A S B E S T O S B U L L E T I N

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C O N T E N T S

ASBESTOS BULLETIN

PART 1. ASBESTOS MINING.

CANADA.

212 MINES MUST EXPORT MORE TO SURVIVE. Asbestos Producer. Vol.14,No.3, March 1968, p.7.

The output from Canada's mines is steadily rising. In the past 10 years, for instance, shipments of asbestos fibre have jumped from 1,046,000 tons in 1957 to an estimated 1,440,000 tons last year. This means that for some time to come, asbestos mines and all other mining operations in Canada must rely on foreign countries to purchase this increasing output. Here's why: even if Canadian demand for all types of minerals were to increase 10 times in the next five years, it would not affect the importance of exports to the Canadian mining industry. To supply the entire 40,000-ton requirement for asbestos fibre in Canada each year would provide Quebec's asbestos mine and mill-workers with exactly 12 days work, and no more.

Although Canada has many customers for her minerals, three main market areas account for nearly all our mineral exports. The United States, Britain and the European Common Market countries buy 80 per cent of our exports of minerals. Canada's largest customer is the U.S.A., which buys over half the minerals we export, including asbestos. Second largest export market is Britain which buys about a quarter of our mineral exports, followed by the Common Market countries and Japan.

There are several signs that indicate Canada's mineral markets will increase and grow more varied in the future, despite stiffening international competition, as in the case of asbestos. Rising construction programmes in Europe and increased production of consumer goods there, the greater dependence of the U.S. on Canada as a source of minerals and the moves to unclog world trade are among the favourable portents of even greater export opportunities for Canada's mineral producers - and hence of greater job security for the people they employ.

Asbestos, which is today sold to some 86 countries, is the Canadian mineral export that gets around the most. It is followed by copper (sold in 74 countries), nickel (41 countries), zinc (34 countries), lead (24 countries).

Asbestos, which is sold to some 86 countries, is the Canadian mineral export that gets around the most. For it, and for all Canadian minerals, the export outlook is a bright one.

Asbestos leads the field.

Asbestos is exported from	Canada to	86 countries.
Copper	do.	74 countries
Nickel	do.	41 countries
Zinc	do.	34 countries
Lead	do.	26 countries
Sulphur	do.	20 countries
Magnesium	do.	19 countries
Iron ore	do.	10 countries
Cobalt	do.	6 countries
Coal	do.	4 countries
Radioactive ores	do.	2 countries
Crude petroleum and natural gas	do.	1 country

213 METALLOGENY OF THE CASSIAR BATHOLITH, YUKON AND B.C. R. Mulligan, Research Geologist, Geological Survey of Canada. Ottawa, Ont. Paper No.11. Conference Annual General Meeting Canadian Institute of Mining and Metallurgy. The Can.Min. & Met. Vol.61 - No.671, March 1968, p.274.

Asbestos deposits, in addition to the Cassiar asbestos mine, occur in ultramafic bodies intruding Devono-Mississippian greenstone, and a few small chromite, nickel and copper showings are associated with these rocks.

214 SOVIET ASBESTOS EXPERTS TOUR QUEBEC. Can.Min.J. April 1968, p.129.

A seven-man team of asbestos experts from the U.S.S.R. visited four asbestos-producing companies in Quebec during February. They toured facilities in the Asbestos and Thetford Mines districts of Quebec.

215 ASBESTOS PRODUCTION NOVEMBER 1967. Asbestos Feb.1968,p.46.

November 1967 asbestos production amounted to 165,902 tons (Quebec-157,390; Newfoundland, Ontario and British Columbia - 8,512). This compares with the November 1966 total of 172,770 (Dominion Bureau of Statistics, Ottawa).

216 CANADA'S MINERAL PRODUCTION 1967. Asbestos, Feb.1968,p.46.

Total value of the mineral production of Canada in 1967 has been estimated at $4,398,579,072, a 10% increase over the 1966 total of $3,969,178,151. Shipments of nonmetallic minerals were valued at $414,006,283 during 1967, which compares well with the 1966 total value of $363,387,717. Asbestos tonnage declined to 1,400,708 tons in 1967 from 1,489,055 in 1966. Total value of asbestos shipments remained at approximately the same level: $163,011,249 in 1967 against $163,654,863 in 1966. (Catalog. No.26-202, Dominion Bureau of Statistics, Ottawa, 25c.)

U.S.A.

217 TALC AND ASBESTOS AT DADEVILLE, ALA. T.L.Neathery and others. Rep.Invest.U.S. Bur.Mines 7045, Nov.1967, 57p.

Geological investigations of a mineralized zone in East Alabama indicate that large quantities of talc and soapstone are scattered over a wide area close to the surface. The antophyllite asbestos which is associated with the talc does not appear to occur in sufficient quantities to be considered as a primary commercial source.

218 VERMONT. Asbestos, March 1968, p.52.

The output in 1966 of asbestos from Orleans County, Vermont, increased slightly over the 1965 production, both in quantity and value. The average price per ton increased from $89.72 in 1965 to $90.54 in 1966. Vermont Asbestos Mines, a division of Rubercid, quarried and processed chrysotile asbestos at its quarry and mill located at Lowell. Twentyfour grades were produced for spinning, cement stock, paper stock and other uses. Some serpentine waste rock was used for roadstone.

U.S.S.R.

219 CHRYSOTILE-ASBESTOS DEPOSITS IN THE U.S.S.R. Editors. P. M. Tatarinov and V. R. Artemov, Moskva.

A detailed description is given of the deposits of chrysotile asbestos in the U.S.S.R. There are two types of chrysotile asbestos deposits associated with hyperbasites and dolomitized limestone respectively. The first type includes the most important Bazhenovo, Labinsk, Karachaevsk and Bredy deposits. The genesis of these deposits is discussed. An evaluation is given of the whole raw material base of the Russian asbestos industry.

220 ANTOPHYLLITE-ASBESTOS OF THE WESTERN ASOV SEA REGION AND THE MIDDLE DNIEPER REGION. (PETROVSKII DISTRICT). V.V.Bairakov and D. V. Bugaenko, Mineral.sb.Lvosk,un-ta,1967,No.21, 22, 213-216. Ref.Zhur.Geol., 1968, 3I68.

In these regions antophyllite-asbestos occur in many localities. Veins or lenses of asbestos are associated with chlorite, carbonate, talc and other formations. The fibre lengths reach 0.5-1 cm. The concentration of asbestos in the rocks is mainly low.

221 EXPERIMENTAL STUDY OF ULTRASONIC DEFIBERIZATION OF ASBESTOS. G. A. Georgievskii et al. Proiz-vo shin. rezino-tekhn. i asbesto-tekhn. izdelii, 1967, No.4, 16-18. Ref.Zhur.Khim., 1968, 1M267.

