

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte POWER TOOL SPECIALISTS, INC.

Appeal 2008-0365
Reexamination Control 90/006,162
Patent 5,435,411
Technology Center 3600

Decided: February 28, 2008

Before JOHN C. MARTIN, TEDDY S. GRON, and LEE E. BARRETT,
Administrative Patent Judges.

BARRETT, *Administrative Patent Judge.*

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. §§ 134(a) and 306 from the Final Rejection of claims 1-13. We have jurisdiction pursuant to 35 U.S.C. § 6(b).

We affirm-in-part and enter a new ground of rejection.

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REEXAMINATION

A request was filed on December 17, 2001, by Patent Owner Power Tool Specialists, Inc., East Windsor, CT, for reexamination of U.S. Patent 5,435,411 (the '411 patent), issued July 25, 1995, to Anthony J. Borgatti, based on Application 09/290,545, filed August 15, 1994, entitled "Work Support Stand."

THE INVENTION

The claims are directed to a work support stand for support and movement of a workpiece toward or away from a machine. The stand has two different types of work supporting surfaces: a roller for providing unidirectional movement of the workpiece and row of discrete ball-bearing units for permitting movement in varying directions as it is fed to the machine. One work supporting surface is pivotally mounted with respect to the other work supporting surface, so when one is in an operative position the other is not and vice versa.

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Figure 1 of the '411 patent is reproduced below.

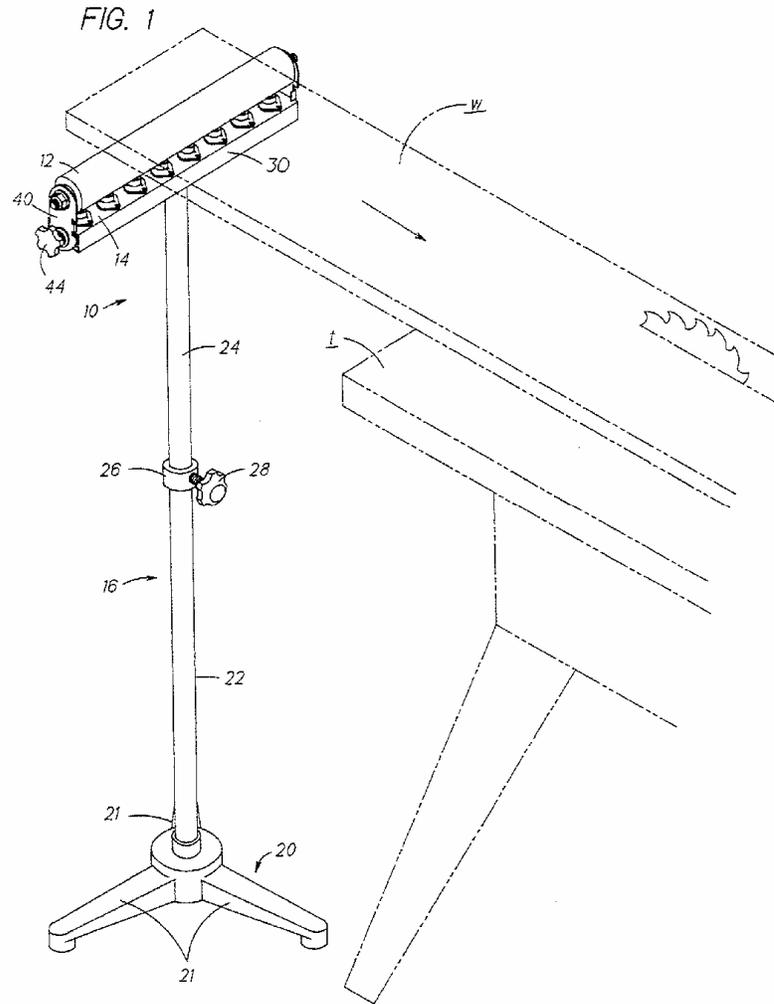


Figure 1 shows a work support stand 10 adjacent a table saw type cutting tool and which comprises a first work supporting member 12 (shown as a roller) and a second work supporting member 14 (shown as ball bearings) both supported on a base member 30 disposed on a post 16. The

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first work supporting member is mounted on a rotatable bracket 40 secured in position by a knurled knob 44 which may be loosened to move the first supporting member (the roller) between an operative position as shown in Figure 1 and an inoperative position where the ball bearings are operative.

Claim 1 is illustrative:

1. An improved work support stand of unitary construction for support and movement of a workpiece into or away from a machine in varying directions comprising a first work supporting member, a second work supporting member in juxtaposition on said stand, each of said members including an operative position adapted to engage the work for supporting and an inoperative position clear of the work, and means for selectively reorienting said first work supporting member to position the one member in the operative position and the other to the inoperative position on said stand.

THE REFERENCES

Black	US 1,390,487	Sep. 13, 1921
Grill	US 5,299,656	Apr. 5, 1994
Lee	US 5,337,875	Aug. 16, 1994 (filed Apr. 9, 1993)
Searfoss	US 5,462,102	Oct. 31, 1995 (filed Aug. 3, 1994)
Xu (hereafter "the Taiwanese patent")	Taiwan 185212 ¹	June 1, 1992

¹ The rejection refers to the application number, 81202836, filed March 6, 1992. Our understanding of this reference is based on a June 2007 translation obtained by the PTO, which also includes clear copies of the figures.

