



knowledge of the 21 miles of shelving in the byzantine Patent Office stacks.

His naked feet propped on a table, gray toes wagging, Bill Huson shouts to colleagues across the room: "Does anybody know the number of that patent for the bulldog watch?"

Not offhand. But most of Huson's companions know the one he's talking about. "It's a wristwatch for dogs," explains Sean Augustine, whose feet, though shod, are also resting on a table. "One of the drawings in the patent actually has a picture of

PATENT PLACE

MARRIAGES HAVE BEEN MADE
AND DYNASTIES FOUNDED IN THE
PUBLIC SEARCH ROOM OF THE
U.S. PATENT OFFICE. BUT
WILL COMPUTERS BLOW THIS
BRAVE OLD WORLD AWAY?

a bulldog sitting there looking at his watch."

Huson and Augustine are patent searchers: private consultants, you might say, employed by inventors and companies to comb the records of the U.S. Patent and Trademark Office in Crystal City to determine whether an invention has already been patented. They come across a lot of

BY TERESA RIORDAN
PHOTOGRAPHS BY SILVIA OTTE



odd patents in their line of work. "Like the one for a device that allows you to examine your anal regions while you sit on the toilet," remarks Huson conversationally, as he continues to hunt for the number of the bulldog watch patent. "And you know that plastic bubble-popping stuff? Someone got a patent for a therapeutic bubble-popping device."

Patent searching—one of the plethora of cottage industries that have grown up around federal agencies—has been around for more than a century. So has the Patent Office's public search room. Back in the 1950s, patent searchers came to work in coat and tie, wearing green eyeshades and special cuffs to protect their shirts. Since then—as the industry has expanded—the culture has, well, relaxed considerably: Clad in shorts and sandals or jeans and tennis shoes, patent searchers like Huson and Augustine bellow at one another from across the vast room. Betting pools circulate. At any given moment, someone is selling something: Tupperware, Avon, baskets, body oil.

One searcher used to make peanut butter sandwiches at his desk, but that was before Patent Office authorities cracked down on conspicuous food consumption. "Now they're busting people

The public search room in Crystal City remains a paper universe—for now. Frank Sikora, opposite page, introduced ex-wife Patti Anne Young to old-fashioned patent searching. These days she trains searchers to use the new computer technology.

for eating candy," snorts Pam Carroll, her bitterness echoed by other searchers who begrudge this infringement on their rights and bristle at any suggestion the place should be more sedate, more library-like.

They may look casual, but they are masters of their own small universe: a universe in which miniature towers of patent records march down long rows of worn wooden tables dating to the 1930s. The edges of the more ancient documents crumble and drift to the floor as Huson, Augustine et al. thumb expertly through bundles of old patents.

Punctuating the tables are classification tomes the size of unabridged dictionaries, which index the labyrinthine stacks adjacent to the search room. The stacks hold 21 linear miles of shelving, with about 65,000 new pages of documents added each week to the estimated 250 million pages already there.

But this happy band is endangered, a likely casualty of the information highway. For a decade the Patent Office has been planning to become a paperless agency. Now, half a billion dollars later, this reality seems at hand. Starting in January, most of the Patent Office's 78 depository libraries across the nation are ex-

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pected to offer full-text, on-line searching for patents issued since 1971. This, in addition to the increasing array of patent databases offered by on-line search services, means that companies and law firms are beginning to do their own patent searches from distant locales, whether it's Tulsa or Tokyo or Timbuktu.

Which raises the question: How will technology alter the small society of patent searchers whose careers—and, in some cases, familial dynasties—have been built on their mastery of the arcane knowledge of the Patent Office's obscure classification system; whose income derives from their intimate familiarity with the byzantine geography of the stacks; whose professional satisfaction and, often, personal happiness hinges on the fact that up to now, a competent and accurate patent search could be completed only by an expert searcher physically touching paper at the Patent Office in Crystal City?

In short: What will happen to Patent Place?

CARDS' LABOR LOST

Even when Frank Sikora is off in the stacks, it's easy to spot where he usually sits in the search room. Every morning, he arrives at his accustomed seat and sets up a framed photograph of his kids, taken in the 1960s; several metal cases of note cards; a paperweight from the University of Wisconsin alumni association bearing his name; and a note left next to a couple of copies of today's newspapers that reads, "Newspapers are property of Search Room & Frank Sikora. Please don't steal."