Experiments are described on the defiberization of asbestos in aqueous slurries under the action of an ultrasonic field. If a sufficiently strong ultrasonic field is employed, the degree of defiberization may reach 95-98% in dilute slurries (0.5 - 1.5%). The duration of the process is 15-20 min., but can be reduced when stronger fields are used. It has been found that ultrasonic vibrations have a somewhat selective effect in that some coarse asbestos fibres are not affected at all. This phenomenon requires some further investigating. The application of ultrasonic vibrations in the asbestos industry may prove to be very advantageous.

222 IMPROVEMENTS IN THE METHODS OF OBTAINING HIGH GRADE CRUDE ASBESTOS. V. L. Komarovskii and P. I. Pomenko. Sb.dokl. Nauchno-tekhn. konferentsii Sib. proekgn. i. n.-i. tsvetn. metalurgii. Vyp.1. Krasnoyarsk, 1966, 55-63: Ref.Zhur.Khim., 1968, 1M269.

Improvements are described in the technology of the processing of asbestos ores at the Soyuzasbest and Aktovrak mines, aiming at an increased output of asbestos of textile grade quality. Several stages of alternating screening and comminuting are applied to separate high grade asbestos from the fines. Hand-picking of the best asbestos ore lumps is also applied.

223 RUSSIAN PATENT. APPARATUS FOR REMOVING DUST FROM ASBESTOS FIBRES. A. S. Ploskikh and A.I.But.

Fine dust is removed from asbestos in an apparatus comprising two horizontal wire-gauze transporters placed one above the other one and connected to a high-voltage a.c. source. A diffuser is located under the lower transporter, and a jacket with a dust collector above the upper transporter.

SOUTH AFRICA.

224 ASBESTOS AT POMFRET. Mining Magazine(London) Sept.1967, 153,155,157.

The history of the Pomfret crocidolite asbestos mine, Cape Province property of Cape Asbestos South Africa(Pty) Ltd., is briefly described The mining and processing techniques are discussed in detail. Characteristics of the products, long fibre PC and PA, and standard fibres PS are given.

INDIA.

225 THE OCCURRENCE OF AMOISTE ASBESTOS IN THE IRON FORMATIONS AT BABABUDANS, CHIKMAGALUR DISTRICT, MYSORE STATE. B. P. Radhakrishra et al. Geol.Soc.India Bull.,1967, 4, No.3, p.99-102.

Veins of amosite asbestos are embedded in magnetite quartzite. The fibres are soft, white or blueish white. There is a possibility that deposits of industrial importance will be found in this area.

226 A NEW ASBESTOS HORIZON IN PULIVENDLA TALUK, CUDDAPAH DISTRICT ANDHRA PRADESH. R. M. Krishna, India Mining and Engng. J. 1965, 4, No.6, p.30-31.

In Andhra Pradesh asbestos mineralisation occurs in an area about 250 km. long and 5 km. wide and high grade chrysotile asbestos is mined near Pulivendla. The author discovered a new mineralisation zone in this area where chrysotile asbestos occurs in bundles 0.1 - 0.5 cm. long.

227 NON-METALLIC MINERALS- A REVIEW. 2ND EDITION. Compiled in the Commodities Division of the Commonwealth Secretariat, London, 1967. 170p., tabs.

The main developments since 1962 in the field of non-metallic materials (including asbestos) are analysed. Detailed statistics of world and Commonwealth production, trade, consumption, prices and tariffs are given up to the end of 1965, with certain preliminary data for 1966.

PART 2. ASBESTOS CEMENT.

228 BRITISH PATENT 1,099,939. IMPROVED METHOD OF MOULDING PIPE FITTINGS. H. C. Shulze.

The process of forming asbestos-cement pipe fittings having intersecting passages is described.

229 BRITISH PATENT 1,075,406. A METHOD AND APPARATUS FOR MANUFACTURING ASBESTOS-CEMENT SHEETS CORRUGATED IN ONE DIRECTION AND CURVED SUBSTANTIALLY IN THE DIRECTION OF THE GENERATRICES OF THE CORRUGATIONS. Eternit Societa per Azioni.

The method according to the present invention comprises the following operations; taking, by means of the flat suction device 6, a flat sheet 1 and placing it on the corrugating device 3; taking by means of the bending suction device 7, the corrugated sheet from the device 3 and placing it on the stack 4, made up of curved corrugated sheets and corrugated, rigid, curved moulds, while the suction device 8 takes from the stack 5 a corrugated curved mould and places it on the corrugated asbestos-cement sheet placed and curved on stack 4.

The bending suction device 7 works as follows: during the step of collection and transport of a flat corrugated sheet, the sucking members 11 are planar. When the bending suction device 7 places the sheet or sheets on the stack 4, the members 11 rotate about the pivot points 18 hinging the links 19 thus causing that part of the corrugated sheet between the two pivots to be bent to a shape conforming to the required curve and the parts of the sheet outside the pivots to be made tangential to this curve. After having curved and pressed the corrugated sheet on the stack 4 the vacuum source 15 is disconnected and the bending suction device 7 leaves the asbestos-cement sheet, which is then covered by the next corrugated curved mould carried by the suction device 8.

The suction device 8 for carrying the moulds works as follows: during their lowering onto the mould stack 5, the suction chambers 22 and 23, swinging about the pivots 24, match automatically the curve of the mould itself, assuming an angle corresponding to the tangent to the curve of the mould, on which they rest at the point below the pivots of the sucker.

230 RUSSIAN PATENT. DEVICE FOR AUTOMATIC FEEDING OF MANDRELS INTO AN ASBESTOS CEMENT PIPE-FORMING MACHINE AND FOR THEIR REMOVAL WITH FRESHLY FORMED PIPES. R. A. Lokhman et al.

The title device is mounted before the support roller. It includes a magazine, a mandrel-handing device and a pipe unloader. In order to simplify the machine the feeder is provided with symmetrical grippers, whereby changes for various diameters are avoided. The lower jaw of the gripper has a pivoted lever for pushing the mandrels and a lever for removing the pipes.

