

**United States Response to Questionnaire Concerning  
*Applied Arts under IP Law:  
The Uncertain Border between Beauty and Usefulness***

**ALAI 2016 Congress  
Rome, Italy**

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*Authors' Note:* The US Copyright Act is contained in Title 17 of the United States Code and is available on the US Copyright Office website, <<http://www.copyright.gov>>. Statutory references in this response are to Title 17, unless otherwise indicated.

APPLIED ARTS

1) *SCOPE*

***a) Is the term “Applied Arts” used in the Copyright Law and/or in other legal provisions in your country?***

The Copyright Act employs the terms “applied art” and “works of artistic craftsmanship” in defining “pictorial, graphic or sculptural works” and the extent to which they are protected by copyright.

***If so, is there is a legal definition of this term in your law? Please quote the relevant statutory provision and/or case law definition.***

The Act does not define “applied art” or “works of artistic craftsmanship.”

Section 101 of the Copyright Act defines “pictorial, graphic or sculptural works” as

includ[ing] two-dimensional and three-dimensional works of fine, graphic, and applied art, photographs, prints and art reproductions, maps, globes, charts, diagrams, models, and technical drawings, including architectural plans. Such works shall include works of artistic craftsmanship insofar as their form but not their mechanical or utilitarian aspects are concerned; the design of a useful article, as defined in this section, shall be considered a pictorial, graphic, or sculptural work only if, and only to the extent that, such design incorporates pictorial, graphic, or sculptural features that can be identified separately from, and are capable of existing independently of, the utilitarian aspects of the article.

Section 101 goes on to define a “useful article” as

an article having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information. An article that is normally a part of a useful article is considered a “useful article.”

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Therefore, a “useful article” enjoys protection under US copyright law only to the extent that the work satisfies the separability requirement. Section 924 of the third edition of the Copyright Compendium, published by the US Copyright Office,<sup>2</sup> clarifies that the “Office will register claims to copyrights in useful articles only on the basis of separately identifiable pictorial, graphic, or sculptural features . . . capable of independent existence from the overall shape of the useful article.”<sup>3</sup> Physical separability requires that the elements “could be physically removed without altering the useful aspects of the article,” while conceptual separability requires that “the artistic feature and the useful article could both exist side by side and be perceived as fully realized, separate works – one as an artistic work and the other as a useful article.”<sup>4</sup>

In *Varsity Brands, Inc. v. Star Athletica, LLC*, the US Court of Appeals for the Sixth Circuit wrote: “Courts have twisted themselves into knots trying to create a test to effectively ascertain whether the artistic aspects of a useful article can be identified separately from and exist independently of the article’s utilitarian function.”<sup>5</sup> The US Supreme Court agreed to review the *Varsity Brands* decision; perhaps its decision will straighten out this tangled area.

Conceptual separability has proven to be especially difficult to apply. According to the court in *Varsity Brands*, tests for conceptual separability include:

(1) The Copyright Office's Approach: “A pictorial, graphic, or sculptural feature satisfies [the conceptual-separability] requirement only if the artistic feature and the useful article could both exist side by side and be perceived as fully realized, separate works—one an artistic work and the other a useful article.”<sup>6</sup>

(2) The Primary-Subsidiary Approach: A pictorial, graphic, or sculptural feature is conceptually separable if the artistic features of the design are “primary” to the “subsidiary utilitarian function.”<sup>7</sup>

(3) The Objectively Necessary Approach: A pictorial, graphic, or sculptural feature is conceptually separable if the artistic features of the design are not necessary to the performance of the utilitarian function of the article.<sup>8</sup>

(4) The Ordinary-Observer Approach: A pictorial, graphic, or sculptural feature is conceptually separable if “the design creates in the mind of the ordinary [, reasonable] observer two different concepts that are not inevitably entertained simultaneously.”<sup>9</sup>

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<sup>2</sup>United States Copyright Office, *Compendium of US Copyright Office Practices, Third Edition*, COPYRIGHT.GOV (3d ed. 2014), <http://www.copyright.gov/comp3/> [hereinafter, “Copyright Office Compendium”].

<sup>3</sup>*Id.* § 824.2.

<sup>4</sup>*Id.* at § 824.2(A)-(B).

<sup>5</sup>799 F.3d 468, 478 (6th Cir. 2015) (*citing* *Inhale, Inc. v. Starbuzz Tobacco, Inc.*, 755 F.3d 1038, 1041 n.2 (9th Cir. 2014)), *cert. granted in part sub nom.* *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 136 S. Ct. 1823 (2016).

<sup>6</sup>*Id.* at 484 (*citing* Copyright Office Compendium, *supra* note 2, § 924.2(B)).

<sup>7</sup>*Id.* (*citing* *Kieselstein-Cord v. Accessories by Pearl, Inc.*, 632 F.2d 989, 993 (2d Cir. 1980)).

<sup>8</sup>*Varsity Brands*, 799 F.3d 468, 484 (6th Cir. 2015) (*citing* *Carol Barnhart, Inc. v. Economy Cover Corp.*, 773 F.2d 411, 419 (2d Cir. 1985)).

<sup>9</sup>*Id.* (*citing* *Carol Barnhart*, 773 F.2d 411, 422 (2d Cir. 1985) (Newman, J., dissenting)).

(5) The Design-Process Approach: A pictorial, graphic, or sculptural feature is conceptually separable if the “design elements can be identified as reflecting the designer’s artistic judgment exercised independently of functional influences.”<sup>10</sup>

(6) The Stand-Alone Approach: A pictorial, graphic, or sculptural feature is conceptually separable if “the useful article’s functionality remain[s] intact once the copyrightable material is separated.”<sup>11</sup>

(7) The Likelihood-of-Marketability Approach: A pictorial, graphic, or sculptural feature is conceptually separable if “there is substantial likelihood that even if the article had no utilitarian use it would still be marketable to some significant segment of the community simply because of its aesthetic qualities.”<sup>12</sup>

(8) Patry’s Approach: There is no need to engage in a separability analysis if (A) the work is the design of a three-dimensional article, and (B) the design is not of a “useful article.”<sup>13</sup> When determining whether pictorial, graphic, or sculptural features are protectable under the Copyright Act, the focus should be on whether those pictorial, graphic, or sculptural aspects are separable from the “utilitarian aspects” of the article, not the “article” because “the protected features need not be capable of existing apart from the article, only from its functional aspects.”<sup>14</sup> This task requires two additional steps.<sup>15</sup> First, the court “must be able to discern pictorial, graphic, or sculptural features.”<sup>16</sup> Second, the pictorial, graphic, or sculptural features “must be capable of existing as *intangible* features independent of the utilitarian *aspects* of the useful article, not independent of the whole article....”<sup>17</sup> This necessitates asking “whether the pictorial, graphic, or sculptural features are dictated by the form or function of the utilitarian aspects of the useful article.”<sup>18</sup> If form or function—rather than aesthetics—dictates the way that the pictorial, graphic, or sculptural features appear, then those pictorial, graphic, and sculptural features are not capable of existing independently of the utilitarian aspects of the useful article.<sup>19</sup>

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<sup>10</sup>*Id.* (citing *Brandir International, Inc. v. Cascade Pacific Lumber Co.*, 834 F.2d 1142, 1145 (2d Cir. 1987); *Pivot Point International, Inc. v. Charlene Products, Inc.*, 372 F.3d 913, 930-31 (7th Cir. 2004); Robert C. Denicola, *Applied Arts and Industrial Design: A Suggested Approach to Copyright in Useful Articles*, 67 MINN. L. REV. 707, 741–45 (1983)).

<sup>11</sup>*Id.* (citing *Pivot Point*, 372 F.3d at 934 (Kanne, J., dissenting)).

<sup>12</sup>*Id.* (citing *Galiano v. Harrah’s Operating Co.*, 416 F.3d 411, 419 (5th Cir. 2005) (quoting Melville and David Nimmer, NIMMER ON COPYRIGHT §2.08[B][3])).

<sup>13</sup>*Id.* (citing William Patry, PATRY ON COPYRIGHT §3:145).

<sup>14</sup>*Id.* at 485 (citing William Patry, PATRY ON COPYRIGHT §3:146).

<sup>15</sup>*Id.*

<sup>16</sup>*Id.*

<sup>17</sup>*Varsity Brands*, 799 F.3d 468, 485 (6th Cir. 2015) (citing William Patry, PATRY ON COPYRIGHT §3:146).

<sup>18</sup>*Id.*

<sup>19</sup>*Id.*

(9) The Subjective–Objective Approach: Conceptual separability is determined by balancing (A) “the degree to which the designer's subjective process is motivated by aesthetic concerns”; and (B) “the degree to which the design of a useful article is objectively dictated by its utilitarian function. The first factor requires courts to consider the degree to which aesthetic concerns, as opposed to functional ones, motivate the designer.”<sup>20</sup> The second factor considers whether “the design is mostly dictated by function” or “hardly dictated by function at all.”<sup>21</sup> If the design of the useful article “is mostly dictated by function,” then that fact “weigh[s] against conceptual separability, and therefore, against copyright protection.”<sup>22</sup> If the design “is hardly dictated by function at all” then that fact “weigh[s] in favor of a finding of conceptual separability.”<sup>23</sup>

*Varsity Brands*, 799 F.3d at 484-85.

***(b) What is included in the scope of the term “applied arts” in your law:***

***-industrial design (registered and unregistered)***

***-graphic design***

***-fashion design***

***-interior design***

***-decorative arts***

***-engineering design***

***-architecture***

***-photography***

***Explain and quote/summarize relevant statutory and/or case law for each of the above.***

***Whenever feasible, please attach the picture of the work/object considered in the case (or the relevant hyperlink).***

The United States does not define the term “applied arts” in its laws. In our response to question 2 below we discuss what types of intellectual property protection might apply to the categories of works listed here.

A dictionary definition for “applied arts” is

any art that applies aesthetic principles to the design or decoration of useful objects, such as industrial design, bookmaking, illustration, printmaking, and commercial art . . . The applied arts are usually contrasted with the fine arts (drawing, painting, sculpture, fine printmaking, etc.), which are seen as serving no purpose other than providing an aesthetic experience.<sup>24</sup>

Since there is no legal definition of which we are aware, we will use this definition as a reference point in responding to the questions in this questionnaire.

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<sup>20</sup>*Id.* (citing Barton R. Keyes, *Alive and Well: The (Still) Ongoing Debate Surrounding Conceptual Separability in American Copyright Law*, 69 OHIO ST. L. J. 109, 141 (2008)).

<sup>21</sup>*Id.* (citing Barton R. Keyes, *Alive and Well: The (Still) Ongoing Debate Surrounding Conceptual Separability in American Copyright Law*, 69 OHIO ST. L. J. 109, 142 (2008)).

<sup>22</sup>*Id.*

<sup>23</sup>*Id.*

<sup>24</sup>Dictionary.com, Applied Art, <http://www.dictionary.com/browse/applied-art>.

***c) Quote any legal provisions and/or case law highlighting the relationship and/or distinction between***

***-applied arts and fine arts***

Fine arts and applied arts are both potentially protected as pictorial, graphic or sculptural works under the Copyright Act, but applied arts are more likely to be useful articles “having an intrinsic utilitarian function that is not merely to portray the appearance of the article or to convey information.”<sup>25</sup> (Informational or depictive utility do not make an article “useful” within the sense of the statute.) Useful articles are protectable “only on the basis of separately identifiable pictorial graphic, or sculptural features. . . capable of independent existence from the overall shape of the useful article.”<sup>26</sup>

***-applied arts and technical solutions for products/methods or principles of construction***

The protectable portions of useful articles must be “pictorial, graphic, or sculptural features,” per the Copyright Compendium section 924.2.<sup>27</sup> Under section 102 of the Copyright Act, copyright protection does not extend to “any idea, procedure, process, system, method of operation, concept, principle, or discovery, regardless of the form in which it is described, explained, illustrated, or embodied in such work.”<sup>28</sup> It is possible that a technical solution for a product/method or principles of construction may be eligible for a patent, if it meets the requirements summarized in our response to question 2(a), below.

***-applied arts and products of craftsmanship***

As far as we are aware, there are no definitions in the law that specifically distinguish between applied arts and products of craftsmanship, and there seems to be considerable overlap between the two. Products of craftsmanship, like applied art, may be protected by copyright, but to the extent they are useful articles they must pass either the physical or conceptual separability tests to be protected.

***-applied arts and the role of computer aided design (CAD software)***

Copyright law does not protect useful articles produced by computer aided design (unless they pass the separability test). The CAD software (to the extent it is distinct from the object the software generates) may be protected as a literary work under copyright. It is also possible that aspects of the software may be protected by a patent, if they meet the requirements summarized in our response to question 2(a), below.

***2) TYPES OF PROTECTION APPLICABLE TO APPLIED ARTS***

***a) What forms of protection are granted by law [statute] or case law in your country for each of the items under 1.b) above?<sup>29</sup>***

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<sup>25</sup>17 USC §101.

<sup>26</sup>Copyright Office Compendium, *supra* note 2 , § 924.2.

<sup>27</sup>*Id.*

<sup>28</sup>17 USC §102.

<sup>29</sup>William M. Borchart’s article “A Trademark is Not a Copyright or a Patent” (2016) (*available at <http://www.cll.com/clientuploads/articles/2016%20PTC%20ARTICLE.pdf>*) is a good basic introduction to United States intellectual property law.

Below are summaries of the principal areas of US intellectual property law that may be applicable to applied arts. These summaries incorporate our responses to question 2(c). Note that the US does not have protection for industrial designs per se, although in limited circumstances industrial designs may be protectable under copyright, trademark, or patent law (particularly under design patent).<sup>30</sup>

Following these summaries are our observations about the extent to which the various forms of IP law may protect the items listed in question 1(b).

## Copyright

Copyright is governed by the Copyright Act of 1976, as amended, codified in Title 17 of the US Code. Copyright subsists in original works of authorship fixed in a tangible medium of expression. For a work to be "original," it cannot be copied from another work, and it must exhibit at least a small amount of creativity.

Categories of works of authorship that can be protected by copyright include, for example, "pictorial, graphic and sculptural works" and "architectural works." As discussed earlier, to the extent US copyright law protects applied art, it does so within the category of pictorial, graphic and sculptural works, and subject to the restrictive definition discussed above. Architectural works, albeit also combining aesthetic and functional aspects, are a distinct category, not subject to the "separability" test, but rather to the general rule that copyright does not protect all aspects of a work. Ideas, concepts, methods, principles, procedures, and the like may not be protected, although the specific manner in which they are expressed may be.

Copyright provides the copyright owner with the exclusive rights to reproduce the work, create derivative works, publicly distribute, perform and display the work. An exercise of any of these rights without the authority of the copyright owner or the law (by virtue of an exception or limitation) is an infringement of copyright.

The Copyright Act contains numerous exceptions to copyright rights, of which the broadest and most ambiguous is the fair use provision in section 107 of the Act. Four non-exclusive factors must be considered in determining if a use is a fair use: the purpose and character of the use, including whether the use is of a commercial nature or for nonprofit educational purposes (whether a use is "transformative" is an important consideration here); the nature of the copyrighted work; the amount and substantiality of the original work used in relation to the original work in its entirety; and the effect of the use on the potential market for or value of the original work.<sup>31</sup>

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<sup>30</sup> Protection for original vessel hull designs under 17 USC Chapter 13 is an exception to this general rule.

<sup>31</sup> 17 USC § 107.

The fair use doctrine has been applied in cases involving photographs of applied art. *See, e.g.,* Sarl Louis Féraud Int'l v. Viewfinder Inc., 627 F. Supp. 2d 123, (S.D.N.Y. 2008) (defendant's posting of photographs of plaintiff's high-fashion clothing designs to defendant's online fashion magazine deemed fair use because "it [could not] be said as a matter of law that no reasonable fact-finder could conclude that the fair use factors weigh in favor of Viewfinder's use." *Id.* at 136.).

