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ABSTRACT

A method of construction and for the personalisation of a coffin or casket includes the following steps:

- i. A user or operator may access a digital image library database to choose appropriate images or may upload his or her own digital images to a computer for printing;
- ii. The digital image is sent by the user or operator's computer to a high resolution wide format printer for printing;
- iii. The digital image is printed using water-based ink on heat conformable vinyl media and laminated with clear, glossy, vinyl film to create proprietary CrystalClear™ image wrap;
- iv. The image wrap is cut to template;
- v. The image wrap is applied to a coffin or casket;
- vi. The user or operator applies compressive force to the image wrap to remove air bubbles and to ensure sufficient bonding between the image wrap and the coffin or casket;
- vii. The user or operator applies heat to the image wrap to ensure conformity of the printed image with the contours of the coffin or casket to which the image wrap is being applied;
- viii. The edges of the image wrap are wrapped into and underneath the coffin or casket and the coffin or casket lid;
- ix. The edges of the image wrap are secured internally and underneath the coffin or casket and underneath the casket or coffin lid with picture framing tape to ensure that the edges of the image wrap will not lift;
- x. The coffin or casket can be finished with traditional lining materials such as fabric and fixtures such as handles added.

Editorial Note

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The description and claims are individually page numbered.

Method of construction and for the personalisation of coffins or caskets

Field of the Invention

5 The invention relates to methods of construction and for displaying personalised images on the surface of a coffin or casket.

Background of the Invention

10 Death is an inevitable part of life. The manufacture and sale of coffins and caskets represents a significant portion of the overall funeral industry which is dedicated to catering for the needs of consumers and their families and friends who face the reality of death.

15 Traditionally the funeral industry has favoured the use of coffins and caskets which are generally understated or muted in colour tones. This trend has historically been seen as a mark of respect for the friends and family of the deceased and is intended to reflect the solemnity and emotional importance of the funeral ceremony and the reverence with which attendees ought to pay the deceased's remains.

20 In recent years however there has been an increasing demand amongst consumers to customise or personalize their funeral ceremony including in regard to the coffin in which their mortal remains are disposed. Consumers now often, during their lifetimes, order their coffins and contribute to planning their own funeral ceremonies by either making financial contributions to a fund that cover their funeral expenses. They may also play a significant role in planning their own funeral ceremony. Customers have
25 indicated an increasing preference towards making a contribution towards the design of their own coffin as a means of displaying to those attending a funeral aspects of the deceased life that were of particular importance whilst they were alive.

30 Family members and friends who are charged by deceased to oversee funeral arrangements may wish to make a sentimental statement about the main interests, passions or loves of a deceased during the funeral ceremony. The epitaph "A picture paints a thousand words" might well be applied to this situation. The use of traditional dark timber coffins and caskets does not take advantage of this. The use of graphic images or other aesthetic modifications
35 to the traditional coffin or casket provides a means whereby the life of a

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deceased might be remembered in a way that recognises the passions and interests that the deceased enjoyed whilst alive. The traditional sombre funeral ceremony has been replaced in recent years with a more celebratory ceremony emphasizing the personal attributes of the deceased.

5 There are currently a number of manufacturers who provide means for the customization of coffins with graphic images incorporated onto them. LifeArt and LifeStyle Coffins provide solutions for displaying personalised images upon the exterior of a coffin.

10 Life Art for example use a matt finish on their printed coffins. LifeArt incorporate digital images that are printed directly onto the cardboard materials used to construct their coffins and which are folded (similarly to pizza boxes) from templates. This leads to the problem of pixilation of the digital images that are incorporated. It has been shown by the present inventor that cardboard is not an ideal material for the construction of coffins
15 as it is prone to deterioration when subjected to moisture.

