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Air-Cushion Lift Pad

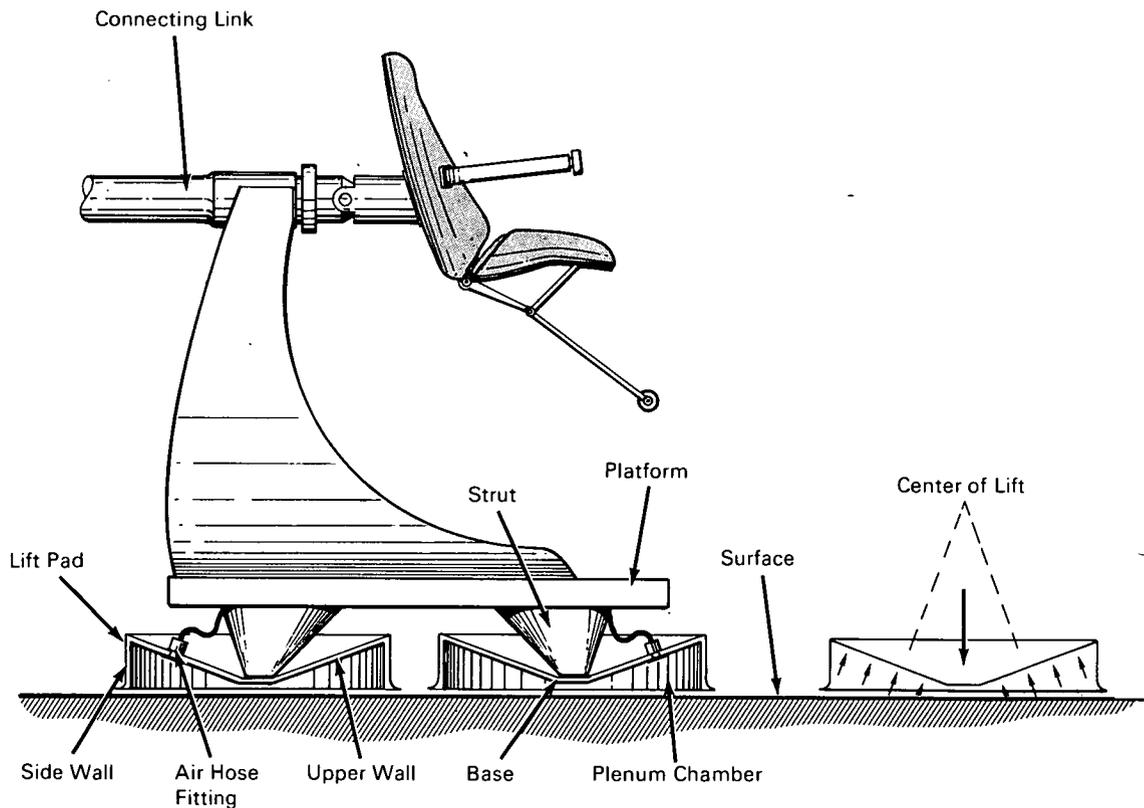


Fig. 1.

Fig. 2.

The problem:

To design an air-cushion supported device which remains stable over irregular surfaces.

The solution:

Formulate a mathematical model for an air pad capable of lifting a structure to a height of 0.125 inch.

How it's done:

Figure I illustrates how the lift pad operates. The air pads are connected to the platform by struts and the entire structure is moved in any desired direction by the connecting link. Each pad consists of a wall sloping upward from a base (fig. 2). If the pad tilts,

(continued overleaf)

the vertical lift force decreases on the high side and increases on the low causing torque which stabilizes the pad. This design is superior to conventional air cushion devices because it eliminates flutter, vibration, heaving, and pitching.

Notes:

1. A similar Tech Brief (B68-10442) concerning this item was previously published.
2. Documentation is available from:
Clearinghouse for Federal Scientific
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Springfield, Virginia 22151
Price \$3.00
Reference: TSP69-10448

Patent status:

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