For works created on or after January 1, 1978, the copyright term for a work by an individual author is life of the author plus 70 years. A work created as a work made for hire, and anonymous and pseudonymous works, are protected for 95 years from publication or 120 years from creation, whichever expires earlier. For works created prior to 1978, the term varies.<sup>32</sup>

Registration with the US Copyright Office is not required to obtain a copyright, but must be made in order to bring a civil action for infringement of a work of US origin. In order to be eligible to receive statutory damages and attorney's fees if the copyright owner is the prevailing party in an infringement action, the copyright owner must make a timely registration of the work. In general this means that the work must be registered before the commencement of the infringement or, in the case of infringement of a newly-published work, within three months of first publication.<sup>33</sup>

The author of the work is the initial owner of copyright but may license or assign the copyright, in whole or in part, to another party. In the case of a work made for hire, the hiring party is the statutory author.

The legal or beneficial owner of an exclusive right under copyright has the right to sue for infringement of that right; the plaintiff may be the original author of the work or a party to which the copyright was assigned. Copyright rights are divisible, so a party need own only the rights at issue in order to sue.

The United States is a member of the Berne Convention, TRIPs, the WIPO Copyright Treaty and the WIPO Performances and Phonograms Treaty, as well as other treaties and trade agreements, and provides national treatment in accordance with those treaties.

## **Trademarks and Unfair Competition**

Trademark law protects consumers from confusion as to the source of products and services used in commerce, and also prevents dilution of the name and reputation of the trademark owner. A trademark or service mark includes any word, name, symbol, device, or any combination thereof, used or intended to be used to identify and distinguish the goods or services of one seller or provider from those of others, and to indicate the source of the goods or services.<sup>34</sup>

To be eligible for trademark protection, the mark must be distinctive. Inherently distinctive trademarks can be words or symbols created for the express purpose of acting as a trademark (e.g., Xerox), common words used in an unexpected manner (e.g., Apple for computers), or words that merely suggest qualities of the product or service without describing it literally (e.g., Jaguar for a car). A descriptive mark (e.g., Intensive Care for lotion) does not qualify for trademark protection at the outset, but through repeated and long-term usage can acquire

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<sup>32</sup>For a detailed explanation of the term of protection for works created prior to January 1, 1978, see US Copyright Office, Copyright Circular 15a, "Duration of Copyright," available at <http://www.copyright.gov/circs/circ15a.pdf>.

<sup>33</sup>17 USC § 412.

<sup>34</sup>Trademark Basics, United States Patent and Trademark Office, <http://www.uspto.gov/trademarks-getting-started/trademark-basics> (last visited June 24, 2016).

distinctiveness and become eligible for trademark protection. Generic terms (e.g., “aspirin” for a painkiller) may not serve as trademarks.

Trade dress, which includes, *inter alia*, the shape of a product or its packaging, can also serve as a trademark (e.g., the shape of the traditional Coca-Cola bottle). However, in order to receive trademark protection the mark must be non-functional. Functionality can be utilitarian, e.g., a design choice that gives the shape mechanical advantages, or aesthetic, e.g., a design that contributes so strongly to the attractive appearance of the product that competitors could not compete effectively using other designs.<sup>35</sup>

Both federal and state law provide trademark protection; the federal statutes do not preempt state law in this area. The current federal trademark statute, the Lanham Act, was adopted in 1946 and has been amended several times since.<sup>36</sup> Federal registration is not a condition of trademark protection, but it provides stronger protection.

A trademark is infringed when a third party uses the same term or design or a confusingly similar one on the same or closely related goods in the same geographic area (or one into which the trademark owner would naturally expand). Federal trademark registration provides nationwide priority.

Protection against certain kinds of unfair competition is provided by federal and state law. The Lanham Act

protects against a likelihood of confusion, mistake or deception about the source, affiliation, sponsorship or approval of goods or service or the commercial activities of another. It also protects against the use of any false or misleading statement of fact in commercial advertising or promotion which contains a misrepresentation about that person’s or another’s goods, services or commercial activities.<sup>37</sup>

Thus, in the US, unfair competition law does not provide a remedy against copying as such, only against copying that confuses the public as to source or approval of the goods.

A trademark is valid as long as it is used in commerce; federal trademark registrations must be maintained by filing a use declaration before the sixth anniversary, the tenth anniversary, and every ten years thereafter.<sup>38</sup>

The party who first used the mark in commerce or who registered the mark, or that party’s assignee, is the owner of the right. The trademark registrant or, if the mark is unregistered, the owner of the mark, has the right to sue for infringement.

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<sup>35</sup>See generally Siegrun D. Kane, KANE ON TRADEMARK LAW: A PRACTITIONER’S GUIDE §3.2.1 (Practising Law Inst. 6th ed. 2015).

<sup>36</sup>The Lanham Act as amended is codified in 15 USC §1051 et seq., available at <http://www.uspto.gov/sites/default/files/documents/tmlaw.pdf>.

<sup>37</sup>Borchard, *supra* note 29 at 5.

<sup>38</sup>15 USC §§1058(a), 1059.

The United States is a member of many international treaties and trade agreements concerning trademark law, e.g., the Paris Convention, TRIPS, and the Madrid Protocol.

## Patent Law

Patent law in the United States is governed by Title 35 of the United States Code,<sup>39</sup> amended in 2011 by the Leahy-Smith America Invents Act (the AIA) to better harmonize US law with international law.<sup>40</sup> There are no state patent laws.

A patent provides the patent owner with the right to exclude others from making, using, selling or offering for sale the patented invention in the US, or importing it into the US.<sup>41</sup> An inventor may receive a patent for any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof provided it is novel and non-obvious.<sup>42</sup> To receive a patent, the inventor must apply to the US Patent and Trademark Office (USPTO) and describe (with words and drawings) how to make and use the invention; why it is novel; and what aspects of the invention are eligible for patent protection.<sup>43</sup> A utility patent generally lasts 20 years from the filing date.<sup>44</sup>

Creators of new, original and ornamental (i.e., non-functional) designs created for an article of manufacture can receive a design patent for a term of 15 years from the issue date (14 years if the application was filed before May 13, 2015).<sup>45</sup> A design patent protects the actual design of the ornamentation as represented in the patent application but does not extend to derivative works.<sup>46</sup> The ability to have a design patent does not affect the ability to have a patent on the mechanical items inherent in the same creation. One can have a design patent and a utility patent on different aspects of the same object. For example, Coca Cola's classic bottle has benefited from design patents protecting its shape and utility patents protecting its "pilferproof" cap.<sup>47</sup>

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<sup>39</sup>35 USC §§1-390. The current US patent laws can be found at [http://www.uspto.gov/web/offices/pac/mpep/consolidated\\_laws.pdf](http://www.uspto.gov/web/offices/pac/mpep/consolidated_laws.pdf).

<sup>40</sup>Pub. L. No.112-29, 25 Stat. 284 (2011).

<sup>41</sup>35 USC §271.

<sup>42</sup>35 USC §102-3.

<sup>43</sup>For more information on applying for a patent, see [http://www.uspto.gov/web/offices/pac/mpep/consolidated\\_rules.pdf](http://www.uspto.gov/web/offices/pac/mpep/consolidated_rules.pdf).

<sup>44</sup>35 USC §154.

<sup>45</sup>*Id.* §173.

<sup>46</sup>Relying on the Patent Act of August 29, 1842 (ch. 263, 5 Stat. 543), *Gorham Mfg. Co. v. White*, 81 US 511 (1872), established the "ordinary person" standard for design patent infringement. The Court held that "if, in the eye of an ordinary observer, giving such attention as a purchaser usually gives, two designs are substantially the same, if the resemblance is such as to deceive such an observer, inducing him to purchase one supposing it to be the other, the first one patented is infringed by the other." *Id.* at 528.

<sup>47</sup>Indeed, the Coca Cola bottle has benefited from nearly all forms of intellectual property protection: patent (design and utility), trademark (discussed *infra*), copyright (on the label), and trade secret (on the contents). *US 3812991 A Pilferproof closure with verticle weakening lines*, GOOGLE PATENTS ONLINE (2016), <https://www.google.com/patents/US3812991>; *US D760084 S Bottle*, USPTO (June 28, 2016), <http://pdfpiw.uspto.gov/piw?Docid=D0760084&homeurl=http%3A%2F%2Fpatft.uspto.gov%2Fnetacgi%2Fnpsh-Parser%3FSect1%3DPTO%2526Sect2%3DHITOFF%2526p%3D1%2526u%3D%25252Fnetahml%25252FPTO%25252Fsearch-bool.html%2526t%3D1%2526f%3DG%2526l%3D50%2526co1%3DAND%2526d%3DPTXT%2526s1%3D%252522coca%2526cola>

Patent law has no work-made-for-hire provision. “The general rule is that an individual owns the patent rights to the subject matter of which he is the inventor, even though he conceived it or reduced it to practice in the course of his employment. There are two exceptions to this rule: first, an employer owns an employee's invention if the employee is a party to an express contract to that effect; second, where an employee is hired to invent something or solve a particular problem, the property of the invention related to this effort may belong to the employer.”<sup>48</sup> Many employers require employees to assign the rights in their discoveries to the employer. Furthermore, in some cases, the employer might have what is called a “shop right” in the invention whereby the employer has an implied, nonexclusive, irrevocable and royalty-free license to use the invention made by the employee. How these rights are generated, however, is not uniform from state to state.<sup>49</sup>

The person to whom the patent is granted is the initial owner of the patent, but the patent may be assigned.

The United States is a member of a variety of international treaties in the areas of patent, including for example the Paris Convention, TRIPs, the Patent Cooperation Treaty, the Patent Law Treaty, etc.

***The applicability of US law to the items listed in question 1(b) above:***

Industrial Design: As noted above, creators of new, original and ornamental (i.e., non-functional) designs created for an article of manufacture may be able to obtain a design patent for a term of 15 years from registration.

As indicated above, trademarks can protect aspects of product design. Packaging, labels, containers, displays, décor, or (more rarely) the shape of a product, product features, or combination of product features are protectable, provided the design is distinctive and ornamental rather than functional. For example, the famous Coca Cola bottle shape (below) obtained a federal trademark registration in 1960 and The Coca-Cola Company has obtained registered trademarks on various bottle shapes since.<sup>50</sup>

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[%252522.AANM.%2526OS%3DAANM%2F%252522coca%252Bcola%252522%2526RS%3DAANM%2F%252522coca%252Bcola%252522&PageNum=&Rtype=&SectionNum=&idkey=NONE&Input=View+first+page.](#)

<sup>48</sup> Banks v. Unisys Corp., 228 F.3d 1357, 1359, 2000 US App. LEXIS 23907, \*5, 56 U.S.P.Q.2D (BNA) 1222, 1224 (Fed. Cir. 2000).

<sup>49</sup> McElmurray v. Arkansas Power & Light Co., 995 F.2d 1576, 1580-1581 (Fed. Cir. 1993). For further discussion on this topic, see Marc A. Lieberstein, *Employers Beware: Will you own your Employee's Inventions?*, 1 HASTINGS BUS. L. J. 18 (2005).

<sup>50</sup> *Timeline: The Evolution of the Coca Cola Bottle*, Coca Cola Journey, THE COCA COLA COMPANY (2016) <http://www.coca-colacompany.com/timeline-the-evolution-of-the-coca-cola-bottle#1977>.



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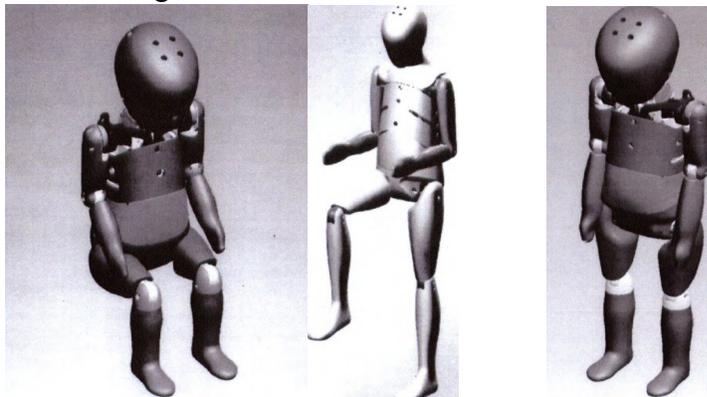
51<sup>Id.</sup>

The “Tiffany Blue Box” (below) is another iconic packaging design that holds registered trademarks for both the box and the box’s “robin’s egg blue” color.<sup>52</sup>



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Industrial designs may be copyrightable if the non-useful portion can be separated from the form’s functionality (i.e., if the non-utilitarian features could stand on their own if separated from the utilitarian aspects of the piece). In practice, however, separability has been difficult to establish, particularly when copyright is asserted in the entire shape of the article.<sup>54</sup> For instance, when faced with a registration request for the overall shape of crash dummies (pictured below), the Copyright Office Review Board noted in Re QI, QIO, QI. Correspondence ID: 1-JT7IVR (Sept. 11, 2014) that it is “impossible to imagine a way to conceptually separate the aesthetic design elements from the Works without destroying their shape and configuration as human-based testing devices.”



<sup>52</sup> Robert Klara, *How Tiffany’s Iconic Box Became the World’s Most Popular Package*, ADWEEK (September 22, 2014), <http://www.adweek.com/news/advertising-branding/how-tiffany-s-iconic-box-became-world-s-most-popular-package-160228>.

<sup>53</sup> *Id.*

<sup>54</sup> *See, e.g.,* Carol Barnhart Inc. v. Economy Cover Corp. 773 F.2d 4111 (2d Cir. 1985) (denying protection to torso mannequins); Brandir International, Inc. v. Cascade Pacific Lumber Co. 834 F.2d 1142 (2d Cir. 1987) (denying protection to a sculptural bicycle rack).

Graphic Design and Photography: Graphic design and photography are generally protected under copyright as “pictorial, graphic, or sculptural works” (see definition in our response to question 1(a)). The owner of copyright in a work that portrays a useful article does not thereby obtain any rights in the useful article as such.<sup>55</sup>

Graphic designs and photography cannot benefit from patent protection; however trademark protection is possible for graphic designs (commonly in the form of logos).

Fashion Design: *Fabric* design is eligible for copyright protection (see the discussion below under “Decorative Arts”). *Fashion* design (the shape of garments), however, is not protected by copyright other than in the rare case in which the decorative elements are original and separable. Compare *Jovani Fashion, Ltd. v. Fiesta Fashion*,<sup>56</sup> with *Klauber Bros., Inc. v. Target Corp.*<sup>57</sup> In the former, the Second Circuit considered that “the aesthetic and the functional are inseparable in the prom dress at issue (below left) and, therefore, Jovani cannot state a plausible copyright claim” for the bodice sequins and crystals.<sup>58</sup> In *Klauber Bros.*, on the other hand, undergarment waistbands (below right), designed with a pattern in lace, were considered separable and therefore copyrightable (no copyright was asserted in the remainder of the undergarments).



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<sup>55</sup>17 USC §113(b).

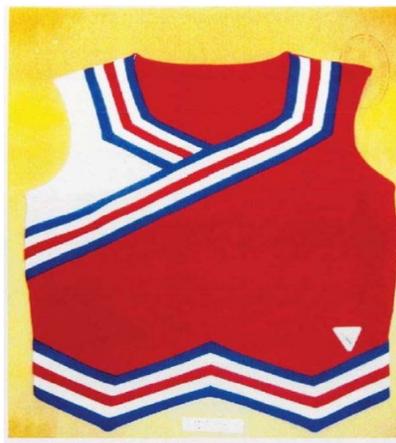
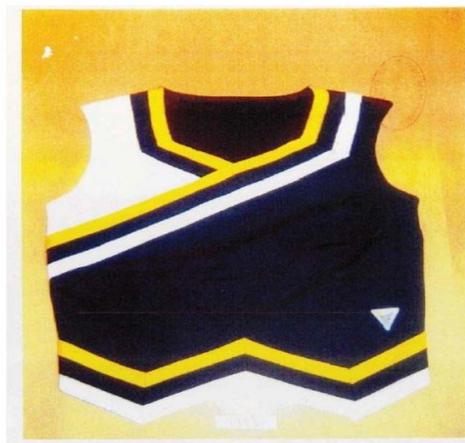
<sup>56</sup>500 Fed. Appx. 42, 44 (2nd Cir. 2012).

