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(54) Counting articles.

(57) Apparatus for detecting and counting articles on a product conveyor or the like includes an optical cell (20), comprising a light source and detector, and a reflector (22) mounted on spaced parallel faces of an arm (18), the light path between the cell (20) and reflector (22) extending transversely to the direction of travel of a conveyor carrying articles such as cylindrical cans (10) and at an angle to the horizontal. The disposition is such that the light path is blocked by the widest part of the can (10) but passes through the peripheral space between adjacent cans (10), thus allowing articles in abutment on a conveyor line to be detected. In a preferred embodiment first and second horizontally spaced pairs of cells and detectors are located on spaced parallel faces of the apparatus to assist in error detection.

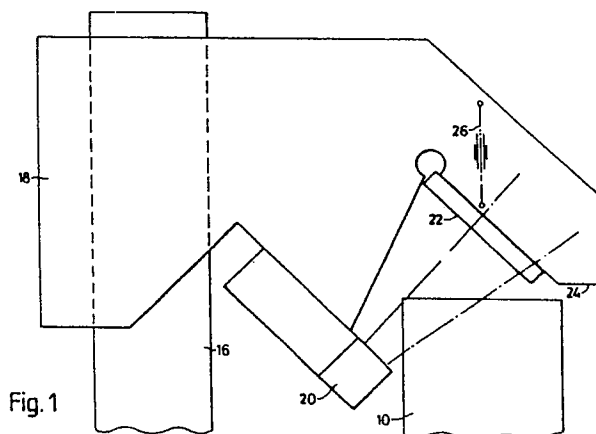


Fig. 1

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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. Cl. 4)
X	EP-A-0 156 192 (TETRA) * Abstract; figure 4 *	1,4	G 06 M 7/00
Y	---	2-3,5-6	G 06 M 1/10
Y	US-A-3 900 718 (H.H. SEWARD) * Figures 2A,2B; column 4, lines 21-28 *	2,5	
Y	---		
Y	EP-A-0 086 289 (SATAKE) * Figure 1; abstract *	3	
A	---	8	
Y	US-A-4 081 661 (J.R. DURBIN) * Column 2, line 50 - column 3, line 19 *	6	
A	---	1	
A	DE-A-1 067 625 (ENZINGER) * Figures; column 3, lines 20-24 *		
A	---	2,5	
A	GB-A-1 376 304 (HIRD-BROWN) * Figure 1 *		TECHNICAL FIELDS SEARCHED (Int. Cl.4)
A	---	3	G 06 M
A	GB-A-1 091 764 (SIMON-CARVES) * Figure 2 *		
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A	US-A-2 037 191 (F.E. BACKER) * Column 2, lines 41-49 *		
A	---	6-7	
A	PATENT ABSTRACTS OF JAPAN, vol. 8, no. 165 (P-291)[1602], 31st July 1984; & JP-A-59 60 586 (SUMITOMO DENKI KOGYO K.K.) 06-04-1984 * Abstract *		
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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 06-10-1989	Examiner HENROTTE I.
<b>CATEGORY OF CITED DOCUMENTS</b>			
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	