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CRYOEMBALMING CASKET

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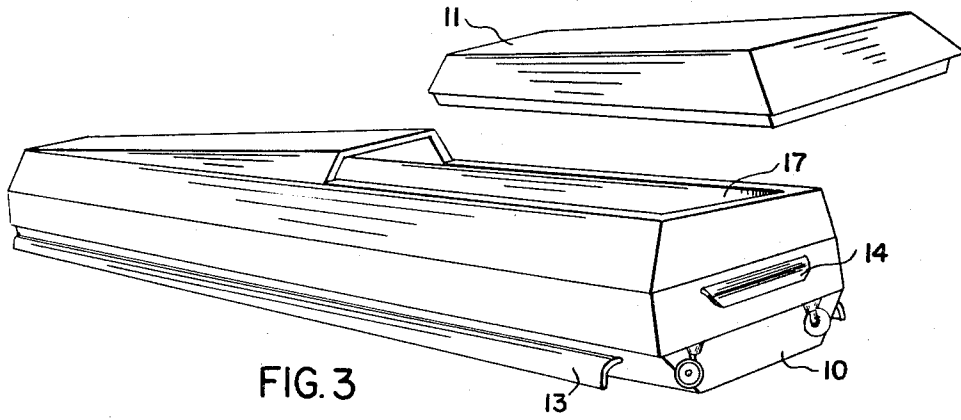