Other manufacturers use paper based media upon which images are printed directly and then apply that paper based material to the external surfaces of coffins or caskets. This method has the problem of lacklustre quality of the printed images and the paper based media requires cutting
20 around the shoulder sections of the coffin which slows down manufacture and production times as the process is time consuming and difficult to complete. The use of paper based materials which require cutting detracts from the overall aesthetics of the finished product as the cuts must be finished off by affixing stickers to hold down the cut portions. Cardboard materials are not
25 ideally suited to receiving printed stickers upon them as the stickers can lift with moisture or frictional pressure. Further, cardboard materials are not favoured within the funeral industry as they not sturdy and are too lightweight in comparison to more traditionally used materials.

There has been shown to be a problem associated with the aesthetic
30 quality of images printed upon coffins using existing methods.

Existing methods of customising coffins are time consuming and inefficient. There is typically a three day turnaround between a death and a funeral being held. This relatively short turnaround time makes customisation of coffins difficult. Existing materials and methods of coffin

5 construction and customisation are slow, the process requires the use of specialised equipment to address the toxicity of the solvent based paints, lacquers, varnishes and inks which are typically used. The use of these materials requires long periods of time to allow inks to dry before lamination is possible. Further, the use of such materials requires large and expensive machinery, for example, extraction fans, to draw off toxic fumes away from workers. The use of such materials may be dangerous to workers and may increase the costs to a manufacture of compliance with local occupational health and safety laws and associated work cover premiums.

10 The use of paper based materials is not ideal as they are prone to damage and deterioration as a result of environmental factors such as dampness, heat and other extremes. For example, when a coffin is removed from a mortuary fridge, condensation can form on the surfaces which would potentially damage paper media constructed coffins.

15 The use of traditional mouldings/trim makes coffin manufacture time consuming and expensive. This process could be streamlined.

It would be advantageous therefore to provide a method of construction and for the personalisation of coffins or caskets which overcame at least some of the problems of the prior art.

20 It would be advantageous therefore to provide a new and improved method for displaying personalised images upon coffins and caskets which overcome at least some of the disadvantages associated with the use of prior art methods.

25 It would also be advantageous to provide a method for displaying personalised images on coffins and caskets which exhibited greater resistance to moisture than existing methods.

30 It would be advantageous to provide a method for displaying personalised images on coffins and caskets which exhibited greater resistance to damage from environmental factors, which retained the aesthetically pleasing attributes of the personalisation for a longer period of time, and which provided the means for displaying images without the need to cover the shoulder regions of the coffin with stickers or plastic or metal ornaments to hide cuts in the materials.

It would be useful to provide a method of personalising a coffin or casket which did not require the use of toxic chemicals, and which therefore reduced the requirement to use expensive and cumbersome machinery to ensure the occupational health and safety of workers involved in the manufacturing process.

It would be useful to provide a method of construction and personalisation of a coffin or casket which was efficient and cost effective and which reduced the overall costs of manufacture.

It would also be advantageous to provide a method which provided an environmentally friendly alternative to existing methods of coffin manufacture and customisation.

Accordingly there is provided a method of construction and for the personalisation of a coffin or casket comprising at least the following steps:

- i. A user or operator may access a digital image library database to choose appropriate images or may upload his or her own digital images to a computer for printing;
- ii. The digital image is sent by the user or operator's computer to a high resolution wide format printer for printing;
- iii. The digital image is printed using water-based ink on heat conformable vinyl media and laminated with clear, glossy, vinyl film to create proprietary CrystalCleer™ image wrap;
- iv. The image wrap is cut to template;
- v. The image wrap is applied to a coffin or casket;
- vi. The user or operator applies compressive force to the image wrap to remove air bubbles and to ensure sufficient bonding between the image wrap and the coffin or casket;
- vii. The user or operator applies heat to the image wrap to ensure conformity of the printed image with the contours of the coffin or casket to which the image wrap is being applied;
- viii. The edges of the image wrap are wrapped into and underneath the coffin or casket and the coffin or casket lid;

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- ix. The edges of the image wrap are secured internally and underneath the coffin or casket and underneath the casket or coffin lid with picture framing tape to ensure that the edges of the image wrap will not lift;
- x. The coffin or casket can be finished with traditional lining materials such as fabric and fixtures such as handles added.

