

3D-Printing: A new Challenge for Intellectual Property?



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Word count: 23,841 words

Research dissertation presented for the approval of Senate in fulfilment of part of the requirements for the Master of Law (LL.M.) in approved courses and a minor dissertation. The other part of the requirement for this qualification was the completion of a programme of courses.

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Chapter 1

Introduction

Presently, technology advances faster than most people ever imagined. Not too long ago, the first computer was invented and today we are at the point that almost everyone has his own computer or at least access to one. One of the 'newest' inventions in this field are so called 3D-printer. Not everyone has his own 3D-printer already, because affordable models of them are relatively new to the market. Although professionals have been using 3D-printing for quite some time, the private use of 3D-printer is relatively new. Possibly, one day 3D-printing will be similarly widespread as the use of PCs.

Although, 3D-printer per se exist since quite a long time, maybe not everyone knows about the existence of such 3D-printer, especially what they are able to do. The first 3D-printer was already invented in the 1980s, but at this time it was still an expensive procedure and thus not accessible for everyone and almost only used by professionals.¹ So, the first patent application for such a 3D-printer was filed in Japan, in May 1980, but unfortunately the full patent specification was subsequently not filed before the one year deadline after the application.² Nonetheless, a man called Charles Hull issued the first patent in 1986.³ In the further years, different patents have been issued for different 3D-printing technologies.⁴ The first selling of 3D-printers goes back to 1988.⁵ Nowadays, the processes are getting faster, while the materials and equipment are getting cheaper, and more materials are being used.⁶ Hence, printing machines nowadays range from the size of a car to the size of a microwave oven.⁷

However, as the appearance of the first 3D-printer is about 30 years ago, these days science is already so advanced that they can produce cheap 3D-printer for almost every person.⁸ Thus, today, 3D-printing is no longer just an industrial procedure; rather it is accessible for nearly everyone. On the Internet, personal 3D-printers for home use are already available for about 14000 ZAR.⁹

¹ http://en.wikipedia.org/wiki/3D_printing.

² <http://3dprintingindustry.com/wp-content/uploads/2014/07/3D-Printing-Guide.pdf> at 11.

³ *Ibid.*

⁴ *Supra* note 2 at 12.

⁵ *Ibid.*

⁶ <http://computer.howstuffworks.com/3-d-printing1.htm> at 2.

⁷ *Ibid.*

⁸ Stephanie Crawford 'How 3D-Printing Works' <http://computer.howstuffworks.com/3-d-printing.htm>.

⁹ See: <http://shop.3d-printer.co.za>.

In technical terms, 3D-printing belongs to the family of additive manufacturing, which means that the products are created by adding material to an object layer by layer.¹⁰ However, there are quite a wide range of different printing procedures existing. One of the most famous is the 3DP procedure where powder is the basis for the print. This powder gets mixed with glue to produce the printed object.¹¹ Another method is the SLS (Selective Laser Sintering) procedure, where the powder gets coalesced through a laser to print the object.¹² By the EBM (Electron Beam Melting) procedure, the powder gets coalesced through an electron beam.¹³ Different from this is the FFF (Fused Filament Fabrication) procedure, where the print is made with the help of already melted materials.¹⁴ In addition to this, we have the SLA (Stereolithography) procedure, where a basin full of photopolymer gets illuminated on certain points, which makes the photopolymer hard, in so doing producing an object.¹⁵ Similar to these works, the DLP (Digital Light Processing) procedure with the only difference that the light comes from a DLP projector.¹⁶ The MJM (Multi Jet Modelling) procedure is a mix of the SLA and FFF procedure, because the photosensitive synthetical comes out of the print head and gets immediately heated by a light which is also in the print head.¹⁷ The last procedure is the FTI (Film Transfer Imaging) procedure, in which a transporting film lays on a photosensitive synthetical which gets cured by a projector.¹⁸

In the beginning, 3D-printing was mostly used for creating products for the medical, dental, aerospace and automotive industries. However, now it crosses also over into toy and furniture manufacturing, art and fashion industries.¹⁹ Modern 3D-printers create their products with the help of a Computer-Aided Design (“CAD”) software, which includes the technical information for the printer to construct the object.²⁰ CADs can be created by a person or through the

¹⁰ Supra note 2.

¹¹ <http://3druck.com/grundkurs-3d-drucker/teil-2-uebersicht-der-aktuellen-3d-druckverfahren-462146/>.

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Supra note 2.

²⁰ Supra note 2.

use of a 3D-scanner, which works similar to a 2D-scanner by scanning an existing 3D object and sending the data to a computer. Thus, with the technology of 3D-printing, it is possible to create new products or to duplicate already existing articles (nearly) exactly either through the combination of a skilled person, who creates the CAD, and a 3D-printer or through the use of a 3D-scanner in combination with a 3D-printer.

As a result, the invention of 3D-printers allows people for example to produce their own home equipment. People can now also produce or reproduce their own cutlery or spare parts for certain products they need. They do not have to go to a shopping mall anymore to buy these things; rather with the right equipment, they can now produce a lot of everyday objects themselves.

The printing of certain objects became seamless, since through websites individuals can now easily up- and download CAD files.²¹ File sharing provides access for already finished CAD files, which users can simply download to print the desired object. Most of the time, the download of CADs is free, because they have been uploaded from other private CAD-creators. Thus, even people who do not have a 3D-scanner or are not able to create their own CAD can print their desired object through downloading a CAD.

Although the invention of 3D-printing can bring a lot of advantages to everyone, on a legal perspective the procedure of 3D-printing could stand in conflict with personal rights of third parties. Already the imagination, that someone can duplicate a work of art from a well-known artist easily with the help of a 3D-printer or people can create their own spare parts for damaged products, shows that there can be some issues with the owner of the genuine product. Also the possibility that people can duplicate complete products like fashion accessories or similar things from well-known brands may stand in conflict with the rights of a third party. It seems to be logical that the owners of the original product are not amused about the fact that everyone can easily, and without paying any remuneration to them, duplicate their products. Consequently, it is to examine how far there is a balance between the rights of the genuine owners and the reproducer.

²¹ E.g.: www.thingiverse.com; www.myminifactory.com; www.3dprinterworld.com and much more.

The most important rights, which state such a balance between these two parties, are the rights of intellectual property. Thus, an important question is to what extent 3D-printing conflicts with intellectual property rights. In general, intellectual property balances the rights between the owners of genuine products and their use through third parties. On the one hand the intellectual property rights give exclusive rights to the genuine owners, on the other hand they give as well some important exceptions for the use of third parts material.

Hence, the purpose of this work is to examine, which intellectual property rights are affected by the production of a 3D-printed object. In each of the following chapters I will look at the different categories of intellectual property rights. I will examine in how far the creators of a CAD, the uploaders who upload a CAD on a website for a free or commercial download, the website owners who facilitate that uploads and the printers, whether private or with a commercial purpose, may be in conflict with any intellectual property rights.

The most important intellectual property rights, which could be affected, are copyright, patents, registered designs, trade marks and passing off. For the present investigation it will be necessary to have a closer look at the different steps of the developing process of a 3D-printed product. More precisely, we have to differentiate between the creation of the CAD, the uploading of a CAD and finally the home-printing or the printing on demand through a specialised company. The aim of this work is to show how these single steps conflict with intellectual property rights and how the different actors in this process are liable for any infringing activity and in how far their activity is covered by any exception. Furthermore, we will also examine whether current legislation and jurisdiction appropriately address issues brought about by this new technology.

Because of the reason, that the issue of 3D-printing in relation to intellectual property is quite a new one, this work will occasionally have a look abroad to other jurisdiction how they already dealt with similar problems. With this in mind, especially the US, European and German jurisdiction and laws will be regarded.

Chapter 2

Copyright

A. What is copyright and what does it protect?

The current South African copyright law is regulated in the Copyright Act no. 98 of 1978 (“Copyright Act”). According to *Dean*²² copyright is “the exclusive right in relation to work embodying intellectual content (i.e. the product of the intellect) to do or to authorise others to do certain acts in relation to that work, which acts represent in the case of each type of work the manners in which that work can be exploited for personal gain or profit”. Copyright “protects the material expression of ideas apart from the physical embodiment of the work in which they are expressed”.²³ The protection of copyright has a limited duration and is subject to exceptions and limitations.²⁴ Furthermore, copyright is an unregistered right which means that it is granted automatically when its requirements are fulfilled without any need of application for a protection from the copyright owner.²⁵ When copyright is granted, the owner of the copyright has several exclusive rights, which are detailed in ss6 to 11B of the Copyright Act. The relevant copyright rights in the context of 3D-printing are described in s7 of the Copyright Act, namely the reproduction of a work in any manner or form, the publishing of a work if it was hitherto unpublished and the making of an adaptation of the work. Most frequently in the context of 3D-printing the violation to the copyright owner will be a violation through an unauthorised reproduction of a work under s7(a) of the Copyright Act.

In general, copyright protects ‘original works’.²⁶ S2(1) of the Copyright Act provides a list of different works, which are protected by copyright. The term ‘work’ in the Copyright Act is defined as a work contemplated in s2 of the Copyright Act.²⁷ This definition is very broad. In *Accesso CC*²⁸ the court stated that “a court has to exercise a value judgment on whether the material in which copyright is claimed constituted a ‘work’ or is too trivial to merit protection. Once it has been decided that a ‘work’ has been created, the further enquiry is whether it is of so commonplace a nature that it does not attract copyright. This

²² O H Dean *Handbook of South African Copyright Law* 1-1.

²³ Klopper et al. *Law of Intellectual Property in South Africa* 19.3.1.

²⁴ *Ibid.*

²⁵ *Supra* note 22 at 1-5.

²⁶ S2 of the Copyright Act.

²⁷ S1 of the Copyright Act.

²⁸ *Accesso CC v Allforms (Pty) Ltd and another* [1998] 4 All SA 655 (T) 668.

is an objective test but a court must also consider what the consequences would be of awarding copyright to a particular work”.

Furthermore, the ‘work’ must be ‘original’. This is the case, “if it has not been copied from an existing source and if its production required a substantial (or not trivial) degree of skill, judgement or labour”.²⁹ Nevertheless, “this does not mean that a work will be regarded as original only where it is made without reference to existing subject-matter”.³⁰ This means that the Copyright Act also protects a ‘work’ which is an infringement of another work.³¹

However, ‘original works’ are only protected if they are reduced to a material form under s2(2) of the Copyright Act, if they are made by a qualified person under s3(1) of the Copyright Act and if they are published under s2(1) of the Copyright Act.

When these requirements are met, the copyright law protects the owner of the copyright, who is not necessarily the author of the work.³²

As a general rule, the duration of copyright protection for ‘works’ relevant here, i.e., literary and artistic works, endures for the lifetime of the author plus a further period of 50 years commencing at the end of the year in which the author dies.³³ Exemptions to this can be found in s3(3) and (4) of the Copyright Act.

Furthermore, the Copyright Act differentiates between direct infringement and indirect infringement.³⁴

For a direct infringement³⁵ it needs an ‘objective similarity’ between the copyright protected and the infringed work. If such an ‘objective similarity’ is given, it “must be judged in the light of the state of the art as at the date of the making of the alleged original work”.³⁶ Furthermore, an ‘objective similarity’ is given when there is a “large degree of correspondence” between the two works.³⁷

²⁹ *Haupt t/a Softcopy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA).

³⁰ *Appleton and Another v Harnischfeger Corporation and Another* 1995 (2) SA 247, 262 (D).

³¹ S2(3) of the Copyright Act.

³² S23(1) of the Copyright Act.

³³ S3(2)(3) of the Copyright Act.

³⁴ S23 of the Copyright Act.

³⁵ S23(1) of the Copyright Act.

³⁶ *Bosal Africa (Pty) Ltd v Grapnel (Pty) Ltd* 1985 (4) SA 882 (C) 889 C-F.

³⁷ *Galago Publishers (Pty) Ltd and Another v Erasmus* 1989 (2) SA 276 (A) 294 B.

Another requirement is that a ‘substantial part’ of the work must be copied.³⁸ Although the term ‘substantial part’ relates to quality and quantity, the courts have decided that the quality plays the decisive role.³⁹

Finally, a causal link is required between the copyright work and the allegedly infringing work.⁴⁰ For this requirement, it must be proven that the alleged infringer had access to the copyright work.⁴¹

Indirect infringement is dealt with in s23(2) and (3) of the Copyright Act. S23 of the Copyright Act distinguishes two forms of indirect infringement: the unauthorised dealing with infringing copies of a work and the permitting of an infringing public performance of a work to take place.⁴² Thus, the first case of unauthorised dealing with infringing copies already implies a former infringement. Unlike direct infringement, indirect infringement requires ‘guilty knowledge’. ‘Guilty knowledge’ means a “notice of facts such as would suggest to a reasonable man that a breach of copyright law was being committed”.⁴³ However, the defendant’s conviction of non-infringement does not exclude ‘guilty knowledge’.⁴⁴

Finally, ss12 to 19B the Copyright Act provide several exceptions and limitations to copyright infringement, such as the ‘fair dealing’ exception for ‘personal or private use’ under s15(4) in conjunction with s12(1)(a) of the Copyright Act.

B. Copyright and 3D-printing

In the following, I will examine how the process of 3D-printing is influenced by copyright and whether this process can infringe copyright. This section addresses, in chronological order, the different activities commonly associated with 3D-printing: i.e., the creation of the CAD, the sharing of the CAD and,

³⁸ Supra note 23 at 27.2.2.

³⁹ Supra note 23 at 27.2.1; *Haupt t/a Softcopy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 475H-476B.

⁴⁰ Supra note 23 at 27.2.3.

⁴¹ Ibid.

⁴² Supra note 22 at 1-81.

⁴³ *Gramophone Co. Ltd v Music Machine (Pty) Ltd* 1973 (3) SA 188 (W) 207 (F). The definition was pursued in *Paramount Pictures Corp v Video Parktown North* 1983 (2) SA 251 (T) 261G-262D.

⁴⁴ *Nintendo Co Ltd v Golden China TV Game Centre and Others* 1995 (4) SA 421 (T) 442.

finally, the printing of the 3D object. Subsequent chapters will deal with other forms of intellectual property in a similar manner.

I. The creation of the CAD

As explained earlier, the CAD is the design on a computer needed to print the object. Based on the design, the 3D-printer creates the object.

There are two different ways to create a CAD: With the help of a 3D-scanner and through human craftsmanship. The question is whether these two methods of creating a CAD can infringe copyright. Another issue is whether copyright can be infringed through creating a copy of an already existing CAD.

1. Creation of a CAD with a 3D-scanner

3D-scanners allow people to convert physical objects into portable, alterable, digital files.⁴⁵ The state of modern technology today allows them to transform physical objects into highly accurate virtual models.⁴⁶

Before we approach the question of whether a copy of a physical object in the form of a CAD can infringe copyright, we need to examine which kinds of physical objects are capable for copyright protection. As already explained above, to be protected by copyright an object has to fall into one of the categories of copyrightable subject-matter. Physical objects would mainly fall into the category of ‘artistic work’.⁴⁷ A physical object could either be a ‘sculpture’, a ‘work of architecture’ or a ‘work of craftsmanship’. A ‘sculpture’ “includes any cast or model made for purposes of sculpture”.⁴⁸ ‘Works of architecture’ are either buildings or models of buildings. A ‘building’ in this case includes any structure.⁴⁹ A ‘work of craftsmanship’ is not further defined so that it covers every work of craftsmanship, which does not fall under any of the other categories of ‘artistic works’.⁵⁰

⁴⁵ Michael Weinberg *What’s the deal with copyright and 3D-printing?* 15.

⁴⁶ *Ibid.*

⁴⁷ S1 of the Copyright Act.

⁴⁸ S1 of the Copyright Act.

⁴⁹ S1 of the Copyright Act.

⁵⁰ S1 of the Copyright Act.

The definition of ‘sculpture’ in the Copyright Act appears unsatisfactory because it is a circular definition and only states that a sculpture includes any cast or model made for the purpose of a sculpture. The *Oxford Dictionary*⁵¹ defines a ‘sculpture’ as “the art of making two- or three-dimensional representative or abstract forms, especially by carving stone or wood or by casting metal or plaster”. This definition states that nearly every two- or three-dimensional representative or abstract form can be a ‘sculpture’ as long as it is art.

‘Works of architecture’ cover only ‘buildings’ and ‘models of buildings’. The structure of the building does not matter. This category is self-explanatory, resulting in copyright protection in every building and in every model of a building for a limited period of time.