<sup>57</sup>2015 WL 4393091 (S.D.N.Y. 2015).

<sup>58</sup>500 F. App'x 42, 45 (2d Cir. 2012).

<sup>59</sup>2015 WL 4393091 (S.D.N.Y. 2015), Exhibit 1.

In *Varsity Brands, Inc. v. Star Athletica, LLC*,<sup>60</sup> the court held that the team insignia on the uniforms was conceptually separable from the overall uniforms (pictured below) because “the arrangement of stripes, chevrons, color blocks, and zig zags are ‘wholly unnecessary to the performance of’ the garment’s ability to cover the body, permit free movement, and wick moisture.”<sup>61</sup> As mentioned above, the Supreme Court will hear this case in the coming term.



Limited patent protection (both design and utility) is possible for fashion designs. Design patents can be granted for ornamental features of a fashion product.<sup>62</sup> When applying for a design patent, the designer must claim certain features of the design that are to be protected; therefore, the patent is directed at the basic design concept, not the exact product the designer sells.<sup>63</sup> For example, Deckers Outdoor Corp., owner of the now famous Teva® sandals mark, was granted a utility patent on its “universal strapping system” (below left) in 1987.<sup>64</sup> Deckers was also

<sup>60</sup>799 F.3d 468 (6th Cir. 2015).

<sup>61</sup>*Id.* at 492 (citing *Carol Barnhart*, 773 F.2d at 419).

<sup>62</sup>Christiane Campbell, *Protecting Fashion Designs Through IP Law*, DUANE MORRIS ONLINE (April 14, 2015), [http://www.duanemorris.com/articles/protecting\\_fashion\\_designs\\_through\\_ip\\_law\\_5516.html](http://www.duanemorris.com/articles/protecting_fashion_designs_through_ip_law_5516.html).

<sup>63</sup>*Id.*

<sup>64</sup>US 4793075 *A Sport sandal for active wear*, GOOGLE PATENTS ONLINE (2016), <https://www.google.com/patents/US4793075>.



(bottom right), which “consists of the design of the two stripes on the midsole of the shoe, the design of the toe cap, the design of the multi-layered toe bumper featuring diamonds and line patterns, and the relative position of these elements to each other.”<sup>71</sup> Both the high and low top marks further feature: a “Multi-Patterned Rubber Toe Strip...Double Rand Stripes...Brushed Metal Grommets in Medial Side Arch...Brushed Metal Eyestay Grommets...Convex Rubber Toe Cap...Double Stitching and Box-Like Stitch Along the Upper,” with the high top adding an “Ankle Patch on the Inside Ankle” and a “Top Line Collar Throat Shape.”<sup>72</sup>



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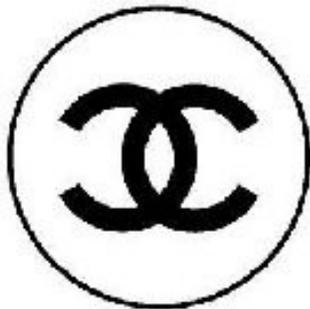


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More common than trademarks on fashion design are trademarked logos featured on fashion. Logos such as Chanel’s interlocking Cs (below left) or the Nike swoosh symbol are examples from the fashion world of trademarked logos.



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In addition, courts have applied trademark law in some circumstances to protect the trade dress of the overall shape of some products, including jewelry and accessories (trade dress protection most commonly applies to a product’s packaging, or to particular product features, rather than to

<sup>70</sup>US Reg. No. 4398753, USPTO (September 10, 2013), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4805:mtxrpn.2.1>;

US Reg. No. 4062112, USPTO (November 29, 2011), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4801:nrgkq6.2.1>;

US Reg. No. 4065482, USPTO (December 6, 2011), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4806:7ljgli.9.1>.

<sup>71</sup>US Reg. No. 4398753, *supra* note 70.

<sup>72</sup>US Reg. No. 4062112 & US Reg. No. 4065482, *supra* note 70.

<sup>73</sup>US Reg. No. 4062112, *supra* note 70.

<sup>74</sup>US Reg. No. 4065482, *supra* note 70.

<sup>75</sup>US Reg. No. 4398753, *supra* note 70.

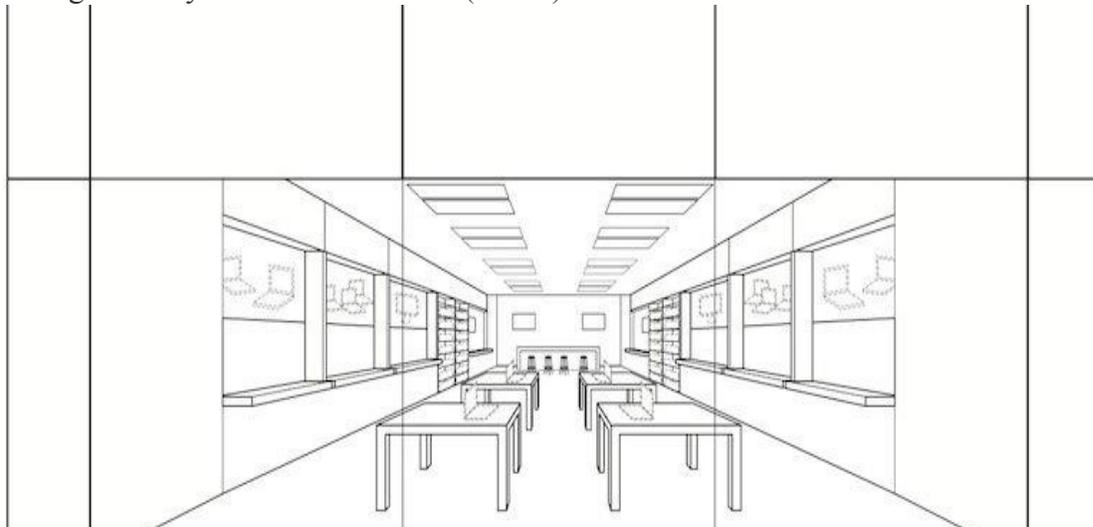
<sup>76</sup>US Reg. No. 4973295, USPTO (June 7, 2016), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4806:91jq77.2.18>.

<sup>77</sup>US Reg. No. 1323343, USPTO (March 5, 1985), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4806:91jq77.6.1>.

its entire configuration). “Trade dress” protection of the “total image of a product” may include features such as size, shape, color, color combinations, texture or graphics.<sup>78</sup> Trade dress protection requires a showing that (1) the trade dress is nonfunctional; (2) the trade dress has acquired secondary meaning, and (3) there is a substantial likelihood of confusion between the two designs.<sup>79</sup>

Interior Design: With respect to interior design, it is possible that the selection and placement of furniture in a room might be protectable as a compilation, sec. 103(a). *See, e.g., Baldine v. Furniture Comfort Corp.*, in which copyright infringement was claimed for a furniture showroom design.<sup>80</sup> (Strict validity was not addressed, but the defendant’s “burden of showing the invalidity of [the furniture arrangement] copyright on the basis of lack of originality” was not met.<sup>81</sup>)

Interior design can also be protected by trademark. Apple famously obtained a trademark for its “design and layout of a retail store” (below) in 2013.<sup>82</sup>



83

Decorative Arts: It is unclear what is meant by “decorative arts,” but the US protects (and the Copyright Office registers) such works as lamps (with separable artistic aspects), jewelry design and fabric designs.

<sup>78</sup>International Jensen, Inc. v. Metrosound U.S.A., Inc., 4 F.3d 819, 822 (9th Cir. 1993)

<sup>79</sup>Art Attacks v. MGA Entertainment, Inc., 581 F.3d 1138, 1145 (9th Cir. 2009).

<sup>80</sup>956 F. Supp 580 (1996).

<sup>81</sup>*Id.* at 585.

<sup>82</sup>*US 85036990 Service Mark*, USPTO (January 22, 2013),

[http://tsdr.uspto.gov/#caseNumber=85036990&caseType=SERIAL\\_NO&searchType=statusSearch](http://tsdr.uspto.gov/#caseNumber=85036990&caseType=SERIAL_NO&searchType=statusSearch)

<sup>83</sup>*Id.*

*Lighting design*:<sup>84</sup> The US Supreme Court first enunciated the separability rule in *Mazer v. Stein*, which involved lamps including statuettes of dancers (below). The Court held that copyright protection extended to “artistic articles . . . in form but not their mechanical or utilitarian aspects,” granting protection to the statuettes despite their adaptation into lamp bases.<sup>85</sup>



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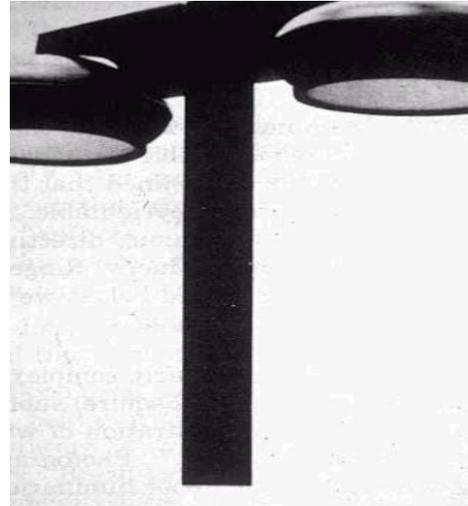
<sup>84</sup>We were uncertain whether this question referred to lighting design in the theatrical sense or the design of lamps and other light fixtures. We have interpreted it as the latter, but if lighting design in the theatrical sense was intended, we make the following observations. Such lighting designs are written in plain text (i.e., the cues, the equipment to be used, etc.), and in computer code, which could be protected by copyright, assuming they met the originality requirement. (The rock band Phish is known for creating intricate and unique lighting designs for its concerts. For visuals of some of these, visit <http://thephunion.com/?p=970>.) Whether the execution of the lighting design could be copyrighted as, for example, a visual work, is purely hypothetical because as far as we can discern, no one has ever attempted to do so. One challenge would be separating the design from the entirety of the production into which it was incorporated. Stage directions face a similar challenge. For a discussion of stage directions and copyright, see Margit Livingston, *Inspiration or Imitation: Copyright Protection for Stage Directions*, 50 B.C.L. REV. 427 (2009). A theatrical lighting design system could be eligible for patent protection (see the description of Apple’s patented display lighting, *infra*), but the patent would presumably protect the mechanical aspects of the design and not the performance sequence that the lights follow. We are not aware of any case in which owners of this type of lighting design have sought trademark protection. It is possible, however, that a particular lighting design could serve as a logo.

<sup>85</sup>347 US 201, 212 (1954).

In other lighting design cases, however, US courts have found the designs inseparable from their functional aspects, particularly when the design was not ornate. For example, in *Progressive Lighting, Inc. v. Lowe's Home Centers, Inc.*, the Eleventh Circuit emphasized that the statutory separability standard applies to “ornamental, superfluous designs contained within useful objects,” and not to the object as a whole – in that case, an unadorned chandelier (of the kind pictured below left).<sup>86</sup> The Court in *Esquire, Inc. v. Ringer* similarly considered an outdoor light fixture (below right) ineligible for copyright protection by limiting the scope of *Mazer*: “The issue here whether the overall shape of a utilitarian object is ‘an article eligible for copyright’ was not addressed in *Mazer*.”<sup>87</sup>



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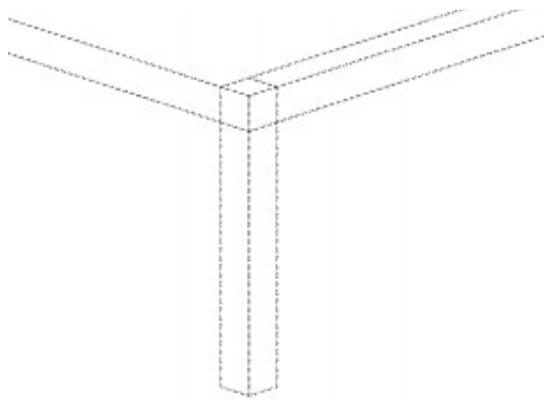
<sup>86</sup>549 Fed.Appx. 913, 921 (11th Cir. 2013).

<sup>87</sup>591 F.2d 796, 804 (D.C. Cir. 1978), *cert. denied*, 440 US 908, 99 S. Ct. 1219, 59 L. Ed. 2d 456 (1979).

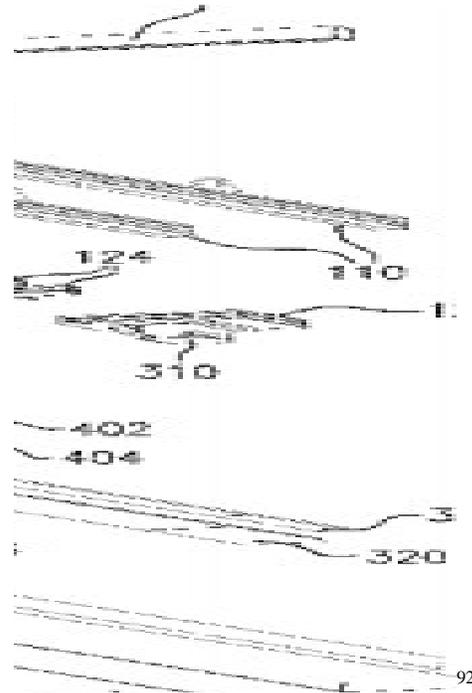
<sup>88</sup>Photograph of Chandelier, [http://www.lowes.com/pd\\_423822-43501-FD12-048\\_1z0y296Z1z0yymk\\_\\_?productId=4764695&pl=1](http://www.lowes.com/pd_423822-43501-FD12-048_1z0y296Z1z0yymk__?productId=4764695&pl=1) (the above image is a “6-Light...chandelier[] sold under the ‘Portfolio’ brand” at Lowe’s (549 Fed. Appx. at 916)).

<sup>89</sup>Photograph of outdoor light fixture, James Grimmelmann (Comp.), *Intellectual Property Law Survey Fall 2015*, Chapter 9. Design, 4 (2015), <http://james.grimmelmann.net/courses/ip2015F/ch9.pdf>.

Lighting design can also be protected by both design and utility patents Apple holds a design patent for its specific display lighting design (below left) and recently obtained a utility patent for a ceiling lighting system design (below right).<sup>90</sup>



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<sup>90</sup>US D 729,433 S Light, USPTO (May 12, 2015), <http://pdfpiw.uspto.gov/piw?Docid=D0729433&homeurl=http%3A%2F%2Fpatft.uspto.gov%2Fnetacgi%2Fnph-Parser%3FSect1%3DPTO2%2526Sect2%3DHITOFF%2526p%3D1%2526u%3D%25252Fnetahtml%25252FPTO%25252Fsearch-bool.html%2526r%3D1%2526f%3DG%2526l%3D50%2526co1%3DAND%2526d%3DPTXT%2526s1%3DD729,433.PN.%2526OS%3DPN%2FD729,433%2526RS%3DPN%2FD729,433&PageNum=&Rtype=&SectionNum=&idkey=NONE&Input=View+first+page>; “The panels may themselves be the light sources. Alternatively or additionally light sourced may be disposed within the troughs.”; US 9,217,247 B2 Ceiling System, USPTO (Dec. 22, 2015) <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetahtml%2FPTO%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=9,217,247.PN.&OS=PN/9,217,247&RS=PN/9,217,247>.

