

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Ex parte PATRICK BINOT

Appeal No. 2007-0175
Application No. 10/467,134

ON BRIEF

Before SCHEINER, ADAMS and GREEN, Administrative Patent Judges.

ADAMS, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on the appeal under 35 U.S.C. § 134 from the examiner's final rejection of claims 18-22. The remaining pending claims, claims 23-34, were withdrawn from consideration. Brief, page 2.

Claim 18 is illustrative of the subject matter on appeal and is reproduced below:

18. A method of degreasing water or wastewater in the course of treating water or wastewater, comprising: subjecting the water or wastewater to treatment by flocs ballasted by granular material and directing the water or wastewater through coagulation, flocculation and sediment devices, and degreasing the water or wastewater within the coagulation, flocculation and sediment devices and eliminating at least 20% of hexane extractable material from the water or wastewater without subjecting the water or wastewater to flotation degreasing means.

The references relied upon by the examiner are:

Oyler	5,061,375	Oct. 29, 1991
Vion	5,382,369	Jan. 17, 1995
Binot et al. (Binot)	5,770,091	Jun. 23, 1998

GROUND OF REJECTION

Claims 18-20 stand rejected under 35 USC §103(a) as being unpatentable over the combination of Binot and Vion.

Claims 21 and 22 stand rejected under 35 USC §103(a) as being unpatentable over the combination of Binot, Vion and Oyler.

We reverse.

DISCUSSION

The combination of Binot and Vion:

Claims 18-20 stand rejected under 35 USC §103(a) as being unpatentable over the combination of Binot and Vion. Claims 19-20 depend directly or indirectly from claim 18. Claim 18 is drawn to a method of degreasing water or wastewater in the course of treating water or wastewater. As we understand it, the method comprises three steps, wherein the water or wastewater is:

- subjected to treatment by flocs ballasted by granular material,
- directed through coagulation, flocculation and sediment devices, and
- degreased within the coagulation, flocculation and sediment devices.

According to the claim, the method results in eliminating at least 20% of hexane extractable material from the water or wastewater without subjecting the water or wastewater to flotation degreasing means.

According to the examiner (Final Rejection¹, page 2), Binot disclose “a method of degreasing wastewater substantially as [set forth in appellant’s claims].” In this regard, the examiner finds (id., emphasis added), “the coagulation, flocculation, and sediment devices of Binot . . . would appear to eliminate hexane extractable material and remove grit from the wastewater as in the instant method.”

The examiner recognizes, however, that appellant’s claimed invention differs from Binot “by reciting that the wastewater is not subjected to flotation degreasing means.” Id. To make up for this deficiency the examiner relies on Vion. According to the examiner (id.), Vion disclose “that it is known in the art to remove grease particles from water by flocculation, coalescence, and sedimentation, with mechanical stirring, and optionally with the injection of air.”

Based on this evidence the examiner reasons that “[i]t would have been obvious to one skilled in the art to modify the method of Binot . . . by excluding the recited degreasing means in view of the teachings of Vion, to remove the hexane extractable material from the wastewater by flocculation, coalescence, and sedimentation, with mechanical stirring.” Final Rejection, bridging paragraph, pages 2-3. According to the examiner (Answer, page 3), “[t]he specific % of hexane extractable material eliminated, would have been an

¹ At page 3 of the Answer, the examiner directs attention to the “Final Rejection dated August 34, 2005” for the statement of the rejection.

obvious matter of process optimization to one skilled in the art, depending on the specific wastewater treated and results desired, absent a sufficient showing of unexpected results.”

In response appellant asserts (Brief, page 3) that Binot differs from the claimed invention by teaching that wastewater is degreased “by an air flotation process.” In contrast, the claimed invention requires that wastewater be degreased “without employing flotation degreasing means.” Id. Regarding Vion, appellant asserts that Vion “teaches the same technology as does Binot”, specifically that “grease particles are removed by flotation degreasing means.” Brief, page 4.

While appellant recognizes that Vion’s process “includes coagulation, flocculation, and sedimentation”; appellant asserts that this process “is utilized continuously to remove contaminants other than grease particles.” Id. To emphasize his point, appellant directs attention to the four step process outlined in column 4 of Vion. Brief, page 4. According to appellant, the separation of grease particles begins at step 3 of the process. Brief, page 5. As appellant explains (id.), “[t]o separate the grease particles from the wastewater and flocs formed, the process urges the grease particles to the surface of the wastewater.” In this regard, appellant points out that Vion discloses that “in order to accelerate the rate of rise of the grease particles, it is possible to inject fine air bubbles” Id., see also Vion, column 4, lines 35-38. Highlighting the use of a floatation degreasing means, appellant explains that “[d]uring the fourth step [disclosed by Vion] grease particles are removed from the surface of the wastewater.” Id., see

also Vion, column 4, lines 49-54. According to appellant (Brief, bridging paragraph, pages 5-6),

