term—which is not challenged by Metso on appeal—rejected any requirement of a “stop.” Significantly the district court in its *Markman* order specifically rejected Metso’s argument that the claims required a stop. It held that “the ‘fixed stop’ and the other ‘stops’” were not part of the “head articulation means” limitation because they “do not connect the head section to the tail section” of the conveyor. *Metso Minerals, Inc. v. Powerscreen Int’l Distrib. Ltd.*, 681 F. Supp. 2d 309, 324 (E.D.N.Y. 2010); *see also Metso*

Minerals, Inc. v. Powerscreen Int'l Distrib. Ltd., 722 F. Supp. 2d 316, 320-21 (E.D.N.Y. 2010) (refusing to alter its construction of “head articulation means” on reconsideration). In addressing obviousness in the context of Powerscreen’s motion for a new trial, the district court acknowledged that it “did not construe the patent claims to require stops.” 833 F. Supp. 2d at 304. Since there was no requirement of a “stop” in the ’618 patent, whether the prior art taught a “stop” is irrelevant. We therefore conclude that the Dominator-Masterstock combination disclosed the limitations of the asserted claims.⁵

Metso also argues that Powerscreen failed to establish that “there was any . . . reason to combine [the prior art] machines to result in the invention other than” hindsight. Metso Br. 47. We disagree. As *KSR* made clear, the Supreme Court has “set forth an expansive and flexible approach” to obviousness. See *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 415 (2007). Under this approach, “it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* at 418. The undisputed evidence of record here establishes a clear motivation to combine the vertical-folding Dominator screener with the side-folding Masterstock conveyor.

Specifically, at the time the ’618 Patent was filed, there was a motivation to create a screener that could handle a greater capacity of sorted material (thereby

⁵ Metso also argues that certain components of the Masterstock conveyor would need to be removed to combine it with the Dominator screener (specifically, support wheels that would otherwise hang off of the side of the conveyor), but this is another difference that does not negate the obviousness of the ’618 Patent in view of the Dominator screener and Masterstock conveyors.

generating output at a faster rate) and, at the same time, comply with road permit regulations that restricted the width of screeners that could be transported on roads. The challenge was that creating a higher-capacity machine required widening the screener's central conveyor, which widened the screener's body. Meanwhile, the over-the-top, I-shaped folding configuration of a screener's lateral conveyors in the transport position also contributed to the overall width of the machine when it was transported on roads. Unsurprisingly, then, when designing the '618 patent, Rafferty knew that "[t]here was no good in making conveyors [like the ones] that [he] was already making [i.e., the Dominator with its vertical fold], because with this [new] wider machine [the conveyers would] be too wide for the road." J.A. 26,835. The side-fold taught by the prior art Masterstock conveyors provided an obvious solution to this problem. This evident motivation to combine—to ensure that higher-capacity screeners complied with road permit requirements—is not rebutted by Metso. No contrary evidence suggests that there was a lack of a motivation to combine, or that the prior art “taught away” from the combination.

We therefore conclude that Powerscreen's prima facie case of obviousness is strong, even viewing the evidence in a light favorable to Metso. This is because, following *KSR*, this is a case where, in our view, “market demand . . . dr[ove] design trends,” 550 U.S. at 419, “there [wa]s a design need or market pressure to solve a problem,” and “there [were] a finite number of . . . solutions” that could have produced the desired outcome, *id.* at 421. Here, the apparent solution to maintain a compact machine for transport while increasing the screener's output capacity required a machine that folded the lateral conveyors in as compact a manner as possible. This further suggests that “ordinary skill and common sense,” rather than innovation, fostered Rafferty's invention of the '618 Patent. *Id.*

B

Although the relevant claims of the '618 Patent are prima facie obvious, Metso also argues that the secondary considerations of commercial success, unexpected results, and copying supported the jury's verdict of non-obviousness.

On commercial success, Metso notes that "[t]here was substantial commercial success of the patented invention, as embodied in the 1,271 mobile screeners sold by defendants for sales of \$158.7 million and the 365 screeners sold by Metso for sales of \$43.5 million." Metso Br. 49. Metso provides no evidence connecting the commercial success of these screeners to the claimed advances in the '618 Patent. "Our case law clearly establishes that the patentee must establish a nexus between the evidence of commercial success and the patented invention." *Wyers*, 616 F.3d at 1246. There was no evidence of any such connection.

Metso next argues that "[t]he double-fold, L design of the '618 patent had the new and unexpected result of enabling dramatically higher product output and longer lateral conveyors." Metso Br. 49. However, this allegedly unexpected result was the result of manufacturing screeners with wider central conveyors (as opposed to the side-folded lateral conveyors at issue here). This widening of the central conveyor allowed more material to be sorted and distributed to the lateral delivery conveyors, but the width of the central conveyor is not part of the limitations of the claimed invention. This factor therefore does nothing to undermine Powerscreen's obviousness claim.

The last secondary consideration Metso emphasizes is copying. It notes the district court's finding that "the Defendants willfully and deliberately copied the '618 patent" and "evinced ostrich-like, head-in-the-sand behavior" when creating the its infringing screener. *Metso*, 833 F. Supp. 2d at 337-38. There is no dispute that during Powerscreen's redesign of its screener to create the ac-

cused models, Powerscreen was aware of Masterskreen's Senator screener, and of the '618 patent that it embodied. However, while there were similarities between the accused screeners and Metso's screeners, the products are far from identical and there is no evidence that Powerscreen copied a specific product developed by Metso (such as the Senator screener). *See Metso*, 833 F. Supp. 2d at 337-38 (citing no specific evidence of copying). Given that "[o]ur case law holds that copying requires evidence of efforts to replicate a specific product," *Wyers*, 616 F.3d at 1246, copying has not been established here.

* * *

In examining the evidence on obviousness as a whole, including Powerscreen's prima facie case and the evidence of secondary considerations, we are persuaded that as a matter of law the asserted claims of the '618 patent would have been obvious to a person of ordinary skill in the art. We therefore reverse. Because we reverse on obviousness, and the asserted claims of the '618 patent are therefore invalid, we need not reach other issues including whether the accused devices were within the scope of the claims.

REVERSED

COSTS

No costs.