In preferred embodiments of the invention the coffin to which the image wrap is applied is manufactured of medium-density fibreboard (“MDF”).

In especially preferred embodiments of the invention the compressive force applied by the user or operator is applied using a rubber squeegee to remove air bubbles and ensure adhesion of the image wrap to the surface of the coffin or casket.

In other preferred embodiments of the invention the application of heat by the user or operator to ensure conformation of the image wrap with the contours of the coffin or casket is achieved by using a paint stripping heat gun or similar device.

In other preferred embodiments of the invention the lid of the coffin or casket is rebated to preserve the aesthetic integrity and conformity of the printed image wrap affixed to the coffin or casket.

There is also provided a method of construction and personalisation of a coffin or casket with reference to the accompanying drawings.

Brief Description of the Drawings/Figures

Figure 1 is a flow diagram setting out the various steps in the method of the invention.

Best Mode and Other Embodiments of the Invention

The nature of funerals is changing. They are no longer a ceremonial mourning but now are more a celebration of the life and individuality of the deceased.

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5 The need has arisen as a result for a greater degree of customisation of coffins and caskets as a result of consumer demands. The need has arisen partly as a result of trends emanating from the United States and Europe which are being disseminated through internet based marketing, and partly as a result of market pressures in as much as consumers are demanding a greater degree of customisation of funeral arrangements.

10 Through the use of customised images incorporated onto the surface of the coffin in which the deceased is placed, the deceased's life can be celebrated through those images by the deceased's friends and family. The present invention has been developed as a result of the changing nature of the funeral industry and in order to meet the demands of consumers and the funeral industry in general which has significant problems associated with existing methods used to customize coffins and caskets.

15 A consumer or manufacturer is able to select an image from a photographic database or to upload an image directly from their own database to a website or via email to the coffin manufacturer for personalisation of a coffin or casket.

20 The chosen image is then sent to a printer, preferably a commercial scale wide format printer such as, by way of non-limiting example, a Hewlett Packard Designjet L26500 printer which is capable of producing high resolution images. The high resolution images are printed onto a vinyl based media which is then laminated to achieve a highly glossy finish. Lamination provides an aesthetically pleasing glossy finish which protects the water based ink used in the process. A cold lamination process is used which requires the use of only a few easily accessible tools rather than a complicated tooled machine processing line. Lamination may be undertaken on a separate machine to the printer or the lamination process may be combined with the printing into a single step undertaken upon a single machine or sub-process. The resulting laminated water based printed vinyl media or image wrap is sold and promoted by the applicant under the trade mark "CrystalClear".

30 The use of laminated vinyl media permits the manufacturer the ability to heat conform the image around the coffin without the need for cutting the media to conform around difficult regions of a coffin for example, the curved shoulder area on the lid of the coffin. Typically, coffin manufacturers place

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plastic or metal ornaments over the cuts located at the shoulders of coffin lids which detracts from the aesthetics of the finished product.

5 Heat conformable vinyls with images printed upon them are currently used in sign writing, automotive sign wrapping (wrapping of cars/trucks, etc) and glass laminating industries. However to date no such use of the methods and technologies used in those industries has been applied to the manufacture of personalised coffins or caskets.

10 Vinyl based media has the advantage of being resistant to moisture and temperature extremes whereas paper based media are susceptible to disintegration when placed in a damp environment, particularly in the case of condensation arising from the removal of a coffin from a mortuary refrigerator. Further the integrity of printed images printed onto vinyl media is much better and the images are more aesthetically pleasing than those produced on paper based media.

15 Vinyl is a heat conformable material which is particularly useful for application to curved surfaces or difficult regions of a manufactured article without the need for making multiple cuts in the media to fit the physical dimensions and configurations of the article to which the media is to be applied.

