Klyachko famously classified (T-linearized) vector bundles on a toric variety by certain data of filtrations associated to the rays in the fan. We give an interpretation of Klyachko’s data as a “piecewise linear map” and make a connection with the notion of “building”. This leads us to a generalization of Klyachko’s classification to principal G-bundles on toric varieties for semisimple groups G other than GL(n). (Received February 18, 2018)