Using 3D Printing to "e-NABLE the Future"

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3D printing, a rapidly growing technology that transforms computer-aided designs into tangible, functional three-dimensional products, presents almost unlimited possibilities to consumers but also presents countless intricate intellectual property questions to attorneys and innovators. e-NABLE uses crowdsourcing to design, share, and produce prosthetic hands for children using 3-D printing. Even such a worthy cause presents weighty questions for the use of this technology in view of others' rights.

Who owns a final 3D-printed product? Does the person who created the computer-aided design have any rights to it? What about the person who owns the printer? Can either the computer-aided design or the final 3D-printed product receive intellectual property protection? If so, will such protection be available under patent, trademark, trade dress, copyright, and/or trade secret law?

A patent permits the patent owner to exclude others from making or selling the patented invention during the term of the patent. Utility patents are granted for new and useful processes, machines, articles of manufacture, compositions of matter, or improvements thereof, while design patents are granted for new and original decorative designs of an article of manufacture. With respect to 3D printing, claims alleging infringement of 3D printers themselves have already been filed. Claims alleging infringement of an invention that has been copied using a 3D printer are likely to arise as the technology develops and becomes more widely used by both manufacturers and consumers. Patentees may also file infringement claims based on theories of indirect or contributory infringement, but such claims will require the patentee to prove the alleged infringer had actual knowledge of the infringement.

A trademark can be any word, name, symbol, device, color, or any combination thereof that serves as an identifier of source for a particular good or service in commerce. If a copied product or other 3D-printed design causes consumer confusion between the 3D-printed product and a trademarked product, the trademark owner may be able to sue for trademark infringement. As 3D printing becomes a more widely used form of manufacturing, consumer confusion may become a greater concern that it currently is.

Trade dress protection is available for product packaging and product configurations that are either inherently distinctive or that have acquired secondary meaning in the marketplace. Similar to trademark infringement, the owner of a distinctive product packing or product configuration may succeed on a claim of trade dress infringement if a 3D-printed product is likely to cause consumer confusion with respect to the protected trade dress.

Copyright protection extends to original works of authorship that are fixed in a tangible medium. Such protection may cover the computer-aided designs used to print products, as well as products that are copied using a 3D printer.

Certain information will be protected as a trade secret if economic value is or can be derived from the fact that the information has been kept a secret and the holder of the information has taken reasonable efforts to maintain its secrecy. Once publicly disclosed, the information is no longer considered a trade secret. Accordingly, once a 3D printer, 3D-printed product, or computer-aided design is made available to the public, it cannot be protected as a trade secret. However, a computer-aided design may be eligible for trade secret protection if it meets the abovementioned criteria.

Questions of ownership and intellectual property protection become even more confounding when computer-aided designs and 3D-printed products are shared and sold online. The Internet facilitates fast and easy sharing, which may also lead to increased infringement of intellectual property rights. Alleged infringers may even be entirely unaware that they are infringing the rights of others. As suggested, e-NABLE promotes group problem-solving and innovation via a crowdsourcing website dedicated to designing, sharing, and producing prosthetic hands for children. Skip Meetze, an e-NABLE Research and Development Team member, posited that "old systems of copyrights and patents are no longer appropriate and may even prevent our human progress" as 3D printing has contributed to changes in intellectual property values. Using the e-NABLE Google+ Research and Development Community, 3D printers, computer-aided designers, medical professionals, and families with children in need of prostheses can come together to work on the same product, feeding off of each other's ideas. Using this method of crowdsourcing to develop prostheses, rather than using the patent system, saves e-NABLE both time and money, as filing a patent application is expensive and the process can take years. By foregoing patent protection, e-NABLE can provide the newest prostheses to children quicker and at little to no cost.

e-NABLE is providing children with more than affordable prosthetic limbs; the online community also seeks "to raise kids' self-esteem to 'superhero levels.'" In September, Aaron Brown, 3D printer and e-NABLE member, modified one of e-NABLE's prosthetic hand designs to look like the claws of comic book superhero Wolverine. Earlier this month, Pat Starace, mechanical designer and e-NABLE member, presented a prosthetic hand modeled after the Iron Man suit.

There is no doubt e-NABLE is using the technology of tomorrow for a noble cause today. Despite the admirable goals of the e-NABLE online community, it can demonstrate some of the concerns associated with 3D printing, intellectual property protection, and online commercial transactions.

Trademark and trade dress issues may arise with respect to the hero-styled prosthetic limbs if any of them contain Iron Man or Wolverine trademarks or trade dress and they cause consumer confusion as to the source of the prosthetic limbs. The computer-aided designs used to print the 3D prosthetic limbs may be protected by copyright. Questions of ownership, however, may arise because many e-NABLE members may work on one particular design before it is finalized. Under a theory of joint authorship, all of the members that contributed to a design may have a copyright interest in it. Patent infringement claims may arise if any of the prosthetic limbs practice claims contained in issued utility patents or are the subject of design patents. Liability could fall on the individual user that printed and used a patent-protect prosthetic. In addition, patentees may be able to file suit against e-NABLE itself for indirect or contributory infringement (i.e., contributing to or inducing patent infringement by others).

e-NABLE facilitates collaboration between computer-aided designers, medical professionals, families, and others passionate about making affordable prosthetic limbs accessible to growing children who are using the newest 3D printing technology to design their prostheses. Despite using 3D printing for both an innovative and charitable cause, e-NABLE illustrates potential intellectual property issues associated with the technology. To avoid liability for infringement of others' intellectual property rights, manufacturers and consumers using, or planning to use, 3D printing (even those doing so for a worthy cause) should consider whether doing so would infringe on the rights of others.

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