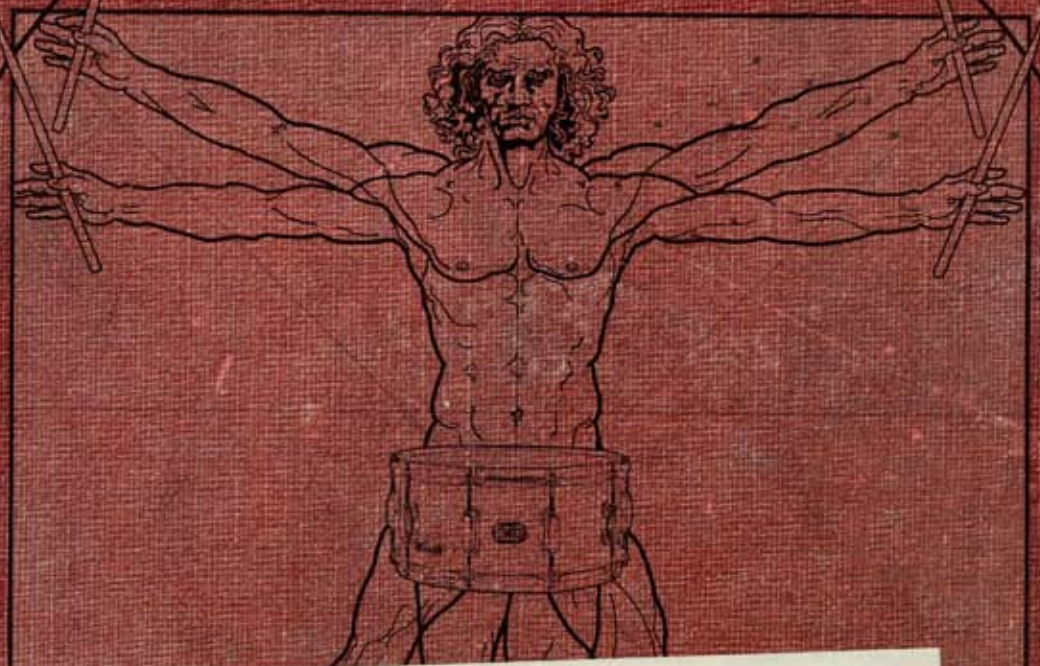


Gear Gurus



BY ROB COOK

These guys are not “nutty-professor” nerds in white lab coats who have devised the slickest gadgets drummers have ever seen. The people here all invented important drum features, but also can be described as entrepreneurs, teachers, manufacturers, and above all percussionists with passion for percussion. In other words, they were not *primarily* inventors, but found themselves *becoming* inventors to advance their art. That process continues, of course, and I wish I could include mention of the many people who will become legends in the coming decades. ▶▶▶

13 MOST INFLUENTIAL DRUM INVENTORS OF THE 20TH CENTURY



George Burt Stone
(1856–1917)

George Lawrence Stone
(1886–1967)

The father-and-son team of George B. and George L. Stone are considered together here because it can be hard to determine where one left off and the other continued. Both were superb musicians and operated the family business.

George B. Stone was a Boston-based drummer who once led his own band, Stone's Military Band. In the early 1880s he began to make drums for his pupils, which were so well received that by 1890 he spent all of his time building drums and other musical instruments. He first established a small workshop close to his home in Roxbury, Massachusetts, and within a year found it necessary to move to a larger space. As he continued to expand his manufacturing capacity and staff, he began a mail-order business. Nearly every sale led to more orders, which in turn led to expanding facilities with more space, machinery, and staff,

always barely managing to keep up with orders. He finally implored his son George L. (who was in his third year on the road as a professional musician) to join him in the family business. The firm was renamed George B. Stone & Son, Inc. George B. died of pneumonia at the age of 60 in January, 1917, leaving 31-year-old George L. in charge of the business.

The Stone dynasty was one of the pillars of the Boston percussion community, and led the city to be known as the center of the percussion universe in the early days of the 20th century. The Stone "Master Model" snare drum (Fig. 1) remains a coveted instrument in the vintage drum market as both a historic collectible and a "player."