Every physical object, which is not, a ‘sculpture’ or a ‘work of architecture’ could theoretically fall under ‘works of craftsmanship’. There is no comprehensive definition of ‘works of craftsmanship’ and because the scope of the term ‘work of craftsmanship’ is very wide we must consider how the scope of the term can or should possibly be narrowed.

The first South African Copyright Act (the Patents, Designs, Trade Marks and Copyright Act of 1916) had its origins in the British Copyright Act.⁵² Although the South African Copyright Act was amended several times, the current South African Copyright Act still shows a degree of similarity with the current British Copyright Act.⁵³ Thus, it could be helpful to have a look at UK law to see how they define the term ‘works of craftsmanship’.

In the UK the terms ‘works of craftsmanship’ and ‘sculpture’ require an aesthetic element.⁵⁴ Several claims in the UK for copyright for functional or useful objects have been unsuccessful.⁵⁵ The basis of these decisions is the differentiation between copyright and design protection.⁵⁶ Also a South African

⁵¹ <http://www.oxforddictionaries.com/definition/english/sculpture?q=sculpture>.

⁵² Supra note 22 at 1-4.

⁵³ Ibid.

⁵⁴ Davies et. al *Intellectual Property Law in the United Kingdom* 36.

⁵⁵ *Metix v G H Maugham* [1997] FSR 718; *J&S Davis (Holdings) v Wright Health Group* [1988] RPC 403; *Lucasfilm Ltd v Ainsworth* [2011] UKSC 39 (AC) 208; *George Hensher Ltd v Restawhile Upholstery (Lancs) Ltd* [1976] AC 77.

⁵⁶ *Lucasfilm Ltd v Ainsworth* [2011] UKSC 39 (AC) 222.

court decision from 2005 states that a ‘work of craftsmanship’ requires some kind of ‘artistic’ element and should not have a primarily utilitarian purpose.⁵⁷

In British copyright law there is also an explicit exclusion for ‘graphic works’, ‘photographs’, ‘sculptures’, or ‘collages’ that are protected as ‘artistic work’ ‘irrespective of artistic quality’, which is not given for the term ‘work of craftsmanship’.⁵⁸ Such an exclusion exists in the South African Copyright Act as well, but also comprises the term of ‘work of craftsmanship’.

Moreover, s15(3A) of the Copyright Act states that “the copyright in an artistic work of which three-dimensional reproductions were made available, whether inside or outside the Republic, to the public by or with the consent of the copyright owner (hereinafter referred to as authorised reproductions), shall not be infringed if any person without the consent of the owner makes or makes available to the public three-dimensional reproductions or adaptations of the authorised reproductions, provided the authorised reproductions primarily have a utilitarian purpose and are made by an industrial process”. Consequently, as an argumentum e contrario out of s15(3A) of the Copyright Act, there must be a possibility of copyright protection for three-dimensional objects with a primarily utilitarian purpose. In other words, the law implies that there are ‘artistic works’ which have primarily utilitarian purposes and denies their infringement in certain circumstances.

In conclusion, based on the wording of the Copyright Act itself, an ‘artistic’ element is not required for ‘work of craftsmanship’. Furthermore, such an assumption would also be a contradiction in respect to s15(3A) of the Copyright Act. Also the judge in the above mentioned *Helm Textile Mills*⁵⁹ case seems not quite sure, if a ‘work of craftsmanship’ really requires an ‘artistic’ element and justifies his holding, that there is no copyright infringement, finally with exception under s15(3A) of the Copyright Act. As a result, there is as a general principle copyright protection for ‘work of craftsmanship’ in every physical object.

S23 of the Copyright Act deals with possible infringements by way of scanning an artistic work. As per s7(a) of the Copyright Act, the owner of the copyright

⁵⁷ *Helm Textile Mills (Pty) Ltd v Isa Fabrics CC & others* [2005] JOL 14423 (T) para. 25.

⁵⁸ S4(1)(a) of the Copyright, Designs and Patents Act 1988 (“CDPA”).

⁵⁹ *Supra* note 57 at 26.

has the exclusive right to reproduce the work in any manner or form. A ‘reproduction’ “in relation to an artistic work, includes a version produced by converting the work into a three-dimensional form or, if it is in three dimensions, by converting it into a two-dimensional form”.⁶⁰ Thus, the term ‘reproduction’ includes the reproduction of a three-dimensional object to a computer graphic, resulting in an infringement as per s23(1) of the Copyright Act, if a ‘reproduction’ is made without the permission of the right-holder.

However, as already mentioned, the Copyright Act provides several exemptions from infringement.⁶¹ The most important exception in this context is the exception of s15(4) in conjunction with s12(1)(a) of the Copyright Act. This is the ‘fair dealing’ exception for ‘personal or private use’. Accordingly, there is no infringement as long as the scanning and creating of the computer file is for personal or private use and is in the scope of ‘fair dealing’. There is no definition in the Copyright Act and no current case law about the issue what ‘fair dealing’ exactly means. Thus, the definition would seem vague.⁶² However, maybe ideas from another jurisdiction could shed more light on the matter.

Canada has under s29 of its current Copyright Act (Copyright Act of Canada) as well a ‘fair dealing’ provision for certain activities, which are excluded from copyright infringement. Canada has also no definition of the term ‘fair dealing’ in its Copyright Act, but has determined the scope of this term through court decisions. The test if any use falls under the ‘fair dealing’ provision in Canada consists two steps: (1) the court has to look, whether or not the dealing is for one of the allowable purposes under s29; (2) the court has to determine, whether or not the dealing is fair, by considering: (a) the purpose, character and amount of the dealing, (b) the existence of any alternatives to this dealing, (c) the nature of the work, and (d) the effect of the dealing on the work.⁶³

Also in the South African literature it is said that a ‘fair dealing’ “means using the work to the extent reasonably necessary for a particular purpose while being careful not to prejudice the author by taking excessive amounts of the work

⁶⁰ S1(1) of the Copyright Act.

⁶¹ S12-19B of the Copyright Act.

⁶² Supra note 22 at 1-93.

⁶³ See *Society of Composers, Authors and Music Publishers of Canada v. Bell Canada* 2012 SCC 36; *Alberta (Education) v. Canadian Copyright Licensing Agency (Access Copyright)* 2012 SCC 37.

concerned”.⁶⁴ The quality and the quantity of the copyright work taken should be considered to determine whether the dealing is ‘fair dealing’ or not.⁶⁵

However, it is still hard to say, if South African courts follow the literature and/or if similar requirements as in Canada shall apply for the South African ‘fair dealing’ provision. A South African test case is needed to set up the requirements for the term of ‘fair dealing’ in South Africa. Nevertheless, in my opinion, South African courts would probably not deviate much from the requirements which Canada sets up for a ‘fair dealing’.

Consequently, a single person who wants to scan a three-dimensional object for his own personal and private use is not guilty of any copyright infringement, as long as this use is still in the scope of ‘fair dealing’. What is comprised in the scope of ‘fair dealing’ has still to be decided in a test case, however, the Canadian practice could be a guidance how South African courts will deal with the scope of ‘fair dealing’.

This would be different, however, if the person makes the scans for a commercial purpose or a number of other people. In these cases, the fair dealing exception for private or personal use would be no longer apply.

Therefore, the scanning of a three-dimensional object which creates a CAD could be an infringement of copyright as per s23(1) of the Copyright Act.

Other relevant exceptions for this issue could be the exceptions of s15(4) in conjunction with s12(4) of the Copyright Act and s15(4) in conjunction with s12(12) of the Copyright Act. S15(4) in conjunction with s12(4) of the Copyright Act provides that the copyright in an artistic work “shall not be infringed by using such work, to the extent justified by the purpose, by way of illustration in any publication, broadcast or sound or visual record for teaching: Provided that such use shall be compatible with fair practice and that the source shall be mentioned, as well as the name of the author if it appears on the work”. The term ‘by way of illustration’ must be interpreted as meaning ‘by way of example, for the purposes of clarification’.⁶⁶ Furthermore, the term of ‘teaching’ does not only comprise to teaching at the more obvious educational institutions, rather it has a broader scope and, for example, also comprises the teaching of an apprentice in

⁶⁴ AJC Copeling *Law of South Africa Volume 5(2) Copyright* 35.

⁶⁵ Ibid.

⁶⁶ Ibid.

the course of a contract of apprenticeship.⁶⁷ What exactly a ‘fair practise’ is in this context is not further defined. However, in my opinion, the term of ‘fair practice’ should be interpreted in the same way as the term ‘fair dealing’ to avoid any (unfair) contradictions in copyright law. Thus, if these requirements are fulfilled, there is also an exception for teaching purposes, for example, if a teacher wants to show his students how 3D-printing equipment works.

S15(4) in conjunction with s12(12) of the Copyright Act states that the copyright in an artistic work “shall not be infringed by the use thereof in a bona fide demonstration of radio or television receivers or any type of recording equipment or playback equipment to a client by a dealer in such equipment”. This exception is self-explanatory and gives exceptions for dealers who want to do a presentation of how 3D-printing equipment works to their clients.

2. Creation of a CAD through human craftsmanship

The other way to create a data file for 3D-printing is the creation through CAD-software. Such software is widely used by designers, engineers and architects to visualise physical objects before they become reality.⁶⁸

An important difference between the creation of the 3D-file through a 3D-scanner and a CAD is that a reproduction by scanner is virtually identical with the original while a work through human craftsmanship often, albeit unintentionally, contains deviations from the original. This said, even the work of a CAD creator could still infringe the physical copyright object.⁶⁹

Thus, when considering an infringement under s23(1) of the Copyright Act, one needs to confirm objective similarity, and whether the copy forms a substantial part of the physical object and the created CAD-file. In principle, however, it makes no difference for copyright whether a CAD is created via scanning or through human craftsmanship.

Here again, the aforementioned exceptions of s15(4) in conjunction with s12(1)(a) of the Copyright Act, s15(4) in conjunction with s12(4) of the

⁶⁷ Ibid.

⁶⁸ Michael Weinberg *It Will Be Awesome, if They Don't Screw It Up: 3D-Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology 2*.

⁶⁹ See s2(3) of the Copyright Act; supra note 23 at 21.2.1.3; *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 470D-F.

Copyright Act and s15(4) in conjunction with s12(12) of the Copyright Act, may become relevant.

3. Copying of an already existing CAD

Another copyright-relevant activity could be the copying of an already existing CAD that contains the model for a 3D-print. First of all, we need to examine whether copyright subsists in a CAD.

As described above, copyright protection requires creating an ‘original work’ that exists in material form. The requirement of material form poses no problems, because the term also includes a representation in digital data.⁷⁰

As for the requirement of ‘original work’, a CAD created through a scanner could fall under photographs under s2(1)(a) of the Copyright Act.⁷¹ The key question is, however, whether a scan fulfils the requirement for an ‘original work’ or whether it is too trivial for copyright protection.⁷² The answer to this question is to be found in an objective test.⁷³ While there is an abundance of cases in South Africa addressing the originality requirement, there is no South African case law specifically dealing with scanning. An English court has, however, stated in the past that “originality presupposes the exercise of substantial independence, skill, labour, judgement and so forth. For this reason, it is submitted that a person who makes a photograph merely by placing a drawing or painting on the glass of a photocopying machine and pressing the button gets no copyright at all for the scanning of an object”.⁷⁴ UK copyright law and South African copyright law have similar requirements for ‘originality’⁷⁵ and, thus, it seems appropriate to follow this English judgment. Hence, there is no ‘originality’ in a sole scan of an object and the scan of the CAD has no copyright protection under s2(1)(a) of the Copyright Act. The scanning is just a copy of an existing source and there is no relevant degree of skill, judgement and labour of a

⁷⁰ S2(2) of the Copyright Act.

⁷¹ Lucas S. Osborn *Regulating Three-Dimensional Printing: The Converging Worlds of Bits and Atoms* 590.

⁷² *Supra* note 28.

⁷³ *Waylite Diaries CC v First National Bank Ltd* 1995 (1) SA 645 (A) 650D.

⁷⁴ *Antiquesportfolio Com Plc v Rodney Fitch & Company Ltd* 2001 ECDR 5.

⁷⁵ *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 473E.

human being involved by just putting an object under a scanner and pressing a button to start the scanning.

This said, the creation of a CAD through human craftsmanship could lead to a different outcome. There is an obvious analogy between the creation of a CAD and a hand-drawing, so that such a creation of a CAD could fall under ‘drawings’ under s2(1)(a) of the Copyright Act.⁷⁶ In relation to the ‘originality’ requirement it can be said that in this case the human being has much more to do than only activating a scanner. Such creation of a 3D-file out of a physical object or out of ideas demands a certain degree of skill, judgement and labour and is certainly not trivial. Thus, the file created can be an original work that attracts copyright protection, even in cases in which the CAD itself is an infringing work as infringing works are also eligible for copyright protection.⁷⁷

In summary, there can be no infringement in a CAD created through a 3D-scanner because this creation is not eligible for copyright. In contrast, there is the possibility of an infringement of a CAD created by a human being. If someone copies someone else’s CAD this can be a direct infringement under s23(1) of the Copyright Act provided the other requirements for an infringement are fulfilled. Such an infringement will mostly occur through the unauthorised violation of the authors right of reproduction under s7(a) of the Copyright Act. An infringement even occurs if the CAD-file is already infringes another copyright work.⁷⁸

Once again, the aforementioned exceptions of s15(4) in conjunction with s12(1)(a) of the Copyright Act, s15(4) in conjunction with s12(4) of the Copyright Act and s15(4) in conjunction with s12(12) of the Copyright Act, may become relevant.

II. The uploading and sharing of the CAD

Another copyright-relevant activity could be the uploading and sharing of an infringing CAD on a website.

⁷⁶ Supra note 69.

⁷⁷ Supra note 23 at 21.2.1.3; *Haupt t/a Soft Copy v Brewers Marketing Intelligence (Pty) Ltd* 2006 (4) SA 458 (SCA) 470D-F.

⁷⁸ Copeling *Copyright Law in South Africa* 66.

There are already a lot of websites through which people can share their CADs.⁷⁹ On some websites the download of the CAD is free⁸⁰ while on others users you have to pay⁸¹ for the download.

The key question in these cases concerns the liability for the upload of infringing CADs. Is it only the uploader, if at all, who is liable or has the website owner also some liability for infringing uploads on a website?

1. Liability of the uploader

An uploader may be liable for indirect copyright infringement under s23(2)(b) or (c) of the Copyright Act. The uploader of the CAD can be the creator of the already infringing CAD or a third person. From this it follows that there are two possibilities how indirect infringement can occur: (1) the uploader distributes or sells a CAD which he himself has created and which is of an infringing nature, or (2) the uploader did not create the CAD but distributes or sells a copyright protected or infringing CAD without permission.

S23(2)(b) of the Copyright Act states that any person “without the licence of the owner of the copyright and at a time when copyright subsists in a work sells, lets, or by way of trade offers or exposes for sale or hire in the Republic any article if to his knowledge the making of that article constituted an infringement of that copyright or would have constituted such an infringement if the article had been made in the Republic”. In other words, anyone who offers an already infringing article or an article which is copyright protected without the authorisation of the copyright owner on a file-sharing website for a commercial purpose is guilty of indirect infringement, if he knows that there was a third party copyright in the article. This so called ‘guilty knowledge’ requires of the alleged infringer a “notice of facts such as would suggest to a reasonable man that a breach of copyright law was being committed”.⁸² Even the conviction of the allegedly infringing person that he does not infringe copyright does not exclude ‘guilty knowledge’.⁸³ Thus, as already mentioned above, when the uploader is also the

⁷⁹ E.g.: www.thingiverse.com; www.myminifactory.com; www.3dprinterworld.com.

⁸⁰ Like www.thingiverse.com.

⁸¹ Like www.threeding.com.

⁸² *Gramophone Co. Ltd v Music Machine (Pty) Ltd* 1973 (3) SA 188 (W) 207F.

⁸³ *Nintendo Co. Ltd v Golden China TV Game Centre and Others* 1995 (4) SA 421 (T) 442.

creator of an infringing CAD he will most of the time know or ought to know that he is infringing copyright. Consequently, he will be guilty of indirect infringement. However, if the uploader uploads a copyright protected work of a third party, the court has to prove that he had already known about the copyright protection in the work.