Fig. 1

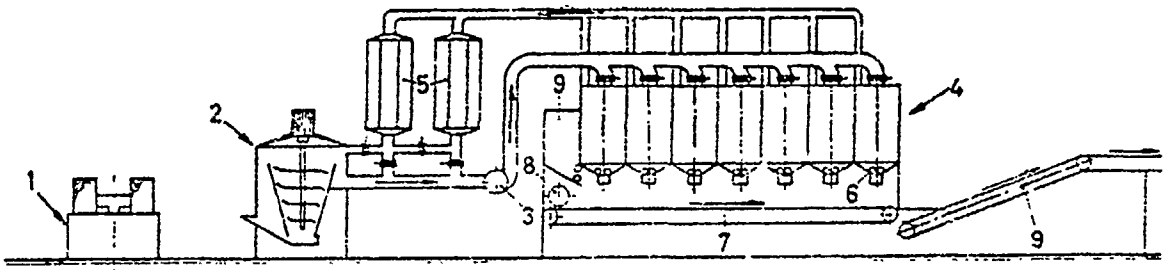


Fig. 2

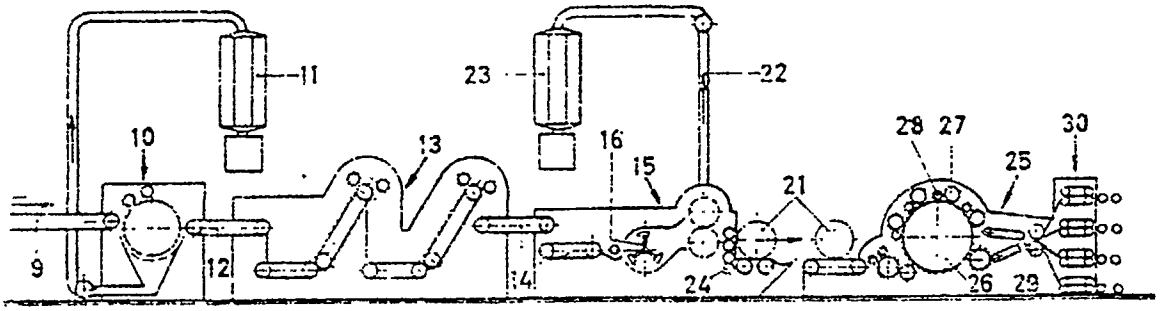
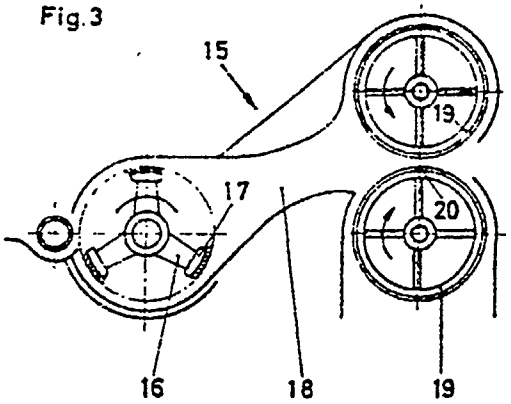


Fig. 3



231 POLISH PATENT. A METHOD OF PRODUCING ASBESTOS CEMENT PIPES. J. Tymoszcuk et al.

A process is described for manufacturing asbestos cement pipes of 400-1500 mm. diameter by the centrifugal method using horizontal or vertical perforated moulds with additional suction. The peripheral velocities range from 12 to 20 m/sec. Two, three or four layers of asbestos cement are applied depending on the required wall thickness.

232 ASBESTOS CEMENT FUME CHAMBER. The Financial Times, 2nd May, 1968.

A general-purpose fume cabinet, constructed from non-combustible materials, has been introduced by Matthew and Yates, Turbro/Cyclone Works, Gibraltar Street, Bolton, Lancs. Designed in conjunction with the Turners Asbestos Cement Company, the unit is intended for use in schools, universities, hospitals and industry. The main body and exterior panelling are made from asbestos cement, an intert material classified as incombustible according to British Standard 476, and are built round a mild steel framework. Interior surfaces are sealed with polyurethane paint, polyvinylic or epoxy resin, depending on the types of chemicals to be used. An aerofoil section in the front of the chamber provides a by-pass for air, which reduces air velocity through the sash opening when in the closed position.

233 INDIAN PATENT 105,894. MANUFACTURE OF ASBESTOS CEMENT ARTICLES. Council of Scientific and Industrial Research.

The strength of asbestos cement articles produced from chrysotile or amphibole fibres and portland cement, using potable water, is improved by curing the products in a moist carbon dioxide atmosphere.

234 ADDS COLOUR TO ASBESTOS SHEET. The Financial Times, 11th April, 1968.

Durable colour finishes for asbestos cement sheeting are being applied in the factory by a process called Matt Sheen introduced by the Universal Asbestos Manufacturing Company of Exchange Road, Watford, Herts. The Matt Sheen range of asbestos cement sheet and sheeting fitments comes in 11 British Standard colours. The finish is said to have good weathering and light-fastness properties, and to give a non-porous alkali-resistant surface. UAM claim that the factory application of the paint, and acrylic/silicone emulsion, ensures a consistency of colour not previously attained.

235 GERMAN PATENT 1,264,310. MACHINE FOR THE PRODUCTION OF BENT AND OPTIONALLY CORRUGATED FIBROUS CEMENT SHEETS. F. L. Smidth & Co. A/S. Copenhagen-Valby.

The title machine comprises a forming plate and a stamp provided with a series of suction boxes in a common frame. The suction boxes are movable vertically and connected with each other by means of a flexible linkage. Each suction box is connected to a common suction duct by means of a flexible tube.

236 RUSSIAN PATENT 211,454. MACHINE FOR MANUFACTURING ELBOW PIPES FROM ASBESTOS CEMENT. G. Marcioli (Italy).

A machine for forming elbow pipes from asbestos cement comprises a split perforated mould and a hollow perforated core provided with an elastic sheath. Movable elastic annular elements are mounted on the straight parts of the core; they are actuated by means of a hydraulic cylinder. These elements prevent the core from turning.

237 CORROSION OF ASBESTOS CEMENT PIPES USED IN GAS TRANSPORTATION. M. Falecki and J. Oliwa. Gaz. Woda, Tech.Sanit., 1967, 41, No.7, 218-221.

The effect of water 0.1% and 0.5% of aqueous solutions of sodium chloride, condensates from town gas pipelines and water saturated with carbon dioxide, on asbestos cement pipes, was investigated. The time of exposure was 40 and 330 days. The pH of the water in contact with the pipes increased rapidly to about 12 and then slowly decreased to about 9. In experiments with the gas condensates, the pH rose rapidly to about 8, and then slowly to about 12. There was no significant decrease in the strength of the pipes.

238 INVESTIGATION ON THE DEPENDENCE OF TECHNOLOGICAL AND PHYSICO-MECHANICAL PROPERTIES OF ASBESTOS CEMENT ON THE PROCEDURE OF THE PREPARATION OF SUSPENSIONS. I. I. Bernei and S. I. Yakubov.