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THE REJECTIONS²

Claims 1, 2, 12, and 13 stand rejected under 35 U.S.C. § 102(b) as being anticipated by the Taiwanese patent.

Claims 1-5 stand rejected under 35 U.S.C. § 102(e) as being anticipated by Searfoss.

Claims 1-5 stand rejected under 35 U.S.C. § 102(e)³ as being anticipated by Lee.

Claims 6, 7, and 9-13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Searfoss and Black.

Claims 6 and 8-13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Lee and Grill.

² In the Final Rejection entered September 20, 2004, the Examiner also rejected: (1) claims 3-5 under 35 U.S.C. § 102(b) over the Taiwanese patent; (2) claims 1-5, 12, and 13 under § 103(a) over the Taiwanese patent; (3) claims 6 and 8-13 under § 103(a) over the Taiwanese patent and Grill; (4) claim 6 under § 103(a) over the Taiwanese patent and Roberts, U.S. Patent 2,237,615; and (5) claim 7 under § 103(a) over the Taiwanese patent, Roberts, and Black. These rejections are not repeated in the Examiner's Answer (mailed in September 2005) and therefore are considered to be withdrawn. *See Ex parte Emm*, 118 USPQ 180, 181 (Bd. App. 1957); *Manual of Patent Examining Procedure* (MPEP) § 1208 (8th ed., rev. 3, Aug. 2005) ("any rejection not repeated and not discussed in the answer may be taken by the Board as having been withdrawn").

³ The statement of the rejection relies on § 102(b); however, Lee issued the day after the '411 patent was filed so the proper basis is § 102(e).

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DISCUSSION

Anticipation

Claims 1, 2, 12, and 13 over the Taiwanese patent

The Taiwanese patent discloses a work support stand with dual work supporting surfaces, a roller 54 and a row of discrete ball bearing 56 in sockets 55, formed as part of a rotation platform 50 (Translation 4). Side plates 52 of the rotational platform 50 can pivot 90 degrees about a rotational axis 57 to let either the roller 54 or ball bearings 56 point up to meet the transport requirements of a variety of materials (*id.*). Limiting blocks 53 bear against a horizontal transverse member, thwart 51, to limit the angle of rotation of the rotational platform 50 (*id.* at 5). The only difference between the Taiwanese patent and the disclosed invention of the '411 patent is that both the roller and row of ball bearings are mounted for rotation with the platform 50 in the Taiwanese patent while in the '411 patent the row of ball bearings remains stationary and only the roller is pivoted. The issue is whether claim 1, as drafted, is anticipated by the Taiwanese patent.

Patent Owner argues that when the claims are properly interpreted, the Taiwanese patent does not anticipate (Br. 5).

The first step in any patentability analysis is to interpret any contested claim limitations to define the scope and meaning of each contested limitation. *See Gechter v. Davidson*, 116 F.3d 1454, 1457 (Fed. Cir. 1997). The contested limitation in claim 1 with regard to the rejection over the

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Taiwanese patent is "means for selectively reorienting said first work supporting member to position the one member in the operative position and the other to the inoperative position on said stand." Patent Owner notes that this is a means-plus-function limitation under 35 U.S.C. § 112, ¶ 6 and is properly interpreted by interpreting the meaning of the function and then identifying the corresponding structure in the '411 patent. As to the function, Patent Owner argues that

the plain and ordinary meaning of the phrase "selectively reorienting" in the context of claim 1 is to choose the first work supporting member in preference to the second work supporting member, and to orient (or orient once again) the first work supporting member in preference to the second work supporting member, to position the one member in the operative position and the other to the inoperative position on the stand.

Br. 6. As to the structure, Patent Owner argues that the corresponding structure in the '411 patent is the mounting bracket 40 which allows the first work supporting member 12 to be reoriented. "Clearly, only the first work supporting member 12 is movable on the disclosed stand." (Br. 6.) It is argued that the means-plus-function limitation is not taught by the Taiwanese patent because both the roller and the ball bearings are rotated together and not relative to one another (Br. 7).

Patent Owner also argues that the interpretation of the function as moving only one member is consistent with the prosecution history of the '411 patent. Original claim 1 recited "means for selectively reorienting said

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members to position the one member in the operative position and the other to the inoperative position" The examiner rejected the claim as inaccurate because only one of the two members is moved. Patent Owner amended the claim to recite "means for selectively reorienting said first work supporting member[s] to position the one member in the operative position and the other to the inoperative position on said stand" (deletion in brackets and additions underlined) and the application was allowed.

The Examiner responds that claim 1 does not require that one member moves relative to the other member (Ans. 6). The Examiner does not address the § 112 ¶ 6 argument in the Examiner's Answer, but states in the Final Rejection that "the brackets 52 is [sic] a functional equivalent of the claimed means plus function, as set forth in claim 1" (Final Rejection 7).