[i]f there was any doubt as to whether Vion utilizes flotation degreasing means, claim 1 makes it clear that Vion relies on flotation degreasing means. Claim 1 describes Vion's wastewater treatment process. In this claim it is clear that the second volume of wastewater . . . , includes floating particles Claim 1 describes the wastewater . . . being transferred to a third volume . . . and that the wastewater therein contains floating particles. Claim 1 describes introducing air bubbles into the third volume . . . to accelerate the rate that the grease particles rise and to encourage the binding of the grease particles. The process in claim 1 is further described as transferring the third volume of wastewater to the fourth volume and doing so in a manner that ensures the flow of the surface layer of the third volume containing the floating particles to the surface layer of the fourth volume. Then the Vion process is described as:

skimming the floating particles of the fourth volume, primarily grease particles;
removing skimmed grease particles from the fourth volume
. . . .

Based on this discussion, appellant asserts (Brief, page 6), "[t]here can be no doubt that the Vion process utilizes flotation degreasing means. The grease particles are caused to coalesce and to rise to the surface of the wastewater where the grease particles are skimmed and removed therefrom."

We recognize the examiner's assertion (Answer, page 3), notwithstanding appellant's arguments to the contrary, "the teachings of Vion also include the use of a settling tank to remove flocculated matter and grease particles trapped in the floc." It is true that Vion teaches that during the "settling operation" of the "mechanical-chemical treatment", "flocculated matter and the grease particles trapped in the floc are removed." Vion, column 2, lines 49-56. There is, however, no indication in Vion that at least 20% of the hexane extractable

material in the water or wastewater is eliminated by this “settling operation”, or that at least 20% of hexane extractable material in the water or wastewater is eliminated without subjecting the water or waste water to flotation degreasing means as is required by appellant’s claimed invention. For the following reasons we disagree with the examiner’s assertion that the elimination of at least 20% of hexane extractable material from the water or wastewater without subjecting the water or wastewater to flotation degreasing means is simply a matter of optimizing the process taught by the combined teachings of Binot and Vion.
Answer, page 3.

The examiner recognizes that Binot does not teach the elimination of hexane extractable material, or grease, by a means other than flotation degreasing. Final Rejection, page 2. Therefore, we look to Vion to provide a teaching of the elimination of at least 20% of hexane extractable material, or grease, from water or wastewater without the use of flotation degreasing means. Vion is interested in reducing “the size of [a water/waste water treatment] plant while optimizing the two functions of degritting and degreasing. Vion, column 1, lines 47-49. To do this Vion proposes that the degritting and degreasing operations can be broken down into elementary steps, and at least one of these two steps can be combined with the steps carried out during the mechanical-chemical treatment and settling operations of the process. Vion, column 1, lines 50-63. We note that Vion does not suggest that the steps, e.g., flotation degreasing, are eliminated. To the contrary, Vion states that the steps can be combined with other steps in the process.

Vion discusses the “elementary steps” involved in degritting and degreasing (Vion, column 1, line 64 – column 2, line 28) and explains (column 2, lines 12-27) that in the degreasing step the grease particles are coalesced and “very fine air bubbles” are optionally employed to improve the gravity separation of the grease. While Vion is not explicitly clear as to what is meant by “gravity separation” of the grease, we understand from column 4, lines 35-37 and 49-54 of Vion that the injection of fine air bubbles accelerates the rate of rise of the grease particles, where they are later taken up off the top of the reactor, e.g., flotation degreasing. Therefore, it would appear to us, that whether or not air bubbles are included in the process of degreasing outlined by Vion at column 2, lines 12-27, Vion contemplates flotation degreasing. Vion then discusses the steps of mechanical-chemical treatment (column 2, lines 28-48), which is followed by the settling operation which comprises “the removal of flocculated matter and the grease particles trapped in the floc.” Vion, column 2, lines 49-56.

As Vion explains, column 2, line 57 – column 3, line 4, as a consequence of breaking the process steps down into elementary steps, several of the processing steps can be performed simultaneously. We note, however, that even when various steps involved in the water-treatment process are performed simultaneously, Vion refers to the separation of grease particles and the start of the settling operation as two separate components of the combined process.

See e.g., Vion, column 3, lines 3-4 “separating the grease particles and commencing a settling operation.” This is emphasized in the four steps outlined by Vion at column 4, lines 3-60, particularly, column 4, lines 35-37 (“[i]n order to

accelerate the rate of rise of the grease particles, it is possible to inject fine air bubbles. . . .”), and column 4, lines 51-54 (“[g]iven that grease particles may appear on top of the reactors [(e.g., flotation degreasing)] . . . a system for taking up or for transferring the floating particles . . . is provided.”)

