

NOTE: This disposition is nonprecedential.

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

NAVICO INC., NAVICO HOLDING AS,
Appellants

v.

INTERNATIONAL TRADE COMMISSION,
Appellee

**GARMIN INTERNATIONAL, INC., GARMIN USA,
INC., GARMIN CORPORATION,**
Intervenors

2016-1533

Appeal from the United States International Trade
Commission in Investigation No. 337-TA-921.

Decided: June 13, 2017

MATTHEW S. STEVENS, Alston & Bird LLP, Charlotte,
NC, argued for appellants. Also represented by KIRK T.
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Washington, DC, argued for appellee. Also represented by WAYNE W. HERRINGTON, DOMINIC L. BIANCHI.

NICHOLAS P. GROOMBRIDGE, Paul, Weiss, Rifkind, Wharton & Garrison LLP, New York, NY, argued for intervenors. Also represented by JENNIFER DIANE CIELUCH, JENNIFER H. WU; DAVID J. BALL, JR., DAVID K. STARK, Washington, DC.

Before PROST, *Chief Judge*, DYK, and REYNA, *Circuit Judges*.

REYNA, *Circuit Judge*.

Navico Inc. and Navico Holding AS appeal from a Final Determination of the United States International Trade Commission that resulted in an exclusionary order prohibiting importation of certain sonar imaging devices. The Final Determination includes a finding of infringement of U.S. Patent Nos. 8,305,840 and 8,605,550, a determination of invalidity for some of the asserted claims, and a finding of noninfringement of U.S. Patent No. 8,300,499. On appeal, Navico raises several challenges to the Commission's Final Determination. We affirm the Commission's decision in these challenged aspects.

BACKGROUND

1. Procedural History

On June 9, 2014, Navico filed a Section 337 petition with the Commission alleging that Garmin's importation and sale of its DownVü marine sonar imaging products infringed three Navico patents.¹ 19 U.S.C. § 1337. On

¹ Generally, section 337 establishes an administrative investigation on whether the importation of certain goods constitute an unfair trade act, i.e. infringement.

July 7, 2014, the Commission initiated a Section 337 investigation on imports of Garmin's DownVü products.²

An Administrative Law Judge ("ALJ") conducted an evidentiary hearing in March 2015. On July 2, 2015, the ALJ issued a Final Initial Determination, finding no violation of Section 337. The ALJ upheld the validity of all asserted claims, but found no infringement. J.A. 98. The ALJ contingently found direct and contributory infringement in the event the Commission did not adopt Garmin's claim construction. Navico, Garmin, and the Office of Unfair Import Investigations each petitioned the Commission for review of the Initial Determination. On September 3, 2015, the Commission agreed to review the Initial Determination and invited further briefing.

On December 1, 2015, the Commission issued its Final Determination reversing the Initial Determination in part and finding that Garmin's DownVü products infringed the '840 and '550 patents. The Final Determination reversed the Initial Determination's primary claim construction for those two patents and adopted the Initial Determination's contingent finding of direct infringement. The Final Determination also reversed the Initial Determination's finding of validity as to claims 1, 7, 12, 13, and 57 of the '550 patent. This appeal followed.

2. U.S. Patent No. 8,305,840

The '840 patent is entitled "Downscan imaging sonar." It discloses sonar systems for providing images of the sea floor beneath a vessel.

The remedy provided in Section 337 is the issuance of an exclusionary order that prohibits the importation of the goods deemed infringing.

² Certain Marine Sonar Imaging Devices, Inv. No. 337-TA-921, 79 Fed. Reg. 40778-79 (July 14, 2014).

The '840 patent discloses a sonar imaging device for generating images of objects beneath a watercraft. The patent discloses that the sonar images are generated via transducers. A linear transducer directed downward (“downscan transducer”) provides images of the water column and bottom features directly below the vessel, while transducers pointed toward the sides (“sidescan transducers”) can be used to map the sea floor on the sides of a vessel. '840 patent col. 2 l. 65–col. 3 l. 13. Instead of linear transducers, conventional circular transducers with conical beams can also be used, although these are said to “provide poor quality images for sonar data relating to the structure on the bottom or in the water column directly below the vessel.” *Id.* at col. 2 ll. 52–59.

