

After three tries, a patent for a baseball bat couldn't knock any competitor out of the park.

By Kirk Teska

patent



ball and softball bat technology. One particular patent, though, has impacted all five companies over a span of 10 years. This is the story of that patent and how, though it was involved in three different patent infringement lawsuits likely costing millions, never quite hit a home run.

The story begins in 1989, when Ray DeMarini approached Michael Eggiman and proposed that they form a part-time business designing and selling high-performance bats. Both men worked as mechanical engineers designing leaf springs at the suspension division of the truck manufacturing company Freightliner.

Outside of work, Ray DeMarini was passionate about softball. He even starred in ESPN's best-selling instructional hitting video and with the resulting royalties he started DeMarini Sports. For Eggiman's part, he knew nothing about bat design prior to his partnership with DeMarini. In studying commercially available bats, Eggiman realized that although thicker-walled bats resisted denting and lasted longer, thinner-walled bats performed better because the wall of the bat caved in at the point of impact and sprung back in a "trampoline effect." Combined with his knowledge of leaf spring technology, Eggiman devised a new bat.

On June 10, 1994, Eggiman lodged a patent application to be owned by DeMarini Sports. The application disclosed a tubular bat frame or barrel with an insert joined at its ends to the interior of the bat frame but separated elsewhere from the frame by a gap. The patent application notes:

The first U.S. patent for a baseball bat was awarded to William Williams in 1884. Williams's patent discussed a bat with a paper pulp exterior molded around a wooden or metallic core. One object of his invention was a "base-ball bat which will not be liable to break or split in the hands of the player, and which at the same time will possess the requisite qualities of density, elasticity, and withal economy of construction." It is unknown whether this bat ever succeeded in the marketplace. But, since that first patent, hundreds of patents have been issued for baseball bats or "lumber" (a slang term for bats, especially when being wielded by a particularly good batter).

Today, DeMarini Sports Inc., Worth Inc., Wilson Sporting Goods, Hillerich & Bradsby Co., and Miken Composites LLC collectively own 36 patents related to base-

Kirk Teska is an adjunct law professor at Suffolk University Law School in Boston, and is the managing partner of Iandiorio Teska & Coleman, an intellectual property law firm in Waltham, Mass.



“The leaf-spring-like attachment of the insert 18 within the impact portion 12 provides a rebound to yield improved power transmission to the ball. The bending stresses are released as the walls of the impact portion 12 and the insert 18 rebound into the unloaded state. The tensile loading of the underlying insert wall is released simultaneously, adding a single ‘snap’ which increases the force and velocity of the rebound. Accordingly, the extra snap owing to the leaf-spring-like suspension of the insert 18 within the tubular frame yields an improved transfer of power to the batted ball, and a heightened slugging capacity for the bat.”

The Patent Office allowed the patent on May 16, 1995. By then, DeMarini had begun selling “double-walled” bats incorporating the leaf-spring technology of the patent.

As is the case with a lot of successful products, the DeMarini double-walled bat bred competition. Worth Inc., which today sells bats with names like “Mutant” and “Prodigy,” was also designing new bats when DeMarini came out with its patented double-walled bat. In 1996, Worth and DeMarini even engaged in licensing negotiation over Eggiman’s bat design, but to no avail.

STRIKE 1

Worth developed a bat called EST, which was not exactly like DeMarini’s patented bat: Instead of having an insert, the EST included an external shell over the hitting end of the bat. Even so, DeMarini sued Worth for patent infringement on Nov. 8, 1997, under the “doctrine of equivalents,” asserting that Worth’s external shell over the bat frame was a mere transposition of Eggiman’s invention of an insert within the frame.

But, during the litigation, DeMarini’s patent was limited by the court to a bat frame (the handle and the larger-diameter impact portion) with an insert therein. Previously, Eggiman had considered an exterior shell design, but didn’t pursue that design because he didn’t know if such a construction would be safe and he wasn’t sure how to keep the exterior shell securely attached over the end of the bat. His patent, limited in scope by the court, could not be applied to Worth’s EST bat lacking anything fairly called an insert. Undeterred, DeMarini appealed.

There was legal precedent at the appellate court for the proposition that a reversal of parts can still result in patent infringement. One precedent-setting decision involved a patent for an optical fiber with a doped silica core inside a fused silica cladding. The infringing optical fiber had the dopant in the cladding instead of in the core, but it achieved the same overall result (a positive refractive index differential between the core and the cladding).