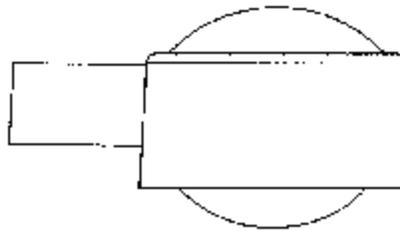
<sup>91</sup>US D 729,433 S Light, *supra* note 90.

<sup>92</sup>US 9,217,247 B2 Ceiling System, *supra* note 90.

Lighting fixture designs can also be trademarked. For example, the “three-dimensional configuration of a floor lamp including a rectangular cuboid base with a small footprint, a single-piece arcing arm, and a hemispherical lamp fixture with ornamental holes” (below left) and the “three dimensional square-shaped light fixture with a circular dome or extrusion on the top, and with an attached straight extension with no surface texturing or indentations” (below right) are both registered trademarks.<sup>93</sup>



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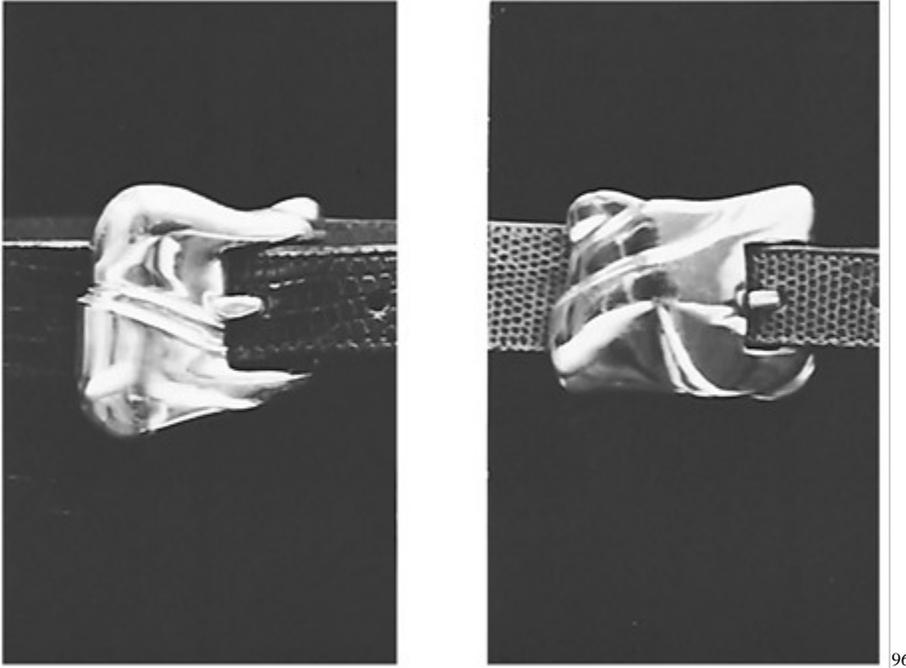
<sup>93</sup>*US Reg. No. 4123899*, USPTO (April 10, 2012), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4801:36roj.4.144>;

*US Reg. No. 2369507*, USPTO (July 18, 2000), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4801:36roj.6.165>.

<sup>94</sup>*US Reg. No. 4123899*, USPTO, *supra* note 93.

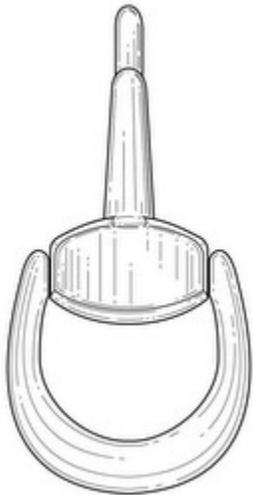
<sup>95</sup>*US Reg. No. 2369507*, *supra* note 93.

*Jewelry design:* Below are the “Winchester” (left) and “Vaquero” (right) belt buckles whose copyrightability the Second Circuit upheld *Kieselstein-Cord v. Accessories by Pearl*, 632 F.2d. 989 (2d Cir. 1980).



96

Jewelry and accessory design is commonly protected by trademarks and in some cases patents. For example, Gucci holds a trademark for its “stylized, three-dimensional image of one-half of a horse bit” featured on accessories and clothing (below).<sup>97</sup>



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<sup>96</sup>Robert A. Gorman, Jane C. Ginsburg and R. Anthony Reese, COPYRIGHT CASES AND MATERIALS 238 (8th Ed. 2011).

<sup>97</sup>*US 77319934 Trademark*, USPTO (January 27, 2009).

[http://tsdr.uspto.gov/#caseNumber=77319934&caseType=SERIAL\\_NO&searchType=statusSearch](http://tsdr.uspto.gov/#caseNumber=77319934&caseType=SERIAL_NO&searchType=statusSearch).

<sup>98</sup>*Id.*

Jewelry and accessory design patents are also common – for example, the two watch designs below.

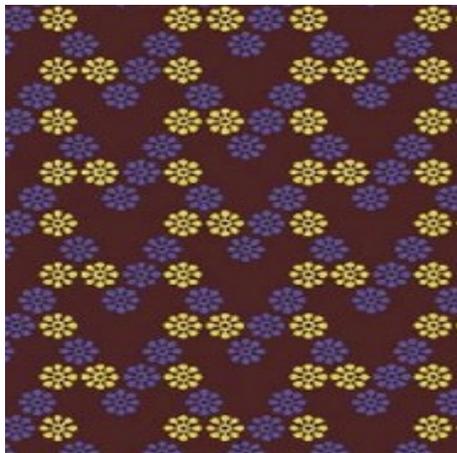


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*Fabric designs* can be protected by copyright, as demonstrated by cases such as *L.A. Printex Industries, Inc. v. Aeropostale, Inc.*, where the Ninth Circuit Court of Appeals held that plaintiff’s flower-printed fabric (below) was original enough to be eligible for copyright protection.<sup>101</sup>



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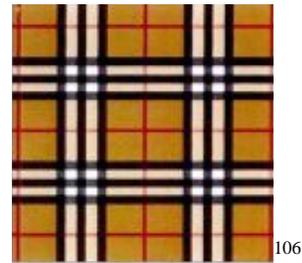
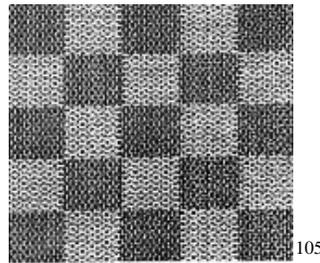
<sup>99</sup>US D758,211 S Watch, USPTO (June 7, 2016), <http://www.uspto.gov/web/patents/patog/week23/OG/Designs.html>.

<sup>100</sup>US D758,212 S Watch, USPTO (June 7, 2016), <http://www.uspto.gov/web/patents/patog/week23/OG/Designs.html>.

<sup>101</sup>646 F.3d 841 (9th Cir. 2012).

<sup>102</sup>Charles Colman, *California federal jury finds for copyright plaintiff L.A. Printex in Aeropostale fabric pattern case: blurgh*, Law of Fashion (February 1, 2013), <http://lawoffashion.com/blog/story/02/01/2013/173>.

Fabric designs are also commonly protected by trademarks. Classic Louis Vuitton (below left and center) and Burberry (below right) fabric design patterns, for example, have been registered trademarks for many years.<sup>103</sup>



In limited cases, fabric designs can also benefit from patent protection. The US Navy, for example, was issued a design patent for its “camouflage pattern for sheet material and uniforms” (below left) in 2004.<sup>107</sup> The Navy also holds registered trademarks for similar design patterns (below center and right).<sup>108</sup> Interestingly, these marks were contested for being “functional as a matter of law under Section 2(e)(5) of the Trademark Act, 15 U.S.C. § 1052(e)(2)” and subject to a long appeal process before the Trademark Trial and Appeal Board (TTAB).<sup>109</sup>

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<sup>103</sup>US Reg. No. 1653663, USPTO (August 13, 1991) <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4810:52mkm5.6.1>; US Reg. No. 3576404, USPTO (December 2, 2008) <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4810:52mkm5.7.1>; US Reg. No. 3529814, USPTO (August 26, 2008), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4810:52mkm5.8.1>.

<sup>104</sup>US Reg. No. 1653663, *supra* note 103.

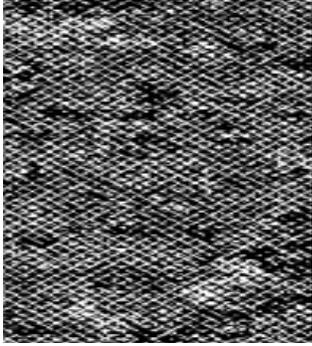
<sup>105</sup>US Reg. No. 3576404, *supra* note 103.

<sup>106</sup>US Reg. No. 3529814, *supra* note 103.

<sup>107</sup>US D491,372 *S Camouflage Pattern for Sheet Material and Uniforms*, USPTO (June 15, 2004), <http://patft.uspto.gov/netacgi/nph-Parser?Sect1=PTO2&Sect2=HITOFF&p=1&u=%2Fnetacgi%2Fsearch-bool.html&r=1&f=G&l=50&co1=AND&d=PTXT&s1=D491,372.PN.&OS=PN/D491,372&RS=PN/D491,372>.

<sup>108</sup>US Reg. No. 4254167, USPTO (December 4, 2012) <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4809:hlptzu.4.1>; US Reg. No. 4254164, USPTO (December 4, 2012) <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4809:hlptzu.5.1>.

<sup>109</sup>In re Navy Exchange Service Command, USPTO TTAB (non-precedential opinion issued September 29, 2012) <http://ttabvue.uspto.gov/ttabvue/v?pno=77324270&pty=EXA&eno=13>.



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*Furniture design:* In a matter involving highly ornate furniture design, the Court of Appeals for the Fourth Circuit in *Universal Furniture Int’l, Inc. v. Collezione Europa USA, Inc.* rejected copyright protection for the overall shape of the furniture pictured below, but did find separability sufficient to sustain protection in several “superfluous nonfunctional adornments for which the shape of the furniture (which is not copyrightable) serves as the vehicle.”<sup>113</sup>



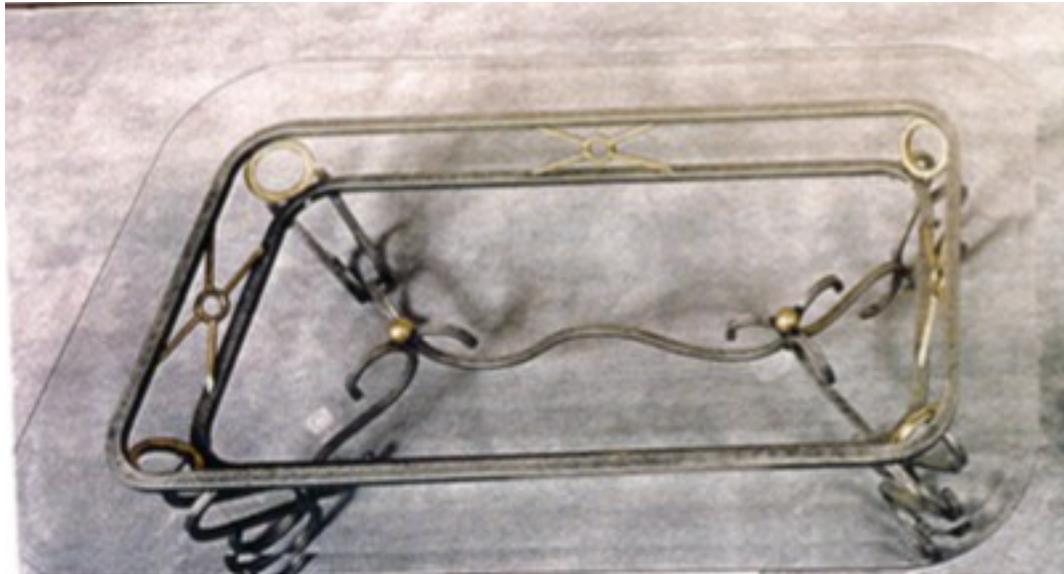
110<sup>1</sup>US D491,372 *S Camouflage Pattern for Sheet Material and Uniforms*, *supra* note 107.

111<sup>1</sup>US Reg. No. 4254167, *supra* note 108.

112<sup>1</sup>US Reg. No. 4254164, *supra* note 108.

113<sup>1</sup>618 F.3d 417, 434 (4th Cir. 2010).

In *Magnussen Furniture, Inc. v. Collezione Europa USA, Inc.*, a case involving the copyrightability of iron tables (below), the same appellate court stated that “like the chair (and unlike the statue) described in *Superior Form* [*v. Dan Chase Taxidermy Supply Co.* (4th Cir.1996)], it appears that Magnussen's line of tables was not created merely for its expressive form. Rather, Magnussen's ultimate purpose, as the district court explicitly found, ‘was to design a table.’ Moreover, like the chair described in *Superior Form*, the sculptural features of the table do not appear to be conceptually separable from the table's utilitarian function.”<sup>114</sup>



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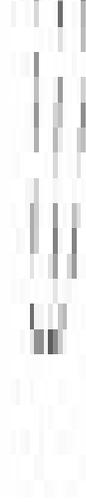
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<sup>114</sup> *Magnussen Furniture, Inc. v. Collezione Europa USA, Inc.*, 116 F.3d 472, 1997 US App. Lexis 14861 at \*8 (4th Cir. 1997) (unpublished opinion).

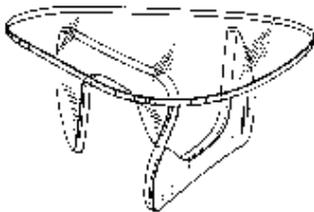
*Superior Form Builders, Inc. v. Dan Chase Taxidermy Supply Co.* established that “[w]hen the sculptural features and utilitarian aspects are not separable, the work is not copyrightable, although it may be protectable on a more limited basis with a design patent. Thus, the industrial design of a unique, aesthetically pleasing chair cannot be separated from the chair's utilitarian function and, therefore, is not subject to copyright protection.” 74 F.3d 488, 493 (4th Cir. 1996).

<sup>115</sup> Magnussen table image provided by Peter J. Juran, attorney for Defendant-Appellee Collezione. The Court stated that both Magnussen and Collezione “sell a line of iron tables that share similar design features, such as curved legs and support frames, “web” and “ring” shapes around the aprons, and glass tops.” *Magnussen v. Collezione, supra*, 1997 US App. Lexis 14861 at \*2.

Furniture design can also benefit from both patent and trademark protection. A design patent for “the ornamental design for a set of surface patterns for a tapestry for a chair” issued in 2001, for example, protects the fabric design featured on two chair designs (below).<sup>116</sup>



With respect to trademarked furniture, Herman Miller, Inc. is well known for obtaining trademark protection for both its’ Noguchi coffee table<sup>117</sup> (below left) and Eames lounge chair and ottoman<sup>118</sup> (below right).



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116<sup>1</sup>US D441,543 S Set of Surface Patterns for a Tapestry for a Chair, USPTO (May 8, 2001), <http://pdfpiw.uspto.gov/.piw?Docid=D0441543&homeurl=http%3A%2F%2Fpatft.uspto.gov%2Fnetacgi%2Fnph-Parser%3Fsect1%3DPTO2%2526sect2%3DHITOFF%2526p%3D1%2526u%3D%25252Fnetahtml%25252FPTO%25252Fsearch-bool.html%2526r%3D1%2526f%3DG%2526l%3D50%2526co1%3DAND%2526d%3DPTXT%2526s1%3DD441543.PN.%2526OS%3DPN%2FD441543%2526RS%3DPN%2FD441543&PageNum=&Rtype=&SectionNum=&idkey=NONE&Input=View+first+page>

117<sup>2</sup>US Reg. No. 2648166, USPTO (November 12, 2002), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4805:qhmgql.10.1>.

118<sup>3</sup>US Reg. No. 2716843, USPTO (May 20, 2003), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4804:2oltop.3.1>.

119<sup>4</sup>US Reg. No. 2648166, *supra* note 117.