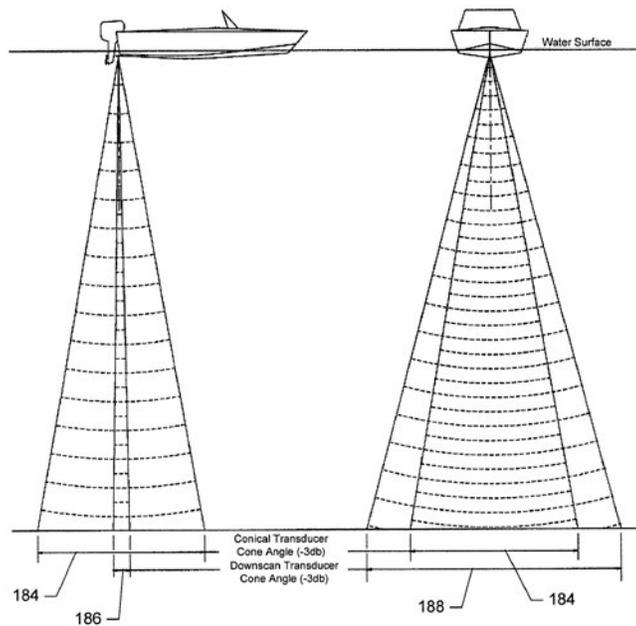


FIG. 15B.

Figure 15B illustrates the beam patterns formed by downscan transducers. Circular transducers produce a

conical beam pattern with the same beamwidth (184) in each dimension, whereas linear transducers produce a fan-shaped beam which is wide in one dimension (beamwidth 188) and narrow in another (beamwidth 186).

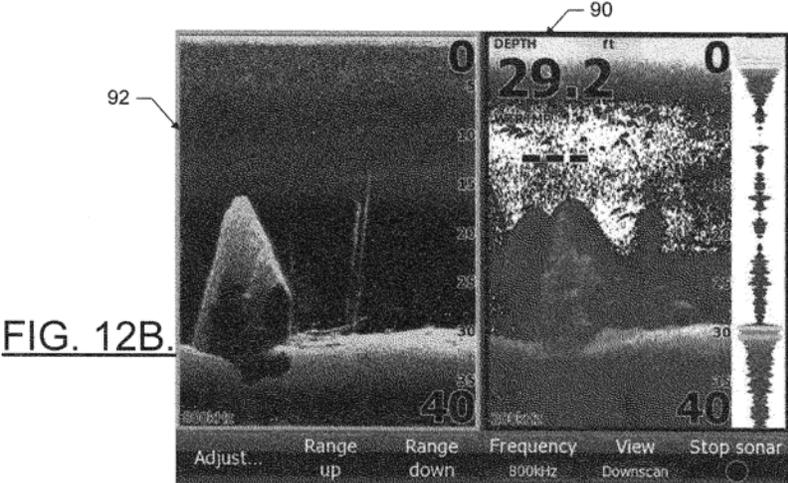


Figure 12B shows example images produced by linear (on the left) and circular (on the right) downscan transducers. The displays scroll across the horizontal axis as the boat moves and plot the sonar data by depth on the vertical axis. The patent describes the data from the linear downscan transducers as unexpectedly more detailed than that from the circular transducers, providing detailed images of the water column below the vessel as well as details of the bottom or structures resting on the bottom. '840 patent col. 14 ll. 5–12.

Although various embodiments are disclosed, the '840 patent claims a sonar assembly with a single linear downscan transducer that creates fan-shaped sonar beams. Some of the asserted claims, such as claim 39, additionally recite a circular transducer element.

3. U.S. Patent No. 8,605,550

The '550 patent, also entitled "Downscan imaging sonar," issued from a continuation application of the '840 patent and contains the same specification. Instead of a single linear downscan transducer, it claims three transducers, two of which are linear sidescan transducers and one of which is a linear downscan transducer.