Initially, we note that the Board is not bound by any claim interpretation that occurred during prosecution of the '411 patent. The duty of the United States Patent and Trademark Office is to issue valid patents. *See Keystone Bridge Co. v. Phoenix Iron Co.*, 95 U.S. 274, 278 (1877) (In the Patent Office, applicant's "claim is, or is supposed to be, examined, scrutinized, limited, and made to conform to what he is entitled to."); *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966) ("[T]he primary responsibility for sifting out unpatentable material lies in the Patent Office. To await litigation is—for all practical purposes—to debilitate the patent system."). The Board must be free to correct mistakes. *Cf. In re Craig*, 411 F.2d 1333, 1336 (CCPA 1969) (where Board has conceded error in a

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prior decision, the broad countervailing public policy considerations of granting valid patents preclude the application of res judicata). "[D]uring patent prosecution when claims can be amended, ambiguities should be recognized, scope and breadth of language explored, and clarification imposed. . . . An essential purpose of patent examination is to fashion claims that are precise, clear, correct, and unambiguous. Only in this way can uncertainties of claim scope be removed, as much as possible, during the administrative process." *In re Zletz*, 893 F.2d 319, 321-22 (Fed. Cir. 1989). Claims are given their broadest reasonable interpretation during reexamination. *See In re Yamamoto*, 740 F.2d 1569, 1571 (Fed. Cir. 1984).

"Claim construction of a means-plus-function limitation includes two steps. First, the court must determine the claimed function. Second, the court must identify the corresponding structure in the written description of the patent that performs that function." *Applied Med. Res. Corp. v. U.S. Surgical Corp.*, 448 F.3d 1324, 1332 (Fed. Cir. 2006). For an anticipation, the Taiwanese patent must teach the identical function and the structure to perform the function must be the same as or an equivalent of the structure disclosed in the '411 patent.

Patent Owner and the Examiner appear to agree that the term "reorienting" should be understood to mean "moving or adjusting the position of." As noted by Patent Owner (Br. 6), the Examiner rejected original claim 1 of the '411 patent application under 35 U.S.C. § 112, ¶ 2 as inaccurate to the extent it recited "means for selectively reorienting said

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members" because only one of the two members is disclosed as being movable. This rejection was overcome by amending the claim language to read "means for . . . reorienting said first work supporting member," as recited in patent claim 1 (*id.*).

Patent Owner and the Examiner disagree about the meaning of the term "selectively" in the function "selectively reorienting said first work supporting member to position the one member in the operative position and the other to the inoperative position on said stand." For the following reasons, we interpret this function to not exclude reorienting the second supporting member at the same time as the first member. Patent Owner argues that "the plain and ordinary meaning of the phrase 'selectively reorienting' in the context of claim 1 is to choose the first work supporting member in preference to the second work supporting member" (Br. 6). We disagree. The language "selectively reorienting said first work supporting member," broadly construed, means "selectively reorienting *at least* said first work supporting member." The claim language does not require "selectively reorienting *only* said first work supporting member," and it does not require "selectively reorienting said first work supporting member *relative to* said second work supporting member," as in claim 10, which language the Examiner apparently has construed as precluding movement of the second work supporting member while the first work supporting member is reoriented (i.e., moved), since he did not reject claim 10 or the other claims that contain such language for anticipation by the Taiwanese patent.

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"Selectively reorienting said first work supporting member" does not exclude reorienting the second work supporting member simultaneously. The term "selectively" can refer to selectively reorienting at least the first work supporting member between the operative and inoperative positions "to position the one member in the operative position and the other to the inoperative position on said stand," rather than selectively reorienting the first work supporting member in preference to the second work supporting member. Stated another way, the user can "selectively" choose to either (1) leave the first work supporting member in a first position that causes "one member" (e.g., the first work supporting member) to be inoperative and the "other" member (e.g., the second work supporting member) to be operative or (2) reorient (i.e., move) the first supporting to another position that makes the "one member" operative and the "other" member inoperative.

In addition, the wording of the function "selectively reorienting said first work supporting member *to position* the one member *in* the operative position and the other *to* the inoperative position on said stand" is broad enough to permit both work supporting members to be moved. We interpret the limitation "*to position* . . . the other [member] *to* the inoperative position" to imply that the "other" member, which can be either the first or the second work supporting member depending on which is being put into the inoperative position, is being physically moved "to" the inoperative position from an operative position rather than its state or characteristic being changed from operative to inoperative without being moved. By

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contrast, while the limitation "*to position* the one member *in* the operative position" does not necessarily imply movement of the one member from one physical position to another, neither does it preclude such movement. Patent Owner does not contend otherwise.

Thus, we interpret the statement of function in claim 1 as broad enough to cover embodiments where either only the "first" or both of the work supporting members are moved. Accordingly, the claimed function, as presented, reads on the Taiwanese patent as well as on the disclosure of the '411 patent. Since we find the function is met, we next determine whether the Taiwanese structure is the same as or an equivalent of the structure in the '411 patent.

The structure for performing the claimed function in the '411 patent is the pair of mounting brackets 40. The Examiner finds that the brackets 52 in the Taiwanese patent are the "functional equivalent of the claimed means plus function" (Final Rejection 7). The '411 patent's brackets are similar to the Taiwanese brackets because they support a roller and rotate the roller into and out of an operative position, but they differ from the Taiwanese patent's bracket because they only support one work supporting member. Under § 112, ¶ 6, the structure that must be the same or an equivalent is the structure that performs the claimed function. Since the function of the means in claim 1 does not require moving only one work supporting member, and since the bracket in the Taiwanese patent and the bracket in the '411 patent perform the claimed function in the same way, the bracket in the

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Taiwanese patent is the same as or equivalent to the disclosed bracket under § 112, ¶ 6. Thus, the anticipation rejection of claims 1, 2, 12, and 13 over the Taiwanese patent is affirmed.

