

COFFIN AND ASSEMBLY JIG

FIELD OF THE INVENTION

This invention relates generally to coffin kits. It relates particularly to coffins, which are designed to ease the assembly process and apparatus for enabling the same.

BACKGROUND OF THE INVENTION

Traditionally, coffins/caskets have been used to carry the mortal remains of humans. Coffins are usually made of wood, which provides a factor of elegance and sturdiness for the structure. Intricate designs and shapes can be carved on the outer surface of coffins, which enhances the appearance of the same. However, fully assembled coffins occupy considerable floor space, and their volume increases transportation costs since only a few can be shipped at a time. This also increases the delivery time. Moreover, the handling of the heavy and large assembled coffin is also difficult.

Ready to assemble coffins and kits have been disclosed in US Patent No. 4,170,054 and US Patent No.3,879,818 that are made of cardboard and self-skinning urethane, respectively. The cardboard coffins pose a problem of

lack of sturdiness and elaborate designs and engravings cannot be made on them. Urethane requires a higher temperature to burn. Thus it is not economical for crematoriums, and the byproducts from burning of urethane are toxic to the atmosphere.

Other ready to assemble coffin kits pose the problem of being very heavy for the assembler. Thus, even though they are designed to be assembled at the point of use, handling the weight of the coffin during assembly can cause substantial discomfort and possible injury to the person assembling it and such prior art kits are complex and therefore require skilled persons to assemble them. Also such prior art coffins require two or more persons to assemble them due to the difficulty in moving it and trying to access the nooks and corners during assembly. The prior art coffins also pose the problem that the side and end boards have to be manually supported by the assemblers once they are positioned on the base plate before and while fastening them to the same. This causes additional and substantial discomfort and effort on the part of the assemblers. Even though the ready to assemble prior art coffins make the coffins more modular, handling the elongated sideboards and the base plate poses additional difficulties. The present invention solves this problem by constructing the longer, heavier

components in half-sections, which are then joined during the overall assembly.

Thus, it is one object of the present invention to make the process of assembly easier, and reduce the amount of labour required to assemble the coffin. It is another object of the invention to enable the base plate to self-support the sideboards and end boards by suitable supporting means, before and while they are fastened to the former by the assembler. These and other objects and advantages of the present invention, such as for example, solving the problem of decomposing fluids of the body, will become more fully apparent from the following description of the embodiments illustrating the principles of the present invention.

SUMMARY OF THE INVENTION

The present invention describes coffin kits and a means for facilitating the assembly of the same.

In an embodiment, the coffin kit comprises of a base plate having side and end edges and grooves along the side and end edges of the plate. There is a pair of sideboards and end boards for forming the sides and ends of the

coffin, the thickness of the boards such that it is receivable into the grooves in the base plate. It also consists of four corner angles for covering the corners formed by the assembly of the sideboards and end boards. A rigid liner is also included to line the coffin, to perform the functionality of retaining liquids.

In another embodiment, the kit comprises of a base plate assembly, which consists of a plurality of base plate sections and connecting members, the base plate sections having grooves along the sides and ends. It also contains of a pair of sideboard assemblies, each assembly consisting of a plurality of sideboard sections and connecting members. It also further included end boards for forming the ends of the coffin and corner angles for covering the corners formed by the assembly of the sideboards and end boards.

An apparatus for facilitating the assembly of the above said coffin is also discussed. The apparatus consists of a pair of rigid bottom frames, which act as load bearing members, a suitable rotating member to rotate the load on the apparatus and a supporting member to support the rotating member. It also consists of a base, on which is placed the load and consists of a plurality of axial members and a plurality of members joined to the axial members at

a suitable angle. The apparatus further consists of a pair of end assemblies, each assembly consisting of vertical and horizontal members joined by suitable means, a suitable supporting member, which helps in supporting the said end assembly against the bottom frame and suitable holding means to hold the said base of the apparatus.

BRIEF DESCRIPTION OF THE DRAWINGS

The objects, advantages and details of this invention will be more clearly understood from the following detailed description taken in conjunction with the accompanying drawings.

Fig 1 is an exploded perspective view of an embodiment of the coffin.

Fig 2 is an exploded perspective view of another embodiment of the coffin.

Fig 3 is a perspective view of a part of the coffin with the moisture impervious liner.

Fig 4 is a perspective view of the fully assembled jig.