Many days, Sikora composes miniature essays, which he gives to his fellow searchers with the understanding that, if they like what they read, they will pay him 25 cents. Today's essay reads: "The Democrats are now thinking of nominating O.J. Simpson as their next presidential candidate if in fact he is acquitted. And he does have these advantages over Bill Clinton: 1. He runs faster through a crowded airport with a briefcase. 2. He looks thinner in a black suit."

Now 65, Sikora first came to Washington in 1956, to work for the Patent Office as an examiner—a bureaucrat whose job it is to determine whether an idea is sufficiently novel to merit a patent. He was the examiner in charge of classified patent applications having to do with organophosphate chemicals.

"Essentially we're talking about highly lethal nerve gases," Sikora says.

He loved his work so much that over a 10-year period he assembled his own collec-

tion of 3,600 organophosphate patents, and worked in his spare time developing a new classification system for the field. (Aside from nerve gas, organophosphate chemicals are found in more benign materials such as flea collars and lecithin, a baking ingredient.)

Eventually Sikora developed an elaborate sort of patent document concordance for organophosphate chemicals—contained on 13,000 index cards. It was a kind of manual precursor to software algorithms that use Boolean logic to produce a list of documents containing a single word or phrase.

Indeed, Sikora says, Patent Office officials in charge of "mechanizing" searches by means of primitive computing methods sought him out back in the 1960s. Ultimately, however, the Patent Office did not adopt his organophosphate chemical classification system. This broke his heart, he says—and his mind.

"The government gave me 100 percent disability, which means I was totally insane," he explains. He went to live with his parents in Milwaukee. When he returned to Washington two years later, he discovered something awful.

"Guess what happened to the 13,000 compound index cards?" he says. "They had been sold at auction to pay my back rent."

Well, actually, it was Sikora's Airstream trailer home that was sold at auction. His personal collection of organophosphate patents, stored inside the trailer, was lost in the process.

Fellow searchers, while acknowledging that Sikora is the undisputed authority on organophosphate chemical patents, affectionately agree with the government's assessment of their colleague's mental health.

"The guy's wacko," declares Tony Castorina, an attorney who specializes in patent searching.

"Certifiable," says Jennifer Branigan, a searcher with expertise in biotechnology. "He told me I'd never get married if I didn't get a boob job."

Sikora is nothing, however, compared with the searcher who wore air traffic controller headphones and padlocked his briefcase to a search table. Or the respiratorially impaired woman, known to search room regulars as Darth Vader, who wore a mask of air filters on her face and who would shriek upon coming within 50 feet of perfume or cigarette smoke.

"When we have a full moon we have a lot more crazy people," says Sean Augustine's father, Dave. "I was attacked once. This 5-foot-tall guy was screaming at me to call off my thought police" *continued on page 37*



PATENT PLACE

continued from page 25

who were controlling him from their headquarters at the Shoreham Hotel."

A REAL SEARCH PARTY

Tom and Gary Augustine and their brother Dave got into patent searching through their father, John, the paterfamilias of a virtual dynasty.

There are about a dozen families who, like the Augustines, have developed patent searching firms. Many of these searchers have only a high school education, and they tend to specialize in what are referred to as the "general and mechanical" arts: patents covering games and toys and valves and engines and the like.

John Augustine—who retired a decade ago—first went to work as a searcher in the late 1950s. He had been a foreman at a machine shop in Silver Spring until his friend Earl Brown, a fellow hot rod enthusiast, lured him into the search room. Then John Augustine's three sons went into the business. They got their friends, Donald and Norman Bullock, into the business. Now several of the Augustine grandchildren are searchers, and they are getting their friends searcher jobs.

Grandson Sean got his girlfriend, Denise Gencavage, a job. Ian—that's the son of John's daughter, Margaret, who used to work in the search room but now works as a machinist—used to live in a house with Bill Huson, who used to be general sales manager of a marina, and that's how Bill got a job searching for Dave.

Tom met his wife, Barbara, at the Patent Office; Barbara used to work at the information desk. Now she does what Lucille—that's John's wife—did before John retired, handling the secretarial work from home.

