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**Erez et al.**

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- (54) **SKIN PIERCING NEEDLE ASSEMBLY**
- (75) Inventors: **Uri Erez, Kiryat Motzkin; Yuval Singer, Haifa, both of (IL)**
- (73) Assignee: **Mali-Tech Ltd., Haifa (IL)**
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**Related U.S. Application Data**

- (62) Continuation-in-part of application No. 08/697,293, filed on Aug. 26, 1996, now Pat. No. 5,921,963, which is a continuation of application No. 08/325,412, filed as application No. PCT/US93/03992 on Apr. 28, 1993, now Pat. No. 5,578,014.

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- (51) **Int. Cl.<sup>7</sup>** ..... **A61M 5/32**
- (52) **U.S. Cl.** ..... **604/273; 604/272; 604/93**
- (58) **Field of Search** ..... 604/192, 263, 604/198, 187, 110, 162, 163, 195, 197, 212-216, 239, 117, 223, 227, 228, 229, 116, 273, 272; 128/919

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*Primary Examiner*—Richard K. Seidel  
*Assistant Examiner*—Cris Rodriguez  
(74) *Attorney, Agent, or Firm*—Ladas & Parry

(57) **ABSTRACT**

A needle assembly for passing a needle through an aperture formed in a plate placed between the needle assembly and a body to be pierced by the needle, the needle assembly including a needle having a needle point, and a sleeve associated with the needle, wherein at least a portion of the sleeve has elastic properties in a generally longitudinal direction and is adapted to take up a generally extended state when the assembly is in a non-operative orientation so as to surround a portion of the needle including the needle point, and is further adapted to take up a compressed state when the assembly is in an operative orientation so as to expose a portion of the needle including the needle point, the needle point passing through the aperture in the operative orientation, and wherein the sleeve comprises an aligning device for aligning the needle point with respect to the aperture.

**3 Claims, 23 Drawing Sheets**

