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**Lattouf** (43) **Pub. Date: Jul. 10, 2003**

(54) **TREATMENT FOR PATIENT WITH CONGESTIVE HEART FAILURE**

(52) **U.S. Cl.** ..... **600/374; 623/2.11; 623/904**

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(57) **ABSTRACT**

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The invention is directed to two minimally invasive therapeutic procedures, particularly for patients with congestive heart failure which may be performed separately or together. One procedure involves providing a valved passageway through the patient's left ventricular wall at the apex of the patient's heart and advancing instruments through the valved passageway to connect the valve leaflets of the patient's heart valve, e.g. the mitral valve, in a "Bow-Tie" configuration to prevent or minimize regurgitation through the valve. The second procedure involves advancing a pacing lead and a pacing lead implanting device through a trocar in the patient's chest and implanting the pacing lead on an exposed epicardial region of the patient's heart wall. The pacing lead has a penetrating electrode which is secured within the heart wall.

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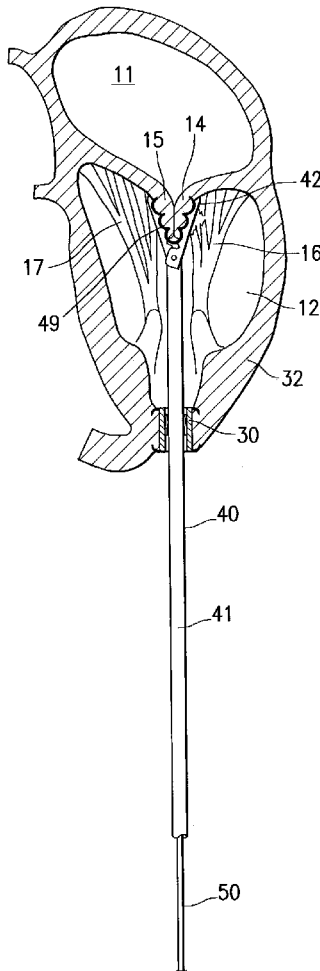
**Related U.S. Application Data**

(60) **Provisional application No. 60/340,062, filed on Dec. 8, 2001. Provisional application No. 60/365,918, filed on Mar. 20, 2002. Provisional application No. 60/369,988, filed on Apr. 4, 2002.**

**Publication Classification**

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Improved devices for these procedures include a minimally invasive grasping device for heart leaflets, a leaflet connector with artificial cordae tendinae and a pacing lead implant instrument.