As a manufacturer, Stone remained a family business, which peaked in the 1920s. In 1950 the Stone Company and its manufacturing equipment were sold to a former Stone student, Ralph Eames, who produced reproduction Revolutionary War drums. In 1978, the company was sold to Joe MacSweeney who continues to use original Stone manufacturing equipment to produce his Eames Drum Company shells. (It should be noted that MacSweeney is the guy Buddy Rich asked to refurbish his last drum set, a Slingerland Radio King kit.)

Both father and son can be considered inventors advancing the art of drum building, but their larger impact was in the educational arena. George L. Stone's book *Stick Control*, published in 1935, remains the most famous educational drum book ever written. George B. Stone was known as the best drummer and drum instructor in Boston. It was said that his closed roll sounded like sand being poured from a vase. A commonly used teaching tool in the Stone studios was carbon paper, which

showed every stick strike. When George Way, as a small boy, became determined to learn to play drums, he asked around and learned that George B. Stone was known as the best teacher in Boston. He dressed up in his military school uniform, strapped on his toy drum, and presented himself at Stone's shop. Stone accepted Way (five years younger than his own son George L.) as a student and gopher. George Way and George L. Stone remained close friends throughout their lives.

For more on George B. and George L. Stone, visit Lee Vinson's site on Boston drum builders, bostondrumbuilders.com.



Ulysses Grant Leedy
(1867–1931)

U. G. Leedy's father was a cabinetmaker and carriage builder in Fostoria, Ohio. U.G. learned the trades of carriage decorating and sign painting until his career shifted to drumming. He traveled with minstrel shows and circuses, and learned that there was a need for higher quality percussion instruments. His first contribution as an inventor was the folding snare drum stand (Fig. 2). The concept of a folding drum stand seems obvious today, but in U.G. Leedy's day as a young touring drummer, it was common for snare drums to be placed on a chair. He obtained a patent for his stand and successfully sued the Wurlitzer Company when they copied his concept. He next made his own drum shell and attached hardware that he purchased from Carl Fischer in 1890. By 1895, he established a drum manufacturing company in Indianapolis. (Leedy incorporated and built its first factory in 1903.) As the company grew, U.G. Leedy had to retire from his performing career, but continued to teach throughout his lifetime.

In the course of his career as a manufacturer, Leedy registered a number of patents. One, awarded in 1923, was for a "Drum And Trap Combination" — basically a drum outfit or kit



Fig. 1 The Stone "Master Model" snare drum.

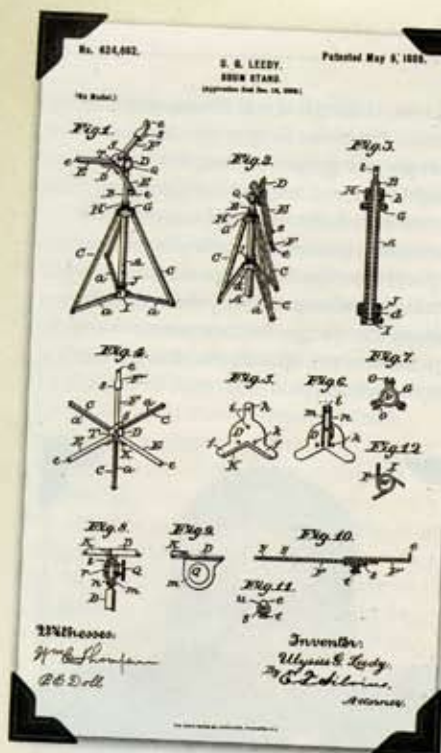


Fig. 2 Leedy's patent for his folding snare stand.

at a time when the concept of one drummer playing multiple instruments was a new idea (Fig. 3). Many more patents were taken out in the names of his employees and assigned to Leedy, most notably C.B. Wanamaker, Cecil Strupe, and George Way. By the 1920s, Leedy Manufacturing Co. had become the world's largest percussion manufacturer and the only one that actually manufactured all the items in its catalog. Leedy had working relationships with many of the other manufacturers of the day, including Conn, Wurlitzer, Ludwig, and Advance. Leedy sold these firms parts and OEM instruments and even counted some as Leedy stockholders. By the time U.G. Leedy decided to retire in 1929 (to a certain degree for health reasons) the Conn Company already owned a sizeable interest in the Leedy Corporation, so the purchase of U.G.'s stock gave them a controlling interest. (Conn shortly thereafter purchased the Ludwig & Ludwig drum company from the Ludwig family.)