Fig 5 is a front elevation view of the fully assembled jig.

Fig 6 is a view of the base assembly of the jig taken along Section 6-6 of Fig 5.

Fig 7 is a side elevation view of the end assembly of the jig taken along Section 7-7 of Fig 5.

Fig 8 is a front elevation view of the end assembly of the jig.

Fig 9 is a side elevation view of the A-frame of the jig taken along Section 9-9 of Fig 5.

DETAILED DESCRIPTION OF THE INVENTION

As illustrated in **Fig 1**, the coffin assembly consists of a base plate **21**, two identical sideboards **22, 23**, two identical end boards **24, 25**, two lid sections **26, 27** and four corner angles **28, 29, 30** and **31**. While the parts may be composed of solid wood or particleboards, it is preferred to be molded from composite wood. Composite wood comes under the category of engineered

wood, which is made from waste wood chips collected as a manufacturing by-product and saw dust. The moulding process employs glue, which acts as a binder and imparts strength and rigidity to the parts. One of the advantages of using molded parts is that designs can be imparted to the mould, so as to provide a decorative appearance looking like engraved wood. Also composite wood is environmentally more sustainable and results in no wastage of material.

As further shown in **Fig 1**, the base plate **21** provides the base support for all the other members. The base plate has grooves **32** on all the four sides into which the bottom edges of the sideboards **22, 23** and end boards **24, 25** are inserted one by one. The grooves have vertical predrilled holes **33** extending through the bottom which enables screwing the end boards and sideboards to the base plate. The edges of the sideboards and end boards have predrilled holes **22a, 23a** and **24a, 25a** respectively. The predrilled holes in the sideboards and end boards are machined in such a way that when the boards are inserted in the base plate, the holes are in line and enable joining the boards by means of screws. The corner angles **28, 29, 30** and **31** serve to camouflage the joints resulting from joining the end boards and sideboards, thus providing an aesthetic appearance. The end boards **24, 25** and side

boards **22, 23** have L shaped cuts **24b, 25b and 22b, 23b** at their edges, which serve to receive the ends of the corner angles, so that the outer surface of the corner angles are flush with the outer surface of the sideboards and end boards. The corner angles also help in improving the overall appearance of the coffin by enabling designs to be engraved on it. The grooves in the base plate **21** serve the novel purpose of self-supporting the sideboards and end boards during assembly, which reduces the effort to be put in on the part of the assembler.

Two lid sections **26, 27** serve to cover the coffin, and as depicted in **Fig 1**, they maybe in two equal halves. In the embodiment shown in **Fig 1**, the upper side of the lid maybe flat, but it is preferred to be dome shaped to provide an overall aesthetic appearance. The lid sections **26, 27** are fitted to the sideboard **22** or **23** with hinges, which are not shown. The lid being in two sections makes opening the coffin easier, and allows for the lid at the foot end to be closed during the viewing of the deceased if desired.

The modular coffin kit is also provided with a rigid moisture impervious liner **36** as shown in **Fig 3** which lines the inside of the coffin up to a height of about 6 inches from the base of the cavity of the coffin. The preferred

material for the rigid impervious liner maybe plastic, and more preferably, PET (Polyethyleneterephthalate). The lining provided by the liner **36** serves to retain the liquids that are discharged from the mortal remains.

During assembly, the end boards **24, 25** are fitted into the grooves **32** of the base plate **21**. The sideboards **22, 23** are then slotted into the grooves and positioned at right angles to the end boards **24, 25**. The end boards and sideboards are then joined together with screws. The next step is to more permanently secure the sideboards **22, 23** and end boards **24, 25** to the base plate **21**. The securing is done by means of screws or the like, screwed upwardly from the bottom of the base plate **21**. This involves turning the semi-assembled coffin upside down as will be more fully described hereafter. After assembling the side and end boards to the base plate **21**, the corner angles **28, 29, 30** and **31** are placed on the intersecting edges of the sideboards **22, 23** and end boards **24, 25**. The corner angles maybe fixed using double-sided tape, glue or screws. Next, the hinges on one of the sideboards **22** or **23** are fitted in place to enable supporting the lid sections **26, 27**. The lid sections are then fitted to the boards by means of the hinges. The rigid moisture impervious liner **36** is then mounted so as to line the lower portion of the cavity of the coffin. The steps in the assembly

procedure described above can also be interchanged with regards to the order of inserting the sideboards and end boards, and the order of fitting the corner angles and the lid sections and hinges.

