

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JURGEN REINOLD, WALTON L. FEHR, and
SAMUEL M. LEVENSON

Appeal 2008-0713
Application 10/186,373
Technology Center 2100

Decided: November 19, 2008

Before LANCE LEONARD BARRY, JEAN R. HOMERE, and
CAROLYN D. THOMAS, *Administrative Patent Judges*.

THOMAS, *Administrative Patent Judge*.

DECISION ON APPEAL

I. STATEMENT OF THE CASE

Appellants appeal under 35 U.S.C. § 134 from a final rejection of claims 1-30 mailed July 11, 2006, which are all the claims remaining in the application. We have jurisdiction under 35 U.S.C. § 6(b).

We affirm.

A. INVENTION

Appellants invented a system and method for obtaining a prospective subassembly for use in a vehicle and determining whether the prospective subassembly is an authentic subassembly based on whether a cryptographic key is successfully utilized in the cryptographic communication. (Spec., Abstract.)

B. ILLUSTRATIVE CLAIM

The appeal contains claims 1-30. Claims 1 and 16 are independent claims. Claim 1 is illustrative:

1. A method for authentication of a subassembly for use in a vehicle, the method performed by the vehicle and comprising the steps of:
 - obtaining a prospective subassembly;
 - obtaining from a certification authority a certification that an authentic subassembly is associated with a cryptographic key;
 - utilizing the cryptographic key in cryptographic communication with the prospective subassembly; and
 - determining whether the prospective subassembly is the authentic subassembly based on whether the cryptographic key is successfully utilized in the cryptographic communication with the prospective subassembly.

C. REFERENCE

The sole reference relied upon by the Examiner in rejecting the claims on appeal is as follows:

Schmidt US 2002/0023223 A1 Feb. 21, 2002

D. REJECTION

The Examiner entered the following rejection which is before us for review:

Claims 1-30 are rejected under 35 U.S.C. § 102(e) as being anticipated by Schmidt.

II. PROSECUTION HISTORY

Appellants appealed from the Final Rejection and filed an Appeal Brief (App. Br.) on September 21, 2006. The Examiner mailed an Examiner's Answer (Ans.) on December 12, 2006. No Reply Brief is shown in the record.

III. ISSUE

The principal issue before us is whether Appellants have shown that the Examiner erred in rejecting claims 1-30 as being anticipated by Schmidt. Specifically, the issue turns on whether Schmidt discloses a cryptographic communication with a prospective subassembly.

IV. FINDINGS OF FACT

The following findings of fact (FF) are supported by a preponderance of the evidence.

Specification

1. The Specification discloses that “[t]he vehicle cryptographic unit 204 performs cryptographic functions of the vehicle system 104, such as

encryption, decryption, key establishment, signature and verification” (Spec. 11:22 to 12:1).

2. The Specification discloses that “[t]he present invention provides an effective means of controlling configuration of a vehicle with respect to a subassembly of configuration elements not predesignated for use with the vehicle” (Spec. 8:5-7).

Schmidt

3. Schmidt discloses that “[a] large number of authentication processes and system are known . . . For example, . . . a cryptographic coprocessor . . . carries out, an authentication and examination of a BIOS change by checking a digital signature embedded in software . . .” (¶[0008]).

4. Schmidt discloses that “[a]fter importing of the new software and the certificate into a control unit, . . . it can then be examined by means of the public key stored in the control unit” (¶ [0067]).

V. PRINCIPLES OF LAW

“A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference.” *Verdegaal Bros. Inc. v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Analysis of whether a claim is patentable over the prior art under 35 U.S.C. § 102 begins with a determination of the scope of the claim. We determine the scope of the claims in patent applications not solely on the basis of the claim language, but upon giving claims their broadest reasonable construction ‘in light of the specification as it would be interpreted by one of ordinary skill in the art.’ *In re Am. Acad.*

of Sci. Tech. Ctr., 367 F.3d 1359, 1364 (Fed. Cir. 2004). The properly interpreted claim must then be compared with the prior art.

VI. ANALYSIS

Grouping of Claims

In the Brief, Appellants argue claims 1-30 as a group (App. Br. 9-10). For claims 2-30, Appellants repeat the same argument made for claim 1. We will, therefore, treat claims 2-30 as standing or falling with claim 1.

See 37 C.F.R. § 41.37(c)(1)(vii). *See also In re Young*, 927 F.2d 588, 590 (Fed. Cir. 1991).

The Board's Claim Construction

"Our analysis begins with construing the claim limitations at issue." *Ex Parte Filatov*, No. 2006-1160, 2007 WL 1317144, at *2 (BPAI Apr. 20, 2007).