The influence of Leedy (and to a certain extent that of U.G. Leedy) would continue to grow throughout the 1930s and '40s. U.G. Leedy had chosen his staff wisely and most of the key operatives stuck with the company when Conn moved Leedy from Indianapolis to Elkhart, Indiana, in 1930. Leedy drums remained in the marketplace as a division of Conn until 1951 when Conn combined their two drum divisions into one, naming it "Leedy & Ludwig." In 1955, Conn decided to get out of the drum business altogether, selling Leedy to Slingerland and Ludwig back to the Ludwig family, who had in 1937 established WFL as the family business. Slingerland produced Leedy drums as a secondary line until about

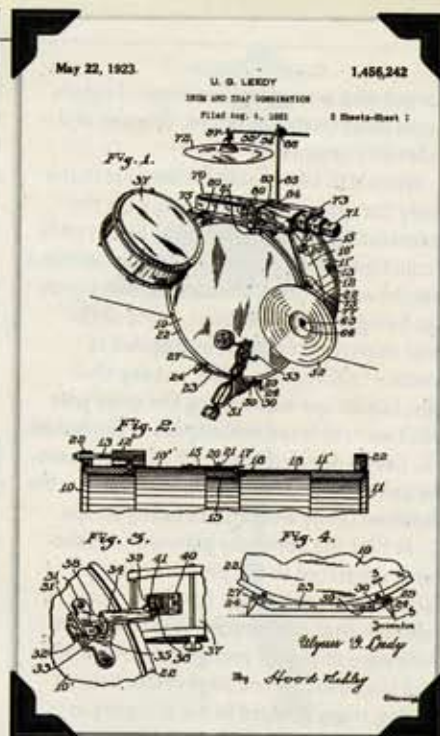


Fig. 3 Leedy's patent for arguably the first drum kit.

1970. When Slingerland was eventually sold to Fred W. Gretsch, the rights to Leedy were part of the package. Fred Gretsch has since sold Slingerland, but retains his interest in Leedy to this day. A few limited-edition boutique drums have been produced with the Leedy name in the last decade.



William F. Ludwig (1879 – 1973)

There are some striking similarities between the careers of U.G. Leedy and William F. Ludwig. Ludwig's father was a professional musician (valve trombone and baritone) who guided his son's early music education. Young Ludwig began his Chicago drumming career as a boy playing dances, parties, and burlesque. In 1895, at the age of 16, he and his father joined a circus band, traveling overnight by horse-drawn

wagons and playing two shows, a parade, and post-show concert daily. From there his career led him to barnstorming, burlesque, and theater drumming before hearing Sousa's band and becoming inspired to become a military band drummer. He built a solid career as a performer and along the way picked up a German-made brass snare drum he fell in love with from Tom Mills, whom Sousa had proclaimed the best drummer he'd ever had.

In 1908, Ludwig was hired to perform with the Ziegfeld Follies and found that the bass drum pedal was mechanically incapable of letting him play the faster tempos the conductor was calling for, so he built his own pedal (Fig. 4). It worked quite well for him, and every other drummer who heard about it wanted one. He built a few more, and then sought the assistance of his brother-in-law Robert Danly, an engineer for International Harvester. They redesigned the pedal, patented it, and established Ludwig & Ludwig (for William and his brother Theo) to sell it.