Somewhat surprisingly, Gary Augustine didn't meet his wife, Barbra (not to be confused with Tom's wife, Barbara), at the search room, although that's where she now works as a long-distance paralegal for a Chicago law firm. Instead, Barbra met Gary and the rest of the Augustines when she came from Michigan 12 years ago to visit her boyfriend, who was the son of John Augustine's business partner.

So did she dump the boyfriend right away for Gary?

"Well, actually I married the boyfriend and then we got divorced," says Barbra.

The first husband was a patent searcher too, at least for a short while.

"Sat right next to me," Dave says.

Dave and Tom are trying to count up how many in the extended Augustine family over the years have been in the patent search business. They're up to a dozen so far.

"We forgot Dennis," Tom realizes. Dennis was once married to Margaret.

"And our cousin's husband's brother married the Bullocks' sister Carmen—that counts as family," says Dave. "Then the Bullocks' other sister, Christina, married Mike Libby, a patent searcher."

"Technically, though, Christina isn't an Augustine," Tom points out.

"No, not technically," Dave agrees.

Come April there will be no question whether Denise Gencavage is technically an Augustine. A couple of months ago, on her birthday, Sean asked her to meet him and the gang downstairs at Au Bon Pain—that's a big searcher hangout—for coffee and a doughnut. He had brought a briefcase full of neckties to work that day. Before Denise showed up, Sean distributed the neckties to his uncles and friends.

"I want you to be dressed for the occasion," he said.

Sean got down on bended knee, brought out the ring and popped the question. Then he and Denise went up to the pay phones in the search room and called her mom with the good news.

YOU INVENT IT. WE PREVENT IT.

Many searchers are here eight hours a day, five days a week. The regulars adhere to an unofficial but rigid seating chart that reflects a social hierarchy as sophisticated as that in any high school cafeteria lunch room. Augustines and honorary Augustines occupy several rows in the northwest corner, not far from the entrance.

"Some people have been sitting in the same seats for 20 years," says Gary Augustine.

At the other end of the room from the Augustines are patent searchers in the electrical and chemical fields. This lot tends to consist of eccentric PhDs with more scholarly inclinations, who hang out in the southeast section, near the south stacks.

"The nerds of the nerds," says Gary.

"Really weird, socially inept and nobody you'd like to be alone in a room with," says Barbra.

"Essentially there are a lot of extreme overachiever social retards," says Jim Spurrell, an honorary Augustine and a chemical searcher whose father is a patent lawyer in Tennessee, and who decided to try searching when it became clear that he and medical school weren't meant for each other.

When searcher Jennifer Branigan first started working in the search room, she picked a seat at random. Some searchers came by and said, "You know whose seat that is? That's George Crowell's seat."

"I'm sorry," said Jennifer. "I didn't mean to take his seat."

"That's okay," the searchers said. "George is dead."

George died several years ago, directly downstairs in the Hot Shoppes cafeteria while having coffee with friends.

"He just slumped over, and I kept saying, 'George! George! Stop it, it's not funny anymore,'" says Jenny Rose, a patent searcher. A nearby patent examiner is slumping sideways, demonstrating how George looked on the fateful day. "We finally figured out what had happened," Jenny says. "George went to the Great Search Room in the Sky."

George did a lot of searching for legendary inventor Jerome Lemelson, according to Glenn Wise, who has been a searcher since 1960 and is widely considered the dean of the search room. (Today Wise is wearing a tie with the same two chemical equations repeated all over it. "Urea and acetic acid," he explains. "Piss and vinegar.")

The 72-year-old Lemelson holds more patents—almost 500—than any other living American inventor. He made little money from his inventions until the 1980s, when he and his patent attorney got fabulously rich through licensing agreements with corporations on patents that covered bar-coding and other technology that Lemelson had dreamed up and filed patent applications for back in the 1950s.

Lemelson did a lot of his own searching too. He even stopped in Washington during his honeymoon in 1954 to look up a few things in the Patent Office. He hasn't been spotted in the search room for about three years. "He usually sits over there," says Wise, pointing to a spot on the periphery of nerd territory.

Aside from Lemelson, no one really famous ever comes into the search room. Of course, famous people have gotten patents over the years. Lawrence Welk for a champagne glass design. Buzz Aldrin for a toy space station. Christie Brinkley—yes, that Christie Brinkley—for an educational tool. But they apparently didn't do their own searches.

"If I had seen Christie Brinkley, that's someone I would remember," says Barbra.

