

DISCLOSURE OF ABSTRACT

LASER MACHINING APPARATUS

To provide a laser machining apparatus with favorable liquid-column flow straightening properties. A laser machining apparatus 1 includes: a laser oscillator 18 for generating a laser beam; a nozzle 14 for directing a jet of water at a workpiece W; and a liquid supply unit 6 for supplying water to the nozzle 14, to machine the workpiece W with the laser beam introduced into a jet liquid column F ejected from the nozzle 14. The laser machining apparatus 1 further includes: a protector cap 32 disposed between the nozzle 14 and the workpiece W for protecting the nozzle 14; and an air supply unit 36 for supplying air to a space 34 formed between the nozzle 14 and the protector cap 32. The protector cap 32 has a flow passage 42 permitting passage of the jet liquid column F. The space 34 between the nozzle 14 and the protector cap 32 has a surface toward the nozzle 14 and a surface toward the protector cap 32, each of the surfaces of the space 34 being at least partially bounded by a projection 40, 46 that protrudes inwardly of the space 34.

Fig. 2