Just as the pedal was taking off, Ludwig was offered a position he'd long wanted — playing timpani with an orchestra. Once more he found his instruments wanting, so he developed the first pedal-tuned timpani. These also sold in the Ludwig shop as fast as they could be produced. Ludwig wanted to offer his customers a brass drum that sounded as good as his "Tom Mills" drum, so he approached U.G. Leedy and asked if he would manufacture a drum like this. (Ludwig was a Leedy sales agent, selling Leedy products in the Ludwig & Ludwig shop.) U.G. Leedy refused, contending

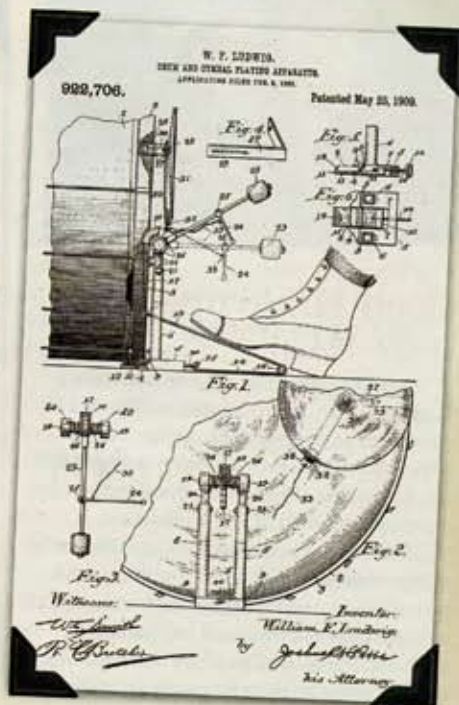


Fig. 4 Ludwig's 1908 bass pedal patent.

that the only proper material for a snare drum was wood. Theo and William Ludwig worked out the metal snare drum design on their own and it was an instant success. With those three products (the pedal, the metal snare drum, and the pedal timpani) Ludwig & Ludwig was transformed into a manufacturing operation.

Ludwig & Ludwig became a major competitor of Leedy in the 1920s. But Ludwig found himself in a desperate situation after making a huge investment in banjo production in the late 1920s, just as the banjo craze was waning. Even worse — around the same time, the theater drummer business was dealt a blow by the advent of "talking movies." William F. Ludwig was forced to merge his company with Conn, the same company that had just purchased Leedy. He moved to Elkhart for a few years to work for the Ludwig & Ludwig division of Conn, then quit and returned to Chicago to start over, this time with his son William F. Ludwig II as a business partner. Conn lawyers would not consent to the Ludwig family using their name on the business, so they used WFL. They finally were able to buy back their name in 1955, and William F. Ludwig worked at the Ludwig factory until his passing in 1973.



Cecil H. Strupe (1889–1947)

Cecil Strupe did not achieve fame as a drummer, and it's quite possible that he didn't play at all. He was, however, a drum engineer/inventor extraordinaire. During World War I, Strupe worked for the government as a development man in the Mechanical Department, where he was responsible for many valuable inventions. After the war he joined Leedy, and by 1923, held the executive post of superintendent and mechanical engineer. Strupe was awarded numerous patents while working for Leedy, including the design improvement on Ludwig's bass drum pedal/cymbal striker in Fig. 5. He was the one

charged with arranging the technical details of new ideas related to drums, timpani, and mallet instruments.

When U.G. Leedy sold his interest in the Leedy Company to Conn, it was with the understanding that Conn would keep Leedy production and offices in Indianapolis. Within a year, however, Conn announced that Leedy was being moved to Elkhart. Many of the most important employees decided to relocate to Elkhart in order to keep their jobs, but Strupe was among the ones who didn't want to leave Indianapolis. A distressed U.G. Leedy decided to start a new company, the General Products Company, to employ the displaced Leedy workers, including Strupe.

At first the company planned to make items unrelated to the percussion industry, such as ductwork for air handling. Soon, however, the L&S Company was born. Since there were photos of youngest son Hollis and Cecil Strupe on the first page of U.G. Leedy's catalog, many referred to the company as "Leedy & Strupe." That name did not appear anywhere in print, however, and years later Hollis Leedy would maintain that L&S stood for "Leedy & Sons." Strupe continued in his role as chief engineer with L&S, and L&S instruments were distributed exclusively through the Chicago Musical Instrument Company. L&S never really developed a sales staff or dealer base, and was a short-lived company.