S23(2)(c) of the Copyright Act states that any person “without the licence of the owner of the copyright and at a time when copyright subsists in a work distributes in the Republic any article for the purposes of trade, or for any other purpose, to such an extent that the owner of the copyright in question is prejudicially affected if to his knowledge the making of that article constituted an infringement of that copyright or would have constituted such an infringement if the article had been made in the Republic”. This category covers the distribution - which is not on a commercial scale - as this behaviour could also harm the owner of the copyright. In this scenario, the copyright owner is exposed to the risk that his copyright protected work is now distributed to ‘millions’ of people. Especially in the case of uploading a file to a file-sharing website, the uploader has usually no control over the downloads. In other words, the uploader makes the copyright protected file available to an unknown number of people and cannot control who downloads the file. This means that the upload of a copyright protected CAD or infringing CAD is a distribution to “such an extent that the owner of the copyright in question is prejudicially affected”. Thus, even the upload without a commercial ulterior motive can lead to indirect copyright infringement.⁸⁴

In addition, the uploader could also be liable for criminal offences as per s27 of the Copyright Act. S27(1)(b) and (f) of the Copyright Act are of particular relevance here and are thus discussed below.

According to s27(1)(b) of the Copyright Act “any person who at a time when copyright subsists in a work, without the authority of the owner of the copyright sells or lets for hire or by way of trade offers or exposes for sale or hire articles which he knows to be infringing copies of the work, shall be guilty of an offence”. The wording is similar to the wording of 23(2)(b). However, different to the objective test for ‘guilty knowledge’ for indirect copyright infringement,

⁸⁴ See to this problem as well the US case: *A&M Records Inc v Napster Inc* 239 F.3d 1004 (9th Cir. 2001) para. 19.

the test for criminal copyright infringement is a more subjective one and requires *dolus* (intention) and not only *culpa* (negligence).⁸⁵ This said, even the *dolus* requirement will usually not be hard to prove if the uploader is the same person as the creator.

According to s27(1)(f) of the Copyright Act “any person who at a time when copyright subsists in a work, without the authority of the owner of the copyright distributes for any other purposes to such an extent that the owner of the copyright is prejudicially affected, articles which he knows to be infringing copies of the work, shall be guilty of an offence”. This means that the criminal offence also includes the sole distribution.

The punishment for criminal offences is an expensive fine or jail.⁸⁶ More specifically, “a person convicted of an offence under this section shall be liable in the case of a first conviction, to a fine not exceeding five thousand rand or to imprisonment for a period not exceeding three years or to both such fine and such imprisonment, for each article to which the offence relates”.⁸⁷ In any other case, the person convicted of an offence under s27 of the Copyright Act will be liable to a fine not exceeding ten thousand rand or to imprisonment for a period not exceeding five years or to both such fine and such imprisonment, for each article to which the offence relates.⁸⁸

No exception or limitation appears to be applicable for commercial file-sharing, i.e., when the uploader receives money for the file, because this can obviously not fall under any ‘fair dealing’. However, the ‘fair dealing’ exception for ‘personal and private use’ may apply to free file-sharing.⁸⁹ As already mentioned above, South Africa has neither a definition of ‘fair dealing’ in its Copyright Act, nor case law further defining this term. Nonetheless, we have already taken a look abroad to the Canadian ‘fair dealing’ exception. As we saw there, two important requirements, whether a dealing is ‘fair’ or not, are the purpose, character and amount of dealing and the effect of the dealing on the work. The uploading of a CAD-file on any website to share it seems to be an offer to an unknown amount of people. Even the uploader does not know how many people

⁸⁵ *S v Nxumalo* 1993 (3) SA 456 (O);supra note 22 at 1-87.

⁸⁶ S27(6) of the Copyright Act.

⁸⁷ S27(6)(a) of the Copyright Act.

⁸⁸ S27(6)(a) of the Copyright Act.

⁸⁹ S15(4) in conjunction with s12(1)(a) of the Copyright Act.

will download his file and make use of it. Also the effect on the work can be quite harmful, because through an upload on a website, the work will mostly be distributed around the whole world that everyone can download it. Even if we are not sure, if South African courts will set out the same requirements for ‘fair dealing’ as Canada, in my opinion, such a distribution of a copyright protected work to an uncertain amount of people and mostly around the whole world cannot be in the scope of ‘fair dealing’ anymore. The uploader makes the copyright protected work almost accessible to everyone and does not know in which way downloader will use it and opens the opportunity for a lot of misuses of the copyright protected work. The uploader has virtually no hold over his uploaded files anymore.

2. Liability of the website owner

Another question is whether a website owner is liable for infringing CADs uploaded to the website. As mentioned above, two types of websites need to be distinguished here: the free ones and those, which host the files for sale. And one could ask whether website owner of websites offering free files should be treated differently to website owner of websites offering files for sale.

There is no current South African case law existing, which issues this problem. However, the German *BGH*⁹⁰ and the *Supreme Court of the United States*⁹¹ denied a stricter liability only because the website owner gains any profit. Hence, courts seem to not find it necessary to put stricter liability on commercial website owners. As always, it is of course uncertain whether South African courts will come to the same conclusion. Yet, these decisions can provide an indication how the South African courts may decide in such cases.

Another issue for the liability of website owners is how their websites are organised. There are two possibilities how the CAD-files can be shared on a website: Either, the website is organised as a peer-to-peer network or the website is organised as an online marketplace.⁹²

⁹⁰ BGH I ZR 216/7, 16.05.2013 at 9: This is only the opinion of the lower court, but the BGH does not contradict.

⁹¹ *Tiffany Inc. v. eBay Inc.* 600 F.3d 93 (2d Cir. 2010).

⁹² http://en.wikipedia.org/wiki/3D_printing_marketplace; <http://3dprintingforbeginners.com/3d-model-repositories/>; e.g. *threeding* is such an online market place, because they act similar like

In short, a peer-to-peer network is a decentralised communications model in which each party has the same capabilities and either party can initiate a communication session. The key feature of such a peer-to-peer network is that each connected user is allowed to function as a server and client.⁹³

The other form, how the website could be constructed is as an online market place. In brief, this means that multiple third parties provide the product and inventory information, whereas transactions are processed by the marketplace operator (i.e. the website owner).⁹⁴

a) Statutory infringement

A liability for the website owner could be based on s 23(1) of the Copyright Act.

If the website owner makes unauthorised reproductions of shared CADs, especially for reasons of caching, there is no question that this website owner can be liable for direct infringement.⁹⁵

Another question is whether the website owner can also be liable for ‘causal infringement’ as per s23(1) of the Copyright Act. The wording of s23(1) of the Copyright Act - ‘does or *causes* any other person to do’ – provides the basis for a ‘causal infringement’. Thus, direct infringement can also be committed by someone who instigates or instructs the doing of the act.⁹⁶ To instigate someone means to incite someone to do something, especially something unlawful.⁹⁷ To instruct means to tell or order someone to do something, especially in a formal or official way.⁹⁸ In short, therefore, such liability only applies if the website owner asks its users in an active way to carry out uploads of infringing material. Website owners usually just provide the platform for exchanges of files but the website owner does not actively ask its users to carry out uploads of infringing material. Instead, users freely determine what they upload and download.

early eBay: User must register and create a store in order to sell their products and for each sale *threeding* charges a commission.

⁹³ <http://searchnetworking.techtarget.com/definition/peer-to-peer>.

⁹⁴ http://en.wikipedia.org/wiki/Online_marketplace; e.g. *threeding* is such an online market place, because they act similar like early eBay: User must register and create a store in order to sell their products and for each sale *threeding* charges a commission.

⁹⁵ Van der Merwe et. al *Information and Communications Technology Law* 274.

⁹⁶ Supra note 22 at 1-90.

⁹⁷ <http://www.oxforddictionaries.com/definition/english/instigate>.

⁹⁸ <http://www.oxforddictionaries.com/definition/english/instruct?q=instruct>.

Consequently, a liability of a website owner for direct infringement is very unlikely.

In the case, that the website owner acts as an online market place, he could be liable for indirect infringement under s23(2) of the Copyright Act. Online market places in the form of CAD-file sharing websites could expose the copyright articles in a way of trade under s23(2)(b) of the Copyright Act. Therefore, it needs a commercial activity of the website owner in the sense of any financial gain. Such a financial gain can be seen in a commission for the sale of file between uploader and downloader.⁹⁹ If the website owner gains any financial profit from the file exchange, this requirement should be fulfilled. However, there is still to prove the 'guilty knowledge' of the website owner.

If there is no financial gain for the website owner, he could still be guilty for indirect copyright infringement under s23(2)(c) of the Copyright Act. This section punishes the distribution of copyright protected works even without any personal gain for the distributor.¹⁰⁰ Thus, website owner in the form of online market places can be guilty of indirect copyright infringement under s23(2)(c) of the Copyright, if their 'guilty knowledge' can be proven.

Additionally, these website owners, who act as online market places, could also be liable for criminal offences under s27(1)(b) and (f) of the Copyright Act for the exposes of a copyright work by way of trade or for the distribution for any other purposes. However, also in this case a 'guilty knowledge' has still to be proven.

As already mentioned above, some 3D-printing websites work as a peer-to-peer networks. Thus, the website owner does not actively do any of the activities mentioned in s23(2) of the Copyright Act. Only the users themselves offer the files. The website owner provides the platform, so that secondary infringement is not given.

b) Common law Liability

Even if there is no liability for a peer to peer website owner arising from the Copyright Act there is still the possibility of a liability under the common law. This liability can of course also come into play for websites, which are organised

⁹⁹ Like *threading* does.

¹⁰⁰ Supra note 64 at 46.

as online market places, if they cannot be held liable in any other way. The common law provides contributory, vicarious and inducement liabilities.¹⁰¹

There is no South African case law regarding the contributory liability of a website owner in the case of copyright infringement. However, in the *Bosal Africa*¹⁰² case the court indicated that contributory liability is possible in the context of copyright infringement. Some commentators also favour this approach.¹⁰³ *Dean*, for instance, states that the general principles of common law delict apply to copyright infringement unless the Copyright Act contradicts the common law principles.¹⁰⁴ The common law ruling of contributory infringement demands for a liability of the contributory infringer that he knows or has reasons to believe that the act which he is aiding and abetting is a tortious act, which only applies for delicts committed with intent or dolus.¹⁰⁵

It may provide further insight to investigate how courts abroad have addressed this issue. In the US, courts have dealt with the issue and they work with the same principles of common law that exist in South Africa.

Contributory liability for copyright infringement was first discussed in a US court in *Sony Corp. v Universal City Studios*¹⁰⁶. This case discussed whether *Sony* could be held liable for contributory copyright infringement by selling videotape recorder, which can be used by the customers in a copyright infringing way. The court ruled, because of the reason that the video recorder was as well usable for non-infringing purposes, that *Sony* cannot be held liable for contributory copyright infringement.¹⁰⁷

The *Ninth Circuit Court of Appeals*¹⁰⁸ in the US had to deal with this problem again. In this *Napster* case, the court had to deal with the copyright infringement liability of the website owner called *Napster*, which was a well-known mp3-file sharing platform. A lot of users infringed copyright through file-sharing using this website. The question then was whether the website owner itself can as well be liable for copyright infringement. The outcome of this judgement was that

¹⁰¹ Supra note 95.

¹⁰² *Bosal Africa (Pty) Ltd v Grapnel (Pty) Ltd* 1985 (4) SA 882 (C) 893.

¹⁰³ Supra note 23 at 27.4.1; supra note 22 at 1-49; supra note 95.

¹⁰⁴ Supra note 22 at 1-49.

¹⁰⁵ Supra note 22 at 1-90.

¹⁰⁶ *Sony Corp. v Universal City Studios* 464U.S. 417 (1984).

¹⁰⁷ Ibid.

¹⁰⁸ Supra note 84.

although the court found that *Napster* had knowledge about the infringing use of its website, it could still avoid a contributory liability as in the *Sony Corp. v Universal City Studios* ruling, because *Napster* was also used for non-infringing purposes. However, because *Napster* had control over its users, in the kind of a supervisor function, the court held *Napster* liable for vicarious infringement as discussed later.

The problem of contributory liability for website owners was again addressed in *In re Aimster*¹⁰⁹. In this case the website owner *Aimster*, which was as well known for mp3-file sharing, (unsuccessfully) tried to use a loophole of the *Napster* case: To avoid any knowledge, *Aimster* encrypted all file-sharing transfers with the consequence that *Aimster* was incapable of knowing what files were sent over its network. However, the court stated that this is a ‘wilful blindness’ which cannot avoid any knowledge.¹¹⁰ Because of this blindness, *Aimster* was also not able to show any non-infringing use, so that it could not prove that its network was also used for non-infringing activities.¹¹¹ Thus, *Aimster* was found guilty of contributory infringement.

Since all these decisions are from the U.S., one has to ask whether we can transfer these principles to South African law, especially because the principle of contributory infringement in relation to copyright law has not already been established in South African case law.¹¹² In trade mark law it has already been held that the delict is not only committed by the actual perpetrator but by anyone who instigates or aids or advises its perpetration.¹¹³ Thus, when we accept that copyright infringement is a form of a delictual liability, then the rules of the Aquillian action can be transferred to copyright law.¹¹⁴ The Aquillian action broadens the liability to third party who assists the direct infringer.¹¹⁵

Consequently, in cases where CAD file-sharing website owners receive reasonable knowledge of specific infringing files, know or should know that these files are available on their server and fail to prevent viral distribution of the works, contributory liability becomes a possibility. Also, it will not help website

¹⁰⁹ *In re Aimster* 334 F 3d 643.

¹¹⁰ *Supra* note 109 at 650.

¹¹¹ *Supra* note 109 at 653.

¹¹² *Supra* note 23 at 27.4.1.

¹¹³ *Supra* note 22 at 1-49; *Esquire Electronics Limited v Executive Video* 1986 (2) SA 576 (A).

¹¹⁴ *Supra* note 23 at 27.4.1.

¹¹⁵ *Ibid.*

owners if they voluntarily ‘blind’ themselves to avoid knowledge about infringing activities. However, the general rule is still that there is no contributory infringement as long as the website is also used for non-infringing purposes.

There is, however, another common law liability called vicarious infringement. Vicarious liability is based on the principle in the law of tort that holds an employer liable for the action of its employees.¹¹⁶ “In the context of copyright law, vicarious liability extends beyond an employer/employee relationship to cases in which a defendant has the right and ability to supervise the infringing activity and also has a direct financial interest in such activities”.¹¹⁷

It is again the above-mentioned *Napster* case that dealt with this problem when addressing the liability of host-providers for copyright infringement. The court affirmed a financial benefit by saying that any benefit is sufficient and that *Napster* gained such a benefit with the draw for the customer. Such a draw for the costumer, the court said, would let the user-base grow, which is again important for the future of the website owner.¹¹⁸ The ability of *Napster* to supervise was justified because *Napster* had the right to control the access to its system but did not exercise the right to police to its fullest extent although it had the possibility to locate infringing materials and to terminate users.¹¹⁹

Once again, the issue arises that the aforementioned principles for vicarious copyright infringement were developed by a US court under US law. However, South African common law also provides the principle of vicarious liability.¹²⁰ And it thus seems sensible to transfer these principles developed for the U.S. to South African copyright law. For the issue at hand this means that a website owner can be held liable for vicarious copyright infringement if website users benefit in a way that in turn benefits the website owner, and if the website owner does not exercise its right to police to its fullest extent.

Finally, there is a third important common law liability called induced infringement. An induced liability applies to those who intentionally induce

¹¹⁶ Supra note 95.

¹¹⁷ Supra note 84 at para. 60.

¹¹⁸ Supra note 84 at para. 61.

¹¹⁹ Supra note 84 at para. 63-67.

¹²⁰ Loubser et al. *The Law of Delict in South Africa* 32.1.

violation of copyright.¹²¹ Again, it was a US court which established such a liability for copyright infringement.

The *Grokster* case¹²² was about the peer-to-peer network *Grokster* in which files did not pass through the central location. Instead, every user downloaded a copy of the *Grokster* programme, which allowed them to swap files directly. As a result, *Grokster* did not know which files were exchanged. *Grokster* also provided its users with a program called *OpenNap*, allowing them to also search for *Napster* files. It was assumed that all this was done to win over former *Napster* users. The plaintiff *MGM* showed that 90% of the files exchanged were copyrighted files and there was no evidence that *Grokster* tried to stop copyright infringements. The court stated that “one who distributes a device with the object of promoting its use to infringe copyright, as shown by clear expression or other affirmative steps taken to foster infringement is liable for the resulting acts of infringement by third parties using the device”.¹²³

Finally, we get again to the question whether induced liability for copyright infringement as introduced by US courts under US law could also be applicable to South African copyright law. Liability for induced infringement already exists in South Africa.¹²⁴ Thus, it should also be possible to transfer this common law rule into the South African copyright law as the US did this with their copyright law. Accordingly, a website owner who hosts CAD-files can be held liable for induced infringement if they promote copyright infringement and take affirmative steps to foster infringement.

c) The rules of the Electronic Communications and Transactions Act (“ECTA”)

Website owners may, however, be able limit their liability through invoking the so called ‘safe harbour provisions’ contained in the ECTA¹²⁵.