20 The process of the present invention uses water based inks, whereas most commercial printing uses solvent based inks. The use of water based inks is non-toxic to workers involved in the manufacturing process and does not require the use of expensive and large exhaust fans to draw off toxic fumes typical of solvent based inks and paints. The use of water based inks is also
25 less damaging to the environment and reduces the risk of producing toxic by-products when a coffin and contents are incinerated during cremation.

The method of the present invention incorporates the use of a coffin with a rebated lid and base which avoids the need for traditional moulding/trim to be used. This assists in achieving a seamless look to the
30 coffin and particularly the image wrap applied thereto.

A further advantage of using the method of the present invention is that a manufacturer can provide a 5 to 7 year warranty on materials and workmanship. This offers commercial advantages to both the manufacturer and consumer as personalised coffins can be ordered well in advance of an

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individual's death and can be stored for extended periods of time. The material used in the method of the present invention, are suitable for extended outdoor use, are flexible and water-resistant.

5 The use of water based ink has further advantages in that the turnaround time from start to finish is much shorter than with solvent based inks. Water based inks do not require aeration (also known as "out-gassing") during the process whereas solvent based inks require the use of extraction fans and typically require a drying period of between 24- 48 hours prior to lamination.

10 The printed and laminated media is cut by machine or by hand to a template which corresponds to the dimensions of the coffin or casket to which it will be applied.

15 The use of vinyl materials permits the printed media to be affixed to a range of differently shaped objects. Image wrap edges are folded around the edges of the coffin or casket so as to ensure conformity with the features of shape and configuration of the coffin or casket and to also ensure a seamless printed image upon the coffin or casket. The operator can use a hand held heat gun such as those used to strip paint to assist in stretching the image wrap around corners and edges of the coffin or casket. The quality of the high resolution printed images is not adversely affected by using heat conformation.

20 The image wrap is repositionable in case the operator makes an initial error in placement. The adhesive properties of the image wrap improve over time and so multiple repositioning of the media is possible in order to ensure seamless continuity in the visual images printed upon the image wrap by overlaying the seams of the image wrap so that the images conform aesthetically.

30 Once properly positioned on the surface of the coffin or casket the operator can apply compressive force to the image wrap to remove air bubbles and to ensure adequate adhesion of the image wrap to the surface of the coffin or casket. The vinyl media is cross-hatched to permit air to be released when pressure is applied during the conformation process.

The lid of the coffin or casket is rebated such that it fits securely within the internal edges of the coffin or casket base. This permits printed materials

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to be stuck over the rebates adding to the aesthetic qualities of the overall finished product. The lid can be reversed for transportation purposes and a screw used to affix the upturned lid to the base of the coffin or casket.

5 The edges of the image wrap are finished off within the interior of the coffin and underneath the lid by affixing picture framing tape over them. This gives clean edges on the underside of the lid and interior of the coffins and holds down the corners. Typically brown picture framing tape is used to blend in with the colour of the medium- density fibreboard (“MDF”) from which the coffin or casket is manufactured.

10 Plastic or other materials can be added to line the inside of the coffin following construction for aesthetic purposes. Handles and other fittings can be affixed in accordance with the user’s requirements. In some embodiments of the invention clear plastic handles are affixed so as to not interfere with the aesthetics of the image wrap affixed to the coffin or casket.

15 The finished coffin or casket is pallet wrapped with plastic film cling wrap for transportation to protect it from damage and exposure to the elements. A colour printed label which represents the personalisation of each coffin or casket can be added to provide instant visual confirmation of what is contained within the film wrap and for better identification by the customer.

20 The process can be carried out using a standard paint stripping heat gun which makes it inexpensive and easy to accomplish in comparison with existing methods of coffin manufacture and personalisation.

25 The quality of ink used is not lost through the conformation process and the use of the method permits a high degree of personalisation in coffin design at relatively low cost.

