

UCL Institute of Brand & Innovation Law
12 February 2020

UCL

What is the function of functionality in trade mark law?

Annette Kur

Research Fellow in IP & Competition Law, Max
Planck Institute for Intellectual Property and
Competition Law

1

The EU 'functionality' exclusions

Regulations, interpretation, open questions

UCL/IBIL functionality event, 12 Feb 2020

Annette Kur
MPI Munich

2

The law

Article 7(1)(e) Reg. (EU) 2017/1001

Article 4(1)(e) Dir. (EU) 2015/2436

1. The following shall not be registered:

...

(e) signs which consist exclusively of:

(i) a shape, or another characteristic, which results from the nature of the goods themselves;

(ii) the shape, or another characteristic, of goods which is necessary to obtain a technical result;

(iii) the shape, or another characteristic, which gives substantial value to the goods;

...

The words “or another characteristic” were added by the law reform of 2015

- doesn't apply retroactively (C-21/18 – Textilis/Svensk Tenn)

- No relevant practice until now (as far as can be seen)

3

CJEU Case Law, I

Aim of provision

- C-299/99 – Philips./.Remington

- Para 78: The rationale of the grounds for refusal of registration laid down in Article 3(1)(e) of the Directive is to **prevent trade mark protection from granting its proprietor a monopoly** on technical solutions or functional characteristics of a product which **a user is likely to seek in the products of competitors**

4

CJEU case law, II

Technical functionality (ii)

- CJEU C-299/99 – Philips./Remington



- Para 79: [exclusion under (ii)] is intended to preclude [that] ...the exclusivity inherent in the trade mark right would **limit the possibility** of competitors supplying a **product incorporating such a function** or at least **limit their freedom of choice** in regard to the technical solution they wish to adopt in order to incorporate such a function in their product
- Para 84: the ground for refusal or invalidity of registration imposed by that provision **cannot be overcome by establishing that there are other shapes** which allow the same technical result to be obtained.

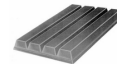
- CJEU C-48/09 – Lego Juris./OHIM



- Para 45: The prohibition on registration as a trade mark of any sign consisting of the shape of goods which is necessary to obtain a technical result ensures that **undertakings may not use trade mark law in order to perpetuate, indefinitely, exclusive rights** relating to technical solutions (applies also to the third indent; see CJEU C-205/13 – Hauck./Stokke, para 19).

- C-215/14 – Nestlé./Cadbury

- Para 57: [ii refers]referring only to the manner in which the goods at issue function and it **does not apply to the manner in which the goods are manufactured**



5

CJEU Case Law, III

Aesthetic functionality (iii)



- C-205/13 – Hauck ./Stokke

- Para 19: The immediate aim [of the second as well as the third indent] is to **prevent the exclusive and permanent right** which a trade mark confers from **servicing to extend indefinitely the life of other rights** which the EU legislature has sought to make subject to limited periods
- Para 32: the concept of a 'shape which gives substantial value to the goods' **cannot be limited purely to the shape of products having only artistic or ornamental value**, as there is otherwise a risk that products which have essential functional characteristics as well as a significant aesthetic element will not be covered...
- Para 36: the third indent of Article 3(1)(e) [TMD]... may apply to a sign which consists exclusively of the shape of a product with **several characteristics each of which may give that product substantial value**. The **target public's perception** of the shape of that product is **only one of the assessment criteria** which may be used to determine whether that ground for refusal is applicable

6

CJEU Case Law, IV

'Product-inherent' functionality (i)



- CJEU C-205/13 – Hauck/Stokke
 - Advocate General Szpunar's opinion, para 28: All three grounds serve to **keep in the public domain the essential characteristics of particular goods which are reflected in their shape** (referred to by the CJEU, para 20)
 - Para 25: the concept of a 'shape which results from the nature of the goods themselves' means that **shapes with essential characteristics which are inherent to the generic function or functions of such goods** must, in principle, also be denied registration.
 - Para 26 (with reference to GA opinion, para 58): reserving such characteristics to a single economic operator **would make it difficult for competing undertakings to give their goods a shape which would be suited to the use for which those goods are intended**. Moreover, it is clear that those are essential characteristics which consumers will be looking for in the products of competitors, given that they are intended to perform an identical or similar function
 - Application of (i) is **not restricted** to 'natural' or 'indispensable' shapes

7

EU case law, V

Relationship among the grounds for exclusion

- C-205/13 – Hauck./Stokke; see also C-215/14 Nestlé./Cadbury
 - Para 39 - 41: [T]he three grounds for refusal of registration ...operate independently of one another: the fact that they are set out as successive points, coupled with the use of the word 'exclusively', shows that **each of those grounds must be applied independently** of the others.
 - Thus, if **any one** of the criteria listed in Article 3(1)(e) of the trade marks directive is satisfied, a sign consisting exclusively of the shape of the product or of a graphic representation of that shape cannot be registered as a trade mark.
 - In that regard, the fact that the sign in question could be denied registration on the basis of a number of grounds for refusal is irrelevant **so long as any one of those grounds fully applies** to that sign.

8

EU case law, VI

Inherent restriction

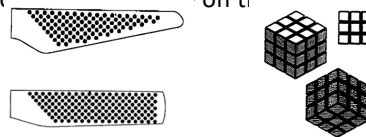
- C-48/09 – Lego./.OHIM
 - Para 48/51: By the terms ‘exclusively’ [and ‘necessary’], that provision ensures that **solely shapes of goods which only incorporate a technical solution**, and whose registration as a trade mark would therefore actually impede the use of that technical solution by other undertakings, are not to be registered... that condition is fulfilled when all the **essential characteristics** of a shape perform a technical function, the presence of non-essential characteristics with no technical function being irrelevant in that context
 - The same applies for the second and third indent; see C-205/13- Hauck./. Stokke, Para 21,22).

