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# United States Patent [19]

Horstman et al.

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[54] **SIMPLIFIED UNIDIRECTIONAL TWIST-UP DISPENSING DEVICE WITH INCREMENTAL DOSING**

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[51] Int. Cl.<sup>6</sup> ..... **A46B 11/02**; A45D 40/06

[52] U.S. Cl. .... **401/174**; 401/172; 401/194; 401/266; 401/288

[58] Field of Search ..... 401/174, 194, 401/288, 266, 172

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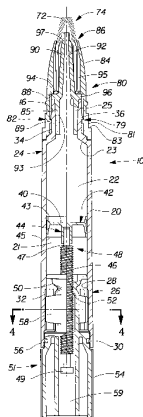
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[57] **ABSTRACT**

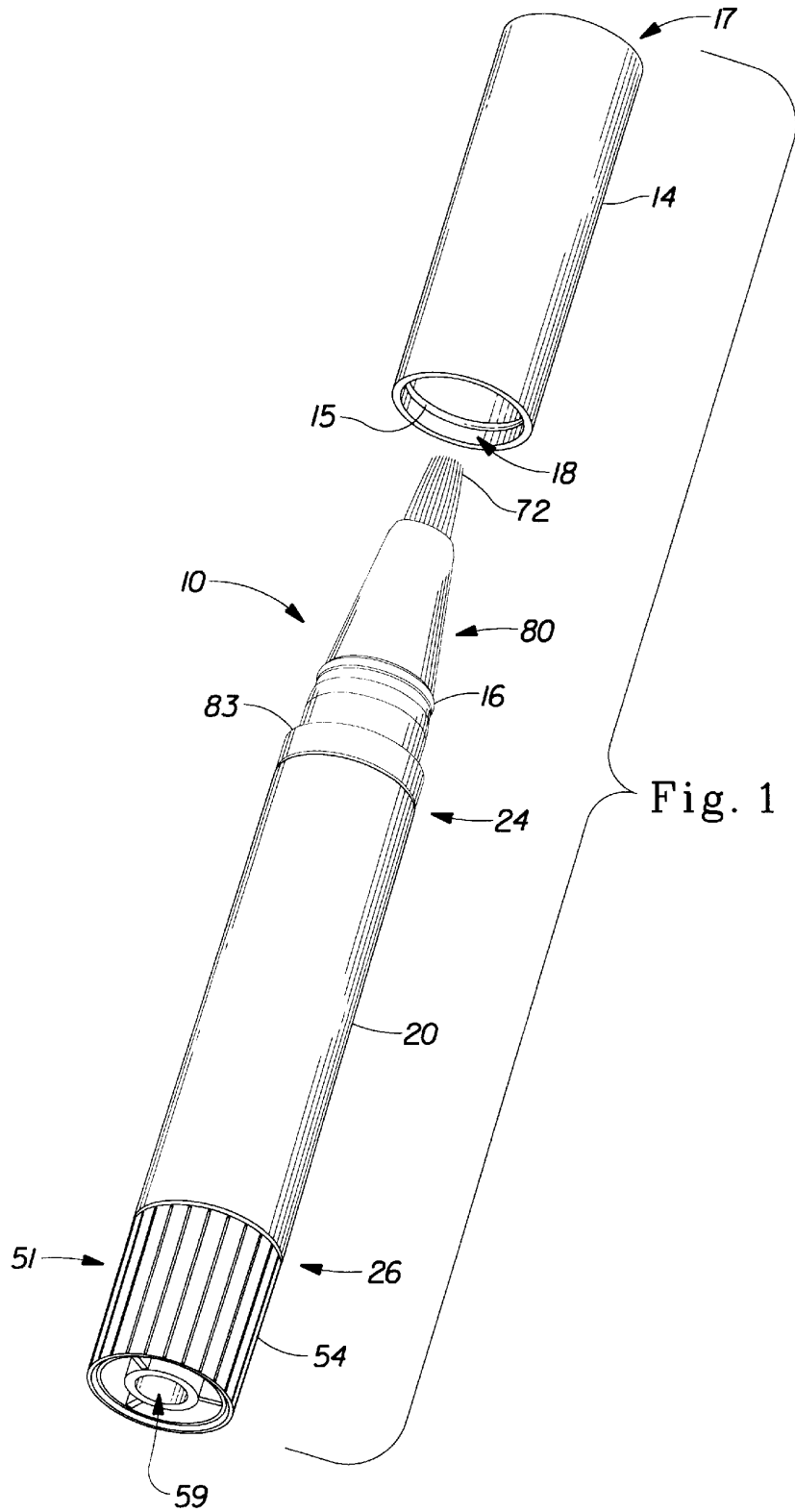
A unidirectional twist-up dispensing device with incremental dosing for dispensing a product is provided. This twist-up dispensing device includes a hollow housing defining a chamber having an open dispensing end and an open actuating end having a interior surface. A piston located within the chamber being limited to translational movement within the chamber. The piston having a top side facing the dispensing end of the housing forming a variable volume portion of the chamber for storing the product. The piston also having a threaded rod extending therefrom opposite the top side. An actuator having a threaded aperture there-through that engages the interior surface at the actuating end of the housing is also provided. The threaded aperture is concentric in the actuator and the actuator is adapted to rotate with respect to the housing in only one direction. The threaded rod engages the threaded aperture such that advancement of the piston toward the dispensing end occurs when the actuator is rotated, thereby causing the product to be dispensed. An applicator can be attached to the dispensing end of the housing in fluid communication with the variable volume portion of the chamber wherein the product is dispensed through the applicator. The applicator comprises a ferrule and an application portion. The ferrule is attached to the dispensing end of the housing and the application portion has at least one orifice located therein. Several versions of the applicator are illustrated, including a fiber brush and a flocked application surface.