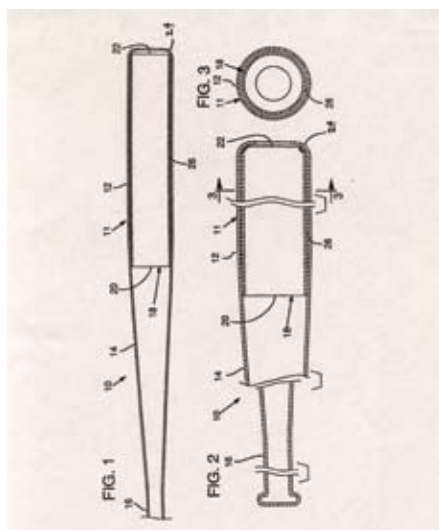
In DeMarini’s case, though, the appellate court stated that the difference between Worth’s bat and the invention of the Eggiman patent was more profound:

To compare the claimed insert to the Worth EST shell involves a structural rearrangement and redefinition of claim limitations in which the functional relationships of these structural limitations is not maintained, i.e., if the claimed insert is

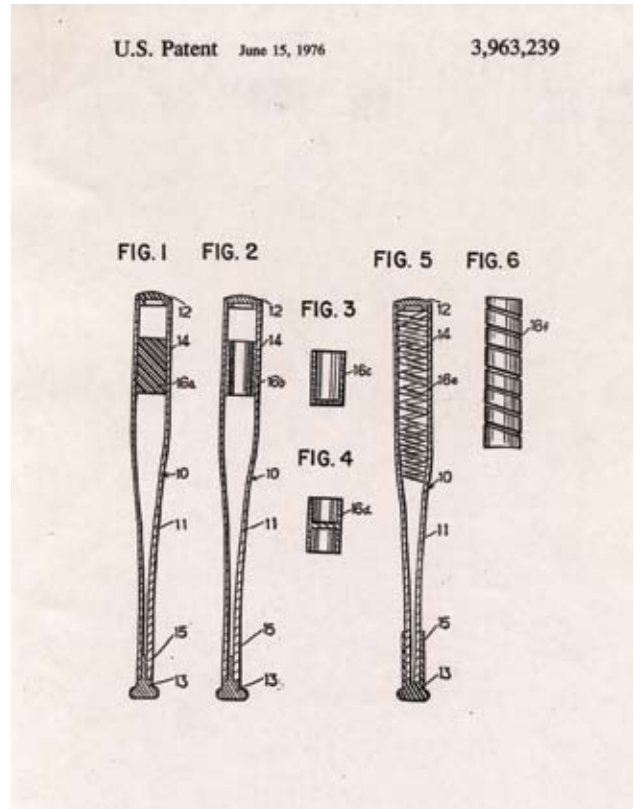
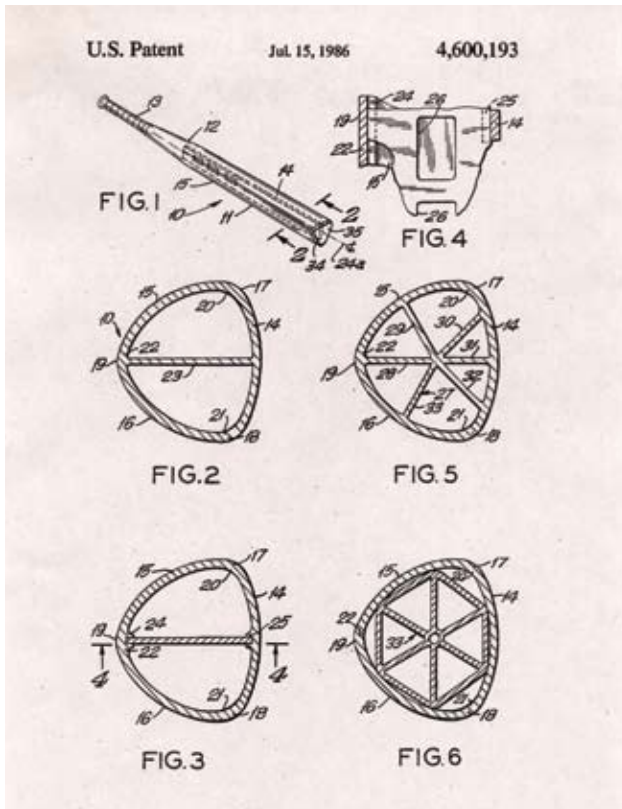
the exterior shell of the EST, the large-diameter portion of the EST frame is no longer available to be impacted by the ball.

The result was that Worth was free to sell its EST double-walled bat despite Eggiman’s patent.

Still, DeMarini Sports appeared to be doing well. In 1999, DeMarini’s annual sales approached \$20 million. In early 2000, DeMarini sold the Eggiman patent to Wilson Sporting Goods and his company joined forces with Wilson, which itself was faced with a new competitor for the DeMarini double-walled bat: Hillerich & Bradsby Co., maker of the legendary Louisville Slugger line of bats.



