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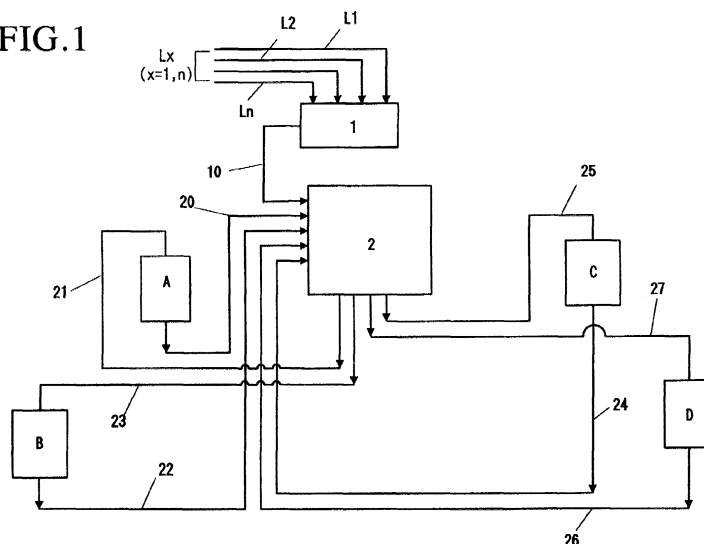
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(54) Improved multi-purpose production system and multi-purpose production method making use of the same

(57) An improved multi-purpose production system comprising a group of N batch process facilities, N outlet extending from bottoms of the respective process facilities, N inlet pipes extending from tops of the respective process facilities, an M:K automatic pipe connection (2), and an L:1 automatic pipe connection (1). The N outlet pipes and N inlet pipes, which extend from the tops and bottoms of the respective process facilities, are connect-

ed to corresponding inlet pipes and outlet pipes of the M:K automatic pipe connection. Further, a remaining inlet pipe (10) or desired one of remaining inlet pipes of the M:K automatic pipe connection and the single outlet pipe of the L:1 automatic pipe connection are connected together. L, K and M are desired integers indicating the numbers of the corresponding pipes, N stands for a desired integer indicating the number of the process facilities, $M \geq N+1$, and $K \geq N$.

FIG.1





European Patent
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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.7)
X	WO 98 12140 A (GUGLIELMINETTI GIUSEPPE) 26 March 1998 (1998-03-26) * page 3, line 26 - page 5, line 12 * * page 6, line 6 - line 22 * * figures 1,2 * ----	1-6	F17D1/08
X	DE 42 16 438 A (WEDEMANN ERNST) 25 November 1993 (1993-11-25) * column 2, line 51 - column 3, line 6 * * column 4, line 23 - line 59 * * figure 1 * ----	1-4,6	
A,D	JP 07 071699 A (TOYO ENG CORP) 17 March 1995 (1995-03-17) * abstract; figures * ----	1	
A	EP 0 654 438 A (FUJI PHOTO FILM CO LTD) 24 May 1995 (1995-05-24) * column 3, line 51 - line 33 * * figures 1,2 * ----	1	
A	DE 228 532 C (WILHELM HARTMANN) 12 November 1910 (1910-11-12) * page 1, line 33 - line 68 * * figures 1-3 * -----	1	<div>TECHNICAL FIELDS SEARCHED (Int.CI.7)</div> <div>F17D</div>
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 30 November 2001	Examiner Ceuca, A-N
<div>CATEGORY OF CITED DOCUMENTS</div> <div> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document </div>			

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**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

EP 00 40 0823

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report.
The members are as contained in the European Patent Office EDP file on
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30-11-2001

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
WO 9812140	A	26-03-1998	WO AU	9812140 A1 7085696 A	26-03-1998 14-04-1998
DE 4216438	A	25-11-1993	DE	4216438 A1	25-11-1993
JP 07071699	A	17-03-1995	JP	2894930 B2	24-05-1999
EP 0654438	A	24-05-1995	JP DE DE EP US	7127800 A 69408408 D1 69408408 T2 0654438 A1 5505496 A	16-05-1995 12-03-1998 20-05-1998 24-05-1995 09-04-1996
DE 228532	C		NONE		