30 The method of the present invention typically uses MDF timber or timber for the construction of coffins to which the image wrap is applied. The inventor has discovered that the use of MDF is preferable to other constructions materials such as cardboard as it is less susceptible to warping and deterioration and is more rigid a material and so is less prone to damage whilst being transported and is more suitable to long term use. The properties of MDF also make it an ideal material for affixing conformable vinyl to as its surface is smooth compared to other materials. The use of MDF provides a good flat finish upon which the printed image wrap can be affixed. MDF does

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not need to be sanded after cutting to size and shape. MDF is considerably more rigid than other materials such as cardboard and therefore more suitable to long term use. The surface of substrate may show through when other more traditional materials such as timbers are used. This may cause problems with the integrity of the printed images in the case that laminated vinyl is affixed to the exterior of the coffins or caskets.

In some embodiments of the invention other timbers can be used without departing from the scope of the invention and in still other embodiments alternative materials such as high density plastics may be used. Such plastics could be biodegradable so as to enhance the environmentally friendly aspects of the present invention.

The weight and quality of the vinyl media used can be varied depending upon the particular requirements of the user. For example an 8/10 quality vinyl will usually suffice for coffin manufacture and the vinyl is readily available commercially. For example, 3M manufactures a high grade vinyl for printing which is suitable for the present use. Cheaper quality vinyl may be used in order to save costs during manufacture and depending upon the particular requirements of the consumer.

The method of the present invention results in a highly glossy, sharp image with photographic quality. Other manufacturers use stickers which are affixed to the coffins but the quality of the finished product is not as good as if the present method of invention is adopted. Alternatively other manufacturers must affix hardware such as handles over joins in the printed media.

The method of the present invention is relatively cost effective which releases funds to the manufacture for other worthwhile expenditure such as the promotion of environmental causes such as, for example, sustainable harvesting of timbers for the manufacturing industry. This in turn can be used as carbon credits to offset any taxation impost related to output.

Alternative configurations of the above are possible according to the user's requirements.

Those skilled in the art will appreciate that there are a variety of applications for which the present device is well suited.

Those skilled in the art will also appreciate that the method of construction and for the personalisation of coffins and or caskets herein described may be adapted according to the user's requirements without departing from the scope of the invention.

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What is claimed is:

1. A method of construction and for the personalisation of a coffin or casket comprising at least the following steps:
- 5
- i. A user or operator may access a digital image library database to choose appropriate images or may upload his or her own digital images to a computer for printing;
- 10
- ii. The digital image is sent by the user or operator's computer to a high resolution wide format printer for printing;
- iii. The digital image is printed using water-based ink on heat conformable vinyl media and laminated with clear, glossy, vinyl film to create image wrap;
- 15
- iv. The image wrap is cut to template;
- v. The image wrap is applied to a coffin or casket;
- 20
- vi. The user or operator applies compressive force to the image wrap to remove air bubbles and to ensure sufficient bonding between the image wrap and the coffin or casket;
- vii. The user or operator applies heat to the image wrap to ensure conformity of the printed image with the contours of the coffin or casket to which the image wrap is being applied;
- 25
- viii. The edges of the image wrap are wrapped into and underneath the coffin or casket and the coffin or casket lid;
- ix. The edges of the image wrap are secured internally and underneath the coffin or casket and underneath the casket or coffin lid with picture framing tape to ensure that the edges of the image wrap will not lift;
- 30
- x. The coffin or casket can be finished with traditional lining materials such as fabric and fixtures such as handles added.

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2. The method of claim 1 wherein the coffin or casket is manufactured of medium-density fibreboard ("MDF").
3. The method of any of the preceding claims wherein the compressive force applied by the user or operator is applied using a rubber squeegee.
- 5 4. The method of any of the preceding claims wherein the application of heat by the user is achieved by using a paint stripping heat gun or similar device.
5. The method of any of the preceding claims wherein the lid of the coffin or casket is rebated to preserve the aesthetic integrity and conformity of the printed image wrap affixed to the coffin or casket.

10

Figure 1

