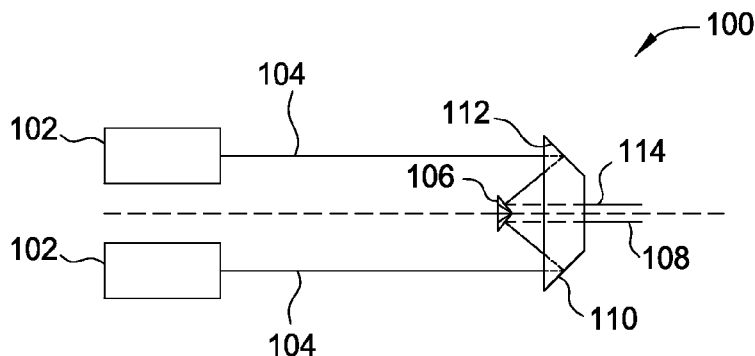




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(54) **Title:** MULTIPLE BEAM COMBINER FOR LASER PROCESSING APPARATUS**FIG. 1A**

(57) **Abstract:** Apparatus and methods for combining beams of amplified radiation are disclosed. A beam combiner has a collimating optic positioned to receive a plurality of coherent radiation beams at a constant angle of incidence with respect to an optical axis of the collimating optic. The respective angles of incidence may also be different in some embodiments. The collimating optic has an optical property that collimates the beams. The optical property may be refractive or reflective, or a combination thereof. A collecting optic may also be provided to direct the plurality of beams to the collimating optic. The beam combiner may be used in a thermal processing apparatus to combine more than two beams of coherent amplified radiation, such as lasers, into a single beam.