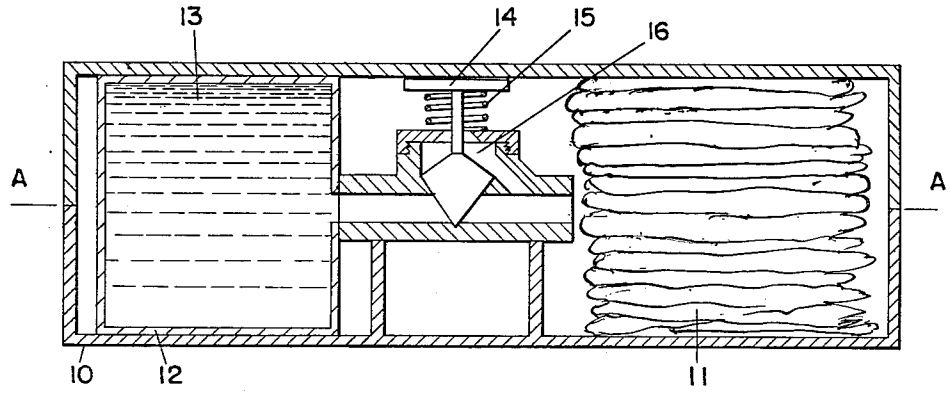
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METHOD OF INFLATING HIGH ALTITUDE INFLATABLE STRUCTURES

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METHOD OF INFLATING HIGH ALTITUDE INFLATABLE STRUCTURES

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This invention relates to the inflation of collapsed thin film envelopes by liquids which are vaporized at high altitudes. Heretofore this has been accomplished by storing the vaporizable liquid in the collapsed envelope. This has the disadvantage that some of the vaporizable liquid can be lost through flaws in the material of the envelope. The present invention avoids this difficulty by maintaining the vaporizable liquid in a separate container until inflation of the envelope is to be initiated and also providing a vent to the envelope so that entrained air can escape when the contained system is subjected to a partial vacuum environment.

The invention will be better understood from the following description when considered in connection with the accompanying drawings and its scope is indicated by the appended claims.

The singe FIGURE of the drawing shows an enclosure 10 within which are contained a collapsed envelope 11 and a vessel 12 containing a liquid 13 vaporizable at altitudes in excess of 150,000 feet. The enclosure 10 is split along its horizontal axis A—A so that it separates into two parts upon its projection into space by a rocket or other suitable vehicle by which it is transported.

Interconnecting the collapsed envelope 11 and the vessel 12 is a check valve 14. So long as the parts of the enclosure 10 are maintained in their illustrated positions the valve 14 is closed with respect to the vessel 12 while maintaining an open port or vent 16 with respect to the envelope 11. When the parts of enclosure 10 separate the check valve 14 is displaced to a new position by spring 15 which opens the passage between the vessel 12 and envelope 11 and closes the port or vent 16 for the envelope 11. The liquid 13 boils into the envelope 11 which is thereby inflated.

As can be readily understood, the check valve 14 may assume forms other than that illustrated. Thus the container 11 and vessel 12 may be interconnected by a rubber tube which is pinched closed until the parts of the enclosure 10 separate with a separate vent 16 which remains open until the parts of the enclosure 10 separate.

We claim:

1. The combination of an enclosure split to separate into two parts upon its ejection into space,
   a vessel mounted within said enclosure and containing a liquid vaporizable at altitudes in excess of 150,000 feet,
   an inflatable envelope positioned in said enclosure, and
   a check valve interconnecting said vessel and said envelope and biased to move from a closed to an open position upon said separation of said parts, said valve providing a vent for said envelope for escape of entrained air therein when said valve is in its closed position.

2. A combination according to claim 1 wherein said enclosure is a cylinder and is split along its longitudinal axis.

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