In 1937 William F. Ludwig recruited Strupe to join the Ludwig father-and-son team to launch the WFL Drum Company. According to

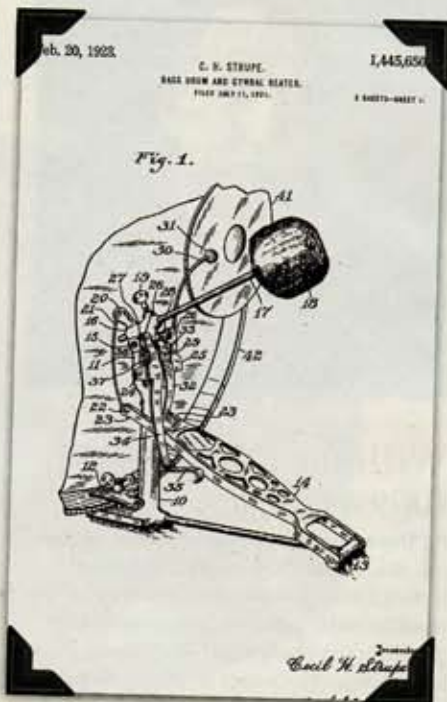


Fig. 5 Strupe's design improvement on Ludwig's bass drum pedal/cymbal striker.

William F. Ludwig II, it was Strupe who first invented the triple-flanged counterhoop by simply taking a pair of pliers to a standard straight hoop and bending the top over. Like the bass drum pedal and the snare drum stand, this concept seems remarkably simple in retrospect now that virtually every metal counterhoop on every drum sold today employs that design. Perhaps someone else would have come up with the idea, but credit goes to Cecil Strupe.



George Harrison Way (1891–1969)

As mentioned earlier, George Way learned about drums, percussion, and music from George B. Stone as a young man in Boston. However, Way's parents did not support their son in this endeavor, and all but disowned him when he became a professional musician.

Way started his playing career as a theater and vaudeville drummer in Boston and New York City, before spending years touring with minstrel and musical shows. He finally settled in Edmonton, Alberta, Canada, where he accepted a job as the house drummer at the Pantages Theater. With two partners, he started the Advance Drum Company there in about 1915, making his own snare drums and other percussion instruments, and became a sales agent for Leedy products in addition to his own. U.G. Leedy noticed Way's promotional efforts and the success of the Advance Drum Company, and hired Way in 1921 to come to Indianapolis as Leedy's sales and advertising manager.

Leedy suddenly shifted from selling directly to end-users to selling to authorized dealers, so it was Way who set up and managed dealer relations. When Conn moved Leedy to Elkhart, Way essentially became "Mr. Leedy" — the public face of the company throughout the 1930s and into the '40s, until World War II disrupted the industry. During the war years, Way worked for a calf head company and

Slingerland briefly before starting his own drumhead and accessory distribution business, and eventually moved to California to open a drum shop in Hollywood.

When Conn sold its interests in the drum business in 1955, Way gathered some investors and incorporated as Geo. Way Drums, Inc. It went fairly well for his new company until one of the investors managed to buy out enough of the others to gain a controlling interest and basically fired Way. Geo. Way Drums then became Camco Drum Company, which eventually evolved into Drum Workshop. In fact, Way invented the distinctive round "turret" lug still seen on DW drums.

When he parted ways with Geo. Way Drums, Way worked for Rogers for a year or so before moving back to Elkhart and starting a drum accessories distribution business, GHW, Inc., which he operated until his passing in 1969.

Way's archives include dozens of drawings from all phases of his career. He designed mallet instruments, lugs, tensioning systems, strainers, timpani mechanisms, holders, and stands. Two of his most significant contributions to 20th century drum development were drum covering (Pyralin) and the floating head counterhoop design.



Billy Gladstone

(born William David Goldstein, 1892–1961)

Billy Gladstone was a Rumanian immigrant who moved to America in 1904. He took up drumming to play in the staff drum and bugle corps of a department store in New York, and demonstrated natural ability



Fig. 6 The Gretsch Gladstone remote hi-hat.

almost immediately. He became a symphonic percussionist and demonstrated not only his talents as a performing musician, but as an engineer and inventor.

