



US005921966A

United States Patent [19]

Bendek et al.

[11] **Patent Number:** **5,921,966**

[45] **Date of Patent:** **Jul. 13, 1999**

[54] **MEDICATION DELIVERY PEN HAVING AN IMPROVED CLUTCH ASSEMBLY**

4,936,833	6/1990	Sams	604/208 X
5,104,380	4/1992	Holman et al.	604/211 X
5,279,585	1/1994	Balkwill	604/207
5,674,204	10/1997	Chanoch	604/232 X

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[57] **ABSTRACT**

[21] Appl. No.: **08/909,222**

[22] Filed: **Aug. 11, 1997**

[51] **Int. Cl.⁶** **A61M 5/00**

[52] **U.S. Cl.** **604/207; 604/211; 604/232**

[58] **Field of Search** **604/207-211, 224, 604/232, 152, 218**

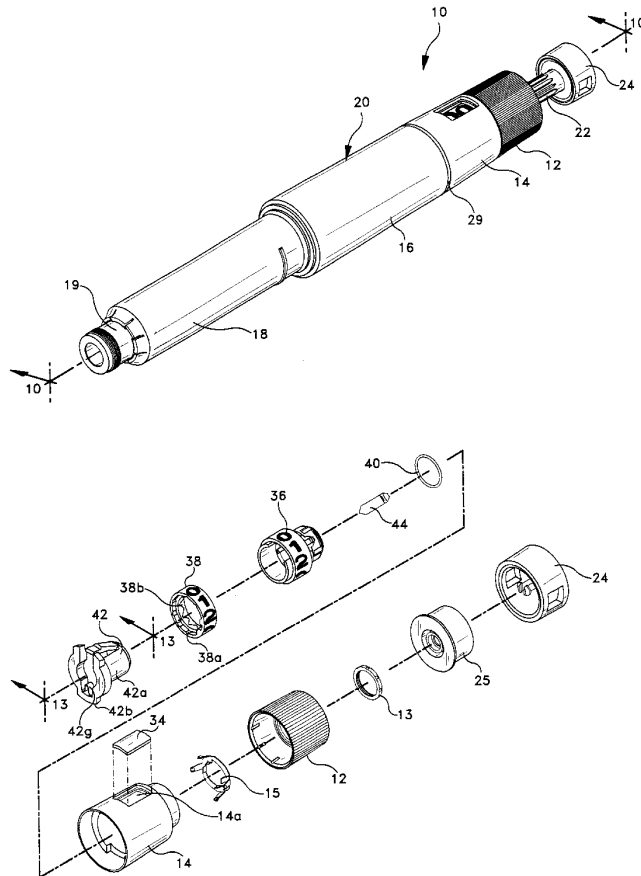
An improved medication delivery pen is provided for injecting fluids such as insulin within body tissue. The medication delivery pen includes a mechanism that prevents the removal of a cartridge unless an injector button on the medication pen is in a predefined position, a bayonet attachment and an improved clutch assembly in a dose setting mechanism that provides improved control over the torque necessary to rotate a units counter ring in the medication delivery pen using a dose setting knob.