9

CJEU case law VII

Steps and mode of assessment

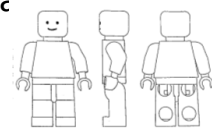
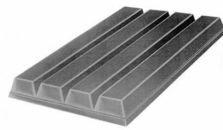
- C-48/09 – Lego./.OHIM
 - Para 71: identification of the essential characteristics ...may... be carried out by means of a **simple visual analysis** of the sign or ... be based on a **detailed examination** in which relevant criteria of assessment are taken into account, such as surveys or expert opinions, or data relating to intellectual property rights conferred previously in respect of the goods concerned
 - Para 72: Once the sign’s essential characteristics have been identified, the competent authority still has to ascertain whether they all perform the technical [to be added: or other] function of the goods at issue.
- C-339/12 P - Pi-Design ./ Yoshida; C-30/15 P - Simba Toys./. EUIPO Rubik’s Cube)
 - [Technical] functionality **must not be assessed solely from the graphical image** filed with the application; account must also be taken of the actual product (if available on the market) as well as of other evidence (e.g. patent documentation).



10

Issues, 1

- Is there any justification for registering shapes necessarily resulting from a mode of manufacturing which is *de facto* without alternatives?
- Did that question become obsolete due to the breadth of the first indent? For instance, shouldn't shapes that have cleared the 2nd indent such as these



be invalidated anyhow under the 1st indent?

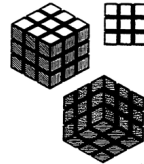
11

Issues, 2

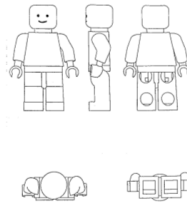
- What is the difference between a shape the essential characteristics of which are 'inherent in the generic function or functions of a product' and a shape 'conforming to the norms and customs of the sector concerned'?
- How substantial was (or is?) the impact in practice of the assumption previously governing that only natural or indispensable shapes ('shape of a banana for bananas') were excluded from protection? In other words: How many product-inherent shapes were admitted to registration and are still found in the registries?
- How broadly (or narrowly) should the relevant product category be defined for assessing whether the essential characteristics of a given shape are technically functional or inherent in the generic functions of that kind of product?

12

- “Three-dimensional puzzle” or “three-dimensional puzzle in the form of a magic cube”?



- “Games and playthings” or “human figurines to be used in a system of interlocking elements”?



13

Issues, 3

- How can a meaningful distinction be drawn between value resulting from the shape as such, and value resulting from its recognition as an indication of origin (see London taxi case; diverging EUIPO BoA cases on Eames alu vs. lounge chairs)?



14

Issues, 4

How to deal with fig-leave strategies?

What is their impact on the enforcement stage?

Shape barred from protection under the 3rd indent



Validly registered 3D-mark



15

Issues, 5

- What will the impact be of extending the registration bar to ‘other characteristics’, in particular regarding the 3rd indent?
 - What is the relevance (if any) in that context of the CJEU’s findings in C-541/18 – AS./DMPA that for assessing distinctive character of a sign one must take account of all modes of uses which, in the light of the customs in the economic sector concerned, can be practically significant? Will that prevent application of the 3rd indent to trade mark registration of artworks, cartoon characters etc. for textiles (given that display of such images on labels sewn into the products can always be considered as a “practically significant mode of use”)?
 - In the same context: What is the relationship between Article 7(1)(e) and Article 7(1)(f) EUTMR (or Article 3(1) (f) TMD 2008) as interpreted by the EFTA-Court in Vigeland?

16

Last but not least

- How do the potential policy rationales for exclusion – need to keep free on the one hand and channelling on the other – inform the understanding and application of exclusion clauses in the EU?

17

Thank you for your attention!

annette.kur@ip.mpg.de

18

UCL Institute of Brand & Innovation Law
12 February 2020

UCL

What is the function of functionality in trade mark law?

Allan James

Senior Hearing Officer and Head of Trade Mark Tribunal, UK IPO.

19

 Intellectual Property Office

TRADE MARKS - FUNCTIONALITY

THE LAW IN PRACTICE

ALLAN JAMES - Senior Hearing Officer - UK IPO

IPO | Making life better through IP
Intellectual Property Office is an operating name of the Patent Office

20

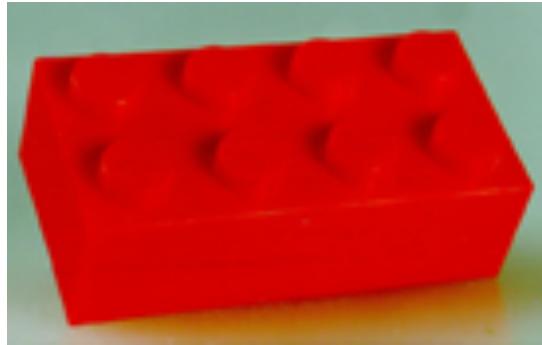
Marks consisting exclusively of “the shape, or another characteristic [of goods]”

- Applies where the essential characteristic(s) of the sign are functional
- The essential characteristic(s) = “*the most important element(s)*” of the sign
- One or more minor arbitrary elements is not enough to avoid the exclusions
- The exclusions do not apply where the sign includes a major non-functional element

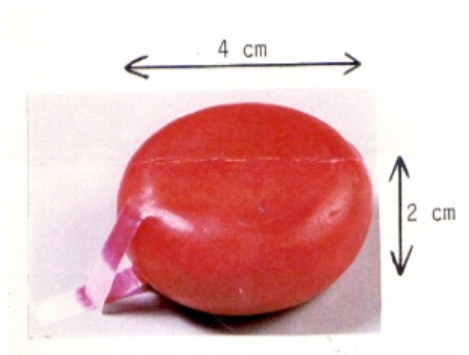
Identification of the essential characteristic(s) [of goods]

- The essential characteristic(s) of the sign can be identified by a simple visual evaluation of it
- In cases of difficulty, consumer surveys or expert evidence can be considered
- Perception of consumers “*may be a relevant criterion of assessment for the competent authority when it identifies the essential characteristics of the sign.*” Lego C-48/09, CJEU, para 76

LEGO BRICK – Essential characteristics functional – colour is a minor arbitrary element



Babybel cheese shape – colour is an essential characteristic of the mark

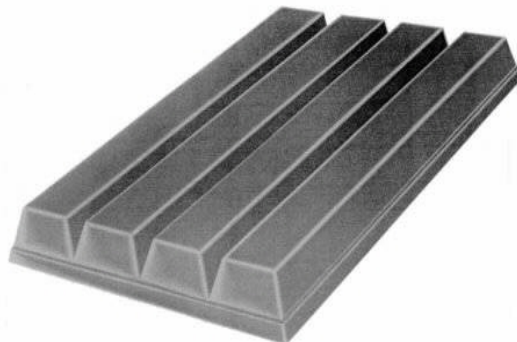


Identifying the appropriate sub-provision of s.3(2)