A number of his inventions were totally unrelated to music, such as a lighted tongue depressor and a juice extractor. Most of his patents met with limited commercial success until Leedy saw potential in his "Operating Device For Cymbals." This was about at the same time that "snowshoe" foot-operated cymbal devices were first being used, and Gladstone designed a foot-operated variation of his device. These instruments led to the invention of the "hi-hat" stand as we know it today. Another Gladstone patent was for the first remote hi-hat, the Gretsch Gladstone, in the late 1930s (Fig. 6).

Probably the two most enduring aspects of Billy Gladstone's remarkable career were his tenure at the Radio City Music Hall and his famous Gladstone drum. Players such as Buddy Rich and Louis Bellson proclaimed Gladstone's roll as unmatched by anyone, including themselves. Chet Falzerano's book on Billy Gladstone (2007, Centerstream Publishing) includes quotes from Rich, Bellson, Joe Morello, Barrett Deems, and many others, all hailing Gladstone's playing as supreme.

Gladstone patented a unique tuning system inspired by roller state key technology that enabled the drummer to use a three-way key to tune the top tension rod, bottom tension rod, or both together depending on which of the three keys were used. All three adjustments were made from the top of the drum, so it didn't need to be removed from the stand to be tuned. It met with limited

success as the Gretsch Gladstone drum in the late 1930s, but commands big dollars today in the vintage marketplace.

He further refined the drum and handmade a limited number of them in his apartment, beginning with one made for Buster Bailey in 1949. Each of the drums had an engraved plate with the name of the person for whom it was made. In a 1954 letter to his good friend George Way, Gladstone made a list of people he'd made drums for and the organizations they played with. (The letter is reproduced in Falzerano's book.) It basically included every top percussionist in the country.



Josephus Brown "Joe" Thompson (1897–1968)

Joe Thompson played drums and sax as a young man. He had a fascination for anything mechanical, particularly musical instruments, and enjoyed repairing them. With a partner, he started a music store in 1924, but the shop went out of business in 1929, when the economy crashed. His partner turned to giving music lessons while Thompson became an instrument repairman working in a shop he set up at his father's farm, and augmented his income by playing in a six-piece dance band.

By 1939, he had purchased a home near Covington, Ohio, and his repair business was in a two-story brick building behind his house. This soon became known as his "laboratory," and another smaller brick building became his "model shop," which was off-limits to visitors. While Thompson's experiments with musical inventions were a sideline for years, they became a primary source of income with the invention of a mouthpiece puller. This was a much-needed device for brass instrument repairmen, and brought Thompson to the attention of Henry Grossman, who owned a jobbing business based in Cleveland

GEAR GURUS

and became the distributor for Thompson's mouthpiece puller. An even bigger success was the small plastic instrument known as the Flutophone. Thompson's Flutophone served as the introduction to making music for millions of American children.

When Grossman had the opportunity to purchase the Rogers Drum Company, he asked Thompson to run it for him. Thompson agreed, but on the condition that he would not have to move, so Grossman built the factory building on Thompson's property in Covington, adjacent to his house and outbuildings. Joe Thompson would become a legend in the drum industry as the man who invented Swiv-O-Matic hardware and the Dyna-Sonic snare drum.



Armand Zildjian
(1921–2002)

Robert Zildjian
(1923–2013)

Although Armand and Robert Zildjian did not *invent* the cymbal, they most certainly must be given a great deal of credit for adapting the instrument to popular music of the 20th century. By far, the most popular recipe for making cymbals was developed by their ancestor Avedis I in 1623, in Istanbul. Zildjian cymbal making continued in Istanbul until the late 1920s when their father Avedis III brought Zildjian manufacturing to Boston. As teenagers, both Robert and Armand began to apprentice and learned the family secrets for cymbal production that had been passed down to male Zildjian heirs for more than 300 years.

