Episode 2,2006: Howard Hughes' Invention, San Jose, California

Gwen Wright: This story takes us to the promise of black gold and instant fortunes in turn-of-the-century Texas. In the second half of the 20th century, America was fascinated with Howard Hughes Jr., movie director, Hollywood playboy, and for a time, the richest man in the world. But the tale of the Hughes fortune doesn't begin with the Howard Hughes most of us know. It starts at the turn of the century with Howard Hughes Sr., his father. The story goes that Howard Sr. invented a remarkable drill bit that ushered in the oil age in America, and that's what helped make his son, Howard Hughes Jar., into a billionaire. But is that really how it happened? A man in San Jose, California, believes this mysterious letter is evidence that his grandfather was the man behind this invention. And that maybe, just maybe, the Hughes billions should have been his.

Haden Henning: My grandmother used to tell us this story about my grandfather, John L. Henning Sr., who had invented a drill bit that became the basis of the Hughes fortune.

Gwen: I'm Gwen Wright, and I'm on my way to meet Haden Henning to investigate the origins of the Hughes dynasty and the beginnings of the oil age in America. So Haden, what do you have for me?

Haden: Well, Gwen, I have an old photo of my grandfather, John L. Henning Sr., and the family story that he invented this drill bit that Howard Hughes used to start the Hughes Tool Company.

Gwen: The Hughes Tool Company was the first really successful business in the Hughes empire, and it was started by Howard Hughes Sr., the father of the famous playboy, Howard Hughes Jr. In addition to Haden's family story, he's also uncovered an intriguing clue.

Haden: I found this letter from a gentleman named Clarence Reed of the Reed Roller Bit Company, and essentially in this letter he was asking my grandfather if he would come to Houston to discuss controversies that they were having with the drill bits.

Gwen: Do you know what the Reed Roller Bit Company was?

Haden: I did a little research on that, and I found out that they were also a company in Houston manufacturing a drill bit in competition with the Hughes drill bit.

Gwen: So what exactly would you like for me to find out?

Haden: What I would like to find out is if my grandfather was the original inventor of the Hughes drill bit.

Gwen: Well, that's a fascinating question. what did your grandfather do?

Haden: My grandfather was a mining engineer, and he's in the photograph here. he worked with a prominent mining engineer there also named Herman Frost.

Gwen: Oh, that's quite intriguing. May I take these with me?

Haden: Yes, you may.

Gwen: I'm eager to see what I can find out about this story. It's a great story, but right away I'm skeptical. Rich and powerful figures like Hughes always attract false claims. In fact, when Howard Hughes Jr. died in 1976, he was worth nearly a billion dollars, and there were no fewer than 40 fake wills circulating. Everyone wanted a piece of that fortune. So let's take a closer look at the letter Haden's grandfather received from the Reed Roller Bit Company. They're asking John Henning to come to Houston because he is possibly in possession of some information which might be of value in their present or future controversies respecting roller bits. so maybe there is something to Haden's story. maybe reed roller bit wanted Henning because he knew something about the Hughes drill bit. I wonder if they were involved in legal battles with Hughes. I'll need more information on the Reed Roller Bit Company and any lawsuits against them. But first I want to get a little more background on the Hughes fortune. Howard Hughes Jr. spent much of his adult life in the public

