[SLICE OF MIT THEME MUSIC]

ANNOUNCER: You're listening to the *Slice of MIT* podcast, a production of the MIT Alumni Association.

JOE MCGONEGAL: This is the MIT Alumni Books Podcast, I'm Joe McGonegal, Director of Alumni Education. Joining me is M. Henry Heines, MIT class of 1967. His recent book, *First to File-- Patents For Today's Scientist and Engineer* was published last fall. The book is every basement tinkerer, ambitious startup employee, and IP-minded CEO's best friend. It is his third book.

Heines lives in San Francisco where he practiced law for four decades and, now in semi-retirement, consults and writes. Henry Heines, thanks for joining me. Why did you choose to write this book last fall?

M. HENRY HEINES: Well, you know, this book came out about a year after the America Invents Act, and that was one of the biggest changes in patent law that came around in a long time. In fact, the most comprehensive set of changes since 1952, and that was 70 years ago.

The reason for the law is that a lot has changed in that 70 years, and there was a lot of pressure on the patent system to address those changes and to adjust to them.

For instance, the whole corporate culture has changed. Employees are much more mobile these days-- they move around from one corporation to another and they take their intellectual property with them, and sometimes even leave their obligations behind in terms of what they owe their former employers.

Then the patent litigation, you end up in a patent infringement suit, the cost nowadays is huge-- it's certainly much greater than it was in the early '50s and that's raised a lot of concerns and the need to come up with some alternatives than actually going to court and spending $5 million-plus. Any corporation and any CEO can understand the need for that.

And then there's also the pressure from abroad, international agreements for enforcing intellectual property and other kinds of commercial international agreements in general. Some of them have run into a roadblock because of inconsistencies between US patent law and the patent laws of those countries.

So one of the things that the new law is all about is moving further towards conforming the law. And in fact, the title of the book is *First to File,* that's one of the biggest issues and the biggest

changes that the law-- that refers to when competing inventors that have the same invention are competing for patents on the same invention and how those disputes are resolved.

It also affected the definition of novelty, that's been changed too. So all these things-- see, there's a whole web, a whole fabric of changes to the patent law, so it seemed like an appropriate time to work all these into a fairly general book on the subject directed to the scientific community, the engineering community, management professionals, corporate professionals, entrepreneurs, managers, directors, officers.

MCGONEGAL: Take us back to the eve of March 16th, 2013, the chaos leading up to the enactment of the Smith-Leahy AIA law.

HEINES: Well, one of the interesting things about the law, which makes the whole field rather complicated, is that there are pending applications and patents still in force at the time of the enactment of the law, and they were grandfathered in under the old laws. So you have a combination of the old law and the new law, and there are different parameters in each one, there's differences in what's patentable, what's not patentable in many of the aspects of the regulation, of the statute, the requirements.

And they're co-existing, so it makes it rather confusing, and you have to sort out which applications got in before the deadline and which ones did not. So of course, people were aware of this fact and they ramped up the filings. So right before that deadline, up to the last day, patent applications started appearing in the patent office so they could get it under the old law.

So one of the things that I do is I set the two laws side-by-side and they take various scenarios and I show how they would fare under the old law and how they would fare under the new law.

MCGONEGAL: You cover cases in this book covering widgets of all varieties. You've got cooling fans, laser hair removal devices, bike chains on bicycles, but also you get into computer code and MP3 technology, advertising, gene analysis, medical methods, banking software, et cetera. I wonder if you could tell a story that one of those cases depicts that is either a favorite or a surprise you to learn of the PTO's decision on the matter.

HEINES: One of the ones that was really the most fun and that was the clothespin. And that attracted me because, see, the claim, which is really setting out the meets and bounds of what the patent covers and what it doesn't cover, essentially describes it in terms of the physical

structure of the clothespin, it went on for something like two pages, which I thought was hilarious because once you start reading it, you can figure out what the hell they're talking about.

So that was a case of not being able to identify the novelty and not being able to know what to do with it. What you need to do is find the core, the point of novelty, and then work outward from there, and to give you a patent that will cover the basic core idea and all the reasonable variations on it and not be limited to unnecessary details of physical structure or things like that, the parameters.

So that was fun to get into, but all of the other technologies, they were all included in there to illustrate various points as what constitutes novelty, the different ways of finding novelty. And the fact is, that the typical inventor will look at other inventors who have a large number of patents and say, boy, they must be brilliant, and where are they coming up with all the ideas?

It's really more a question of recognizing a patentable invention-- a potentially patentable invention when you see it. There are many very small differences that could lead to patents and that people very frequently think of as being trivial. Very valuable, particularly when you're working up a corporate patent portfolio or any kind of patent position for a startup to work up an intellectual property estate to identify and define these things.

Because most of the time, they're right under your nose, and the typical experience of working in a laboratory, working in a garage or wherever, working with your coworkers, discussing this with your advisors, with your managers, and you're coming up with these new ideas every day. A creative way of approaching this is to understand the various different things that the patent office recognizes as novelty.

MCGONEGAL: Reading through the cases that you cite, the sometimes surprising decisions of the patent office, one learns how subjective that office is, and studying the makeup of its members must be useful to patent thinkers. Not as political bodies as the Supreme Court.

HEINES: That's right. Well, the patent office, the requirements for an examiner is that the examiner would be skilled in the art in which-- or the technology in which the examiner is examining patent applications in. So yes, it's very important that the examiner understand the technology, understand where the novelty is and what that point of novelty should be worthy of the grant of a patent, and in order to do that, you have to have a solid technical background.