The skill sets and personalities of the two brothers were quite different and complimented each other nicely. Robert was the business expert who guided marketing and distribution development. Armand was the music expert who used his interactions with Zildjian artists to influence his product development and manufacturing decisions. Robert would later say that he and his brother got along in the factory because they both worked under one despot, their father. (Until his passing in 1979 at the age of 90, Avedis Zildjian would have

the final say on major company decisions.) After their father's passing, the brothers found that their differences were more difficult to resolve and decided to part ways. Armand took command of Zildjian while Robert started a new company, Sabian, in Canada, where Zildjian had a plant.

Both Robert and Armand continued to define the cymbal business as they heeded the input of their artists and provided products that met the needs of contemporary music. To understand the impact these brothers had on the cymbal marketplace, it helps to consider the models that Zildjian offered in the early 1940s. In 1942, the company offered cymbals from 9" to 16". In terms of bell size and shape, lathing, and other key features, the only differences among all the cymbals Zildjian offered were diameter and thickness. Today's Zildjian and Sabian catalogs list dozens of different cymbal styles thanks primarily to the efforts of Robert and Armand.



Robert C. Beals
(1922–2010)

Remo D. Belli
(1927–)

Drumheads were made from animal hides for centuries. While calfskin heads are still available to this day, users are faced with challenges while trying to keep the tension constant, as skin heads react to changes in temperature and humidity.

The most significant product development of the 20th century drum industry was the "plastic" (Mylar) drumhead. There had been earlier efforts to improve on natural skin drumheads, but they failed miserably. These efforts included cloth heads soaked with shellac, and even a sheet metal drumhead. It's very difficult to determine exactly who first had the *idea* of a Mylar drumhead, but it's slightly easier to say who *developed* the concept.

Marian "Chick" Evans is widely credited with being the first to tack a sheet of Mylar onto wooden flesh hoops in 1956. Around the same time, Remo Belli began to experiment with Mylar as a drumhead material. The

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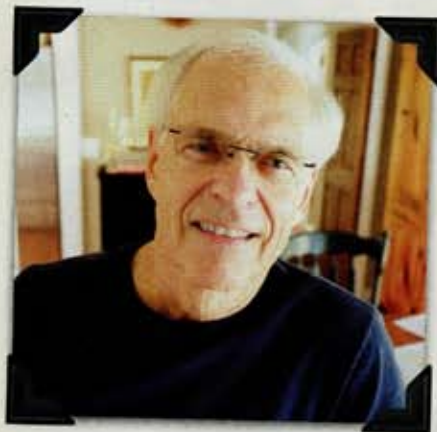
- Jason Sutter

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difficulty both men encountered was in finding a way to fasten the head to the flesh hoop. Evans got help from Bob Beals, who was at the time a music storeowner, tool engineer, and machinist. Beals took an interest in the Evans project and together they formed Evans Products in Dodge City, Kansas. They developed a synthetic flesh hoop that is still an Evans hallmark to this day (Fig. 7). Remo, with the help of chemist Sam Muchnick, found a way to anchor the Mylar in a channeled aluminum hoop. (Slingerland and Ludwig both developed methods of crimping Mylar into an aluminum channel that was based on the concept Pullman used on railroad car screens. Bitter litigation raged between the two firms as they fought for the exclusivity of this method.)

Beals received numerous patents for his drumhead innovations related to the development of extremely tough but flexible resins reinforced with fiberglass. Beals sold Evans Products to D'Addario in 1995, while Belli continues at the helm of the Remo company.



Gary Gauger (1943-)

Aside from Remo Belli, Gary Gauger is the only one on this list that is still living. Born in Philadelphia in 1943, Gauger is still a very active player in the percussion industry. The decades that have passed since the primary contributions of everyone else on the list have clearly demonstrated the profound influence these individuals have had on the percussion world. In some cases it took many decades for their real influence to become obvious — ripples that actually became waves as they expanded across the years. Gauger's 1979 patent earned him membership in this elite club in an amazingly short period of time. Those of us who were active in the percussion industry when the RIMS mounting system patent expired felt the world change (Fig. 8). All of a sudden there were isolation systems everywhere on drums in all price ranges. I predict that in the future the

