

2010 Giles Sutherland Rich Memorial Moot Court Competition

DeLorean Enterprises LLC v. McFly Automotive Inc.

Case No. 09-1955

Appeal from the District of Upper California, Hill Valley Division

This case involves a decision from the United States District Court for the District of Upper California, within the jurisdiction of the Court of Appeals for the Ninth Circuit. Plaintiff, DeLorean Enterprises LLC (“DeLorean”), filed suit against McFly Automotive Inc. (“McFly”), alleging infringement of claim 2 of U.S. Patent No. 6,543,321 (“the ’321 patent”). McFly stipulated to infringement and asserted that claim 2 was invalid as obvious and not enabled. The Court found claim 2 invalid and entered judgment for McFly.

DeLorean timely filed a Notice of Appeal in the United States Court of Appeals for the Federal Circuit. The appeal was docketed as Appeal No. 09-1955. All of the facts recited herein are supported by substantial evidence of record. Any facts not recited herein are without support in the record.

Background

DeLorean sued McFly for infringement of Claim 2 of the ’321 patent on September 16, 2007. Claim 2 of the ’321 patent claims a method for making a fuel additive from cassavas, a type of plant native to South America. DeLorean alleged that McFly’s method of making its cassava-derived fuel additive infringed claim 2. McFly raised defenses based on obviousness and lack of enablement. The parties agreed to a bench trial. The District Court found claim 2 obvious and not enabled. Accordingly, the District Court entered final judgment for McFly.

DeLorean appeals the District Court’s ruling on the issues of obviousness and enablement. The parties do not contest any claim construction issues. The District Court’s Findings of Fact and Conclusions of Law are set forth below.

Findings of Fact

1. Dr. Saul Tubert first became interested in the potential uses of potatoes during his graduate studies at the Ohidaho Institute of Technology (OIT). Dr. Tubert graduated with a Ph.D. in chemical engineering in 1994. His dissertation involved research on petroleum-like polymers that can be produced from potatoes and other tuberous vegetables.
2. In 2000, Dr. Tubert somewhat serendipitously discovered that by treating potatoes with the solvent tuberchloric acid, the potatoes would produce a starchy extract. When added to gasoline, the potato starchy extract improved fuel efficiency of vehicles by 10%.
3. After realizing the potential significance of such plant based fuel additives, Dr. Tubert also considered other potential starchy extract sources. He spent roughly two years trying to identify the appropriate solvent for cassava, another potato-like tuber.
4. Eventually, Dr. Tubert determined that another solvent, tubersulfuric acid, would work for cassavas, but the reaction was not very efficient. Dr. Tubert's extraction process required over one ton of cassavas to produce one gallon of cassava starchy extract. Dr. Tubert's cassava starchy extract increased fuel efficiency by roughly 3%.
5. Disappointed by his cassava results, Dr. Tubert stopped his cassava experiments in August of 2002 and returned his focus to potatoes.
6. By September of 2004, Dr. Tubert had optimized the extraction process for potato starchy extract. Dr. Tubert found the best method for producing starchy extract from potatoes included heating the potatoes in a 350° C oven for 45 minutes prior to treating the potatoes with tuberchloric acid.

7. Dr. Tubert filed a patent application titled Vegetable Based Fuel Additive on September 15, 2004.
8. Dr. Tubert considered including a description of his extraction process for cassava starchy extract in his patent application. But, ultimately, he decided against including the description, because of the relatively poor yields of his extraction process and the relatively poor performance of the cassava starchy extract as a fuel additive.
9. The application initially included only one claim. It read:
 1. A method of making a vegetable based fuel additive comprising:
 - (a) pretreating the vegetable, and
 - (b) treating the vegetable with a solvent.
10. Dr. Tubert assigned his application to DeLorean Enterprises LLC. DeLorean is an agricultural products company which develops and manufactures plant-based raw materials for use in a variety of industrial processes.
11. In May, 2006, the examiner rejected claim 1 as not enabled to the full scope of the claim under 35 U.S.C. § 112, first paragraph.
12. McFly Automotive Inc. is headquartered in Hill Valley, California and manufactures and markets high performance oils, fluids, and fuel additives for vehicles.
13. In 2002, sensing increasing interest in environmentally friendly products, McFly engineers began development of a new “green” fuel additive.
14. After four years of intense research and development, McFly’s fuel additive was unveiled to the public on June 14, 2006. Much to the surprise of the automotive industry, McFly’s fuel additive was derived from cassavas.

15. The McFly development team had quickly discovered that cassavas treated with the solvent tubersulfuric acid released cassava starchy extract. But, just as Dr. Tubert found, the extraction process was relatively inefficient and required large amounts of cassavas.
16. The McFly team experimented with one other tuber-class solvent, tubernitric acid, to see if it might improve extraction efficiency. Tubernitric acid was completely ineffective and resulted in no starch extraction whatsoever.
17. In his spare time, the lead McFly engineer, Marty, was an accomplished chef and focused his considerable culinary talents on South American cuisine.
18. In January, 2004, Marty came across a recipe for baked cassavas in a 1974 Guatemalan cookbook, titled Recetas Favoritas. The recipe called for removing the thick cassava skin and then salting the cassava prior to baking for 45 minutes in a 350° C oven.
19. After reading the recipe, Marty theorized removal of the cassava skin followed by salting might also be applicable for starchy extract production, because the salt would help to release the starchy extract from the cassava.
20. The McFly team spent the next two years developing the salt pretreatment process. Initial experiments in 2005 indicated improved yields of starchy extract, and the following year was spent optimizing the procedure.
21. In June of 2005, Marty and several others from the McFly engineering team published an article in the leading plant based products journal, Agri-Tech, describing their initial procedure for producing starchy extract from cassavas.
22. Specifically, the McFly procedure disclosed in the Agri-Tech article included: (1) removing the cassava skin, (2) salting the cassavas with one part salt per ten parts

cassavas, (3) heating the cassavas in a 350° C oven for 30 minutes, and (4) extracting the starchy extract with tubersulfuric acid.

