March 13, 1934. I. W. COX 1,951,132

METHOD OF MAKING MEMORIAL MARKERS

Filed Nov. 30, 1932

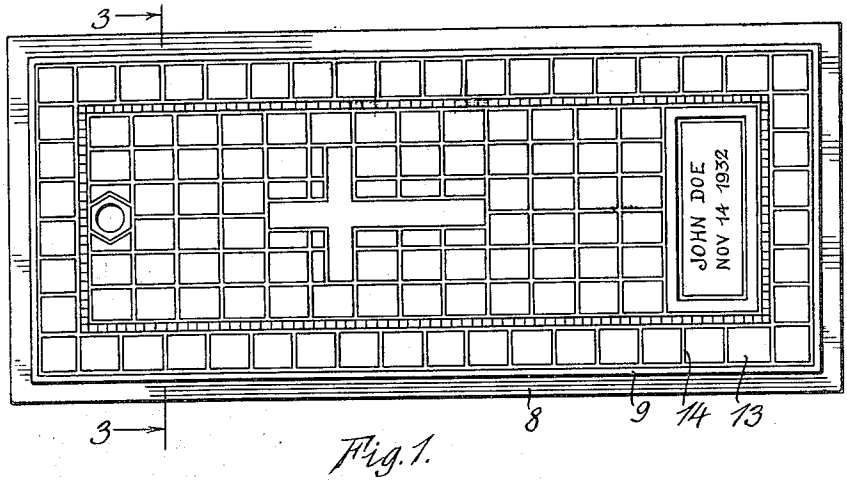


Fig. 1.

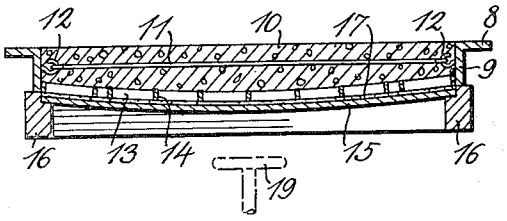


Fig. 2.

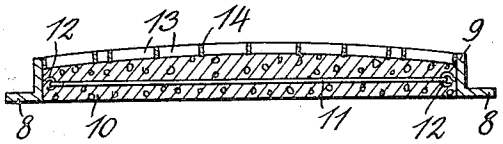


Fig. 3.

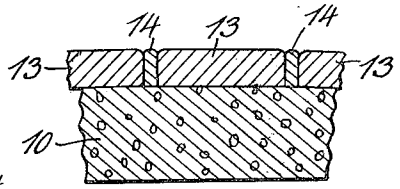


Fig. 4.

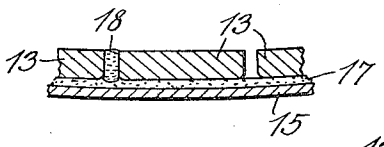


Fig. 5.

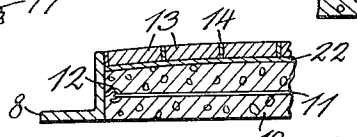


Fig. 9.

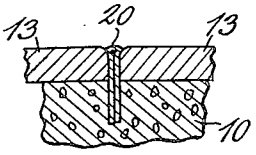


Fig. 7.

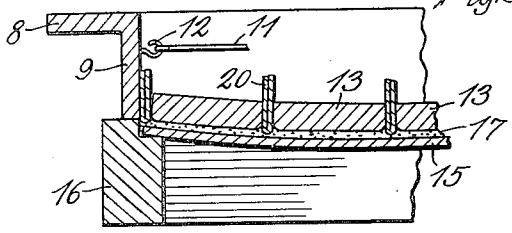


Fig. 6.

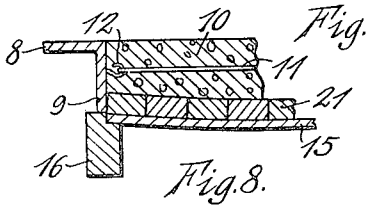


Fig. 8.

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Patented Mar. 13, 1934 1,951,132

UNITED STATES PATENT OFFICE

1,951,132

METHOD OF MAKING MEMORIAL MARKERS

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Application November 30, 1932, Serial No. 644,976

3 Claims. (Cl. 41—23)

This invention relates to improvements in memorial markers of the type employed in cemeteries for marking and ornamenting graves.

It is the object of this invention to produce an ornamental marker that can be put in place on top of a grave and whose size is such as to completely cover the grave.

This marker, briefly described, consists of a copper covered steel frame of the proper size in which is molded a slab of concrete to the outer surface of which tiles of suitable shape and color are arranged so as to form an ornamental tile surface. Embedded in the tile surface is a legend member containing the name and other information relating to the deceased, also some religious emblem as a cross and a holder for a flower vase.