- The overlapping nature of the exclusions
- The s.3(2)-type objection(s) must fall wholly within one of the three possible ‘functionality’ exclusions
- Shapes resulting from the way the goods are made are not excluded by s. 3(2)(b)
 - but may be excluded under s.3(2)(a)
- Shapes which add substantial value to the goods because of the attractive way they look and because of their functional utility may be excluded under s.3(2)(c)

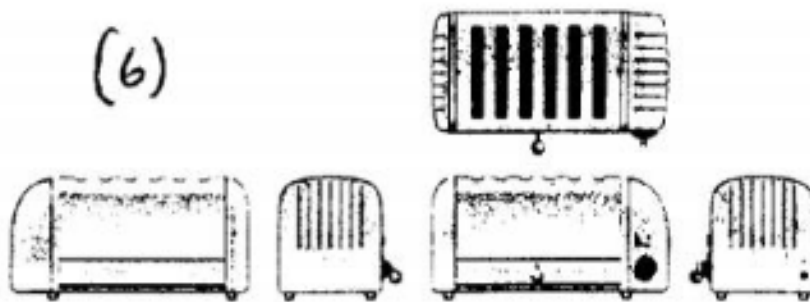
KIT KAT SHAPE – essential characteristics – combination of generic (basic bar shape), functional (presence of grooves) and manufacturing process (angle of grooves)

“Inherent to the generic function or functions of that product?”



Shape of Dualit toaster – Design classic

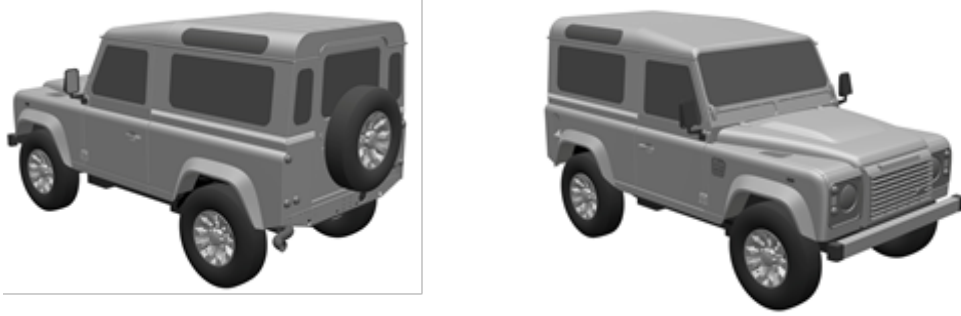
First UK trade mark refused under s.3(2)(c)



Shapes etc. necessary to achieve a technical result – the practical challenges

- Can the presence of a design element arising from the way all the individual [functional] features have been configured avoid the objection?
- Application of the functionality objection to complex designs
- Can evidence of the availability of a very large number of different functional solutions cast light on whether the shape at issue is really just functional?
- Can we read anything across from the case-law law on registered designs?

LAND ROVER SHAPE – essential characteristics – all the main features functional, or the result of historical manufacturing constraints, but also design elements, including the way that the functional features are configured



Doceram v CeramTec Case C-395/16

Exclusion of “designs dictated by technical function”

“32.it must be established that the technical function is the only factor which determined those features, the existence of alternative designs not being decisive in that regard.”

37.an assessment must be made, in particular, having regard to the design at issue, the objective circumstances indicative of the reasons which dictated the choice of features of appearance of the product concerned, or information on its use or the existence of alternative designs which fulfil the same technical function, provided that those circumstances, data, or information as to the existence of alternative designs are supported by reliable evidence.” (emphasis added)

Shape of agricultural tine – evidence from designer that Aesthetic appearance played a part in this design



Doceram v CeramTec Case C-395/16

Opinion of AG SAUGMANDSGAARD ØE

“69.....I think that it should be stressed that the court hearing the case will, if necessary, be able to conduct the required evaluation by seeking clarification from an independent expert appointed by it. I note in this regard that the national courts do not possess the sometimes highly technical competences necessary for that purpose and that they commonly order an expert report when faced with complex questions of this kind.”

Expert evidence

- The limits of expert evidence: important but rarely determinative by itself
- The objectiveness of the expert
- The challenge of agreeing to a single independent expert
- Keeping the evidence concise and focussed on the relevant legal and factual issues

UCL Institute of Brand & Innovation Law
12 February 2020

UCL

What is the function of functionality in trade mark law?

Mark P McKenna

John P. Murphy Foundation Professor of Law, Notre Dame Law School, USA

34

Functionality: The US Experience

Mark P. McKenna

John P. Murphy Foundation Professor of Law

 UNIVERSITY OF
NOTRE DAME
The Law School

35

Protection for Unpatented Designs



Right to Copy vs. Need to Copy

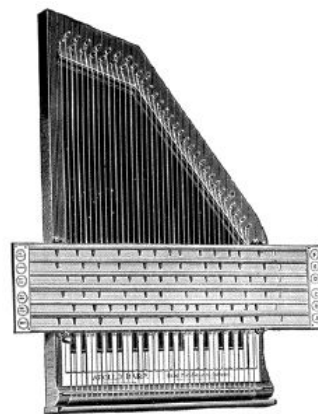
36

Right to Copy



Both zithers are adapted for the use of patented sheets of music, but the zithers are not patented. Under such circumstances the defendant has the same right that the plaintiff has to manufacture instruments in the present form, to imitate the arrangement of the plaintiff's strings or the shape of the body. **In the absence of a patent the freedom of manufacture cannot be cut down under the name of preventing unfair competition.**

It is true that a defendant's freedom of action with regard to some subsidiary matter of ornament or label may be restrained, although a right of the same nature with its freedom to determine the shape of the articles which it sells.



Flagg Mfg. v. Holway,
178 Mass. 83 (1901)

37

Need to Copy



In the first place it appears that the oval shape adopted by the plaintiff was uncommon, although not entirely novel, and that it was uneconomical, and less convenient and satisfactory generally for the cutting of slices for all kinds of uses than the shapes generally adopted. **There was nothing to show that the defendants' business interests required the combination of this shape with the same size, color and general visual appearance that had become associated with the plaintiff's trade in this Creamalt bread.**

These that the defendants adopted had been combined to distinguish the plaintiff's Creamalt bread, and it was the duty of other manufacturers to recognize this fact. **Not, indeed, to the abandonment of their right to do what was reasonably necessary to success in the management of their own business; but to the extent of so conducting their business as not unreasonably and unnecessarily to interfere with the plaintiff's business through deception of the public.**



George G. Fox Co. v. Hathaway, 199 Mass. 99 (1908)

38



Hence, upon expiration of the patents the form, as well as the name, was dedicated to the public.