It was found that processing asbestos in a hollander in the presence of cement results in halving the time necessary for the preparation of the suspension, while the filtration characteristics of the suspension are not adversely affected, and the strength of asbestos cement sheets is increased by 10-11%. If the asbestos is fluffed in a hollander alone, and then mixed with the cement in a mixer, the filtration and dehydration properties of the product are improved but the strength of asbestos cement sheets is decreased by 6.5%.

239 INVESTIGATION ON TECHNOLOGICAL PROPERTIES OF SUSPENSIONS AND QUALITY OF SHEETS BASED ON SILICEOUS PORTLAND CEMENT. I. I. Bernei and S. I. Jakenbov.

Increasing alite content of a siliceous cement to 50%, with constant C_3A value of 5.5-6.5%, results in improved technological properties of the suspension and physico-mechanical characteristics of asbestos cement. Increasing or decreasing the optimum C_3A content adversely affects the technological and physico-mechanical characteristics of the products. The alite content should be increased when soft asbestos is used.

240 PERFORMANCE OF ASBESTOS CEMENT PIPES IN AGRESSIVE SOILS. J. E. Carriere. Tribune du CEBEDEAU, 1966, 19, No.277, 530-533.

Asbestos cement pipes have been used for the transportation of water (including drinking water) in many countries for more than 30 years. Only aerobic, acidic soil with a pH below 6-7 proved to be dangerous for asbestos cement, because of the attack on calcium carbonate contained in the cement. However, adequate protection of asbestos cement in soils of this type can be provided by coating the pipes with thin layers of bitumen, tar or an epoxy resin.

241 EFFECT OF SURFACE-ACTIVE ADDITIVES ON COAGULATIVE FORMATION OF STRUCTURES IN AQUECUS ASBESTOS SUSPENSIONS. T. K. Brutskus et al.

Additives which impart hydrophilic properties (e.g. sulphite-base compositions) decrease the volume of the precipitate and the rate of filtration. Agents with hydrophobic action(e.g. naphtha soap) intensify the formation of loose coagulated structure, thus increasing the volume of the precipitate and accelerating the filtration. Flocculating additives(polyacrylamide) reduce the volume of the precipitate, increase the settling rate, and the filtration rate. Addition of 750g. of polyacrylamide per ton of asbestos increases the filtration rate by a factor of 7.

PART 3. ASBESTOS TEXTILES.

242 GERMAN PATENT 1,245,661. STUFFING-BOX PACKING. Crane Packing Ltd.

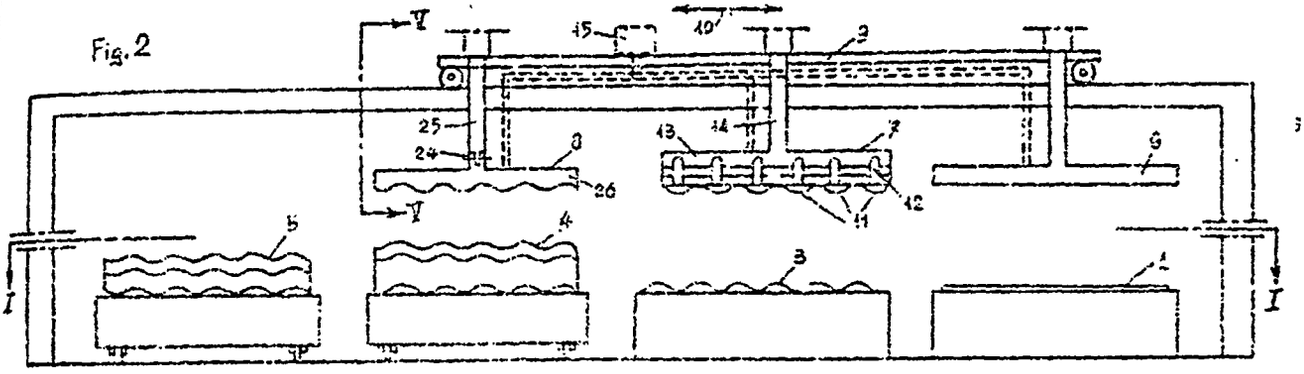
Stuffing-box packings or sealing cords are made of polytetrafluoroethylene filaments interwoven or interlaced with other fibres, particularly asbestos fibres, and/or with metal wires.

243 BRITISH PATENT 1,091,080. IMPROVED METHOD AND DEVICE FOR THE PRODUCTION OF RANDOM ASBESTOS WEBS. Rex Asbestwerke, Graf von Rex, K.G.

According to this invention, the asbestos is first of all opened up in a grinding mill 1 as coarsely as is required and then opened further in a vertical opener 2. The asbestos is then fed with the assistance of an air blast conveyor 3 to a group 4 of supply containers of asbestos fibres still in flocculate form. The complete installation is provided with a dust removal device, comprising the filters 5.

Each supply container has toothed rolls 6 at the delivery end which during rotation deliver the asbestos downwards out of the particular container in the form of a flat layer. Below the group 4 of supply containers a conveyor belt 7 is arranged. At the left end of the belt 7 in Figure 1 a device is provided which makes it possible to wind a web 8 in roll form on the conveyor belt 7 at the speed of the said belt. A hopper feeder 9 for the feed of further fibre types can also be provided here. If it is a question of the production of a random asbestos web in which the longest fibres are cotton, first of all the cotton web roll 8 is reeled off onto the conveyor belt 7 at the speed of said belt and the supply containers with the desired asbestos types feed superimposed layers of asbestos fibre sheets in succession onto the conveyor belt. The thickness of the said layers leaving the belt is determined by the speed of the delivery rolls 6. The layers consist of several layers of different fibre types lying one above the other. These layers are now fed to an opener 10 by means of a conveyor belt 9, i.e. to a device in which the fibres introduced are passed between rolls working against each other and having pins for opening the fibres. The conveyor belt 7 is only operated for so long as is required to provide a sufficient quantity for filling the opener 10, then the belt 7 and the toothed rolls 6 are stopped until the opener 10 can be fed again. The latter is also provided with a dust removal device having a filter 11. The now finely milled and mixed fibres are fed from the opener to a double hopper feeder 13 by means of a conveyor belt 12, the said double hopper feeder consisting essentially of two hopper feeders connected in series. The fibre layer is fed from the double hopper feeder 13 to a scutcher 15 preferably by belt type conveying means 14, the construction of the scutcher being seen in more detail in Fig.3. This scutcher serves to separate the fibres of the fed fibre layer by means of a Kirschner beater 16. The fibres separated by the sets of beater bars 17 of the Kirschner beater are carried by a current of air through a narrowing air duct 18 to a pair of perforated rolls 19. The air passes through the perforated rolls 19, and is withdrawn by suction in the interior thereof so that the fibres previously carried by the air are deposited on the perforated surfaces of