Chapter XI of the ECTA states that the ‘safe harbour provisions’ apply to ‘service provider’. S70 of the ECTA states that a ‘service provider’ is a person providing ‘information system services’. As per definition in s1 of the ECTA, ‘information system services’ include the provision of connections, the operation

¹²¹ Supra note 95.

¹²² *MGM Studios Inc. v. Grokster Ltd* 545 U.S. 913 (2005).

¹²³ Ibid.

¹²⁴ Supra note 95.

¹²⁵ Electronic Communications and Transactions Act, 2002.

of facilities for information systems, the provision of access to information systems, the transmission or routing of data messages between or among points specified by a user and the processing and storage of data, at the individual request of the recipient of the service. The question is whether a website owner of a CAD-file sharing website provides such an information system service. The website owner of a CAD-file sharing website provides a facility for routing of data messages between or among points specified by a user and the processing and storage of data. Consequently, these website owners can in general make use of the ‘safe harbours’ of the ECTA as they are ‘service provider’.

However, to benefit from limitations the website owner has to be “a member of the representative body” referred to in the Act and must have “adopted and implemented the official code of conduct of the representative body”.¹²⁶ If these requirements are fulfilled, the website owner can benefit from the ‘mere conduit’¹²⁷, ‘caching’¹²⁸, ‘hosting’¹²⁹ and ‘linking’¹³⁰ limitations. ‘Mere conduit’ means, that a service provider provides access to or for operating facilities for information systems or transmitting, routing or storage of data messages via an information system under its control.¹³¹ ‘Caching’ means that a service provider transmits data provided by a recipient of the service via an information system under its control.¹³² ‘Hosting’ means that a service provider provides a service that consists of the storage of data provided by a recipient of the service.¹³³ ‘Linking’ is given, when a service provider refers or links users to a web page.¹³⁴

The ‘caching’ and ‘hosting’ limitation are furthermore dependent on the ‘take-down notification’ under s77 of the ECTA. S77 of the ECTA states that “for the purposes of this Chapter, a notification of unlawful activity must be in writing, must be addressed by the complainant to the service provider or its designated agent and must include (a) the full names and address of the complainant;(b) the written or electronic signature of the complainant; (c) identification of the right that has allegedly been infringed; (d) identification of the material or activity that

¹²⁶ S72 of the ECTA.

¹²⁷ S73 of the ECTA.

¹²⁸ S74 of the ECTA.

¹²⁹ S75 of the ECTA.

¹³⁰ S76 of the ECTA.

¹³¹ S73(1) of the ECTA.

¹³² S74(1) of the ECTA.

¹³³ S75(1) of the ECTA.

¹³⁴ S76(1) of the ECTA.

is claimed to be the subject of unlawful activity; (e) the remedial action required to be taken by the service provider in respect of the complaint; (f) telephonic and electronic contact details, if any, of the complainant; (g) a statement that the complainant is acting in good faith; (h) a statement by the complainant that the information in the take-down notification is to his or her knowledge true and correct; and (2) Any person who lodges a notification of unlawful activity with a service provider knowing that it materially misrepresents the facts is liable for damages for wrongful take-down". Thus, especially in the case of 'hosting' the service provider is not liable for any infringement if it does not have actual knowledge of the infringing activity and if it is not aware of facts or circumstances from which the infringing activity is apparent.¹³⁵

In summary, if the website owner fulfils the requirements he can successfully make use of limitations for his liability from copyright infringement as per the ECTA.

3. Summary

The sharing of CAD-files can have serious consequences for both the user and the website owner. While the user can be held liable for indirect infringement under s23(2)(b) and (c) of the Copyright Act and criminal offence under s27(1)(b) and (f) of the Copyright Act, the website owner will usually be liable as per the common law, if he cannot be held liable for indirect infringement under s23(2)(b) and (c) of the Copyright Act or for an criminal offence under s27(1)(b) and (f) of the Copyright Act. However, the liability of the users is still dependent on their 'guilty knowledge', while the website owner may be able to invoke the limitations of the ECTA.

III. The printing of the physical object

The last point we have to analyse in conjunction with copyright infringement is the actual printing of the physical object. We will differentiate between the home printing of a private person and the printing on demand of a company.

¹³⁵ S75 of the ECTA.

In general, a private person, who creates 3D-printings of a copyright work – it does not matter if the CAD or the former 3D-object was copyrighted – will be liable for primary infringement under s23(1) of the Copyright Act, because he makes reproductions of the copyright protected object as per s7(a) of the Copyright Act.

Furthermore, a private person could also be liable for secondary infringement under s23(2)(b) and (c) of the Copyright Act, if he sells or distributes the object after printing it.

If the private person sells or distributes the printed article he prints he may commit a criminal offences under s27(1)(a),(b) (e) and (f) of the Copyright Act. S27(1)(b) and (f) of the Copyright Act are already explained above, while s27(1)(a) and (e) of the Copyright Act additionally punish the ‘making for sale’ and the ‘distribution for purposes of trade’.

However, private persons will often be able to rely on the ‘fair dealing’ exception for ‘private or personal use’ under s15(4) in conjunction with s12(1)(a) of the Copyright Act. Another relevant exception is contained in s15(3A) of the Copyright Act. It applies if a person makes a reproduction of a copyrighted article, provided the reproduction has primarily a utilitarian purpose and is made by an industrial process. Whether the article has a primarily utilitarian purpose is a question of actual facts in the relevant case and depends on the article itself. There is no definition in the Copyright Act what the term ‘industrial process’ exactly means. As per the different dictionaries an ‘industrial process’ is “a systematic series of mechanical or chemical operations that produce or manufacture something”.¹³⁶ A 3D-printer can fulfil these requirements and can therefore be used for an ‘industrial process’.

Companies printing for their customer could commit direct copyright infringement under s23(1) of the Copyright Act. By printing a copyright protected object the company makes a reproduction of the object under s7(a) of the Copyright Act. This leads to a direct copyright infringement under s23(1) of the Copyright Act if such reproduction takes place without permission of the rights holder.

¹³⁶ <http://www.thefreedictionary.com/industrial+process;>
<http://www.vocabulary.com/dictionary/industrial%20process;> [http://www.webster-dictionary.org/definition/industrial%20process.](http://www.webster-dictionary.org/definition/industrial%20process)

Furthermore, a printing company can be liable for indirect copyright infringement under s23(2)(b) and (c) of the Copyright Act.

Moreover, the printing company could as well be liable for criminal offences in the case of s27(1)(a)(b) and (e) of the Copyright Act. Obviously, the company produces the article for sale. If this article is copyright protected and the company has a 'guilty knowledge', then the company is guilty of a criminal offence under s27(1)(a) of the Copyright Act. If they sell this article afterwards with the required 'guilty knowledge', the company is also guilty of a criminal offence under s27(1)(b) of the Copyright Act. The same is true if the company distributes the copyright protected article for purposes of trade under s27(1)(e) of the Copyright Act.

The only exception potentially benefitting a company is s15(3A) of the Copyright Act. The requirements of s15(3A) of the Copyright Act are that the reproduced copyright protected articles primarily have a utilitarian purpose and are made by an industrial process.

The customer could be liable for direct copyright infringement under s23(1) of the Copyright Act by ordering an article which is copyright protected. Through his order the customer instigates the company to reproduce a copyright protected article. This fulfils the requirement of 'causes' under s23(1) of the Copyright Act.

IV. Summary

Already the creation of a 3D CAD file can cause copyright infringement. Creators of a file can be liable for direct copyright infringement. However, private person may make use of the 'fair dealing' exception for personal and private use, s15(4) in conjunction with s12(1)(a) of the Copyright Act. Also the exceptions of s15(4) in conjunction with s12(4) of the Copyright Act and s15(4) in conjunction with s12(12) of the Copyright Act may become relevant.

As far as the sharing of CAD-files is concerned, the user can be liable for indirect infringement even be guilty of a criminal offence. However, the liability of the users is dependent on their 'guilty knowledge'. The website owners can be liable for indirect copyright infringement under s23(2)(b) and (c) of the

Copyright Act and also criminal offences under s27(1)(b) and (f) of the Copyright Act, if he acts as an online market place. Furthermore, if the website owner can be liable under the common law. Nevertheless, the website owners can profit from the limitations of the ECTA.

Finally, as for the printing of 3D objects, private persons and printing companies have to consider about copyright infringements under s23(1) of the Copyright Act and criminal offences under s27(1)(a), (b) and (e) of the Copyright Act. However, usually private persons will be able to rely on the fair dealing exception for personal and private use. Furthermore private persons and companies may be able to invoke the exception of s15(3A) of the Copyright Act (reproductions for utilitarian purposes made by an industrial process).

Chapter 3

Patents

A. What is a patent and what does it protect?

A patent is “a certificate in the prescribed form to the effect that a patent for an invention has been granted in the Republic”.¹³⁷ A patent is granted “for any new invention which involves an inventive step and which is capable of being used or applied in trade or industry or agriculture”.¹³⁸ Key differences to copyright protection are that patents protect technical inventions instead of creative works and that patents are registered rights. This means that persons who want to obtain patent protection have to apply for it. This stands in contrast to copyright protection which is granted without any registration as long as the legal requirements are fulfilled.

The test for the patentability of an invention requires an invention for patent purposes under s25(2) of the Patents Act. Furthermore, the invention must not be excluded from patent protection under s25(4) of the Patents Act. Additionally, it must fulfil the requirements of novelty (new invention), inventive step and utility (used or applied in trade or industry or agriculture) under s25(1) of the Patents Act. The following analysis will focus on the patent requirements contained in s25(1) of the Patents Act.

To fulfil the requirement of ‘novelty’, the invention must be beyond the prior state of the art.¹³⁹ What should be considered for the test against the state of the art is stipulated in s25(6)-(8) of the Patents Act. As per s25(6) of the Patents Act “the state of the art shall comprise all matter (whether a product, a process, information about either, or anything else) which has been made available to the public (whether in the Republic or elsewhere) by written or oral description, by use or in any other way”. S25(7) of the Patents Act extends this that “the state of the art shall also comprise matter contained in an application, open to public inspection, for a patent, notwithstanding that that application was lodged at the patent office and became open to public inspection on or after the priority date of the relevant invention, if that matter was contained in that application both as lodged and as open to public inspection; and the priority date of that matter is earlier than that of the invention”. A further extension can be found in s25(8) of

¹³⁷ S 1 of the Patents Act no. 57 of 1978 (“Patents Act”).

¹³⁸ See s25(1) of the Patents Act.

¹³⁹ S25(5) of the Patents Act; Supra note 23 at 39.2.

the Patents Act where is stated that “an invention used secretly and on a commercial scale within the Republic shall also be deemed to form part of the state of the art”.

Provided the invention in question is found to be novel, the next step is to assess an ‘inventive step’.¹⁴⁰ An ‘inventive step’ is given “if it is not obvious to a person skilled in the art, having regard to any matter which forms, immediately before the priority date of the invention, part of the state of the art by virtue only of subsection (6) (and disregarding subsections (7) and (8))”.¹⁴¹

Lastly, the ‘utility’ requirement must be fulfilled. As per South African case law the term ‘useful’ connotes “effective to produce the result aimed at”.¹⁴² The Patents Act provides certain provisions, which exclude the alleged invention to be ‘useful’.¹⁴³

According to s46(1) of the Patents Act patent protection is granted for 20 years without a possibility for extension. The benefits of a patent are the exclusive rights for the patentee under s45 of the Patents Act, which states that “the effect of a patent shall be to grant to the patentee in the Republic, subject to the provisions of this Act, for the duration of the patent, the right to exclude other persons from making, using, exercising, disposing or offering to dispose of, or importing the invention, so that he or she shall have and enjoy the whole profit and advantage”.

Important to note is that s25(2) of the Patents Act excludes some inventions from patent protection. The most important exception in this context is s25(2)(d) in conjunction with s25(3) of the Patents Act which excludes aesthetic creations as such from patent protection.

B. Patents and 3D-printing

I. The creation of the CAD

¹⁴⁰ Supra note 23 at 39.3.

¹⁴¹ S25(10) of the Patents Act.

¹⁴² *Frank & Hirsch v Rodi & Wienberger* 1960 (3) 747 (A) at 755C-D.

¹⁴³ S36, s25(4), s 25(11) of the Patents Act.

At first, we should note that for patent infringement it makes no difference whether the CAD is created by human craftsmanship or by a 3D-scanner. As stated above: a patent protects inventions and for that it does not matter how an invention is rebuilt.

In contrast to the copyright chapter, we do not have to examine whether our objects are protected, because patents are registered rights. Hence, an object enjoys patent protection if it is registered.

However, the mere creation of the CAD does not create a replica of a physical invention. Rather, it is only the first step towards making such replica. The question is, therefore, whether creating a CAD could already qualify as direct patent infringement under s45 of the Patents Act. The creation of a CAD could fall under the term of 'making' under s45 of the Patents Act.

There is no definition of the word 'making' given in the Patents Act. However, in this context the word 'make' means "to produce by combination of parts, or by giving a certain form to a portion of matter; to construct, frame, fashion, bring into existence".¹⁴⁴ Nevertheless, as per *Burrell* the term of 'making' occasionally also includes the process of making.¹⁴⁵ Yet, *Burrell*¹⁴⁶ states, by relying on the British case *Sykes v Howarth*¹⁴⁷, that if the making of an article requires several steps, the 'making' only occurs with the last step. In the *Sykes* case¹⁴⁸ the court stated "that selling articles to persons to be used for the purpose of infringing a patent is not an infringement of the patent". Thus, this means that the term of 'making' does not include the first steps of the production process. Rather, only the final step of the process qualifies as 'making'. Consequently, the first steps of a process of making an article do not violate the exclusive right of 'making'. Related to our issue: since a CAD is not the final step in the process of printing an article and therefore does not qualify as 'making'. This result is supported by the principles developed by a German court¹⁴⁹, which had to deal with the creation of workshop drawings, which in my opinion is very close to the creation of a CAD. The German court held that the mere creation of workshop drawings

¹⁴⁴ JR Steyn *Law of South Africa - Patent* 186.

¹⁴⁵ Burrells *South African Patent and Design Law* 5.5.

¹⁴⁶ *Ibid.*

¹⁴⁷ *Sykes v Howarth* (1879) 12 ChD 826 at 833.

¹⁴⁸ *Ibid.*

¹⁴⁹ LG Duesseldorf 4b O 141/10 01.03.2012 para 35.

does not qualify as patent infringement in the sense of ‘making’. Also authors from the US are of the opinion that the creation of a CAD is no direct patent infringement.¹⁵⁰

However, the act of creating a CAD can still be indirect patent infringement under the common law. While the British¹⁵¹, the US¹⁵² and the German¹⁵³ Patents Acts contain express provisions for indirect infringements, there is no such provision in the South African Patents Act. Nevertheless, for decades, South African courts have agreed, that a liability for indirect patent infringement is possible.¹⁵⁴ Similarly, academics are calling for indirect infringement in the form of contributory infringement to be recognised in the South African patent law.¹⁵⁵ In spite of the recent dispute in the *Gallagher* case¹⁵⁶, discussing whether an indirect infringement in the form of contributory infringement is based on the Patents Act or on common law, the Supreme Court of Appeals¹⁵⁷, in 2013, stated explicitly that the common law is the legal basis for contributory infringement.

Contributory infringement occurs when a person, without actually committing a specified act of infringement, makes use of, or gains some advantage, from a patent invention, to the detriment of the patentee.¹⁵⁸ A liability for such a contributory infringement is considered by the South African courts if a person procures or induces another person to infringe a patent.¹⁵⁹ It will not be granted, however, if the person has no *dolus* (intent) to commit the act of infringement.¹⁶⁰ This means that contributory infringement requires that the alleged infringer knows or has reasons to believe that the act which he is aiding and abetting is a tortious act, which only applies for delicts committed with intent or *dolus*.

¹⁵⁰ Davis Doherty *Downloading Infringement: Patent Law as a Roadblock to the 3D Printing Revolution* Harvard Journal of Law & Technology Vol. 26 No. 1 2012 at 360.

¹⁵¹ S60(2) of the UK Patents Act.

¹⁵² 35 US Code § 271(b) and (c).

¹⁵³ § 10 Abs. 1 Patentgesetz.

