

The opinion in support of the decision being entered today was **not** written for publication and is **not** binding precedent of the Board.

Paper No. 20

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte WILLIAM K. CODY, JOHN R. LARSON
and JEROME A. GRUNDTNER

Appeal No. 2002-2250
Application No. 09/519,823

ON BRIEF

Before STAAB, MCQUADE and BAHR, Administrative Patent Judges.
MCQUADE, Administrative Patent Judge.

DECISION ON APPEAL

William K. Cody et al. appeal from the final rejection (Paper No. 11) of claims 1 through 20, all of the claims pending in the application.

THE INVENTION

The invention relates to "the structure and method of installation of a deep foundation to support large diameter, tall towers in a wide range of soil conditions" (specification, page 1). Representative claims 1 and 8 read as follows:

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1. An embedded high-tension, high-compression foundation for an above ground tower comprising:

a ground level cap for supporting the tower;

attachments to secure the tower to the cap; and

embedded tension/compression components secured to the cap and terminating only distally with a bearing surface resistant to pullout and overturning forces to provide embedded tension retention of the components within a terminal soil/rock mass;

wherein the components extend to deep, high-strength soil layers in absence of deep wide-area excavation to provide exceptional bearing and tension capacity, high resistance to overturning moment forces acting on the tower, and compression significantly higher than the tension capacity.

8. A method of constructing an embedded high-tension, high-compression foundation for an above ground tower comprising:

establishing a minimal ground-level excavation for a cap;

embedding below ground level tension/compression components that terminate only distally in a bearing surface to provide below ground tension retention within a terminal soil/rock mass absent deep wide area excavation, so that the components extend to deep, high-strength soil layers to provide exceptional bearing and tension capacity, high resistance to pullout and overturning forces, and compression significantly higher than the tension capacity;

forming the cap; and

securing the cap to the components.

THE PRIOR ART

The references relied on by the examiner to support the final rejection are:

Thornley

2,741,910

Apr. 17, 1956

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Lejeck et al. (Lejeck) 3,006,626 Oct. 31, 1961

THE REJECTION

Claims 1 through 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Lejeck in view of Thornley.

Attention is directed to the appellants' main and reply briefs (Paper Nos. 13 and 15) and the examiner's answer (Paper No. 14) for the respective positions of the appellants and examiner regarding the merits of this rejection.

DISCUSSION

Lejeck, the examiner's primary reference, discloses a concrete foundation mat 24 for a blast furnace stove 10. The stove includes an outer shell 17 having anchor rods 29 welded to its bottom section 25. When poured, the concrete mat embeds the bottom section of the shell and the rods to anchor the stove against upward pressures exerted by cold blasts of air entering the stove for heating prior to being conveyed to a downstream blast furnace. Figure 1 depicts the stove mounted on the concrete mat and also shows a series of unidentified elements extending downwardly from the bottom of the mat.

In applying Lejeck against the appealed claims, the examiner finds (see page 3 in the answer) that the unidentified elements (labeled by the examiner as "P") extending downwardly from the

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bottom of the concrete mat are piles which correspond to the tension/compression components recited in independent claims 1 and 8, as well as in independent claims 14, 18 and 20. The examiner concedes (see pages 4 and 8 in the answer), however, that these alleged piles do not respond to the bearing surface limitations in claims 1 and 8, the corresponding anchoring means limitations in claims 14 and 18 and spin fin limitation in claim 20, and the deep extension and related bearing, tension, compression, and/or resistance limitations in claims 1, 8, 14, 18 and 20. To cure these admitted shortcomings in Lejeck, the examiner turns to Thornley.

Thornley discloses a method and apparatus for adjusting the vertical position of massive structures, such as large buildings, to accommodate soil settlement. Sidewalks, sewer systems, water systems, and small buildings supported on or in settling soil move downwardly therewith, but larger buildings and more massive structures supported on piles extending deeply to firmer soil strata do not, and thus eventually become elevated relative to the surface of the settling soil (see Thornley at column 1, lines 21 through 46). To overcome this problem, Thornley proposes a building having a foundation rigidly mounted on piles and a superstructure which is capable of being lowered relative to the

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foundation (see column 2, lines 47 through 64). The piles 20, which are conventional structures, extend from the foundation to a relatively deep bearing stratum 26 firm enough to withstand the weight of the piles, the foundation and the superstructure, as well as the various loads to which the building is subjected. As shown in the drawing figure, the piles include components at their distal lower ends which arguably function as bearing or anchoring elements.

In proposing to combine Lejeck and Thornley to reject the appealed claims, the examiner takes the position that

it would have been obvious to one having ordinary skill in the art at the time the invention was made to replace Lejeck's tension/compression components P with Thornley's piles, because Thornley's [sic] teaches that his piles are capable of sustaining high tension and compression loads. Therefore, Lejeck's tower structure will not be susceptible to any lateral wind loads or any vertical compression loads that may occur due to winds or earthquakes [answer, pages 4 and 5].

Even if Lejeck's unidentified elements "P" are assumed to be piles, however, there is nothing in the disparate teachings of Lejeck and Thornley to indicate that Lejeck's blast furnace stove 10 might be subject to damaging loads from wind and/or earthquakes, or to any load having a magnitude on the order of those acting on the types of massive building structures of concern to Thornley. The only suggestion for replacing the

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assumed piles P associated with the concrete mat or foundation disclosed by Lejeck for supporting a blast furnace stove with piles of the type disclosed by Thornley for supporting the foundation of a massive building structure stems from hindsight knowledge impermissibly derived from the appellants' disclosure.

Hence, we shall not sustain the standing 35 U.S.C. § 103(a) rejection of independent claims 1, 8, 14, 18 and 20, and dependent claims 2 through 7, 9 through 13, 15 through 17 and 19, as being unpatentable over Lejeck in view of Thornley.

SUMMARY

The decision of the examiner to reject claims 1 through 20 is reversed.

REVERSED

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LAWRENCE J. STAAB)	
Administrative Patent Judge)	
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)	BOARD OF PATENT
JOHN P. MCQUADE)	APPEALS
Administrative Patent Judge)	AND
)	INTERFERENCES
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JENNIFER D. BAHR)	
Administrative Patent Judge)	

JPM/gjh

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GRAY, PLANT, MOOTY, MOOTY
& BENNETT
P.O. BOX 2906
MINNEAPOLIS, MN 55402-0906

GJH

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APJ MCQUADE

APJ BAHR

APJ STAAB

REVERSED

January 22, 2004