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[Continued on next page]

(54) Title: LIQUID MIXING AND INJECTING TOOL

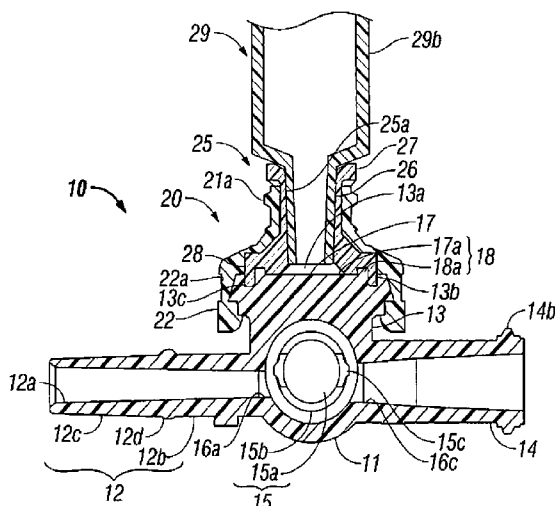


FIG. 10

(57) Abstract: A liquid mixing and injecting device is provided which includes an upper branch tube, a chamber part and a rubber plug including a slit formed through the body of the rubber plug. A lid member is attached to an open end of the upper branch tube. The lid includes an opening part and a generally cylindrical member. The upper branch tube is occluded by the rubber plug. A male luer part of a syringe can be inserted into the slit to access the chamber part. A rubber plug receiving part is provided for controlling the shape of the lower end part of the rubber plug body when it is deformed to avoid forming a gap where air can accumulate within the flow path. The rubber plug is fixed by fixing an upper fixing piece of the rubber plug to the generally cylindrical member and by fixing a lower fixing piece between the opening part and the generally cylindrical member.



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INTERNATIONAL SEARCH REPORT

International application No.

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - A61M 39/10 (2008.04)

USPC - 604/533

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)

IPC8 : A61M 39/10 (2008.04)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

IPC8 : A61M 39/00, A61M 39/02, A61M 39/04, A61M 39/22 (2008.04)

USPC : 604/539, 604/82, 604/86

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PubWEST (PGPB,USPT,EPAB,JPAB), Google Scholar

split, port, septum, entry, plug, bung, three way, valve, connect, upstream, downstream, branch, tube, connector, slit, opening, liquid, mix, mixing, weir, dam, diverter, deflector

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X --- Y	US 2005/0256500 A1 (FUJII) 17 November 2005 (17.11.2005) see especially para [0057]-[0059], [0065]-[0068], fig 1b	1, 4 ----- 2, 3
Y	EP 1234596 A1 (INUKAI et al) 28 August 2002 (28.08.2002) see especially para [0005], [0028], [0032] figs 1b, 3e, 4c	2, 3

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"&" document member of the same patent family
"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	

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Name and mailing address of the ISA/US Mail Stop PCT, Attn: ISA/US, Commissioner for Patents P.O. Box 1450, Alexandria, Virginia 22313-1450 Facsimile No. 571-273-3201	Authorized officer: Lee W. Young PCT Helpdesk: 571-272-4300 PCT OSP: 571-272-7774

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 08/01018

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search 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.: 5-11
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

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

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 additional fees, this Authority did not invite payment of additional fees.
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 and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.