120<sup>5</sup>US Reg. No. 2716843, *supra* note 118.

Remedies for trademark infringement of furniture design, however, have proven limited. In *Knoll Associates, Inc. v. Burtman Ornamental Iron Works, Inc.*,<sup>121</sup> for example, Knoll sought an injunction against knock-offs of its famous Butterfly chair (below) under the theory that the chair was a “shape mark and the knock-offs were causing ‘source confusion’ among customers.”<sup>122</sup> The injunction was denied and instead “[t]he judge ordered that competitors prominently label that their products did not come from Knoll – thus to avoid consumer confusion – but did not preclude them from selling their competing versions.”<sup>123</sup>



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Engineering Design – We are not entirely clear what “engineering design” is meant to embrace. If it is an object created for mechanical purposes, please see the discussion of patents above. If it is materials such as blueprints or diagrams, they are protected under copyright as “pictorial, graphic or sculptural” works as discussed above.

Designs of products used in engineering processes may also be eligible for some degree of trademark protection. For example, the “vacuum pump housing having opposing rectangular sides, a pentagonal front from which projects a first cylindrical portion having a happy face, with a second and third cylindrical portion projecting from the first cylindrical portion, a half-arcuate-shaped handle, smaller rectangular projections on each opposing rectangular side, and slotted vents at the corners” (below left) or the “color red (pantone code No. 485C) as applied to the engine housing and end yokes of machines for rolling, bending, and pressing metals” (below right) are protected by registered trademarks.<sup>125</sup>

121<sup>88</sup> U.S.P.Q. 463 (BNA) 1950.

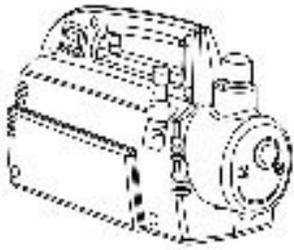
122<sup>Dan Hunter and Suzannah Wood, *The Laws of Design in the Age of Mechanical Reproduction*, ADELAIDE L. REV. (2016) (forthcoming) (citing generally Carma Gorman, *Law as a Lens for Understanding Design*, 6(3) DESIGN & CULTURE 269, 282).</sup>

123<sup>Id.</sup>

124<sup>Pair of Butterfly Chairs by Knoll, SHOWPLACE ANTIQUE + DESIGN CENTER (2016)</sup>

[http://nyshowplace.com/Pair-Knoll-Butterfly-Chairs/0\\_209\\_object=843.aspx](http://nyshowplace.com/Pair-Knoll-Butterfly-Chairs/0_209_object=843.aspx).

125<sup>US Reg. No. 3895744, USPTO (December 21, 2010), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4801:36roj.7.93>;</sup>



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Architecture: Architectural plans and 3-dimensional architectural models are protectable by copyright and, since amendment of the Copyright Act in 1990, that protection has extended to the overall form and elements of an architectural design, although not to its individual standard features. The law accordingly makes it an infringement to construct a building that copies a copyrightable 2-dimensional or 3-dimensional architectural design. (The separability requirement that applies to other categories of useful articles does not apply here.<sup>128</sup>) There is an exception permitting the making, distributing or public display of a 2-dimensional representation of a constructed architectural work “if the building in which the work is embodied is located in or ordinarily visible from a public place.”<sup>129</sup>

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*US Reg. No. 4775627*, USPTO (July 21, 2015), <http://tmsearch.uspto.gov/bin/showfield?f=doc&state=4801:36roj.7.69>.

<sup>126</sup>*US Reg. No. 3895744*, *supra* note 125.

<sup>127</sup>*US Reg. No. 4775627*, *supra* note 125.

<sup>128</sup> See 17 USC §102 (a)(8) and §120; architectural drawings are specifically included in the definition of pictorial graphic and sculptural works under 17 USC §101.

<sup>129</sup>17 USC §120(a).



The scope of protection for registered architectural trademarks, however, was limited by the 1998 decision *Rock and Roll Hall of Fame and Museum, Inc. v. Gentile Productions*.<sup>133</sup> The case involved an unauthorized poster featuring a picture (taken by professional photographer Charles Gentile) of the famous Rock and Roll Hall of Fame Museum building (below) designed by I.M. Pei. The Sixth Circuit vacated the district court finding that the photographer had infringed a trademark in the design of the building on the ground that, while the building was famous *as a work of architecture*, the museum had not established that the public recognized the building's appearance, or any particular depiction of the building, *as a trademark* for museum services.<sup>134</sup>



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***b) Can more than one form of protection be granted to one production? Under what conditions? Cumulatively or exclusively?***

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<sup>133</sup> 134 F.3d 749 (6th Cir. 1998).

<sup>134</sup> The Sixth Circuit reasoned: “[W]e believe that the district court abused its discretion by treating the “Museum’s building design” as a single entity, and by concomitantly failing to consider whether and to what extent the Museum’s use of its building design served the source-identifying function that is the essence of a trademark. As we have noted, we find no support for the factual finding that the public recognizes the Museum’s building design, in any form, let alone in all forms, as a trademark. In light of the Museum’s irregular use of its building design, then, we believe that it is quite unlikely, on the record before us, that the Museum will prevail on its claims that Gentile’s photograph of the Museum is an infringing trademark use of the Museum’s building design.” *Id.* at 755.

For a broader discussion of the Rock and Roll Hall of Fame Museum trademark’s validity and architectural trademarks generally, see Andrew T. Spence, *When a Landmark Cannot Serve as a Trademark: Trademark Protection for Building Designs*, 2 WASH. U. J. L. & POLICY 517 (January 2000), [http://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1517&context=law\\_journal\\_law\\_policy](http://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1517&context=law_journal_law_policy).

<sup>135</sup> *Building Architecture*, Rock and Roll Hall of Fame Museum Online (2016), <https://rockhall.com/visit-the-museum/learn/building-architecture/>.

As long as a work satisfies each set of requirements, that work may qualify for any number of forms of intellectual property protection. For instance, when considering the statuette of the dancer above, the Supreme Court in *Mazer v. Stein* rejected the argument that “congressional enactment of the design patent law should be interpreted as denying protection to artistic articles embodied or reproduced in manufactured articles.”<sup>136</sup> According to the Court: “[T]he patentability of the statuettes . . . does not bar copyright as works of art,” precisely because the “dichotomy of protection for the aesthetic is not beauty and utility but art for the copyright and the invention of original and ornamental design for design patents.”<sup>137</sup> Therefore, a design may qualify as a work of art under copyright law and, at the same time, as an ornamental design under the design patent regime.

Many ordinary consumer objects are covered by multiple IP protections. For example, one package of disposable razors can contain patented, copyrighted and trademarked works. The razors themselves may be subject to a design patent provided their design is novel and non obvious.<sup>138</sup> The carton in which they are stored may also be patented, if it meets the same criteria. The logo on the packaging can serve as a trademark and any image incorporated in the logo can be copyrighted, provided it meets the regular standards of copyrightability, as can any advertising copy located on the packaging.<sup>139</sup>

***c) Specify for each form of protection***

***-the types of rights granted***

***-limits and exceptions***

***-duration of the protection***

***-threshold requirements for protection, e.g. originality, novelty, distinctiveness***

***-formalities to obtain the protection (if any)***

***-original owner of the right***

***-who has the right to sue***

***-treatment of foreigners***

***-any other element affecting/determining the protection***

The response to this question is incorporated into our response to question 2(a), above.

### 3 D PRINTING

***A session of the Congress is devoted to the analysis of the problems raised by the development of the 3D printing technology, the increasing availability of 3D printers and the digital dissemination of 3D modeling software both for commercial purposes and for private usage.***

***The expression “3D printing” is currently used to indicate various processes employed to synthesize and reproduce a three-dimensional object. It is also known as additive manufacturing (AM), but this definition is reductive since, from a file, there may also be a manufacturing process obtained by removing material. In the 3D printing, successive layers of material are formed under computer control to create or reproduce an object. A 3D printer is***

<sup>136</sup>*Mazer v. Stein*, 347 US 201, 215 (1954).

<sup>137</sup>*Id.* at 217, 218.

<sup>138</sup>*Borchard*, supra note 29 at 11.

<sup>139</sup>*Id.* at 14.

*a type of industrial robot, controlled by specific software that can be either proprietary, or acquired by license, or open source.*

*The 3d printing could stem from a 3D modelling or a tridimensional digitalization of a pre-existing object (that can be a model or a work). The 3D modeling is the process of developing a mathematical, three-dimensional representation of all the surfaces of an object via specialized software. The 3D model can be displayed as a two-dimensional image or can be physically created using 3D printing devices. The objects are produced from a 3D model, or file, or from other electronic data source.*

*The 3D technology can be used also for the 3D scanning/digitalization of existing physical objects, resulting in digital files (the reverse of 3D modeling).*

*The issues relating to the applicability of Intellectual Property in 3D printing can be subdivided into two categories:*

*i) issues and rules relating to the software, designs and devices employed for the production of 3D objects. This category is not affected by the features and the nature of the printed 3D object.*

*ii) Issues relating to the applicability of Intellectual Property in the creation of files and in the 3D printing of objects that are protected by Intellectual Property. For example, in Museums, the use of the 3D printing technology (digitalization and printing) can extend both to the replication and restoration of artifacts for on-site display and to the educational mission of the institutions with outside delivery of their artifacts.*

*This Section of the questionnaire is meant to survey the current situation and trends (possible evolution of solutions) in the legal framework applicable to the 3D printing ecosystem. For this purpose, please take into consideration the description above, but feel free, if you believe it useful, to add any other details and comments that you deem necessary.*

*You are requested to you answer the following questions to the end of showing the practices, the questioning and the legal responses, existing or expected. These latter can result from the application of legal or regulatory solutions - general or specific - or from court decisions or soft law.*

*NB: The questionnaire is long enough to enable a better understanding of the issues and answers. It is obvious that people called to respond can do so synthetically and answer only some of them.*

*1) Overview*

*a) Is there reason to distinguish, in legal terms, depending on whether the three-dimensional object is reproduced by an additive manufacturing process or by a material-removing manufacturing process? Do you believe that additive manufacturing requires a special legal treatment?*

Depending on the factual circumstances, 3D printing might implicate copyright, patent, and/or trademark/trade dress protection in the United States, as discussed further below. Currently we do not believe that there is legal relevance to whether the three-dimensional object is reproduced by an additive manufacturing process or by a material-removing manufacturing process, nor that additive manufacturing requires a special legal treatment in terms of intellectual property

protection. We acknowledge, however, that those views may change over time, as the law develops.

3D printing may also implicate other types of law besides intellectual property, such as laws regarding consumer safety and products liability, but that is beyond the scope of this questionnaire.

***b) Have there been, in your country, public or private initiatives aiming at supporting and legally framing the printing of three-dimensional objects? If this is the case, can you summarize the main lines and conclusions?***

There have been many conferences, symposia and papers that have looked at the business and/or legal implications of printing three-dimensional objects, examples of which are listed below. Most involve a survey of the legal issues concerning 3D printing.

Events:

In April 2016, the Cleveland-based law firm Benesch held its second annual 3D printing conference.<sup>140</sup> The conference focused on the potential of digital file licensing to replace the sale of physical products and posited that by 2018 the 3D printing industry could cause \$100 billion per year in intellectual property losses.<sup>141</sup>

In March 2015, the International Trademark Association (INTA) held a New York City conference entitled “3D Printing/Additive Manufacturing: Cutting-Edge IP and Business Implications.”<sup>142</sup> Panel topics were wide-ranging and included the effect on intellectual property of “the democratization of manufacturing”; the IP, products liability, safety, potential policy/tax issues raised by 3D printing; and an in-house perspective panel with John Cheek, senior corporate counsel for Caterpillar Inc. An alternate perspective to the popular music industry analogy was presented by co-authors of *Fabricated: The New World of 3D Printing*, Melba Kurman and Hod Lipson, in “3D Printing: The Next 25 Years – Why There Won’t Be a Napster Moment for Most Companies.”<sup>143</sup>

In February 2015, the CARDOZO ARTS & ENTERTAINMENT LAW JOURNAL held a symposium titled *3D Printing and Beyond: Emerging Intellectual Property Issues with 3D Printing and Additive Manufacturing*, focusing on the current commercial status of 3D printing and its IP implications.<sup>144</sup>

In September, 2014, Inside 3D Printing hosted the first political/legal 3D printing event in Washington, DC titled *Printing Politics*.<sup>145</sup> The event included a roundtable discussion on “Intellectual Property Challenges and the Changes to Culture Driven by Bottom-up, Peer-to-

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<sup>140</sup>What Every Business Must Know Today About 3D Printing, BENESCH ATTORNEYS AT LAW (April 21, 2016), <http://www.beneschlaw.com/3DPrintingSeminar/>.

<sup>141</sup>*Id.*

<sup>142</sup>*3D Printing/Additive Manufacturing: Cutting-Edge IP and Business Implications*, INTERNATIONAL TRADEMARK ASSOCIATION (March 10, 2015), [http://www.inta.org/Programs/Pages/2015-3D-Printing\\_Program.aspx](http://www.inta.org/Programs/Pages/2015-3D-Printing_Program.aspx).

<sup>143</sup>*Id.*

<sup>144</sup>2015 AELJ Spring Symposium: *3D Printing and Beyond: Emerging Intellectual Property Issues with 3D Printing and Additive Manufacturing*, 34 CARDOZO ARTS & ENT. L. J. 1 (2016).

<sup>145</sup>Eddie Krassenstein, *3D Printing & Legal Professionals to Discuss IP Issues at 3D Printing Political Conference on September 17*, 3DPRINT.COM, (June 10, 2016, 10:45AM), <https://3dprint.com/15006/3d-printing-politics/>.

Peer, Democratized Manufacturing,” in which IP litigator John Hornick likened the 3D printing industry to the music industry when the stream of peer-to-peer litigation began.<sup>146</sup>

#### Publications:

Various papers and articles have attempted to frame the legal issues involved in 3D Printing, e.g.,

- Mark A. Lemley, *IP in A World Without Scarcity*, 90 N.Y.U. L. REV. 460 (2015) (addressing the IP issues of a “post-scarcity” world made possible by 3D printing).
- Amir H. Khoury, *The Makings of an “Individualized-Industrial” Revolution: Three-Dimensional Printing and Its Implications on Intellectual Property Law*, 16 J. HIGH TECH. L. 1 (2015) (addresses principal challenges posed by 3D printing to intellectual property).
- Charles Cronin, *3D Printing: Cultural Property As Intellectual Property*, 39 COLUM. J.L. & ARTS 1 (2015) (concerning 3D printed “cultural property” and the applicable copyright concerns).
- Preeta Reddy, *Legal Dimensions of 3D Printing: Analyzing Secondary Liability in Additive Layer Manufacturing*, 24 COLUM. SCI. & TECH. L. REV. 222 (2014) (addressing copyright liability concerns for 3D printing services).
- Lucas S. Osborn, *Of PhDs, Pirates, and the Public: Three-Dimensional Printing Technology and the Arts*, 1 TEX. A&M L. REV. 811 (2014) (3D printing’s relationship to art, technology and intellectual property law).
- Michael Weinberg, *What’s the Deal With Copyright and 3D Printing?*, PUBLIC KNOWLEDGE (January 2013), [https://www.publicknowledge.org/files/What's%20the%20Deal%20with%20Copyright\\_%20Final%20version2.pdf](https://www.publicknowledge.org/files/What's%20the%20Deal%20with%20Copyright_%20Final%20version2.pdf).
- Kyle Dolinsky, Note, *CAD’s Cradle: Untangling Copyrightability, Derivative Works, and Fair Use in 3D Printing*, 71 WASH. & LEE L. REV. 591, 593 (2014) (discussing 3D printing issues including “whether CAD files are copyrightable, whether CAD files and 3D printed objects are derivative works protected by copyrights on already-existing works; and whether courts can adequately apply the fair use defense as currently constructed to cases in which defendants have 3D printed or created CAD files of copyrighted works”).
- Nathan Reiting, Note, *CAD’s Parallel to Technical Drawings: Copyright in the Fabricated World*, 97 J. PAT. & TRADEMARK OFF. SOC’Y 111, 112 (2015) (addressing copyrightability of CAD drawings used in 3D printing).