FIG. 3

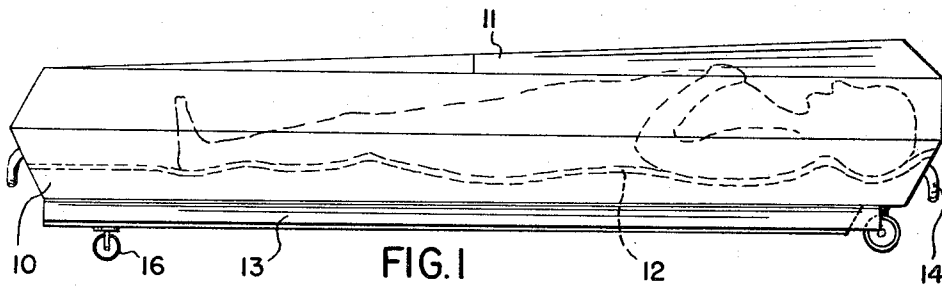


FIG. 1

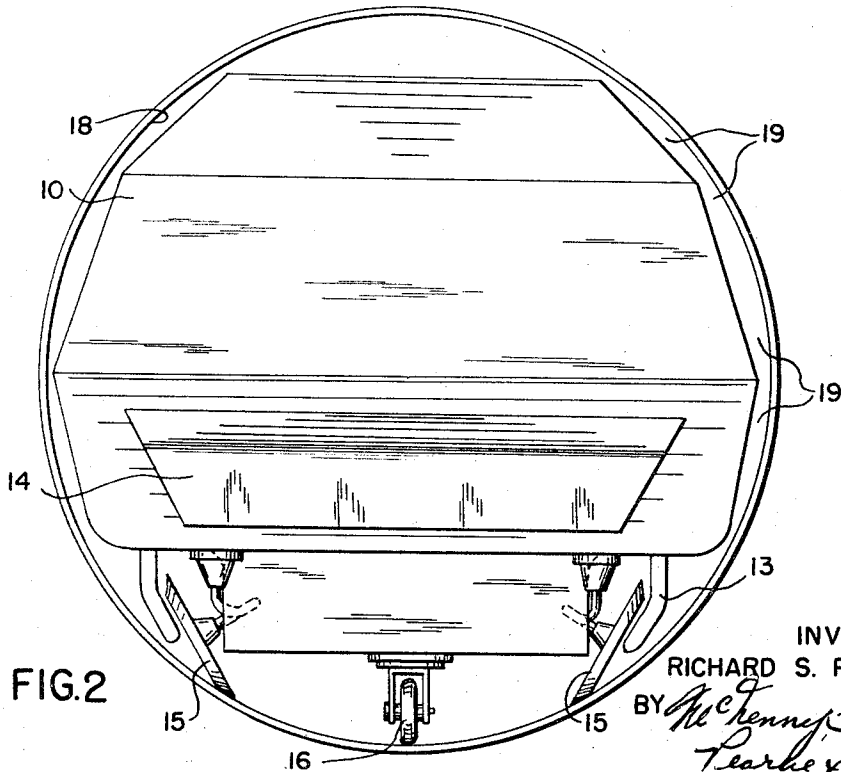


FIG. 2

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CRYOEMBALMING CASKET

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10 Claims. (Cl. 27-6)

This invention relates to a casket for cryoembalming, by which is meant the preservation of human bodies for extended periods at very low temperatures.

No rapidly destructive processes are presently known to occur in simple or complex organisms between about minus 100° C. and absolute zero. (However, gradual accumulation of changes on an atomic scale due to naturally occurring ionizing radiation remains a possibility as an extremely slow destructive process.) Theoretically any organism that can survive cooling below minus 100° C. and be rewarmed to normal biological temperatures can be maintained indefinitely, if not almost perpetually, even in the viable state, by storage at temperatures below about minus 150° C. However cryoembalming is not presently directed to the preservation of whole body viability because this has not been yet shown to be attainable for human beings. However it is possible by cryoembalming to preserve human bodies for time intervals of indefinite duration without any significant change in state or appearance. Indeed it appears that human bodies can be held in a frozen-state condition that, biologically, will remain almost absolutely stable for an indefinite interval of months, years, or millenniums.

The present invention provides a casket suitable for the protection of a body and its maintenance in a steady-state frozen condition over long intervals of time. The casket of the invention may be used with a suitable cooling and storing apparatus, and is adapted to be received in a crypt that is in the form of a cylindrical tube that is bathed in liquid nitrogen or other coolant.

The invention contemplates provision of an elongated walled metal box or frame of aluminum or the like, and a bed of heat-conductive material adapted to support a corpse and to conform to its configuration, the bed being connected through a large heat path to the metal of the box or frame so that it is in direct heat-transmitting contact therewith. Via the bed, heat-transmitting contact is maintained between the metal box or frame and a large surface area of the corpse.

In the drawings, FIGURE 1 is a side elevation of a casket illustrating the invention. FIGURE 2 is an end elevation of the casket, and of an imaginary surrounding cylindrical envelope which shows the configuration of the inner face of a tubular envelope in which the illustrated casket may be received. FIGURE 3 is a perspective view of the casket.

The illustrated casket comprises an elongated walled metal box or frame proportioned to receive and protectively surround a corpse. The box or frame may be fabricated of aluminum of sufficient wall thickness to provide adequate strength for supporting, protecting, and transporting a corpse received in the casket. Fabrication may be by stamping and welding, or by any other suitable means. Elaborate hardware and trimming is avoided so that the walls of the box or frame have substantially regular heat transfer characteristics at all local areas so that no relatively high heat-opaque localities are present. Substantial local aberrations in heat absorption through the walls are thereby avoided.

Supported over the bottom of the box or frame is a yielding resilient bed or stretcher 12 of highly heat conductive material such as flexible wire cloth net or

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relatively fine shavings of aluminum, copper, or equivalent metal wool material. The bed or stretcher 12 is sufficiently resilient to conform to the body contour of a corpse placed on the bed or stretcher, and thereby establish heat-absorbing solid contact between the corpse and the bed over a large surface area of the corpse.

As is seen in FIGURE 2, the sides of the casket 10 approach congruency with the sides of an imaginary surrounding cylindrical envelope 18. If the casket is placed in a tubular envelope of the same configuration, such tubular envelope being surrounded by a refrigerant liquid, there is a small interfacial gap corresponding to the gap 19 between the sides of the box or frame of the casket and the sides of the tubular envelope. Relatively direct heat transmission is thereby established between the box or frame of the casket and the refrigerated tubular envelope in which it is placed.