▲ Spring-loaded: Michael Eggiman, a former Freightliner engineer, patented this bat design inspired by leaf springs in 1995.



▲ Prior bats: Earlier patents describing bats with inserts, like these issued in 1986 (left) and 1976, limited the scope of Eggiman’s patent.

STRIKE 2

Wilson sued H&B on October 20, 2000, asserting infringement of the Eggiman patent for the second time. Unlike Worth’s, H&B’s bats did indeed have inserts. The problem was that the inserts were not exactly like Eggiman’s design. Several models of H&B’s bats had inserts that touched the bat frame at some locations and the Eggiman patent (now owned by Wilson) required an insert separated from the frame by a gap.

The trial court held that the Eggiman patent required a continuous space between the insert and the frame and, as a result, found that H&B’s bats did not violate the Eggiman patent. Wilson, like DeMarini before, appealed that case to the appellate court, which this time found that the trial court unduly limited the scope of the Eggiman patent. The Eggiman patent, said the court, “does not require concentricity of the circular insert and frame. Moreover, [the Eggiman patent claims] do not foreclose some contact between the insert and the frame.”

Back at the trial court, Wilson and H&B continued to fight over the meaning of the patent, but in March of 2008 Wilson dismissed the case against H&B. The court records do not indicate why and today H&B is still selling bats with inserts.

STRIKE 3

In addition to Worth and H&B, Wilson sued Miken Composites LLC over the Eggiman patent. Miken’s bats had inserts, but since they were hydraulically forced

into the frame, there was no spatial separation between the frame and the insert. Without a gap, the trial court determined that the Eggiman patent was not violated by Miken’s bats.

At the appeal of that decision, Wilson contended that there were microscopic gaps between the insert and the frames of Miken’s bats despite the hydraulic forcing of the insert into the frame. But intermittent and discontinuous separations between the insert and the frame, held the appellate court, do not constitute a “gap.” The result: Miken’s bats did not infringe the Eggiman patent either.

Is the DeMarini double-walled bat patent too easy to design around? Did it provide any return on investment given three competitors and three expensive patent infringement lawsuits all taken to an appeal? The real answer to these questions may never be known. In 2002, Ray DeMarini died of cancer at age 55, one year after being elected to the U.S. Specialty Sports Association Hall of Fame.

A clue to the answers for these questions, however, may lie in the fact that Eggiman was not the first to place an insert within a baseball bat frame. A 1975 patent, for example, showed a hollow tube, a coil spring, and a helical spring all within a bat frame. A different patent issued in 1986 also had an insert within a bat frame.

Thus, the Eggiman patent was what patent attorneys sometimes call an “improvement patent.” The Eggiman double-walled bat leaf spring design was different from and had advantages over previously known bats. But,

because of the existence of these two prior patents, Eggiman's patent could not cover every possible configuration of an insert within a bat frame or, in the case of the Worth EST bat, the transposition of the frame and the insert. As such, the Eggiman patent protected the specific leaf spring configuration that Eggiman invented, but failed to stop competitors that designed fairly close approximations which did not literally meet the requirements of the Eggiman patent.

That is the way it is in the land of patents. To win a patent, some requirement that is not found in prior technologies must be claimed in the patent application. If that same requirement is not present in a competitor's product, however, there is no patent infringement. And, "close enough" is usually not sufficient to win a patent infringement lawsuit.

Contrast "improvement patents" with disruptive technologies that can be more broadly covered via a patent. Consider, for example, the lowly ballpoint pen. In that patent, the inventor (John Loud) described a "marking sphere" that revolved in all directions. Such a pen was revolutionary and later ballpoint pens, which included retractable tips, refillable ink cartridges, and the like, still violated the Loud patent, even though it did not disclose such features.

In contrast, Eggiman was not the first to put an insert within a bat, so he was foreclosed from broadly patenting a double-walled bat. The results were competitors who were able to freely sell double-walled bats so long as they didn't include Eggiman's specific leaf spring design.

Despite once striking out, Mike Eggiman, working with Wilson, continues to invent. He is named on 13 patents for baseball bats in addition to the patent for the DeMarini double-walled bat. His latest patent covers a bat with a composite flexible handle. ■

For Further Reading

Kirk Teska's book *Patent Savvy for Managers* (Nolo) discusses patent management and includes case studies such as the story of the Gillette three-bladed "Mach 3" razor patent and the Blackberry patent infringement battle.

Ron Slusky's book *Invention Analysis and Claiming—A Patent Lawyer's Guide* (ABA Publishing) discusses the ballpoint pen patent and numerous other revolutionary technologies.