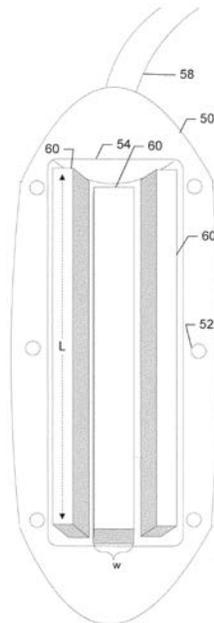


FIG. 6.

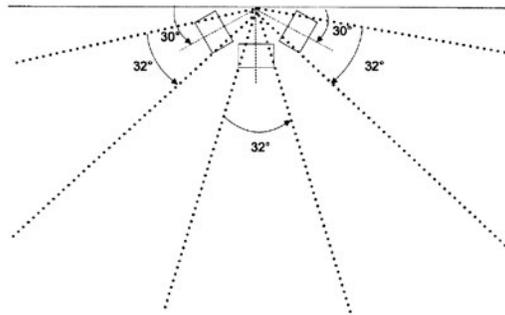


FIG. 9A.

Figure 6 of the patent illustrates a top view of a transducer array containing two linear sidescan transducers (labeled 60, on the left and right) and one linear downscan transducer (also labeled 60, in the middle). Figure 9A shows an example beam pattern of such a system, with one beam directed downward from the downscan transducer and one beam directed to each side from the sidescan transducers.

The Commission's decision found claims 1, 7, 12, 13, and 57 obvious over a combination of the Betts and Tuck-

er references. Claim 1 is representative for the purposes of this appeal. It claims:

1. A sonar transducer assembly, comprising:

a plurality of transducer elements, each one of the plurality of transducer elements having a substantially rectangular shape configured to produce a sonar beam having a beamwidth in a direction parallel to a longitudinal length of the transducer element that is significantly less than a beamwidth of the sonar beam in a direction perpendicular to the longitudinal length of the transducer element,

wherein the plurality of transducer elements are positioned such that the longitudinal lengths of the plurality of transducer elements are substantially parallel to each other, and

wherein the plurality of transducer elements include at least:

a first linear transducer element positioned within a housing and configured to project sonar pulses from a first side of the housing in a direction substantially perpendicular to a centerline of the housing,

a second linear transducer element positioned within the housing and spaced laterally from the first linear transducer element, wherein the second linear transducer element lies substantially in a plane with the first linear transducer element and is configured to project sonar pulses from a second side of the housing that is generally opposite of the first side, and is also in a direction substantially perpendicular to the centerline of the housing, and

a third linear transducer element positioned within the housing and configured to project sonar pulses in a direction substantially perpendicular to the plane defined by the first and second linear transducer elements.

'550 patent col. 17 l. 39–col. 18 l. 3.

4. U.S. Patent No. 8,300,499

The '499 patent is entitled “Linear and circular downscan imaging sonar.” This patent is directed to software that receives sonar data from different types of transducers and combines that data into a single display. '499 patent col. 3 ll. 12–15. This allows the sonar system to receive high quality images relative to the water column and bottom features directly beneath the linear transducer and the vessel on which the linear transducer is employed and also employ a circular transducer to provide greater sensitivity with respect to detecting small objects in the water column. *Id.* at col. 3 ll. 4–9.

Claim 1 is representative for the purposes of this appeal. It claims:

1. A method comprising:

receiving linear downscan sonar data based on sonar returns from a series of fan-shaped beams produced sequentially by a linear downscan transducer mounted on a watercraft, the series of fan-shaped beams insonifying different fan-shaped regions of an underwater environment beneath the watercraft as the watercraft travels;

receiving conical downscan sonar data based on sonar returns from a generally conical beam produced by a second downscan transducer, wherein the conical beam is wider than each fan-shaped beam in a direction parallel to a

longitudinal length of the linear downscan transducer;

combining the linear downscan sonar data and the conical downscan sonar data to produce combined downscan sonar data; and

rendering the combined downscan sonar data as at least one image on a display, the at least one image including a composite of images of the fan-shaped regions arranged in a progressive order corresponding to the travel of the watercraft.