A small subset of professional searchers are also inventors. Glenn Wise holds a couple of patents for different kinds of movie screens, for example. But most searchers are more like anti-inventors.

"Dreambusters," says Gary Augustine.

"You invent it, we prevent it," says Tom Augustine.

The Augustines estimate that about 95 percent of the inventions they are asked to search have already been patented in some form or another.

"When you work here," Gary says, "nothing is new."

When Glenn Wise was a teenager in Chicago, he invented a refrigerator whose shelves could be rotated inside, kind of like a Lazy Susan. He contacted an invention

firm advertised in the back of Popular Mechanics. "They wrote me back with four or five patents on the same idea," says Wise, who has personally been hired to do searches for at least 20 inventions on that same theme.

David DeBar, who was an IBM engineer "for 25 and a half years" until corporate downsizing three years ago, and who now does searching for IBM as a consultant, theorizes that "whenever people are sitting for long periods of time without much to do—that's when they invent things."

That's why beach towels with pockets sewn in the corners—where sand can be deposited to anchor the towel—keep cropping up. "And ventilated toilet seats," DeBar says, adding hyperbolically: "Hundreds of applications come in every week."

And devices for collecting fingernail clippings. "Trust me," Tony Castorina recently told an inventor of such a device. "I'll save you the cost of a search. That's been done before." (A search typically costs several hundred dollars, but, if extensive, can range into thousands.)

Searchers are touchy on the subject of the invention promotion scams that have inspired congressional hearings and "60 Minutes"-type exposés for decades now. They say that they're not involved with such companies—which charge exorbitant prices to obtain patents for naive inventors and would-be inventors—yet they sometimes take the rap.

"There are a lot of scam artists out there," says Castorina. "That's because people are greedy. They think, wow, this invention is going to make me a million dollars."

"They're so gullible!" says Samuel Shipkovitz, a searcher with a PhD in electrical engineering from Case Western Reserve University. "These places will get you a patent, sure. But just because you get a patent doesn't mean it's worth anything. You look at some of these patents and it will be, like, a patent for a method of making an atomic bomb—and it will be a design patent! All it will cover is the housing, what it looks like on the outside—not what's inside."

"Those people pay \$5,000, \$10,000 for what amounts to a piece of toilet paper with a gold seal on it," Castorina says.

So who does the searches for those kinds of places?

"People who work for those kind of companies aren't regulars at the search room," Castorina says defensively. "We don't know them."

HOME EC TO HIGH TECH

In the days before photocopying machines, the Patent Office stocked dozens of copies of every patent ever issued. In 1955, a searcher could order a copy of a patent

in the morning for 25 cents, and by mid-afternoon a clerk would have delivered it to his desk. If the searcher paid 50 cents, the patent would be delivered within the hour.

By the mid-1970s, however, the Patent Office stopped stocking patents and instead installed a photocopying center operated by Patent Office employees. To get a copy, a searcher had to fill out a form. And then wait. And wait. Sometimes a week. The service, everyone acknowledges, was lousy.

And that's when the trouble started.

In 1978, an FBI investigation into corruption at the Patent Office produced 11 guilty pleas. It turned out that a handful of Patent Office workers had been accepting tiny bribes to expedite the copy process, and that several patent searchers had been handing them out. Several other patent searchers were witnesses in the grand jury investigation. Two searchers and at least three Patent Office workers did stints in jail. When they got out, it made for some awkwardness in the search room.

"I just couldn't lie about it, that's all," John Augustine says of his testimony against one colleague, who came back to the search room and works there today. "It's the past now. We're both trying to forget it."

"A lot of people seemed to admire him for what he did," says Frank Sikora of the returned searcher. "He was just trying to give his clients good service."

These days copying is done at self-service machines in the search room. As a result, a whole other set of individuals and family businesses specialize in copying documents for searchers.

Everybody in the search room knows Ivy Lansdown, who works for her mom's company, B's Business Services Inc. It kind of bugs Lansdown, who has an undergraduate degree in social work from George Mason, that people tend to think of her as a mere copier. She points out that she does searching too.

"There's a definite hierarchy," she says. "The people who search maybe think that they're better than the copiers. And the chemical searchers and the searchers who used to be patent examiners, they tend to think they're better than other searchers."