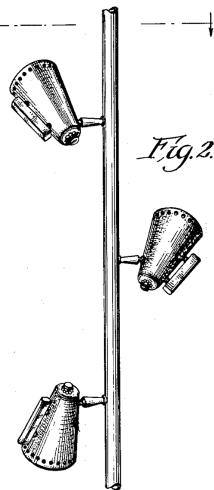
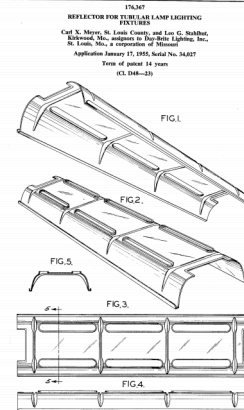


Fig. 2.

United States Patent Office Des. 176,367
Patented Dec. 15, 1952



An unpatented article, like an article on which the patent has expired, is in the public domain and may be made and sold by whoever chooses to do so.

But if the design is not entitled to a design patent or other federal statutory protection, then it can be copied at will.

39

In Re Morton-Norwich



Utilitarian means superior in function or economy of manufacture which *superiority is determined in light of competitive necessity to copy*

1. A utility patent that discloses the utilitarian advantages of the design
2. Advertising materials in which the originator of the design touts its utilitarian advantages
3. Facts tending to establish the unavailability to competitors of alternative designs
4. Facts indicating that the design results from a comparatively simple or cheap method of manufacturing the product or container



40

Functionality in *Qualitex*



A product feature is functional and cannot serve as a trademark if it is essential to the use or purpose of the article or if it affects the cost or quality of the article; that is, if exclusive use of the feature would put competitors at a significant non-reputation-related disadvantage.



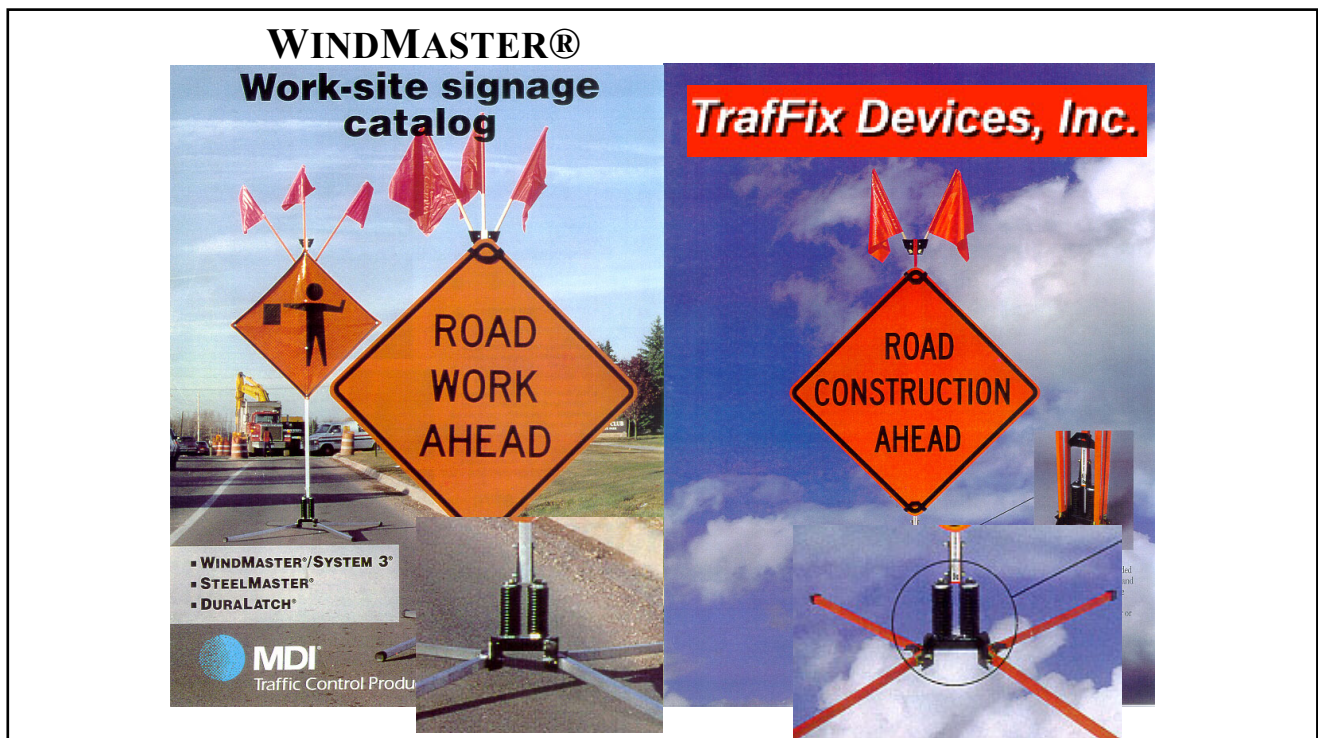
41

Functionality in *Qualitex*



The upshot is that, where a color serves a significant non-trademark function – whether to distinguish a heart pill from a digestive medicine or to satisfy the “noble instinct for giving the right touch of beauty to common and necessary things” – courts will examine whether its use as a mark would permit one competitor (or a group) to interfere with legitimate (non-trademark-related) competition through actual or potential exclusive use of an important product ingredient.

42



43

Functionality in *TrafFix*



A product feature is functional if it is essential to the use or purpose of the article or if it affects the cost or quality of the article

It is proper to inquire into a “significant non-reputation-related disadvantage” in cases of aesthetic functionality; where the design is functional [because it is essential to the use or purpose or affects cost or quality] there is no need to proceed further to consider if there is a competitive necessity for the feature.

- Expired utility patent has “vital significance” and creates a strong inference of functionality
- Inference can be overcome by showing design feature is *ornamental, incidental, or arbitrary*.

