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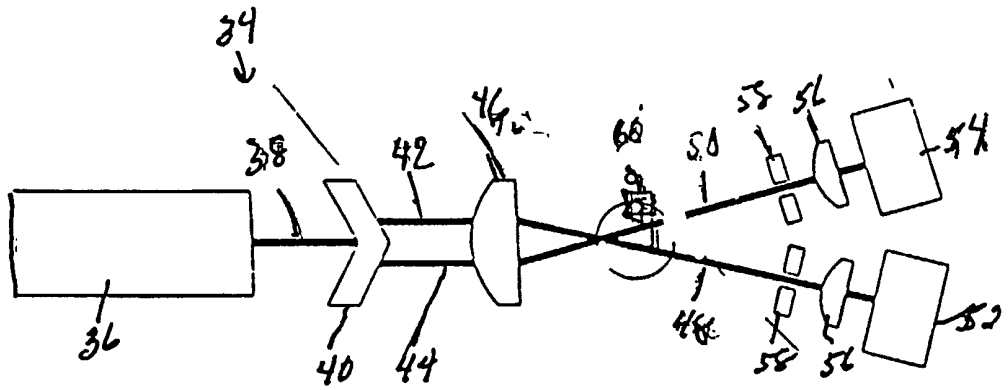
(54) Title: APPARATUS FOR MEASUREMENT OF PARTICLE OR DROPLET VELOCITY



(57) Abstract: An apparatus (34) for measuring the velocity of a droplet a liquid includes a laser (36) for generating a beam of light into the shape of a thin sheet. A beam divider (40) is along the first path (38) of the light for dividing the beam into two separate beams which extends along second (42) and third (44) paths. The second (42) and third (44) paths lie in a common plane. Along the second (42) and third (44) paths is a device (60) for projecting a droplet of liquid across the second (42) and third paths (44) so that the droplet passes through both of the divided beams. At least one photodetector (52, 54) is along both the second (42) and third paths (44) to receive the divided beams and provide an electrical signal corresponding to the beams. A beam divider (40) which is used to divide the beam into two beams includes a body (62) of an optically transparent material having at least two flat front surfaces (68, 70) which are at an angle with respect to each other to form a V having a sharp corner, and at least two flat back surfaces (74, 76) each of which is spaced from and parallel to a separate front surface.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US00/10794

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : G01D 15/18
US CL : 347/19; 250/222.2, 573; 356/338; 359/640

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
U.S. : 347/19; 250/222.2, 573; 356/338; 359/640

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
NONE

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
NONE

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,025,438 A (EMOTO) 18 June 1991 (18.06.1991), column 3, line 41 to column 4, line 44.	1-18
Y	US 5,339,196 A (GREBE) 16 August 1994 (16.08.1994), column 5, lines 17-63.	1-18
Y	US 5,430,306 A (IX) 04 July 1995 (04.07.1995), column 8, lines 52 to column 9, line 13.	1-14

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:

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Date of the actual completion of the international search	Date of mailing of the international search report
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Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703)305-3230	Authorized officer Craig A Hallacher Telephone No. (703)308-0956

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