Although independent claims 3 and 6, which have not been rejected for anticipation by the Taiwanese patent, are similar to claim 1 in that they also recite "means for selectively reorienting said first work supporting member to position the one member in the operative position and the other to the inoperative position on said stand," these claims further specify that "the means comprises a pivotal bracket disposed on said base for supporting one of said work supporting members for movement relative to the other work supporting member." As noted above, the Examiner construes the limitation regarding relative movement as precluding the work supporting members from being moved together.

Claims 1-5 over Searfoss

The Examiner finds that Searfoss discloses a first work supporting member, roller 52, and a second work supporting member, planar upper surface 14. The first work supporting member 52 is supported by a pivotal bracket, pivot arm 34, for movement relative to upper surface 14 and has a tab, hook 46 (Fig. 3), to support the bracket in an operative position.

Patent Owner notes that Searfoss's filing date is 12 days prior to the filing date of the '411 patent and "[t]herefore, Searfoss is expressly not

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admitted to be prior art with respect to the '411 patent and the patent owner reserves its right to swear behind Searfoss at a later date" (Br. 9).

Searfoss is a valid prior art patent until it is antedated.

Patent Owner argues that element 14 is not a "second work supporting member," but is a fixed table top for supporting a saw. "Accordingly, the table top 14 of Searfoss does not have 'an operative position adapted to engage the work for supporting and an inoperative position clear of the work', as recited in independent claim 1." (Br. 9.)

Claims 1-5 do not define the structure of the second work supporting member (*compare* claim 6 which recites that the first work supporting member is a roll-type member and the second work supporting member is a plurality of discrete ball bearing units), so a planar surface can be a second work supporting member. The preamble limitation "for support and movement of a workpiece into or away from a machine" is a statement of intended use and thus does not structurally define over planar surface in Searfoss. *See Boehringer Ingelheim Vetmedica, Inc. v. Schering-Plough Corp.*, 320 F.3d 1339, 1345 (Fed. Cir. 2003) ("An intended use or purpose usually will not limit the scope of the claim because such statements usually do no more than define a context in which the invention operates.").

Patent Owner does not contend otherwise. Nothing precludes the planar support surface 14 from being used to support a workpiece instead of a saw. The claim language does not require that the "operative" and "inoperative" conditions be determined during performance of the same type of work on a

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workpiece, such as cutting it with a table-mounted power saw. As a result, support surface 14 is in an "operative position adapted to engage the work for supporting . . . the work" when no saw is present and roller 52 is in the lowered position and is in "an inoperative position clear of the work" when a saw is present and roller 52 is in the raised position. Thus, we find that surface 14 is a "second work supporting member" and the first work supporting member 52 is selectively reoriented relative to the second work supporting member 14. The anticipation rejection of claims 1-5 over Searfoss is affirmed.

Claims 1-5 over Lee

The Examiner finds that Lee discloses first and second work supporting members, rollers 18. Each roller 18 is supported by a pivotal bracket 16 for movement of one work supporting member relative to the other. With regard to the limitation "means for selectively reorienting said first work supporting member to position the one member in the operative position and the other to the inoperative position on said stand," the Examiner finds that Figure 5 shows both work supporting members in a first position (an inoperative position for a rectangular workpiece) and Figure 6 shows one work supporting member pivoted to a horizontal second position (an operative position for a rectangular workpiece) with the second work supporting member remaining in an inoperative position.

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Patent Owner notes that claim 1 requires "each of said members including an operative position adapted to engage the work for supporting and an inoperative position clear of the work" and contends that neither work supporting member 18, 18 has "an inoperative position clear of the work" (Br. 9). First, it is argued that Lee does not teach the roller positions of Figure 6 for a material having a rectangular cross section, but teaches the roller positions of Figure 4 for such workpieces (Br. 10). Second, it is argued that even if one were to use the roller positions of Figure 6 for rectangular workpieces, the angled roller would not be in an inoperative position because it would still contact the edge of the work (Br. 10). Patent Owner notes that Lee states, "when only one receiving mount 16 of the roller 18 is used to hold the material, another receiving mount 16 can be folded upwards to press against the material which is intended to be conveyed in a predetermined direction" (col. 3, l. 55 to col. 4, l. 4).

The Examiner responds that Patent Owner's work support members may be operative in all positions depending upon the kind of workpiece and the claims do not recite any particular type of workpiece (Ans. 7).

We agree with Patent Owner that Lee does not teach that the rollers 18 have "an inoperative position clear of the work." Lee discloses that when only one roller is used, the other is still operative to press against the material. Even if the workpiece was supported on only one roller, the other roller would not be in "an inoperative position clear of the work." It is not necessary to address whether the separate brackets 16 are the equivalent

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under § 112, ¶ 6, of the "means for selectively reorienting said first work supporting member." The rejection of claims 1-5 over Lee is reversed.

Obviousness

Claims 6, 7, and 9-13 over Searfoss and Black

The Examiner finds that Searfoss does not disclose a plurality of discrete ball bearings on the second work supporting member 14, but concludes that it would have been obvious to modify the second work supporting surface of Searfoss to include a plurality of discrete ball bearing units in view of Black, which discloses a work supporting surface having a plurality of discrete ball bearing units (Final Rejection 4).