Since this memorial marker is constantly exposed to the weather, it must be very carefully constructed so as to resist the effects of all kinds of weather and temperature changes and it is to the method of constructing this marker so as to make it as nearly weather proof as possible that this invention relates.

In order to more clearly describe the invention so that it may be fully understood, reference will now be had to the accompanying drawing in which the invention has been illustrated, and in which:

Fig. 1 is a top plan view of the finished marker showing one design thereof;

Fig. 2 is a transverse section of the marker showing the same in place on a support during one stage of the process of manufacture;

Fig. 3 is a section taken on line 3—3, Fig. 1; and shows the marker in normal position;

Fig. 4 is a section to a somewhat larger scale showing the lead spacers between the adjacent tile blocks;

Fig. 5 is a view somewhat similar to that shown in Fig. 2 and shows the position of the tiles on the support before any sealing means has been put in place between the joints;

Fig. 6 is a fragmentary transverse section showing a slightly different construction;

Fig. 7 is a fragmentary transverse section showing the finished joint obtained when the method illustrated in Fig. 6 is employed;

Fig. 8 is a section showing another modification; and

Fig. 9 is a section showing the finished product made as shown in Fig. 8.

The marker consists of a rectangular frame which is preferably made of structural steel bars of angle or L-shaped cross section. These bars are preferably covered with copper or may be copper plated. In the drawing the horizontal flange of the bar has been designated by reference numeral 8 and a vertical flange by reference numeral 9. Molded in place in the frame is a concrete slab 10 in which is embedded reenforcing members 11 that extend transversely and have their ends anchored to the sides of the frame members as indicated at 12.

The upper surface of the concrete slab is covered with tile which may be of any desired material and shape and which have been designated by reference numeral 13. The joints between the tiles are filled with some sealing material, such as lead and these joints have been designated by reference numeral 14.

It is to the method of constructing this marker that this invention relates, and the method employed, as well as some variations thereof, will now be described in detail.

In order to construct the marker illustrated, it is necessary to provide a support which, in the drawing has been indicated by reference numeral 15 and which consists of a steel plate whose edges are supported on the frame members 16 as shown in Fig. 2. Since the upper surface of the finished marker is preferably convex, the upper surface of the support 15 is made concave to correspond with the curvature of the marker. The frame comprising the angle irons mentioned above is put in place on the frame 16 in the manner shown in Fig. 2. The first step in the construction of the marker is to cover the surface of the supporting plate 15 with a layer of sealing material such as molder's sand and which has been designated by reference numeral 17. The tiles 13 are now put in place with the finished surface resting on the upper surface of the sealing material in the manner shown in Fig. 5. The tiles are spaced apart the distance desired and after all the tiles have been put in place, the joints are filled with molten lead or other suitable alloy as indicated at 18 in Fig. 5. In one form of construction, instead of filling the spaces between the blocks with lead they are filled with dry sand, which can be removed after the cement backing has been put in place. Where molten lead is employed, it is desirable to first heat the support and the tile to the approximate temperature of the molten metal in order to prevent breakage of the tiles and for this purpose gas burners or other suitable heating means like those indicated by 19 are provided underneath the supporting plate. After the lead has been poured, the parts are allowed to cool. When the temperature has fallen sufficiently to permit further operations, a con-

crete mixture is poured into the space in the frame above the tiles. Before the concrete mixture is poured, it is sometimes desirable to coat the upper surface of the tile with neat cement so as to assure a good adhesion between the tiles and the concrete. After the concrete has been poured, it is allowed to set and after it has set sufficiently to permit further operations, the frame is turned over into the position shown in Fig. 3, and the lead joints are caulked from the outside. This caulking increases the density and forces the metal against the edges of the tile so as to form a perfectly water tight seal. After the caulking operation the joints may be finished in any suitable manner so as to remove the marks of the caulking tool.

Instead of pouring molten lead into the space between the tiles before the concrete backing is put in place, the spaces may be filled with dry sand, as above mentioned, after which the concrete is put in place and allowed to set.

After the concrete is set the memorial marker is then turned into the position shown in Figs. 3 and 4, after which the sand is removed by means of compressed air or some other suitable means, after which the spaces between the tiles are filled with lead, either by pouring molten lead into the spaces or else by filling the spaces with shredded lead, which is then caulked so as to produce absolutely water tight joints. After the lead has been caulked, the joints are finished as above explained. After the joints are finished, they have the appearance shown in Fig. 4.

