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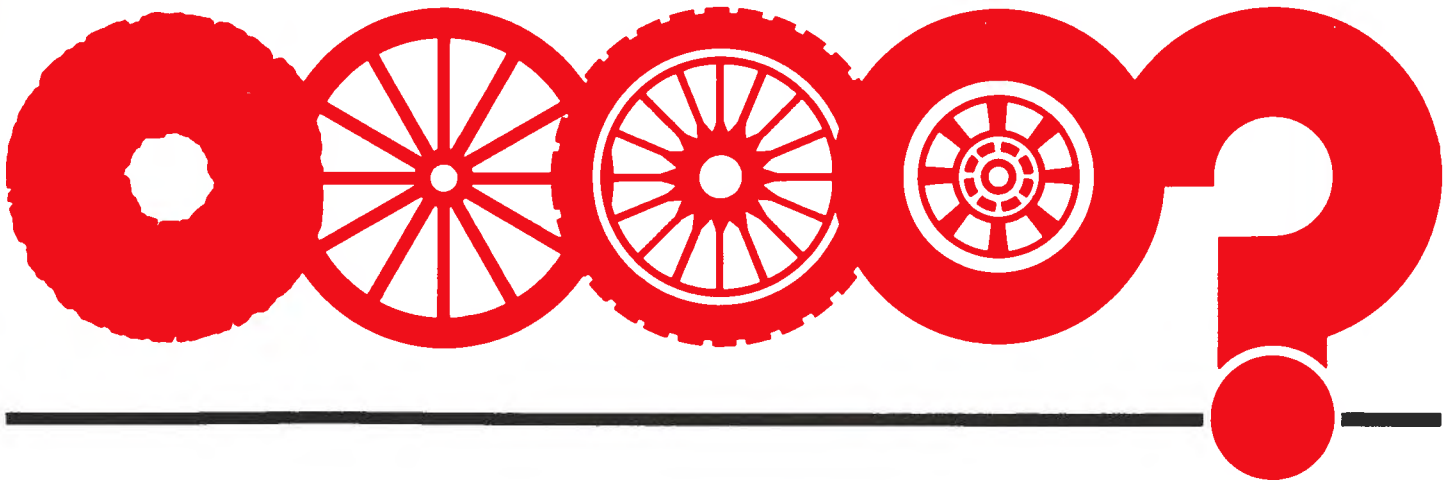
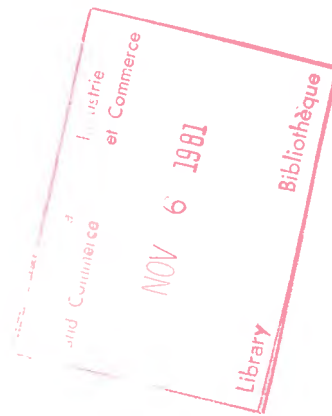
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# new products bulletin