spotlight. He was America's first playboy industrialist. For decades he grabbed headlines as a daredevil pilot, Hollywood producer, and in his later life as an eccentric recluse. In 1930 Hughes premiered Hell's Angels, the most expensive film ever made at that time, costing $3.8 million. The film profiled fearless war pilots. It lost over $1 million at the box office, but led Hughes to a fascination with flight that never waned. In 1935 he broke the world speed record, flying at 352 miles an hour. Three years later he set new round-the-world flight records and cut Lindbergh's New York-to-Paris record in half. Most of us know next to nothing about Howard Hughes Sr., yet he was responsible for launching Hughes Jr. to celebrity and fortune. When Hughes Sr. died in 1924, he left young Howard the Hughes Tool Company. In the early part of the 20th century, the Hughes Tool Company made most of its money selling and leasing the twin-cone drill bit for oil drilling. That's the device Haden says his grandfather invented. This is interesting. Here's an account of how Howard Hughes Sr. got hold of that invention, and it doesn't mention Haden's grandfather. This is a personal account of a chance meeting with Howard Hughes in a Louisiana bar. This account is from some oral histories by early oil pioneers. It tells the story of a Louisiana inventor out for the night drinking with friends. the inventor is carrying his design for a new kind of drill bit, one that could cut through hard stone. Howard Hughes is there that night, too. He takes a canny interest in the inventor and his design. The oral history goes on to say that Hughes "bought my idea and paid me $150 for the idea and I stood in the bar with the oil boys and I spent about $50 in the bar." But this account isn't from John Henning. It's from another Louisiana inventor named Granville Humison. And I find this same story repeated in several biographies of Howard Hughes Sr. I'm not sure what to make of Haden's claim. It certainly contradicts what the history books say. And to get to the bottom of this mystery, I'm heading out to the Texas oil fields to an oil well outside Houston. Don Clutterbuck is a geologist and oil-history expert. He describes drill bits as literally "the cutting edge of the oil business."

Don Clutterbuck: What's happening, Gwen is the bit's been put on the end of this drill pipe. They're now lowering it into the ground through the hose that you see here. Drilling fluid will be pumped down the inside and around the bit to cool it as the bit penetrates, and hopefully at 10,200 feet, they'll have a discovery.

Gwen: Don tells me that people have been drilling in this area for over 100 years. The spot we're standing on is only an hour away from Spindletop, America's first oil gusher. On January 10, 1901, the Spindletop well erupted, spouting 100,000 barrels of oil every day. That's over 4 million gallons. The gusher triggered a turn-of-the-century gold rush in Texas as thousands
streamed into the area seeking their fortune. ButDon tells me that these early wildcat drillers could only hunt for oil in soft ground.

Don: The drill bit they had at the time, called the fishtail, was nearly worthless when it hit hard rock. The problem with this one, it's not very efficient. In drilling, it would penetrate loose sands very easily, but if it hit a very hard layer of rock, all this thing would do would be just bounce. It would not cut. As a result of that, the technology limited us to what we could do
with the drilling. That left billions of dollars of fossilized carbon trapped, buried under the hard stone. Great riches awaited the inventor who could get to that river of oil. In 1909, Hughes laid claim to that fortune. His twin-cone drill bit allowed oil drillers to penetrate mother lodes of black gold thousands of feet below the surface. When the Hughes twin-cones hit hard rock, they keep turning, their dozens of sharp teeth grinding through the hard stone. This new way of drilling helped make scores of new Texas millionaires. The innovation of Mr. Hughes in 1909 with the two-cone bit, this changed everything. As you'll notice, these are two cones that are opposite each other, 166 teeth on the cone. As the drill string rotates, these cones rotate also and essentially crush and penetrate the rock. A vast amount of oil below that surface was accessible. It vaulted the industry into technology that we didn't have available to us at the past.

Gwen: But it wasn't just personal fortunes that would be transformed with this invention. America itself would change. The gushers of oil unleashed by the revolutionary drilling technology gave Henry Ford's new horseless carriage an abundant supply of cheap fuel. The drill bit and the motor car helped remake America. A hundred years later, oil drillers are still using Hughes bits. Don shows me the modern version, the tri-cone bit, still made by a Hughes company. He says it hasn't changed all that much from the original design. This one invention had a huge impact on the country, but was Haden's grandfather, John Henning, the unsung hero behind all this? I'm meeting with Hughes scholar Katherine Huit. She's director of collections for the evergreen aviation museum in Oregon. She meets me in front of the spruce goose, one of the most popular symbols of Hughes Jr.'s incredible wealth. Katherine reminds me that when we think about the wealth of the Hughes family, we really ought to think back to the drill bit and to the rough-and-tumble business skills of Howard Hughes Sr. in the early Texas oil industry. Howard Hughes Sr. was just a wildcat oil driller seeking a

gigantic oil strike just like thousands of other people in Texas at the time. She tells me that Hughes Sr. studied law for a time at Harvard, but soon dropped out, eager to strike it rich.