Various disputes have led to articles in popular media raising IP concerns (with varying levels of accuracy). For example:

The uploading to 3D design sharing and printing website Thingiverse of Settlers of Catan board game pieces.<sup>147</sup>

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<sup>146</sup>Eddie Krassenstein, *Experts & Law Makers to Meet Next Month to Discuss Intellectual Property Issues Within 3D Printing*, 3DPRINT.COM (August 7, 2014), <https://3dprint.com/11173/experts-law-makers-to-meet-next-month-to-discuss-intellectual-property-issues-within-3d-printing/>.

<sup>147</sup>Michael Weinberg, *3D Printing Settlers of Catan is Probably Not Illegal: Is This a Problem?*, PUBLIC KNOWLEDGE ONLINE (January 18, 2011), <https://www.publicknowledge.org/news-blog/blogs/3d-printing-settlers-catan-probably-not-illeg>.

Thingiverse hosting numerous designs featuring the Disney-owned Star Wars Yoda design.<sup>148</sup>

Shapeways, another 3D printing website, featuring a design file for the Super 8 film alien cube.<sup>149</sup>

Shapeways featuring 3D design files for Final Fantasy VII characters.<sup>150</sup>

In February 2016, private companies involved in various aspects of 3D printing submitted an amicus brief asking the Supreme Court to accept a petition for certiorari in a conceptual separability doctrine case, *Varsity Brands*, discussed above.<sup>151</sup> The brief argued that “[u]ncertainty over the line between copyrightable and noncopyrightable works can lead to over-claiming and over-categorization of material as copyrightable, upsetting the balance struck by Congress between the interests of rights holders and the societal benefits from a vibrant public domain.”<sup>152</sup> They requested the Court to “establish a single, clear test for conceptual separability.”<sup>153</sup>

In April 2016, two leading 3D printing companies (Shapeways, Inc. and Stratsys, Inc.), along with several other online tech companies, filed comments with the US Copyright Office regarding DMCA section 512.<sup>154</sup> Shapeways highlighted the concern with respect to users “targeted by copyright takedown requests [being] unable to respond with a counter notice within the system established by section 512.”<sup>155</sup> This concern, amongst others relating to IP interests, was further outlined in Shapeways’ 2015 Transparency Report.<sup>156</sup>

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148<sup>]</sup>Melba Kurman and Hod Lipson, *Why You Shouldn’t Worry About 3D Printed Piracy*, POPULAR MECHANICS ONLINE (May 30, 2014), <http://www.popularmechanics.com/technology/gadgets/a10687/why-you-shouldnt-worry-about-3d-printed-piracy-16841445/>; Steve Henn, *As 3-D Printing Becomes More Accessible, Copyright Questions Arise*, NPR ONLINE (February 19, 2013), <http://www.npr.org/sections/alltechconsidered/2013/02/19/171912826/as-3-d-printing-become-more-accessible-copyright-questions-arise>; Andy Greenberg, *Inside Thingiverse, The Radically Open Website Powering The 3D Printing Movement*, FORBES ONLINE (December 10, 2012), <http://www.forbes.com/sites/andygreenberg/2012/11/21/inside-thingiverse-the-radically-open-website-powering-the-3d-printing-movement/#4fdc34606e91>.

149<sup>]</sup>Michael Weinberg, *3D Printing Expands How You Should Think About Copyright: The Super 8 Cube Edition*, PUBLIC KNOWLEDGE ONLINE (June 28, 2011), <https://www.publicknowledge.org/news-blog/blogs/3d-printing-expands-how-you-should-think-about>.

150<sup>]</sup>Nick Statt, *Print Chop: How Copyright Killed a 3D-Printed Final Fantasy Fad*, CNET (August 16, 2013), <http://www.cnet.com/news/print-chop-how-copyright-killed-a-3d-printed-final-fantasy-fad/>.

151<sup>]</sup>Brief for Formlabs, Inc., Matter and Form, Inc., and Shapeways, Inc. as Amici Curiae, *Star Athletica, L.L.C. v. Varsity Brands, Inc.*, 2016 US LEXIS 3031 (US May 2, 2016), <https://www-cdn.law.stanford.edu/wp-content/uploads/2016/03/2016-02-08-Brief-Amici-Curiae-Formlabs-Inc.-et-al.pdf>.

152<sup>]</sup>*Id.* at 4.

153<sup>]</sup>*Id.* at 5.

154<sup>]</sup>Comments of Etsy, Foursquare, Kickstarter, MakerBot, Meetup, Shapeways, and Stratsys in the matter of Section 512 Study: Notice and Request for Public Comment, Docket No. 2015-7, April 1, 2016, <https://www.shapeways.com/wordpress/wp-content/uploads/2016/04/Comment-of-Etsy-et-al-in-512-Study.pdf>; Michael Weinberg, *Trademark and Copyright Safe Harbors*, THE SHAPEWAYS BLOG (April 4, 2016), <https://www.shapeways.com/blog/archives/24457-trademark-and-copyright-safe-harbors.html>.

155<sup>]</sup>*Id.* at 4.

156<sup>]</sup>*2015 Transparency Report*, SHAPEWAYS (2015), <http://www.shapeways.com/legal/transparency/2015>.

***c) Several different steps can be distinguished in the chain of 3D printing: modeling/scanning (by acquisition device or CAD software), digital distribution of 3D models, printing of three-dimensional objects. Do you believe that there are other important steps requiring specific legal analysis?***

The public distribution of the printed 3-dimensional objects might be considered a separate step, since printing a 3-dimensional object for private non-commercial purposes in some cases may have different legal implications from printing it *and* distributing it.

*2) 3D modeling / Creation of the file that will allow, downstream, the reproduction of an object with a 3D printing process*

***a) If a pre-existing (two or three dimensional) object is scanned/digitalized or modeled, must we consider that the person who carried out the digitalization or modeling can claim rights to the file? If so, under what conditions?***

## Copyright Law

Whether the person who created the 3D model file has any intellectual property right in that file depends on (i) the legal status of the pre-existing object, and (ii) whether that person contributed copyrightable new authorship.

### *Scanning a pre-existing object*

If a 3D model file is created simply by scanning a pre-existing 3D object, the resulting scan is merely a copy, and not a work of authorship in its own right. Moreover, unless the pre-existing 3D object is in the public domain, the copy may be infringing (see discussion, *infra*).

*Meshwerks, Inc. v. Toyota Motor Sales U.S.A., Inc.* affirmed that “[t]he fact that a work in one medium [digital cars] has been copied from a work in another medium [physical cars] does not render it any the less a copy.”<sup>157</sup> The person who created the scan would have no intellectual property rights in the model file.<sup>158</sup> (“Meshwerks copied Toyota’s designs in creating digital, wire-frame models of Toyota’s vehicles. But the models reflect, that is, ‘express,’ no more than the depiction of the vehicles as vehicles. The designs of the vehicles, however, owe their origins to Toyota, not to Meshwerks, and so we are unable to reward Meshwerks’ digital wire-frame models, no doubt the product of significant labor, skill, and judgment, with copyright protection.”<sup>159</sup>)

If, however, a 3D public domain object is scanned in a manner that demonstrates sufficient creative authorship to meet the originality requirement, *Meshwerks* suggests that the resulting 3D model file would be eligible for copyright protection. “[J]ust as photographs can be, but are not per se, copyrightable, the same holds true for digital models. There’s little question that digital models can be devised of Toyota cars with copyrightable features, whether by virtue of unique shading, lighting, angle, background scene, or other choices.”<sup>160</sup>

Furthermore, if the scan of a 3D public domain object is altered in a manner that demonstrates creative authorship, then the person who added that authorship would own a copyright in the resulting 3D model file.<sup>161</sup> (If the object of the scan is a copyright-protected 3D object, then the scan, even if no longer an exact copy, may still infringe; see discussion, *infra*). The court in *Lucky Break Wishbone Corp. v. Sears Roebuck & Co.* held that sanding and shaping a graphite wishbone-shaped electrode print of a 3D CAD file (produced by scanning a wishbone), “constituted sufficient original expression to support a copyright in the resulting plastic wishbones.”<sup>162</sup> Dale Hillesland, of Paraflex, Inc., “manipulated the graphite electrodes by hand to make the wishbone ‘more attractive and sleek looking’... On summary judgment, it was undisputed that these multiple variations were the intentional product of Hillesland’s creativity

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<sup>157</sup> 528 F.3d 1258, 1267 (10th Cir. 2008) (*citing* 1 Melville B. Nimmer & David Nimmer, NIMMER ON COPYRIGHT § 8.01(B) (2014)) (internal quotations omitted).

<sup>158</sup> *Id.* at 1268.

<sup>159</sup> *Id.* at 1269.

<sup>160</sup> *Meshwerks*, 528 F.3d 1258, 1269 (10th Cir. 2008).

<sup>161</sup> See Osborn, discussed in our response to question 1(b) under “Publications” (*citing Lucky Break Wishbone Corp. v. Sears Roebuck & Co.*, 373 F. App’x 752, 755 (9th Cir. 2010)).

If it was not the person who scanned the public domain object who changed the file with new creative authorship, but instead a third party, then the third party’s right to hold and exploit a copyright in the modified scan may depend on the terms of access to the original scan.

<sup>162</sup> *Lucky Break Wishbone Corp. v. Sears Roebuck & Co.*, 373 F. App’x 752, 755 (9th Cir. 2010).

and aesthetic design. They went beyond mere copying and did not serve a functional purpose; they were therefore sufficient to constitute original expression.<sup>163</sup> Modifying 3D design files, as well as the subsequent exchange of these modified files, frequently occurs via cloud sharing platforms such as Cashew or websites such as Thingiverse.

Finally, it is conceivable that choices made in the 3D printing process – e.g., selection of a particular 3D printing process to produce a smoother or more rounded print as in *Lucky Break*, or the selection of the particular material to be used for the print – could result in a copyrightable contribution.

*Scanning an object protected by copyright with permission*

If the 3D model file is created by scanning a copyright-protected object but the scan is made with the right holder’s permission, whether or not the person who scanned it can claim rights to the resulting 3D design file depends on whether he or she added copyrightable authorship, as well as on the terms of the license or permission granted.

*Scanning an object protected by copyright without permission*

If the 3D model file is created by scanning a copyright protected 3D object without permission, then the scan is an unauthorized copy. The 3D model file may then be an infringement of copyright in the object, unless there is an applicable copyright exception. The scanner will generally hold no rights in the scan.

If the person who creates such a scan makes changes to the 3D model file by adding creative authorship, the 3D model file may be a derivative work rather than a copy of the 3D object, analyzed similarly to the copy discussed above. In some circumstances, however, the person who added the creative authorship may have a copyright interest in the modified scan, e.g., if the use of the scan is deemed a fair use, or if that person makes sufficient changes to the 3D model file that it is no longer substantially similar to the scanned object.<sup>164</sup>

*Concerning use of the 3D scanning software*

Assuming the software is used pursuant to a valid purchase or license, there is no copyright violation in loading it and using it. Presumably the software creator would not have any rights in the resulting files of scanned 3D works (just as creators of document-scanning software have no rights in files created using their software), although one would have to refer to any restrictions in the license agreement.

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<sup>163</sup>*Id.*

<sup>164</sup>*Id.* (where “multiple” non-functional “variations” were sufficient to meet the originality requirement, see *Lucky Break* discussion in our response to question 2(a) *supra*).

## Trademark or Patent Law

The mere act of digitizing or modelling a 3D object would not provide the person who digitized or modelled the object with any trademark or patent rights.

***b) Is the modeling and the 3D scanning/digitalization of an object for private use allowed by the law in your country, and if so under what conditions? Distinguish, if necessary, according to the nature of the modeled or scanned/digitalized object (work of the spirit [work of authorship], model, invention ...) or the source of the used object. What about acts made for non-private use?***

The copyright implications of digitizing or modeling a copyright-protected 3D objects are discussed in our response to question 2(a), above. The US has no explicit private use exception under copyright law. For objects with copyright protection, a fair use exception might apply in some situations.<sup>165</sup> Fair use is applied on a case-by-case basis, and is discussed further in our response to question 2(a), *supra*.<sup>166</sup>

Scanning a trademark-protected object for one's own wholly private use is unlikely to trigger trademark law issues as there will not likely be a plausible argument as to consumer confusion. If in fact use extends beyond the person who scanned the object, then there is the possibility of post-sale confusion, which could support a trademark claim.

Scanning for non-private use could theoretically be the basis for a trademark or unfair competition claim, if the surrounding facts and circumstances suggest that it is being done with the authorization of the right owner and thus lead to consumer confusion. There are no cases on this issue of which we are aware. Printing 3D trademark-protected objects (discussed below) seems to be more likely to attract a trademark or unfair competition claim.

Scanning would trigger a patent claim only if the activity is deemed to be "producing" or "using" the patented subject matter. Scanning for individual private use is unlikely to attract a patent claim, however.

***c) When modeling or three-dimensional scanning for private use is permitted by the law (application of general law or special text), is this accompanied by a compensation mechanism in favor of the right-holders of the printed object? If so, can you specify the methods of collection and distribution?***

The US does not have any statutory license of this nature. If modeling/scanning is deemed fair use, no compensation is required.

### 3) Dissemination of 3D models / Making available of files for 3D reproduction

***a) Are there in your country websites legally distributing 3D files, for free or for a fee? If so, can you specify the business model and the legal model (licensing models, liability...)?***

Numerous websites legally distribute 3D files, both for free and for a fee (typically a combination).<sup>167</sup> Most websites selling/offering actual 3D design file downloads, such as Thingiverse and GrabCAD (described below), include in each download a "Creative Commons

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<sup>165</sup>See response to question 2(c) *supra* for a discussion of the fair use doctrine in US law.

<sup>166</sup>See Dolinsky, discussed in our response to question 1(b) under "Publications", at 667-71 (general 3D fair use analysis); see also Reddy, discussed in our response to question 1(b) under "Publications", at 235-238 (fair use analysis of a 3D printed Jeff Koons' Gorilla).

Public Domain Dedication license.”<sup>168</sup> Some users who offer 3D model files choose to include their own conditions.<sup>169</sup>

Shapeways, arguably the most popular site to date, allows registered users to purchase prints of featured 3D design files via Shapeways printing facilities. Users can also license 3D design files to Shapeways for sale in printed form, again for exclusive purchase of printed products delivered from a Shapeways printing facility.

Uploading files to Shapeways requires accepting Shapeways’ Terms & Conditions and asserting “that you own all copyrights for this 3D model or have authorization to upload and use it.”<sup>170</sup> Shapeways’ terms and conditions establish that users retain all IP rights in their uploaded 3D models, but grant a broad license:

By uploading your 3D Model to the Services, you grant Shapeways a non-exclusive, royalty free, worldwide, transferable, and sublicensable right and license (i) to use your 3D Model for the manufacturing of your 3D Model in order to fulfill your order; (ii) if you offer your 3D Model for sale through Shapeways, to use your 3D Model for the manufacturing of your 3D model in order to fulfill orders of your 3D Model made through Shapeways (iii), if you indicate that you want your 3D Model to be a CoCreator Model during the upload process (a) to display such CoCreator Model on the Shapeways Website and (b) to use and modify such CoCreator Model for the manufacturing of your model in order to fulfill the order of any other user of the Services; (iv) to generate and display 3D renders of your 3D Model; and (v) to use the 3D Model as necessary for the operation and maintenance of Shapeways Services including without limitation for the internal testing and educational purposes of Shapeways and Shapeways manufacturing partners.<sup>171</sup>

***b) Are there in your country platforms allowing users to share 3D files? If so, do these platforms raise legal problems (distribution licensing models, unauthorized making available ...)? Has there been any litigation? To your knowledge, did the right-holders conclude contracts with this type of platforms to authorize the making available of models created by users? If so, how the question of moral rights has been perceived.***

Thingiverse is MakerBot’s community for downloading, making, and sharing 3D design files.<sup>172</sup> The community is free to join and designs can be printed directly by purchasing any MakerBot 3D Printer.<sup>173</sup>

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<sup>167</sup> Many of the most popular sites are described here: Mathilde, *37 Marketplaces to Share, Buy and Sell Designs for 3D Printing*, MAKINGSOCIETY (July 11, 2013), <http://makingsociety.com/2013/07/37-3d-printing-marketplaces-to-share-buy-and-sell-3d-designs/>.