44

TrafFix and Alternative Designs



There is no need ... to engage, as did the Court of Appeals, in speculation about other design possibilities, such as using three or four springs which might serve the same purpose. Here, the functionality of the spring design means that competitors need not explore whether other spring juxtapositions might be used. The dual-spring design is not an arbitrary flourish in the configuration of MDI’s product; it is the reason the device works. Other designs need not be attempted.

45

Post-*TrafFix* Issues







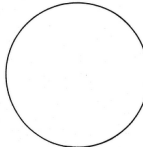
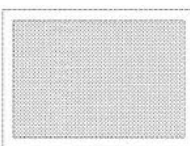

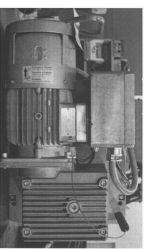



- Is the *TrafFix* test one test or two?
- What does it mean for features to be “essential to the use or purpose” of an article?
 - Role of alternative designs?
 - Relationship to “arbitrary, incidental, or ornamental”?

46

Emerging Consensus?



			
5th Circuit	6th Circuit	Federal Circuit (applying 9th Circuit law)	Federal Circuit
			
11th Circuit	7th Circuit	7th Circuit	4th Circuit
			
3d Circuit		9th Circuit	7th Circuit

47

Not so Fast ...



(1) the existence of a utility patent, expired or unexpired, that involves or describes the functionality of an item's design element; (2) the utilitarian properties of the item's unpatented design elements; (3) advertising of the item that touts the utilitarian advantages of the item's design elements; (4) the dearth of, or difficulty in creating, alternative designs for the item's purpose; (5) the effect of the design feature on an item's quality or cost.

48

Post-*TrafFix* Issues



- Is the *TrafFix* test one test or two?
- What does it mean for features to be “essential to the use or purpose” of an article?
 - Role of alternative designs?
 - Relationship to “arbitrary, incidental, or ornamental”?
- How, and at what level of specificity, must the features be disclosed in a utility patent in order for the patent to have “vital significance”?

49

McAirlaids & Georgia Pacific



50

Post-*TrafFix* Issues



- Is the *TrafFix* test one test or two?
- What does it mean for features to be “essential to the use or purpose” of an article?
 - Role of alternative designs?
 - Relationship to “arbitrary, incidental, or ornamental”?
- How, and at what level of specificity, must the features be disclosed in a utility patent in order for the patent to have “vital significance”?
- **Aesthetic functionality and design patents?**

51



52

Jay Franco & Sons



“Fashion is a form of function.”

53

Functionality in *Traffix*



A product feature is functional if:

- it is essential to the use or purpose of the article; or
- it affects the cost or quality of the article

It is proper to inquire into a “significant non-reputation-related disadvantage” in cases of aesthetic functionality; where the design is functional [because it is essential to the use or purpose or affects cost or quality] there is no need to proceed further to consider if there is a competitive necessity for the feature.

Aesthetic Functionality?



Millennium R.A.D.A.R.[®] R.A.D.A.R.[®] Hotline: 888.888.8605
 Rapid Assessment of Drug Abuse Report 830 W. 83rd St., Monday-Friday
 Testing performed at Millennium Laboratories, 5040 W. Touhy, Ste. 200, Chicago, IL 60631. See Clinical Approval Form, PHS 04932.

Specimen ID: CC688390 Specimen Outcome: POSITIVE
 Accession ID: CC688390
 Amended Report Collected: 11/09/11 12:00 AM
 Patient SSN: [REDACTED] Patient DOB: [REDACTED] Requested: 11/09/11 10:00 AM
 Requesting Physician: Robert Gajjala, MD 12/02/2011 Original Tested: 11/09/11 04:01 PM
 Requesting Practice: Tampa Pain Relief Center - 12/02/2011 Reprinted Completed: 11/09/11 12:00 AM
 Habana - POC: Other

CONSISTENT RESULT (S) REPORTED (MEDICATION DETECTED (PAIN) DRUG ANALYSE (ABUSE))	
REPORTED PRESCRIPTION	ANALYSED (POSITIVE)
TEST OUTCOME	DETECTION (NONE)

INCONSISTENT RESULTS (PAIN) (MEDICATION NOT DETECTED (PAIN) (PAIN) (PAIN) (PAIN))	
REPORTED PRESCRIPTION	ANALYSED (POSITIVE)
TEST OUTCOME	DETECTION (NONE)

INCONSISTENT RESULT (S) ANALYSE DETECTED (S) (NO) (NO) (NO) (NO) (NO) (NO) (NO) (NO)	
DETECTED ANALYTE	COMMENTS
Oxycodone	Oxycodone was detected, but could not be matched to any of the reported prescriptions. Sources of Oxycodone include Endoneur, Oxycodone, Percocet, and Bonine. Oxycodone is also a known illicitly synthesized prescription component.
Morphine	The analyte was detected, however no corresponding prescription was reported on the available form.
Hydrocodone	Hydrocodone was detected, but could not be matched to any of the reported prescriptions. Sources of Hydrocodone include Vicodin, Vicodin-N, and others.
Valproic Acid	Valproic Acid was detected, but could not be matched to any of the reported prescriptions. Sources of Valproic Acid include Depakote, Depakene, and others.
EDDP (methamphetamine)	EDDP is a metabolite of methamphetamine. It is not available as a prescription. The presence of EDDP indicates methamphetamine use, however is not included in our test panel.

SPECIMEN QUALITY TESTING				ADDITIONAL INFORMATION	
TEST	TEST RESULT	REFERENCE RANGE	REPORTED BUT NOT TESTED FOR IN THIS REPORT	NONE	
Alkalinity (pH)	Normal	6.5 - 8.5			
Cholesterol (mg/dL)	Normal	<200 mg/dL			
Glucose (mg/dL)	Normal	65 - 100			
Specific Gravity	Normal	1.000 - 1.060			

Millennium Laboratories performs all controlled and non-controlled substances testing in-house. All other DAs are C/D. (Some results are considered presumptive. In the event of control screen as LC 95081 and 95082, additional information is provided in the LC 95081/95082. Millennium Laboratories, Inc. 19981 Via Torres, San Diego, CA 92127 Fax 619 444-4444 444 Elm Street, Anaheim, CA 92801. PHS 04932. Patient Name: [REDACTED] Specimen ID: CC688390 Page 1 of 3