¹⁵⁴ See *Wynn Oil and Another v Metropolitan Oils (Pty) Ltd and Another* 1981 BP 62 (CP); *Letraset Ltd* 1972 BP 243 (A); *Viskase Corporation v Columbit (Pty) Ltd and Another* 1986 BP 432 (CP); *Grande Paroisse SA v Sasol Ltd and Another* 2003 BIP 11 (CP); *Sunsmart Products (Pty) Ltd v Vari-Deals 101 (Pty) Ltd and Others* 2006 BIP 1 (CP).

¹⁵⁵ Steyn *Law of South Africa – Patents* 186; Supra note 145 at 5.12.

¹⁵⁶ *Gallagher Group Ltd and Another v I O Tech Manufacturing and Others* (96/6799) [2012] ZACCP 1 (8. February 2012).

¹⁵⁷ *Cipla Medpro (Pty) Ltd v Aventis Pharma SA and Others* 2013 (4) SA 579 (SCA).

¹⁵⁸ Supra note 145 at 5.12.

¹⁵⁹ *Ibid.*

¹⁶⁰ *Ibid.*

This said, it is still questionable whether the mere creation of a CAD is indirect infringement. The key question is if a direct infringement of a third party is needed to substantiate a liability for indirect infringement. While under US¹⁶¹ law a direct infringement is required to create a liability for indirect infringement, indirect infringement is independent from a direct infringement under German¹⁶² law. Because liability for indirect infringement is a delictual liability in South Africa it requires ‘harm’.¹⁶³ Such ‘harm’ has either to be potential or actual.¹⁶⁴ Consequently, under South African law the mere creation of a CAD appears not to fulfil the requirements for a contributory infringement because it causes neither potential nor actual ‘harm’.

In conclusion, therefore, the mere creation of a CAD is neither a direct infringement as per s45(1) of the Patents Act, nor an indirect infringement as per the common law.

II. The uploading and sharing of the CAD

1. Liability of the uploader

The uploader of the CAD could be liable for direct infringement in the sense of ‘disposing of’ under s45 of the Patent Act. The ordinary meaning of ‘disposing of’ is to “get rid of by throwing away or giving or selling to someone else”.¹⁶⁵ Thus, ‘disposing of’ could apply to the free offer on a website as well as to an offer on a commercial scale on a website. However, the key question is, if the ‘disposing of’ of the CAD alone, instead of the entire patent protected article, is already enough for a direct infringement. As per *Burrells* “the sale of an article does not become an infringement merely because the vendor knows that the purchaser intends to use the article, when sold, for the purposes of infringing a patent”.¹⁶⁶ Consequently, it is argued here that it is not enough to offer an article that could later be used for an infringement. Thus, the uploader is not liable for a direct patent infringement.

¹⁶¹ *Lucent Technologies Inc. v. Gateway Inc.* 470 F.Supp.2d 1180 (S.D.Cal.,2007) at 18.

¹⁶² *BGH, Urteil vom 7. Mai 2013 - Az. X ZR 69/11* at 18.

¹⁶³ *Sunsmart Products (Pty) Ltd v Vari-Deals 101 (Pty) Ltd and Others* 2006 BIP 1 (CP) 10.

¹⁶⁴ *Supra* note 119 at 3.1.

¹⁶⁵ <http://www.oxforddictionaries.com/definition/english/dispose>.

¹⁶⁶ *Supra* note 145 at 5.12.

In contrast to the mere creation of the CAD, the uploading and offering on the internet could, however, fulfil the requirements for an infringement as per the common law as this could constitute an offer to a third person. But the requirements for a contributory infringement must still be fulfilled, i.e., that the uploader either has to act with dolus that a third person will infringe the patent or has to procure or to induce the third person to commit the infringement.¹⁶⁷ Whether these requirements are fulfilled appears to depend on the facts of each case which have to be investigated by a relevant court. In my opinion, it will be difficult to argue that the uploader procures or induces any infringement if he simply uploads the CAD and does not know the downloader as he cannot influence the downloader in these cases.

Even if the uploader uploads a possibly infringing CAD, his liability can be excluded if this occurs on a “non-commercial scale and solely for the purposes reasonably related to the obtaining, development and submission of information required under any law that regulates the manufacture, production, distribution, use or sale of any product”.¹⁶⁸ There is no further definition of the term ‘non-commercial scale’. In the *Delta G Scientific* case¹⁶⁹ the judge stated that the meaning of “‘work on a commercial scale’ is used in contradiction to research work and that must have been the meaning the legislature intended the phrase to have”. However, this definition was given in relation to s56 of the Patents Act. In relation to s69A of the Patents Act special consideration should be given to the second half of the sentence, i.e., that the use must also be “solely for the purposes reasonably related to the obtaining, development and submission of information required under any law that regulates the manufacture, production, distribution, use or sale of any product”. This will hardly ever be the case.

Therefore, the uploader of a CAD that can be used to infringe a patent is liable for contributory patent infringement as per the common law if the court can prove his intention and if his products do not fall under the exception of s69A of the Patent Act.

¹⁶⁷ Supra note 145 at 5.12.

¹⁶⁸ S69A of the Patents Act.

¹⁶⁹ *Delta G Scientific (Pty) Ltd v Janssen Pharmaceutica NV and Another* 1996 BP 455 (CP) 460.

2. Liability of the website owner

For patent infringement, we do not have to distinguish between CAD-file sharing website which are organised as peer-to-peer networks and the ones which are organised as online market places. The liability of both will follow the same rules.

Here again, a liability for a direct infringement of the website owner could result from s45(1) of the Patent Act ('disposing of'). However, as already explained earlier in this chapter the mere offer of the CAD-file is not sufficient for such liability.

Nevertheless, there is still the possibility of a contributory infringement through the website owner. In short, again, to commit a contributory infringement, the website owner must procure or induce another person to infringe a patent, or he must know or have reasons to believe that the act which he is aiding and abetting is a tortious act, which only applies for delicts committed with intent or dolus.

It seems to be questionable whether a website owner procures or induces another person to infringe copyright. To fulfil these criteria the website owner must have some kind of influence over the website users or somewhat promote the infringing activities. This brings us back to the *MGM Studios Inc v Grokster Ltd*¹⁷⁰ case mentioned earlier where such an inducing activity was giving through the promotion of infringing activities. Consequently, if the website owner acts in such a manner he can be held liable for contributory patent infringement.

The other variation of contributory patent infringement is that the website owner knows or has reasons to believe that the act which he is aiding and abetting is a tortious act, which only applies for delicts committed with intend or dolus, reminds of the *Napster* and *Aimster*¹⁷¹ cases. The key question here is whether we should also in this context consider a criterion of 'significant non-infringing uses' to exclude a contributory infringement. Furthermore, one could also consider a criterion of 'wilful blindness' here. Considering 'significant non-infringing uses' appears appropriate because otherwise every act that could aid infringing a patent would lead to a contributory infringement. Thus, in my opinion, we should apply this element not only in the area of copyright law but

¹⁷⁰ Supra note 121.

¹⁷¹ Supra note 84; Supra note 109.

also in the context of patent law. Similarly, the ‘wilful blindness’ criterion i.e., that a website owner cannot just blind himself to avoid any knowledge and thus liability – should in my opinion be applied here. This would lead to the following results: Contributory liability is possible (a) if the website owner has reasonable knowledge of specific infringing files, knows or should know that these files are available on his server and fails to prevent viral distribution of the works, or (b) if website owners turn a ‘blind’ eye on infringing activities to avoid knowledge.

Furthermore, a website owner is also liable if he promotes any infringing activities. This is particularly relevant for contributory patent infringement.

Another question is whether there is also a vicarious liability for patent infringement. There is no case law or academic writing on this issue in South Africa. However, as already stated in the copyright chapter¹⁷², vicarious liability is accepted under South African common law. Consequently, it is argued here that it is possible to also apply this instrument to delictual acts in patent law. Thus, a website owner can be held liable under common law if he benefits from the action of website users and if he does not exercise his right to police.

In my opinion, there is no need for introducing rules regarding induced infringement into patent law as under patent law contributory infringement already sufficiently covers such activities.

Lastly, website owners can possibly still rely on s77 of the ECTA, mentioned earlier. If they fulfil the requirements of this provision they can limit their liability for patent infringement unless they receive a take-down notification from the complainant, what means that they are not liable for any infringement unless they got actual knowledge about it.¹⁷³

III. The printing of the physical object

A private person who prints a copy of a patented article undisputedly commits direct patent infringement under s45 of the Patents Act in the sense of ‘making’, as long as he cannot rely on the exception of s69A of the Patents Act. However,

¹⁷² Chapter 2 B. II. 2. c).

¹⁷³ Chapter 2 B. II. 2. d).

as explained above, in most of the cases the requirements of s69A will not be fulfilled.

A company which prints for a customer will also be liable for direct patent infringement under s45 of the Patents Act because the printing itself already fulfils the requirement of 'making'. The company can also be liable for direct infringement in the sense of 'disposing of' under s45(1) of the Patent Act, when they sell or give away the article.

Another question is the liability of persons ordering the article. Vicarious liability seems not to fit in this context, as customers usually have no supervisory function over a printing company.

However, a customer can be liable as a result of contributory infringement, i.e., when a customer aids or abets any infringement of the printing company with knowledge, or in situations where he has reasons to know about any infringement.

Contributory infringement also applies if a customer promotes any infringement committed by the printing company. However, this is not already the case when he just orders a product offered by the printing company. In these cases the customer only makes use of an already existing offer. The situation is different, however, if the customer orders a print from his own CAD. In this case, the customer promotes the infringement of the printing company through his order and can be held liable for contributory patent infringement.

IV. Summary

While the mere creation of the CAD is no patent infringement, all the other steps are potentially infringing activities. Both the uploader and the website owners can be liable for indirect patent infringement. Also, the printer and the printing company can be liable for direct patent infringement, while the person who orders can be liable for indirect patent infringement.

Chapter 4

Other relevant IPRs

A. Registered Designs

I. What is a registered design and what does it protect?

As the name ‘registered designs’ already indicates, the design right is a registered right, i.e. there is no protection of any unregistered article.¹⁷⁴

The Designs Act covers ‘aesthetic designs’ and ‘functional designs’.¹⁷⁵ An ‘aesthetic design’ “means any design applied to any article, whether for the pattern or the shape or the configuration or the ornamentation thereof, or for any two or more of those purposes, and by whatever means it is applied, having features which appeal to and are judged solely by the eye, irrespective of the aesthetic quality thereof”.¹⁷⁶ In contrast to this a ‘functional design’ “means any design applied to any article, whether for the pattern or the shape or the configuration thereof, or for any two or more of those purposes, and by whatever means it is applied, having features which are necessitated by the function which the article to which the design is applied, is to perform, and includes an integrated circuit topography, a mask work and a series of mask works”.¹⁷⁷

The successful registration of a design grants the applicant “the right to exclude other persons from the making, importing, using or disposing of any article included in the class in which the design is registered and embodying the registered design or a design not substantially different from the registered design, so that he shall have and enjoy the whole profit and advantage accruing by reason of the registration”.¹⁷⁸

Design protection applies to articles as defined by s1(1) of the Designs Act. The protection applies to its shape, pattern, configuration and ornamentation.¹⁷⁹ However, because protection can only be granted for a single design, one article cannot consist out of a number of registrable articles in the alternative.¹⁸⁰ ‘Aesthetic designs’ must fulfil the requirement of ‘eye appeal’.¹⁸¹ The eye in this

¹⁷⁴ S2 of the Designs Act no. 195 of 1993 (“Designs Act”).

¹⁷⁵ S1 of the Designs Act.

¹⁷⁶ S1 of the Designs Act.

¹⁷⁷ S1 of the Designs Act.

¹⁷⁸ S20(1) of the Designs Act.

¹⁷⁹ S1(1) of the Designs Act.

¹⁸⁰ Supra note 23 at 31.2.2.

¹⁸¹ See definition in s1(1) of the Designs Act.

case is the eye of the court through the spectacles of a costumer.¹⁸² In contrast ‘functional designs’ must be “necessitated by the function an article is intended to perform”.¹⁸³ This requirement does not mean, however, that a particular design is the only one capable of enabling the article concerned to perform that function.¹⁸⁴ Furthermore, design protection applies as well for ‘integrated circuits’.¹⁸⁵

To be protectable a design must be ‘novel’ under s14(2) of the Designs Act. The ‘state of the art’ against which ‘novelty’ is to be assessed is defined in s14(3) of the Designs Act. The assessment of the novelty criteria is visual. This relates for aesthetic designs to the eye appeal and for functional designs to the functional necessity.¹⁸⁶ Furthermore, the design must be original.¹⁸⁷ This means that the creator of the design must have put some labour and effort into its creation, even by way of supplementing or alternating known art.¹⁸⁸ Moreover, there must be non-commonplaceness,¹⁸⁹ and the design must be intended to be multiplied by an industrial process.¹⁹⁰

S14(5)(a) of the Designs Act excludes from the protection as an aesthetic design a “feature of an article in so far as it is necessitated solely by the function which the article is intended to perform”.

S14(5)(b) of the Designs Act also excludes from the protection as an aesthetic design a ‘method or principle of construction’. This means that the proprietor cannot get design protection for several different appearances of an article which all embody the general feature which the proprietor claims in the definitive statement accompanying the application for registration of the design.¹⁹¹

Importantly, s14(6) of the Designs Act excludes spare parts for a machine, vehicle or equipment from design protection. However, there is no definition of

¹⁸² *Brudd Lines (Pty) Ltd v Badsey (2)* [1973] 4 All SA 229 (T) 231; *Swisstool Manufacturing Co v Omega Africa Plastics* 1975 (4) SA 379 (W).

¹⁸³ S1 (1) of the Designs Act.

¹⁸⁴ Supra note 23 at 31.2.3.

¹⁸⁵ S1(1) of the Designs Act.

¹⁸⁶ Supra note 23 at 31.3.1.2.

¹⁸⁷ S14(1)(a) of the Designs Act.

¹⁸⁸ *Brudd Lines (Pty) Ltd v Badsey (2)* [1973] 4 All SA 229 (T) 979C.

¹⁸⁹ S14(1)(b) of the Designs Act.

¹⁹⁰ S14(4) of the Designs Act.

¹⁹¹ TD Burrell *Law of South Africa – Designs* 238A.

the word 'spare-part' in the Act. Hence, its meaning is still somewhat uncertain.¹⁹²

As per s22(1) of the Designs Act, the duration of design protection is 15 years for aesthetic designs and 10 years for functional designs without any possibility for extension.

The infringement of a registered design is addressed in s20(1) of the Designs Act.¹⁹³ The assessment whether an infringement has taken place or not is done by visual comparison.¹⁹⁴ However, s20(3) the Designs Act provides exceptions for integrated circuits.

II. Registered designs and 3D-printing

1. The creation of the CAD

For registered designs it makes no difference whether the CAD is created through using a scanner or by human craftsmanship. This is because the protection of registered designs covers a certain design for which it does not matter how it is created.

However, there is no registered design protection for articles which fall under s14(5) and (6) of the Design Act. These sections exclude features of an article that are necessitated solely by the function which the article is intended to perform as well as method or principle of construction and spare parts from design protection.

S20(1) of the Designs Act, which deals with the exclusive rights of the owner of a registered design, is similar to s45(1) of the Patents Act. It punishes the same actions as s45(1) of the Patents Act as infringements for registered designs with the only difference that s20(1) of the Designs Act also covers the infringement of designs which are not 'substantially different' from the registered design.¹⁹⁵ As we already know, a design has to apply to any article.¹⁹⁶ Therefore and against the backdrop that when it comes to direct infringement of registered designs

¹⁹² Supra note 23 at 31.4.3.

¹⁹³ See s20(1) of the Designs Act.

¹⁹⁴ Supra note 23 at 36.3.

¹⁹⁵ Supra note 192 at 9.80.

¹⁹⁶ S1 of the Designs Act.

design law mirrors patent law, we can build upon the already discussed problems in the patent chapter.¹⁹⁷ This means, first, that the action of ‘making’ does not cover the mere creation of a CAD, because the term of ‘making’ only covers the final step of a process, while the creation of a CAD is not the final step of the 3D-printing process.

