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This poster concerns an experimental study of the flow in a cylindrical container with a rotating bottom, as observed by Vatistas (1990), *J. Fluid Mech.* 217. For this study we use a new setup where the cylinder wall and bottom can rotate independently. The transitions between different polygonal states are explored, and the results displayed in phase diagrams. There are made new observations of the transitions between states, when the cylinder and bottom counter rotate. Periodic states are visualized, and bifurcations of unstable states are investigated in relation to Bergmann et al. (2011), *J. Fluid Mech.* doi:10.1017/jfm.2011.152.