<sup>168</sup> CC0 1.0 Universal Public Domain Dedication, CREATIVE COMMONS, <http://creativecommons.org/publicdomain/zero/1.0/>.

<sup>169</sup> E.g., MorenaP, *Treefrog*, MakerBot THINGIVERSE (Mar 3, 2012), <http://www.thingiverse.com/thing:18479>.

<sup>170</sup> *Shapeways Terms and Conditions*, SHAPEWAYS (April 26, 2016), [http://www.shapeways.com/terms\\_and\\_conditions](http://www.shapeways.com/terms_and_conditions).

<sup>171</sup> *Id.*

<sup>172</sup> *About Thingiverse*, MAKERBOT THINGIVERSE (2016), <http://www.thingiverse.com/about/>.

<sup>173</sup> Andy Greenberg, *Inside Thingiverse, The Radically Open Website Powering The 3D Printing Movement*, FORBES ONLINE (December 10, 2012),

GrabCAD is Stratsys' community for downloading and sharing 3D design files. The community is free to join, as is the GrabCAD Workbench collaboration platform since February 2015 (previously a subscription model).<sup>174</sup>

Many 3D design files are posted by their right holders pursuant to Creative Commons licenses which permit their use. In some cases, the files and 3D printing is licensed by the right holder, Hasbro is one such rights holder that has been entering into revenue sharing SuperFanArt (Hasbro) Artist Agreements with Shapeways community designers since 2014.<sup>175</sup> The “notice and takedown” process historically used by websites hosting other forms of copyright-protected content is currently used by these websites.<sup>176</sup> 3D design file takedown requests typically come in two forms:

1. 3D design file creator requesting that an identical/similar design file be taken down. (E.g., Penrose Triangle takedown request, *infra*.)
2. Rights holder of an object requesting a 3D design file of the object be taken down. (E.g., Paramount Super 8 cubes cease-and-desist letter.<sup>177</sup>)

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<http://www.forbes.com/sites/andygreenberg/2012/11/21/inside-thingiverse-the-radically-open-website-powering-the-3d-printing-movement/#22dff9dd6e91>; <http://www.thingiverse.com/about/>.

<sup>174</sup>John Hayes, *GrabCAD Hits 500,000 Users. So Where's the Money?*, ENGINEERING.COM (March 11, 2013), <http://www.engineering.com/DesignSoftware/DesignSoftwareArticles/ArticleID/5437/GrabCAD-hits-500000-users-So-where-s-the-money.aspx>.

<sup>175</sup>After a successful pilot program granting My Little Pony character licenses to specific Shapeways designers, Hasbro and Shapeways launched the “Hasbro Superfan Marketplace” in August 2014. *Shapeways Hasbro Superfan Marketplace*, SHAPEWAYS (2016), <http://www.shapeways.com/engage/superfanart?s=0#more-products>. See also 2015 AELJ Spring Symposium: 3D Printing and Beyond: Emerging Intellectual Property Issues with 3D Printing and Additive Manufacturing, 34 CARDOZO ARTS & ENT. L. J. 1, 10 (2016); Duann, *Hasbro & Shapeways Enable 3D Printing Fan Art with SuperFanArt*, THE SHAPEWAYS BLOG (July 21, 2014), <http://www.shapeways.com/blog/archives/16759-hasbro-shapeways-enable-3d-printing-fan-art-with-superfanart.html> (both describing the Shapeways-Hasbro pilot program).

Any artist can now upload and sell designs of a range of Hasbro properties (including Transformers, Dungeons & Dragons, and GI Joe). *Submission Instructions, Shapeways Hasbro Superfan Marketplace*, *supra*. Artists simply upload the design to the Shapeways website with the appropriate settings and tags, receive a SuperFanArt (Hasbro) Artist Agreement via email, which they can sign by responding via email. *Id.* Artists then select printing materials and set the retail price based on a revenue sharing model with Shapeways and Hasbro. *Id.* According to Shapeways CEO Peter Weijmarshausen, “for a \$30 item, \$3.50 goes to Hasbro for licensing, \$6.50 to the artist, and \$20 to Shapeways for material and manufacturing costs.” Chris Ryan, *Mass Customization – Brought to you by 3-D Printing*, LAW360 (January 7, 2015), <http://www.law360.com/articles/605901/mass-customization-brought-to-you-by-3-d-printing>. It remains to be seen if and how the Artist Agreements will shift the intellectual property rights distribution on these products. Shapeways' general Terms and Conditions specify that designers “retain all [their] intellectual property rights in 3D Models, including and without limitation any and all derivative works like 3D renders.” *Shapeways Terms and Conditions*, SHAPEWAYS (April 26, 2016), [http://www.shapeways.com/terms\\_and\\_conditions](http://www.shapeways.com/terms_and_conditions).

<sup>176</sup>E.g., *Procedure for Reporting Copyright Infringement*, SHAPEWAYS (2016), [https://www.shapeways.com/legal/content\\_policy#a-procedure](https://www.shapeways.com/legal/content_policy#a-procedure).

<sup>177</sup>Nate Anderson, *Paramount: No 3D Printing Of Our Alien Super 8 Cubes!*, ARS TECHNICA (June 29, 2011 5:21PM EDT), <http://arstechnica.com/tech-policy/2011/06/paramount-no-3d-printing-of-our-alien-super-8-cubes/>.

As early as February 2011 Thingiverse received a DMCA takedown request for the “Penrose Triangle design.”<sup>178</sup> The party who posted it had reverse-engineered the design from one that Ulrich Schwanitz had posted for sale on Shapeways several weeks earlier.<sup>179</sup> Schwanitz ultimately granted permission to Thingiverse to host his design, so whether he had a valid legal claim to his 3D design file was never determined.<sup>180</sup>

Though many takedown requests have been filed since the Penrose Triangle incident, to our knowledge litigation has yet to be pursued to a judicial resolution. Several websites like Shapeways encourage users to resolve disputes internally.<sup>181</sup>

As far as we are aware, moral rights issues have not been raised in this context. Section 106A of the Copyright Act provides rights of attribution and integrity to works of visual art, but the definition of “works of visual art” excludes applied art,<sup>182</sup> and even where a work is included in the definition, the rights provided by section 106A don’t apply to reproductions of works of visual arts in applied art.<sup>183</sup>

*4) 3D printing / Reproduction of a work, a model or any other object protected by intellectual property rights*

***a) In your country is the 3D printing of an object for private use authorized by law (special law or application of general law), and if so under what conditions? Distinguish, if necessary, according to the nature of the modeled or scanned object (work of the spirit [work of authorship], model, invention ...) or the source of the file used. What about acts made for non-private use?***

We assume for purposes of this response that the 3D model file and the object it produces are protected by US copyright law. The Copyright Act has no explicit private use exception. 3D printing of an object for private use is permissible only if excused by an exception such as fair use. As described above, the applicability of the fair use exception is determined through a 4-factor case-by-case analysis.<sup>184</sup> It is important to distinguish between reproduction by an individual for her own use, and reproduction by a printing service provider for the ostensibly private use of its customers. The latter is less likely to be fair use, as discussed in our response to question 4(c).

Similarly, there is no private use exception under patent or trademark law either. An individual who 3D prints a trademark-protected shape solely for his own private use is unlikely to create any consumer confusion thereby, but where the individual creates 3D prints for non-private purposes, there is a risk of consumer confusion and potential liability under trademark and unfair competition laws. Where an individual prints a patent-protected 3D object solely for his own use she may be subject to a patent infringement claim if the activity is deemed to be “producing” or

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<sup>178</sup>Reddy, discussed in our response to question 1(b) under “Publications,” at 234.

<sup>179</sup>Peter Hanna, *The Next Napster? Copyright Questions as 3D Printing Comes of Age*, ARS TECHNICA (April 6, 2011 12:35AM EDT), <http://arstechnica.com/tech-policy/2011/04/the-next-napster-copyright-questions-as-3d-printing-comes-of-age/>.

<sup>180</sup>Cory Doctorow, *3D Printing’s First Copyright Complaint Goes Away, but Things are Just Getting Started*, BOING BOING (February 21, 2011), <http://boingboing.net/2011/02/21/3d-printings-first-c.html>.

<sup>181</sup>Duann, *IP, 3D Printing & DMCA*, THE SHAPEWAYS BLOG (February 20, 2011), <http://www.shapeways.com/blog/archives/747-IP,-3D-Printing-DMCA.html>.

<sup>182</sup>See 17 USC § 101 (definition of “works of visual art”).

<sup>183</sup>17 USC 106A (c)(3).

<sup>184</sup>See response to question 2(c) *supra* for an outline of the fair use analysis under 17 USC. §107.

“using” the patented subject matter. While such individual’s private use may be unlikely to attract a patent claim, 3D printing of patented objects for non-private purposes incurs a greater risk that such a claim will be asserted.

***b) When the 3D printing for private use is permitted by the law, is this accompanied by a compensation mechanism in favor of rights-holders of the printed object (and if so, which ones)? If applicable, can you specify the methods for collection and distribution? In general, do exist in your legislation legal license mechanisms or compulsory collective management benefiting different categories of intellectual property rights-holders (for example, copyright and designs and models)?***

N/A

***c) How does your legislation consider the activity of a service provider that prints 3D object at the request of an individual, for his private use? Is this service provider responsible for the acts of reproduction carried out? If so, can it absolve itself, totally or partially, of this responsibility?***

For the purposes of analysis, we consider “a service provider that prints 3D objects at the request of an individual,” companies such as Shapeways, described above, which makes and ships 3D prints of 3D design files to end-users upon request. Also, we note that the requesting individual’s professed intention to use the 3D print for private use does not necessarily excuse the acts of the service provider, as discussed more fully below.

### Copyright

We assume for this response that the 3D model file is copyright protected. This question has not yet been addressed by US courts.

We consider first the mere hosting of 3D design files uploaded by users to the service provider’s site. In such a case, the service provider can protect against liability for infringement by implementing the notice-and-takedown regime in section 512(c) of the US Copyright Act. As long as the service provider abides by the requirements of the statute, it will be protected against liability, direct or secondary.

When a service provider goes beyond hosting and actually makes the 3D print at a user’s request and sends the print to a user, such activity seems to go beyond the limitation of liability for “storage at the direction of a user” (17 USC §512(c)) or other service provider activities protected under section 512. In such circumstances, court may find that the “copy shop” model applies. In *Princeton University Press v. Michigan Document Services*,<sup>185</sup> the copy shop (“MDS”) was liable when its employees reproduced significant portions of copyrighted educational material for course packs (containing readings assigned by professors for a particular class) for students at a local university. The court found that fair use did not apply, principally because of the potential adverse effects on plaintiff’s market. MDS was a commercial enterprise, moreover, and could not “stand in the shoes” of its customers, for whom the copying might be fair use.<sup>186</sup>

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<sup>185</sup>99 F.3d 1381 (6th Cir. *en banc* 1996).

In *Cartoon Network LP v. CSC Holdings, Inc.*,<sup>187</sup> however, the Court of Appeals for the Second Circuit looked at activities done on behalf of a customer from a different perspective. The case involved a “remote DVR service” that Cablevision provided to customers of its cable television service. Customers could designate programs to be copied for them and stored in individualized areas on Cablevision’s hard drive, to be later transmitted to the customer at a time of her choosing. The court found that because Cablevision’s system made the copies automatically at the customer’s request, Cablevision lacked the element of “volition” necessary to a claim of direct infringement; it was, in effect, the customers who were making the copies. The court distinguished *Princeton University Press*, because MDS’s employees engaged in volitional conduct by operating the copy machines, binding the copies and selling them to students, subjecting MDS to liability for direct infringement.<sup>188</sup>

The volitional conduct issue was addressed by the Supreme Court in *ABC, Inc. v. Aereo, Inc.*<sup>189</sup> Aereo offered a service that captured over-the-air TV signals at customers’ request on individualized antennas, digitized those signals and stored them individually on Aereo’s server, from which they were transmitted to the requesting customer. Aereo made an argument analogous to that raised by Cablevision, that because the process commenced with the customer’s request to transmit programming, the transmission was the customer’s act, not Aereo’s, and therefore the transmission was not a performance by Aereo. It likened itself to a copy shop that merely allows patrons to use its machines for copying, but does not do the copying itself. The Court rejected this analogy and held that Aereo was not merely an equipment provider but instead was performing the requested programming. It cautioned, however, that “[i]n other cases involving different kinds of service or technology providers, a user’s involvement in the operation of the provider’s equipment and selection of the content transmitted may well bear on whether the provider performs within the meaning of the [Copyright]Act.”<sup>190</sup>

Based on these cases, it appears that 3D printing providers’ direct liability will likely depend on factors such as the source of the 3D design files (whether posted by third parties, supplied by the end user, or created or posted by the service provider at issue), on who selects the printing specifications, and on the degree of intervention on the part of the 3D printing provider.

The greater the level of intervention on the part of the 3D printing provider, the more likely it will be deemed analogous to a copy shop whose personnel make the copies. In some cases the provider’s conduct might be considered less proximate than that of such a copy shop. Part of the

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<sup>186</sup>The court did not reach the question whether the same copying, if done by the students individually, would qualify as fair use. *Id.* at 1389.

<sup>187</sup>536 F.3d 121 (2d Cir. 2008), *cert. denied*, 557 US 946 (2009).

<sup>188</sup>*Id.* at 131-32. The court also concluded that Cablevision did not publicly perform the programs in transmitting them to users, because only one person was capable of receiving the performance when transmitted from the individualized copy. This aspect of the *Cablevision* decision may have been substantially undermined by the US Supreme Court’s decision in *American Broadcasting Cos., Inc. v. Aereo, Inc.*, 134 S.Ct. 2498 (2014), discussed *infra*.

<sup>189</sup>134 S. Ct. 2498 (2014), 2014 US Lexis 4496. The Court addressed this issue in the context of performance rather than reproduction.

<sup>190</sup>134 S. Ct. 2498, 2507 (2014), 2014 US Lexis 4496. The balance of the Court’s opinion addressed whether Aereo was performing the programs *publicly*. The Court concluded that it was, though it took pains to limit the scope of its ruling. *Id.* at 2510-11.

case against copy shops rests on their “volitional conduct.”<sup>191</sup> 3D print shops likely do not have actual humans analyzing design file uploads. But the process or the nature of the service provided may require greater involvement by the service provider, in which case the service provider may be subject to direct liability.

Even if the 3D print provider is not liable for direct infringement, it may incur secondary liability. In *Sony Corp. of America v. Universal City Studios, Inc.*,<sup>192</sup> the Supreme Court ruled that Sony’s manufacture and distribution of a video recorder did not make it secondarily liable for the unauthorized copying of programming using the recorders. The Court viewed the recorder as a “staple article of commerce” that could be used for infringing or noninfringing purposes.<sup>193</sup> According to the Court, the manufacturer of such an article is not liable if the article can be used for noninfringing purposes (in that case, for permitted copying and fair use time-shifting).<sup>194</sup> If a court in a particular case were to view the 3D printing provider’s process as a mechanism to which the user is merely given access, then it could apply *Sony* on the ground that the process can be used for noninfringing as well as infringing purposes, and absolve the 3D printing provider from secondary liability.

