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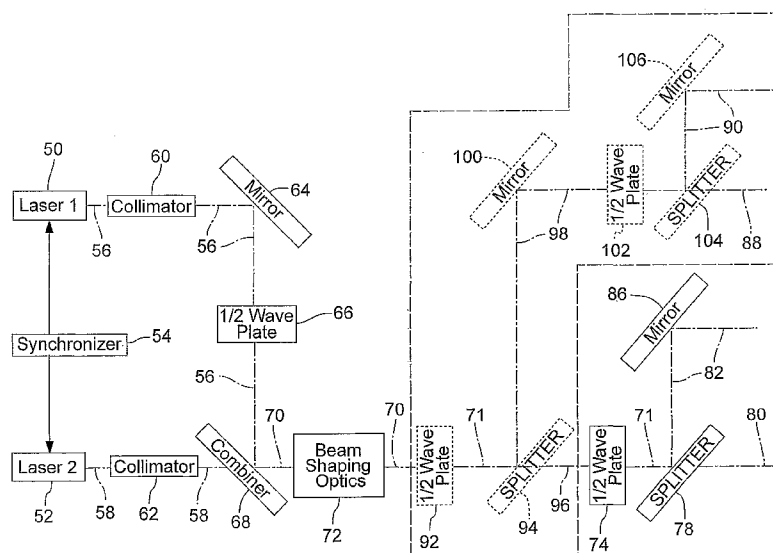
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(54) Title: SYNTHETIC PULSE REPETITION RATE PROCESSING FOR DUAL-HEADED LASER MICROMACHINING SYSTEMS



(57) Abstract: A method and system for increasing throughput of laser micromachining systems use more than one laser. Two or more pulsed laser beams (56, 58) are combined and then separated into multiple laser beams (80, 82) that enable the system to work simultaneously at multiple locations on the workpiece (20) with pulse rates greater than those achievable with independently operating lasers while maintaining pulse energy equal to or greater than the pulse energy of each of the original independent laser beams. Most laser micromachining applications required multiple sequential pulses to process a workpiece. Increasing the pulse rate while maintaining pulse energy effects more rapid material removal and thereby increases throughput for a laser micromachining system.

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