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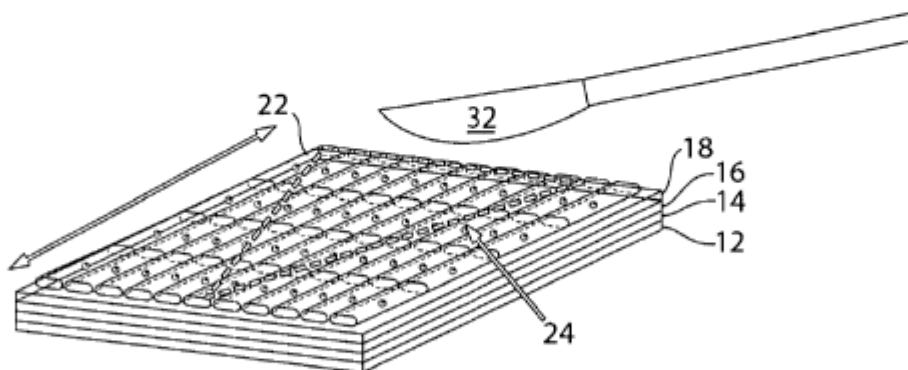


Fig. 3

(57) **Abrégé/Abstract:**

A free-standing thin film is fabricated from a structure comprising a base layer coated with a sacrificial polymer layer, which is in turn coated with a flexible polymer layer. Cells are then seeded onto the flexible polymer layer and cultured to form a tissue. The flexible polymer layer is then released from the base layer to produce a free-standing thin film comprising the tissue on the flexible polymer layer. In one embodiment, the cells are myocytes, which can be actuated to propel or displace the free-standing film. In another embodiment, the free-standing film is used to treat injured human tissue.

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