As seen in FIGURE 1, the side-elevational profile of the box or frame may be tapered so that it is deeper at its head end than at its foot end, but the plan profile is of substantially constant width so that the interfacial gap 19 is no greater at the foot than it is at the head end.

The top of the box or frame is closed and a removable lid 11 is provided at the head end. The lid closes an opening 17. A transparent closure which may be of the same size and shape as the lid 11, and therefore is not separately illustrated, may also be provided for the opening 17 so that a corpse which has been partly cooled in preparation for interment may be viewed through such transparent closure without excessive surface frosting of the corpse.

The carrying handles 13 located beneath the sides of the casket body and along its length may be of the same material as the box or frame. The casket 10 is provided with a pair of crawler casters 15 and a guide caster 16. The latter, which may extend further below the casket than the former pair, facilitates directional control during the insertion of the casket into a tubular crypt. The casters 15 serve as followers. All the casters are preferably removable, to provide an unobstructed bottom for convenient and secure emplacement of the casket on flat surfaces prior to insertion into the tubular crypt.

The invention is not restricted to the slavish imitation of each and every one of the details described above which have been set forth merely by way of example with the intent of most clearly setting forth the teachings of the invention. Obviously devices may be provided which change, eliminate or add certain specific structural details without departing from the invention.

What is claimed is:

1. A casket comprising an elongated walled metal box or frame proportioned to receive and protectively surround a corpse and having substantially regular heat transfer characteristics at all local areas so that no relatively highly heat-opaque localities are present and substantial local aberrations in heat absorption through said walls are avoided, a yielding resilient bed of heat-conductive metal wool or metal fabric supported over the bottom of said box or frame and connected through a large heat path with the metal of the box or frame, whereby the bed conforms to a corpse supported thereon, and heat-absorbing solid contact is maintained between the corpse and the bed over a large surface area of the corpse and thereby a large heat path is established between a large area of the corpse and the metal of the box or frame during exterior cooling of said box or frame.

2. A casket as defined in claim 1, the casket having sides that approach congruency with the sides of an imaginary surrounding cylindrical envelope whereby substantially throughout the areas of said sides there may be maintained a small interfacial gap between the sides of

said box or frame and a tubular envelope surrounded by a-refrigerant liquid in which the box or frame is placed.

3. A casket as defined in claim 2, the side-elevational profile of the casket being tapered so that it is deeper at its head end than at its foot end, but the plan profile of the casket being of substantially constant width throughout at least the majority of the length of the casket.

4. A casket as defined in claim 1 in which the top of the box or frame is closed, and a removable lid is provided at the head end thereof.

5. A casket as defined in claim 4 in which a transparent closure is provided for the opening covered by the removable lid, so that a partly cooled corpse may be viewed through such closure without excessive surface frosting of the corpse.

6. A casket comprising an elongated walled metal box or frame of heat-conductive metal, a yielding bed of heat-conductive material adapted to support a corpse and conform to the body configuration thereof, said bed being supported over the bottom of the metal box or frame in heat-transmitting contact with the metal of the box or frame, whereby heat-absorbing contact is maintained between the bed and a corpse supported thereon over a large surface area of the corpse and a large heat path is established between a large area of the corpse and the metal of the box or frame during exterior cooling of the box or frame.

7. A casket as defined in claim 6 with removable casters at the bottom of the casket.

8. A casket as defined in claim 6 with a central guide caster at one bottom end of the casket and a pair of follower casters at the other bottom end of the casket.

9. A casket as defined in claim 8, the guide caster depending further below the casket than do the follower casters.

10. A casket as defined in claim 1, the side-elevational profile of the casket being tapered so that it is deeper at its head end than at its foot end, but the plan profile of the casket being of substantially constant width throughout at least the majority of the length of the casket.

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