

# Aerogels

SOMETIMES, A PARTICULAR TECHNOLOGY becomes the subject of a large number of patents covering different uses of the technology. One example is the Internet. Another is aerogel (a.k.a. “solid smoke”)—a synthetic porous material about as dense as air. Patent No. 2,093,454 (1934) by aerogel inventor Samuel S. Kistler states: “This invention relates to improvements in the art and process of producing dry gels from colloidal solutions, and the present specification is particularly directed to the production of a gel, one continuous phase of which is a gas, and which I therefore define as an aerogel.” The result was the world’s lightest solid.

The United States Patent Trademark Office website reveals numerous later patents covering uses of aerogel. Examples include using aerogel in a fire extinguishing powder (patent No. 2,472,539), as cladding for an optical fiber (5,684,907), as an acoustic backing layer for an ultrasound transducer (6,475,151), in a tire tread (6,527,022), in a fuel cell (6,809,060), as filler for a blanket (8,021,583), and as an antireflective membrane (8,088,475).

Other aerogel patents cover new types of aerogels and new ways to produce aerogels. Kistler himself later patented (No. 2,589,705) a way to make aerogels waterproof. A more recent example is No. 8,080,591 wherein several professors at Union College in Schenectady, N.Y., disclose a fast supercritical extraction technique for fabricating aerogels.

The aerogel patents lead us to a difficult question in the law surrounding patents: to what extent can a person patent a new use of a known product? One court tried to explain it like this:

“Inventor A invents a shoe polish for shining shoes (which for the sake of example is novel, useful, and non-obvious). Inventor A receives a patent having composition claims for shoe polish. Clearly Inventor B could not later secure a patent with composition claims on the same composition because it would not be novel. Likewise, Inventor B could not secure claims on the method of using the composition for shining shoes, because the use is not a ‘new use’ of the composition, but rather the same use—shining shoes.

“Suppose Inventor B discovers that the polish also repels

water when rubbed onto shoes. Inventor B could not likely claim a method of using polish to repel water on shoes because repelling water is inherent in the normal use of the polish to shine shoes. If a previously patented device, in its normal and usual operation, will perform the function claimed in a subsequent process patent, then such process patent is anticipated by the former patented device. In other words, Inventor B has not invented a ‘new’ use by rubbing polish on shoes to repel water. Upon discovering, however, that the polish composition grows hair when rubbed on bare human skin, Inventor B can likely obtain method claims directed to the new use of the composition to grow hair.”

This all sounds good but time and time again I’ve seen the Patent Office issue patents more like the repel water

example than the growing hair example. Also, what if no one knew the shoe polish repels water? What does it mean that repelling water is “inherent”? If the shoe polish grows hair, isn’t that inherent too? Thus, the court’s parable raises more questions than it answers.

I leave it to you to ascertain on which side of the fence each of the numerous aerogel patents fall. It is clear in the law that new uses of known things are patentable. What may always be unclear is how new the new use must be.

The aerogel patents also highlight another patent lesson: winning a patent gives you no rights to work your own invention. So, if A patents aerogel (We know A is Mr. Kistler, but let’s use the legal way of talk-

ing in hypotheticals) and B later patents using aerogel as chicken feed (Chickens will eat anything, trust me), then until A’s patent expires, B cannot produce aerogel and feed it to chickens (because of A’s patent) nor can A feed aerogel to chickens (because of B’s patent). B could buy the aerogel from A and then B could feed his chickens. Also, A could feed his chickens aerogel if he licenses B’s patent. Thus, a patent, say the patent attorneys, gives you the right to exclude not the right to produce.■

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