Id. at col. 17 ll. 34–55.

5. Tucker Prior Art

The Commission’s decision found some, but not all, claims of the ’550 patent invalid over a combination of two references. The first reference is a 1960 article by Tucker entitled “Narrow-beam echo-ranger for fishery and geological investigations.”

Tucker describes an “echo-ranger” designed to be usable both as a horizontal fish finder and a sea floor mapper. J.A. 5323. This is because its transducer can be adjusted to point either to the side (for the fish finder) or downward (to map the sea bed). J.A. 5330. The article provides a complete circuit diagram for Tucker’s echo ranger. J.A. 5326–27. In particular, Figure 8 shows the circuit diagram of the transmitter. The output stage portion is reproduced below:

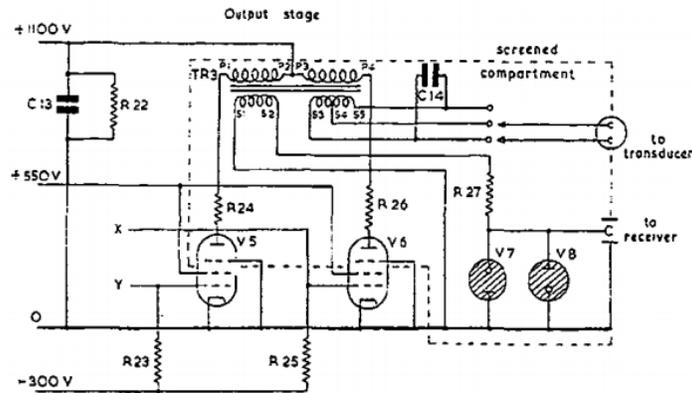


Fig. 8. Circuit diagram of transmitter.

J.A. 5326. This diagram shows how transmitted pulses enter through the connections labeled “X” and “Y” (which come from the earlier stages of the transmitter), are amplified by pentode vacuum tubes V5 and V6, and travel through transformer TR3 to the transducer. Similarly, echoes received through the transducer travel back through transformer TR3, pass through resistor R27, and are sent on to the receiver.

The receiver then takes the “input from transmitter,” amplifies it using multiple amplifiers, and sends to “to [the] recorder unit.” This circuitry is shown in Figure 9 of Tucker.

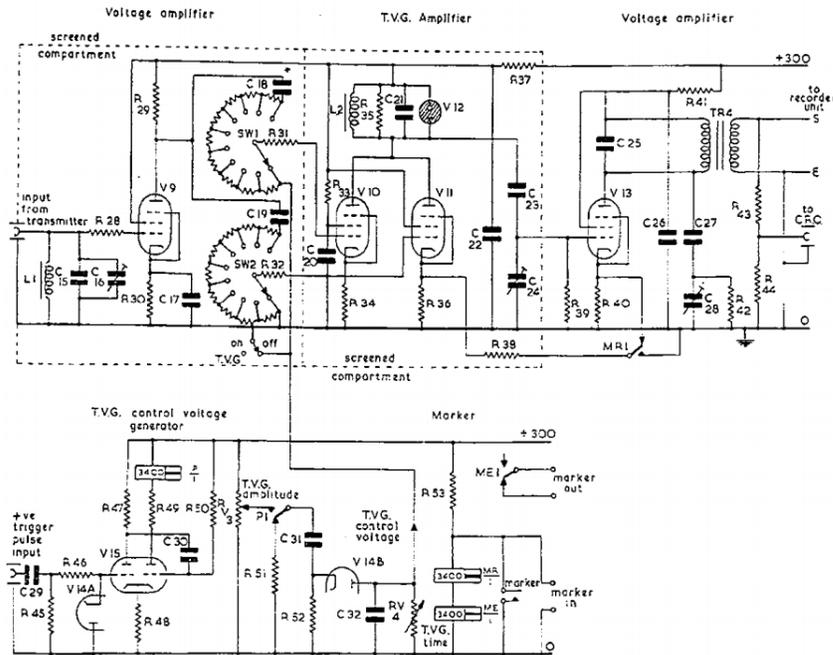


Fig. 9. Circuit diagram of receiver amplifier.

