

NOTE: This disposition is nonprecedential.

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

**IN RE EUGENE J. HOFFMANN AND
DAVID E. LUND**

2013-1657

Appeal from the United States Patent and Trademark
Office, Patent Trial and Appeal Board, in Serial No.
11/504,474.

Decided: February 25, 2014

EUGENE J. HOFFMANN, of Sun City Center, Florida,
pro se and DAVID E. LUND, of Hertford, North Carolina,
pro se.

NATHAN K. KELLEY, Acting Solicitor, Office of the So-
licitor, United States Patent and Trademark Office, of
Alexandria, Virginia, for appellee. With him on the brief
were BENJAMIN T. HICKMAN and MICHAEL S. FORMAN,
Associate Solicitors.

Before RADER, *Chief Judge*, NEWMAN, and DYK, *Circuit
Judges*.

PER CURIAM.

Eugene Hoffmann and David Lund appeal the rejection of their application for a patent on a “[t]ropical hurricane control system.” The rejected claims describe a process for weakening a tropical storm by injecting a super coolant such as liquid nitrogen into the eye wall of the storm from airplanes. The examiner rejected the claims for lack of enablement, and the Patent Trial and Appeal Board (“Board”) affirmed. We agree with the Board’s decision and *affirm*.

BACKGROUND

Hoffmann and Lund’s patent application, No. 11/504,474, describes a “method and system for diminishing the intensity of tropical cyclones by delivering super coolant from [an] aircraft into the eye wall of the tropical cyclone.” J.A. 204. According to the specification, delivering “a sufficient quantity” of super coolant into the storm’s eye wall “breaks the forming or recently formed eye wall, which will cause the eye wall to implode.” J.A. 207. Although the method has never been tested, the specification contains a set of “preliminary calculations” detailing the amount of super coolant and number of airplanes necessary to address an example storm of small size. J.A. 219-23.

Independent claim 36 is representative of the claims:

A process for disrupting a formed or forming tropical cyclone eye wall or eye or center of lowest pressure comprising: Introduction of a super coolant chemical agent sprayed with force (the super coolant is stored in a vessel under pressure) and or released from pre-measured containers from an appropriate number of large aircraft to reduce the temperature within the eye wall (top to bottom at sea level), thereby circulating the super coolant throughout the eye wall by the centrifugal force of

the eye wall, alternatively into the eye or center of lowest pressure to reduce the temperature in the eye or center of lowest pressure and the water beneath, thereby reducing the wind and storm surge of the eye wall or raising the pressure in the eye or center of lowest pressure and converting it back to a tropical rainstorm.

J.A. 593.

The examiner rejected the claims for failure to comply with the enablement requirement of 35 U.S.C. § 112(a). The examiner relied on three principal grounds for his conclusion on lack of enablement. First, he noted that the preliminary calculations contained several unexplained assumptions and mathematical errors. Second, the examiner noted that the specification itself acknowledged the need for experimentation to determine the amount of super coolant needed and the optimal time to strike. Finally, the examiner cited a variety of publications by weather scientists who expressed serious doubts about the viability of weather modification plans like Hoffmann and Lund's. The examiner ultimately concluded that Hoffmann and Lund "failed to provide a disclosure of the invention which would enable one of ordinary skill in the art to make and/or use the invention without undue experimentation." J.A. 1538.

The Board affirmed the examiner's rejection after applying the eight factor analysis set forth by *In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988).

Hoffmann and Lund appeal. We have jurisdiction under 28 U.S.C. § 1295(a)(4)(A). We review the Board's decision on enablement de novo and its underlying factual findings for substantial evidence. *See In re Gartside*, 203 F.3d 1305, 1315-16 (Fed. Cir. 2000); *Enzo Biochem, Inc. v. Calgene, Inc.*, 188 F.3d 1362, 1369 (Fed. Cir. 1999).

DISCUSSION

Section 112(a) of the patent statute requires that the specification of a patent describe “the manner and process of making and using [the invention], in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains . . . to make and use the same.” 35 U.S.C. § 112(a). A specification is not enabling if a person of ordinary skill in the art would be unable to practice the invention without “undue experimentation.” *Wands*, 585 F.2d at 737. Factors relevant to a determination of whether undue experimentation would be necessary include:

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

Id. (footnote omitted). When rejecting a claim for lack of enablement, the initial burden is on the PTO to set forth “a reasonable explanation” of why it believes the specification is not enabling. *In re Wright*, 999 F.2d 1557, 1561-62 (Fed. Cir. 1993). The burden then shifts to the applicant to provide “suitable proofs indicating that the specification is indeed enabling.” *Id.* at 1562.

We agree with the Board that the PTO has met its burden and that Hoffmann and Lund have failed to meet theirs. As an initial matter, the examiner’s findings are more than enough to constitute a “reasonable explanation” of the doubts regarding enablement. *Id.* at 1561. The “preliminary calculations” contain figures that are either inaccurate or incoherent, raising the possibility that a person of ordinary skill would need to correct those errors in order to practice the claimed method. The patent itself acknowledges a need for further experimentation to

determine the necessary or optimal value of certain variables. And perhaps most significantly, the very efficacy of the method itself is subject to considerable doubt in the scientific community. These points are sufficient to meet the PTO's burden.

Hoffmann and Lund, on the other hand, offer little to meet their burden to show that the specification is indeed enabling. Their primary argument is that the specification must be enabling because the government has secretly implemented their method and abated or redirected many hurricanes over the past several years. But they have no evidence to support this theory. All they have is a speculative inference of government use drawn from the fact that relatively few named storms have made landfall in the United States in recent years. Hoffmann and Lund also argue that the specification is enabling because it contains a table estimating the number of airplanes necessary to treat tropical storms of different sizes. But that is not enough information to enable a person of ordinary skill in the art to practice the method without undue experimentation.

We conclude that the Board correctly ruled that Hoffmann and Lund's specification does not describe their invention in such "full, clear, concise, and exact terms" to enable a person of ordinary skill in the art to practice the invention. 35 U.S.C. § 112(a).

AFFIRMED