When the Patent Office moved from the Commerce Department Building to Crystal City in 1967—a few years after Lansdown, who is African American, was born—most faces in the search room were white and male. Now the room reflects America at large, though most of the searchers are white males, while the copiers tend to be women and/or people of color.

While Lansdown is speaking, a woman with auburn hair walks by. "There's Frank's wife," says one searcher. "She works here."

That would be Frank, as in Frank Sikora, the organophosphate enthusiast.

"That's my third wife, Patti," Sikora later clarifies. "She has a real big-shot job. She's one of the key people in charge of computer searching. We met at a boy-meets-girl dance at the Holiday Inn over here. She never saw a patent in her life before she met me. She didn't know what a patent was."

Patti Anne Young has been employed by the Patent Office since 1989 as a technical information specialist. "You're looking at a trained home economist who used to manage restaurants," she says. "I didn't know anything about patents until I started doing some searching for my husband."

"Let's rephrase that," she says. "Ex-husband."

She acknowledges that the split was difficult, since she and Sikora both work in the same place. But that's all she really wants to say about it.

He is more expansive. "She kicked me out once!" he says. "She barred me for three weeks!"

This is a he-said, she-said sort of episode. His version is that he was habitually forgetting to bring his building pass with him to the search room, and one day she told him he couldn't come in without it.

"I said to her, 'Goddamit, Patti, you were married to me for 14 years and now you're telling me you don't recognize me!'"

She says that it was a supervisor of hers who barred him, and, anyway, he was out for only a week.

In a world made turbulent by technological change, Patti Anne Young has proved to be a highly adaptable creature. When she went to work in 1987 for Derwent Inc., a search company that maintains its own patent database, she knew nothing about computers. But she learned on the job, taping instructions she received from her boss during the day so she could listen to them again at night. Since moving to the Patent Office she has been responsible for training searchers on the agency's new computers.

"The technology is there," she says matter-of-factly. "You'd be a fool not to use it."

PAPER TIGERS

Few searchers have proved as adaptable.

"I'm an old dog," says 41-year-old Gary Augustine. "And I don't do new tricks."

Shirley Brown, who runs one of the computerization programs and shows searchers how to use it, is frustrated by pupils who are computer novices. "I've had people who don't even know where the space bar is," she says.

Although some searchers would disagree, most affirm that business is slow-

ing down. This is particularly true in the case of searches that already can be easily done on-line—trademark searches, which involve a simple word search, and assignment searches, which involve finding out who holds the rights to a particular patent.

Tony Castorina recently had to lay off one of his sons. "Work dried up," he says. "I don't know if it's because of computerization, but there's certainly been a downsizing. If corporations are filing, they're doing it without hiring out searches. It's tough to make a nickel in patents these days."

Even so, Castorina, who is in his mid-fifties, has no plans to learn the Patent Office computers. "Maybe if I were younger," he says.

Most searchers insist that paper remains the most reliable way to conduct a difficult search. On a computer, they point out, the only way to look for a document is through a "key word" search—a hit-or-miss proposition when you're confronted with a vast body of documents without a standardized nomenclature.

"There's a lot of people that believe what the computer tells them," says searcher Mike Smith. "Garbage in, garbage out, I say. Patents deal with semantics and connotations. With the computer you're limited to individual words."

Not necessarily. The new Patent Office computer programs allow a person to sit at a terminal and flip through different classes of documents all the way back to the first patent granted in 1790, much as if the records had been pulled off the shelf. And some commercial on-line services are developing sophisticated software and classification systems that, they say, will make computer searching more artful.

Greg Aharonian, a Boston-based patent searcher who relies heavily on computer databases, predicts that paper patent searches will go the way of library card catalogs. "When's the last time you used one of those when you were at the library?" he asks.

Aharonian, who distributes a patent newsletter over the Internet, dreams of the day when he will be able to load the more than 5 million U.S. patents—about 600 gigabytes' worth, he estimates—onto the Internet, where they could be easily accessed for free from any home computer terminal.

But Aharonian's dream is not a reality yet. And even Shirley Brown offers a fond word of hope for Sean and Denise, for Tony, for Frank, for Tom and Gary and all the other longtime residents of Patent Place. "Paper," she predicts, "will never disappear as long as those people are alive." ■

Teresa Riordan last wrote for the Magazine about her quest for a nontoxic house.



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