Aug. 25, 1953 E. J. LAGER 2,649,644

BASE SEAL STRUCTURE FOR BURIAL VAULTS

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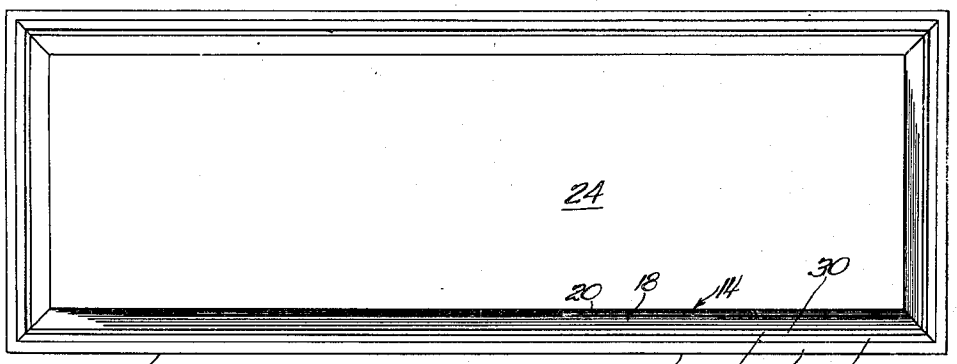



Fig. 1

Fig. 3

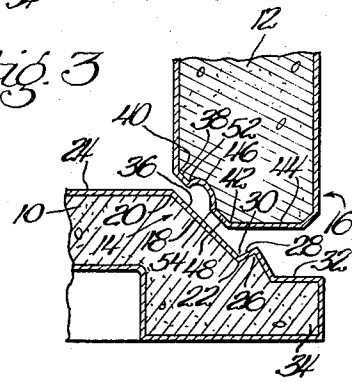



Fig. 2

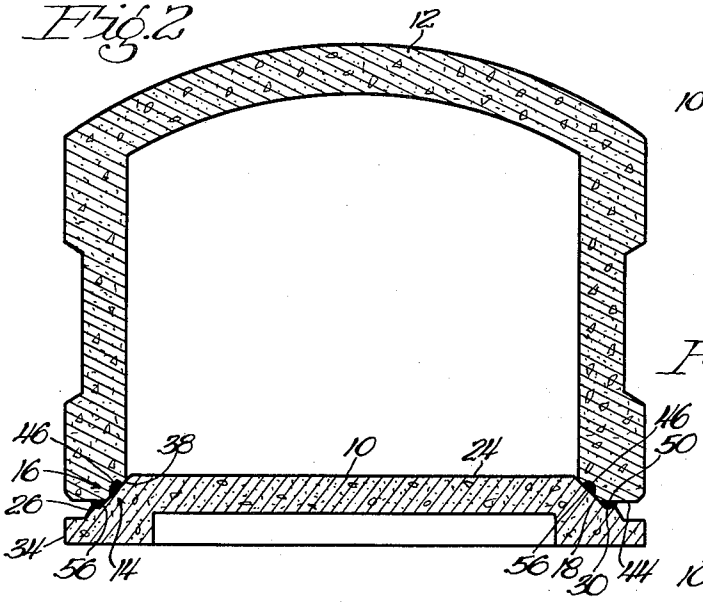



Fig. 4

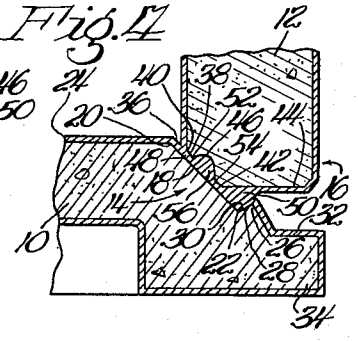
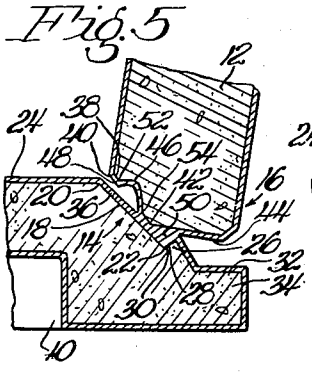



