Title: A DEVICE FOR SYNCHRONIZING THE PARAMETERS OF RESUSCITATIVE THERAPIES TO RESIDUAL MYOCARDIAL ACTIVITY DURING CARDIOPULMONARY RESUSCITATION

Abstract: In one embodiment, a method for improving the cardiac output of a patient who is suffering from pulseless electrical activity or shock and yet still displays some myocardial wall motion comprises sensing myocardial activity to determine the presence of residual left ventricular pump function having a contraction or ejection phase and a filling or relaxation phase. In such cases, a compressive force is repeatedly applied to the chest based on the sensed myocardial activity such that the compressive force is applied during at least some of the ejection phases and is ceased during at least some of the relaxation phases to permit residual cardiac filling, thereby enhancing cardiac output and organ perfusion. Also incorporated may be a logic circuit capable of utilizing multiple sensing modalities and optimizing the synchronization pattern between multiple phasic therapeutic modalities and myocardial residual mechanical function.
INTERNATIONAL SEARCH REPORT

A. CLASSIFICATION OF SUBJECT MATTER
   IPC: A61H 31/00 (2006.01)

   USPC: 601/41.44
   According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

   Minimum documentation searched (classification system followed by classification symbols)
   U.S.: 601/41.44; 607/3

   Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

   Electronic database consulted during the international search (name of database and, where practicable, search terms used)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

<table>
<thead>
<tr>
<th>Category</th>
<th>Citation of document, with indication, where appropriate, of the relevant passages</th>
<th>Relevant to claim No.</th>
</tr>
</thead>
</table>

   Further documents are listed in the continuation of Box C.

   See patent family annex.

   Special categories of cited documents:
   "A" document defining the general state of the art which is not considered to be of particular relevance
   "E" earlier application or patent published on or after the international filing date
   "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
   "O" document referring to an oral disclosure, use, exhibition or other means
   "P" document published prior to the international filing date but later than the priority date claimed
   "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
   "X" document of particular relevance; the claimed invention cannot be considered without it
   "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is taken alone
   "Z" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is considered with one or more other such documents, such combination being obvious to a person skilled in the art
   "&" document member of the same patent family

   Date of the actual completion of the international search: 23 August 2006 (23.08.2006)
   Date of mailing of the international search report: 27 SEP 2006

   Name and mailing address of the ISA/US
   Mail Stop PCT, Attn: ISA/US
   Commissioner for Patents
   P.O. Box 1450
   Alexandria, Virginia 22313-1450
   Facsimile No. (571) 273-3201

   Authorized officer
   DeMille
   Telephone No. (571) 272-2975

Form PCT/ISA/210 (second sheet) (April 2005)