This said, the creation of a CAD can still be an indirect infringement of registered designs under the common law. In the case *Bayerische Motorenwerke Aktiengesellschaft v Auto Body Spares SA (Pty) Ltd and Others*¹⁹⁸ the court stated that the principle underlying the *Esquire Electronics Limited v Executive Video*¹⁹⁹ case also applies to registered design infringement. In the *Esquire Electronics*²⁰⁰ case, the court stated that there is a possible liability per common law in the case of trade mark infringement: “The modern law of trade mark infringement is statutory, but its origins are to be found in the common law rule that it is an actionable wrong, i.e., a delict, to filch the trade of another by imitating the name, mark or device by which that person has acquired a reputation for his goods [...]. A delict is committed not only by the actual perpetrator, but by those who instigate or aid or advise its perpetration. See *McKenzie v Van der Merwe* 1917 AD 41. In that case Solomon AJ said at 51: "Under the *Lex Aquilia* not only the persons who actually took part in the commission of a delict were held liable for the damage caused, but also those who assisted them in any way, as well as those by whose command or instigation or advice the delict was committed. To a similar effect is the passage which was quoted from *Grotius* (3, 32, 12, 13) that everyone is liable for a delict 'even though he has not done the deed himself, who has by act or omission in some way or other caused the deed or its consequence: by act, that is by command, consent, harbouring, abetting, advising or instigating'". In the case *Executive Video* produced video cassettes and disposed of them “knowing and intending that they would be put to use for the purpose for which they were purchased or hired and that such use would necessarily involve the visual representation of the trade mark. In the circumstances it is idle to contend that Executive Video is

¹⁹⁷ Chapter 3. B. I.

¹⁹⁸ *Bayerische Motorenwerke Aktiengesellschaft v Auto Body Spares SA (Pty) Ltd and Others* 1999 BIP 51 (T) 61.

¹⁹⁹ *Esquire Electronics Limited v Executive Video* 1986 (2) SA 576 (A) 590D-F.

²⁰⁰ *Esquire Electronics Ltd. v Executive Video* (270/84) [1986] ZASCA 12; [1986] 2 All SA 210 (A) (13 March 1986) 29(a), 30.

innocent of infringement.”²⁰¹ This means that the court is of the opinion that indirect registered design infringer are also liable under the common law. Consequently, as per *Esquire Electronics*, an uploader could be held liable under indirect infringement under common law by a knowingly or intended act, that is by command, consent, harbouring, abetting, advising or instigating. Through uploading the uploader can abet downloaders to commit registered design infringement. However, as already stated in the patent chapter, indirect infringement still requires an ‘actual’ or ‘potential harm’ which usually is not the case when only the CAD is created.²⁰²

2. The uploading and sharing of the CAD

a) Liability of the uploader

In terms of a direct infringement under s20(1) of the Designs Act, a liability under the term ‘disposing of’ is possible. As already stated, the wording of s20(1) of the Designs Act is very similar to s45(1) of the Patents Act. The problem with the term of ‘disposing of’ was already discussed in the patent chapter with the result that the uploading of a CAD does fulfil this requirement, because the offer of an article which could be used for an infringement is not enough, rather it needs an offer of the infringing article.²⁰³

However, a possible liability for the uploader could be again a liability for indirect registered design infringement under the common law. As already discussed above, a South African court has confirmed that for registered design infringement a liability for indirect infringement exists.²⁰⁴ Consequently, an uploader could be held liable for indirect infringement under common law by a knowingly or intended act, that is by command, consent, harbouring, abetting, advising or instigating. Through his uploading, the uploader can abet downloaders to commit registered designs infringement.

However, especially in the case of registered designs and 3D-printing it is very important to know which articles cannot be protected as registered designs.

²⁰¹ Supra note 200 at 590D-G.

²⁰² Chapter 3 B. I.

²⁰³ Chapter 3 B. II. 1.

²⁰⁴ Supra note 173.

These articles can be found in s14(5) and (6) of the Designs Act. These exclusions significantly reduce the liability for indirect design infringement of an uploader with regards to ‘functional features’, ‘methods or principles of construction’ and ‘spare parts’. Most relevant in this context will be the exclusions for ‘technical features’ and ‘spare parts’. The exclusion for ‘technical features’ provides that there is no registered design protection granted for features of an article that are necessary “solely by the function which the article is intended to perform”.²⁰⁵ Furthermore, there is the ‘spare part’ exclusion. There is no definition of the term ‘spare parts’, which makes its meaning somewhat uncertain.²⁰⁶ As per the *Oxford Dictionary*²⁰⁷ a ‘spare part’ is “a duplicate part to replace a lost or damaged part of a machine”. How broad the scope of the word ‘spare parts’ finally will be and which articles it will include or not has to be defined in future case law.

S20(3) of the Designs Act contains an exception for integrated circuit topographies. Their registered design is not infringed by making an article “for private purpose or for the sole purpose of evaluation, analysis, research or teaching”.²⁰⁸ This can also be a relevant exception in the context of 3D-printing, especially the exception for private purposes.

b. Liability of the website owner

For registered design infringement, we do not have to distinguish between CAD file sharing website which are organised as peer-to-peer networks and the ones which are organised as online market places. The liability of both will follow the same rules.

As far as the liability for direct registered design infringement through ‘disposing of’ by a website owner is concerned, we can refer back to the findings of the patent chapter, i.e. that the mere offer of the CAD is usually not sufficient for a liability under this term, rather it needs an offer of the infringing article itself.²⁰⁹ However, another question is whether the website owner is liable under the common law rules as explained above, especially for the acts of harbouring,

²⁰⁵ S14(5)(a) of the Designs Act.

²⁰⁶ Supra note 23 at 31.4.3.

²⁰⁷ <http://www.oxforddictionaries.com/definition/english/spare-part>.

²⁰⁸ S20(3)(a) of the Designs Act.

²⁰⁹ Chapter 3 B. II. 2.

abetting and instigation. However, in the cases the courts would still have to determine the necessary knowledge and intention.

Also, in these cases the website owner may again rely on s77 of the ECTA as already mentioned in the copyright and patent chapters.²¹⁰

Lastly, here again the exclusions for granting a registered design under s14(5) and (6) and s20(3) of the Designs Act can be relevant.

3. The printing of the physical object

A private person or company, who prints an article that is protected by a registered design is usually liable for direct infringement as per s20(1) of the Designs Act as the act of printing fulfils the requirement of ‘making’. However, the above-mentioned exclusions or exceptions for ‘methods or principles of construction’, ‘spare-parts’ and integrated circuits can still apply.

The persons who order can also be liable for indirect infringement because their activities could be acts of command, abetting or instigating. The required knowledge and intention will usually be present.

Again, the above-mentioned exclusions and exception may limit liability.

4. Summary

While the mere creation of the CAD is no infringement of a registered design, all other relevant activities are potentially infringing activities: Both the uploader and the website owner can be liable for indirect infringement of a registered design. Also, the printer can be liable for direct infringement of a registered design, and the person who orders can be liable for indirect infringement of a registered design.

²¹⁰ Chapter 2 B. II. 2. d); chapter 3. II. 2.

B. Trade Marks

I. What is a trade mark and what does it protect?

Like the protection of patents and registered designs, the protection of trade marks requires registration.²¹¹

Definitions of a ‘mark’ and a ‘trade mark’ are contained in s2(1) of the Trade Marks Act. Accordingly, the definition of the term ‘trade mark’ stipulates, inter alia, that the ‘mark’ has to be ‘used’ in relation to goods or services.

A trade mark has several functions: origin function, distinguishing function, guarantee function and an advertising function.

The key requirement for the registration of a trade mark is that it is capable of distinguishing the goods or services of one person from that of another person.²¹²

The question whether or not a trade mark fulfils this requirement must include all relevant circumstances in the context the trade mark is used.²¹³

It is important to note that a trade mark can lose its distinctiveness when the public uses the name of the trade mark as an ordinary name for all the products in this class, like the term ‘Sellotape’ in South Africa.²¹⁴

Once it has been established that the mark has a distinctive character one still has to examine that the mark is not an unregistrable mark under s10 of the Trade Marks Act.

Trade marks are registered in different classes for different goods and services. The classification occurs after the Nice Classification, which has 34 different classes for goods and 11 different classes for services.²¹⁵ According to s11(1) of the Trade Marks Act, “a trade mark shall be registered in respect of goods or services falling in a particular class or particular classes in accordance with the prescribed classification: Provided that the rights arising from the registration of

²¹¹ S3(1) of the Trade Marks Act no. 194 of 1993 (“Trade Marks Act”).

²¹² S9(1) of the Trade Marks Act.

²¹³ Supra note 23 at 13.3.1.

²¹⁴ Supra note 23 at 13.3.3.

²¹⁵ <http://www.wipo.int/classifications/nice/en/>

a trade mark shall be determined in accordance with the prescribed classification applicable at the date of registration thereof.”

As per s37(1) of the Trade Marks Act, the duration for trade mark protection is 10 years, but always renewable.

Trade mark infringement is addressed in s34 of the Trade Marks Act and covers three types of infringement: Primary infringement²¹⁶, extended infringement²¹⁷ and infringement by dilution²¹⁸.

Primary infringement covers only infringements in the same class in which the trade mark is registered, while the extended infringement also covers infringements in a similar class. Infringement by dilution takes place when the infringement causes dilution to a well-known mark in South Africa. The term ‘well known’ is not defined in the Trade Marks Act.²¹⁹ However, in the *McDonalds* case²²⁰ the court stated that “a mark is well-known in the Republic, if it is well-known to persons interested in the goods or services to which the mark relates”, like McDonald’s back in the days before they had a branch in South Africa.

Ss34 and 36(1) of the Trade Marks Act stipulate some defences against trade mark infringement. Most important for the issue of 3D-printing is s34(2)(c) and (e) of the Trade Marks Act. Accordingly, “a registered trade mark is not infringed by: the *bona fide* use of the trade mark in relation to goods or services where it is reasonable to indicate the intended purpose of such goods, including spare parts and accessories, and such services; and the *bona fide* use by any person of any utilitarian features embodied in a container, shape, configuration, colour or pattern which is registered as a trade mark”.

2. Trade marks and 3D-printing

²¹⁶ S34(1)(a) of the Trade Marks Act.

²¹⁷ S34(1)(b) of the Trade Marks Act.

²¹⁸ S34(1)(c) of the Trade Marks Act..

²¹⁹ Webster and Page *South African Law of Trade Marks* 12.27.

²²⁰ *McDonald's Corporation v Joburgers Drive-Inn Restaurant (Pty) Ltd. and Another; McDonald's Corporation v Dax Prop CC and Another; McDonald's Corporation v Joburgers Drive-Inn Restaurant (Pty) Ltd. and Another* (547/95) [1996] ZASCA 82; 1997 (1) SA 1 (SCA); [1996] 4 All SA 1 (A); (27 August 1996) 37.

1. The creation of the CAD

Trade mark protection protects a mark and it makes no difference, therefore, whether the CAD is created through using a 3D-scanner or by human craftsmanship. The only relevant points are whether a trade mark exists in the physical object and whether the creation of the CAD infringes that trade mark.

The physical appearance of an infringing mark does not matter, because a trade mark protects names, signatures, words, letters, numerals, shapes, configurations, patterns, ornamentations, colours or containers for goods or any combination of the aforementioned. Thus, it does not matter if the trade mark in form of a physical object is now infringed in a CAD or the other way around. An infringement just depends on the fact, if the requirements of s34 of the Trade Marks Act are fulfilled or not.

However, another issue in this context, that trade marks could be registered for shapes, is that such a protection is not possible if this shape is necessary in connection with the use of the goods, even if there are other shapes which can achieve the same result.²²¹ Protection for shapes is also not permitted if “such mark is or has become likely to limit the development of any art or industry”.²²² Nevertheless, this kind of protection can play an important role in the context of 3D-printing. Indeed, trade mark protection of a whole shape can make the reproduction of a product impossible. Similar issues arise in the context of trade mark protection for configuration, colour or pattern of goods.²²³

As mentioned above, trade mark protection is a protection by registration. In other words, only registered trade mark are protected.

Aforementioned, the requirements for trade mark infringement are stated in s34(1) of the Trade Marks Act. Primary infringement requires an ‘unauthorised use’. This requirement is fulfilled if there is no consent of the trade mark owner. Furthermore, for the requirement ‘of the registered trade mark or of a confusingly similar mark’ the onus rests upon the plaintiff to prove, on a balance of probabilities, that the mark used by the defendant so nearly resembles the

²²¹ S10(5) of the Trade Marks Act; *Beecham Group plc v Triomed (Pty) Ltd* 2003 (3) SA 639 (SCA) 652.

²²² S10(11) of the Trade Marks Act.

²²³ S2(1) of the Trade Marks Act.

plaintiff's trade mark as to be likely to deceive or cause confusion.²²⁴ The requirement 'in relation to goods or services for which the trade mark is registered' states that the infringing goods or services have to be registered in the exact same class.

Of particular importance here are the requirements of 'in the course of trade' and 'as a trade mark'.

In South Africa no definition exists as to what 'in the course of trade' exactly means. A look abroad may help here as the *ECJ*²²⁵ has already defined the term 'in the course of trade'. Accordingly, something is used 'in the course of trade' when "it takes place in the context of commercial activity with a view to economic advantage and not as a private matter". Both elements of this definition are important.²²⁶ A similar definition is used in Germany, where "a mark is used in the course of trade when use occurs in the context of a commercial activity pursued for financial gain, and not in the private sphere".²²⁷ Thus, according to both the EJC and Germany there is no infringement if one acts in a private matter or if the use is not in the context of commercial activity with a view to economic advantage. Both these definitions appear helpful and they are therefore being followed here. The question is whether already the creation of a CAD fulfils these requirements.

It could be argued that a private person, who creates a CAD at home with a scanner or through his own craftsmanship acts in the context of commercial activity with a view to economic advantage if he already thinks about making money from this CAD. However, in the end he still acts in a private manner until he publishes the CAD. Thus, it is argued here that at this stage persons are not acting 'in the course of trade'. This is different though if companies create such CADs to gain money through selling them or printing products with them which they want to sell afterwards. In this situation, both criteria are fulfilled because companies are then not acting in a purely private manner.

²²⁴ Supra note 219 at 12.8.1.

²²⁵ *Arsenal Football Club v Matthew Reed* ECJ C-206/01 12.11.2002 para. 40.

²²⁶ Mellor et al. *Kerly's Law of Trade Marks and Trade Names* 14-029.

²²⁷ Lambert Grosskopf in: Julia Walter *FabLab Of Machines, Makers and Inventors* 48.

However, an additional requirement is that the mark must be ‘used as a trade mark’, i.e., the use must be liable to affect the function of the trade mark.²²⁸ In other words, it is required that the trade mark shows a material link in the course of trade between the goods and the trade mark proprietor.²²⁹ If the mark is used purely for a descriptive purpose, it will not create this impression.²³⁰ There is one South African case²³¹ and two judgements of the *ECJ*²³² where this issue was addressed. In the *Verimark*²³³ case the *Supreme Court of Appeal* decided that no one perceives a material link between *BMW* and the car polisher *Diamond Guard*, only because there was a *BMW* vehicle with its logo on the picture of the packing of the car polisher. No one would perceive “that the logo on the car performs any guarantee of origin function in relation to *Diamond Guard*”.²³⁴ In the *Arsenal* case²³⁵, the *ECJ* stated that the word ‘Arsenal’ - a trade mark of a football club, - on fan articles affects “the guarantee of origin of the goods and that the trade mark proprietor must be able to prevent this”.²³⁶ The *ECJ* was of the opinion that the descriptive purpose was not given in this case, because “the use of the sign takes place in the context of sales to consumers”.²³⁷ Even a notice at the stall of the defendant that the goods were not from the football club could not prevent such an assumption of the consumer because some consumers will see the articles after they have been bought and will link them to the football club.²³⁸ In the *Opel* case²³⁹, the *ECJ* had to deal with an alleged infringement by a model car manufacturer. The manufacturer used the *Opel* sign on its model cars although *Opel* had the trade marks in this sign for motor vehicles and toys. However, the *ECJ* stated that if “the relevant public does not perceive the sign identical to the *Opel* logo appearing on the scale models market by ‘Autec’ as an indication that those products come from ‘Opel’ or an undertaking economically linked to it, it would have to conclude that the use at issue at the main

²²⁸ Supra note 225 at 14-039.

²²⁹ *Verimark (Pty) Ltd v BMW AG* [2007] SCA 53 (RSA) para. 7.

²³⁰ Ibid.

²³¹ Ibid.

²³² Supra note 229.

²³³ Supra note 229.

²³⁴ Supra note 229 at para. 8.

²³⁵ Supra note 225.

²³⁶ Supra note 225 at para. 61.

²³⁷ Supra note 225 at para. 55.

²³⁸ Supra note 225 at para. 57.

²³⁹ *Adam Opel AG v Autec AG* ECJ C-48/05 25.01.2007.

proceedings does not affect the essential function of the Opel logo as a trade mark registered for toys”²⁴⁰.

