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LEXSEE 937 F2D 589

IN RE JOSEPHUS J. M. BRAAT

No. 90-1470

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

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June 28, 1991, Decided

PRIOR HISTORY: [**1] Appealed from the U.S. Patent and Trademark Office Board of Patent Appeals and Interferences.

DISPOSITION:

Reversed.

LexisNexis(R) Headnotes

COUNSEL:

Jack E. Haken, U.S. Philips Corporation, of Tarrytown, New York, argued for Appellant. Algy Tamoshunas and John F. Moran, U.S. Philips Corporation, Tarrytown, New York, were on the brief for Appellant.

Jameson Lee, Associate Solicitor, Office of the Solicitor, of Arlington, Virginia, argued for Appellee. With him on the brief was Fred E. McKelvey, Solicitor.

JUDGES:

Nies, Chief Judge, Rich, and Clevenger, Circuit Judges.

OPINIONBY:

RICH

OPINION:

[*590] RICH, Circuit Judge.

Braat appeals from the May 30, 1990 decision of the United States Patent and Trademark Office (PTO) Board of Patent Appeals and Interferences (Board), Appeal No. 90-0971, affirming the rejection of claims 8-10, 13, and 15-17 of application Serial No. 569,546 (Braat), filed

January 10, 1984, entitled "Record Carrier with Optically Readable Phase Structure and Apparatus for Reading," on the grounds of obviousness-type double patenting in view of commonly-assigned U.S. Patent No. 4,209,804 (Dil). We reverse.

BACKGROUND

Nature of Braat's Invention

The real party in interest in this case is U.S. Philips Corporation (Philips), the assignee [**2] of both the Braat application and the Dil patent. The Braat application is based, through two intervening continuing applications, on application Serial No. 925,433 filed July 17, 1978, which in turn claims priority from a Netherlands patent application filed April 3, 1978. The Dil patent issued June 24, 1980, on an application filed January 31, 1979.

Both the Braat application and the Dil patent are concerned with optical record carriers of the type that store information which can be retrieved by scanning the record carrier with a beam of radiation such as a laser beam. One commonly-known example of such a record carrier is the compact disc, or CD.

Record carriers are generally circular, and store the information in tracks extending around the surface of the carrier. The tracks are made up of "information areas" separated by "intermediate regions." For example, the information areas can be pits formed in the track, and the intermediate regions can be lands formed between the pits. Information can be encoded by varying the length or spacing between the pits. A read apparatus is used to retrieve the information by projecting a read beam onto the information tracks and detecting variations [**3] in the light transmitted through or reflected from the tracks as the beam passes over the information areas.

The Braat application is concerned with the ability to increase the amount of information which can be stored

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on a record carrier. One way to do so, of course, is to place the tracks closer together. However, the minimum spacing between the tracks is limited by the ability of the read apparatus to focus the read beam on a single track. If the tracks are placed too close together, then a read beam which is intended to illuminate a certain track may inadvertently illuminate an adjacent track as well, resulting in interference or "cross-talk."

The Braat application discloses a way to reduce the effect of "cross-talk," so that even if more than one track is inadvertently illuminated, the apparatus can still accurately read the stored information. This is done by alternating the "phase depth" ⁿ¹ of adjacent tracks (or, more generically, of adjacent track portions) and then using two different detection systems, one of which is particularly sensitive to the signal from track portions of one phase depth and the other of which is sensitive to the signal from track portions of the other ⁴ phase depth. As a result, the tracks can be placed closer together.

ⁿ¹ When the read beam is incident on the surface of the record carrier, it is diffracted into a zero order subbeam, a number of first order subbeams, and a large number of higher order subbeams. The term "phase depth" is defined in the Braat application as the phase difference between the zero order subbeam and the first order subbeams. The phase depth of a track portion is dependent on numerous factors, including the physical depth of the track portion and, as will be discussed further with respect to the Dil patent, the angle of the side walls of the information areas which make up the track portion.

In the preferred embodiment described in the Braat application, the phase depth is altered by varying the physical depth of the pits in adjacent tracks. Figure 3 of the Braat application (shown below) is a radial cross-section of the preferred embodiment, and illustrates this concept.

⁵ [SEE FIGURE 3 IN ORIGINAL]

As seen above, the tracks alternate between ⁵ ones which have information areas (pits) ⁴ which are of a depth $d[1]$, and ones which have information areas ⁴ of depth $d[2]$. ⁿ²

ⁿ² The depth variation shown in Fig. 3 is greatly exaggerated; in reality this depth variation is very small, i.e., on the order of a fraction of the wavelength of the read beam.

