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The opinion in support of the decision being entered today (1) was not written for publication in a law journal and (2) is not binding precedent of the Board.

Paper No. 22

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte JIMMY R. RAULSTON, SAMMY D. PAIR
and ENRIQUE CABANILLAS

Appeal No. 1996-3887
Application 07/883,434¹

ON BRIEF

Before WINTERS, ROBINSON and SCHEINER, Administrative Patent Judges.

SCHEINER, Administrative Patent Judge.

¹ Application for patent filed May 15, 1992.

DECISION ON APPEAL

This is an appeal under 35 U.S.C. § 134 from the final rejection of claims 16 through 22, 42, 43, 46 and 47, the only claims remaining in the application. Claims 16, 46 and 47 are representative and read as follows:

16. A composition for use as a biopesticide comprising an insecticidally effective amount of entomopathogenic Steinernema riobravis isolated from the environment and an inert carrier.

46. The composition as described in claim 16 wherein said Steinernema riobravis are isolated and substantially pure.

47. The composition as described in claim 16 wherein said Steinernema riobravis are isolated in pure form.

New grounds of rejection under 35 U.S.C. §§ 101 and 102(b) were entered in the Examiner's Answer (paper no.15, October 21, 1994). Following the entry of two Reply Briefs (paper no.16, December 27, 1994; paper no. 20, July 20, 1995), two Supplemental Answers (paper no. 19, May 17, 1995; paper no. 21, September 14, 1995), an amendment (paper no. 17, December 27, 1994), and an Advisory Action (paper no. 18, March 9, 1995), the claims stand rejected as follows:

I. Claims 16 through 22, 42 , 43, 46 and 47 under 35 U.S.C. § 101 (non-statutory subject matter).

II. Claims 16 though 19, 21, 22, 42, 43, 46 and 47 under 35 U.S.C. § 102(b) as anticipated by "the soil in a field in the lower Rio Grande Valley which soil contains the indigenous nematodes of S. riobravis."

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III. Claims 16 through 22, 42, 43, 46 and 47 under 35 U.S.C. § 112, second paragraph.

IV. Claims 16, 46 and 47 under 35 U.S.C. § 112, second paragraph.

V. Claims 46 and 47 under 35 U.S.C. § 112, fourth paragraph.

VI. Claims 16 through 22, 42, 43, 46 and 47 under 35 U.S.C. § 112, first paragraph (enablement, written description and best mode requirements).

VII. Claims 16 through 22, 42, 43, 46 and 47 under 35 U.S.C. § 112, first paragraph (scope of enablement).

We REVERSE all of the rejections.

DISCUSSION

Entomopathogenic nematodes of the family Steinernematidae are used as biological control agents against many insects that damage crops of agricultural importance. “These nematodes search for their insect hosts; they are highly virulent, killing most hosts within 48 hours; they are easily and inexpensively mass produced; and they have a wide range of insect hosts” (specification, page 2). According to appellants, Steinernema riobris is a naturally occurring, but “previously unknown entomopathogenic nematode . . . which is effective as a biopesticide for the control of insects” (Id. at page 3).

35 U.S.C. § 101

35 U.S.C. § 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement

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thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

All of the claims stand rejected under this section of the statute. According to the examiner, “the composition as claimed consists of the naturally occurring nematodes Steinernema riobravis as naturally occurring in the fields . . . in combination with soil.” If we understand the examiner’s position correctly, it is that the claimed invention is a product of nature, and therefore, “is not new and not novel;” nor is it “an article of manufacture,” that is, the invention is not among the statutory categories of subject matter which may be patented. Examiner’s Answer, paper no. 15, pages 13 and 14.

As explained in In re Bergy, 596 F.2d 952, 960-61, 201 USPQ 352, 361 (CCPA 1979):

Section 101 states three requirements: novelty, utility, and statutory subject matter. The understanding that these three requirements are separate and distinct is long-standing and has been universally accepted . . . Of the three requirements stated in §101, only two, utility and statutory subject matter, are applied under §101 . . . [I]n 1952 Congress voiced its intent to consider the novelty of an invention under §102 where it is first made clear what the statute means by “new”, notwithstanding the fact that this requirement is first named in §101.

