

#### WORLD INTELLECTUAL PROPERTY ORGANIZATION International Bureau



## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 4:

D21H 3/78, 3/82

(11) International Publication Number:

WO 88/ 02048

(43) International Publication Date:

24 March 1988 (24.03.88)

(21) International Application Number:

PCT/GB87/00613

**A1** 

(22) International Filing Date: 2 September 1987 (02.09.87)

(31) Priority Application Number:

8621680

(32) Priority Date:

9 September 1986 (09.09.86)

(33) Priority Country:

(71) Applicant (for all designated States except US): E.I. DU PONT DE NEMOURS AND COMPANY [US/US]; Legal Department, 1007 Market Street, Wilmington, DE 19898 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): CLITHEROW, Barbara, Mary [GB/GB]; 12 Croftwell, Harpenden, Hertfordshire AL5 1JG (GB). DEAN, Trevor, William, Ridgley [GB/GB]; Edgeworth House, Arlesey, Bedfordshire SG15 6SX (GB). GASCOIGNE, John, Alan [GB/GB]; 110 Wymondley Road, Hitchin, Hertfordshire SG4 9PX (GB). VAN ISSUM, Bernhard, Ernst [GB/CH]; 44A, Vieux Chemin d'Onex, 1213 Onex (CH).

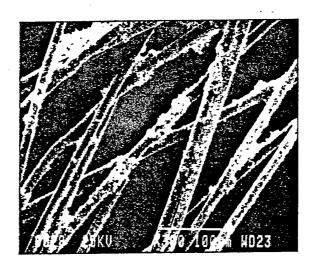
(74) Agents: DAVY, John, Raymond et al.; Carpmaels & Ransford, 43 Bloomsbury Square, London WC1A 2RA (GB).

(81) Designated States: AT (European patent), AU, BE (European patent), BR, CH (European patent), DE (European patent), FI, FR (European patent), GB (European patent), IT (European patent), JP, LU (European patent) pean patent), NL (European patent), SE (European patent), US.

#### Published

With international search report. Before the expiration of the time limit for amending the claims and to be republished in the event of the receipt of amendments.

(54) Title: FILLER COMPOSITIONS AND THEIR USE IN MANUFACTURING FIBROUS SHEET MATERIALS



### (57) Abstract

A filler composition that is suitable for use in the manufacture of paper, board, wet-laid non-wovens or other fibrous sheet materials comprises (preferably flocculated) filler particles (e.g. mineral fillers such as clay, talc or calcium carbonate) attached to fibres (e.g. synthetic organic fibres such as polyester or aramid fibres) by means of a coupling agent. These fibres generally have an average fibre length of 4 mm or more. Suitable coupling agents include oligomeric and other polymeric materials such as modified starch, cellulose ethers and derivatives thereof, modified natural gums, ketene dimers or poly(vinyl alcohol). Colloidal silica or colloidal bentonite clay may also be included. The filler composition is preferably added to the stock before the latter reaches the flowbox of the sheet-making machine. The invention allows high levels of filler to be achieved whilst maintaining satisfactory strength properties, in particular tear strength, in the sheet.

# FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AT AU BB BE BG BJ CF CG CH CM DE DK FI	Austria Australia Barbados Belgium Bulgaria Benin Brazil Central African Republic Congo Switzerland Cameroon Germany, Federal Republic of Denmark Finland	FR GA GB HU IT JP KP KR LI LK LU MC MG	France Gabon United Kingdom Hungary Italy Japan Democratic People's Republic of Korea Republic of Korea Liechtenstein Sri Lanka Luxembourg Monaco Madagascar	ML MR MW NL NO RO SD SE SN SU TD TG US	Mali Mauritania Malawi Netherlands Norway Romania Sudan Sweden Senegal Soviet Union Chad Togo United States of America
--	---	--	--	--	--