

3D Printing: What it Means To Manufacturers Who Want To Sell Replacement Parts in a Digital Ecosystem

SEPTEMBER 27, 2016

Authors: [Mark E. Avsec](#)

Among the next generation of 3D printing patents that will soon expire are key patents for metal-based printing processes. The patents' expiration will almost certainly result in significant price reductions for 3D printers in the metal-based field. For example, a key patent for selective laser melting held by the Fraunhofer Institute for Laser Technology will expire in December 2016. As a result, 3D printer manufacturers in 2017 and beyond will produce SLM printers at substantially reduced prices (SLM is a great technology for metal 3D printing). The bottom line is that we expect dramatic growth for printing processes that can produce functional parts in metal.

As 3D metal printing becomes ubiquitous, customers that previously bought metal replacement or spare parts from the original equipment manufacturer may no longer do so because they will be printing the parts themselves (or having a fabricator do it) without the OEM's involvement. That will be a huge loss of revenue for the OEM. Does the OEM have any legal rights when its customers can simply obtain the CAD files for metal replacement parts off of a website and install them without the OEM having any knowledge? Let us begin with patented parts.

To be sure, legal enforcement mechanisms are in place to curb the illegal trading of patent-protected parts, though even here questions exist. There will be significant challenges identifying patent infringers as online trading of files occur, as well as challenges applying traditional theories of direct, induced, and contributory infringement in the new digital ecosystem. Moreover, a setback for patent rights-holders recently occurred in *ClearCorrect Operating, LLC v. Int'l Trade Comm'n*, a decision issued by the U.S. Court of Appeals for the Federal Circuit on November 10, 2015.

In *ClearCorrect*, the Federal Circuit held that the jurisdiction of the International Trade Commission ("ITC") does not extend to electronically transmitted digital data. The ITC initially blocked the importation of digital files that would permit operators of U.S. 3D printing facilities to manufacture dental braces that infringed the patents on the "Invisalign" brand of clear braces. The Federal Circuit overturned that decision. The Federal Circuit specifically held that under U.S.C. section 1337(a), the statute governing the ITC, jurisdiction extends only to "articles," which the Federal Circuit interprets as material and tangible things. Therefore, the ITC's jurisdiction does not extend to digital files imported into the United States that are useful for 3D printing of patentable articles.

The notion that 3D model files or blueprints may themselves not be patentable subject matter impedes rights-holders from pursuing free-riding behavior in the world of things, the same kind of behavior that decimated the recorded music business post-Napster. However, the dissenting opinion from Judge Newman in *ClearCorrect* suggests that the Federal Circuit's opinion will not be the end of the story. Moreover, the Federal Circuit's *ClearCorrect*

holding only affects ITC investigations and not infringement actions in the federal courts.

The fact is that most replacement and spare parts are not capable of patent protection anyway, but software (like a CAD file of the very same part) is capable of copyright protection. So can you leverage copyright law to curb unwanted file-sharing of your products' digital files? The fact is that enforceability questions exist in the copyright arena too. One question is, for copyright protection to apply to a CAD file, how much of a role must a person (rather than a scanning machine) play in the design or creation of the file? A modicum of creativity is required for copyright protection to attach to a digital blueprint. More fundamentally, is the metal replacement part that is the subject of the CAD file an expressive article (capable of copyright protection) or merely a useful/functional article (not capable of such protection)? Most replacement parts are merely functional. Only non-functional objects and their CAD files are clearly subject to copyright protection. This makes copyright law largely irrelevant for the protection of replacement parts except for clearly non-functional parts or in those hybrid instances where parts have both functional and expressive features.

As to the hybrid cases, on May 2, 2016, the U.S. Supreme Court granted a petition for writ of certiorari to clarify an important test: how is copyright protection applied to articles that are "mixed," i.e., that are both functional and also have expressive features? The case is *Varsity Brands, Inc. v. Star Athletica, LLC*, 799 F.3d 468 (6th Cir. 2015).

Varsity Brands concerns the copyrightability of articles of clothing, which are useful and functional (in this case, cheerleader uniforms). Under the Copyright Act, a "useful article" such as a dress or cheerleader's uniform (or other useful articles such as replacement parts for airplanes, automobiles or other big machines) fundamentally cannot be copyrighted. 17 U.S.C. § 101. However, a useful article's component, expressive features may be protected if they can be "identified separately from, and . . . existing independently of the utilitarian aspects of the article." *Id.* What is the appropriate test to determine when a feature of a useful article is protectable under § 101 of the Copyright Act?

Pirate Bay, the notorious torrent site that has traded music and movie files for years, is now trading files in a whole new category: PHYSIBLES, i.e., 3D files for 3D printing. Established companies like Shapeways and Thingiverse host thousands of 3D digital models for a variety of articles, sometimes only expressive and sometimes only useful - but often a mix of everything in between. Can the Copyright Act be leveraged by the owner of the design of a lamp to demand that Shapeways (through a DMCA take-down notice) take it down and its displayed 2D photo/rendering? (Assume it was scanned and posted by a third party to Shapeways' site without the owner's permission.) Yes, if the lamp itself is protected by copyright law, which begs the question. We know a basic no-frills lamp would not be protected by the Copyright Act. We know that a lamp as expressive as the famous "leg lamp" in the *Christmas Story* movie would be protected by the Copyright Act. And, as for the myriad of lamp styles that fall along the continuum in between, it gets blurry. As succinctly stated in Shapeways' amicus brief in support of Star Athletica's petition, "Shapeways and its users will often be called on to navigate the landscape of conceptual separability and would benefit from the certainty and clarity of a single test." It seems now the Supreme Court will provide an answer, perhaps later this year or in early 2017. In addition to providing clarification for the apparel industry, a predictable test for conceptual separability is important for the growth of the 3D printing industry.

Whether or not your part is protected by a patent, a copyright, trade dress, or nothing at all, think about licensing. The music industry did not really effectively leverage a digital marketplace until

Steve Jobs developed an elegant store for digital products. In the industrial marketplace, certain customers will pay a premium to license the OEM's genuine, branded CAD files for metal replacement parts. This is a strategy that may yield lower per-unit revenue (an OEM could not charge as much for a license as for the physical part), but more profit over-all. And, after all, only the OEM can verify safety, quality, and maintain the warranty on the big machine. Only the OEM can market the blueprint under its brand, the official OEM trademark, connoting a guarantee of quality.

If you are a manufacturing company that derives significant revenue from replacement parts, you should be talking to your legal advisors and evaluate (1) what sorts of patent, copyright, and trademark strategies your company should employ today, if any, and (2) what a licensing strategy for your company might look like. Do not delay or deny the threat posed by the coming digitization that may affect your business. Instead, consider, if appropriate for your business, a licensing strategy as your opportunity, which is what the music industry finally embraced. In any case, there should be a bullet in your business's strategic plan every year: what are we doing in additive?

One day your customers may scan your parts or download their digital files off of Pirate Bay. You could sue them, but the music industry teaches that will not work, unless you want to alienate them. The bottom line: even if your customers could scan the machine's replacement parts after you sell the machine to them (or obtain the digital files on Pirate Bay), they would rather pay a premium to you, the OEM, for safety, quality, and a warranty. Today you are a manufacturer. Tomorrow you may be a software company.

Because 3D printing is changing our clients' businesses, Benesch has formed a 3D Printing Industry Group, a multidisciplinary team led by core members of the firm's Innovations, Information Technology & Intellectual (3iP) Property Group.

To contact Benesch's 3D Printing Team, call or e-mail Mark Avsec (216.363.4151) mavsec@beneschlaw.com.