Claim 8 is illustrative of the claims on appeal. It

reads as follows:

8. A record carrier comprising an information structure containing information adapted to be read with a beam of radiation of a single wavelength, said information structure having a plurality of adjacent information track portions each comprising a plurality of areas separated from each other along said track portion by intermediate regions having a different influence on the read beam than said areas, one track portion of a pair of said adjacent track portions containing areas of a first configuration which diffract the read beam of said single wavelength incident thereon into a zero order subbeam and a first order subbeam with a first phase difference ⁶ therebetween and the other track portion of said pair containing areas of a second configuration which diffract the read beam of said single wavelength incident thereon into said zero and first order subbeams with a second phase difference therebetween which is different from said first phase difference.

The Dil Patent

The Dil patent is also concerned with controlling the phase depth of information areas on record carriers, but is primarily concerned with the effect that the angle of the side walls of the information areas has on the phase depth. Dil teaches that a particularly useful record carrier is one which has V-shaped information areas with (1) a phase depth in the range between 100 degrees and 125 degrees, and (2) side walls whose angle of inclination is in the range between 65 degrees and 85 degrees (relative to the normal to the carrier surface).

Dil recognizes that this *improvement* is particularly useful when combined with the invention of the Braat application, which is specifically referred to, and so discloses an embodiment wherein alternating track portions have different phase depths, and the information areas have angled side walls. For example, the Dil patent ⁷ specification includes the following:

Two types of information areas in one record carrier may for example be used in order to obtain a high information density, as is described in U.S. patent application Ser. No. 925,433, filed July 18, 1978 [Baat]. If in such a record carrier use is made of the concept underlying the invention, said record carrier is characterized in that between first

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information tracks containing information areas with a phase depth between 100 degrees and 110 degrees second information tracks are formed which contain information areas whose phase depth is approximately 180 degrees.

unjustified timewise extension of the right to exclude granted by a patent no matter how the exclusion [sic, extension] is brought about. See *In re Van Ornum*, 686 F.2d 937, 214 U.S.P.Q. (BNA) 761 (CCPA 1982).

* * *

Claim 1 of Dil is directed to the improvement disclosed in that patent, i.e., a record [*592] carrier having angled side walls. Specifically, it states in relevant part:

1. A record carrier . . . characterized in that the cross-section, transverse to the track direction, of the information areas is substantially V-shaped, that the phase depth of the information areas has one value between 100 degrees and 125 degrees, and that the angle of inclination between the walls of the information areas and the normal to the record carrier is substantially constant and has a value between 65 degrees [**8] and 85 degrees.

Appellant has also argued that the Office in granting the Dil patent must have made the determination that those claims are patentably distinct from the claims of the present application, and hence based upon such patentable distinction he is entitled to the claims. Whether or not the claims in Dil are patentably distinct from the claims in the instant application is not the issue. The issue is whether the claims on appeal are patentably distinct over claims 5/1 and 6/1 of Dil. Manifestly, the claims rejected for double patenting with respect to claims 5/1 and 6/1 of Dil are not patentable over those claims.

However, *dependent* claims 5 and 6 of Dil recite as an additional feature the alternating phase depth structure of the Braat application. For example, claim 5 reads as follows:

5. A record carrier as claimed in claim 1, characterized in that between first information tracks containing information areas with a phase depth between 100 degrees and 110 degrees second information tracks are formed which contain information areas whose phase depth is approximately 180 degrees.

The PTO examiner rejected claims 8-10, 13, and 15-17 of the Braat application under the doctrine of obviousness-type double patenting as claiming subject matter not patentably distinct from that claimed in claims 1, 5 and 6 of the Dil patent. On appeal, the Board found that *independent claim 1 of Dil alone did not form a proper basis for a double patenting rejection*, but that dependent claims 5 and 6 did support the rejection. The following are excerpts from the Board's opinion:

We agree with and sustain the rejection of claims 8, 9, 10, 13, 15, 16 and 17 on the basis of double patenting with respect to claims 5/1 and 6/1 of the Dil patent. The claims here being broader than claims 5/1 and [**9] 6/1 in the Dil patent, the double patenting rejection is of the type created by the courts to prevent

This appeal followed.

