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— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*

— *of inventorship (Rule 4.17(iv))*

[Continued on next page]

(54) Title: HANDS-FREE BREAST PUMP WITH BALANCED RECIPROCATING DRIVE

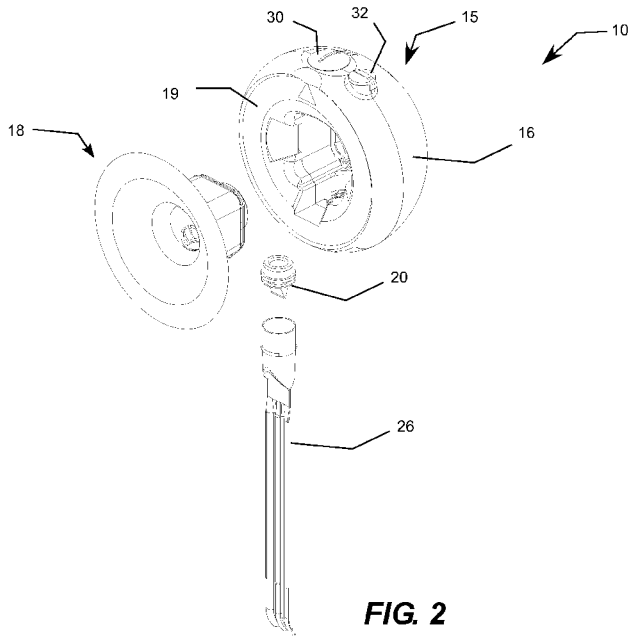


FIG. 2

(57) Abstract: A hands-free breast pump that includes a balanced push-pull reciprocating drive system that applies pumping force to a vacuum chamber formed by a breast interface cup during inward and outward pump strokes. The breast pump includes a breast cup that has a resilient bellows structure that partially collapses the volume of the vacuum chamber during the inward stroke and recovers the volume of the vacuum chamber during the outward stroke. The pump mechanism includes a cam drive system that translates rotary electric motor power into reciprocating linear action of an actuator arm that drives the bellows structure. The bellows structure acts like a spring that charges (resists the pump force) during the inward stroke and discharges (assists the pump force) during the outward stroke, and the shape of the cam track is designed to produce a desired operating profile for the pump.

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