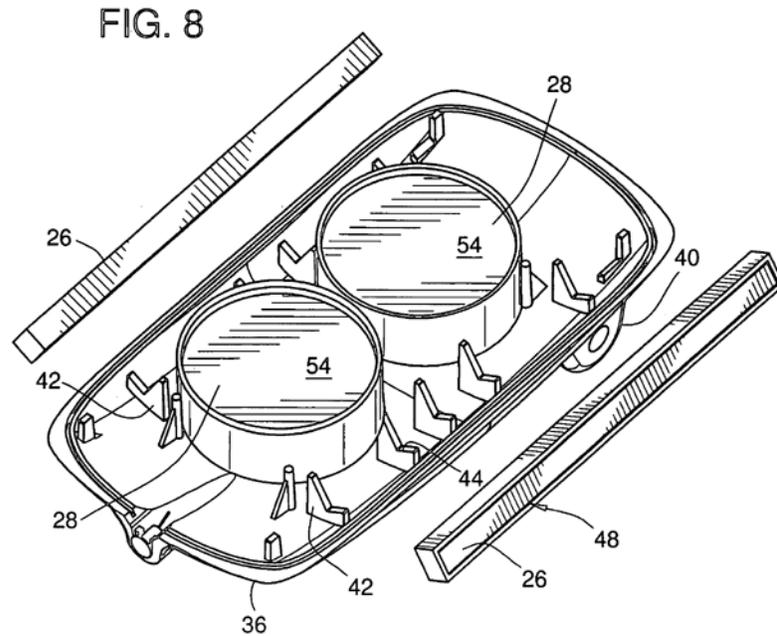
J.A. 5327.

The recorder unit Tucker describes is a system for producing a printed image of the collected data. J.A. 5328. The picture is printed onto paper using a "Mufax picture receiver," a primitive form of printer that reproduces analog data onto a sheet of paper. Tucker shows example images of topography of various sea floors. J.A. 5329.

6. Betts Prior Art

The second prior art reference cited by the Commission is U.S. Patent No. 7,652,952 to Betts, entitled "Sonar imaging system for mounting to watercraft." Betts discloses a sonar system with side scanning and bottom scanning elements. Betts describes two linear transducers that scan the water to the sides of a boat and two circular transducers that scan the water below the boat.

The return signals received by the elements can be processed through a software filter to remove noise.



Betts Fig. 8 (showing downscan circular transducers 54 and sidescan linear transducers 26).

DISCUSSION

1. Standard of Review

Under the Administrative Procedure Act, 5 U.S.C. § 706(2), we review the Commission’s factual findings for substantial evidence, and the Commission’s legal determinations de novo. *See Spansion, Inc. v. Int’l Trade Comm’n*, 629 F.3d 1331, 1343–44, 1349 (Fed. Cir. 2010). Under the substantial evidence standard, the court “must affirm a Commission determination if it is reasonable and supported by the record as a whole, even if some evidence detracts from the Commission’s conclusion.” *Spansion*,

629 F.3d at 1344. This court may set aside the Commission's choice of remedy only if it is legally erroneous, arbitrary and capricious, or constitutes an abuse of discretion. *Fuji Photo Film Co. v. Int'l Trade Comm'n*, 386 F.3d 1095, 1106 (Fed. Cir. 2004).

2. Contributory Infringement and Prospective Relief

In addition to Navico's allegations of direct infringement by Garmin's complete sonar systems, Navico also alleged that Garmin contributorily infringed through its sale of standalone transducers because it knew they were specially made to be used in an infringing manner. The Commission found there was no contributory infringement of various claims of the '840 patent by Garmin's standalone transducers. J.A. 34. On this basis, the Commission did not award Navico prospective relief for future contributory infringement. Navico challenges these findings of no contributory infringement.