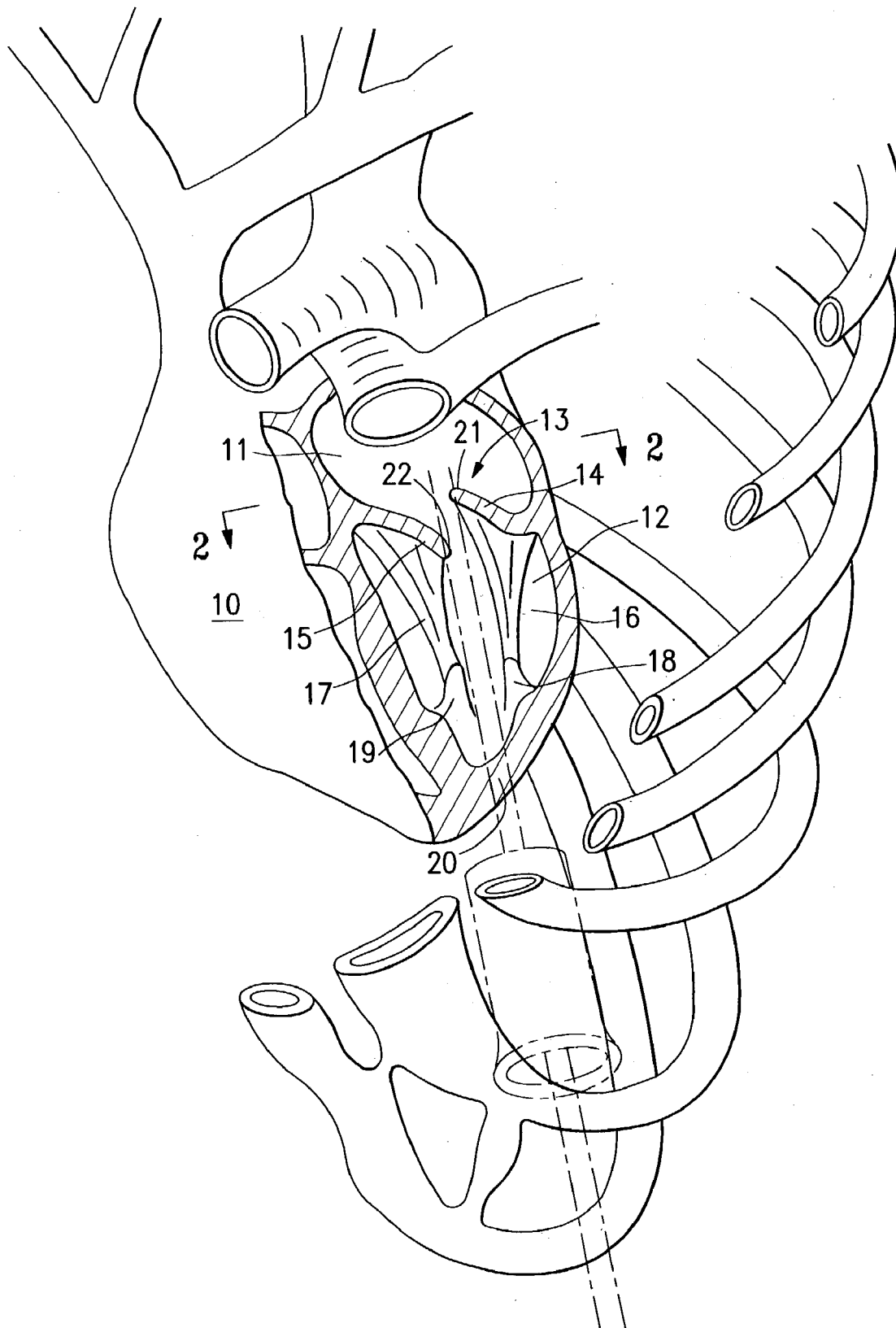


FIG. 1

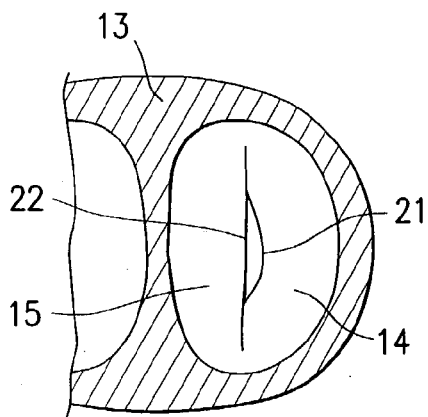


FIG. 2A

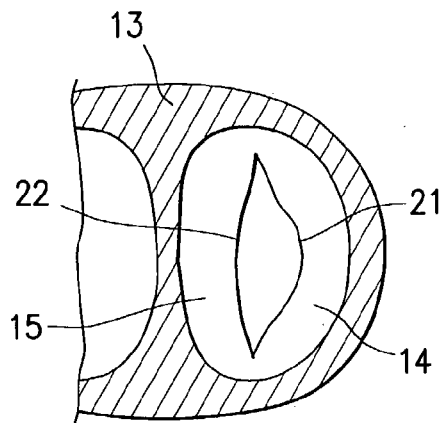


FIG. 2B

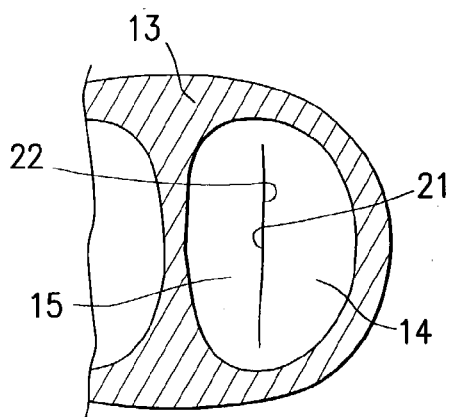