Katherine Huit: In 1895, he hit the road, drifting from one drilling operation to the next. But his legal training helped Hughes understand that what mattered with a new invention was who took out the patent. Howard Hughes Sr. submitted his drill bit to the U.S. patent office, and in 1909 was granted patent number 930,759.

Gwen: Then Katherine tells me something else about Hughes Sr. that piques my curiosity.

Katherine; Hughes Sr. continued to build his business, refining his drill bits, and suing anyone with a design remotely close to his.

Gwen: It's the mention of lawsuits that gets my attention. Haden's letter from the Reed Roller Bit Company is asking for his grandfather's help in a dispute with Hughes. It suggests the possibility of legal action. I wonder if Hughes sued Reed Roller Bit, and whether, buried underneath the official history, there's any truth to Haden's story. I'm searching a summary of federal lawsuits, and on one page I find what may be a telling fragment of information. It's from a summary of a lawsuit dated February 3, 1925, that says, "through a long period of years, Howard r. Hughes and C.E. Reed have been engaged in litigations of various sorts
over the use of drilling tools and equipment covered by conflicting patent claims." the lawsuit refers specifically to patent number 930,759. That's the drill bit that put Hughes Tool Company on the map. So Hughes did sue Reed over the twin-cone bit, but as I combed the transcripts, there's no mention of John Henning. If he really was the inventor, I'd have expected his name to appear. So far, I haven't found anything to back Haden's story. I'm wondering if John Henning was even in the oil business. I'm heading back to the hotel to check on one last resource. Don Clutterbuck in Texas had recommended I consult an encyclopedic text called the history of oil well drilling. Buried inside the mammoth volume, I find some crucial information. It's a list of six inventors who did pioneering work with twin-cone drill bits before Hughes received his 1909 patent. At a minimum, it looks as if Howard Hughes wasn't alone in this idea. John Henning is not one of the inventors listed, but there is one name that I recognize. I think I have what I need for Haden.

Gwen: I tell Haden I didn't find any evidence that his grandfather, John Henning, sold a drill-bit design to Howard Hughes. Instead, I've come across a story of another inventor, and that tale sounded very much like Haden's. It's from an oral history of a Louisiana inventor. It was a man named Granville Humison, who described a chance meeting with Howard Hughes. So we don't have this connection to your grandfather.

Haden: Well, I feel a little disappointed, but I also feel that we've put a long-standing mystery to rest.

Gwen: Then I tell Haden about the discovery I'd made in the history of oil drilling. It was a connection between John Henning's boss, Herman Frasch, and the twin-cone bit.

Gwen [reading]: It says here that around 1907 a twin-cone bit was used at sulphur, Louisiana, under the direction of Herman Frasch. According to available information, the Frasch bit was not patented and not marketed. It seems the idea for the twin-cone drill bit had been around for several years, but Howard Hughes had staked his claim first with a patent.

Gwen: I tell Haden it's possible his grandfather was involved in the creation of this important invention. But business skills and a legion of lawyers are often more important than technological breakthroughs for getting into the history books and building a fortune.

Haden: It's interesting to know that he did play a part in that and I want to thank you for your investigation.

Gwen: The wells at Spindletop continued to produce oil for many decades, over 150 million barrels. Today Spindletop is a popular tourist attraction, but oil production has slowed dramatically. It's unlikely America will see another mad rush for undiscovered oil like the one at the turn of the century. Instead, the mad rush may be for a new source to replace the world's dwindling supply of this precious fuel.

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