Instead of employing molten lead as above explained, it is possible to make the joints in the manner shown in Figs. 6 and 7 from which it will be seen that the spaces between the different tiles are filled with sheet lead bent double as indicated by reference numeral 20. After the tiles have been set and separated by the strips of sheet lead, the backing of concrete is put in place and permitted to set. The marker is then turned over into the position shown in Fig. 3 and the lead separator strips are then caulked so as to increase their density and force the lead against the sides of the tiles so as to form a perfect weatherproof seal. After the caulking, the joints are finished as above described.

It will be seen from Fig. 7 that the lead separator strips extend into the concrete backing and serve as anchors, although this is not essential because when the concrete is properly put in place, it will adhere very strongly to the back of the tile so as to form a substantially unitary structure.

The importance of heating the tile before the lead or other molten alloy is poured into the joints is to prevent the tile from cracking, as it has been found that where molten lead is poured into joints between cool tiles, the sudden expansion due to the increased temperature has a tendency to crack the tile or at least to crack the glaze and this can be prevented by heating. The function of the sealing layer 17 is to prevent the lead from flowing to the sides, as it will if the tile are merely laid on a metal surface. Where the sealing layer 17 is omitted, a much larger amount of labor is found necessary to finish the joints due to the running of the metal between the support and the tiles. When the method described in connection with Figs. 6 and 7 is employed, no heat is necessary because instead of using molten lead, lead strip fillers as shown, are employed. The function performed by the sealing layer 17 when the method shown in Fig. 6 is employed is merely to permit the strips to be projected down below the surface of the tile so as to leave sufficient metal projecting to permit consolidation by the caulking operation.

Another advantage in having the layer 17 of sand or other sealing means is that the tiles can be more easily set and do not have the tendency to move which they will have if placed on a smooth hard surface like the upper surface of the sheet 15.

Instead of proceeding in the manner described above, the article can be made as shown in Figs. 8 and 9. When the method illustrated in Figs. 8 and 9 is employed, the sealing layer 17 is omitted and a layer of boards 21 is placed directly on top of the support 15. The thickness of the boards 21 is greater than the thickness of the tile blocks 13 by the thickness of the layer 22 of neat Portland cement (Fig. 9). After the boards have been put in place, a concrete mixture 10 is put in place and allowed to harden. After the concrete has set, the frame is reversed so as to bring the boards to the top and the boards are then removed. After the boards have been removed, a layer 22 of neat Portland cement is applied to the convex surface of the concrete block 10, and the tiles are then set in the moist cement. The tile blocks are spaced and arranged in the manner desired. After the cement has set, the joints between the tile blocks are filled with lead or other alloy and caulked. If shredded lead is used and caulked in place, there is no danger of cracking the tile due to the sudden expansion as when molten metal is employed. After the joints are caulked, they are then finished in the manner above described.

The importance of having the joints between the tiles absolutely weather-proof has been remarked on before, but will be repeated here because the object of this invention is to obtain as perfect a joint between the several tiles as it is possible, as by this means only can a memorial marker be made that will resist the elements for an almost unlimited length of time.

I am aware that it is old to set tile in cement with cement joints and I am also aware that it has been suggested to employ lead in the manner similar to that used in constructing ornamental glass windows, but so far as I am aware no one has suggested any of the methods described in this application, all of which are well suited for this purpose and all of which have steps in common which will be defined in the claims annexed hereto.

Having described the invention what is claimed is:

1. The method of making tile surfaced articles which comprises, covering a supporting surface with a layer of refractory sealing material whose upper surface is curved to conform to the shape of the outer surface of the article, arranging tiles, face down, on the surface of the sealing material, the tiles being spaced from each other, heating the support, the sealing material and the tiles to a temperature substantially that of molten lead, pouring molten lead into the spaces between the tiles, allowing the assembly to cool, applying a backing of concrete to the tiles, and permitting the concrete to set.

2. The method of making tile covered memorial markers which comprises, placing a number of tiles on a supporting surface with their adjacent edges spaced apart, heating the support and the tile to a temperature approximately equal to that of molten lead, filling the spaces between the tiles with molten lead, permitting the support and the tiles to cool, then pouring a concrete mixture

onto the tiles to form a backing, and then permitting the concrete to set.

3. The method of making tile covered memorial markers which comprises, covering a supporting surface with a layer of sand, placing a number of tiles on the sand with their adjacent edges spaced apart, heating the support and the tile to a temperature approximately equal to that of molten lead, filling the spaces between the tiles with molten lead, permitting the support, the sand and the tiles to cool, pouring a concrete mixture onto the tiles to form a backing, and then permitting the concrete to set.

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