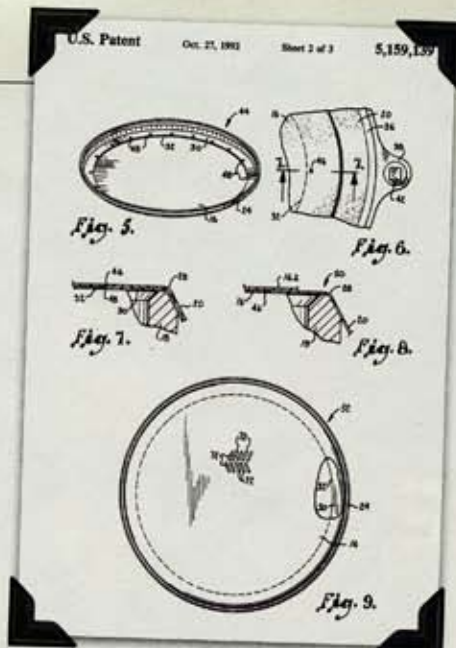


Fig. 7 The premier of the "synthetic flesh hoop."

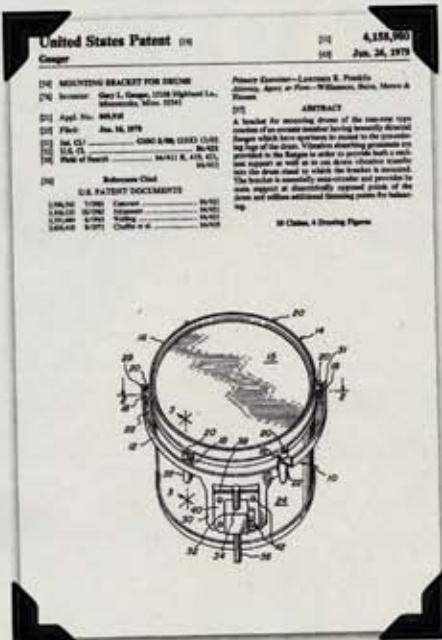
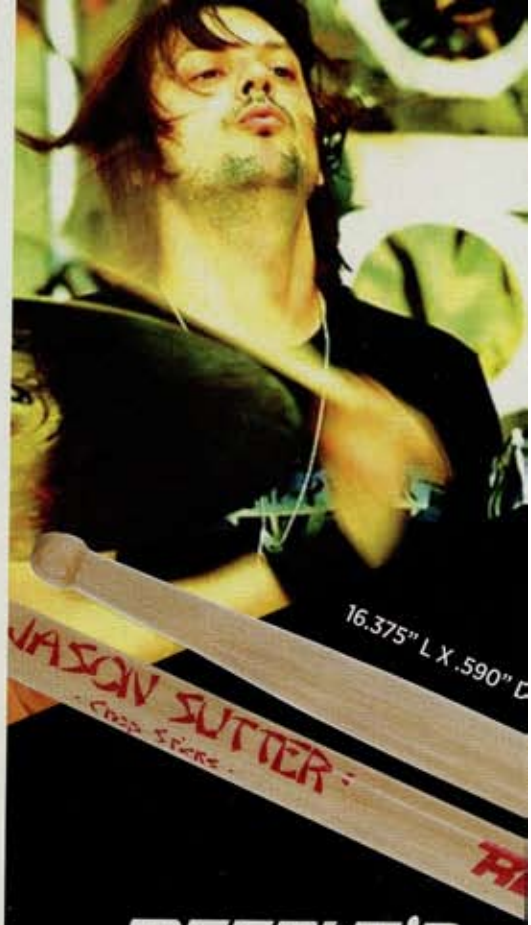


Fig. 8 Gauger's 1979 patent for his RIMS mounting system.

isolation principles that Gary Gauger has worked so hard to bring to our attention will be seen much as we today perceive the folding drum stand, bass drum pedal, and Mylar drumhead — so obvious that we take them for granted. ▣

Rob Cook is the author of books on Rogers, Ludwig, Gretsch, Leedy, and Slingerland. He currently is working on *The Leedy Way, a revised Leedy history that will be combined with the biography of George Way. Doing business as Rebeats, he publishes company histories and drummer biographies and produces the Chicago Drum Show annually.* rob@rebeats.com



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