Fig. 2



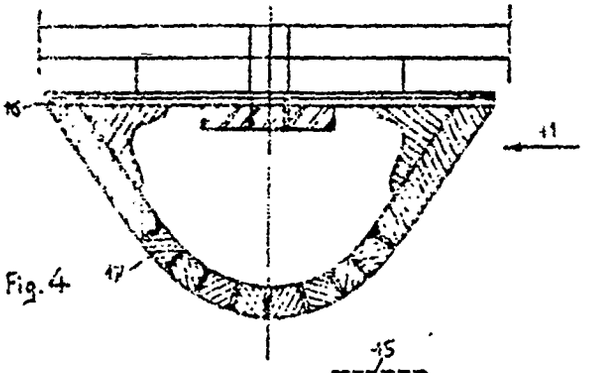


Fig. 4

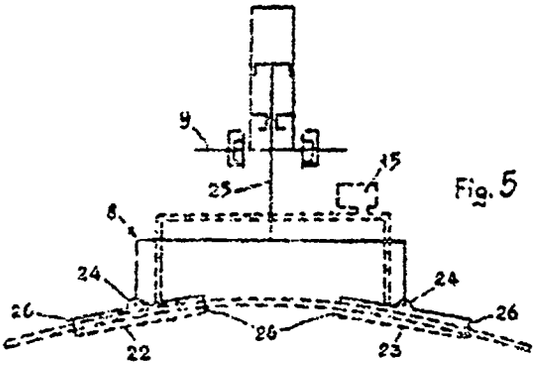
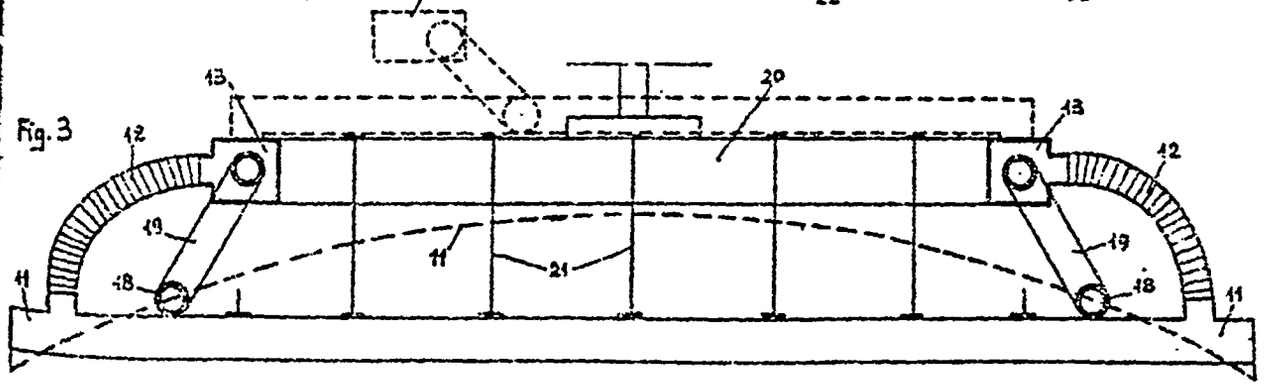


Fig. 5

Fig. 3



the rolls in the form of webs. Covers, (not shown) are provided in the interior of the rolls 19, so as to prevent the suction in the interior from becoming effective at that portion of the surface of each roll which is passing through the zone of closest approach of the two rolls. Consequently, as the rolls are rotated in the direction of the arrows shown, the webs deposited thereon can be removed together through the space 20 between the rolls 19. The scutcher is also provided with a dust removing device 22 having a filter 23. Whilst being formed on the rolls 19, the webs are thoroughly freed of dust by the suction existing in the interior of the rolls, which means an essential improvement in quality in further treatment.

After the perforated rolls 19 of the scutcher are further provided calender rolls 24 through which the loose web from the perforated rolls 19 is fed in an S-shape, the web thereby being compressed to improve its strength.

The web leaving the calender rolls 24 is fed to a carding engine 25 comprising the usual large drum 26 and a plurality of working rolls 27 and clearers 28. It is, of course, possible to feed the web directly from the calender rolls 24 to the carding engine 25. However, since the throughput quantity of the scutcher is essentially larger than that of the carding engine it is preferred to wind the web from the calender rolls 24 into laps 21 which can be removed from the scutcher and fed to one or more carding engines as required. As the web leaving the scutcher is wound to a lap 21, foils of paper or the like, are advantageously inserted as a dividing layer between the individual lap windings in order to facilitate the subsequent treatment on the carding engine.

244 BELGIAN PATENT 701,507. COMPOSITE THREADS. BBA Group Ltd.

Threads which can be woven into a heat-resistant fabric consist of a blend of asbestos threads and non-inflammable organic threads, such as wool or synthetic aromatic threads. The asbestos threads can be spun with Z twist and the organic threads with S twist, or vice versa. The asbestos threads contain a reinforcing element or a continuous core which is a nylon monofilament.

245 FRENCH PATENT 1,490,172. MANUFACTURE OF ASBESTOS STRANDS. Rex Asbestwerke Graf von Rex K.G.

Asbestos strands are manufactured by passing a dispersion of asbestos fibres (preferably containing a dispersant) through shaping means, and, then into a coagulating liquid to produce a coherent body. The strand is stretched or subjected to pressure to enhance the action of the coagulant.

246 NETHERLANDS APPLICATION 6,701,705 AND BELGIAN PATENT 693,633. PROCESS FOR METALLIZING THERMOPLASTIC ARTICLES. Dynamit Nobel AG.

A process is described for metallizing articles of thermoplastic polymers containing 10 - 60% of inorganic fibres (such as asbestos or glass fibres) by chemical reduction of solutions of metal salts combined with electro-deposition. The solutions preferably contain salts of copper, nickel and/or silver. The presence of the inorganic fibres greatly improves the adhesion of the metal coating to the plastic substrate.

PART 4. ASBESTOS FRICTION MATERIALS.

247 RUSSIAN PATENT 209,726. FRICTIONAL MATERIAL. I. T. Taranenko et al.

A frictional material with improved thermal stability consists of divinylacrylonitrile-methylstyrene rubber with vulcanising agents and fillers, in particular 30-60% asbestos and 20-60% barite.

248 EFFECT OF TEMPERATURE OR FRICTION AND WEAR OF FILLED FLUORINATED PLASTIC MATERIALS. V. D. Parkhomenko and S. N. Gants, 19 apr.1965, 6p refs. Transl.into English from Izv. Vysshikh Uchebn. Zavedenii, Mashinostro(Moscow), No.9, 1963, p.130-133. AD-614957.

