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Do Patents Control Self-Replicating Technologies?

Supreme Court Hears Argument that Sale of Patented Seed Exhausts Future Patent Rights

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Patent infringement arises when one "makes, uses, offers to sell, or sells" a patented invention without authority from the patent holder. However, once the first authorized sale of the patented product has occurred, the patent holder's rights with respect to that invention are exhausted, and the purchaser is free to use or resell the purchased product as it wishes. This legal doctrine of "first sale" or patent exhaustion attempts to strike a balance between protecting a patentee's intellectual property (incentive to invent), while encouraging secondary markets in patented articles and limiting the patentee's power in those markets (encouraging competition).

Traditional patent exhaustion protects subsequent uses and re-sales of a patented invention. However, courts generally have not extended this protection to "making" the patented invention. That is, the law does not protect an authorized purchaser from subsequently making the patented invention without authority from the patent holder.

But how will the courts apply patent exhaustion principles to technologies that are necessarily "self-replicating" as many biotechnology inventions are? This question was argued before the U.S. Supreme Court on February 19, 2013, in the *Bowman v. Monsanto Co.* case, which involved Monsanto's Roundup Ready® seeds. The outcome could fundamentally alter the business of genetic engineering and biotechnology.

Indiana farmer Vernon Bowman purchased commodity second-generation soybeans from a grain dealer, with the expectation that the soybeans had been grown from Monsanto's genetically modified Roundup Ready seeds. Traditional patent exhaustion principles usually would apply to this sale, and Monsanto could normally impose no further control over the use, sale, or distribution of those soybeans.

While Bowman could have used the purchased soybeans for animal feed or the like, he instead used them as seeds to grow a genetically identical second generation of soybeans, which were encompassed within the scope of Monsanto's patents. Bowman also took advantage of the seeds' genetic modification and sprayed his crops with the herbicide Roundup®.

Monsanto sued Bowman for infringement of U.S. Patent Numbers 5,352,605 and RE 39,247, which protect genetically modified, glyphosateresistant, Roundup Ready soybeans, asserting that Bowman infringed the patents when he grew—or "made"—additional seeds from his purchased seeds. Both the district court and the U.S. Court of Appeals for the Federal Circuit sided with Monsanto and held that patent exhaustion did not apply. In these courts, Monsanto's arguments drew an analogy to copyright law—a first purchaser is free to distribute or resell a book, but cannot use that book to make additional unauthorized copies.

This case is now before the U.S. Supreme Court, and oral arguments were presented February 19, 2013. Bowman petitioned the Court to apply patent exhaustion principles, so that the authorized sale of any patented seeds exhausts all future patent rights, including the rights to those seeds as well as their progeny seeds produced as a result of planting. According to Bowman, replanting and "growing" seeds is not "making" the invention in the patent sense, but is rather an authorized use of the self-replicating genetic modification invention made earlier, which is consistent with the exhaustion of Monsanto's patent rights on first sale.

In presenting arguments, Bowman did not explicitly challenge the traditional principle that limits the ability to make subsequent copies of a patented product, even after patent rights are exhausted. Instead, he appeared to argue that soybeans are—well, different—because "seeds will self-replicate by normal use," and therefore subsequent generations are embodied in previous generations. Bowman argued that the Supreme Court should not create an exception to the traditional exhaustion doctrine for self-replicating technologies.

On the other hand, Monsanto asserted that even "authorized" sales do not exhaust patent rights to the extent urged by Bowman. Monsanto cautioned that it is Bowman who seeks an exception for self-replicating technologies, and biotechnological innovation would be discouraged if the Court created such an exception.

Monsanto also presented arguments drawn from common law property principles, such as derivative title, which had carried the day in the lower courts. According to Monsanto, the farmers who sold the seed to the grain dealer could not convey what they did not possess themselves. Because these farmers did not possess the right to use the soybeans as seeds under the terms of their license agreements for purchase, they could not convey that right to the grain dealers, who in turn could not convey that right to Bowman. Therefore, the right of ownership did not, according to Monsanto, include the right to use the soybeans as seeds.

Several major universities have lined up behind Monsanto in their amici brief, urging the Supreme Court to uphold the lower court and warning of the farreaching negative effects of creating an exception for self-replicating technologies. Reversing the lower courts, according to the universities, would weaken patent rights for artificial, progenitive technologies, which in turn would upset the strong innovation system created by the Bayh-Dole Act and federally funded university research.

The implications of this case are far-reaching. How might a Supreme Court win for Monsanto affect, for example, the implementation of gene therapies, stem cell cultures, and monoclonal antibody producing hybridomas? Can adequate protection of self-replicating biotechnologies be managed by license agreements and contractual arrangements? Would upholding patent exhaustion for self-replicating technologies remove commercial incentives for improving these technologies, or would excessive control of use after the sale otherwise limit future developments?

The issues and conflicting interests are complex, and this case warrants cautious consideration. Even after the Supreme Court's decision is handed down, which is expected by the end of the June 2013 term, it will be quite some time before the implications are fully appreciated. And whatever the decision, there will be consequences—some unintended—that could fundamentally alter the business of genetic engineering and biotechnology.