In summary, if there is a material link in the course of trade between the goods and the trade mark proprietor, and thus a ‘use as a trade mark’, seems to require a case-by-case assessment. Nevertheless, it appears that the more the product differs from the products of the trade mark proprietor the less the likelihood of such a material link. The existence of a material link is mostly affected by the view of the consumers and their thoughts when they see the product and the mark. Thus, it is very difficult to predict the outcome of the ‘material link’ assessment.

The same questions as just discussed also arise in the context of the so-called extended infringements. The only difference is that the infringement must not be caused “in relation to goods or services for which the trade mark is registered”, but instead “in relation to goods or services which are so similar to the goods or services for which the trade mark is registered that there is a likelihood of deception or confusion”.

The difference of infringement by dilution to primary infringement is that this protects a registered trade mark which “is well known in the Republic”, and provided “the use of the said mark would be likely to take unfair advantage of, or be detrimental to, the distinctive character or the repute of the registered trade mark, notwithstanding the absence of confusion or deception”. Thus, the above-mentioned issues discussed in the context of primary infringement also play a key role here. The question, if the mark is “well known” is a question relying on the actual facts of the individual case. Furthermore, the term “detrimental to the repute” means that the harm of the trade mark proprietor must be an economic one, according to the *Laugh it Off Promotions* decision.²⁴¹ This means that the harm must occur in a loss of sales of the plaintiff. The term of ‘unfair advantage’ means that the alleged infringer must gain some benefit or marketing advantage from the use of the mark.²⁴² This advantage must be of a significant degree as to warrant the restraining of non-confusing use.²⁴³

²⁴⁰ Ibid at para. 24.

²⁴¹ *Laugh It Off Promotions CC v SAB International (Finance) BV* 2006 (1) SA 144 (CC) 169.

²⁴² Supra note 23 at 18.2.3.2.

²⁴³ *Verimark (Pty) Ltd v Bayerische Motoren Werke Akiengesellschaft* 2007 (6) SA 263 (SCA) 270.

Notably, in relation to 3D-printing, the defences of the *bona fide* use of indications and of utilitarian features under s34(2)(c) and (e) of the Trade Marks Act are of relevance. The *bona fide* use of indications provides especially for manufacturer of spare parts that they are entitled to use the trade mark to describe the intended purpose of their goods and services.²⁴⁴ If this section protects a certain use of a trade mark, it becomes a question of the use of the trade mark: “A phrase such as “XYZ spare parts” [where XYZ is the registered trade mark] would not be protected by this section while “Spare parts for XYZ goods” would clearly fall within the provisions of section 34(2)(c)”.²⁴⁵ Thus, under certain circumstances, manufacturers are allowed to use the trade mark.

S34(2)(e) stipulates that it is sufficient if the feature has a primarily utilitarian function.²⁴⁶

2. The uploading and sharing of the CAD

a) Liability of the uploader

For the present examination, uploaders must be divided into two groups: Uploaders who offer the CADs for free and those who offer the CADs for sale.

Those offering the CAD for sale can be liable for trade mark infringement under s34(1) of the Trade Marks Act as they act ‘in the course of trade.’ However, the situation is different if the infringing CADs are offered for free downloading. Again, the problem here is whether the trade mark is used in such cases ‘in the course of trade’. According to the aforementioned definition of the *ECJ*, a trade mark is used ‘in the course of trade’ if such use “takes place in the context of commercial activity with a view to economic advantage and not as a private matter”. This seems to indicate that offering a CAD for free downloading does usually not fulfil the ‘in the course of trade’ requirement.

Nevertheless, the uploader could still be liable for indirect infringement under the common law as stated in the *Esquire Electronics*²⁴⁷ case. In this case the

²⁴⁴ Supra note 219 at 12.40.

²⁴⁵ Ibid.

²⁴⁶ Supra note 219 at 12.42.

²⁴⁷ *Esquire Electronics Ltd. v Executive Video* (270/84) [1986] ZASCA 12; [1986] 2 All SA 210 (A) (13 March 1986) 29(a), 30.

court stated that the *Lex Aquilla* and thus the common law rules also apply for trade mark infringement.²⁴⁸ Consequently, an uploader could be liable for indirect infringement under common law by a knowingly or intended act that is by command, consent, harbouring, abetting, advising or instigating. Through uploading the uploader can abet downloaders to commit trade mark infringement; and if one can prove the necessary knowledge and intent a liability for the uploader under the common law is possible. This said, the uploader can still make use of the defences under s34(2)(c) and (e) of the Trade Marks Act.

b) Liability of the website owner

For trade mark infringement, we do not have to distinguish between CAD-file sharing websites which are organised as peer-to-peer networks and the ones which are organised as online market places. The liability of both will follow the same rules.

The key question for a liability of website owners under s34(1) of the Trade Marks Act is whether the website owner makes ‘use’ of a trade mark. On the face of it the website owner does not create the infringing mark and merely facilitates the exchange or selling of CADs between website users. The website owner has usually no possession of the CAD.

There is no South African case law directly addressing this problem. However, a South African court once dealt with a similar problem: The liability of retailers for trade mark infringement.²⁴⁹ In *Protective Mining* the court stated that “[a] trader who advertises and sells goods marked with their trade mark clearly [...] makes use of the trade mark”.²⁵⁰ Furthermore, the court stated that “assuming that the proprietor does use the trade mark in these circumstances, this would not mean that the dealer who sells the marked articles is not also using the mark. There is nothing anomalous in recognising that different persons may concurrently use the same mark in different ways”.²⁵¹ Thus, even if there is already a ‘use’ of the trade mark through the uploader, the website owner could still make ‘use’ of it in a different way.

²⁴⁸ For further details see: Chapter 4 A. II. 1.

²⁴⁹ *Protective Mining & Industrial Equipment Systems (Pty) Ltd v Audiolens (CAPE) (Pty) Ltd* 1987 (2) SA 961 (A).

²⁵⁰ Supra note 249 at 988I.

²⁵¹ Supra note 249 at 993C.

However, in my opinion, the position of a website owner and a retailer are markedly different. A retailer has possession of the infringing products and sells them directly. He is the one who has the products ‘in his hands’. The position of a website owner is not the same: As mentioned before, the website owner merely facilitates the selling or exchange of infringing products. In most cases, he does not even know about a certain infringing product, while a retailer exactly knows which products are in his inventory. In addition, the website owner is not the one who offers the products. Thus, in my opinion, the website owner does not make ‘use’ of the trade mark.

This said, a website owner may be liable under the common law rules as explained above. Of particular relevance in this context are the acts of harbouring, abetting and instigation. Yet again, the website owner may be able to rely on the safe harbour provisions of the ECTA to avoid liability.²⁵² And even if a website owner is, in principle, liable for trade mark infringement, the website owner may still be able to make use of the above mentioned defences of s34(2)(c) and (e) of the Trade Marks Act.

3. The printing of the physical object

As far as private persons are concerned who print the object at home and for private purposes only, there is no trade mark infringement because such persons do not act ‘in the course of trade’.

Whether manufacturing on demand qualifies as infringement depends again on the question whether the manufacturer makes actual ‘use’ of the trade mark. The same problem was already discussed above in the context of liability for website owners. In my opinion, however, a printing company can more easily be compared with a classical retailer, not least because they as well have at some point the product ‘in their hands’. Thus, the principles developed in the *Protecting Mining* case²⁵³ can be used here. Consequently, a printing company makes ‘use’ of a trade mark and can, therefore, be liable for trade mark infringement as per s34(1).²⁵⁴

²⁵² These provisions are explained in detail in Chapter 2 B. II. 2. c).

²⁵³ Supra note 249.

²⁵⁴ The reasons for this can be looked up in the section of the liability of website owner.

A consumer who orders and buys a 3D-printed, trade mark infringing product does not make 'use' of the mark as a trade mark. Neither do these activities qualify as use 'in the course of trade'. Such customers simply buy the mark for themselves, thereby not creating a material link between the mark and the proprietor for other people. Nor do they use the mark in any relation to trade. Thus, a customer cannot be liable for any statutory infringement. However, the persons who order can be held liable for indirect infringement because their activities could be qualified as acts of command, abetting or harbouring.

4. Summary

Private persons are mostly safe in as far as liability for trademark infringement is concerned because they usually do not act 'in the course of trade'. Thus, in most cases, they can without fear create 3D-files and/or print the 3D products. Only the uploading of any 3D-files may lead to liability for trade mark infringement.

The situation is different, however, if business activity is involved. If the printing and the creating is made 'in the course of business' a liability is possible. Also, a consumer who orders such products can be held liable under the common law rules for third parties. Lastly, the website owner can also be liable under the common law rules for third parties.

C. Passing-off

I. What is passing-off and what does it protect?

In *Capital Estate and General Agencies (Pty) Limited v Holiday Inns Inc*²⁵⁵ the court provided the following definition of passing-off: “The wrong known as passing off consists in a representation by one person that his business (or merchandise, as the case may be) is that of another, or that it is associated with that of another, and, in order to determine whether a representation amounts to a passing-off, one enquires whether there is a reasonable likelihood that members of the public may be confused into believing that the business of the one is, or is connected with, that of another.”

The key requirements for passing-off are that the plaintiff has acquired a reputation in the trade mark and that there is an unauthorised use of it, which is likely to deceive and that he will suffer damages because of the deception.²⁵⁶ To prove a reputation, the plaintiff has to show that his trade mark has become famous among a reasonable number of customers who are interested in the product.²⁵⁷ The protection of a reputation covers: Fancy names, descriptive words, get-up or packaging²⁵⁸, appearance of business or product²⁵⁹, use of own name as trade mark²⁶⁰, protracted use and association²⁶¹. Importantly, foreign traders have to place their market in South Africa to be protected against passing-off or at least have potential South African customers.²⁶² Furthermore, the plaintiff has to prove the likelihood that the ordinary consumers or potential ordinary consumers are deceived or confused.²⁶³ The plaintiff only needs to prove a probability of deception or confusion.²⁶⁴ The likelihood of deception is determined by the whole get-up of the mark.²⁶⁵

²⁵⁵ *Capital Estate and General Agencies (Pty) Limited v Holiday Inns Inc*. 1977 2 SA 916 (A) 929C.

²⁵⁶ *Supra* note 23 at 5.1.5.1.

²⁵⁷ *McDonald’s Corporation v Joburgers Drive-Inn Restaurant (Pty) Ltd and another* [1996] 4 All SA 1 (A) 16.

²⁵⁸ *John Craig (Pty) v Dupa Clothing Industries* 1977 (3) SA 144 (T) 155.

²⁵⁹ *Supra* note 23 at 5.1.5.2.5.

²⁶⁰ *Supra* note 23 at 5.1.5.2.6.

²⁶¹ *Haggart v Tailorscraft* 1985 (4) SA 569 (T) 578.

²⁶² *Pick’n’Pay Stores Ltd v Pick’n’Pay Superette* 1973 (3) SA 564 (R) 571.

²⁶³ *Supra* note 23 at 5.1.5.3.1.

²⁶⁴ *Media24 Bpk v Ramsay, Son & Parker (Edms) Bpk* 2006 (5) SA 204 (C) 205.

²⁶⁵ *Philip Morris Inc v Marlboro Shirt Co SA Ltd* 1991 (2) SA 720 (AD) 739.

II. Passing-off and 3D-printing

The relevant legal issues with regards to passing-off in the context of creating a CAD are similar to those discussed in the trade mark section. However, passing-off refers to the whole get up of the mark, where this can cause deception or confusion. Another salient point is that it only applies to businesses and not to private persons.²⁶⁶ Thus, even if a private person creates a CAD which could cause confusion in relation to any other well-known mark, this person will not be liable for passing-off. However, if a company creates a CAD that can cause deception or confusion to another person's business, in order to sell the CAD or to do other business with them, they may be liable for passing off.

An uploader could be liable if his conduct qualifies as business. As per the *Oxford Dictionary*²⁶⁷ 'business' means "a person's regular occupation, profession, or trade". This definition excludes persons from liability for passing-off who share the CAD files for free. For all other persons, it is argued here, it depends on the amount of uploading and file-sharing whether this activity can be qualified as 'business'. This said, in *Omega and Others v African Textile*²⁶⁸ the court stated that the principles of the *McKenzie* case²⁶⁹ do also apply to passing-off. Hence, an uploader can be liable for passing-off if he knowingly and with intention instigates or aids or advises an infringing activity of a third party.²⁷⁰

A website owner is usually not liable for direct passing-off because he is not producing anything himself that could trigger liability. However, according to the aforementioned principles for indirect infringement, a website owner can be liable for passing-off if he knowingly and with intention instigates or aids or advises or harbours an infringing activity conducted by a third party.²⁷¹

A private person, who prints the product for his personal use will not be liable for passing-off because such activity does not fulfil the requirement of business as defined above. Liability for private persons can only arise if they distribute the printed products in larger quantities to others. A company can, however, be liable for passing-off if it is their business to produce these products.

²⁶⁶ *Capital Estate and General Agencies (Pty) Limited v Holiday Inns Inc.* 1977 2 SA 916 (A) 929C.

²⁶⁷ <http://www.oxforddictionaries.com/definition/english/business>.

²⁶⁸ *Omega and Others v African Textile* 1982 (2) SA 951 (TPD) 957A.

²⁶⁹ *McKenzie v Van der Merwe* 1917 AD 41.

²⁷⁰ For further details see: Chapter 4 B. II. 2.

²⁷¹ For further details see: Chapter 4 B. II. 2.

Finally, the consumer, who orders an infringing product from a printing company, can again be held liable for indirect passing-off under the common law.

Chapter 5

Conclusion

The development of 3D-printing offers a variety of new opportunities for its users. They can now create their own objects as well as make inexpensive copies of already existing objects. This thesis has analysed if and to what extent the different activities involved in the process of 3D-printing can infringe intellectual property rights. The examination shows that creators of CADs, website owners, printing companies and private printers run a high risk of infringing intellectual property rights.

In the case of Copyright law the thesis pointed out that already the scanning of a copyright protected article and converting it to a CAD can infringe copyright according to s23(1) of the Copyright Act, provided the 'fair dealing' provision for 'personal or private use' under s12(1)(a) in conjunction with s15(4) of the copyright Act, the 'teaching exception' of s12(4) in conjunction with s15(4) of the Copyright Act and the 'bona fide exception' of s12(12) in conjunction with s15(4) of the Copyright Act do not apply.²⁷² The same applies to the creation of CAD through human craftsmanship when the creator creates the CAD from a copyright protected article. Only that in these cases the examination whether a substantial part is copied has to be more careful because of possible deviations from the original work.²⁷³ Copying an existing copyright protected CAD can be a copyright infringement under s23(1) of the Copyright Act, even if the CAD copied is already an infringing CAD and provided the 'fair dealing' provision for 'personal or private use' under s12(1)(a) in conjunction with s15(4) of the copyright Act, the 'teaching exception' of s12(4) in conjunction with s15(4) of the Copyright Act and the 'bona fide exception' of s12(12) in conjunction with s15(4) of the Copyright Act do not apply.²⁷⁴ Furthermore, the uploader of copyright infringing files on a file-sharing website runs a high risk for copyright infringement under s23(2)(b) and (c) of the Copyright Act. Even if he offers the file free of charge he could be liable for secondary infringement and a criminal offence. However, these liabilities depend only on the 'guilty knowledge' of the uploader.²⁷⁵ As statutory liability comes only into consideration for website owner who constructed their website as a online market place. These website owners could be held liable for indirect infringement under s23(2)(b) and (c) of

²⁷² Chapter 2 B. I. 1.

²⁷³ Chapter 2 B. I. 2.

²⁷⁴ Chapter 2 B. I. 3.

