

1 When such a condition is detected, the machine has a brake that stops the cutting
2 tool in approximately 3 milliseconds.

3 Claim 1 reproduced below is further illustrative of the claimed subject
4 matter:

5 1. A woodworking machine comprising:

6
7 a support frame;

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9 a motor supported by the frame;

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11 a cutting tool supported by the frame and moveable by the motor;

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13 a detection system adapted to detect a dangerous condition between a
14 person and the cutting tool;

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16 a brake component adapted to engage the cutting tool, where the
17 brake component has a ready position spaced apart from the cutting tool; and

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19 an actuator having stored energy sufficient to move the brake
20 component from the ready position into the engagement with the cutting tool
21 within approximately 3 milliseconds or less after the dangerous condition is
22 detected.

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24 The references of record relied upon by the Examiner as evidence of
25 obviousness are:

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28	Baur	US 3,695,116	Oct. 3, 1972
29	Friemann	US 3,858,095	Dec. 31, 1974
30	Yoneda	US 4,117,752	Oct. 3, 1978
31	Andreasson	US 4,653,189	Mar. 31, 1987
32	Bielinski	US 5,606,889	Mar. 4, 1997

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1 Friemann discloses another band saw for use in cutting fabric. Friemann has
2 a frame 10, 11, and a saw blade 5 that rotates on the frame via four pulleys 6, 7, 8,
3 and 9. A motor M is provided to rotate the saw blade. Contact rollers 12 are
4 provided for sensing a change in the capacitance in the saw blade that indicates the
5 proximity of the operator. The operator's touch unbalances a bridge circuit and
6 ensures a rapid braking of the motor M and the saw blade. At various locations in
7 the disclosure Friemann says that the blade can be stopped in 5 milliseconds or 10
8 milliseconds.

9 Andreasson discloses a chain saw provided with an electromechanical chain
10 brake. The chain brake is energized by an electromagnetic with a current from a
11 capacitor. The capacitor is charged by the magnetic ignition system of the chain
12 saw motor whenever the chain saw motor is operating at an RPM higher than a
13 threshold value.

14 Baur and Bielinski have been cited to show actuators that are severable
15 when provided with high electrical currents.

16 PRINCIPLES OF LAW

17 "Enablement requires that 'the prior art reference must teach one of ordinary
18 skill in the art to make or carry out the claimed invention without undue
19 experimentation.'" *Elan Pharms., Inc. v. Mayo Found.*, 346 F.3d 1051, 1054, 68
20 USPQ2d 1373, 1376 (Fed. Cir. 2003) (remanding the case to the district court for a
21 determination of whether the prior art reference enabled persons of ordinary skill
22 to make the invention without undue experimentation)(citing *Minnesota Mining
23 and Manufacturing Co. v. Chemque, Inc.*, 303 F.3d 1294, 1301, 64 USPQ2d 1270,
24 1278 (Fed. Cir. 2002) and *Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362,
25 1369, 52 USPQ2d 1129, 1134 (Fed. Cir. 1999)("Whether undue experimentation
26 would have been required to make and use an invention, and thus whether a

1 disclosure is enabling under 35 U.S.C. §112, Para. 1, is a question of law that we
2 review de novo, based on underlying factual inquiries that we review for clear
3 error.”)).

4 The factual premises of the enablement analysis were addressed in *In re*
5 *Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988), the court
6 explaining that determination of whether the requisite amount of experimentation
7 is undue may include consideration of:

8 (1) the quantity of experimentation necessary, (2) the amount of direction or
9 guidance presented, (3) the presence or absence of working examples, (4)
10 the nature of the invention, (5) the state of the prior art, (6) the relative skill
11 of those in the art, (7) the predictability or unpredictability of the art, and (8)
12 the breadth of the claims.

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14 *See Amgen, Inc. v. Chugai Pharm. Co.*, 727 F.2d 1200, 1213, 18 USPQ2d
15 1016, 1027 (Fed. Cir. 1991) (stating that the *Wands* factors are illustrative, not
16 mandatory and that what is relevant to an enablement determination depends upon
17 the facts of the particular case).

18 Furthermore, “[w]hether undue experimentation is needed is not a single,
19 simple factual determination, but rather is a conclusion reached by weighing many
20 factual considerations. *Wands*, 858 F.2d at 737, 8 USPQ2d at 1404.

21 “A claimed invention is unpatentable if the differences between it and the
22 prior art are such that the subject matter as a whole would have been obvious at the
23 time the invention was made to a person having ordinary skill in the pertinent art.”
24 *In re Kahn*, 441 F.3d 977, 985, 78 USPQ2d 1329, 1334-35 (Fed. Cir. 2006) (citing
25 35 U.S.C. § 103(a) (2000)); *Graham v. John Deere Co.*, 383 U.S. 1, 13-14, 148
26 USPQ 459, 467 (1966). “The ultimate determination of whether an invention
27 would have been obvious is a legal conclusion based on underlying findings of

1 fact.” *Id.* (citing *In re Dembiczak*, 175 F.3d 994, 998, 50 USPQ2d 1614, 1616
2 (Fed. Cir. 1999)).

