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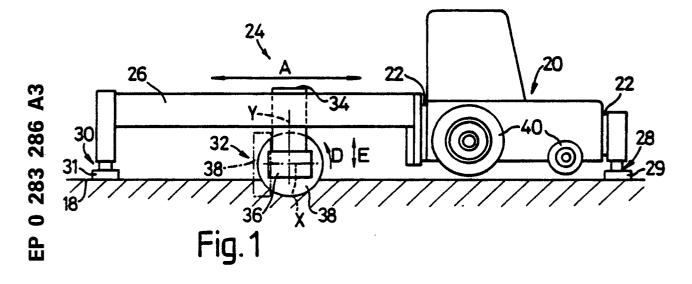
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Apparatus for removing a surface layer from the ground.

Apparatus is described for removing a hard surface layer from the ground, for example from the road comprising a vehicle (20) having support means (24) mounted on a frame (22) of the vehicle (20), a rotary cutting device (32) carried by the support means (24) and moving means, conveniently provided by hydraulic rams, for urging a cutter (38) of the cutting device (32) into and out of operative engagement with a surface (18) to be removed on

which the vehicle (20) is standing, means is also provided for moving the cutting device (32) in engagement with the surface (18) relative to frame (22) of the vehicle (20) along the surface (18) to remove the surface layer. Apparatus may be use in road planing or in digging a trench in which latter case a digging device is also mounted on the frame (22) of the vehicle (20) to dig out the remainder of the material from the trench.





EUROPEAN SEARCH REPORT

EP 88 30 2340

		th indication, where appropriate,	Relevant	CLASSIFICATION OF THE	
ategory	of rele	vant passages	to claim	APPLICATION (Int. Cl.4)	
Y	EP-A-0 142 277	(ECON GROUP)		E 01 C 23/08	
	lines 3-34; p 32 - page 4, lines 12-23,2 lines 1-17,24	4-10; page 2, age 3, lines 14-17 line 3; page 5, 7,28,33-36; page 6 -29; page 7, lines lines 13-19,36 -	7-9, 12,16	E 01 C 23/12 E 02 F 3/96 E 02 F 5/02	
v	page 3, iiic	i, liguio i	15		
X			13		
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L	no. 1897, Janua: 15,16,32;	IC WORKS, vol. 53, ry 1985, pages 14- reading the cost of t maintenance"	E		
	to cold plane: left-hand cold 30-32; right-	Co-operation leads r development", umn, lines 6,7,26, hand column, lines 6-29; top illustra-	-	TECHNICAL FIELDS SEARCHED (Int. CI.4)	
		or, mentioned in 142 277".		E 02 F	
Y	US-A-4 531 883 (ARNOLD)				
	48,49; column 68; column 3, column 4, line	es 5-7,11-15,38-44, 2, lines 53-62,66- lines 2-6,46,53; es 3,4,6,7,56,59-61 s 1,2A,2B,5A,5B *	-		
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	THE HAGUE	13-12-1989		SCHUMAN	
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CL	AIMS INCURRING FEES
The presen	it European patent application comprised at the time of filing more than ten claims.
	All claims fees have been paid within the prescribed time limit. The present European search report has been
	drawn up for all claims.
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	Only part of the claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for the first ten claims and for those claims for which claims fees have been paid.
	namely claims:
	No claims fees have been paid within the prescribed time limit. The present European search report has been
	drawn up for the first ten claims.
X LA	CK OF UNITY OF INVENTION
The Search	Division considers that the present European patent application does not comply with the requirement of unity of
invention ar	nd relates to several inventions or groups of inventions.
nameiy:	
1. C	laims 1-15: Surface layer removing apparatus.
2. C	laim 16: Method excavating trench.
	All further search fees have been paid within the fixed time limit. The present European search report has
	been drawn up for all claims.
	Only part of the further search fees have been paid within the fixed time limit. The present European search
	report has been drawn up for those parts of the European patent application which relate to the inventions in
	respect of which search fees nave been paid.
	namely claims;
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X	None of the further search fees has been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first
	mentioned in the claims,
	1 1 7
	namely claims: L=L5



EUROPEAN SEARCH REPORT

EP 88 30 2340

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	DOCUMENTS CONS			
Category	Citation of document wi of rele	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl. 1)	
A	US-A-3 575 307 ((GUINOT)		
	* Column 1, line 73; figure 1 *	es 36-38,41-43, 63-	1-4,14	
A	GB-A-1 456 503 CONCRETE ASSOCIA	THE CEMENTATION AND		
	40,74-87,91-12	88-90; page 2, page 5, lines 35- 23; page 7, lines 114-120; figures	1,7,9,	
				
A	US-A-4 262 966 (•		
		es 40-49,55,56,61- n 4, lines 3-12,22- lines 18-38;	1,3,4, 7-10, 14	
x	,,,,,,,,,,,,,,,,,,,,		15	TECHNICAL FIELDS SEARCHED (Int. Cl 4)
A	FR-A-1 590 110 (TOUFLET)		
		1-4,8-10,21-23,28- e 2, lines 1-3,16,	1,7- 11,14, 15	
A	US-A-2 935 981 (MIDDLESTADT)		-
	* Column 1, line 62; column 2, 38-40; column	es 15-18,32-39,59- lines 22,23,25-30, 3, lines 15-22,26, umn 4, lines 52-58;	1-3,7, 9,15	
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	Place of search	Date of completion of the search		Examiner
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EUROPEAN SEARCH REPORT

Application number

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EP 88 30 2340

	DOCUMENTS CON			
ategory		vith indication, where appropriate, evant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. CI 4)
A	BE-A- 572 877	(BRAMCUT)		
-	* Page 1, lines lines 1-4,24- 3, lines 1-16	42-47; page 2, 30,35-43,47-52; page ,23-35; page 4, 18; figures 1-9 *	1,7,9, 14,15	
A	GB-A-2 012 339			
		3-8,27-39,48-62,72- ines 13-15,28-39,53- -4 *		
x			15	
A	US-A-4 174 184	(MEENAN)		
	line 10; colu	ne 51 - column 11, mn 16, lines 58-62, 7, line 17; figures	13	TECHNICAL FIELDS
	, , .			SEARCHED (Int. CI 4)
A	US-A-3 649 071	(GRAFF)		
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	Place of search	7		Examiner
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