Our decision today in a related case, *Garmin International, Inc. v. International Trade Commission*, No. 16-1572, reverses the Commission's finding of validity and finds these patent claims invalid as obvious over the prior art. Because the claims are invalid, there can be no contributory infringement. Accordingly, we affirm the Commission's finding of no contributory infringement.

3. Obviousness

The Commission found claims 1, 7, 12, 13, and 57 of the '550 patent obvious. These claims are directed to three linear transducer elements, two of which scan to the sides and one of which scans downwards. The Commission, reversing the Initial Determination, found these claims obvious based on a combination of the Betts and Tucker references. J.A. 51–57. Betts describes two linear transducers that scan the water to the sides of a boat and two circular (not linear) transducers that scan the water below the boat. J.A. 3674. Tucker describes a linear

transducer which can be adjusted to point “vertically downwards.” J.A. 5323, 5330. By swapping Betts’ two downward circular transducers for Tucker’s single downward linear transducer, the Commission found that a person of ordinary skill in the art would arrive at the ’550 patent’s invention.

The obviousness inquiry must “guard against slipping into use of hindsight and . . . resist the temptation to read into the prior art the teachings of the invention in issue.” *Graham v. John Deere Co.*, 383 U.S. 1, 36 (1966). Further, “when a patent claims a structure already known in the prior art that is altered by the mere substitution of one element for another known in the field, the combination must do more than yield a predictable result.” *KSR*, 550 U.S. at 416. Similarly, § 103 usually bars patentability when the improvement is nothing more than the predictable use of prior art elements according to their established functions. *Id.* at 417.

Obviousness is a question of law based on subsidiary findings of fact relating to “the scope and content of the prior art, differences between the prior art and the claims at issue, the level of ordinary skill in the pertinent art, and any objective indicia of non-obviousness.” *Randall Mfg. v. Rea*, 733 F.3d 1355, 1362 (Fed. Cir. 2013) (citing *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 406 (2007)). Whether there would have been a motivation to combine multiple references is also a question of fact. *S. Ala. Med. Sci. Found. v. Gnosis S.p.A.*, 808 F.3d 823, 826 (Fed. Cir. 2015). If all elements of the claims are found in a combination of prior art references, as is the case here, the factfinder should further consider whether a person of ordinary skill in the art would be motivated to combine those references, and whether in making that combination, a person of ordinary skill would have a reasonable expectation of success. *Medichem, S.A. v. Rolabo, S.L.*, 437 F.3d 1157, 1164 (Fed. Cir. 2006).

Navico argues for reversal of the Commission's finding of obviousness on four grounds. First, Navico argues that Tucker discloses *sidescan*, not *downscan*, sonar. Thus, Navico argues, the Commission should not have used Tucker as prior art for the *downscan* linear transducer component. However, the Commission found that even though Tucker was largely a *sidescan* unit, Tucker disclosed turning the unit vertically downwards into a *downscan* unit. J.A. 39. In support of this finding, the Commission cited Tucker's statement that "when turned vertically downwards it forms a powerful tool" and that "[i]n some circumstances, the high resolution obtained when used as a vertical sounder can be useful for studying the topography of the sea bed." J.A. 39, 5330. Tucker even provides images of sea beds. J.A. 5329–30. Further, the Commission repeatedly cited Dr. Vincent's expert testimony in support of obviousness. J.A. 40–42. The statements in Tucker and Dr. Vincent's testimony are substantial evidence supporting the Commission's finding that Tucker discloses *downscan* sonar.

Second, Navico argues that the combination of Tucker and Betts renders both references inoperable for their intended purposes. *See In re Gordon*, 733 F.2d 900, 902 (Fed. Cir. 1984) (finding that a modification which renders the invention inoperable for its intended purpose is not obvious because it teaches away from the invention). The Commission rejected this argument, noting that configuring the transducer elements of Tucker as claimed does not render it inoperable but rather is indicative of the adjustability of the Tucker system. J.A. 44.