Based on the foregoing analysis, we find ourselves in agreement with appellant, that while the flocculation process “might remove some grease particles while removing suspended solids, . . . [t]his does not mean that Vion teaches the elimination of his degreasing process which is a flotation degreasing process.” Reply Brief, bridging paragraph, pages 2-3. Therefore, we disagree with the examiner’s assertion (Answer, page 3) that “Vion discloses[, at step 2 of this process,] (see col. 4 lines 15-42) the use of mechanical stirring instead of air flotation to remove grease particles.” To the contrary, Vion clearly discloses in step 4 of this process that “[g]iven that grease particles may appear on top of the reactors . . . a system for taking up or for transferring the floating particles . . . is provided.” Contrary, to the examiner’s interpretation of Vion, we do not read Vion as teaching the use of mechanical stirring as an alternative to flotation degreasing. Instead, at best, we understand Vion to teach the combination of mechanical stirring together with flotation degreasing.

According to the examiner (Answer, page 4, emphasis added), since coagulants and flocculants are added in the Vion and Binot methods prior to removing grease particles from the wastewater, “at least some grease particles that are not removed by the [floatation] degreasing means” would be removed with the coagulants and flocculants. While this may be true, it serves only to

emphasize the difference between the method taught by the combination of Vion and Binot (which, at best, teaches the removal of grease by the combination of flotation and coagulation/flocculation), and appellant's claimed invention which requires that the water or wastewater is not subjected to a flotation degreasing means. Therefore, it is our opinion that the evidence of record fails to support the examiner's assertion (Final Rejection, page 3) that it is simply a matter of optimizing the combined teachings of Binot and Vion to eliminate at least 20% of the hexane extractable material (e.g., grease), without subjecting the water or wastewater to flotation degreasing means. While Vion teaches that grease may be removed with the floc, there is no suggestion in either Binot or Vion that a water or wastewater treatment process can be performed without subjecting the water or wastewater to flotation degreasing means, or that at least 20% of the hexane extractable material could be eliminated from the water or wastewater without the use of a flotation degreasing means.

On reflection, after considering all the evidence of record for what it fairly teaches a person of ordinary skill in the art, we find that the examiner failed to meet his burden² of providing the evidence necessary to establish a prima facie case of obviousness. If the examiner fails to establish a prima facie case, the rejection is improper and will be overturned. In re Fine, 837 F.2d 1071, 1074, 5 USPQ2d 1596, 1598 (Fed. Cir. 1988). Accordingly, we reverse the rejection of claims 18-20 under 35 USC §103(a) as being unpatentable over the combination of Binot and Vion.

² The initial burden of presenting a prima facie case of obviousness rests on the examiner. In re Oetiker, 977 F.2d 1443, 1445, 24 USPQ2d 1443, 1444 (Fed. Cir. 1992).

The combination of Binot, Vion and Oyler:

Claims 21 and 22 stand rejected under 35 USC §103(a) as being unpatentable over the combination of Binot, Vion and Oyler.

Claim 21 ultimately depends from and further limits claim 18 to include the step of at least partially removing grit from the water or wastewater utilizing a coarse grit removal device upstream from the coagulation, flocculation and sediment devices and operating the coarse grit removal device at a settling speed of more than 15 m/h. Claim 22 depends from and further limits the coarse grit removal device of claim 21, by requiring that the device operate at a settling speed between 80 and 200 m/h.

The examiner relies on the combination of Binot and Vion as set forth above. Final Rejection, page 3. The examiner recognizes, however, that the combination of Binot and Vion differs from appellant's claimed invention "by reciting that the grit removal device is operated at a specific speed." The examiner relies on Oyler to make up for this deficiency in the combination of Binot and Vion. In this regard, the examiner finds (id.) Oyler disclose "that it is known in the art to adjust the speed of a rotor in a vortex grit removal device, to aid in maximizing grit removal."

Based on this evidence the examiner reasons (id.) "[i]t would have been obvious to one skilled in the art to modify the references applied above by operating the device at the recited speed in view of the teachings of Oyler, [in order] to maximize the removal of grit from the wastewater." According to the examiner, "[t]he specific speed utilized, would have been an obvious matter of

process optimization to one skilled in the art, depending on the specific wastewater treated and results desired, absent a sufficient showing of unexpected results.” Id.

Oyler is directed to grit removal devices and methods of using these devices. See e.g., Oyler, title. The examiner fails to direct our attention to any teaching, and we find none, to suggest that Oyler discloses the elimination of hexane extractable materials from water or wastewater without the use of a flotation degreasing means. Accordingly, we find that Oyler fails to make up for the deficiencies in the combination of Binot and Vion as discussed above.

Therefore, rejection of claims 21 and 22 under 35 USC §103(a) as being unpatentable over the combination of Binot, Vion and Oyler is reversed.

REVERSED

Toni R. Scheiner
Administrative Patent Judge

Donald E. Adams
Administrative Patent Judge

Lora M. Green
Administrative Patent Judge

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