An examination was made of the effect of temperature and the nature of the filler (molybdenum disulfide, boron nitride, barium sulphate, ground coke, talc, soot, or colloidal graphite)on the coefficient of friction and wear of "Fluoroplast" (poly-(chlorotrifluoro ethylene)), while undergoing a water-lubricated friction process. In general: 1) wear decreases with increasing filler content (up to a limit); 2) wear increases by increasing water temperature; 3) the coefficient of friction (mu) increases as temperature increases; 4) mu decreases with increasing specific pressure; and 5) mu decreases with increasing speed of sliding. Under the test conditions MoS_2, BN, $BaSo_4$ and coke improved the wear resistance to a greater extent than the other fillers.

249 JAPANESE PATENT 17,645/67. BRAKE MATERIAL. Dai-Nippon In and Chem. Ind.Co.

A brake material is produced from a resin derived from formaldehyde and phenol, cresol or resorcinol with addition of powdered walnut shell. Other fillers may also be included, such as baryte, metallic powder, carbon black, milled asbestos, and the like.

250 PRODUCTION OF MAINTENANCE FREE SINTERED METAL FRICTION BEARINGS. W. Scharfe. Abh.Deut.Akad.Wiss. Berlin, Kl. Math., Phys. Tech.(Germany) 1966, No.1, 311-319. Chem. Abstr. (U.S.A.) 8th Jan. 1968, 68(1), 5373.

Bearings of sintered iron were either impregnated with oil or with a mixture of 80% polytetrafluoroethylene plus 20% lead. Tests showed that with ptfe and lead, an improvement of the sliding properties was obtained. For ptfe without lead a higher abrasion factor resulted. The ptfe-lead bearings are applicable at higher temperatures and there is no chance of oil harm, for example, to foodstuffs.

PART 5. ASBESTOS REINFORCED PLASTICS.

251 INITIAL EVALUATION OF ASBESTOS LAMINATES BONDED WITH POLYBENZYL RESIN. B.J.C.Moore London Min.of Aviation, Dec.1963, 24p refs. (RAE-TN-CPM-46). Royal Aircraft Establishment, Farnborough, England.

The prepration of a thermosetting resin from benzyl chloride and paradichloroxylylene is described. The flexural and tensile strengths and modulus of elasticity of asbestos laminates are examined on aging the elevated temperatures and a comparison is made with the conventional phenolic bonded materials. Variation of the resin preparation to give different crosslink densities is also investigated. It was found that the polybenzyl laminates had superior retention of mechanical properties after exposure to elevated temperatures and after immersion in alkali solutions.

252 BELGIAN PATENT 703,336. LAMINATES. Union Carbide Corp.

Laminated materials are produced by forming a felted layer of a fibrous material, preferably cellulosic pulp, on a draining table, and applying on top of the cellulosic layer, before removing it from the draining table, a layer of chrysotile asbestos and a binder, preferably a resinous latex, e.g. a synthetic rubber latex. The resulting material is then consolidated and dried.

253 FRENCH PATENT 1,514,780. FILLER FOR POLYESTER RESINS. Union Carbide Corp.

Asbestos modified by reaction with olefinic unsaturated acids, e.g. acrylic acid, is used as a filler for polyester resins.

254 BELGIAN PATENT 702,024 AND NETHERLANDS APPLICATION 6,707,003. METHOD OF EXTRUDING FILLED PLASTIC MATERIALS. Nypel Inc.

A thermoplastic material is plastified and liquified in a heated extruder, and an abrasive filler, such as alumina and glass or asbestos fibres, is introduced into the liquified plastic material through a separate hopper at a point where the capacity of the extruder increases. In this way, a better distribution of the filler is obtained.

255 FRENCH PATENT 1,505,256. REINFORCED THERMOPLASTIC MATERIAL. I.C.I. Ltd.

An inert mineral filler, such as asbestos or glass fibres, mica, glass flakes etc., is treated with a silane containing one or more reactive groups (e.g. vinylsilane, epoxysilane, aminosilane) and then coated with a polymer or copolymer compatible with the thermoplastic material. The coated filler is mixed with the thermoplastic material, such as a polyolefine, polyamide, polyvinyl chloride etc.

256 CANADIAN PATENT 735,534. INJECTION-MOULDED PLASTICS. N.V.Koninklijke Ned.Machinenfabriek.

A method of injection-moulding fibre-reinforced plastic articles comprises mixing together a resin, a particulate filler such as silica, and asbestos or glass fibres, and feeding the mass towards an outlet from which the mass is discharged at a lower rate than that at which the mixing screw feeds the material. This results in a part of the mass being recirculated, thus providing excellent mixing conditions.

257 CANADIAN PATENT 735,001. PRODUCTION OF FIBROUS MOULDING COMPOSITIONS. Johns-Manville Corp.

Reinforced polyester resin compositions are produced by first mixing asbestos and glass fibres by means of a pressurised gas, and then adding the polyester resin. The premixing under the action of the pressurised gas results in a more uniform blending without any substantial breaking of the glass fibres, and in improved fluffing or opening of asbestos fibre bundles.

PART 6. BUILDING MATERIALS.

258 FRENCH PATENT 1,506,864. FLOORING MATERIAL. Monsanto Co.

A flooring material comprises 10-95 vol.% of an inorganic material having hardness of at least 4, and 5-90% of polyalkyl methacrylate. Suitable inorganic materials include chrysotile and crocidolite.

259 CANADIAN PATENT 740,497. FIBROUS ROOFING COMPOSITIONS. Shell Int.Res.Mij.

A fine-resistant asphalt-base roofing material, having improved hardness, modulus, tensile strength, flexibility and elongation characteristics, is composed of about 233 parts by weight of straight-run asphalt, 144 parts of chlorinated phenyl resin, 100 parts of polystyrene-polybutadiene-polystyrene block copolymers, 133 parts of whiting and 67 parts of ground asbestos. Addition of the asbestos and whiting improves both the hardness and the tensile strength of the composition.

260 NETHERLANDS APPLICATION 6,712,961. WATERPROOFING BUILDING MATERIALS. S.A.Fse et al.

Building materials are waterproofed by impregnating them with a composition containing an emulsion of unsaponifrable wax particles in an aqueous solution of a soluble soap, with addition of a compatible antioxidant. The soap is then converted into the insoluble form by treatment with a precipitating agent, which is a metal salt, and the product is dried. The method can be used for waterproofing various building materials, including asbestos products.

261 GERMAN PATENT 1,262,856. PRODUCTION OF TUBES FROM HARDENING MATERIALS. R. W. Emery.

Tubes are formed by applying a hardening material, e.g. a polyethylene or polyvinyl chloride resin, onto a rigid mandrel covered with a sleeve of a flexible textile material made of wool, cotton, rayon, nylon, asbestos or glass fibres. After the tube hardens, first the mandrel is withdrawn from the inside, and then the sleeve is removed.