Thus, for purposes of deciding the propriety of this rejection, we need not concern ourselves with whether the claimed compositions are novel. “The question here, as it has always been, is: are the inventions claimed of a kind contemplated by Congress as possibly patentable if they turn out to be new, useful, and unobvious within the meaning of those terms as used as in the statute.” Id., at 963-64, 201 USPQ at 365.

Bergy provides guidance here as well. As pointed out by appellants, the court in Bergy agreed that “a pure strain of a microorganism was patentable as ‘the product of a microbiologist’, and ruled that a claim limited to a pure culture of a naturally occurring microorganism: ‘clearly does not define a product of nature’ [] and thus constituted statutory subject matter” (Reply Brief, paper no. 16). Similar limitations are at issue here. In its broadest aspect, the claimed composition comprises Steinernema riobravis “isolated from the environment” in combination with an inert carrier. Claim 46 further specifies that the composition comprises “isolated and substantially pure” Steinernema riobravis; claim 47 specifies that the nematodes are “isolated in substantially pure form.”

In determining whether these limitations preclude interpreting the claimed composition as a product of nature, we begin with the proposition that “the language employed [in a claim] must be analyzed -- not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.” In re Moore, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971) (footnote omitted).

The phrase “isolated from the environment” is not expressly defined in the specification, but the process of isolating the nematode from soil samples is distinguished from its initial recovery (or excavation) from the Lower Rio Grande Valley. For example, at pages 5 and 6, the specification teaches:

As described in the Examples herein, Steinernema riobravis may be initially recovered from soil samples taken from corn fields . . . Following isolation

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from the environment, the nematodes may then be reared in vivo in susceptible host insects such as H[elicoverpa] zea prepupae or pupae . . . the nematodes may also be produced on a large scale using in vitro rearing techniques . . . In accordance with either technique, the nematodes may be subsequently harvested and collected in pure or substantially pure form.

Example 1, on page 10 of the specification, outlines the process of extracting the nematodes from the soil samples using a “bait and trap” technique:

Nematode Extraction and Culture. A previously unknown nematode of the genus Steinernema, subsequently identified as S. riobravis, was isolated from soil samples taken from corn plots after harvest . . .

H. zea prepupae were used as trap hosts for this experiment. Approximately 1 kg of a Hidalgo sandy loam soil, was collected at each sample site from the top 10-15 cm of soil. Five prepupae were placed at the bottom of a 30-cm diam ceramic pot, covered with moist soil excavated from the corn plots, and incubated at about 23EC for 7 d. Dead prepupae were transferred to [traps] and infective juveniles (IJ) of the nematode were collected 10-14 d after exposure to the soil sample.

The Steinernema nematodes were cultured in vivo in the laboratory using H. zea prepupae as a susceptible host. Following harvest the nematodes were suspended in 50 ml of water and stored . . .

In light of this disclosure, we agree with appellants that one skilled in the art would interpret “isolated from the environment” as describing S. riobravis “free from or isolated from its natural surroundings,” and that “any composition of S. riobravis which is naturally occurring would not fall within the scope of the claims.” Reply Brief, paper no. 16, December 27, 1994, pages 19-20.

We hold that the claimed composition comprising Steinernema riobravis “isolated from the environment” combined with an inert carrier is, like Bergy’s bacterial culture, a

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“manufacture, or composition of matter;” a form of the organism that does not exist in nature. Accordingly, the rejection of claims 16 through 22, 42, 43, 46 and 47 under 35 U.S.C. § 101 is reversed.