Patent Owner argues that Black does not teach a second work supporting surface in addition to the ball-bearing surface, much less a pivotal bracket or like means for selectively orienting the first work supporting member, so Black does not cure the deficiencies of Searfoss (Br. 13). It is argued that it would not have been obvious to modify the table top 14 of Searfoss to include the ball bearings of Black because such modification would render Searfoss unsatisfactory for its intended purpose of supporting a power saw (Br. 13). Specifically, Patent Owner contends that "to modify the table top 14 to include thereupon a plurality of balls, as suggested by the Examiner, would render the table top incapable of supporting a power saw (e.g., the saw would slide along the table during operation and be highly dangerous)" (Br. 13). The Examiner responded to

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this argument by explaining that "a work piece can be supported on a portion of the table the saw [sic], etc. (note Black's table having ball bearings and a saw[)]" (Ans. 8).

We agree with Patent Owner that there is no reason to mount ball bearings on the upper surface 14 of Searfoss since this surface is disclosed to be for mounting a machine. While the upper surface 14 may satisfy the intended use limitation because it is capable of supporting a workpiece as well as a machine, there is no apparent reason why one of ordinary skill would modify its work supporting structure to add ball bearings when the surface is intended to mount a machine. While it is true that Black's table supports ball bearings and a saw blade, the Examiner has not adequately explained how he proposes to modify Searfoss's stand in light of that teaching. The obviousness rejection of claims 6, 7, and 9-13 over Searfoss and Black is reversed.

Claims 6 and 8-13 over Lee and Grill

Independent claims 6, 9, and 10 require "each of said members including an operative position adapted to engage the work for supporting and an inoperative position clear of the work." Lee does not disclose that one of the rollers has "an inoperative position clear of the work," as discussed in connection with independent claims 1 and 3. Grill, which is applied to teach substituting a row of discrete ball bearings for one of the rollers in Lee, does not cure this deficiency. In addition, there is no apparent

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reason for substituting a row of ball bearings for a roller. Nor is it clear that such a substitution would even work in Lee. Accordingly, the rejection of claims 6 and 8-13 over Lee and Grill is reversed.

NEW GROUND OF REJECTION

Claims 1-13 are rejected under 35 U.S.C. § 103(a) as unpatentable over the Taiwanese patent and Grill.

Obviousness findings of fact

Every obviousness determination is based on the four factual inquiries of *Graham v. John Deere Co.*, 383 U.S. 1, 17-18 (1966): (1) the scope and content of the prior art; (2) the differences between the prior art and the claimed invention; (3) the level of ordinary skill in the art; and (4) any objective evidence of nonobviousness. No evidence of nonobviousness is presented.

Scope of the prior art

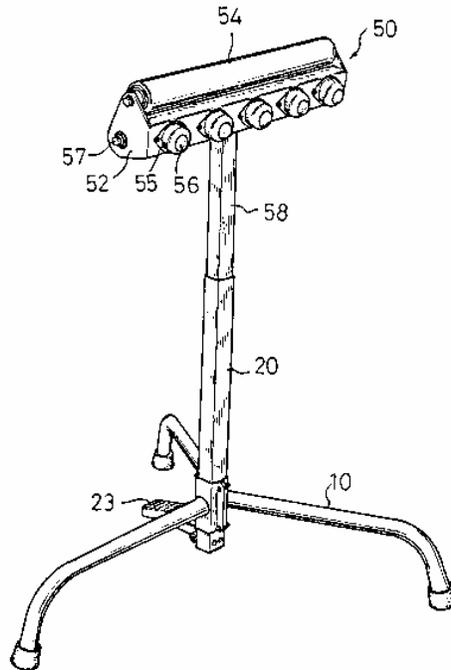
There is no dispute that the references are within the scope of the prior art, i.e., that they are from analogous art, because both are work support stands. *See Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1535 (Fed. Cir. 1983) ("The scope of the prior art has been defined as that 'reasonably pertinent to the particular problem with which the inventor was involved'").

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Content of the references

The Taiwanese patent

Figure 2 of the Taiwanese patent is reproduced below.