Another embodiment as illustrated in **Fig 2** consists of two base plate parts **37a, 37b** and a connecting member **37c**. Similarly the sideboards are also split into two sideboard parts **38a, 38b** and **38'a, 38'b**, connecting members **38c, 38'c** and camouflaging members **38d, 38'd**. There are two identical end boards **39, 40** and four corner angles **41, 42, 43** and **44**. The corner angles can be fitted to the intersection of the edges as previously described. There are two lid sections **45, 46**. The sideboard parts have a stepped cut surface **47**, which has predrilled holes for screws. The connecting member **38c, 38'c** also has predrilled holes for screws corresponding to the ones in the side section parts **38a, 38b** and **38'a, 38'b** respectively. The side section parts are assembled into a complete side section by bringing both the side section parts together and holding them in place and screwing the connecting members. The camouflaging members **38d** and **38'd** are then fitted on the side just opposite to the connecting member so as to camouflage the joints. Similarly the base plate parts **37a, 37b** have predrilled holes positioned corresponding to the ones in the connecting member **37c**. The base plate

parts and the sideboard parts are first assembled individually before the coffin is assembled. The coffin is then assembled in the same manner as described in the previous embodiment. Similar to the previous embodiment, the members may be made from particleboard or solid wood, but are preferably of moulded composite wood for the reasons previously discussed. As in the previous embodiment, a rigid moisture impervious liner is provided as a waterproof lining for the inside of the coffin. Because of the split sideboards and base plates, the length of the most elongated members is substantially reduced so as to make it more compact and thereby easier to be transported and handled.

In order to facilitate the assembly and reduce the required manpower, a jig **80** is provided as illustrated in **Figs 4 – 9**.

The jig consists of rigid A-frames **71** at the bottom, one on each end as illustrated in **Fig 9**. The A-frames are the load bearing members of the jig and for the coffin when it is assembled. The A-frame **71** consists of legs **72** in the shape of alphabet A. On the top portion of the legs **72** is fitted a supporting member **73**. The spindle **74** is supported firmly on the supporting member **73** in such a way that it allows rotation of the spindle. The spindle

74 supports the end assembly 62 and base 59, as will be more fully described hereafter through the frame-supporting member 66.

The base 59 of the jig as illustrated in **Fig 6** consists of two identical, elongated channel members 60a, 60b connected to three identical channel members 61a, 61b and 61c placed perpendicular to members 60a, 60b. The axial members 60a, 60b and members 61a, 61b, 61c provide a flat, horizontally extending shelf to support the coffin during assembly. The channel members 60a, 60b, 61a, 61b and 61c can be square or round or C shaped.

The jig further includes two end assemblies 62, one of which is illustrated in **Fig 7**. The end assembly consists of two inner vertical channel members 63a, 63b and two outer vertical channel members 64a, 64b. There are two identical horizontal channel members 65a and 65b, one on the top and one on the bottom of the end assembly 62. The end assemblies 62 are rigidly secured to both ends of the base 59. The horizontal members 65a, 65b are firmly joined to the vertical members 63a, 63b and 64a, 64b. In the base of the inner vertical members 63a, 63b are attached holding members 67a, 67b respectively, which are substantially long with their axis perpendicular to the

plane of the end assembly **62**. Each of the holding members **67a**, **67b** have a substantial taper in their end. The taper **68b** in the holding member **67b** is illustrated in **Fig 8**. The inner dimensions of the holding members **67a**, **67b** correspond to the outer dimensions of the axial members **60a**, **60b**. The ends of the axial members **60a**, **60b** are inserted into the holding members **67a**, **67b** and held by screws. Thus the holding members **67a**, **67b** serve to support the base **59** of the jig.

A pair of clamp supports **69a**, **69b** is connected to the top of the outer vertical members **64a**, **64b** respectively. The clamp support **69b** is illustrated in **Fig 8**. The clamp supports **69a**, **69b** are screwed onto the upper horizontal member **65a** and support manual screw-type clamps **70a**, **70b** respectively. The manual clamps **70a**, **70b** help in clamping down the corners of the coffin during assembly. Attached between the bottom part of the inner vertical member **63a**, **63b** is the frame-supporting member **66**, which serves to support the base **59** and end assembly **62** on the A-frame **71**.