OPINION

Obviousness-type double patenting is a judicially created doctrine intended to prevent *improper* timewise extension of the patent right by prohibiting the issuance of claims in a second patent which are not [**10] "patentably distinct" from the claims of a first patent. See *In re Longi*, 759 F.2d 887, 892, 225 U.S.P.Q. (BNA) 645, 648 (Fed. Cir. 1985). The doctrine has also been phrased as prohibiting claims in the second patent which define "merely an obvious variation" of an invention claimed in the first patent. *In re Vogel*, 57 C.C.P.A. 920, 422 F.2d 438, 441, 164 U.S.P.Q. (BNA) 619, 622 (CCPA 1970). We note at the outset the difficulty which arises in all obviousness-type double patenting cases of determining when a claim is or is not an obvious variation of another *claim*. As this court's predecessor, the CCPA, noted in *Vogel*, 422 F.2d at 441-42, 164 U.S.P.Q. at 622, a claim often does not describe any particular thing but instead defines the boundary of patent protection, and it is difficult to try to determine what is a mere obvious variation of a legal boundary. However, this court has endorsed an obviousness determination similar to, but not necessarily the same as, that undertaken under 35 USC § 103 in determining the propriety of a rejection for [**593] double patenting. See *Longi*, 759 F.2d at 892 n.4, 225 U.S.P.Q. at 648 n.4. [**11]

The crux of this appeal comes down to whether the Board erred in applying a "one-way" patentability

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determination instead of a "two-way" determination. The Board correctly found that the rejected claims of Braat are merely obvious variations of the invention described by dependent claims 5/1 and 6/1 of Dil. The only difference between the claims of Braat and claims 5/1 and 6/1 of Dil is the *omission* of the requirement in the claims of Dil of information areas having side walls which are angled at a particular angle, and we do not think that *omission* of such a limitation in the present case would constitute an unobvious modification. The issue is whether the Board erred in concluding that such a one-way determination was all that was necessary or whether it was necessary to also determine whether the claims of Dil are patentably distinct from the invention described by the rejected claims of Braat; i.e., whether the *addition* in the claims of Dil of side walls which are angled at a particular angle was merely an obvious modification over the invention claimed in Braat.

On appeal, Philips (the assignee) attempts to characterize the invention of Dil as an improvement over **[**12]** the invention of the Braat application, citing 3 D. *Chisum Patents*, § 9.03[2][c] (1990), entitled "Generic Claim Issuing After Later Filed Specific or Improvement Claim," as well as *In re Borah*, 53 C.C.P.A. 800, 354 F.2d 1009, 148 U.S.P.Q. (BNA) 213 (CCPA 1966), for the proposition that when a later filed improvement patent issues before an earlier filed basic invention, a double patenting rejection is only proper against the claims to the basic invention if the improvement is not patentably distinct from the basic invention. The rationale behind this proposition is that an applicant (or applicants), who files applications for basic and improvement patents should not be penalized by the rate of progress of the applications through the PTO, a matter over which the applicant does not have complete control. See *Chisum*, supra. In this situation, the order of issuance is, in effect, ignored, and the relevant determination becomes whether the improvement is patentably distinct from the generic invention. *Id.* n3

n3 Although *Borah* is the latest authority of which we are aware which stands for this proposition, it is certainly not the only one. See also *In re Stanley*, 41 C.C.P.A. 956, 214 F.2d 151, 102 U.S.P.Q. (BNA) 234 (CCPA 1954); *In re Calvert*, 25 C.C.P.A. 1333, 97 F.2d 638, 38 U.S.P.Q. 184 (1938); *Thomson-Houston Elec. Co. v. Elmira & Horseheads Ry. Co.*, 71 F. 396 (2d Cir.), cert. denied 163 U.S. 685, 41 L. Ed. 315, 16 S. Ct. 1201 (1896); *Thomson-Houston Elec. Co. v. Ohio Brass Co.*, 80 F. 712 (6th Cir. 1897). In fact, *Stanley* is more relevant to the present case than is *Borah*, since *Stanley* deals specifically with commonly-assigned inventions of two co-workers. *Borah* approved *Stanley*

notwithstanding it extended protection for four years. See *Borah*, 354 F.2d at 1017, 148 U.S.P.Q. at 220.

[13]**

We hesitate to characterize the Dil invention as an "improvement" over the Braat invention. The word "improvement" implies that it was developed specifically for use with the "basic" invention, and thus must have come later in time. The Dil patent invention, however, is totally separate from that of Braat, and could conceivably have been developed earlier rather than later. The inventions of Dil and Braat are independent but when jointly used may complement each other, and it is for that reason that Dil disclosed the Braat invention in his own patent application and, in claims 5/1 and 6/1, claimed the use of the two inventions in combination. A better characterization of the relationship between the inventions is as combination/subcombination. Braat and Dil each developed separate subcombination inventions, which are described by their respective independent claims. Dil then *combined* these two subcombinations to form a third invention. This *combination* is described by dependent claims 5/1 and 6/1 of Dil.