262 NEW DESIGNS UNDERFOOT. The Financial Times, 2nd May,1968.

Two variants on the Vinylex range of vinyl asbestos floor tiles have been introduced by Dunlop Semtex of 19 Berners Street, London,W.1. Both incorporate special surface effects. Piazza is an embossed tile, available in six colours, and like the Marbletone, which, as the name suggests, has a mottled finish, comes in 12-inch squares and 1/10 inch gauge. Both are produced from a blend of PVC resin and asbestos fibre, with supporting pigments, stabilisers and fillers.

PART 7. ASBESTOS PACKING,SEALING & COATING COMPOSITIONS.

263 RUSSIAN PATENT 208,154. SEALING COMPOSITION. R.A.Garalyavichius et al.

A sealing material consists of (in parts by weight); bitumen 100, polyisobutylene 60-70, asbestos 90-100, paraffin 1.5-2.5, neutral oil 10-50 and powdered chalk 700-800.

264 CANADIAN PATENT 736,553. PACKING COMPOSITION. Johns-Manville Corp.

A heat-resistant material for packings exposed to rotary or gliding movements comprises 19-24.5 wt.% of graphite and/or mica as a lubricant up to 5% of a powdered inhibitor and 0.1-2% of a high molecular weight water-soluble polyethylene oxide resin, the remainder being asbestos fibres. Because of the very low content of the organic component, the packings have good shelf life and lubricating characteristics.

265 CANADIAN PATENT 735,528. FIBROUS PATCHING ADHESIVES. Swift & Co.

A non-cracking material for patching sidewalks, concrete walls and floors, metal structures etc., is composed of 3 parts by weight of asbestos fibres, 30-300 parts of sand or other finely divided filler, 10-100 parts of a water-soluble or dispersible acrylic ester resin, 8-50 parts of calcium aluminate cement, and about 100 parts of non-waterproof portland cement, optionally with addition of a small proportion of a water-soluble salt of a siliconic acid.

266 CANADIAN PATENT 734,997. COLD-CURING ASBESTOS RUBBER COMPOSITION. Esso Res. & Engng.Co.

A cold-curing caulking composition comprises a mixture of a butyl rubber latex, p-quimone dioxine, lead dioxide, polyisobutylene, clay and short asbestos fibres. The composition has a very small shrinkage and good adherence to the substrate.

267 CANADIAN PATENTS 734,995-6. FIBROUS INSULATING AND PATCHING ADHESIVES. Swift & Co.

An adhesive composition having a good resistance to cracking, even when exposed to wide temperature variations, consists typically of about 50 parts by weight of waterproofed white portland cement, 16.9 parts of sand, 5.65 parts each of ground mica and titanium dioxide, 6.05 parts of an acrylic ester resin, 2.42 parts of asbestos fibres, 34.2 parts of water and a small proportion of a siliconate. The composition is applied by trowelling or brushing.

PART 8. ASBESTOS PAPER & INSULATING MATERIALS.

268 BRITISH PATENT 1,100,896-7. A MOULDED LINING FOR INGOT MOULDS. D.P.M.

Insulating layers comprises up to 11% by weight of asbestos fibres.

269 ELASTOMERIC INSULATION FOR SOLID PROPELLANT ROCKET MOTORS. D. H. Sale, 27 Oct.1964, 23p. refs. Rock Island Arsenal Lab. Ill. (Rept.-64-3158; AD-452948) OTS; $0.75.

The development of flexible, elastomeric-based solid propellant rocket motor case insulation is discussed. The effects on insulation properties of the type of asbestos, of liquid versus solid elastomers, and of the methods of dispersing fibrous compounding ingredients, are reported. Oxyacetylene torch and static motor firing test data for some of the better insulation materials developed, as well as for some commercial materials, are presented. A material with 40% elongation, 1.34 gm/cc density, performance index of 95 $cm^2 sec/gm$ and erosion rate of 2.0 mils/sec was the most promising insulation developed. The material is a 55/45 butadiene-acrylonitrile compound containing phenol furfural resin, asbestos and oxyazoline wetting agent. It was satisfactorily bonded to aluminium and to steel by conventional bonding agent. The thermal properties of this vulcanizate are not affected by oven aging for one week at 70°C.

270 JAPANESE PATENT 6084/68. PRODUCTION OF PAPER. Union Carbide Corp.

Paper is produced from an aqueous suspension which contains a fibrous material, asbestos, magnetite and an inorganic filler such as titanium dioxide, talc or clay, and a rubber latex binder.

271 FRENCH PATENT 1,507,702. HEAT-INSULATING MATERIAL. Foseco Trading Co.

A heat-insulating material is made from a mixture of a granular refractory material, a fibrous organic material, a foaming agent and a binder. Optionally, inorganic heat-resistant fibres may be used, such as asbestos, slagwool, metallic fibres etc.

272 JAPANESE PATENT 26537/67. SOUND-INSULATING COMPOSITION. Revertex Ltd.

A sound-insulating composition consists of one part by weight of a coumarone-indene resin and five parts by weight of a mineral filler. Suitable fillers include clay, talc, silica, asbestos or cork.

273 FRENCH PATENT 1,506,413. THERMALLY INSULATING MATERIAL. Grefco Inc.

A heat-insulating material of a low density is produced from expanded perlite, a fibrous material and a binder. As the fibrous material, newsprint is preferred, but the composition may also contain asbestos, mineral wool or glass fibres.

274 FRENCH PATENT 1,505,927. INSULATING PANELS, Johns-Manville Corp.

Insulating panels are produced from expanded perlite, a fibrous material (preferably newsprint which may be mixed with other fibres), bituminous materials and starch. In an example, the composition consists of (in wt.%): expanded perlite 55-75, cellulosic fibres 15-25, asbestos fibres 0.5-5, asphalt 5-10, and starch 0.3-5.

275 NETHERLANDS APPLICATION 6,708,344. HEAT-INSULATING MATERIAL. Philip Carey Mfg.Co.

A heat-insulating material stable to moisture, which can be used at temperatures of 1500-2000°F, consists of 55% of calcined dintomite powder, 10% of expanded perlite, maximum 10% of asbestos fibres (normally 5 - 8%), about 8 - 20% of dispersed montmorillonite clay, 5-10% of modified starch, 0.2-0.6% of potassium pyroantimonate and 0.2-0.6% of sodium methylsiliconate.

PART 9. REFRACTORY FIBRES.

276 - FRENCH PATENT 1,506,598. SILICON CARBIDE FIBRES. Corning Glass Works.