Louboutin v. YSL



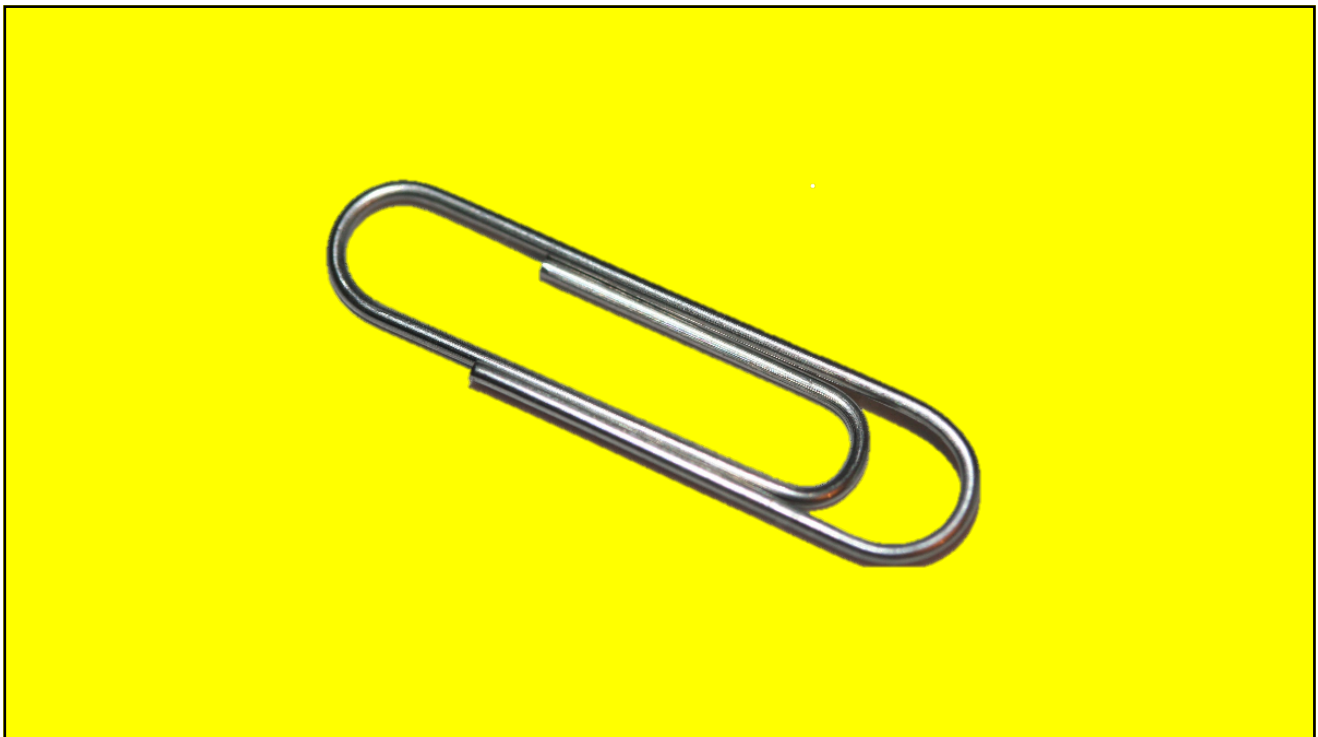
UCL Institute of Brand & Innovation Law
12 February 2020

UCL

What is the function of functionality in trade mark law?

Saeema Ahmed-Kristensen
John P. Professor of Engineering Design
Royal College of Art

57



58

Prof Saeema Ahmed-Kristensen


Cambridge- Technical University of Denmark- Imperial College London- RCA

Head of Design Products

Prof of Engineering Design

s.ahmed-kristensen@rca.ac.uk

Google scholar Saeema ahmed-kristensen

 @SaeemaDesignEng



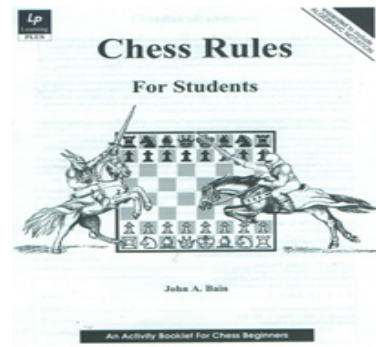
59

Function: technical function- utilitarian
Value: aesthetical function

“the availability or unavailability of alternative designs as evidence of a feature’s functionality.”

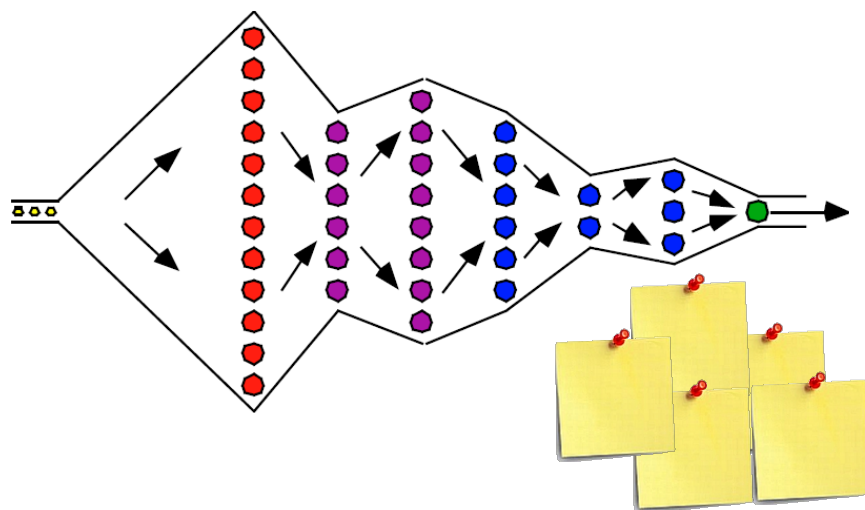
60

Design ill-defined
Initial state - operators – goal state



61

Creativity: divergent and convergent thinking



62

Design

As Ill-defined problem –by definition has design alternatives

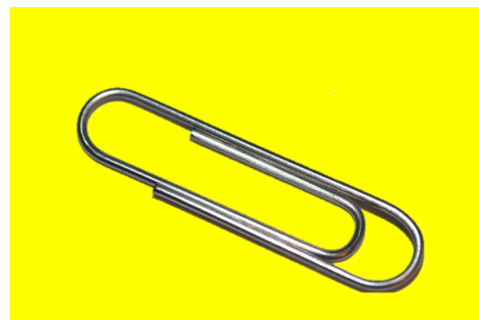
.....the availability or unavailability of alternative designs as evidence of a feature's functionality.