And the law, as a result, is based on technology. All those parameters of what's patentable and what isn't, those questions are all based on technology, and you know something? It varies with the different technologies. What makes something patentable in chemistry is very different from what makes it patentable in electronics, in software, in clothespins, in mechanical structures, in business systems. The examiner who is assigned to the case will have familiarity and comfort in those areas. The attorneys, of course, have to have comfort and familiarity as well.

Sometimes when you get into court, including the Supreme Court all the way down to the trial courts, you are not that fortunate, because the judges and juries don't fully understand the technology and they have to rely on the attorneys to explain it to him. Now in many cases, they get it right, but it also depends on which attorneys argue better and present their case better, so sometimes you do get a distorted view and sometimes you generate wrong reasoning.

MCGONEGAL: You write that the average settlement of a patent dispute has gone down in recent years when a judge is involved, but gone up when a jury's involved, is that right?

HEINES: I think that's probably true, yeah. Juries in particular have to be educated, but you'll find that if you've ever attended a jury trial in the voir dire process, they don't want jurors to be too educated, because they don't want them to start to reinvent the inventions themselves, so they're trying to reach a balance between the man on the street-- as it were, the woman in the street and the professor in that area of technology. Obviously they don't want someone who is really an expert sitting on the jury, but they don't want someone who's totally at sea in the technology.

In any case, the jury has to be educated, so they need someone who's a quick study. But you have all these factors when you're dealing with jury selection and you never know what a jury is going to decide.

MCGONEGAL: Tell me, five years from now, 10 years from now, you publish another edition of this book-- what has yet to be written on it?

HEINES: Well, what happens over the course of time-- of course, you have the international pressure and then the pressures from the corporate community, but technology continues to evolve, and when that happens, since patent law is based in technology, and since the questions of what's patentable and what isn't, the kinds of things that should be patentable, that keeps on changing as new things emerge.

The law will continually try and adjust to this. Of course, the law lags behind it because these things don't end up in the law-- and when I say the law, I mean the examiners' decisions up to statutory changes. But those are the slowest of all, of course.

So these developments are all vetted through the courts, and you get to read the arguments that are made. I read the court decisions all the time. Some of them are just wonderful and fascinating, but what happens is, the laws evolve and the new technologies work their way into the patent laws.

And public policy considerations about patents, there's a whole chapter in this book, of course, on subject matter eligibility-- the question of getting your foot in the door in the first place. Will they even consider a patent on this type of subject matter? Business methods, for instance, that was very controversial when that first came through. Manipulating the genes in one's body and various ways of testing genes to determine aberrations and all those fascinating things that really keep on developing-- represent some great breakthroughs in medical science, but raise these questions in patent law.

MCGONEGAL: Will we see more companies like Tesla, which gained all sorts of news last year for opening up its patents on the-- what is it? the Model S electric car and-- it was at a press stunt.

HEINES: I don't think we know. It's one or the other. The pressure on corporations, that are on any patent holder that holds a monopoly on something is great-- the more valuable the monopoly is, of course, and the bigger the portfolio of patents. There's public policy, there's public relations, there's all kinds of implications there that affect how a company is viewed by the public and by the industry. Decisions are made with all those considerations in mind, and I think we've seen quite a few, we're probably going to see a lot more decisions that we haven't even thought about yet.

There is a movement that patents are too strong, they give too much power. The Apple decision was really a lawsuit relating to cell phones with rounded corners, that certainly raised a lot of eyebrows. And of course, it went on for many, many years, it ran into a huge amount of money both in the legal fees and in the verdict. So people look at this and wonder, what are they thinking? How could they have patented this?

It's a fascinating, wonderful field, and the fact that it is kind of the intersection between technology and industry and business decisions.

MCGONEGAL: There'll be no shortage of reading for you in the years to come. How is your MIT education alive in this book?

HEINES: It certainly is. I'll tell you, it's not only in writing the book, but in practicing patent law. The one thing that you need, of course, as I mentioned earlier, whether you're an examiner or a patent attorney, you need to have a fairly solid background in the basics and MIT supplies that. You also need to be a quick study, because you're dealing with areas that you may or may not have spent much time in in your undergraduate years at MIT. I mean, like, my degree was a few decades ago.

And you're dealing with new technology, you're dealing with kind of good stuff. I use my MIT textbooks on various occasions throughout this process.

MCGONEGAL: Almost 50 years later?

HEINES: Yeah, quite a few years. They're still good.

MCGONEGAL: Tell me what else, though, you've been reading that's on your nightstand right now.

HEINES: I've been reading books by Mike Malone in Silicon Valley. I started out with his most recent book that just came out earlier this year, *The Intel Trinity,* the history of the three guys that formed Intel and the whole history of the company and how its business decisions that they made and mistakes that they made and what they dealt with them.

And then I went to one of his earlier books entitled *The Microprocessor, A Biography.* Now that's a little bit of a dinosaur because it was published in '95, but still, there was a great deal that happened up to that time in terms of the development of the technology, and he goes into wonderful detail in there.

The next thing that I have on my list, since I'm on this Silicon Valley tick, is a biography of Steve Jobs played by Isaacson. I'll be reading that over the next few weeks.

MCGONEGAL: Henry Heines' latest book, *First to File, Patents for Today's Scientist and Engineer,* is now available online or at your favorite local bookstore. Dr. Heines, thanks for joining me.

HEINES: My pleasure.

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