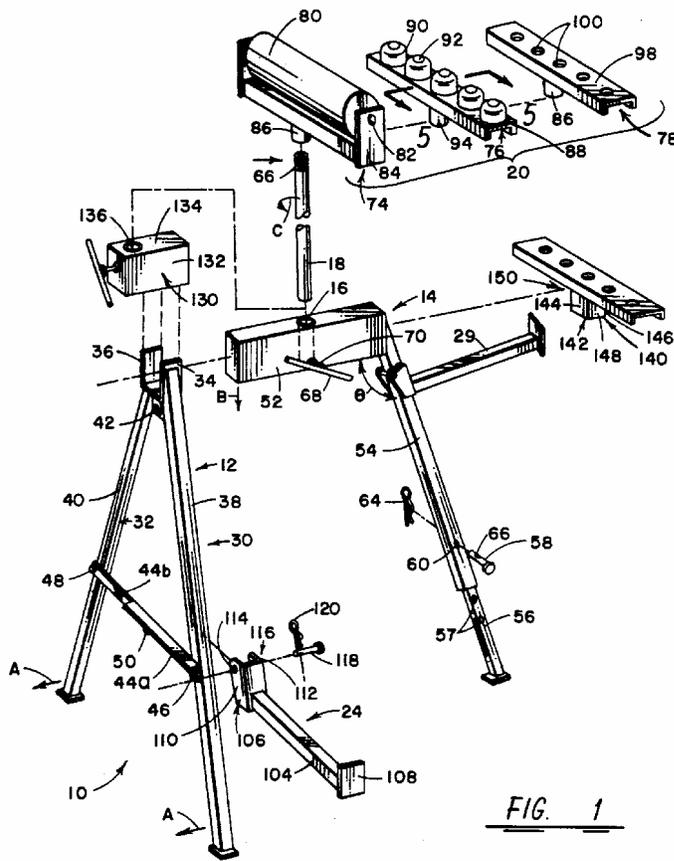


The Taiwanese patent discloses a work support stand with dual work supporting surfaces, a roller 54 (corresponding to the claimed "first working supporting member") and a row of discrete ball bearings 56 in sockets 55 (corresponding to the claimed "second work supporting member"), mounted on a rotational platform 50. The rotational platform 50 has a pair of side plates 52 (corresponding the claimed "brackets") pivotally mounted about a rotational axis 57 on a transverse horizontal member, thwart 51 (Fig. 3) (corresponding to the claimed "base"). The rotational platform 50 can be

rotated 90 degrees to put either the roller 54 or the row of ball bearings 56 in an "operative position adapted to engage the work for supporting" and the other in "an inoperative position clear of the work." The side plates 52 ("brackets") have limiting blocks 53 (corresponding to the "tabs") that engage a edge (corresponding to the claimed "panel") on the thwart 51 to limit rotation of the rotational platform 50 to 90 degrees.

Grill

Figure 1 of Grill is reproduced below.



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Figure 1 illustrates a work support apparatus 10 having removable heads 20 which can be mounted on a rod 18. "Heads 20 are interchangeable, examples include a roller head 74, a ball or transfer head 76 and a flat drilled head 78." (Col. 3, l. 67 to col.4, l. 23.)

The difference

The only difference between the Taiwanese patent and the subject matter of independent claims 3, 6, 9, and 10 is that both the roller and the row of ball bearings rotate with the platform 50 in the Taiwanese patent, while in these claims the row of ball bearings ("second work supporting member") remains stationary and only the roller ("first work supporting member") is pivoted. This difference is expressed with slight variations in language. Claims 3 and 6 recite that "the means comprises a pivotal bracket disposed on said base for supporting one of said work supporting members for movement relative to the other work supporting member," which clearly requires relative movement. Claim 9 recites "a pivotal bracket disposed on the panel for selectively moving said first work supporting member relative to said second work supporting member to position the one member in the operative position and the other to the inoperative position on said stand," and claim 10 recites "means for selectively moving said first work supporting member relative to said second work supporting member to position the one member in the operative position and the other to the

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inoperative position on said stand," so these claims also require relative movement of the first and second members.

Inasmuch as claim 1 does not include the "relative to" limitation, it will read on any combination of reference teachings that renders the other independent claims unpatentable.

Level of skill in the art

The level of ordinary skill in the art is evidenced by the references. *See In re Oelrich*, 579 F.2d 86, 91 (CCPA 1978) ("the PTO usually must evaluate both the scope and content of the prior art and the level of ordinary skill solely on the cold words of the literature"); *In re GPAC Inc.*, 57 F.3d 1573, 1579 (Fed. Cir. 1995) (the Board did not err in adopting the approach that the level of skill in the art was best determined by the references of record). The references shed light how those skilled in the art think, their knowledge, their working assumptions, and their approach to problems. A hypothetical person of ordinary skill in the art is presumed to have knowledge of all references within the field of work supporting stands. A person of ordinary skill in the art of work supporting stands is presumed to have ordinary mechanical ability and would not consider the references to be limited to only what is expressly described. Skill in the art is presumed. *See In re Sovish*, 769 F.2d 738, 743 (Fed. Cir. 1985).

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Obviousness reasoning

"To facilitate review [of the obviousness conclusion], this analysis should be made explicit. As our precedents make clear, however, the analysis need not seek out precise teachings directed to the specific subject matter of the challenged claim, for *a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ.*" (Citation omitted and emphasis added.) *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727, 1741 (2007). "[I]t 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.* However, the teaching, suggestion, or motivation (TSM) test of the Federal Circuit cannot be applied as a rigid and mandatory formula. *Id.* "The obviousness analysis cannot be confined by a formalistic conception of the words teaching, suggestion, and motivation, or by overemphasis on the importance of published articles and the explicit content of issued patents." *Id.* "A person of ordinary skill is also a person of ordinary creativity, not an automaton." *Id.* at 1742. "Rigid preventative rules that deny factfinders recourse to common sense, however, are neither necessary under our case law nor consistent with it." *Id.* at 1742-43.