Fig. 5



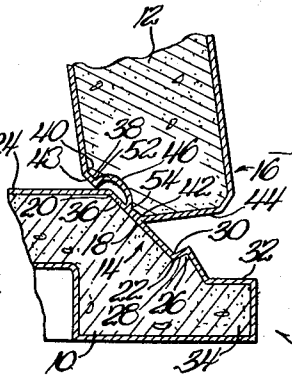




Fig. 6

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## BASE SEAL STRUCTURE FOR BURIAL VAULTS

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Continuation of application Serial No. 130,995, December 3, 1949. This application February 2, 1951, Serial No. 209,000

2 Claims. (Cl. 27—35)

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This invention relates to a burial vault and more particularly to a seal structure for sealing the junction between the base and cover. This application is a continuation of applicant's co-pending application Serial No. 130,995, filed December 3, 1949.

Burial vaults are essentially concrete box-like structures in which burial caskets are placed and the primary functions thereof are to protect the casket and the corpse and to prevent caving in of the burial plot. One of the principal problems encountered in the design and use of a vault of this nature is that of waterproofing the structure so that moisture from the ground does not penetrate the vaults, either because of the porosity of its walls or because of a leak at the joint between the base and the cover.

Considerable effort has been expended in the past in the development of suitable waterproof coatings but the effectiveness of these are nullified if the joint fails to seat and seal properly. In some cases resort has been had to various types of interlocking joints employing the fundamental tongue-and-groove principle, but these have proved unsatisfactory because of the difficulty encountered in centering or properly seating the cover on the base. This difficulty is accentuated in the case of a vault of the type having a flat base and what is known as a bell or dome cover, wherein the sheer size and weight of the cover makes it virtually impossible to initially obtain perfect centering of the cover on the base. As a practical matter, misalinement occurs initially and the workmen must reach down into the grave with pry bars or the like to force the cover into centered position. In cases of this character the conventional tongue-and-groove seal would be highly undesirable.

According to the present invention, the difficulties outlined above are eliminated by the provision of a peripheral seal structure between the base and cover comprising an inclined plane up and down which the cover may be adjusted until it is accurately centered. The sealing surface is coated or has otherwise applied thereto a deformable or plastic sealing material, such as asphalt, and the cooperative surfaces forming or meeting at the inclined plane have grooves or channels and cooperative scraping edges or sealing-material-impelling portions for causing the sealing material to flow into one or more of the sealing grooves. The result is that even though the cover be initially installed in a cocked position on the base, centering thereof results in one or more effective seals about the peripheral seal structure.

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It is an object of the invention to provide the cover and base with complementary, peripherally sloped cap and seat surfaces by means of which the cover is self-centering or self-adjusting on the base. Results of this nature are particularly pronounced because of the conventional rectangular shape of the base. The combined effectiveness of the seals of the nature mentioned above is enhanced as the cover is caused to seek its centered position on the base.

Still another object of the invention resides in the provision of a burial vault comprising a base structure and a cover structure, both of which are both internally and externally coated with a sealing and waterproofing material, this material being carried over onto the seat and cap structures so as to present a suitable quantity of material to accomplish the channel-filling results set forth above. Yet another object is to provide a seal that is simple and effective and one that will serve its intended purpose without the employment of particularly skilled workmen in the final closure of the vault.

The foregoing and other important objects and desirable features inherent in and encompassed by the invention will become apparent as the following disclosure of a preferred embodiment of the invention progresses in conjunction with the accompanying sheet of drawings in which:

Figure 1 is a plan view of the vault base.

Figure 2 is an enlarged transverse section of a closed vault without its contents.

Figures 3, 4, 5 and 6 are fragmentary sectional views, each on an enlarged scale, showing the functional characteristics of the seal and seat structure in different circumstances.

The burial vault chosen for the purposes of illustration comprise a substantially flat horizontal base 10 and a top or cover 12 of the bell or dome type. As shown in Figure 1, the base 10 is rectangular, as is conventional, and has about its border or margin a peripheral, upwardly facing seat and seal structure designated generally by the numeral 14. The rectangular shape of the cover 12 will be obvious because of its intended cooperation with the rectangular base. The cover has a downwardly facing peripheral cap and seal structure designated generally by the numeral 16.