FIG. 3A

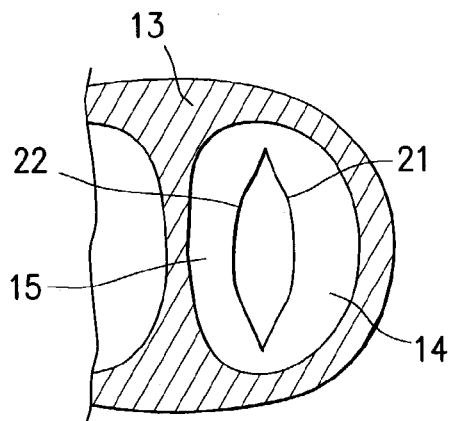


FIG. 3B

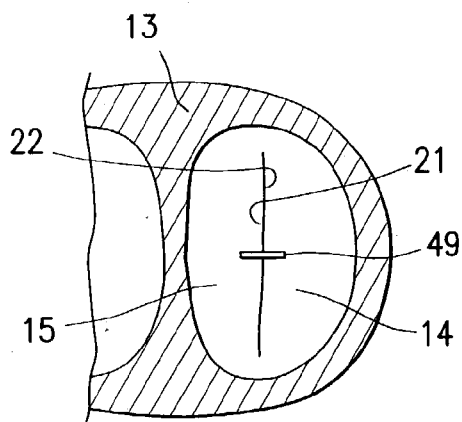


FIG. 4A

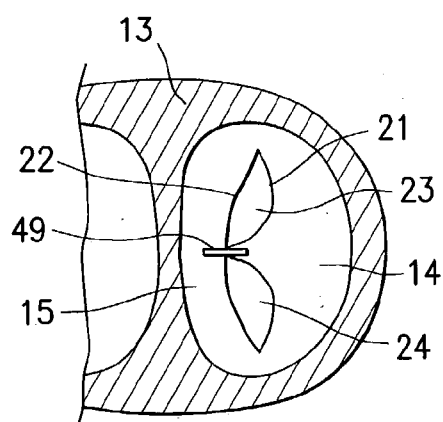


FIG. 4B