The teaching, suggestion, motivation (TSM) test provides objective ways to analyze the "obviousness" conclusion under § 103(a). A "teaching" is something that instructs, so it would generally be obvious for one skilled in the art to follow a "teaching" to modify or combine elements to arrive at

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the claimed invention. A "suggestion" in the context of § 103(a) is something which puts an idea into the mind of a person having ordinary skill in the relevant art, so it would generally be obvious to follow a "suggestion," if it can be adequately explained how the information together with the knowledge in the art combine to create the idea. "[T]he question under 35 USC 103 is not merely what the references expressly teach, but what they would have suggested to one of ordinary skill in the art at the time the invention was made." *In re Lamberti*, 545 F.2d 747, 750 (CCPA 1976). A suggestion is less direct than a teaching and implies some input by the person of ordinary skill. "Motivation" is something that provides an incentive for taking some action. Motivation may derive from a teaching or suggestion to do something specific, but may also come from other sources. For example, the Supreme Court stated that "[w]hen there is a design need or market pressure to solve a problem and there are a finite number of identified, predictable solutions, a person of ordinary skill has good reason to pursue the known options within his or her technical grasp," *KSR*, 127 S. Ct. at 1742. This indicates that the motivation can be to overcome a problem (not just to make the particular modification or combination) and the result may be obvious if it involves no more than the exercise of routine skill in the art (i.e., "options within his or her technical grasp").

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The issue

The issue is whether it would have been obvious to a person of ordinary skill in the art having the Taiwanese patent and Grill before him or her, to relocate the row of ball bearings from the rotational platform 50 to the stationary transverse horizontal member 51.

Obviousness analysis

There are no *per se* rules of obviousness. *See In re Ochiai*, 71 F.3d 1565, 1571 (Fed. Cir. 1995) (*per se* rules cannot substitute for the particularized inquiry required by § 103). Nevertheless, there are many common situations which inform the obviousness analysis.

Some situations involve a known problem/obvious solution scenario. *See KSR*, 127 S. Ct. at 1742 ("One of the ways in which a patent's subject matter can be proved obvious is by noting that there existed at the time of invention a known problem for which there was an obvious solution encompassed by the patent's claims."); *Graham v. John Deere Co.*, 383 U.S. 1, 25 (1966) ("Certainly a person having ordinary skill in the prior art, given the fact that the flex in the shank could be utilized more effectively if allowed to run the entire length of the shank, would immediately see that the thing to do was what Graham did, i.e., invert the shank and hinge plate."). If the solution to a problem involves no more than the exercise of routine skill in the art, or would be what any skillful mechanic, engineer, or

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artisan would produce when required to produce a given result, the solution is generally obvious.

Other obviousness situations involve a substitution of elements, such as elements known to be interchangeable, or a combination of pre-existing elements. *See KSR*, 127 S. Ct. at 1740. Substitution of elements that are equivalents where they are known to be interchangeable may infringe. *See Overhead Door Corp. v. Chamberlain Group, Inc.*, 194 F.3d 1261, 1269-70 (Fed. Cir. 1999) (hardware and software implementations of component may be interchangeability substitutes and noting that known interchangeability can be one of the hallmarks of an equivalent). The "known interchangeability test," as used for infringement, appears applicable as evidence of obviousness of the substitution.

The present situation might be labeled as rearrangement or relocation of parts where all the parts are taught in the reference. "The combination of familiar elements according to known methods is likely to be obvious when it does no more than yield predictable results." *Leapfrog Enter., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1161 (Fed. Cir. 2007) (quoting *KSR Int'l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727, 1739 (2007)). A reasonable inference can be drawn that rearrangement of existing parts likely would have been obvious where it does not produce a different function or any new or unexpected results. *See In re Dailey*, 357 F.2d 669, 672-73 (CCPA 1966) ("Appellants have presented no argument which convinces us that the particular configuration of their container is significant or is anything more

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than one of numerous configurations a person of ordinary skill in the art would find obvious for the purpose of providing mating surfaces in the collapsed container of Matzen."). To do something in a particular way among the many ways that one of ordinary skill in the art might choose to implement that something, when there is no difference in function or any unexpected result, suggests that it is an obvious matter of "design choice" within the skill in the art. *See In re Rice*, 341 F.2d 309, 314 (CCPA 1965) ("Appellants have failed to show that the change [in the claimed invention] as compared to [the reference], result in a difference in function or give unexpected results. Such changes in design of the various features are no more than obvious variations consistent with the principles known in that art."). *Cf. In re Chu*, 66 F.3d 292, 298-99 (Fed. Cir. 1995) (placement of catalyst within a bag retainer instead of between the bag retainer and a bag not merely a matter of "design choice" when it overcomes specific problems in the art). There are countless variations that a person might choose when designing even a simple product. It is often impossible to find an express TSM for minor variations, but this does not prove nonobviousness.

We start with the proposition that a person of ordinary skill in the art is presumed to have sufficient skill and creativity to make simple and routine modifications in a design without an express TSM in a reference. That is, "a court can take account of the inferences and creative steps that a person of ordinary skill in the art would employ," *KSR*, 127 S. Ct. at 1741; the court can rely on "common sense," *id.* at 1742-43; and it is recognized that a

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"person of ordinary skill is also a person of ordinary creativity, not an automaton," *id.* at 1742. It would have been obvious to one of ordinary skill in the art of designing work support stands to make variations in the designs using the mechanical knowledge and skill of the artisan where the changes are within the level of skill in the art and do not result in a different function or produce an unexpected result.

In this case, all of the elements are taught by the Taiwanese patent, i.e., the roller, the row of ball bearings, a stand with a horizontal transverse member, pivotal brackets to support the roller for movement between an operative and an inoperative position, and tabs on the brackets to limit rotation. The only difference between the claims of the '411 patent (where we assume for purposes of this rejection that the "means for selectively reorienting said first work supporting member" requires moving only the first work supporting member) and the Taiwanese patent is that the row of ball bearings in the Taiwanese patent is relocated from the rotational platform 50 to the stationary horizontal transverse member 51.