²⁷⁵ Chapter 2 B. II. 1.

the Copyright Act and even for criminal offence under s27(1)(b) and (f) of the Copyright Act. Even if there is no statutory liability for website owners who facilitate the exchange of CAD files, they can still be held liable under the common law rules of contributory, vicarious and inducement infringement.²⁷⁶ However, website owners have the possibility to limit their liability under the safe harbour rules of the ECTA.²⁷⁷ In the process of printing an object, a private person can be held liable for direct infringement under s23(1) of the Copyright Act, for indirect infringement under s23(2)(b) and (c) of the Copyright Act and for criminal offences under s27(1)(a),(b),(e) and (f) of the Copyright Act. For private persons the 'fair dealing' exemption for 'private or personal use' will play a decisive role.²⁷⁸ Furthermore, if a printing company is involved in the printing process, this company can be held liable for direct infringement under 23(1) of the Copyright Act, indirect infringement under s23(2)(b) of the Copyright Act and for criminal offences according to s27(1)(a),(b) and (e) of the Copyright Act.²⁷⁹ Even the person ordering the printed article from a company can be held liable for direct infringement under s23(1) of the Copyright Act because he instigates the infringement through his order.²⁸⁰

As far as patent law is concerned, it makes no difference how a CAD is created, because the sole creation of a CAD is not a direct patent infringement under the term or 'making' under s45(1) of the Patents Act. The term of 'making' only comprises the last step of making, what is not given by the creation of a CAD.²⁸¹ The sole creation of a CAD is also not an indirect infringement under the common law, because the sole creation of a CAD is neither a potential nor an actual harm for the patentee.²⁸² However, the uploader of a CAD can potentially be liable for contributory patent infringement under the rules of the common law, if he cannot rely on the exemption of s69A of the Patents Act.²⁸³ In addition, the website owner can also be liable under the common law rules of contributory and vicarious infringement if he cannot rely on the 'safe harbour provisions' of the

²⁷⁶ Chapter 2 B. II. 2.

²⁷⁷ Chapter 2 B. II. 2. d).

²⁷⁸ Chapter 2 B. III.

²⁷⁹ Chapter 2 B. III.

²⁸⁰ Chapter 2 B. III.

²⁸¹ Supra note 145 5.5.

²⁸² Chapter 3 B. I.

²⁸³ Chapter 3 B. II. 1.

ECTA.²⁸⁴ In the process of printing the article, a private person can be liable for direct infringement under s 45(1) of the Patents Act, if the requirements of the exemption of s69A of the Patents Act are not fulfilled. The same applies for a company who prints the article. At last, also through an order, a consumer can be held liable for contributory patent infringement.²⁸⁵

As for registered designs, the mere creation of a CAD is neither a direct nor an indirect registered design infringement, because it does not fulfil the requirement of 'making' and is neither a potential nor an actual harm for the registered design owner for the same reasons as stated in the patent chapter.²⁸⁶ For the uploader of a CAD, indirect infringement under the common law is a possibility. However, the uploader is not liable for any infringement if s14(5) and (6) or 20(3) of the Registered Designs Act apply. A website owner can be liable for indirect infringement under the common law, provided he cannot rely on the safe harbour provisions of the ECTA. A private printer can be held liable for direct registered design infringement under s20(1) of the registered designs Act, and if a private person orders a print that person can be held liable for indirect registered design infringement, while the company is again liable for direct registered design infringement. This said, they may be able to invoke the rules under ss14(5) and (6) or 20(3) of the Registered Designs Act, which exclude features of an article in so far as they are necessitated solely by the function which the article is intended to perform, 'method or principle of construction' and spare parts from registered design protection and give exceptions from registered design infringement for certain uses of integrated circuit topographies.²⁸⁷

In the context of trade mark law, a private person creating a CAD cannot be liable for trade mark infringement under s34(1) of the trade marks Act if they not act 'in the course of trade'. However, this could of course be different for companies who create such a CAD and if they make 'use of the trade mark'. Yet, even companies can still make use of the defences contained in s34(2)(c) and (e) of the Trade Marks Act.²⁸⁸ In the case of uploading a CAD, the uploader can only be liable for direct trade mark infringement if he offers the CAD for sale,

²⁸⁴ Chapter 3 B. II. 2.

²⁸⁵ Chapter 3 B. 3.

²⁸⁶ Chapter 4 A. II. 1.

²⁸⁷ Chapter 4 A. II. 3.

²⁸⁸ Chapter 4 B. II. 1.

because only then is he acting 'in the course of trade'. Here again, the liability for direct infringement depends on whether the uploader can rely on any of the defences available.²⁸⁹ Additionally, the uploader who uploads the CAD files for free can be held liable for indirect infringement under the common law if he cannot make use of any of these defences.²⁹⁰ Furthermore, the website owner can also be liable for indirect trade mark infringement under the common law.²⁹¹ For the process of printing a private printer is not liable for any infringement because he does not act in the 'course of trade', while a printing company can be held liable for direct infringement under s34(1) of the Trade Marks Act. Furthermore, a consumer ordering the article can again be held liable for indirect trade mark infringement under the common law.²⁹²

For passing-off the situation is very similar to the one described for trade mark law. The creation of a CAD can be passing-off if it causes deception or confusion of another persons' business. A website owner can again be liable under the common law rules, and the process of printing can again create a passing-off liability for a company as well as for the person ordering the article.²⁹³

It became evident that current case law does not cover every scenario of 3D-printing which potentially conflicts with intellectual property protection. However, it is argued that the legislative framework provides enough leeway to be able to deal with all the new issues arising from 3D-printing. Although at this point it cannot always be predicted how South African courts will deal with certain issues, taking into consideration relevant case law from abroad may provide some guidance. There is no way of knowing how South African courts will eventually decide on the issues discussed in this thesis if the current law is unclear; however, it is hoped that the solutions put forward in this thesis are considered as they aim to marry what is possible under the current law with what has been decided elsewhere and what hopefully appears to be a just and logical result.

²⁸⁹ Chapter 4 B. II. 2. a).

²⁹⁰ Chapter 4 B. II. 2. a).

²⁹¹ Chapter 4 B. II. 2. b).

²⁹² Chapter 4 B. III.

²⁹³ Chapter 4 C.

A key problem, in my opinion remains that average consumers do not have enough knowledge regarding IP law as yet. As a result they may unintentionally make themselves liable for intellectual property infringement when carrying out activities that they thought to be perfectly legal. It is therefore crucial that consumers and perhaps even professionals learn more about the potential legal consequences of their actions. Raising awareness about these issues is therefore of utmost importance. Again, it is hoped that this thesis is a first step towards a better understanding of the issues at hand. Website owners, which allow and enable the exchange of CADs, should be informed about the legal risks as described in this thesis. And they should be informed about the ‘safe harbour provisions’ which the ECTA provides for them. Also, average consumers as well as companies can often rely on the exceptions and limitations contained in intellectual property legislation for certain activities: Under copyright law, the ‘fair dealing’ exception for ‘personal or private use’ under s12(1)(a) in conjunction with s15(4) of the Copyright Act is crucial. Similarly, under patent law, s69A of the Patents Act prevents infringement action if an activity occurs “on a non-commercial scale and solely for the purposes reasonably related to the obtaining, development and submission of information required under any law that regulates the manufacture, production, distribution, use or sale of any product”. In the context of registered designs, consumers and companies can, for example, benefit from s14(5)(b) and 14(6) of the Registered Designs Act, which exclude ‘method or principle of construction’ and ‘spare parts’ from design protection. And with regards to trade mark law, the defences contained in s34(2)(c) and (e) of the Trade Marks Act are relevant if the trade mark use is a “bona fide use of the trade mark in relation to goods or services where it is reasonable to indicate the intended purpose of such goods, including spare parts and accessories, and such services “or if the trade mark use is a “bona fide use by any person of any utilitarian features embodied in a container, shape, configuration, colour or pattern which is registered as a trade mark”. This can be relevant when using 3D-printing to produce spare parts and products where the container, shape, configuration, colour or pattern has a primarily utilitarian purpose. All these exceptions and limitations are meant to safeguard a fair balance between the interests of intellectual property owners on the one hand and the interests of users of intellectual property protected subject matter on the other.

3D-printing technology holds huge promise for a developing country like South Africa in that it allows for the inexpensive production of much-needed products. Although 3D-printing technology is new and in many ways challenging for the South African lawmaker and other stakeholders alike, in my opinion, the issues we are presented with can be handled in a satisfactory manner. Often, solutions can be derived from older cases dealing with related issues, or from foreign case law, and if this is not possible, new case law or new laws will develop. But along the way, users of this new technology need to be informed about potential legal risks and ways of avoiding such risks and addressing those issues was a core objective of this thesis.

Table of Cases

A&M Records Inc v Napster Inc 239 F.3d 1004 (9th Cir. 2001)

Accesso CC v Allforms (Pty) Ltd and another [1998] 4 All SA 655 (T)

Adam Opel AG v Autec AG ECJ C-48/05 25.01.2007

Appleton and Another v Harnischfeger Corporation and Another 1995 (2) SA
247, 262 (D)

Arsenal Football Club v Matthew Reed ECJ C-206/01 12.11.2002

*Bayerische Motorenwerke Aktiengesellschaft v Auto Body Spares SA (Pty) Ltd
and Others* 1999 BIP 51 (T)

Beecham Group plc v Triomed (Pty) Ltd 2003 (3) SA 639 (SCA)

BGH I ZR 216/7, 16.05.2013

BGH Urt. v. 30. Januar 2007 - X ZR 53/04 - *Funkuhr II*

BGH Urteil vom 7. Mai 2013 - Az. X ZR 69/11

Bosal Africa (Pty) Ltd v Grapnel (Pty) Ltd 1985 (4) SA 882 (C)

Bress Designs (Pty) Ltd v G Y Lounge Suite Manufactures (Pty) Ltd 1991 (2) SA
455

Brudd Lines (Pty) Ltd v Badsey (2) [1973] 4 All SA 229 (T)

Swisstool Manufacturing Co v Omega Africa Plastics 1975 (4) SA 379 (W)

Brudd Lines (Pty) Ltd v Badsey (2) [1973] 4 All SA 229 (T)

Capital Estate and General Agencies (Pty) Limited v Holiday Inns Inc. 1977 2
SA 916 (A)

Cipla Medpro (Pty) Ltd v Aventis Pharma SA and Others 2013 (4) SA 579
(SCA)

Delta G Scientific (Pty) Ltd v Janssen Pharmaceutica NV and Another 1996 BP
455 (CP)

Esquire Electronics Limited v Executive Video 1986 (2) SA 576 (A)

Frank & Hirsch v Rodi & Wienberger 1960 (3) 747 (A)

Galago Publishers (Pty) Ltd and Another v Erasmus 1989 (2) SA 276 (A)

Gallagher Group Ltd and Another v I O Tech Manufacturing and Others
(96/6799) [2012] ZACCP 1 (8. February 2012)

George Hensher Ltd v Restawhile Upholstery (Lancs) Ltd [1976] AC 77

Gramophone Co. Ltd v Music Machine (Pty) Ltd 1973 (3) SA 188 (W)

Grande Paroisse SA v Sasol Ltd and Another 2003 BIP 11 (CP)

Haggart v Tailorscraft 1985 (4) SA 569 (T)

Haupt t/a Softcopy v Brewers Marketing Intelligence (Pty) Ltd 2006 (4) SA 458
(SCA)

Helm Textile Mills (Pty) Ltd v Isa Fabrics CC & others [2005] JOL 14423 (T)

In re Aimster 334 F.3d 643.

John Craig (Pty) v Dupa Clothing Industries 1977 (3) SA 144 (T)

J&S Davis (Holdings) v Wright Health Group [1988] RPC 403

Laugh It Off Promotions CC v SAB International (Finance) BV 2006 (1) SA 144

(CC)

Letraset Ltd 1972 BP 243 (A)

LG Duesseldorf 4b O 141/10 01.03.2012

LG Düsseldorf, Urteil vom 25. Oktober 2000 – 2a O 109/00 –, juris.

Lucent Technologies Inc. v. Gateway Inc. 470 F.Supp.2d 1180 (S.D.Cal.,2007)

Lucasfilm Ltd v Ainsworth [2011] UKSC 39 (AC) 208

McDonald's Corporation v Joburgers Drive-Inn Restaurant (Pty) Ltd and

another [1996] 4 All SA 1 (A)

McKenzie v Van der Merwe 1917 AD 41

Media24 Bpk v Ramsay, Son & Parker (Edms) Bpk 2006 (5) SA 204 (C)

Metix v G H Maugham [1997] FSR 718

MGM Studios Inc. v. Grokster Ltd 545 U.S. 913 (2005)

Nintendo Co Ltd v Golden China TV Game Centre and Others 1995 (4) SA 421

(T)

Omega and Others v African Textile 1982 (2) SA 951 (TPD)

Paramount Pictures Corp v Video Parktown North 1983 (2) SA 251 (T)

Philip Morris Inc v Marlboro Shirt Co SA Ltd 1991 (2) SA 720 (AD)

Pick'n'Pay Stores Ltd v Pick'n'Pay Superette 1973 (3) SA 564 (R)

Protective Mining & Industrial Equipment Systems (Pty) Ltd v Audiolens

(CAPE) (Pty) Ltd 1987 (2) SA 961 (A)

S v Nxumalo 1993 (3) SA 456 (O)

Sony Corp. v Universal City Studios 464 U.S. 417 (1984)

Stellenbosch Farmer's Winery Ltd v Stellenbosch Winery (Pty) Ltd 1957 4 SA

234 (C)

Sunsmart Products (Pty) Ltd v Vari-Deals 101 (Pty) Ltd and Others 2006 BIP 1

(CP)

Sykes v Howarth (1879) 12 ChD 826

Tiffany Inc. v. eBay Inc. 600 F.3d 93 (2d Cir. 2010)

Verimark (Pty) Ltd v BMW AG [2007] SCA 53 (RSA)

Viskase Corporation v Columbit (Pty) Ltd and Another 1986 BP 432 (CP)

Waylite Diaries CC v First National Bank Ltd 1995 (1) SA 645 (A)

Wynn Oil and Another v Metropolitan Oils (Pty) Ltd and Another 1981 BP 62

(CP)

Books and Articles

Burrell, Timothy *Law of South Africa – Designs* Durban: LexisNexis 2005

Burrell, Timothy *South African Patent and Design Law* Durban: LexisNexis
(1998-)

Copeling, A. J. C. *Law of South Africa Volume 5(2) Copyright* Durban:
LexisNexis 2003

Copeling, A. J. C. *Copyright Law in South Africa* Durban: Butterworth 1978

Crawford, Stephanie *How 3D-Printing Works*

<http://computer.howstuffworks.com/3-d-printing.htm>

Davies, Colin et. al *Intellectual Property Law in the United Kingdom* Great
Britain: Wolters Kluwer 2011

Dean, O. H. *Handbook of South African Copyright Law* Cape Town: Juta (1987-)

Doherty, Davis *Downloading Infringement: Patent Law as a Roadblock to the
3D Printing Revolution* Harvard Journal of Law & Technology Vol. 26 No. 1
2012

Grosskopf, Lambert *3D Druck – Personal Manufacturing* Computer und Recht
2012, 618

Klopper, H. B. et al. *Law of Intellectual Property South Africa* Durban:
LexisNexis 2011

Loubser, Max et al. *The Law of Delict in South Africa* Cape Town: Oxford University Press 2012

Mellor, James et al. *Kerly's Law of Trade Marks and Trade Names* London: Sweet & Maxwell 2011

Osborn, Lucas S. *Regulating Three-Dimensional Printing: The Converging Worlds of Bits and Atoms* 51. San Diego L. Rev. 553 (2014)

Steyn Law of South Africa - Patents Durban: LexisNexis 2009

Van der Merwe et. al *Information and Communications Technology Law* Durban: LexisNexis 2008

Walter, Julia *FabLab Of Machines, Makers and Inventors* Bielefeld: Transcript Verlag 2013

Webster, G. C. and Page, N.S. *South African Law of Trade Marks* Durban: LexisNexis (2006-)

Weinberg, Michael *It Will Be Awesome, if They Don't Screw It Up: 3D-Printing, Intellectual Property, and the Fight Over the Next Great Disruptive Technology* Washington D.C.: Public Knowledge 2010

Weinberg, Michael *What's the deal with copyright and 3D-printing?* Washington D.C.: Public Knowledge 2013

Websites

<http://3druck.com/grundkurs-3d-drucker/teil-2-uebersicht-der-aktuellen-3d-druckverfahren-462146/>.

<http://3dprintingindustry.com/wp-content/uploads/2014/07/3D-Printing-Guide.pdf>

<http://computer.howstuffworks.com/3-d-printing1.htm>

<http://en.wikipedia.org>

<http://shop.3d-printer.co.za>.

<http://www.oxforddictionaries.com>

<http://www.thefreedictionary.com>

<http://www.vocabulary.com>

<http://www.webster-dictionary.org>

<http://www.wipo.int>

Statutes**Canada:**

Copyright Act of Canada

Germany:

Patentgesetz

South Africa:

Copyright Act no. 98 of 1978

Designs Act no. 195 of 1993

Electronic Communications and Transactions Act 2002

Patents Act no. 57 of 1987

Patents, Designs, Trade Marks and Copyright Act of 1916

Trade Marks Act no. 194 of 1993

United Kingdom:

Copyright, Designs and Patents Act 1988