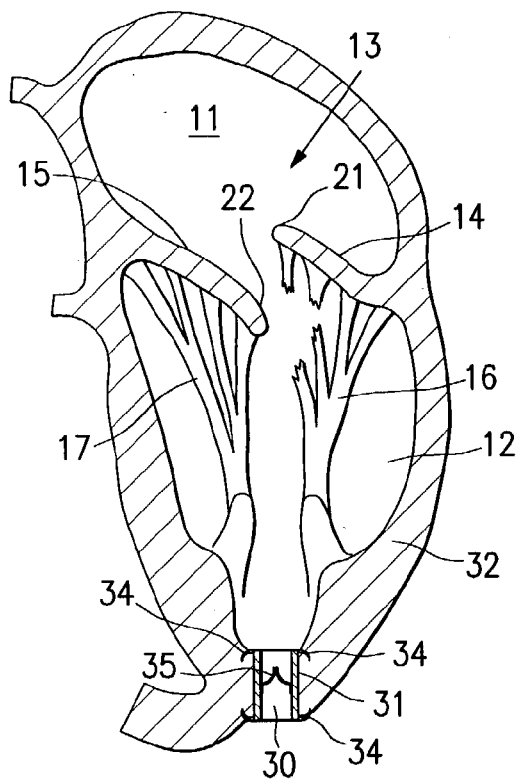


FIG. 5

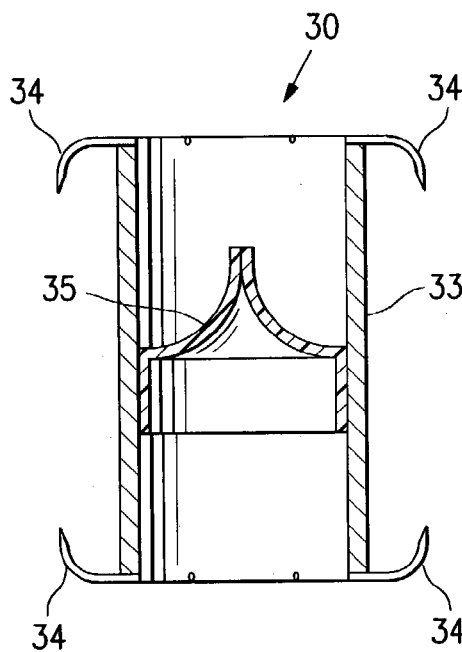


FIG. 7

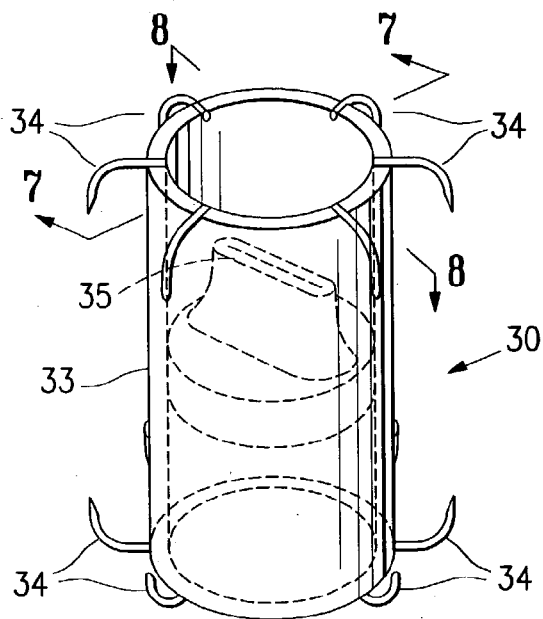


FIG. 6

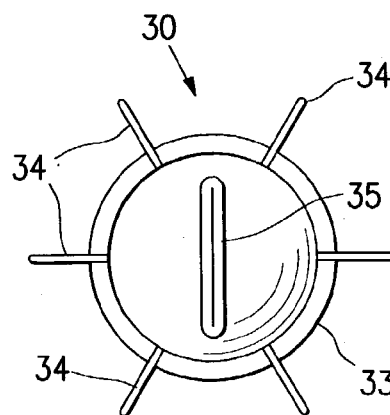