63

Function

- Functions indicate what is required from the solution, i.e. needs to be accomplish
- Usually stated as verb + noun pairs

- fasten paper
- move object
- supply energy



- solution-neutral problem statement

64

1.hem holder
 2.cigar filter unstopper
 3.spray bottle unclogger
 4.eyeglass repair
 5.hair barrette
 6.zipper tab
 7.clean fingernails
 8.Xmas ornament holder
 9.unclog Elmer's glue bottle
 10.calendar holder
 11.belt holder
 12.emergency cotter pin
 13.emergency diaper pin (boy! do I date myself there!)
 14.unclog baby bottle nipples (man! I was sure careful to put all the modifiers in there)
 15.strawberry huller
 16.cherry pit remover
 17.hymn marker (for organists)
 18.a substitute for the thingy that holds
 19.substitute for a twist-tie to close
 20.poke snoozing parishioner
 21.clean the little roller t
 22.a pastor's helper to
 the altar book while c
 23.substitute toothpick
 24.clean the shaft of
 25.toenail cleaner
 26.emergency Tie Tack
 27.inexpensive ear (or b
 28.inexpensive ear (or nose)
 29.when combined with a rubber
 from eighth grade
 30.sparkly and useful alternative to throwing
 31.Lilliputian water diving rod
 32.holding dangles on a pierced ear
 33.cone incense holder/stand
 34.reset a Palm Pilot or Handspring Visor
 35.eject a powered-off LS-120 drive
 36.eject a powered-off Zip drive
 37.eject a powered-off CD-ROM, CD-R, CD-RW, or DVD drive
 38.actor for Microsoft Office "help" system
 39.snow shoes for mice, birds, and other small creatures
 40.booger hunting device
 41.arrange clips to spell "TIP?" and leave in lieu of cash when service stinks in a restaurant
 42.similarly, spell "happy birthday" on a cake for the office workaholic
 43.clip all these suggestions together, wrap, and send as a gift to your cheap, I mean frugal, friends and relations
 44.emergency corkscrew
 45.public hair for Bionic Woman
 46.splint for minor injuries of fingers & toes
 47.makeshift antenna for small electronics
 48.miniature slingshot
 49.miniature catapult
 50.when a fellow smashes his thumb in a range gate, and the blood begins pressuring under the thumbnail, the doctor takes a paper clip, straightens it, heats its tip up good and proper at a bunsen burner, and plunges the thing through the thumbnail to make a hole to relieve the pressure.


51.construction of drinking straw buildings (slide clip in end and link together)
 52.nose weight for paper airplanes
 53.central weight (several together) for a Come-back-can powered by rubber bands
 54.substitute playing pieces for game (bend small part up to grasp)
 55.card holder when strung along string or wire
 56.necklace/bracelet (children love stringing them)
 57.emergency key chain
 58.emergency key to bathroom knobs (the ones that have the hole in the middle to slip a long skinny thing in and pop them open)
 59.quick find tabs for favorite recipes
 60.hold papers together (too obvious?)
 61.book mark
 62.pry bar
 63.lottery ticket scratcher
 64.pipe cleaner
 65-necklace clasp
 66.chain link

Here is the first 100.....

65

Function (technical-)
Segway

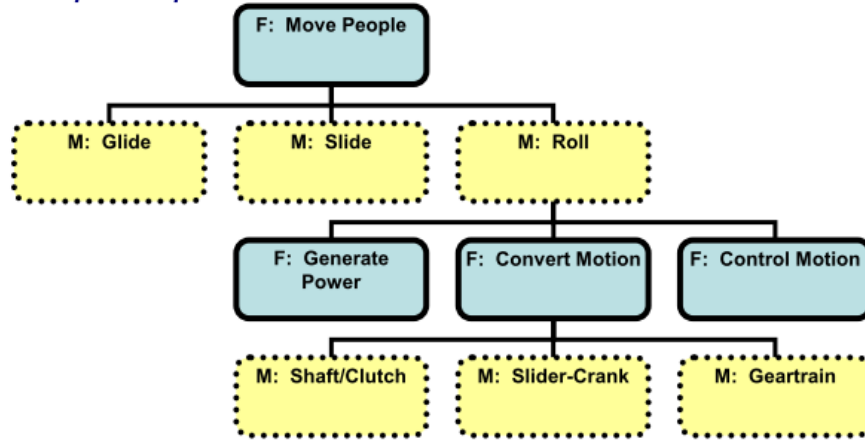
transport people and goods



66

Function: technical more than one way to achieve it

Example: People Mover



<http://www.clemson.edu/ces/cedar/images/c/c0/08-FunctionMeansTree.pdf>

67

Surgical tools over time



68

Reframing problems

Problem: Where to cut?

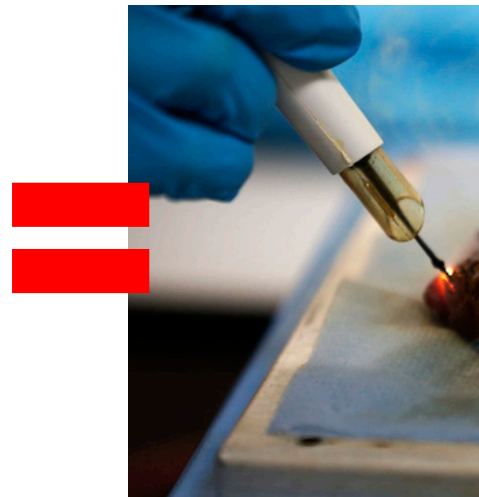
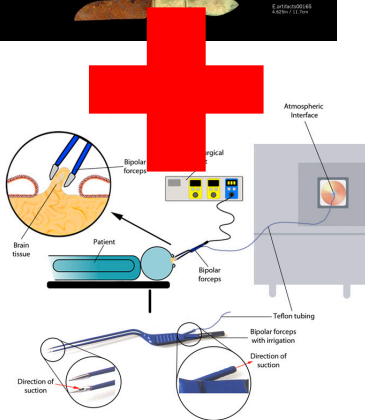
Hard to tell where cancer ends and when healthy tissue begins

- **Solution:** Detect cancer during the surgery?



