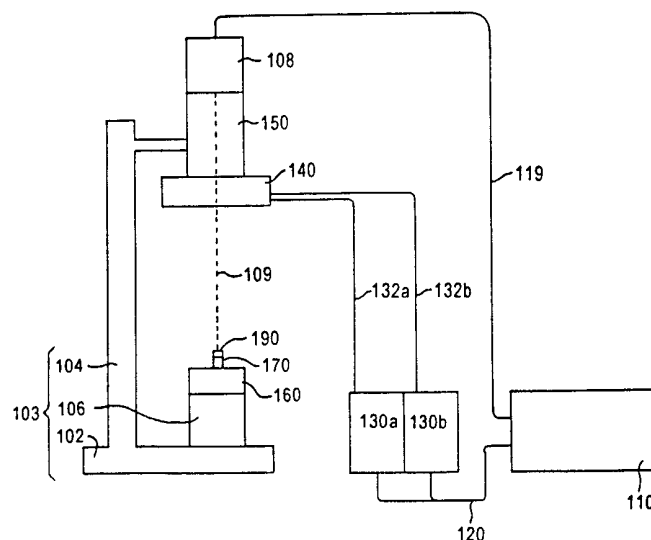




INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

<p>(51) International Patent Classification ⁶ : H04N 7/18, 9/47</p>	<p>A3</p>	<p>(11) International Publication Number: WO 99/28698</p> <p>(43) International Publication Date: 10 June 1999 (10.06.99)</p>
<p>(21) International Application Number: PCT/US98/25569</p> <p>(22) International Filing Date: 3 December 1998 (03.12.98)</p> <p>(30) Priority Data: 60/067,356 3 December 1997 (03.12.97) US 60/094,919 31 July 1998 (31.07.98) US</p> <p>(71) Applicant (for all designated States except US): MNEMONIC SYSTEMS INCORPORATED [US/US]; Suite 1000, 2001 L Street N.W., Washington, DC 20036 (US).</p> <p>(72) Inventors; and (75) Inventors/Applicants (for US only): BACHENHEIMER, Daniel [US/US]; 2905 Hardy Avenue, Wheaton, MD 20902 (US). BISHOP, Gerald, E., Jr. [US/US]; 5727 Robinwood Lane, Falls Church, VA 22041 (US). JONES, Brett, C. [US/US]; 105 Deer Ridge Lane, Hendersonville, TN 37075-5078 (US).</p> <p>(74) Agents: STEWART, David, L. et al.; McDermott, Will & Emery, Suite 300, 99 Canal Center Plaza, Alexandria, VA 22314 (US).</p>		<p>(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HR, HU, ID, IL, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, ARIPO patent (GH, GM, KE, LS, MW, SD, SZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).</p> <p>Published <i>With international search report.</i> <i>Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.</i></p> <p>(88) Date of publication of the international search report: 2 September 1999 (02.09.99)</p>

(54) Title: STANDARD IMAGE CAPTURE MICROSCOPE FOR FORENSIC IDENTIFICATION OF FIREARM AMMUNITION



(57) Abstract

An image capture microscope includes a stand (103) having a specimen positioning stage and a digital video camera (108) fixed with respect to the stand. A microscope (150), fixed with respect to the stand, is in an optical path from the position stage to the video camera. A light fixture (140), fixed with respect to the stand, includes an oblique light which illuminates the stage from locations on one side of the optical path. A high precision universal specimen holder is disposed on the stage to provide tilt, rotation and centering that enhances the correlation among digital images required for forensic analysis.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/25569

A. CLASSIFICATION OF SUBJECT MATTER IPC(6) :H04N 7/18, 9/47 US CL :348/79 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. : 348/ 61, 79, 80, 125; 359/368, 391, 392, 393, 394 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) APS		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 3,970,845 A (HOLLIS et al) 20 July 1976, fig. 1, col 2, line 60 - col. 3, line 65.	1-12, 17-38
Y	US 5,529,671 A (DEBLEY et al) 27 June 1996, figs. 5-13, col. 6, line 62 - col. 8, line 32.	1-12, 17-32
Y	US 5,301,436 A (JOHNSTON) 12 April 1994, fig. 6, col. 8, lines 36-64.	33-38
A	US 4,604,910 A (CHADWICK et al) 12 August 1986, fig. 18	13
<input type="checkbox"/> Further documents are listed in the continuation of Box C. <input type="checkbox"/> See patent family annex.		
* Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier document published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) "O" document referring to an oral disclosure, use, exhibition or other means "P" document published prior to the international filing date but later than the priority date claimed "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art "&" document member of the same patent family		
Date of the actual completion of the international search 19 JUNE 1999		Date of mailing of the international search report 07 JUL 1999
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 <i>for</i> TOMMY P. CHIN <i>Hilgenia Zagar</i> Telephone No. (703) 305-4615

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/25569

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:

4. No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

The additional search fees were accompanied by the applicant's protest.

No protest accompanied the payment of additional search fees.

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/25569

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group 1, claim(s) 1-12, 17-32, drawn to an image capture microscope.

Group 2, claim(s) 13-16, drawn to an universal specimen holder.

Group 3, claim(s) 33-39, drawn to a casing mount for forensic analysis of firearm casings.

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.