[56] **References Cited**

U.S. PATENT DOCUMENTS

4,568,335 2/1986 Updike et al. 604/211

7 Claims, 14 Drawing Sheets



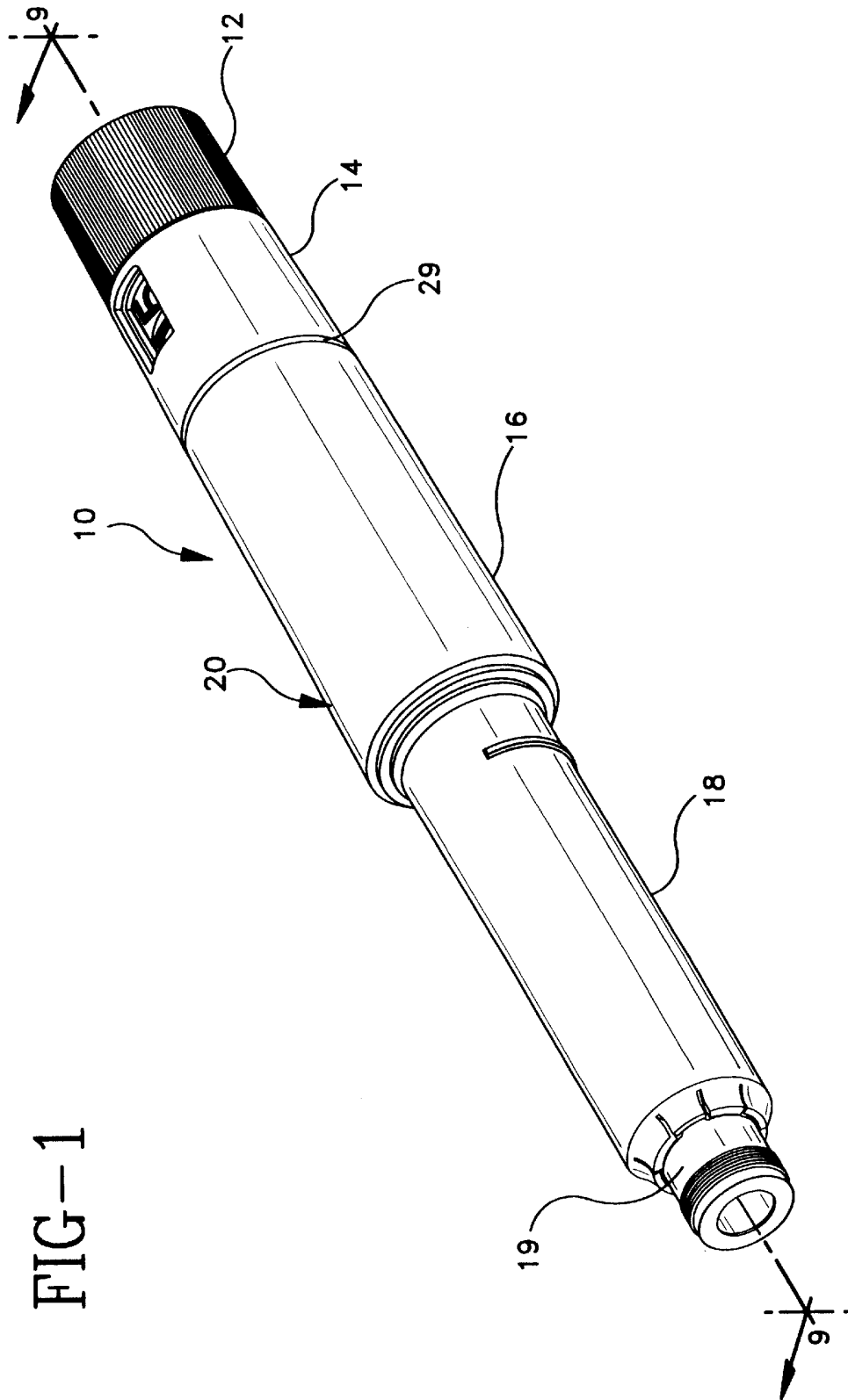


FIG-1

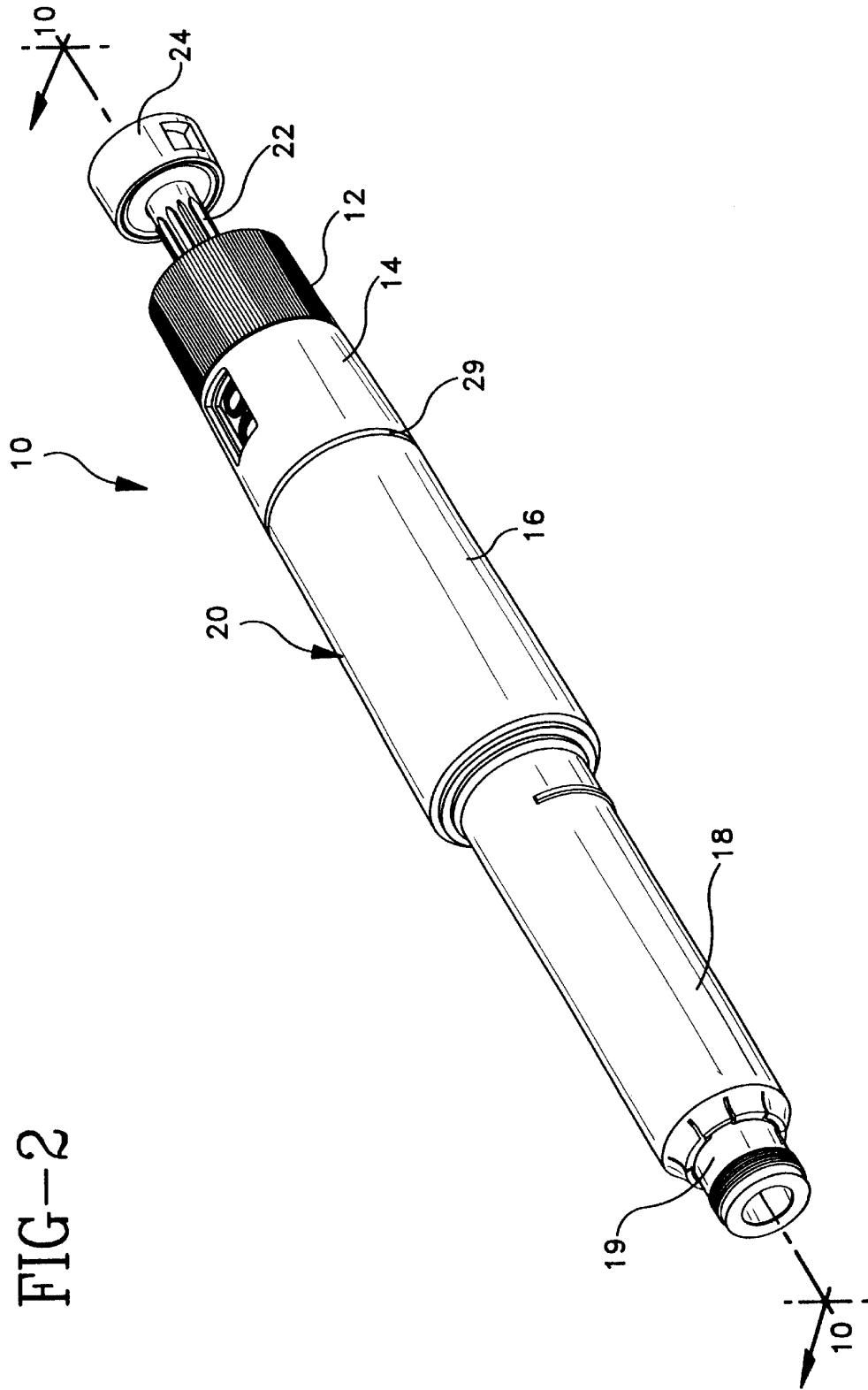


FIG-2

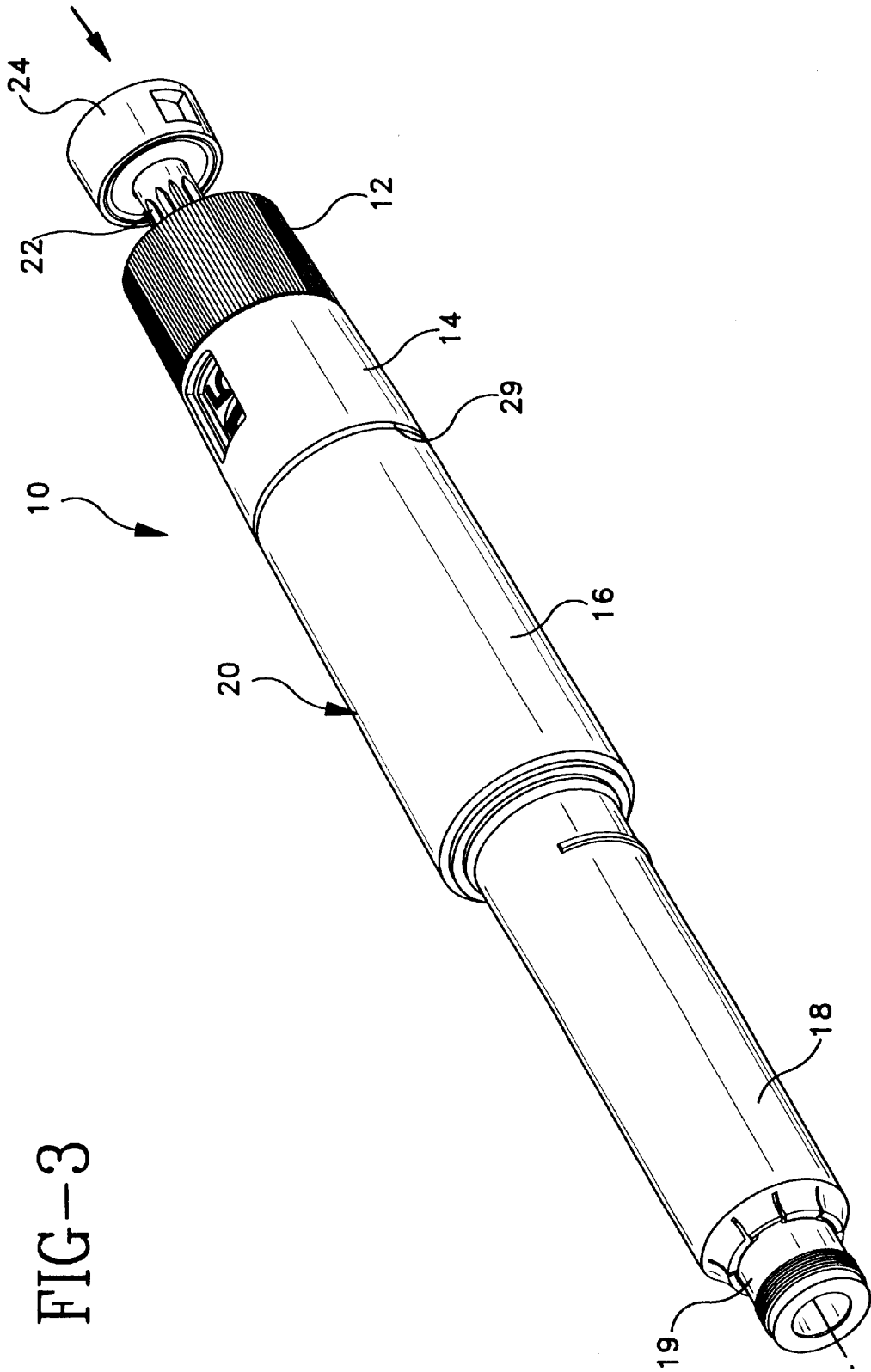


