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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No. : 12/718,316 Confirmation No. : 4620  
First Applicant : Benjamin McCloskey Art Unit : 4125  
Filed : 5 March 2010 Examiner : Jahangir, Naeem M.  
Title : FATIGUE TESTING SYSTEM FOR PROSTHETIC DEVICES  
Docket No. : P201384.US.02 Customer No. : 20686

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AMENDMENT A AND RESPONSE TO OFFICE ACTION  
INCLUDING INTERVIEW SUMMARY

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Mail Stop Amendment  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the Office action dated 3 January 2013, please consider the following remarks and amend the above-identified application as follows:

**Amendments to the Claims** begin on page 2 of this paper.

**Remarks** begin on page 8 of this paper.

## CLAIMS

This listing of claims replaces all prior versions and listings of claims in this application. New terms are presented in underline text and deleted terms are indicated in ~~strikethrough~~ text or are enclosed in [[double brackets]].

What is claimed is:

1. (Currently Amended) A device for simultaneous accelerated cyclic testing of a plurality of valved prosthetic devices comprising
  - a pressurizable test chamber further comprising
    - a fluid distribution chamber having a first manifold defining a first plurality of ports configured to receive and fluidically couple with a first end of each of a respective plurality of sample holders and defining an aperture in a lower face in fluid communication with a pressure source;
    - a fluid return chamber having a second manifold disposed opposite and spaced apart from the first manifold of the fluid distribution chamber and defining a second plurality of ports configured to receive and fluidically couple with a second end of each of the respective plurality of sample holders;
    - a fluid return conduit both structurally and fluidily connecting the fluid distribution chamber to the fluid return chamber; and
    - a compliance chamber providing a volume for holding a gas or elastomeric material that compresses under a pressure placed upon fluid in the test chamber and ~~and~~; allows fluid in the test chamber to occupy a portion of the volume;
    - a drive motor configured to operate cyclically, acyclically, or a combination of both; and
    - a fluid displacement member connected with and driven by the drive motor to provide the pressure source that increases and decreases a pressure on fluid in the test chamber; whereby cyclic and acyclic fluid pressures are maintained throughout the test chamber.
2. (Original) The device of claim 1 further comprising a plurality of sample holders, each configured to hold a respective prosthetic device, mounted between the first manifold of the fluid distribution chamber and second manifold of the fluid return chamber, and mounted within a respective pair of the first plurality of ports and the second plurality of ports, whereby the prosthetic device is placed in fluid communication with the distribution fluid chamber and the return fluid chamber.

3. (Original) The device of claim 1, wherein  
the compliance chamber comprises a plurality of compliance chambers formed as cavities within the fluid return chamber; and  
a respective one of the plurality of compliance chambers is positioned substantially above each of the second plurality of ports and between each of the second plurality of ports and the fluid return conduit.
4. (Original) The device of claim 1, wherein each of the sample holders defines a first port on a first side of a test sample position and a second port on a second side of the test sample position; wherein the first port and the second port are configured to receive one or more sensor devices.
5. (Original) The device of claim 4 further comprising a pressure transducer in fluid communication with the first port and the second port in one of the sample holders configured to measure a pressure gradient across a test sample positioned within the one of the sample holders.
6. (Original) The device of claim 1 further comprising a one-way valve positioned within the fluid return conduit that prevents fluid flow through the fluid return conduit when the fluid displacement member increases pressure on fluid in the test chamber.
7. (Original) The device of claim 1, wherein the fluid return conduit is positioned along an axial center of the test chamber.
8. (Original) The device of claim 1, wherein the fluid return conduit further comprises  
an inner conduit wall having an outer diameter and attached to one of the fluid distribution chamber or the fluid return chamber;  
an outer conduit wall having an inner diameter larger than the outer diameter of the inner conduit and attached to the other of the fluid distribution chamber or the fluid return chamber, wherein the inner conduit wall is received within the outer conduit wall; and  
a seal member positioned between the inner conduit wall and the outer conduit wall to create a fluid-tight seal therebetween; wherein  
the fluid return conduit is configured to telescopically lengthen or shorten.

9. (Original) The device of claim 8 further comprising a plurality of adjustment posts positioned between the fluid distribution chamber and the fluid return chamber and operable to adjust a separation distance between the fluid distribution chamber and the fluid return chamber.

10. (Original) The device of claim 1 further comprising a computer control system connected with the drive motor and a sensor positioned within the test chamber, wherein the computer control system is configured to operate one or more of the following:

an alarm module for alerting a user or arresting operation of the device upon receipt of data from the sensor that is outside a preset parameter; or

a closed loop feedback module for adjusting operation of the drive motor upon receipt of data from the sensor to maintain a pressure profile within the test chamber according to a preset parameter.

11. (Original) The device of claim 1 further comprising a heater positioned in the test chamber for heating fluid within the test chamber; and a temperature sensor positioned within the test chamber to measure temperature of fluid within the test chamber.

12. (Original) The device of claim 1, wherein the fluid displacement member comprises a flexible diaphragm.

13. (Original) The device of claim 1, wherein the drive motor comprises a linear motor.

14. (Original) The device of claim 13 further comprising a mounting structure connected to and supporting the linear motor in a vertically mounted position; and

a spring supported by the mounting structure, and interfacing with an end of a shaft of the linear motor extending from a lower end of the linear motor, wherein

the spring prevents the shaft from dropping downward from the linear motor when the linear motor is in an unpowered state.

15. (Original) The device of claim 1, wherein the fluid displacement member further comprises a flexible rolling bellows connected to a shaft of the linear motor.

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