3 “In assessing whether subject matter would have been non-obvious under §
4 103, the Board follows the guidance of the Supreme Court in *Graham v. John*
5 *Deere Co.* [383 U.S. at 17, 148 USPQ at 467.] The Board determines ‘the scope
6 and content of the prior art,’ ascertains ‘the differences between the prior art and
7 the claims at issue,’ and resolves ‘the level of ordinary skill in the pertinent art.’”
8 *Id.* (citing *Dann v. Johnston*, 425 U.S. 219, 226, 189 USPQ 257, 261 (1976))
9 (quoting *Graham*, 383 U.S. at 17, 148 USPQ at 467). “Against this background,
10 the Board determines whether the subject matter would have been obvious to a
11 person of ordinary skill in the art at the time of the asserted invention.” *Id.* (citing
12 *Graham*, 383 U.S. at 17, 148 USPQ 467).

13 ANALYSIS

14 As an initial matter, we note that Appellants’ arguments are based to a large
15 extent on the Declaration from Dr. Turcic. We have reviewed the Declaration and
16 find it to be legally insufficient for two reasons. As noted above in our
17 “PRINCIPLES OF LAW” section, enablement requires that the prior art reference
18 must teach one of ordinary skill in the art to make or carry out the claimed
19 invention without undue experimentation. The Declaration by Dr. Turcic does not
20 even mention undue experimentation, nor does it discuss the so-called *Wands*
21 factors. As such, the Declaration is legally insufficient to support an argument that
22 the Friemann reference lacks enabling disclosure.

23 Secondly, as our case law quotation makes clear, the issue to be established
24 is whether the reference is enabled to one of ordinary skill without undue
25 experimentation. However, as shown in paragraph 8 and paragraph 26 of the
26 Declaration, the evidence by Dr. Turcic is based on his own personal knowledge

1 rather than the knowledge possessed by one of ordinary skill in the art. This is a
2 second reason why the Declaration does not establish that the Friemann reference
3 is not an enabling disclosure.

4 Before turning to the obviousness rejection, we make one other point dealing
5 with the scope of the claimed subject matter. The Friemann reference discloses that
6 the saw blade can be stopped within 5 milliseconds or within 10 milliseconds.
7 This is the time that it takes to *stop* the saw blade. Appellants' claims are directed
8 to the time it will take to move the brake component into engagement with the
9 cutting tool. The claims are silent with respect to stopping the blade. Claim 31 is
10 even more distinguishable from the 5 milliseconds of Friemann in that in claim 31
11 the actuator starts moving the component within 3 milliseconds. Thus, as claimed,
12 it may indeed take an additional 2 milliseconds to stop the blade, if moving the
13 brake started at 3 milliseconds. The point is that Friemann completely stops the
14 blade in 5 milliseconds, whereas, as claimed, Appellants only start the stopping
15 process within 3 milliseconds. Thus, the Examiner's argument that the 3
16 millisecond and 5 millisecond time periods are substantially similar is well taken.

17 Despite the foregoing, however, we reverse the rejections of the claims on
18 appeal. In our view, the Examiner has not cited any prior art that shows an
19 actuator having stored energy sufficient to move the brake component to stop the
20 saw band disclosed in Friemann. We are in agreement with Dr. Turcic that it takes
21 substantial energy to stop the band brakes of Yoneda and Friemann. Any
22 capacitors in the circuitry of Yoneda and Friemann are merely electronic
23 components and do not store energy to move the respective actuators. With
24 respect to Andreasson, we acknowledge that Andreasson uses a capacitor to
25 energize the electromagnetic saw brake. However, the amount of energy to stop a

1 band saw band within Friemann's disclosed time frame appears to be orders of
2 magnitude more than the Andreasson capacitor can store.

3 Secondly, we find no suggestion or motivation for placing the capacitor of
4 Andreasson into the safety systems of Friemann or Yoneda. Both references
5 contemplate using electrical line power to stop their saw blades. In their
6 installations, this power is readily available, and it is unclear why one of ordinary
7 skill would use a giant capacitor to stop the saw blades.

8 Thirdly, Andreasson makes clear that the reason a capacitor is needed is that
9 the electromagnetic ignition system is the only source of electricity available.
10 With line power clearly available to Yoneda and Friemann, there appears to be
11 little incentive to use a capacitor as shown in Andreasson.

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1 CONCLUSION

2 For the foregoing reasons, it is our conclusion of law that the Examiner has
3 not established the prima facie obviousness of claims 1, 3, 4, 19, and 31.

4 ORDER

5 The rejections of claims 1, 3, 4, 19, and 31 are reversed.

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7 REVERSED

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