Grill teaches stationary, interchangeable work supporting members (a roller, a row of ball bearings, and a flat surface). The Taiwanese patent describes a work support stand having two work supporting members that can be rotated to put a first member in an operative position and a second member in an inoperative position and vice versa. Although we have no reference that provides an express TSM, in our opinion it would have been obvious to one of ordinary skill in the art, having the Taiwanese patent and

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Grill before him or her as prior art, to relocate the row of ball bearings from the rotation platform 50 to the stationary horizontal transverse member 51 in the Taiwanese patent so only the roller is rotated for the following reasons.

First, a hypothetical person of ordinary skill in the art at the time the application was filed, having the Taiwanese patent in front of him or her, would have been motivated to "design around" the Taiwanese patent by making minor modifications, such as rearrangement of elements, to avoid anticipation, just as a person who had a U.S. patent in front of him or her would be motivated to design around the claims to avoid infringement. *See State Industries, Inc. v. A.O. Smith Corp.*, 751 F.2d 1226, 1236 (Fed. Cir. 1985) ("One of the benefits of a patent system is its so-called 'negative incentive' to 'design around' a competitor's products, even when they are patented, thus bringing a steady flow of innovations to the marketplace.").

Second, mounting the roller to the stationary horizontal member is one of a limited number of ways of rearranging the elements without destroying the function, and the rearrangement would involve no more than simple mechanical skill. A person of ordinary skilled in the art must be presumed to have the skill and ability to make minor variations in what he or she sees—that is, there is a "penumbra" of undescribed obvious variations around any references based on the level of skill in the art—it is only when a change involves more than routine skill in the art that it becomes unobvious.

Third, one skilled in the art would have been motivated to mount one work supporting member to be stationary and the other member to be

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rotatable because it is a compromise between the Taiwanese patent, which has two rotatable members, and Grill which teaches a single stationary member for each type of supporting member.

Fourth, one of ordinary skill might have wanted to simplify the bracket design in the Taiwanese patent by eliminating the strip (unnumbered) joining the side plates 52 which supports the ball bearings 56 and sockets 55.

Fifth, mounting the roller on a bracket separate from the ball bearings allows replacement of a failed roller or ball bearing separately and allows the roller to be added at a later time.

Sixth, one of ordinary skill in the art would have been motivated to locate the row of ball bearings on the horizontal transverse member because it provides a more rigid support. That is, the roller is a cylinder which is relatively resistant to bending over its length, but the sheet metal strip mounting the discrete ball bearings and sockets in the Taiwanese patent is subject to bending between the individual bearings and the horizontal transverse member 51 would provide a much more rigid support to hold the ball bearings in horizontal alignment.

The modification of relocating the row of ball bearings from the rotation platform 50 to the stationary horizontal transverse member 51 in the Taiwanese patent might require the bracket to be extended slightly so that the roller does not hit the ball bearings when it is rotated, but this is clearly within the level of mechanical skill of one skilled in the art.

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Finally, the modification does not produce a different or unexpected result because the roller and ball bearings would operate exactly as they do in the Taiwanese patent. In a couple of ways, the Taiwanese patent has advantages over the disclosed and claimed invention: (1) the top of the roller and the tops of the ball bearings appear from the drawings to be at the same height when they are in their operative positions, which eliminates the need to adjust the height of the stand when switching between work supporting members; and (2) the rectangular part of the rotation platform 50 that supports the row of ball bearings rigidly connects the two side plates 52 and prevents the side plates from twisting relative to each other as apparently can happen in the '411 patent. Nevertheless, these differences would have been completely expected.

CONCLUSION

The rejection of claims 1, 2, 12, and 13 under 35 U.S.C. § 102(b) over the Taiwanese patent is affirmed.

The rejection of claims 1-5 § 102(e) over Searfoss is affirmed.

The rejection of claims 1-5 under § 102(e) over Lee is reversed.

The rejection of claims 6, 7, and 9-13 under § 103(a) over Searfoss and Black is reversed.

The rejection of claims 6 and 8-13 under § 103(a) over Lee and Grill is reversed.

A NEW GROUND OF REJECTION is entered as to claims 1-13.

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Regarding the affirmed rejection, 37 C.F.R. § 41.52(a)(1) provides that "Appellant may file a single request for rehearing within two months from the date of the original decision of the Board."

This decision contains a new ground of rejection pursuant to 37 C.F.R. § 41.50(b), which provides that "[a] new ground of rejection pursuant to this paragraph shall not be considered final for judicial review."

37 C.F.R. § 41.50(b) also provides that the appellant, WITHIN TWO MONTHS 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 as to the rejected claims:

(1) *Reopen prosecution.* Submit an appropriate amendment of the claims so rejected or new evidence relating to the claims so rejected, or both, and have the matter reconsidered by the examiner, in which event the proceeding will be remanded to the examiner. . . .

(2) *Request rehearing.* Request that the proceeding be reheard under § 41.52 by the Board upon the same record. . . .

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv) (2006).

AFFIRMED-IN-PART – 37 C.F.R. § 41.50(b)

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