Bulletin 310, November 1981

# bulletin de produits nouveaux

Bulletin 310, Novembre 1981





# new products bulletin

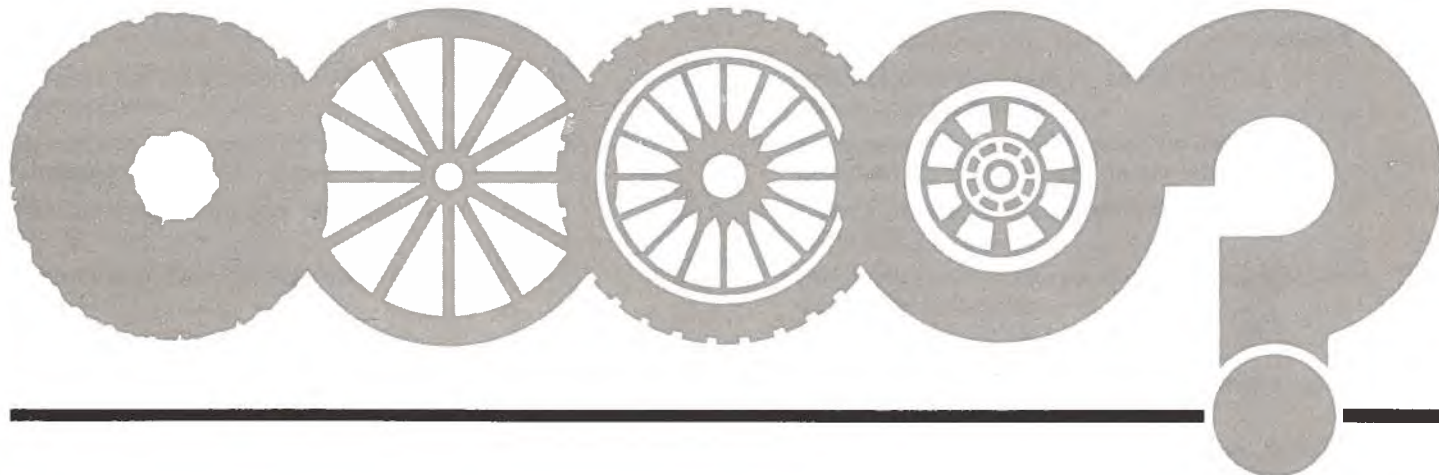
# bulletin de produits nouveaux

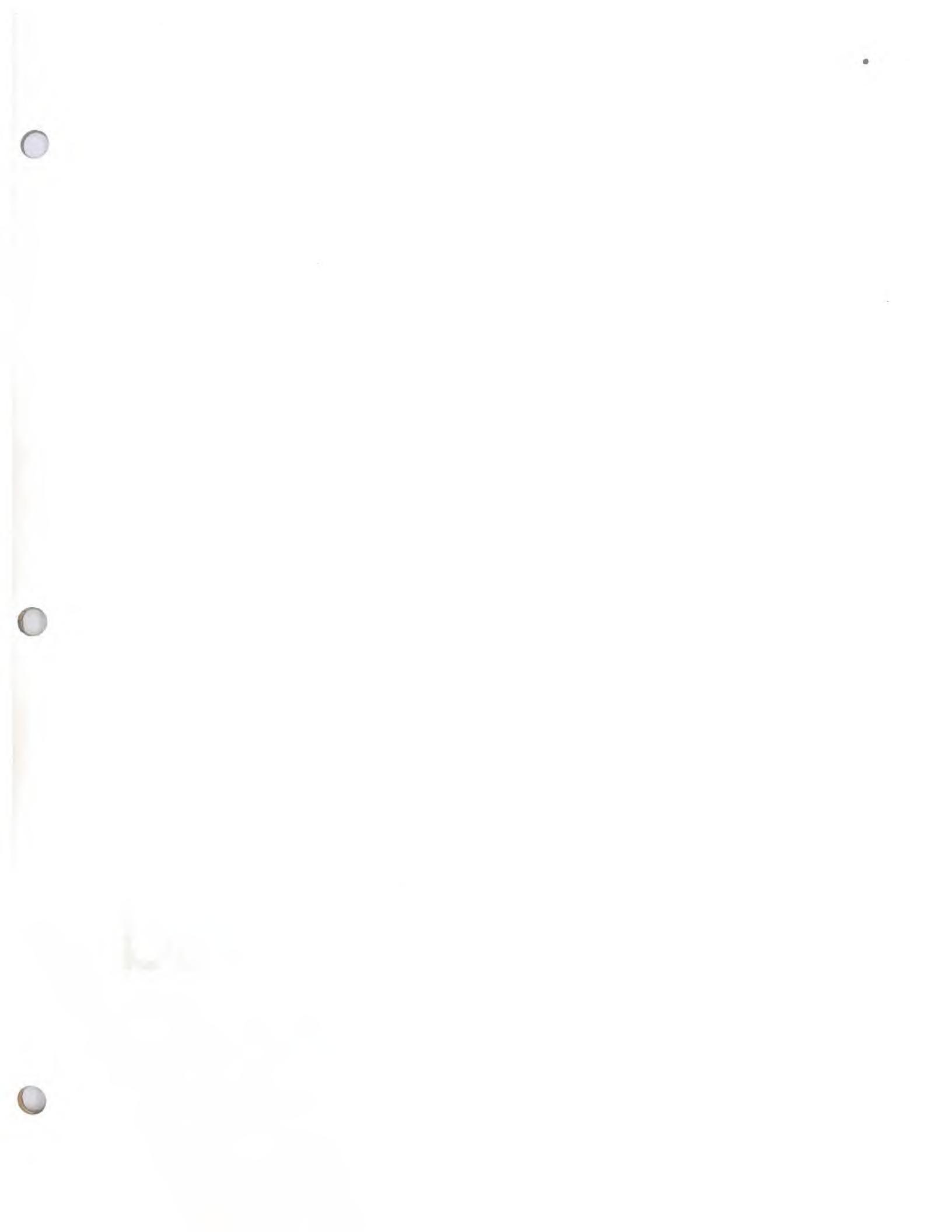
This monthly bulletin is published to inform Canadian industry of licensing and joint venture opportunities that may be investigated for the purpose of forming manufacturing affiliations. The Department cannot assume any responsibility for claims made or for transactions which ensue from the publication of any items in this bulletin. If you are interested in any of the proposals you should contact the correspondent identified with the item and send a copy of your initial correspondence to the Canadian Government Trade Commissioner responsible for the area at the address indicated, in order that he can provide appropriate assistance or commercial information.