The peripheral seat and seal structure 14 of the base comprises a peripheral downwardly and outwardly sloping bevel seat 18, inclined as shown at an angle of between 20° to 50° to the horizontal

and extending from an upper, inner peripheral edge 20 to a lower, outer peripheral edge 22. In the instance shown, the upper edge 20 borders an upper inner surface 24 of the base on which may be provided means to carry a casket as shown in the co-pending application referred to above.

The lower peripheral edge 22 is bordered by a peripheral rib 26 which rises above the level of the peripheral edge 22 to a height substantially below the level of the upper peripheral edge 20. This rib has an upper, upwardly and outwardly directed surface 28 which, with the proximate portion of the sloped seat 18, forms a peripheral channel or groove 30 at the bottom of the slope. The outer margin of the rib 26 drops away to join a peripheral upper surface 32 of a peripheral ledge 34 that projects outwardly beyond the rib and defines the marginal edge of the base.

Preferably the entire exposed surface of the base 10 is coated with a suitable plastic sealing material such as asphalt. This material is indicated in section in Figures 3 through 6 but is represented merely by a relatively heavy solid line in Figure 2. Since the presence of the material is obvious from the representation just made, it will not be generally designated by a reference character, but important and instrumental portions thereof will be appropriately identified in the larger illustrations. The important thing to remember, at least in so far as the seal is concerned, is that this material is applied in quantity, preferably in the form of an adhesive layer 36, over the bevel or seat 18, preferably also lining the channel 30 and covering the rib 26.

The peripheral cap and seal structure 16 of the cover comprises a beveled cap surface 38 peripherally sloped outwardly and downwardly from the inner face of the wall of the cover part way toward the outer face of said wall, the slope being the same as that of the bevel 18 and having inner and outer peripheral edges 40 and 42 respectively. The edge 42 forms a downwardly pointing peripheral ridge at a dihedral angle junction with a substantially horizontal under surface 44. The surface 38 is interrupted intermediate its inner edge 40 and the ridge 42 by a peripheral sealing channel or groove 46. As will be apparent from Figures 2, 3 and 4, the channel 46 lies uphill from the channel or groove 30 in the base when the cover is seated on the base. The cooperating surfaces 18 and 38 (ignoring for the moment the presence of sealing material therebetween) meet or seat at an inclined plane angled generally transversely to the path of movement (here vertical) along which the base and cover members move relatively in the final closure of the vault.

The sealing function is further augmented by completely coating the exposed surfaces of the cover 12 with material similar to that used in the base. As in the case of the base, only that instrumental portion or layer of material at 48 need be considered here. This layer overlies or covers the cap surface 38 and preferably also coats the peripheral channel 46.

The junction at 42 between the surfaces 38 and 44 provides a scraping edge or what may be termed a sealing-material-impelling portion disposed uphill from the channel or groove 30 in the base and adapted, when the cover is seated on the base, to impel portions of the sealing material 36—48 downhill and into the channel 30. As best shown in Figures 2 and 4, the under surface 44 of the cover extends above the top of the rib 26 and is in spaced relation to the upper surface 32 of the base ledge 34. The upwardly directed slope 28 on the rib causes the impelled material to flow upwardly to create a seal at 50. The rib 26 serves also to prevent overflowing of the sealing material onto the ledge 34.

The sealing channel 46 in the cap surface 38 is defined by a pair of scraping edges 52 and 54. These provide material-impelling portions parallel to and uphill from the rib 26. In the case of an initially perfect seal, as in Figure 4, deformation of the sealing material 36—48 caused by limited shifting of the cover member 12 relative to the base member 10 along the inclined plane provided by the cap and seat surfaces causes the material 36—48, or a portion thereof, to flow into the channel 46 to provide a second seal 56.

As stated above, the more usual instance in the installation of the cover is one in which the cover is cocked as in either Figure 5 or 6. As a matter of fact, both situations will occur simultaneously, since if the cover is cocked at one side as in Figure 5, its opposite side will have some of the characteristics of Figure 6. It is in cases of this type that the scraping edges or impelling portions 42, 52 and 54 function to cooperate with the grooves or channels 30 and 46. As shown in Figure 5, the scraping edge 42 has already affected a seal at 50 in the channel or groove 30. Now, when the cover is straightened or centered, the scraping edge 54 will pull uphill to cause the sealing material 36—48 to flow into the channel 46.