Navico argues that Tucker disclosed an adjustable system, whereas Betts disclosed a system of simple, fixed transducers. In Navico's view, modifying either of the Betts transducer elements, which are not configurable, to be like the Tucker transducer would be a fundamental redesign. The Commission's finding, however, is supported by substantial evidence. Tucker explicitly discusses

the value of pointing a transducer vertically downward, so fixing a transducer in that position would have been obvious. J.A. 5330. Nothing suggests that combining Betts and Tucker would produce a system unable to produce sidescan or downscan images. On the contrary, the evidence suggests the combined system would be capable of producing both images.

Third, Navico argues that there was no motivation to combine the Tucker and Betts references. Navico suggests that because Betts was a simple, fixed system and Tucker was a complex, customizable system, there would be no motivation to combine them. 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.” *KSR*, 550 U.S. at 418.

Here, the Commission correctly found that Tucker provides a motivation to modify Betts to incorporate a linear downscan transducer. J.A. 44. This motivation is to obtain a high resolution image for studying the layers in the sea and the topography of the sea bed. J.A. 5330. There was substantial evidence to find such a motivation. Tucker suggests that a transducer be pointed downwards to obtain high resolution images of the sea bed. *Id.*

Fourth, Navico argues that the Commission considered the objective indicia of non-obviousness as a mere afterthought after making a prima facie case. We have held that such an analysis is improper, and a fact finder must “consider all evidence relating to obviousness before finding a patent invalid on those grounds.” *In re Cyclo-benzaprine*, 676 F.3d 1063, 1075 (Fed. Cir. 2012). Objective indicia of non-obviousness are vital to an obviousness determination and must be considered, not ignored as a mere afterthought. *See, e.g., Leo Pharm. Prods., Ltd. v. Rea*, 726 F.3d 1346, 1357 (Fed. Cir. 2013) (“Whether before the Board or a court, this court has emphasized

that consideration of the objective indicia is part of the whole obviousness analysis, not just an afterthought.”); *In re Kao*, 639 F.3d 1057, 1067 (Fed. Cir. 2011) (“[W]hen secondary considerations are present, though they are not always dispositive, it is error not to consider them.”); *Stratoflex v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983); *In re Depomed, Inc.*, No. 2016-1378, 2017 WL 676604, at *5 (Fed. Cir. Feb. 21, 2017) (Reyna, J., concurring).

While the Commission’s Final Determination did discuss the objective indicia last, it devotes four pages to their discussion and concluded that there was both positive and negative evidence in the objective indicia. J.A. 54–57. The Commission stated that “these secondary considerations do not overcome the strong prima facie showing,” indicating that it properly conducted a two-part test rather than ignoring the secondary considerations altogether. We find the Commission properly considered all relevant evidence. *See In re Cyclobenzaprine*, 676 F.3d at 1075.

Because the Commission’s factual findings with respect to obviousness are supported by substantial evidence, and because its ultimate legal conclusion of obviousness is correct, we affirm the Commission’s determination that claims 1, 7, 12, 13, and 57 of the ’550 patent are obvious.

4. Claim Construction

Claim 1 of the ’499 patent recites in part “combining the linear downscan sonar data and the conical downscan sonar data to produce combined downscan sonar data.” Other claims include similar limitations. The Commission’s Final Determination construed “combining” as “to merge or to bring into union.” J.A. 74.

Claim construction is a question of law that may be based on underlying factual determinations. *Teva Pharm.*

USA, Inc. v. Sandoz, Inc., 135 S. Ct. 831, 834 (2015). Claim terms are generally given their ordinary and customary meaning, which is the meaning a term would have to a person of ordinary skill in the art after reviewing the intrinsic record at the time of the invention. *Kyocera Wireless Corp. v. Int’l Trade Comm’n*, 545 F.3d 1340, 1346 (Fed. Cir. 2008) (citing *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312–13 (Fed. Cir. 2005) (en banc)). The specification is the single best guide to the meaning of a disputed term, but “there is sometimes a fine line between reading a claim in light of the specification, and reading a limitation into the claim from the specification.” *Id.* at 1346–47. In some cases, the ordinary meaning may be apparent, but in other cases, the meaning as understood by a person of skill in the art is not readily apparent. *Phillips*, 415 F.3d at 1314; see *O2 Micro Int’l Ltd. v. Beyond Innovation Tech. Co.*, 521 F.3d 1351, 1360 (Fed. Cir. 2008).