The Licensing Opportunities Section (34/3) of the BUSINESS CENTRE of the Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5 (Telephone: (613) 995-5771) should be advised of any agreements concluded as a result of this publicity.

Publié tous les mois, le présent bulletin a pour objet d'informer l'industrie canadienne des occasions de fabrication sous licence et d'entreprises en participation qu'il est possible d'étudier aux fins de constituer des affiliations manufacturières. Le Ministère ne peut assumer aucune responsabilité à l'égard des réclamations ou transactions découlant de la publication d'articles dans le présent bulletin. Si l'une ou l'autre des propositions vous intéresse, auriez-vous l'obligeance de communiquer avec le correspondant et transmettre copie de votre premier échange de correspondance au délégué commercial du Gouvernement du Canada qui s'occupe de la région en cause, à l'adresse indiquée, afin qu'il puisse vous fournir l'aide ou les renseignements commerciaux pertinents.

Prière d'informer la Section des possibilités de licences (34/3), du CENTRE DES ENTREPRISES, ministère de l'Industrie et du Commerce, Ottawa (Ontario) K1A 0H5 (tél. (613) 995-5771), de toute entente intervenue à la suite de la présente publicité.





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Vêtements d'enfants
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Béton au polyester
Salle de bain modulaire
Tubes à rayons cathodiques
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Digester anaérobie à chauffage solaire
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## **Selected Licensing or Joint Venture Manufacturing Opportunities**

### **Hand Held Shear Vane Penetrometer/310**

This portable soil-mechanics instrument measures resistance to penetration and shear, in situ. Two separate measuring means record the maximum penetrating force and the maximum rotating force for each sample location. This compact tester is more versatile than previous devices. Write: Case 7367, Canadian Patents and Development Limited, 275 Slater Street, Ottawa, Canada K1A 0R3 and send a copy of your initial correspondence to Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

### **Derivatives of Chitin, Chitosan and other Polysaccharides with Industrial Applications/310**

These molecules can be chemically tailored to accomplish specific tasks including chelating metals, metal extraction, water purification, pharmaceutical formulations, cosmetics, chromatographic separation, enzyme immobilization, catalysis, viscofiers in the food, drug and oil drilling industries. Write: Case 7402, Canadian Patents and Development Limited, 275 Slater Street, Ottawa, Canada K1A 0R3 and send a copy of your initial correspondence to Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

### **ASTL-Modul Building System/310**

Austrian company is offering a Canadian firm the licensing rights to manufacture, and distribute in Canada and parts of the United States, its ASTL patented system of wood building components for walls, fences, parapets, etc., based on a modular concept. The system utilizes only four different elements to provide maximum flexibility for any required floor plan and allows erection in a do-it-yourself manner. Standard component dimensions for walls and parapets are 200 x 200 x 12 cm. The building elements consist of two flat boards, 2.5 cm thick, separated by wood spacers and filled with non-flammable polyurethane foam or rockwool insulation. It is claimed that three unskilled workers can erect a 100 square metre house in three days. Write: Innova-Wiener Innovationsgesellschaft mbH, Beatrixgasse 1, A-1030 Vienna, Austria and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Luegerring 10, 1010 Vienna, Austria.