FIG. 8

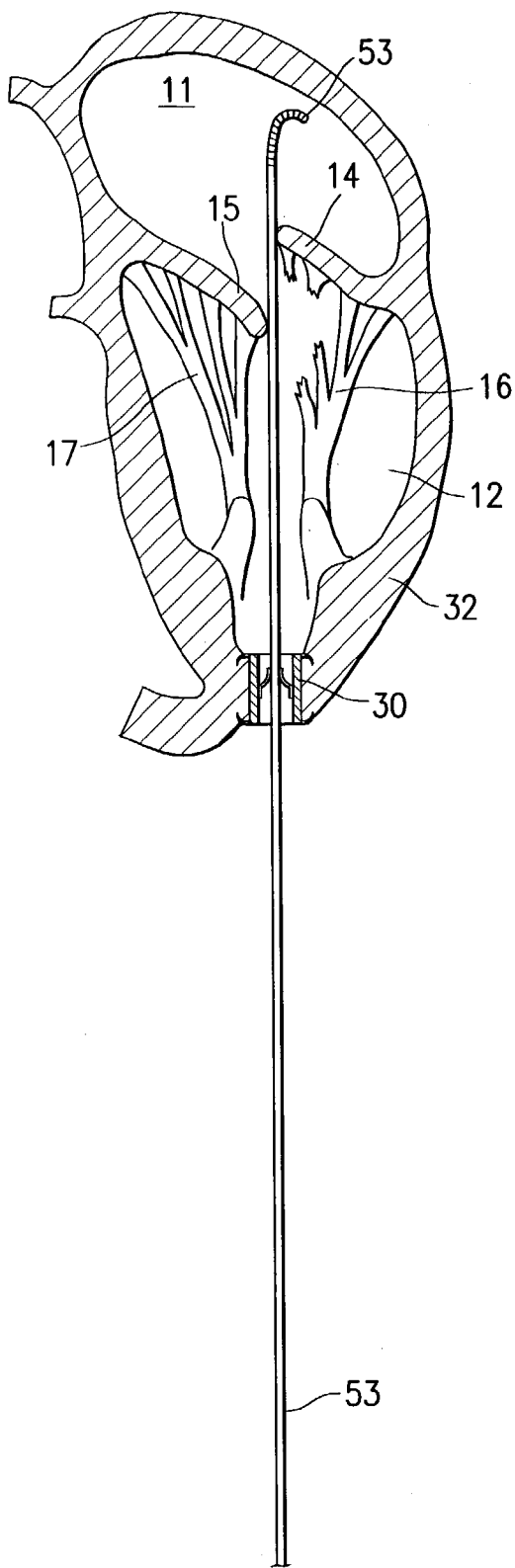


FIG. 9

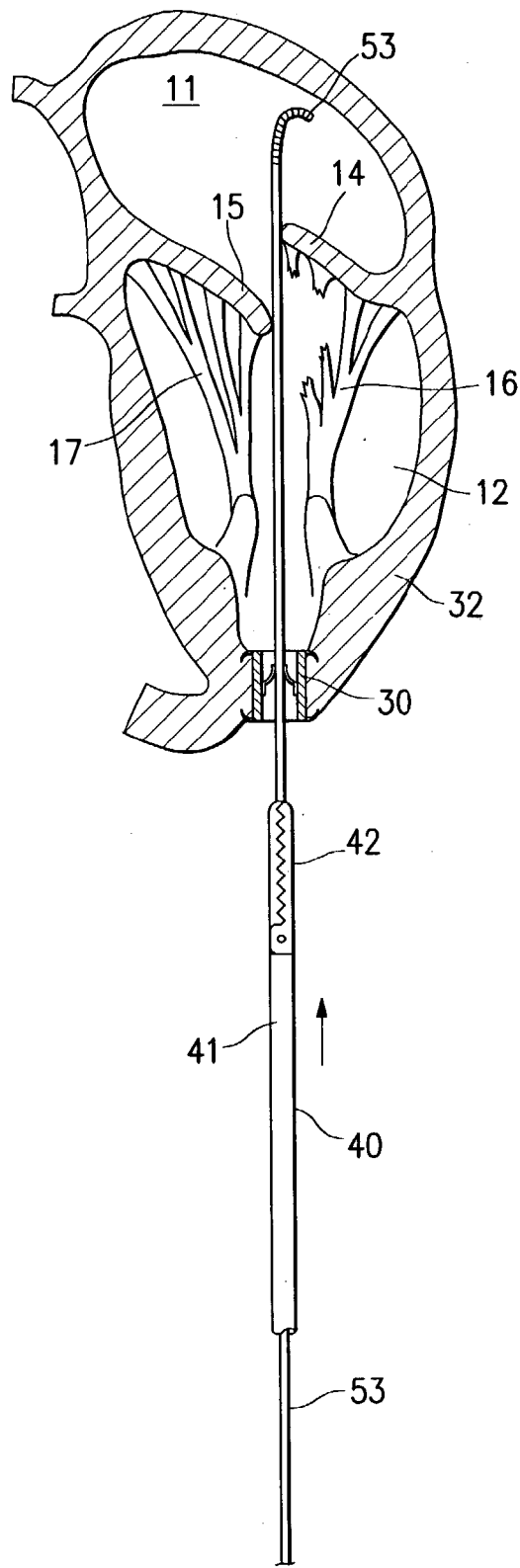


FIG. 10

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