35 U.S.C. § 102(b)

According to the examiner, the composition of claims 16 through 19, 21, 22, 42, 43, 46 and 47 is anticipated by:

the soil in a field in the lower Rio Grande Valley which soil contains the indigenous nematodes of S. riobravis where the soil (composed of solid particles) which is an inert carrier and contains water when wet (another carrier in which one or more of the nematodes are suspended in a water puddle which puddle also a different and isolated environment from an environment such as a lake compared to soil on arable land or a water puddle on arable land). . . the nematodes are naturally occurring in the soils of the lower Rio Grande river valley and [] these nematodes were noticed at the time of excavation which was carried out in 1986 according to [Raulston]² where 1986 is prior to appellant’s filing . . . This is also evidenced by the present specification page 13 at lines 10-15 which indicates that the “soil was collected from a corn field where this nematode occurs naturally . . . (specification, pages 16 and 17, footnote added)

The examiner acknowledges that the claims recite that the nematodes are isolated from the environment and combined with an inert carrier. Nevertheless, the examiner believes that these limitations fail to distinguish the claimed composition from the nematode as it exists in nature:

² J.R. Raulston, et al., “Prepupal and Pupal Parasitism of Helicoverpa zea and Spodoptera frugiperda (Lepidoptera: Noctuidae) by Steinernema sp. In Cornfields in the Lower Rio Grande Valley,” Journal of Economic Entomology, Vol. 85, No. 5, pp.1666-1670 (October 1992).

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Here, even where specification page 5, line 24 to page 6, line 14 has been asserted to indicate otherwise as to the “isolated from the environment” and “inert carrier”, the instant claim terminology does not contain the recitation of that part of the specification nor do pages 5 and 6 indicate a definition of “isolated from the environment” nor does page 5, line 24 to page 6, line 14 per se define “inert carrier” as merely supplying examples do not set limits to same nor necessarily define same . . . (specification, page 17).

We disagree with the examiner’s conclusion and the underlying analysis. The claims need not “contain the recitation of that part of the specification.” Rather, we look to appellants’ specification to determine the how one possessing the ordinary level of skill in the art would interpret the claims. In re Moore, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971). Again, we agree with appellants that “any composition of S. riobravis which is naturally occurring would not fall within the scope of the claims;” and that one skilled in the art, upon reading the present disclosure, would interpret “isolated from the environment” as describing S. riobravis “free from or isolated from its natural surroundings.” Reply Brief, paper no. 16, December 27, 1994, pages 19-20.

In the Supplemental Answer (paper no. 19, page 22), the examiner adds that the “isolated and substantially pure” composition of claim 46, and the “pure” composition of claim 47 “are not differentiable from the naturally occurring products out in the field” because:

the nematode is isolated as an individual nematode from another nematode and is pure nematode as it is a nematode and not part some other worm or multicellular animal, rather the nematode is per se pure nematode regardless of where it is located or produced, thus such recitation in the claim does not distinguish how the nematode of claim 46 differs from that nematode in the field which is, as it exists in nature, is isolated as one

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individual nematode from another nematode and is pure nematode as it is a nematode and not part some other worm or multicellular animal, rather the nematode is per se pure nematode regardless of where it is located or produced . . .

According to the examiner's analysis and conclusion, a nematode "isolated from the environment" is always identical to a nematode "in the environment." This position is untenable on its face.

Accordingly, the rejection of claims 16 through 19, 21, 22, 42, 46 and 47 under 35 U.S.C. § 102(b) is reversed.

35 U.S.C. § 112, second and forth paragraphs

All of the claims on appeal stand rejected as indefinite under 35 U.S.C. § 112, second paragraph, for the reasons set forth on page 16 of the Examiner's Answer (paper no. 15) and pages 18 through 21 of the Supplemental Examiner's Answer (paper no. 19). Claims 16, 46 and 47 are separately rejected under 35 U.S.C. § 112, second paragraph, for the reasons set forth on page 23 of paper no. 19.