Claims are given their broadest reasonable construction "in light of the specification as it would be interpreted by one of ordinary skill in the art." *In re Am. Acad. of Sci. Tech. Ctr.*, 367 F.3d at 1364.

To determine whether Schmidt anticipates claims 1-30, we must first determine the scope of the claims. Our reviewing court stated in *Phillips v. AWH Corp.*, 415 F.3d 1303, 1315 (Fed. Cir. 2005), *cert. denied, sub nom. AWH Corp. v Phillips*, 126 S. Ct. 1332 (2006):

The claims, of course, do not stand alone. Rather, they are part of "a fully integrated written instrument," *Markman*, 52 F.3d at 978, consisting principally of a specification that concludes with the claims. For that reason, claims "must be read in view of the specification, of which they are a part." *Id.* at 979. As we stated in *Vitronics*, the specification "is always

highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” 90 F. 3d at 1582.

Appellants’ Specification discloses that “cryptographic” functions include key establishment, signature and verification (FF 1). Thus, we find that a “cryptographic communication” includes any communication whereby keys are used and/or a signature is verified.

The Anticipation Rejection

We now consider the Examiner’s rejection of illustrative claim 1 under 35 U.S.C. § 102(e) as being anticipated by Schmidt.

Appellants contend that “both claims 1 and 16 require ‘cryptographic communication with the prospective subassembly.’ . . . Schmidt does not disclose any such communication” (App. Br. 9). Specifically, Appellants contend that “[t]he transfer of the digital signature is not a cryptographic communication, because the digital signature is not encrypted” (App. Br. 10).

The Examiner found that:

Schmidt discloses the importation of new software into a control unit (the configuration element) of a vehicle including a certificate (the obtaining of a prospective subassembly) (see paragraph 58), which has been generated by a trust center for that subassembly, the subassembly’s certificate having a public/private key pair specific to the certificate holder (the certification authority) (see paragraphs 51-53 and 59-61). This public key is used to verify the certificate’s digital signature (see paragraphs 67-68).

(Ans. 3.)

The Examiner further found that “[i]t is well-known in the art that a communication in which one o[r] more data fields are encoded using a public, private, or secret key is ‘cryptographic;’ therefore, the transmitting and receiving of a digital signature or hash generated using such a key constitutes a ‘cryptographic communication.’” (Ans. 5.) We agree.

As noted *supra*, Appellants themselves disclose that cryptographic functions include “key establishment” and “signature verification”. In addition, Schmidt discloses that using a cryptographic coprocessor is known (FF 3). Thus, we find that Schmidt’s use of a public key and the examination of an imported signature are consistent with Appellants’ disclosed “cryptographic communication” functions. Thus, we find that the claimed “cryptographic communication” reads on Schmidt’s above-noted disclosures.

Appellants further contend that “since the Schmidt ‘check’ actually takes place in the control unit 600 (see, FIG. 6 and ¶ [0055] of Schmidt), Schmidt cannot disclose the ‘cryptographic communication *with the prospective subassembly*’ as claimed” (App. Br. 9).

The Examiner found that “Schmidt discloses the delivery of software to the control unit, which is part of the subassembly, and further discloses that the communication contains a digital signature which is cryptographically verified using the public/private key of the sender” (Ans. 5). We agree.

Appellants’ claim 1 requires “cryptographic communication with the prospective subassembly”, not specifically where the communications takes place. We further find that Appellants have not offered any special definition for the term “prospective subassembly” (FF 2). Therefore, we

find that a “prospective subassembly” can include any configuration element (hardware or software) that was not predesignated for use with the vehicle. As such, we find that the claimed limitation of “cryptographic communication *with the prospective subassembly*” reads on Schmidt’s disclosed “importing new software” into the control unit of the motor vehicle (FF 4), as the new software can be seen as a prospective subassembly.

As to the other recited elements of claim 1, Appellants provide no argument to dispute that the Examiner has correctly shown where all these claimed elements appear in the prior art. Thus, we deem those arguments waived. *See* 37 C.F.R. § 41.37(c)(1)(vii) (2004).

Therefore, we do not find that Appellants have shown error in the Examiner’s rejection of illustrative claim 1. Instead, we find the Examiner has set forth a sufficient initial showing of anticipation.

VII. CONCLUSIONS

We conclude that Appellants have not shown that the Examiner erred in rejecting claims 1-30.

Thus, claims 1-30 are not patentable.

VIII. DECISION

In view of the foregoing discussion, we affirm the Examiner’s rejection of claims 1-30.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a). *See* 37 C.F.R. § 1.136(a)(1)(iv) (2007).

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AFFIRMED

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MOTOROLA, INC.
LAW DEPARTMENT
1303 E. ALGONQUIN ROAD
SCHAUMBURG IL 60196