However, we agree that the reasoning of *Borah* and *Chisum*, § 9.03[2][c] is applicable in the present case. n4 Philips could not **[*594]** have included the claims of Dil in the Braat **[**14]** application, for Braat did not invent the subject matter of the Dil claims, i.e., information areas having V-shaped side walls at particular angles of inclination. Nor could Philips have included the claims of Braat in the Dil application, for Dil did not invent the subject matter of the Braat application, i.e., adjacent track segments of different phase depth. Philips filed the Braat and Dil applications so as to maintain proper inventorship, with claims directed to Braat's "subcombination" invention in the first application and claims directed to both Dil's "subcombination" invention and to the "combination" invention in the second application. Philips even acknowledged in Dil's application that part of the combination invention was invented by Braat, not Dil. It is not Philips' fault that the combination claims in the Dil patent issued first. Thus, a double patenting rejection is sustainable here only if claims 5/1 and 6/1 of Dil are not patentably distinct from the subject matter defined by the rejected claims of Braat, and the Board erred in sustaining the double patenting rejection without making such a "two-way" determination.

n4 In his brief to this court, the PTO solicitor's primary objection to Braat's reliance on the reasoning of *Borah* and *Chisum* is that Braat did not adequately raise this argument below and thus is precluded from raising it on appeal. We

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disagree. Braat has argued throughout these proceedings that the double patenting rejection was in error because the claims of Dil are patentable over the subject matter of the claims of Braat, even if the contrary is not true. The Board disagreed, stating that it was not necessary to make such a ("two-way") determination. On appeal, Braat has merely pointed out where the Board erred, and has cited persuasive authority for his position.

[**15]

We are further convinced that claims 5/1 and 6/1 of Dil are patentably distinct from the subject matter defined by the claims of Braat. Claims 5/1 and 6/1 of Dil, of course, include the limitations of Dil's independent claim 1, which requires, among other things, V-shaped information areas with side walls having an angle of inclination, relative to the normal to the record carrier, of between 65 degrees and 85 degrees. There is nothing in the rejected claims of Braat which refers to any angling of the side walls of the information areas, much less the specific angles recited in claim 1 of Dil. Moreover, we note that in the preferred embodiment of the Braat application, the information areas are all rectangular, and have side walls which are not inclined relative to the normal to the carrier. n5 Since the subject matter embraced by the rejected claims of Braat does not suggest the record carrier recited by claims 5/1 and 6/1 of Dil, we conclude that the claims of the Braat application and the Dil patent are patentably distinct, and that the double patenting rejection was in error.

n5 In determining whether one claim is patentable in view of the subject matter of another *claim*, it is useful to compare the one claim with a tangible embodiment which is disclosed and which falls within the scope of the other claim. The patent disclosure must not be used as prior art. *See Vogel*, 422 F.2d at 442, 164 U.S.P.Q. at 622.

[**16]

It is true that allowance of the Braat application will

result in some timewise extension of Philips' patent protection of the Dil structure. This is because Braat's claims dominate the invention of Dil claims 5/1 and 6/1. As our predecessor court pointed out in *Borah*, in analogizing the *Stanley* decision, "We see . . . that as a matter of law the extension of protection objection is not necessarily controlling." 354 F.2d at 1017, 148 U.S.P.Q. at 220. There is nothing to the contrary in the 1982 *Van Ornum* case cited by the Board. The reason the CCPA affirmed the double patenting rejection in *Van Ornum* is clearly stated in the opinion, 686 F.2d at 943, 214 U.S.P.Q. at 766 (emphasis in original):

The *only difference* between the claims on appeal and the claims of the '799 patent *resides in the recited ratio* of high to low molecular weight butyl rubber, as follows:

application: between 20/80
and 60/40
patent '799: between 35/65
and 45/55.

The passage which the Board appears to have focussed on in *Van Ornum* states: "The fundamental reason for the rule [against "double patenting"] is *to prevent unjustified* [**17] *timewise extension of the right to exclude* granted by a patent no matter how the extension is brought [**595] about." 686 F.2d at 943-44, 214 U.S.P.Q. at 766 (emphasis in original) (quoting *In re Schneller*, 55 C.C.P.A. 1375, 397 F.2d 350, 158 U.S.P.Q. (BNA) 210 (CCPA 1968)). Thus, only if the extension of patent right is *unjustified* is a double patenting rejection appropriate. There are situations where the extension is justified. *See Borah; In re Kaplan*, 789 F.2d 1574, 1577-78, 229 U.S.P.Q. (BNA) 678, 681-82 (Fed. Cir. 1986). This case presents such a situation.

CONCLUSION

For the foregoing reasons, the decision of the Board is

REVERSED.

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