Artificial heart muscle

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PATENT STATUS: Granted

PRIORITY NUMBER: 102020000015208

PRIORITY DATE: 24/06/2020

PUBLISHED AS: ITALY

Invention

In recent years, thanks to the introduction of innovative materials and technologies, the development of biomedical instruments has reached new goals, leading to increasingly performing devices.

In particular, this new phase has breathed a new life also into the artificial organs field. The robotic systems presently used in clinical practice are, indeed, still unable to guarantee a satisfactory life quality, if compared to the one of patients that underwent an organ transplant. Therefore, the development of new solutions is mandatory.

This patent is focusing on an artificial heart muscle, an innovative artificial device able to replicate the natural human heart functionalities.

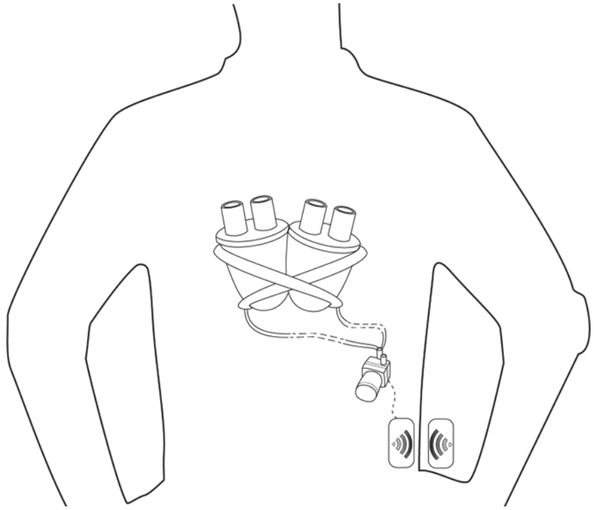
The patent protects at least one chamber ("ventricle") capable of deforming under an external force caused by at least one layer of active elements, wrapped around it.

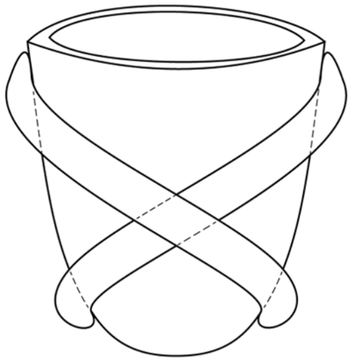
The deformable chambers are designed to be as close to the shape of a real heart as possible with the associated benefits.

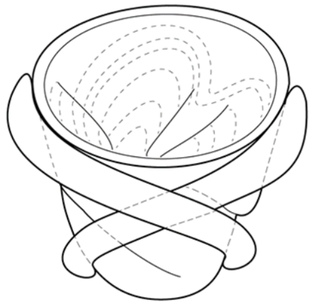
The combined action of ventricle and active elements generates an increase of pressure within the ventricle, thus developing a heart-like pumping action.

This technology as it is structured is very promising for the verisimilitude of the physical action with respect to the natural heart one

Drawings & pictures







DIASTOLIC PHASE

SYSTOLIC PHASE

Industrial applications

- Organ transplant;
- Treatment of cardiovascular diseases;
- Total artificial heart;

Possible developments

The research group is interested in industrial partners interested in licensing the technology covered by this patent.

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