69

Reframing problem



Citation: J. Balog, et al. Intraoperative Tissue Identification Using Rapid Evaporative Ionization Mass Spectrometry. *Sci. Transl. Med.* 5, 194ra93 (2013).

70

Value?



My Parker pens, 8 euros each



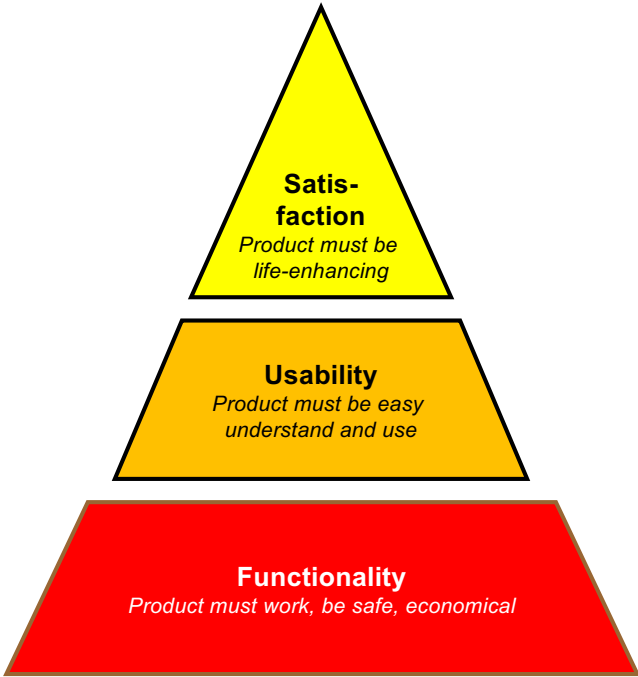
Parker special edition, 3000 euros
Does it write 375 times better?

Product success requires that
Cost < Price < Value

What determines **value**?

-- *aesthetics, associations, perceptions*

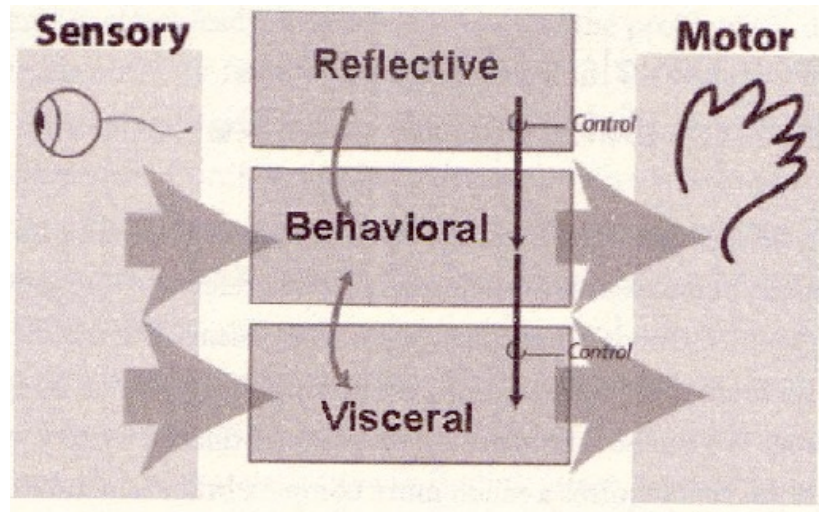
71



Jordan: Heirachy of consumer needs

72

Emotional Responses



Norman, Emotional Design

73

Value..

How can a meaningful distinction be drawn between value resulting from the shape and value resulting from its recognition as an indication of origin (see London taxi case; diverging BoA cases on Eames alu vs. lounge chairs)?

74

Emotional Design

- **Visceral design**
 - first impressions
- **Behavioral design**
 - the total experience of using a product. performance, function, understandability, usability, physical feel
- **Reflection design**
 - self-image, personal satisfaction, memories

75

Reflection design

- “Watches tell more than time” Del Coates,
- **Impossible to design a watch that only tells time.**



Jacob Jensen Clock

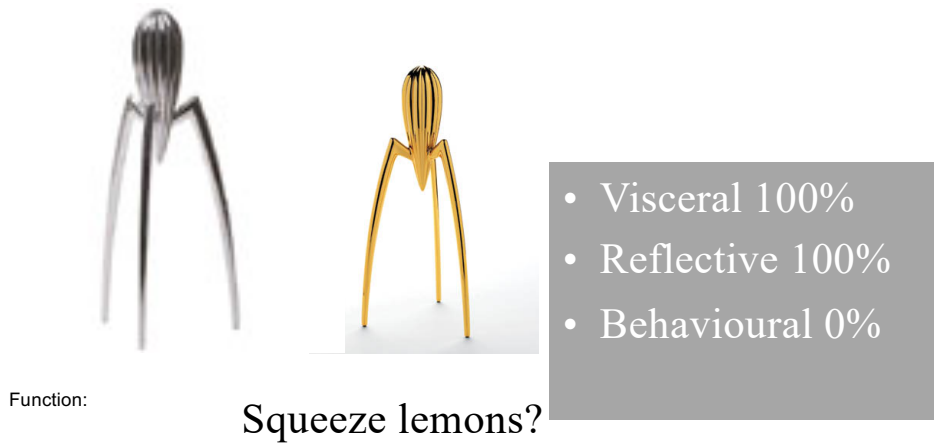
76

My teapots & kettles today



77

“Juicy salif” Philippe Starck



My juicer is not meant to squeeze lemons: it is meant to start conversations...

78

Satisfaction

Satisfaction

Product must be
life-enhancing, rewarding

Usability

Functionality

Three facets

- **Aesthetics** -- appealing to the senses -- sight, hearing, feel, taste, smell
- **Associations** -- what does it remind you of ? What does it suggest ?
- **Perceptions** -- what is your reaction to it ? How does it make you feel ?


79

- Design – assumes alternatives
- Some forms have not changed overtime- knife, alternative to utilitarian functions not easily found.
- Reframing problems enables new designs achieving the same function- innovation
- Value: visceral, behavioral, reflective.

80



- s.ahmed-kristensen@rca.ac.uk
- Google scholar saeema ahmed-kristensen

 @SaeemaDesignEng