## **Sélection d'occasions de fabrication sous licence ou d'entreprises en participation**

### **Pénétrromètre à ailette de cisaillement à main/310**

Cet instrument portatif de pédologie mesure in situ la résistance à la pénétration et au cisaillement. Pour chaque emplacement de l'échantillon, la force maximale de pénétration et la force maximale de rotation sont relevées par deux moyens distincts. Cet appareil est d'un emploi plus souple que les précédents. Écrire: Cas 7367, Société canadienne des brevets et d'exploitation limitée, 275, rue Slater, Ottawa (Canada) K1A 0R3 et faire parvenir une copie de votre correspondance initiale à la Section des possibilités de licences (34/3), Centre des entreprises, ministère de l'Industrie et du Commerce, Ottawa (Ontario) K1A 0H5.

### **Dérivés de la chitine, du chitosane et d'autres polysaccharides possédant des applications industrielles/310**

Ces molécules peuvent être façonnées de façon à exécuter des tâches bien particulières, dont chélation et extraction de métaux, purification de l'eau, fabrication de préparations pharmaceutiques et cosmétiques, séparation chromatographique, mobilisation enzymatique, catalyse et fabrication de viscosifiants utilisés dans les industries alimentaire, pharmaceutique et pétrolière. Écrire: Cas 7402, Société canadienne des brevets et d'exploitation limitée, 275, rue Slater, Ottawa (Canada) K1A 0R3 et faire parvenir une copie de votre correspondance initiale à la Section des possibilités de licences (34/3), Centre des entreprises, ministère de l'Industrie et du Commerce, Ottawa (Ontario) K1A 0H5.

### **Système de construction modulaire ASTL/310**

Une compagnie autrichienne offre à une firme canadienne les droits de fabrication et de commercialisation sous licence au Canada et dans certaines parties des États-Unis de son système breveté de construction ASTL en éléments de bois pour murs, clôtures, parapets, etc. basé sur la conception modulaire. Le système n'utilise que quatre éléments différents afin de permettre une possibilité maximale de variation pour toute sorte de plan d'étage et l'assemblage par des bricoleurs. Les éléments standard pour murs et parapets mesurent 200 x 200 x 12 cm. Les éléments des parois sont des planches de 2.5 cm d'épaisseur, séparées par des cales de bois et entre lesquelles on place un isolant de mousse de polyuréthane ou de laine minérale. Trois travailleurs inexpérimentés devraient pouvoir construire une maison de 100 mètres carrés en trois jours. Écrire à: Innova-Wiener Innovationsgesellschaft mbH, Beatrixgasse 1, A-1030 Vienne (Autriche) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, Luegerring 10, 1010 Vienne (Autriche).

### Children's Clothing/310

United States based manufacturer of designer children's clothing, "Today's Child", would like to sell, to an established Canadian children's wear manufacturer, the exclusive right to their name and the right to manufacture and sell "Today's" clothing in Canada. Other marketing areas open to negotiation are Europe, the United Kingdom, etc. Produced is a full line of garments in four size ranges: infants, toddler, 4 to 6X and 7 to 14. The line is currently sold across the United States by large department stores including Macy's, I. Magnin's, Saks, Bloomingdales, Bonwit Teller and Emporium Capwell. The designer, Carol Mercado, and her staff would furnish continuous original designs, graded sets, first samples, merchandising, fabric selection, and promotional help including designer personal appearances to the Canadian firm for the duration of the licensing agreement in exchange for a flat sum initially and royalties on the sales in the selling territory negotiated. Write: Mr. Jayme A. Matson, Export Analyst, L & M Ventures, 175 Upper Terrace, San Francisco, California 94117 and send a copy of your initial correspondence to Canadian Consulate General, One Maritime Plaza, Alcoa Building, Suite 1100, Golden Gateway Center, San Francisco, California 94111, U.S.A.

