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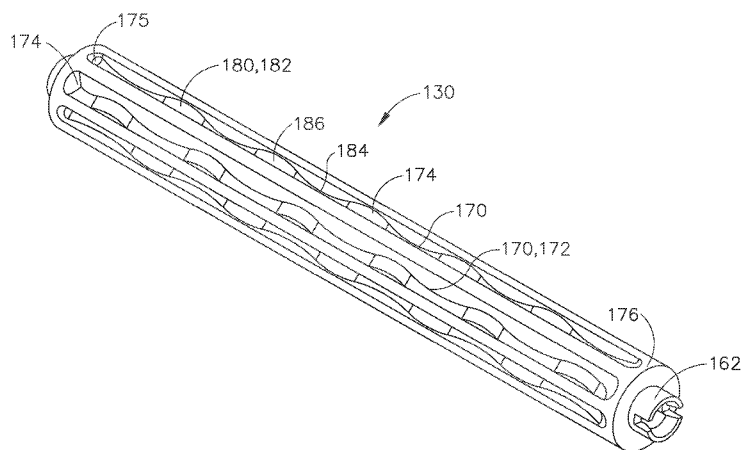
(54) **Title:** BRUSH MANDREL FOR PVA SPONGE BRUSH

Fig.2A

(57) **Abstract:** A cleaning device for cleaning substrates is provided. The cleaning device includes a generally cylindrically-shaped brush mandrel and a cylindrical brush. The brush mandrel has a body section with an outer surface positioned about a central axis. The outer surface is interrupted by an engagement member having primary features adjacent secondary features. The brush has a hollow bore formed around the brush mandrel with an inner surface interrupted by a second engagement member which mates the first engagement member. The primary features flow in a direction generally perpendicular to a rotational direction of the brush mandrel around the central axis and include a first surface which is generally perpendicular to the outer surface. The secondary features include a second surface which flows in a direction generally perpendicular to the first surface and along the central axis. No primary feature includes a radially obstructing feature formed over any secondary feature.