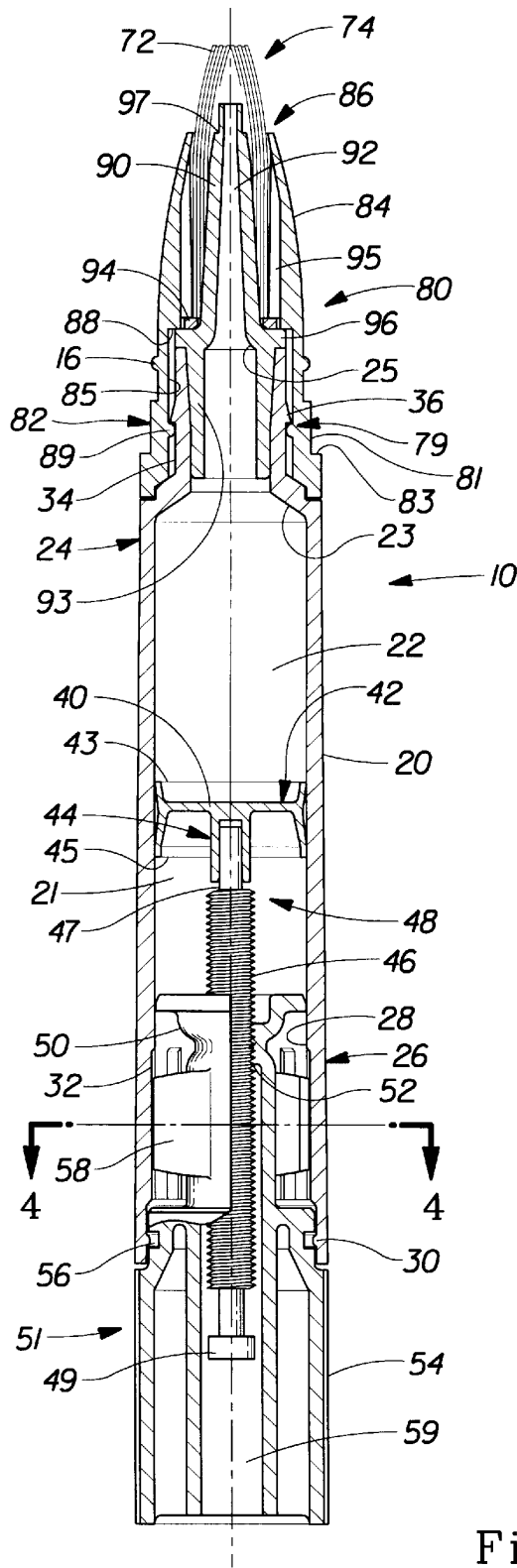
**17 Claims, 6 Drawing Sheets**



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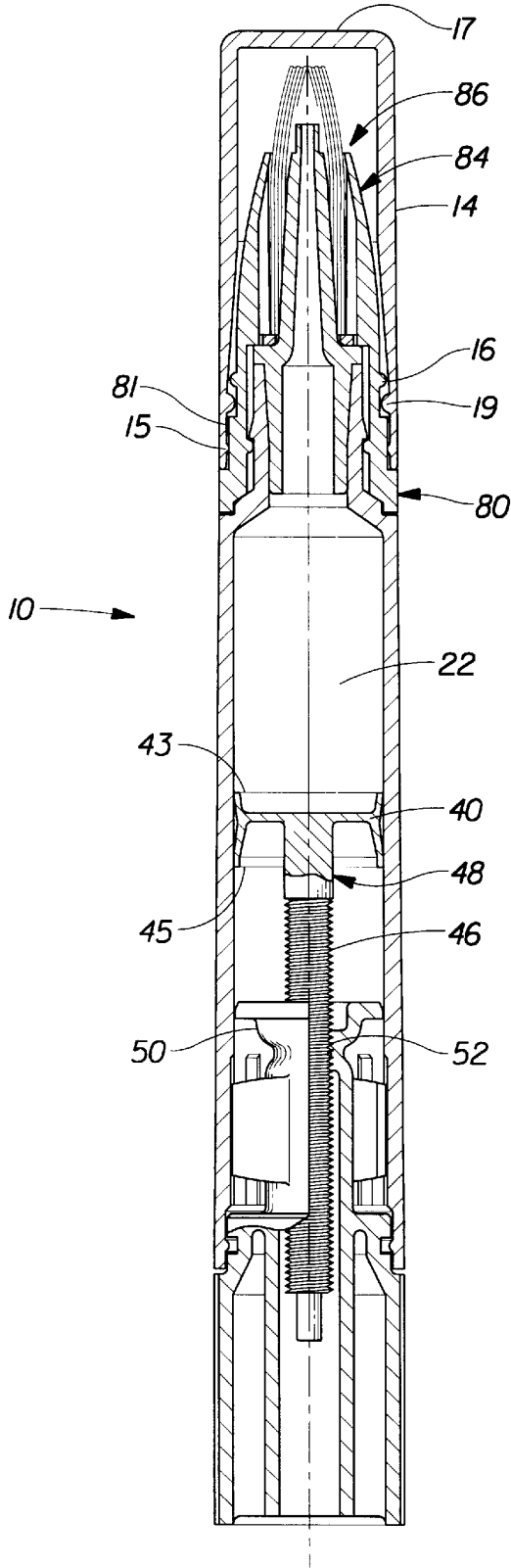


Fig. 3

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