Silicon carbide fibres are produced by reacting silicon and carbon at an elevated temperature in an atmosphere containing one or more compounds of the group HF, HCl, HBr and $SiCl_4$. Fibres of a diameter of 1-2 microns and a diameter: length ratio up to 1:50,000 are obtained. The fibres are useful as reinforcement for various materials.

277 FRENCH PATENT 1,502,405. SUBMICROSCOPIC SILICON CARBIDE FIBRES. Corning Glass Works.

Submicroscopic silicon carbide fibres (diameter 0.01 - 0.5 microns, length about 100 microns) are produced by heating finely divided silicon carbide in an atmosphere of carbon dioxide, oxygen or water vapour (or mixtures thereof). The fibres show no discontinuities in their crystalline structure and have a high strength/diameter ratio. They are readily dispersable and hence, are suitable as reinforcement for plastics, rubber, cement and metals. The process is suitable for the production of large quantities of silicon carbide fibres.

278 JAPANESE PATENT 608/68. INORGANIC REFRACTORY MATERIALS. K. Shigemoto.

Electro-insulating materials resistant to arcing are produced by mixing, kneading and moulding an inorganic filler, such as asbestos and quartz sand with water glass boric acid and/or phosphoric acid is added to the mixture in such an amount that in the first stage complete solidification does not take place. The product is then dehydrated in such a way that it does not lose its plasticity, and is then comminuted. In the final stage, the material is steam treated and hot-pressed to the desired shape.

279 FRENCH PATENT 1,505,474. COMPOSITE REFRACTORY FILAMENTS. Comp. Francaise Thomson Houston - Hotchkiss Brandt.

Composite refractory filaments of great length are produced by depositing a refractory material onto a moving thin, metallic or mineral filament. The deposition results from a chemical reaction in the gas phase. Before depositing a refractory material, a barrier layer is formed on the filament to prevent diffusion of atoms between the filamentary substrate and the refractory sheathing. In examples, the production of Al_2O_3 and SiC-coated filaments is described, but the method is also applicable to other refractory materials.

PART 10. MISCELLANEOUS.

280 MISS EDITH E. COX RETIRES.

The Asbestos Bulletin has noted with much regret the retirement on 31st March, 1968, of Miss Edith Cox, Editor of the magazine "ASBESTOS" for many years. Miss Cox has rendered sterling service to the Asbestos Industry throughout the world, and this service has been very much appreciated. The Editor and all concerned with the publication of the Asbestos Bulletin wish Miss Cox a very happy retirement for many years to come, and are pleased to note that she is not entirely severing her connection with "ASBESTOS", but is continuing to act as a consultant as her time may permit.

281 FRENCH PATENT OF ADDITION NO.86,879. PREPARATION OF CATALYSTS BASED ON IRON OR ITS COMPOUNDS. Produits Chimiques Pechinez-Saint-Gobain.

Catalysts used for the decomposition of ammonium chloride are prepared by precipitating iron from aqueous solutions on a support such as asbestos powder.

282 BELGIAN PATENT 687,957. DEPOSITION OF ASBESTOS BY ELECTROPHORESIS. Turner Brothers Asbestos Co.

Deposition of asbestos fibres by electrophoresis is effected in an anionic aqueous dispersion, which may also contain other adjuvants. On application of an electric field, the solids migrate to the anode and are deposited there. Alternatively, an ion-permeable membrane is placed before the anode, and asbestos is deposited on the membrane. The deposit is removed from the anode by known methods.

283 GERMAN PATENT 1,225,679. INACTIVATION OF PYROPHORIC METAL DUST. Fried. Krupp Huettenwerke and Leybold-Hochvakuum-Anlagen.

Pyrophoric metal dust formed in vacuum-degassing process in the manufacture of steel is inactivated by dusting with solid particles, e.g. alumina or powdered asbestos.

284 DEHYDRATION OF CYCLOHEXANOL ON ASBESTOS. M.B.Turova-Polyak et al. Vestnik Mosk. Univ. 1967, No.4, 91-93.

It has been found that asbestos is an effective catalyst for the dehydration of cyclohexanol at 400 - 500°C. The yields amounted to 91-93%. The products comprised mainly cyclohexene with addition of methylcyclopentenes.

285 JAPANESE PATENT 17275/67. ASBESTOS ROLLER. Asahi Glass Co.

A heat-resistant roller is composed of asbestos discs mounted on a shaft together with a number of reinforcing discs having a smaller diameter than the asbestos discs and inserted between them at a certain distance apart.

286 SPONTANEOUS GROWTH OF FILAMENTARY MONOCRYSTALS OF MAGNESIUM OXIDE. P. P. Budnikov et al. Doklady Akad.Nauk SSSR, 1967, 175, No.5, 1045-6.

Filamentary monocrystals of magnesium oxide spontaneously grew on a periclase material with a spinel binder, which has been calcined at 1650°C and then allowed to cool to room temperature. The length of some crystals reached 5 mm., and the thickness was not larger than 10 microns. The formation of these crystals is ascribed to the development of high compressive stresses in the substrate.

287 SOLUTION STUDIES OF CHRYSOTILE, LIZARDITE AND ANTIGORITE. G.T.Faust and B.S.Nagy.Prof.Pap.U.S.Geol.Surv.384-13,Wash. D.C.1967.

Re-evaluation is presented of the differential solution method for serpentine-group minerals.

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PART 11. REVIEW OF JOURNALS.

"ASBESTOS", January 1968.
807 Western Saving Fund Bldg. Philadelphia, Penn.19107.

288 BRAKE SAFETY-No.6:QUOTES FROM EXPERTS ON BRAKES, p.14.
289 MARKET CONDITIONS,p.34.
290 PRODUCTION,p.44.
291 IMPORTS & EXPORTS, p.46.
292 INDUSTRY NEWS, p.50.
293 ASBESTOS PRICES, p.54.
294 ASBESTOS PATENTS, p.56.

INTERNATIONAL ASBESTOS-CEMENT REVIEW, AC49, January 1968.
Kirchgasse 40, Zurich, Switzerland.

295 ASBESTOS-CEMENT NINETEENEIGHTYFOUR, p.4.
296 MULTI-STOREY HOUSING, BOGOTA, COLUMBIA, p.9.
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298 AN AGRICULTURAL REFRIGERATION PLANT, URUGUAY, p.13.
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317 CHURCH OF THE EVANGEL AT SILLIMAN UNIVERSITY,PHILIPPINES, p.52.
318 A FUNERAL CHAPEL IN LUUMAKI, FINLAND, p.53.
319 CHURCH OF SAN MARCO, ENVIGADO,ANTIOQUIA, COLUMBIA, p.53.