23. By 2006, the McFly procedure had been further optimized to finally include: (1) removing the cassava skin, (2) salting the cassavas with one part salt per 20 parts cassavas, (3) heating the cassavas in a 350° C oven for 55 minutes, and (4) extracting the starchy extract with tubersulfuric acid.
24. The McFly development team found that this now optimized procedure also increased the performance of the resulting cassava starchy extract such that it now provided a 20% increase in fuel mileage when used.
25. McFly's product was an overnight success. Within 90 days of launch of the product, the McFly product outpaced DeLorean's potato based fuel additive sales by a 2-to-1 margin. That sales margin has continued through today.
26. After seeing McFly's announcement of its new fuel additive, DeLorean quickly filed its amendment and response to the examiner's rejection the same day, on June 14, 2006. Claim 1 was cancelled and two new claims were added:

2. A method of making a vegetable based fuel additive comprising:

- (a) pretreating a potato, and
- (b) treating the potato with a tuber-class solvent.

3. A method of making a vegetable based fuel additive comprising:

- (a) pretreating a cassava, and
- (b) treating the cassava with a tuber-class solvent.

27. The application was allowed without further amendment on July 14, 2007. The application issued as U.S. Pat. No. 6,543,321 on September 15, 2007. Claim 2 was renumbered as claim 1, and claim 3 was renumbered as claim 2.
28. The issued specification includes a detailed description of the optimized extraction process for potato starchy extract at col. 4, ll. 40-46. The specification does not provide any other pretreatment examples.

In one embodiment, the potatoes are pretreated by heating in a 350°C oven for 45 minutes. After pretreatment, the potatoes are treated with a solvent, such as tuberchloric acid. The optimal ratio of potatoes to solvent is 1 gallon of solvent per 100 pounds of potatoes. Those of skill in the art will recognize other solvents and ratios may be used. Other possible solvents include tubersulfuric acid.

29. The specification notes that, in addition to potatoes, there are other sources of starchy extract. At col. 5, ll. 12-14:

It is well known that many foodstuffs contain starches which can be extracted for use as fuel additives, including lima beans, salted pork, vegetables, cheese puffs, cassava, and fruit leather.

30. The specification does not provide any disclosure regarding how starch might be extracted from any of these other foodstuffs.
31. At trial, McFly asserted an obviousness defense based on the combination of two references: Recetas Favoritas, the Guatemalan cookbook which had inspired Marty in 2004, and a journal article, titled “Extraction of Starch from Tomatoes.”
32. The journal article was authored by Dr. Solum Lycops and was published in the journal Plant Protocols in 1993.
33. The Lycops reference taught the extraction of starch from tomatoes using the solvent tuberchloric acid. The reference also stated that any of the tuber-class of solvents, such

as tuberchloric, tubersulfuric, or tuberphosphoric acid, could be used for starch extraction.

34. The Lycops reference also stated that, given the soft and rapidly ripening nature of tomatoes, any sort of heating of the tomatoes prior to starch extraction was unnecessary. Lycops also stated, “In fact, heating might depolymerize the starch and reduce the amount of starch recovered.”
35. Dr. Brown, a recognized expert in the field of plant based products, testified that cassava is a starchy tuber and, consequently, is quite similar to potato. Dr. Brown further testified that cassava, like all starchy tubers, can be processed to extract the starches, using varying techniques with varying degrees of difficulty and success.
36. Dr. Brown also stated one such general technique is treatment with a solvent, and in particular the tuber-class solvents, like that described in the '321 patent. According to Dr. Brown, there are 12 tuber-class solvents and they have been well known and defined since 1945.
37. Dr. Zemeckis, a recognized expert with a Ph.D. in chemical engineering, testified that one of ordinary skill in the art would have known to combine the teachings of the Lycops article with that of the Recetas Favoritas recipe. Dr. Zemeckis concluded that when combined, the two references taught pretreating and extracting with a solvent as required by the claims.
38. Mr. Sacks, a certified public accountant with ten years of experience in patent licensing negotiations for a chemical products company, testified that the basis for the success of McFly's cassava based fuel additive was a clever marketing campaign which highlighted the exotic and environmentally friendly source of the additive.

39. Mr. Sacks also noted that the only significant competitor in the fuel efficiency additive market was DeLorean, and that its potato based additive was sold in plain brown cans, and consumers found the can and the origin of the product unappealing.
40. Mr. Goldmun, a certified public accountant with seven years of experience in valuing chemical companies, testified regarding results of a consumer survey he conducted. The survey indicated that reason consumers most often cited for their preference of the McFly product was that it provided a 20% increase in fuel mileage as compared to the DeLorean product, which only provided a 10% increase in fuel mileage.
41. The parties stipulated that a person having ordinary skill in the art holds a Ph.D. in chemistry or chemical engineering and also has at least five years of experience in the alternative fuel industry.

Conclusions of Law

1. The District Court found claim 2 obvious under *KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398 (2007).
2. In support of its obviousness determination the District Court explained that it found Mr. Goldmun's testimony more credible as to issues of financial success.
3. The District Court also found that one of skill in the art would have been motivated to combine the references and that it would be obvious to try to combine the prior art references.
4. The court also found claim 2 as not enabled as of the time of filing, because as in *In re Wands*, 858 F.2d 731 (Fed. Cir. 1988), undue experimentation was required to arrive at the asserted invention.