In the case of Figure 6, the scraping edges 42 and 52 will cause the flowing of material 36—48 respectively into the channels 30 and 46. Briefly, the situation is one involving the provision of a plurality of seals in parallel so that in any case there is at least one perfect peripheral seal about the junction between the cover and the base.

Various specific features in addition to those outlined herein will undoubtedly occur to those versed in the art, as likewise will numerous modifications and alterations in the preferred embodiment of the invention illustrated, all of which may be achieved without departing from the spirit and scope of the invention as defined in the appended claims.

What is claimed is:

1. A burial vault comprising a horizontal base having a single upper peripheral seat and seal structure, and a cover having a single lower peripheral cap and seal structure complementary to and supportable on the peripheral structure of the base, characterized in that the base has a substantially flat horizontal casket-supporting surface bounded by a peripheral edge lying generally in the plane of said surface and the peripheral structure of the base comprises a peripheral seat in the form of an inclined plane sloping downwardly and outwardly directly from said upper peripheral edge to a lower peripheral edge at a level below said surface, a peripheral rib raised from the zone of said lower peripheral edge to a height below the level of said upper peripheral edge to form with the adjoining portion of the seat a peripheral, upwardly opening sealing channel spaced below the plane of said surface, and a coating of deformable sealing material on the seat between the channel and said upper peripheral edge; and the peripheral structure of the cover comprises a cap seat in the form of an inclined plane sloping outwardly and downwardly from an inner peripheral edge to an outer peripheral edge at the same slope as the base seat, said cap seat being interrupted by having let therein a downwardly opening peripheral sealing groove, and the length of the

inclined plane of the cap seat being shorter than that of the base seat and the outer peripheral edge of the cap seat lies peripherally uphill from the base channel so that the cover may be adjustably rocked on the base from end to end and side to side with the cap seat inclined plane resting flatly on and slidable upwardly and downwardly on the base seat inclined plane whereby the cover may be centered on the base, said sealing groove lying peripherally intermediate said outer peripheral edge of the cap seat and the peripheral edge of said casket-supporting surface, said sealing groove being defined at each side by peripheral scraping edges engaging the sealing material on the base so that pressure applied by rocking of the cover as aforesaid causes the outer peripheral edge of the cap surface to flow a portion of the sealing material into the base channel and causes at least one of the scraping edges of the cap surface groove to flow a portion of said sealing material into said groove.

2. A burial vault comprising a horizontal base having a single upper peripheral seat and seal structure, and a cover having a single lower peripheral cap and seal structure complementary to and supportable on the peripheral structure of the base, characterized in that the base has a substantially flat horizontal casket-supporting surface bounded by a peripheral edge lying generally in the plane of said surface and the peripheral structure of the base comprises a peripheral seat in the form of an inclined plane on the order of twenty to fifty degrees to the horizontal and sloping downwardly and outwardly directly from said upper peripheral edge to a lower peripheral edge at a level below said surface, and a coating of deformable sealing material on the seat between its lower peripheral edge and its upper peripheral edge; and the peripheral structure of the cover comprises a cap seat in the form of an inclined plane sloping outwardly and downwardly from an inner peripheral edge to an outer peripheral edge at the same slope as the base seat, said cap seat being interrupted by having let therein a downwardly opening peripheral sealing groove located intermediate the inner and outer edges of said cap seat so that said groove is bordered at both sides by substantial flat marginal portions of the cap seat capable of seating on the base seat, and the length of the inclined plane of the cap seat being shorter than that of the base seat and the outer peripheral edge of the cap seat lies peripherally uphill from the lower peripheral edge of the base seat so that the cover may be adjustably rocked on the base from end to end and side to side with the cap seat inclined plane resting flatly on and slidable upwardly and downwardly on the base seat inclined plane whereby the cover may be centered on the base, said sealing groove lying peripherally intermediate said outer peripheral edge of the cap seat and the peripheral edge of said casket-supporting surface, said sealing groove being defined at each side by peripheral scraping edges engaging the sealing material on the base so that pressure applied by rocking of the cover as aforesaid causes the scraping edges of the cap surface groove to flow a portion of said sealing material into said groove.



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