The spindle **74** enables rotating the end assembly **62** and base **59** freely. The supporting member **73** has a block projection **76** on its side on which is situated a lock pin **75** as illustrated in **Fig 5** and **Fig 9**. The horizontal

member **65b** and the inner vertical member **63a** in one of the end assembly **62** have holes **66b** and **66a** respectively for inserting the lock pin **75**. Once the end assembly and base assembly as a whole is rotated, it can be locked in place by inserting the lock pin **75** into either of the lock pin holes **66a** or **66b**, depending on the position of the combined assemblies. This enables locking the combined end assembly **62** and base **59** in place, which makes assembling the coffin easier without the need to hold the rotated coffin.

As illustrated in **Fig 4**, a side frame **90** is fitted on to one side of the jig assembly **80**. The side frame **90** is fitted to the sides of both the end assemblies with screws. The side frame **90** consists of three members, a top bar **92**, a middle bar **94** and base bar **96**. The bars prevent the partially assembled coffin from slipping when it is rotated during assembly. The base bar **96** supports the base plate of the coffin, and the middle bar **94** supports the sideboard of the coffin. The top bar **92** supports the lid section of the coffin when it is being assembled, preventing any slipping of the lid section when the hinges are screwed.

What is claimed is:

1. A coffin kit comprising:
 - (a) a base plate including side and end edges and grooves extending along said side and end edges of the plate;
 - (b) a pair of sideboards and a pair of end boards for forming the sides and the ends of the coffin; the thickness of said side and end boards being such as to be receivable into said grooves during assembly;
 - (c) four L-shaped corner angles for covering the corners formed by the sides and end boards when assembled; and
 - (d) a rigid liner composed of liquid proof material of a size and shape such as to line said coffin when the coffin is assembled.
2. A coffin kit as claimed in Claim 1, wherein the said base plate, said sideboards and end boards are made of moulded wooden products.
3. A coffin kit as claimed in Claim 1, wherein the four corner angles are fastened to the side and end board intersections with double sided tape.

4. A coffin kit as claimed in Claim 2, wherein at least some of the said sideboards and end boards are decoratively moulded.
5. A coffin kit as claimed in Claim 1, wherein the liner is made of Polyethyleneterephthalate (PET).
6. A coffin kit comprising:
 - (a) a base plate assembly consisting of at least the first and second base plate sections and connecting members for joining the said sections; the said base plate sections including grooves extending along the side and end edges;
 - (b) a pair of sideboard assemblies for forming the sides of the coffin and consisting of at least the first and second sideboard sections and connecting members for joining the said sections; the thickness of said sideboard sections being such as to be receivable into said grooves during assembly;
 - (c) a pair of end boards for forming the ends of the coffin; the thickness of said end boards being such as to be receivable into said grooves during assembly;

- (d) four corner angles for covering the corners formed by the side and end boards when assembled.
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- 7. A coffin kit as claimed in Claim 6, wherein the said base plate sections, said sideboard sections and end boards, said connecting members are made of moulded wooden products.
 - 8. A coffin kit as claimed in Claim 6, wherein the four corner angles are fastened to the side and end board intersections with double sided tape.
 - 9. A coffin kit as claimed in Claim 7, wherein at least some of the base plate sections, sideboard sections, end boards and connecting members are decoratively moulded.
 - 10. A jig comprising:
 - (a) a pair of rigid bottom frames performing the function of bearing the load; the said bottom frame consisting of frame legs for support, a suitable rotating member to rotate the load on the jig and a supporting member to support the rotating member;

- (b) a base consisting of a plurality of members placed axially and a plurality of members placed at a substantial angle and joined by suitable means to the said members placed axially;
- (c) a pair of end assemblies; each end assembly consisting of a plurality of vertical members and a plurality of horizontal members; a frame supporting member fitted on to the bottom portion of each said end assembly; a clamping means to clamp the load placed on the said base of the jig; holding members to hold the said base of the jig; and each end assembly supported on the said bottom frame through the said frame supporting member.

11. A coffin and jig kit comprising a coffin kit as claimed in Claim 1 and a jig as claimed in Claim 10.

12. A coffin and jig kit comprising a coffin kit as claimed in Claim 6 and a jig as claimed in Claim 10.