1077-90-2502 **Bradley J. Paynter*** (`paynter@clemson.edu`), Department of Mathematical Sciences, Clemson University, Box 340975, Clemson, SC 29634, and **Douglas R. Shier** (`shierd@clemson.edu`), Department of Mathematical Sciences, Clemson University, Box 340975, Clemson, SC 29634. *On a Geometric Packing Problem.* Preliminary report.

We investigate a geometric packing problem (derived from an industrial setting) that involves fitting patterns of regularly spaced disks without overlap. We derive conditions for achieving the feasible placement of a given set of patterns and discuss certain related optimization problems (e.g., fitting the maximum number of patterns). In addition, a variety of heuristics are developed for solving large-scale instances of this provably difficult problem. (Received September 22, 2011)