

In recent years, three-dimensional (3D) printing has seen rapid growth both in commercial and home-use contexts, based at least partially on the expiration of earlier 3D printing patents and, relatedly, more low-cost 3D printing options. 3D printing is a process for creating solid 3D objects using any suitable material, including plastics, rubbers, and metals. 3D printers utilize digital models (e.g., via computer-aided design (CAD) files) as the basis for printing particular objects. Digital models relating to almost any conceivable object are often easily accessible either via the Internet, or via 3D printers capable of scanning (and reproducing) such objects (e.g., a toy). The ease with which businesses and individuals alike can create essentially any object — including objects protected by intellectual property (IP) — without any authorization has led to a number of potential IP issues in the realms of trademarks, patents, and copyrights.

For example, trademarks comprise words, symbols, designs, phrases, and so forth that distinguish the source of particular goods/services from those of other sources. As such, counterfeit goods, which can often be fairly easily reproduced using 3D printing, are particularly problematic for trademark owners, as the counterfeits may confuse the general public regarding the source of the counterfeit goods.

In response, trademark holders can take a number of actions. Most importantly, trademark holders are advised to file federal trademark registrations on all marks. Among other things, a federal trademark registration provides an exclusive right to use the registered mark for the registrant, prevents any defense of good faith adoption or use of the mark by a third party after the registration date, provides priority throughout the United States as of the registration's filing date, provides a statutory presumption of validity of the mark, provides the right to sue in federal court, and can provide the right to statutory damages with respect to counterfeiting.

However, once a mark has been federally registered, the mark must be properly used by the owner. Proper use includes monitoring the marketplace for confusingly similar marks used by third parties. Accordingly, such monitoring may be increasingly important in light of the current environment and the ease with which third parties may use 3D printing to create

counterfeits or other items having confusingly similar marks.

Patent owners may be similarly advised to vigilantly monitor the marketplace for infringing 3D-printed products. Patents provide owners of a patented invention an exclusive right to prevent others from making, using, selling, offering for sale, and importing the patented invention, which generally means that the responsibility for identifying infringers lies with the patent owner. With respect to 3D printing, such identification, and further enforcement, may often be difficult. For instance, it may be essentially impossible for patent owners to identify individuals that are infringing 3D-printed patented inventions for home use. However, with respect to third parties using 3D printing to infringe patented inventions in a commercial context, patent owners would be advised to actively monitor the marketplace. Notably, patent owners may monitor the marketplace both for infringers, as well as inducers of infringement (e.g., websites hosting infringing digital models). However, patent owners must be aware that inducement of patent infringement requires that the inducer have actual knowledge of the infringed patent, which can be difficult to prove at times.

Copyrights relate to original works of authorship that are fixed in any tangible medium of expression. Among other things, copyrights provide the owner of a copyright with the exclusive right to reproduce the copyrighted work, the right to prepare derivative works of the copyrighted work, and the right to distribute copies of the copyrighted work. With respect to copyrights, the most relevant 3D printing issues relate to designs (e.g., toys, models, and so forth) and digital models (e.g., CAD files) that are used by 3D printers to produce 3D objects.

As implied, digital models may be protected by copyright. In such cases, the copyright owner has the right to prevent others from distributing (e.g., via the Internet) the copyrighted digital models. Notably, the Digital Millennium Copyright Act (DMCA), which heightens penalties for copyright infringement on the Internet, may be utilized by copyright owners in protecting copyrights and enforcing takedowns of infringing works (e.g., digital models). Again, monitoring for infringing works and enforcing copyrighted works (e.g., requesting websites to takedown copyrighted digital files) is strongly recommended. Of note, however, is the

cooperative approach that some businesses are taking. For instance, [in 2014](#), Hasbro, owners of My Little Pony, announced a partnership with Shapeways, a 3D printing marketplace, that allows for fans to create art based on My Little Pony. The outcome of such approaches may be of particular interest to copyright owners attempting to create innovative copyright strategies.