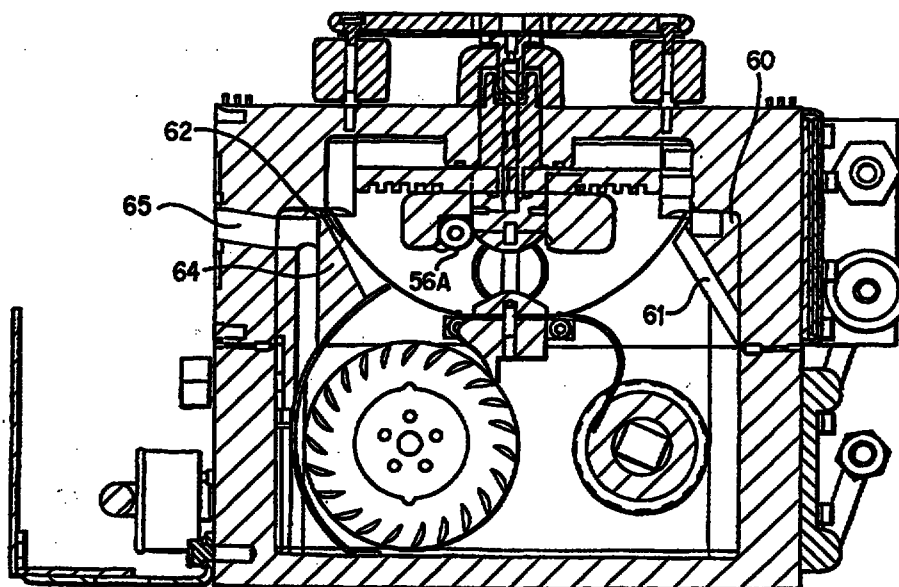




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(54) Title: RELIABLE, MODULAR, PRODUCTION QUALITY NARROW-BAND KrF EXCIMER LASER



(57) Abstract

A reliable, modular, production quality narrow-band KrF excimer laser capable of producing 10 mJ laser pulses at 1000 Hz with a bandwidth of about 0.6 pm or less. The present invention is especially suited to long-term round-the-clock operation in the lithographic production of integrated circuits. Improvements over prior art lasers include a single upstream preionizer tube (56) and acoustic baffles. A preferred embodiment includes reduced fluorine concentration, an anode support bar shaped to reduce aerodynamic reaction forces on blower bearings, a modified pulse power system providing faster pulse rise time, an output coupler (65) with substantially increased reflectivity, a line narrowing module with CaF prism beam expanders, a more accurate wavemeter, a laser computer controller programmed with new and improved pulse energy control algorithm.