INTRODUCTION

The fear of the unknown has always played a role in society. From fire to DVR, new technology has always met with periods of fear, understanding, and eventual acceptance. These periods manifest in all aspects of a new technology, including their role in society and the legal issues surrounding them. 3D scanning and 3D printing (“3D printing”) technology are relatively new and now starting to go through the processes of fear and understanding. In particular, we are beginning to see fear and understanding manifest in the role of intellectual property (“IP”) as it relates to 3D printing. One particular aspect of IP that is giving users concern is the potential for infringement of design patents\(^1\). Having an understanding of design patents and what constitutes infringement of them can help to alleviate some of those fears.

3D PRINTING

3D printing technology allows a user to scan an object; this generates data which can be transferred into a computer program where it can be viewed and edited as a 2D virtual model. The 2D virtual model is a model of the scanned object stored on your computer, where you can see the details of the original scanned object. Objects are scanned with a device that can perform 3D scanning. Users can have the 3D virtual models printed on a 3D printer. 3D prints can be made using various materials in a

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myriad of colors and sizes, depending on the type of 3D printer used. The technology is new and has difficulty scanning images perfectly such that they accurately display all of the details of a scanned object upon each scan, but fast advancements are allowing 3D printing technology to scan and provide those details of a scanned object more accurately and frequently.

**DESIGN PATENTS**

Intellectual Property encompasses “creations of the mind,” including inventions (protected by utility patents), designs (protected by design patents), literary and artistic works (protected by copyrights), and symbols, names, and images used in commerce (protected as trademarks). Design patents offer inventors of “new, original and ornamental design for an article of manufacture” the right to exclude others from infringing on or manufacturing their patented design. The ornamental design refers to those aspects of an article of manufacture that are “just for show”; that is, the ornamental design does not affect the function of an article of manufacture, but only the aesthetics of such an article. An ornamental design can be separated from the useful aspects of an article of manufacture: a flower pot with roses painted on it will still function as a flower pot even if the roses were not painted on (those the roses give the flower pot a touch of beauty). Put more explicitly, the ornamental design does not refer “to the design of an article, but to the design for an article, and is inclusive of ornamental designs of all kinds including surface ornamentation as well as configuration of goods.” When a design is created, it needs new ornamentality that goes beyond the function of the article of

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5 In re Zahn, 617 F.2d 261, 204 USPQ 988 (CCPA 1980); See MPEP 1502.
manufacture in order to be eligible for design patent protection. Design patent protection also requires a design to be “original” such that it is not mimicking anything that has already been patented or available to the public.

Besides the basic requirements for a design patent, a design patent application requires a single claim for the design, which consists of a drawing or picture of the design. Drawings should be shown in enough views and with enough detail to enable someone with ordinary skill in the art to recreate the design.

**DESIGN PATENT INFRINGEMENT**

Patent infringement can occur as direct infringement, contributory infringement, or induced infringement. Direct infringement of a design patent occurs when a person makes, uses, sells, or offers to sell an article of manufacture that displays the patented design without permission from the patent owner. If someone imports, offers to sell, or sells a component of or something necessary to make a patented article of manufacture that would display the patented design without permission of the patent owner, knowing that such an item will be used to make an infringing product, they would be committing contributory infringement. Induced infringement of a patent occurs when someone asks others to directly infringe on a patent, or induces infringement (i.e. providing instructions on how to infringe a patent), without directly infringing.

The test for direct design patent infringement is whether an ordinary observer would view the patented design and accused infringing design as “substantially the
same.” In order to liable for induced infringement, direct infringement must be found, where the inducer knew of the patent and knew the activities of the inducee would lead to infringement of the patent.13

**DESIGN PATENTS AND 3D PRINTING**

Since design patents protect ornamental designs of articles of manufacture, and 3D printing technology has the capability to reproduce actual articles of manufacture, those using 3D printing technology should be aware of the possibility of design patent infringement. Scanning an object that has a design patent attached to it creates data that can be converted into and viewed as a 2D virtual model that will contain the very patented design. This 2D virtual model could be printed out and sold as a 3D actual model, leading to direct infringement. The data for the 2D virtual model could also be given to someone that would use the scan to manufacture such products that would infringe on the design patent, which could lead to contributory or induced infringement. Those using 3D scanners and 3D prints need to be aware of the possible risks of design patent infringement and how to avoid these pitfalls.

Since 3D scanning technology does not necessarily produce the most detailed scans of an object, an ordinary observer may not see the patented design and the ornamental design of a 3D printed object as being “substantially the same.” This could be a potential defense to a claim of design patent infringement. Further, if any changes were made to the 3D image such that its design is substantially different from that of the original article of manufacture, there would be less chance of patent infringement.

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13 *See DSU Med. Corp. v. JMS Co., Ltd.*, 471 F.3d 1293 (Fed. Cir. 2006).
Having worked with a 3D scanner and creating 3D prints, I have seen why people would be weary of this technology: how would you manage to protect your patented designs if someone could easily scan your work within minutes and send that scan file to anyone around the world for 3D printing and sale? Design patent owners can use methods of design patent protection previously afforded to them, which is helpful. The ability for rapid dissemination through 3D printing technology, however, makes finding infringers to exert your patent rights more difficult. The scanning technology is still being developed to allow for more detailed scans, which is helpful. However, if someone has access to the specifications of your design, they could use computer-aided design (CAD) software to create the design over a period of time and have the 3D files printed out, or create a mold to mass-produce such objects exhibiting the protected design. The ability to quickly scan an object with a 3D scanner and have a digital 3D model within minutes exponentially speeds up the process to recreate a design.

Having a specific set of patent law dedicated to items produced from 3D scans using 3D prints may be necessary. It may be necessary to impose stricter standards on those that use such scans and prints in commerce. Having a mandatory, thorough search of design patents prior to any use of such scans or prints in commerce could curb any infringing practices that this new technology would allow for. This would function as a deterrent to infringing practices while also lowering the bar for proving infringement; an infringing party knew or should have known at the time of their infringement that there was a subsisting patent based on their mandatory, thorough search. This search would only apply to those that would intend to use such scans or prints for commercial use. These changes would not completely alleviate any fears of infringement using this new
technology because the potential for infringement would still exist after such a search.

These changes would, however, begin the understanding of the role this technology will play in society.