Navico argues that the meaning of “combining” is broader, and that putting both types of data next to each other constitutes “combining” for the purposes of the claim. Under Navico’s interpretation, there is no need to merge both types of data into a single composite image.

Navico contends that the plain meaning of “combining” includes using two things for a common purpose, such as a combo meal at a restaurant which contains two separate items. Navico further argues that the Commission’s construction of “combine” reads a disclosed embodiment out of the patent and renders a claim meaningless. Figure 10 of the ’499 patent shows a screen with separate display windows for each type of transducer data, displayed next to each other rather than merged. J.A. 524 at col. 4, ll. 51–54; J.A. 524 at col. 12 ll. 28–41; J.A. 515. Dependent claim 21 provides for the linear downscan image data to be displayed in one window and conical downscan image data to be displayed in another. J.A. 532 at col. 19, ll. 49–52. Because claim 21 depends from claim

1, which reads “rendering the combined downscan sonar data,” and because it provides for the uncombined data to be separately rendered, Navico argues that “combined” sonar data must encompass this separately rendered data.

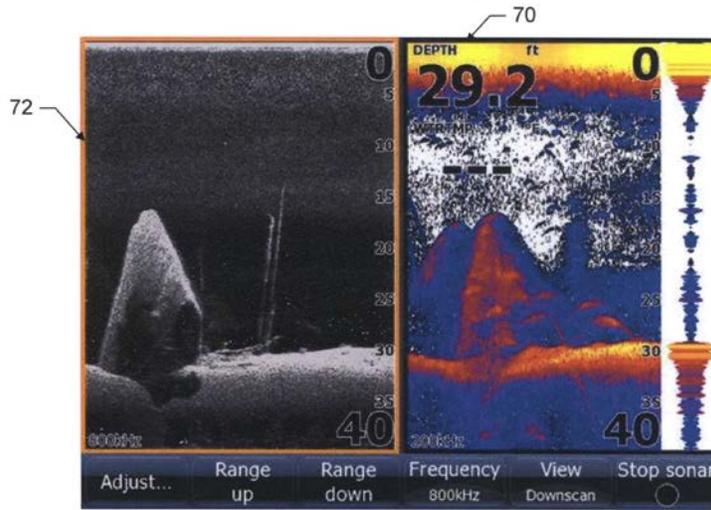


FIG. 10.

J.A. 515 (‘499 patent Fig. 10).

Reading the claims and specification as a whole, however, we find it clear that the claims refer to a system where multiple display formats can be selected, some of which include the “combined downscan sonar data,” and some of which display individual sonar data separately. Claim 19 makes this clear by setting forth a number of display formats. Because all claims depend ultimately from claim 1, all must be capable of rendering combined downscan sonar data. But for claim 21, it must also be possible to render separate, individual data. Just because the claim comprises rendering data in one format does not mean that another part of the claim cannot also require

the data to be rendered in another format. Accordingly, we find claim 21 is consistent with the Commission's construction.

As for the embodiment of Figure 10, which provides for side-by-side display, the specification does not describe this display as a "combined" display. Rather, the specification explicitly distinguishes the display shown in Figure 10 from a combined display. The specification notes that the separate display windows of Figure 10 "may not always be preferable or desirable" and that "a *combination* of the circular downscan transducer data and the linear downscan transducer data into a single display window" is a preferred alternative. J.A. 528 at col. 12, ll. 36–41 (emphasis added). Thus, by suggesting that side-by-side data is not a combination, Figure 10 supports the Commission's construction. Accordingly, we agree with the Commission's view that "combine" means "to merge or to bring into union," and that Garmin did not infringe the '499 patent.

CONCLUSION

Because there is no contributory infringement and the Commission was correct in finding claims 1, 7, 12, 13, and 57 of the '550 patent obvious, and in its construction of "combine," we *affirm* the Commission's Final Determination.

AFFIRMED

COSTS

No costs.