If the “staple article of commerce” approach of *Sony* does not apply, then one would look at whether the print provider was liable for one of the recognized forms of secondary liability under copyright. Contributory liability requires knowledge of the infringing activity and a material contribution to it. The printing would definitely qualify as a material contribution; the question is whether the provider would be deemed to have specific knowledge of the infringement, which would depend on the facts of a particular case. Vicarious liability requires a direct financial benefit from the infringing conduct, and the right and ability to control it. Whether there is a direct financial benefit may depend on how payment is set up. If printing were done pursuant to a subscription, then a court may not view the provider as having a direct financial benefit from infringing conduct. Where the printing provider controls the printing process, arguably there is the right and ability to control the requesting party.

Finally, in *Metro-Goldwyn-Mayer Studios Inc. v. Grokster, Ltd.*,<sup>195</sup> the Supreme Court found Grokster liable for inducement of copyright infringement, for actively encouraging copyright

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191<sup>14</sup>In determining who actually ‘makes’ a copy, a significant difference exists between making a request to a human employee, who then volitionally operates the copying system to make the copy, and issuing a command directly to a system, which automatically obeys commands and engages in no volitional conduct. In cases like *Princeton University Press*, the defendants operated a copying device and sold the product they made using that device.” *Cartoon Network*, 536 F. 3d 121, at 132.

192<sup>15</sup>464 US 417 (1984).

193<sup>16</sup>*Id.* at 426.

194<sup>17</sup>*Id.* at 440.

195<sup>18</sup>545 US 913, 125 S. Ct. 2764, 162 L. Ed. 2d 781 (2005).

infringement by its customers.<sup>196</sup> Grokster suggests that a printing provider's conduct would have to be rather egregious to rise to the level of inducing infringement.<sup>197</sup>

## Trademarks

We consider first the mere hosting of 3D design files uploaded by users to the service provider's site. The notice-and-takedown regime of section 512 of the US Copyright Act does not apply to trademark claims. However, merely hosting such files likely would not rise to the level of direct trademark infringement or unfair competition, absent specific actions that the service provider did it in a manner to cause consumer confusion.

When a service provider goes beyond hosting and actually makes the 3D prints at a user's request and sends the prints to the user, those activities could be the basis for a claim of trademark infringement or unfair competition, but again, it may depend on the particular facts and circumstances.

There are essentially two types of secondary liability under trademark law. The first is contributory trademark infringement, which involves either inducing someone to infringe a trademark, or continuing to supply a product to "one whom it knows or has reason to know is engaging in trademark infringement."<sup>198</sup> Willful blindness can be deemed the equivalent of actual knowledge; to be willfully blind, "a person must suspect wrongdoing and deliberately fail to investigate."<sup>199</sup> Whether a 3D printing provider will be secondarily liable, then, will depend on its level of knowledge with respect to the infringing activities.

Vicarious liability for trademark infringement is different from that for copyright infringement: it requires a direct financial benefit and a particularized relationship with the direct infringer. The consequence is that it is unlikely that the 3D printing provider will be vicariously liable for trademark infringement for printing at the demand of the general public.<sup>200</sup>

## Patent Law

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<sup>196</sup>The Court cited as evidence of Grokster's intent to induce infringement: (1) Grokster's goal of exploiting a known source of demand for infringing works, former Napster customers; (2) its failure to develop filtering or other tools to minimize infringing use; and (3) its advertising-based business model which relied on high volume downloads of infringing copies for its commercial gain. 545 US at 939-40.

<sup>197</sup>According to the Court, "Grokster and StreamCast [were] not...merely passive recipients of information about infringing use. The record is replete with evidence that from the moment Grokster and StreamCast began to distribute their free software, each one clearly voiced the objective that recipients use it to download copyrighted works, and each took active steps to encourage infringement." *Id.* at 2772.

<sup>198</sup>*Inwood Labs. v. Ives Labs.*, 456 US 844, 854-55 (1982).

<sup>199</sup>*Hard Rock Café Licensing Corp. v. Concession Services, Inc.*, 955 F.2d 1143, 1149 (7th Cir. 1992).

<sup>200</sup>2015 AELJ Spring Symposium: *3D Printing and Beyond: Emerging Intellectual Property Issues with 3D Printing and Additive Manufacturing*, 34 CARDOZO ARTS & ENT. L. J. 1, 38 (2016).

We consider first the mere hosting of 3D design files uploaded by users to the service provider's site. The notice-and-takedown regime of section 512 of the US Copyright Act does not apply to patent claims. However, a passive host of such files is unlikely to be considered a patent infringer.<sup>201</sup>

Service providers and printing shops that actually make 3D prints of patented objects can be liable for direct patent infringement, regardless of the provider's level of knowledge.<sup>202</sup>

***d) Are there in your country websites offering 3D printing services on demand? If so, do the users have the option to share the object transmitted for printing? Are these websites implementing control measures of the transmitted or shared objects (control keywords, fingerprinting ...)? What is under your legislation the liability regime applicable to those websites (distinguish, if necessary, according to the nature of the service provided)?***

Most 3D design-sharing websites feature 3D printing services on demand. On demand models generally take one of two forms: direct or crowdsourced distribution. Shapeways (described above), began with two large "fab hubs" with industrial-sized 3D printers capable of mass production and rapid delivery times. Thingiverse (also described above) links users to 3D Hubs B.V., a 3D printing service with over thirty thousand private and professional on demand 3D printing services. Both models have proven highly successful and Shapeways has now expanded its network to offer both options.

These websites are aware of the various copyright implications and have already begun implementing copyright measures found in other disciplines and developing mechanisms such as versions of Content ID.<sup>203</sup> More long-standing anti-counterfeiting measures such as watermarks, as well as solutions more specific to 3D printing, have also been proposed.<sup>204</sup>

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201 "I think it's pretty unlikely that most file hosting sites or printer suppliers are going to infringe." *Id.* at 45. Both direct and indirect liability are statutory under US patent law. 35 USC § 271. With respect to direct infringement, websites simply hosting 3D design files do not directly infringe on patents because "direct infringement here means...one of a few statutory legally listed things like making, using, offer to sell or import." 2015 AELJ Spring Symposium, at 42.

There are two types of secondary liability for patent infringement, contributory liability (which involves selling, offering to sell or importing a component of a patentable invention), 35 USC §271(c), and inducement liability, 35 USC § 271 (b). Inducement liability requires, in addition to "actual knowledge of the patent and of infringement or willful blindness, which is a lot more than deliberate indifference... that you are doing something of active inducement...But I think it's highly unlikely that just hosting a forum for posting is going to be enough to be considered inducement." 2015 AELJ Spring Symposium, at 44. Contributory infringement "can only [be found] if you sell, offer to sell, or import...Secondly, the thing that you are selling, offering to sell or import has to be a component of a patented invention. And we already have case law from the court that tells us that a blueprint is not a component, software on a master disk is not a component. So I would say it seems highly unlikely that a 3D printer file that you use to make the thing is going to be deemed a component, given the current law we already have on the books." *Id.* See also Davis Doherty, *Downloading Infringement: Patent Law As A Roadblock to the 3D Printing Revolution*, 26 HARV. J. L. & TECH. 353, 360 (2012).

202 *Id.* Establishing secondary liability would likely be unnecessary where the principal actors can be charged with direct infringement.

203 PBS Idea Channel, *Will 3D Printing Break Copyright? Discussion with Shapeways General Counsel Michael Weinberg*, YOUTUBE (May 11, 2016), <https://www.youtube.com/watch?v=X1gmNeNzcto>.

204 Rebecca Hoffman, *Future-Proof*, BLOOMBERG BNA ONLINE (February 26, 2013), <http://www.bna.com/futureproof-b17179872508/>.

See response to question 4(c) above for liability regime analysis.

5) *Technical protection and information measures*

**a) *In the light of possible precedents in your country, does it seem to you that the apprehension of 3D printing acts within the private sphere through technological protection measures implanted in 3D printing devices or software is appropriate and feasible?***

It seems quite feasible from a technical perspective. For example, in 2012 researchers from the Institute for Critical Technology and Applied Science and the Virginia Tech Design, Research, and Education for Additive Manufacturing Systems (DREAMS) Laboratory filed a quantum dot detection technology patent application.<sup>205</sup> Quantum dots are nanocrystal semiconductors that “emit colored light in strict correlation to their size” when placed under certain types of light.<sup>206</sup> Quantum dots are already being used to manufacture high quality display screens and solar cells. The technology was acquired in 2014 by Quantum Materials Corporation (QMC).<sup>207</sup> QMC has combined the technology with its own semiconductor nanomaterials, which they embed in 3D printed objects “to produce a unique, physically uncloneable signature known only to [an] object’s manufacturer.”<sup>208</sup> This signature can be “read-out to identify genuine model numbers or genuine serial numbers.”<sup>209</sup> And many different types of technological measures are in use with respect to copyright-protected materials. Such protection measures are appropriate to the extent they do not completely foreclose permissible, non-infringing uses.

**b) *Are there in your country regulatory precedents or soft law aiming to impose to an industrial sector the implementation of technological protection measures to prevent copying?***

Technological protection measures can be used, but they are not mandated by law and the law enforces them only under certain circumstances. Under US copyright law, if a work falls under the Copyright Act, protection is afforded under 17 USC §1201: Circumvention of copyright protection systems. There is no similar provision under patent or trademark law.

**c) *Are there in your national legislation legal obligations to adapt certain categories of software to security standards? If so, how are these obligations applied in the field of free software?***

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<sup>205</sup>ICTAS-Supported Group Completes Patent Application for Fabrication of Physically Uncloneable Functions via Additive Manufacturing, VIRGINIA TECH INSTITUTE FOR CRITICAL TECHNOLOGY AND APPLIED SCIENCE ONLINE (December 6, 2012), <http://www.ictas.vt.edu/communication/fullStory.php?id=19;WO2015077471A1:PhysicallyUncloneableFunctionsViaAdditiveManufacturing>, GOOGLE PATENTS ONLINE (2016), <http://www.google.com/patents/WO2015077471A1?cl=en>. A similar international patent application was filed in 2011 by Swiss inventors Tamas Visegrady and Heiko Wolf: *WO 2012038842 A1 Product Embodying a Physical Uncloneable Function*, GOOGLE PATENTS ONLINE (2016), <https://www.google.com/patents/WO2012038842A1?cl=ko>.

<sup>206</sup>Jon Jacobi, *Quantum dots explained: How this nanotechnology could give OLED TVs a run for the money*, TECHHIVE (September 11, 2015), <http://www.techhive.com/article/2978857/smart-tv/quantum-dots-explained-how-this-nanotechnology-could-give-oled-tvs-a-run-for-the-money.html>.

<sup>207</sup>Michael Molitch-Hou, *Quantum Dots to Hinder 3D Printed Counterfeits*, 3D PRINTING INDUSTRY (July 1, 2014), <http://3dprintingindustry.com/news/quantum-dots-hinder-3d-printed-counterfeits-29081/>.

<sup>208</sup>*3-D Printing Anti-Counterfeiting*, Quantum Materials (2014), <http://www.qmcdots.com/products/products-3dprinting.php>.

<sup>209</sup>Colin Johnson, *3D Tetrapod Quantum Dots Outperform: TQD Can Create Uncrackable Anti-Counterfeiting for Chips*, EE TIMES (July 11, 2014), [http://www.eetimes.com/document.asp?doc\\_id=1323073](http://www.eetimes.com/document.asp?doc_id=1323073).

We assume this question is referring to whether software in certain categories is required to respond to technological measures designed to prevent unauthorized uses of 3D files. As far as we are aware, there are no laws to this effect. The law governing circumvention of technological measures that protect copyrighted works specifically states that:

Nothing in this section shall require that the design of, or design and selection of parts and components for, a consumer electronics, telecommunications, or computing product provide for a response to any particular technological measure, so long as such part or component, or the product in which such part or component is integrated, does not otherwise fall within the prohibitions of subsection (a)(2) or (b)(1) [banning trafficking in circumvention devices and services].<sup>210</sup>

On the other hand, the Copyright Act's provision on service provider non liability makes "accommodation of technology" a "condition of eligibility" for the statutory safe harbor, and states that "the service provider must accommodate and not interfere with 'standard technical measures.'"<sup>211</sup> It defines "standard technical measures" as

technical measures that: (1) are "used by copyright owners to identify or protect copyrighted works"; (2) "have been developed pursuant to a broad consensus of copyright owners and service providers in an open, fair, voluntary, multi-industry standards process"; (3) "are available to any person on reasonable and nondiscriminatory terms"; and (4) "do not impose substantial costs on service providers or substantial burdens on their systems or networks."<sup>212</sup>

To date, however, such "standard technical measures" may not exist because the participation of service providers in the development of the standard could disqualify them from immunity were the service providers to fail to accommodate the technical measure. Service providers therefore have every incentive to abstain from participation in developing a standard that meets statutory requirements.

Software facilitating the development, production or use of commodities such as certain defense or health care items, even if distributed freely, is nonetheless subject to other forms of regulation in the US, e.g.:

The International Traffic in Arms Regulations, 22 C.F.R. Parts 120-30 establish controls for defense articles and services and related technical data, as specified on the United States Munitions List. Some 3D scan/design/print software is capable of falling under this regulation.

3D printing software in the health care industry has already been proven subject to regulations for "medical devices regulated by the FDA's Center for Devices and Radiological Health (CDRH)," for "biologics regulated by the FDA's [Center for](#)

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<sup>210</sup>17 USC § 1201(c)(3).

<sup>211</sup>17 USC § 512(i)(1)(B).

<sup>212</sup>*Id.* § 512(i)(2).

[Biologics Evaluation and Research](#),” and for “drugs regulated by the FDA’s Center for Drug Evaluation and Research.”<sup>213</sup>

***d) Are digital signature or watermarking techniques (fingerprinting, watermarking ...) likely to be implemented to monitor and control the distribution and/or printing of 3D models? Is there any of such devices in your country? If so, can you describe it? In case it is or will be used a database of protected 3D models, what are or will be the obligations of the technical service? And what is or will be the consequence of the lack of registration of a model in such a database?***

See our responses to questions 4(c) and 4(d) above re watermarking. See our response to question 5(a) re technological measures and databases of protected 3D models.

For certain types of works, increased verification methods and “legitimate” prints will likely serve as alternatives to technical protection measures. Source verification methods are already being proposed to aid end-users seeking to print collectors’ items (items for which the source of value is in the fact that they are authentic) or specific mechanical/technical parts (items for which inauthenticity might have functional implications).<sup>214</sup> Whether or not they legally benefit from copyright protection for a 3D design file or print of copyrighted work, corporations such as Paramount have already started producing, selling and licensing their own 3D designs that provide a level of assurance (fidelity of the design itself to represent the object, quality of prints and appropriate print material) for which certain customers seem willing to pay.<sup>215</sup>

New York, New York

July 14, 2016

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<sup>213</sup>*3D Printing of Medical Devices*, US FOOD AND DRUG ADMINISTRATION (May 12, 2016), <http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/3DPrintingofMedicalDevices/default.htm>;

see also John Murray, *CDRH Regulated Software: An Introduction*, FDA Center for Devices and Radiological Health (April 7, 2010), <http://fda.yorkcast.com/webcast/Play/4dd89d860ce0449e927a0a8bb92be03f>; *Public Workshop – Additive Manufacturing of Medical Devices: An Interactive Discussion on the Technical Considerations of 3D Printing*, US Food and Drug Administration (October 8-9 2014), <http://www.fda.gov/MedicalDevices/NewsEvents/WorkshopsConferences/ucm397324.htm>.

<sup>214</sup>Nick Hall, *How to Defend Your Copyright in 3D Printing: Verification, Rather than Enforcement?*, 3D PRINTING INDUSTRY (May 12, 2016), <http://3dprintingindustry.com/news/defend-copyright-3d-printing-78699/>.

<sup>215</sup>See Anderson, *supra* note 177.