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(54) Title: GRIPPING APPARATUS, METHOD OF FORMING THE GRIPPING APPARATUS AND METHOD OF OPERATING THEREOF

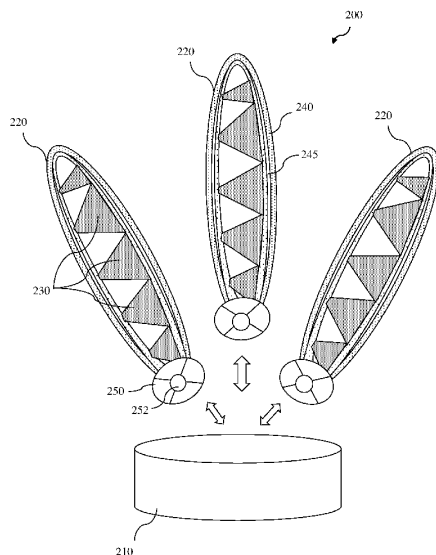


FIG. 2

(57) Abstract: A gripping apparatus includes a palm member; a plurality of finger members configured to couple to the palm member, each of the plurality of finger members comprising a plurality of phalange members arranged in series along a longitudinal axis of the finger member, each phalange member being formed of an elastomer; a multilayer finger membrane configured to encapsulate the plurality of phalange members, the multilayer finger membrane being formed of multiple material layers, including a strain limiting layer configured to limit the multilayer finger membrane from stretching; and a coupling end portion configured to couple to the palm member and includes an opening configured for fluid communication with a vacuum system, wherein each of the plurality of finger members is configured to bend based on vacuum pressure actuation generated by the vacuum system via the opening of the coupling end portion of the finger member.

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