Merely by way of example, the examiner believes that claim 16 (drawn to a "composition for use as a biopesticide") is indefinite because "it is not clear . . . that the insecticidally effective amount of the nematode is the biopesticide amount or whether the inert carrier is the biopesticide or whether or not the 'inert carrier' is inert to the environment or inert to the nematode" (paper no. 15, page 16). The phrase "isolated from the environment" is said to be indefinite because it is not clear whether it refers to "isolated

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from water as in dry land or isolated from the environment of the insect host body or isolated from the insect host as [the] claims do not distinguish any of the foregoing from any other unspecified environment” (paper no. 15, page 16). The phrase “isolated and substantially pure” is said to be indefinite because:

the nematode is isolated as an individual nematode from another nematode and is pure nematode as it is a nematode and not part some other worm or multicellular animal, rather the nematode is per se pure nematode regardless of where it is located or produced, thus such recitation in the claim is indefinite since it does not indicate how the nematode of claim 46 differs from that nematode in the field which is, as it exists in nature, is isolated as one individual nematode from another nematode and is pure nematode as it is a nematode and not part some other worm or multicellular animal, rather the nematode is per se pure nematode regardless of where it is located or produced, and thus the claim also does not demonstrate how claim 46 more narrowly defines claim 16 . . .

At the risk of being redundant, we can only return to the proposition that “the language employed [in a claim] must be analyzed -- not in a vacuum, but always in light of the teachings of the prior art and of the particular application disclosure as it would be interpreted by one possessing the ordinary level of skill in the pertinent art.” In re Moore, 439 F.2d 1232, 1235, 169 USPQ 236, 238 (CCPA 1971) (footnote omitted). Having reviewed the claims in light of the specification, we are persuaded that one skilled in the art would have no difficulty in interpreting the language of the present claims. Moreover, we find that claims 46 and 47 further limit claim 16, from which they depend.

Accordingly, the rejections of the claims under 35 U.S.C. § 112, first and fourth paragraphs, are reversed.

35 U.S.C. § 112, first paragraph

The specification is objected to under 35 U.S.C. § 112, first paragraph, as “failing to provide an adequate written description, an enabling disclosure, and the best mode for the claimed invention.” All of the appealed claims stand rejected on this basis; in addition, the claims are rejected “as the disclosure is enabling only for claims limited to compositions containing [the deposited organism].” According to the examiner, Steinernema riobravis is “not freely obtainable or available, and requirement for deposit of the nematode is made.” The examiner states that “[t]he requirement of 35 U.S.C. 112 may be satisfied by a deposit of the organism” (paper no. 15, page 7) and acknowledges appellants’ “assurance of deposit and amendment of claims to recite the deposit number,” but maintains the rejection of the claims “until such time the requisite documents and assurances in declaration format are made of record” (paper no. 15, page 19). Finally, the examiner indicates that:

Upon the filing of such documents in this instance, it will not result in the removal of the deposit requirements. However, where the deposit requirement can be removed by filing of the above indicated requisite documents, all reasons stated in the objection to the specification and rejection of claims thereof as the specification still lacks adequate written description, enablement, and best mode as indicated in the above objection to the specification. However, as to such deposit, neither the instant specification [nor] the claims contain a deposit number of a nematode that is demonstrated in the specification to have any distinguishing feature/characteristic that is not also displayed by the naturally occurring nematode, thus the instant nematodes even where a deposit is asserted as will be made in the future as presently claimed are not distinguishable from

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the nematodes out in the field and the instant specification discloses no apparent difference as to any insecticidal or biopesticidal difference of the "isolated from the environment" nematode as compared to the nematode out in the field.

Needless to say, the examiner has not explained why appellants' specific assurances for the deposit of Steinernema riobravis with a recognized International Depository Authority "upon indication of allowability and before payment of the Issue Fee" (Brief, paper no. 14, page 5) do not satisfy the requirements of 35 U.S.C. § 112, first paragraph.

The rejection of claims 16 through 22, 42, 43, 46 and 47 under 35 U.S.C. § 112, first paragraph, is reversed.

CONCLUSION

Each of the rejections of the claims under 35 U.S.C. §§ 101; 102(b); 112, second paragraph; and 112, first paragraph, is reversed.

REVERSED

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Administrative Patent Judge)
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