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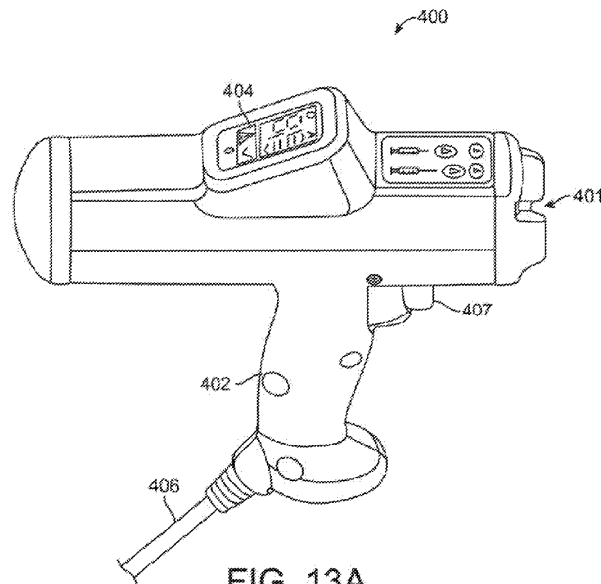


FIG. 13A

(57) Abstract: Methods and apparatus for the reproducible, consistent and efficacious delivery of an HBV vaccine to a subject. The disclosure comprises apparatus for the controlled administration of the HBV vaccine through an orifice to the subject, a plurality of penetrating electrodes arranged with a predetermined spatial relationship relative to the orifice, and an electrical signal generator operatively connected to the electrodes.

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