FIG-3

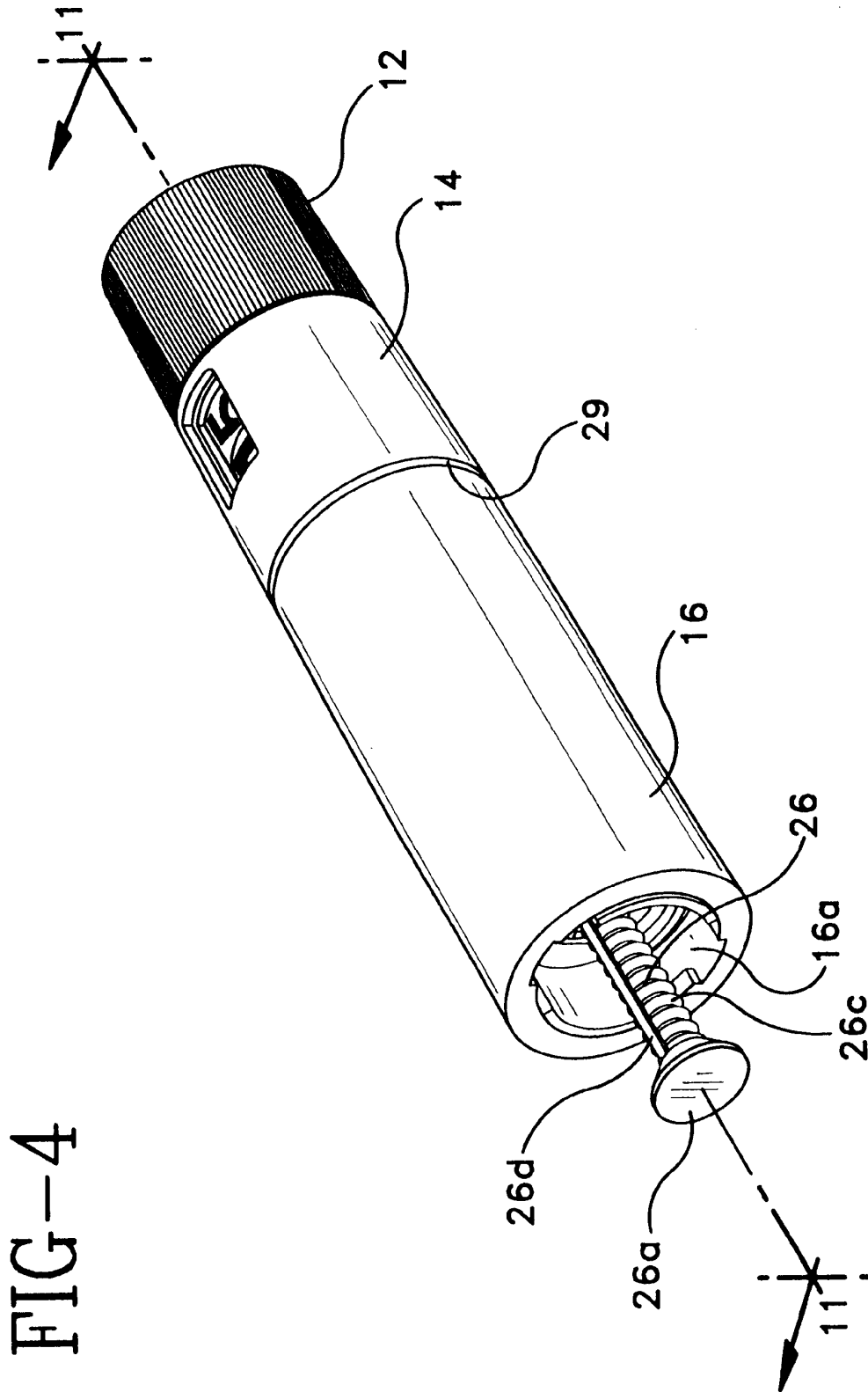


FIG-4

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