

(12)

Europäisches Patentamt

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(11) **EP 0 950 441 A3**

EUROPEAN PATENT APPLICATION

(88) Date of publication A3: 02.05.2001 Bulletin 2001/18

(51) Int. Cl.⁷: **B21C 37/06**, B21C 37/15

(43) Date of publication A2: **20.10.1999 Bulletin 1999/42**

(21) Application number: 99106946.9

(22) Date of filing: **08.04.1999**

(84) Designated Contracting States:

AT BE CH CY DE DK ES FI FR GB GR IE IT LI LU
MC NL PT SE
Decignated Extension States:

Designated Extension States: **AL LT LV MK RO SI**

(30) Priority: 08.04.1998 JP 9552998

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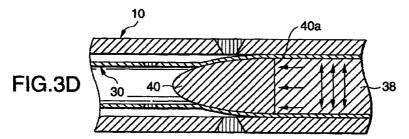
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(54) Method of manufacturing long dual layer metal pipe

(57) The present invention relates to a method for manufacturing a long dual layer metal pipe (50) which comprises the following steps. Namely, a joined body (30) of inner metal pipes is inserted into a joined body (10) of outer metal pipes. The joined body (30) of inner metal pipes has an outer diameter smaller than an inner diameter of the joined body (10) of outer metal pipes.

The joined body (30) of inner metal pipes has one or more joining portions. The joined body of outer metal pipes has one or more joining or clamping portions. Then the joined body of inner metal pipes is expanded to manufacture a dual layer metal pipe (50).





EUROPEAN SEARCH REPORT

Application Number EP 99 10 6946

	DOCUMENTS CONSID	ERED TO BE RELEVANT			
Category	Citation of document with it of relevant pass	ndication, where appropriate, sages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.CI.6)	
A,D	PATENT ABSTRACTS OF vol. 008, no. 002 (7 January 1984 (198 -& JP 58 167094 A (3 October 1983 (198 * abstract *	M-266), 4-01-07) NIPPON SEIKOSHO KK),	1	B21C37/06 B21C37/15	
A	28 September 1983 (* page 2, line 24 - * page 11, line 18 figure 5 *		1		
A	FR 1 072 416 A (FOS 13 September 1954 (* page 1, column 2, *		1		
A	US 1 827 437 A (ALF 13 October 1931 (19 * page 1, line 55-6	31-10-13) 9; figure 1 * 		TECHNICAL FIELDS SEARCHED (Int.CI.6) B21C B21D F16L B23K B23P	
	The present search report has I		<u> </u>	Examiner	
	Place of search THE HAGUE	Date of completion of the search 12 March 2001	Mar	c Augé	
CATEGORY OF CITED DOCUMENTS 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 E: earlier patent doc after the filing dat her D: document cited in L: document cited fo	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		

EPO FORM 1503 03.82 (P04C01)

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

EP 99 10 6946

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12-03-2001

	Patent document ed in search repo		Publication date	Patent family member(s)	Publication date
JP	58167094	A	03-10-1983	JP 1407746 C JP 62016745 B	27-10-1987 14-04-1987
EP	0089379	Α	28-09-1983	DE 3278625 D DE 3279530 D	14-07-1988 20-04-1989
FR	1072416	A	13-09-1954	NONE	
US	1827437	A	13-10-1931	NONE	

For more details about this annex : see Official Journal of the European Patent Office, No. 12/82