### Solar Collectors/310

A Swiss firm is offering manufacturing and sales rights in Canada and possibly all of North America for its system of solar collectors. The main feature is that they are covered with a special film rather than glass. This system is suitable for use with air and water collectors and has other applications. For example, the system may be used in industrial windows eliminating the danger of broken glass, translucent insulating roofs, greenhouses, insulators etc. The licence covers complete solar heating systems, including storage and auxiliary energy developed and tested in Switzerland, together with all current and future advances in the systems. Write to: Kohli Ener-Nat S A, Rue du Midi, CH 1880 — Bex/VD, Switzerland and send a copy of your initial correspondence to Commercial Office Division, Canadian Embassy, Kirchenfeldstrasse 88, 3005 Berne, Switzerland.

### Polyester Bonded Concrete/310

Liechtenstein organization offers know-how, layout plan and engineering services to install a manufacturing plant for improved polyester bonded concrete in which no cement and water are used. Sand and gravel are bonded with polyester or other resins. Up to 20 per cent of the expensive binding agent is saved over conventional polyester bonded concrete. An improved molding procedure allows reduced wall thicknesses, better surface quality and rapid cycle time. Applications: for drain gutters, sewer sections, manhole shafts in duct construction; kerbs, concave mouldings in road building; feeding troughs in agriculture; etc., wherever high strength combined with chemical resistance is required. Investment for a complete production line is in the range of U.S. \$1 million, or less if only improvement of the existing line is needed. (See illustration

### Vêtements d'enfants/310

Un fabricant américain de vêtements d'enfants, "Today's Child", désire vendre à une entreprise canadienne établie dans le même domaine les droits exclusifs d'utiliser son nom ainsi que de fabriquer et de vendre les vêtements "Today's" au Canada. L'Europe continentale, le Royaume-Uni, etc., sont également des secteurs ouverts à des négociations analogues. Le produit consiste en une gamme complète de vêtements de quatre catégories: bas âge, tout-petits, enfants de 4 à 6 ans et de 7 à 14 ans. A l'heure actuelle, ces vêtements sont vendus aux États-Unis par les grands magasins, notamment Macy's, I. Magnin's, Saks, Bloomingdales, Bonwit Teller et Emporium Capwell. La modéliste Carol Mercado, assistée de son personnel, fournirait les patrons originaux, les ensembles assortis, les échantillons, le choix des tissus ainsi que l'aide pour la promotion des ventes, y compris des visites publicitaires, pendant toute la durée du contrat de licence, contre un prix initial fixe puis des redevances sur les ventes réalisées dans le secteur donné. Écrire à: M. Jayme A. Matson, Export Analyst, L & W Ventures, 175 Upper Terrace, San Francisco (Californie) 94117 et faire parvenir une copie de votre correspondance initiale au Consulat général du Canada, One Maritime Plaza, Alcoa Building, Suite 1100, Golden Gateway Center, San Francisco (Californie) 94111 (É.-U.).

### Capteurs solaires/310

Une société suisse offre pour le Canada les droits de manufacture et de vente et éventuellement à toute l'Amérique du Nord et du Sud de son système de capteurs solaires ayant pour particularité d'être recouverts de films spéciaux remplaçant le vitrage. Ce procédé convient pour capteurs à air, à eau, ainsi que pour d'autres applications, par exemples: vitrages d'usines (pas de bris de verre) toitures translucides isolantes, serres, isolantes, etc. La licence comprend les procédés complets des systèmes de chauffage solaire, avec stockage et énergie d'appoint, développés et éprouvés en Suisse, ainsi que tous développements en cours ou futurs. Écrire à: Kohli Ener-Nat S.A., Rue du Midi, CH 1880 — Bex/VD (Suisse) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, Kirchenfeldstrasse 88, 3005 Berne (Suisse).

### Béton au polyester/310

Un organisme du Liechtenstein offre le know-how technique, le plan d'aménagement et les services d'ingénierie pour l'implantation d'une usine de fabrication de béton au polyester amélioré ne contenant ni ciment ni eau. Le sable et le gravier sont liés par du polyester ou d'autres résines. On peut économiser jusqu'à 20 pour cent de liant coûteux par rapport au béton lié au polyester conventionnel. Un procédé de coffrage amélioré permet de réduire l'épaisseur des pavés, d'améliorer la qualité des surfaces et de raccourcir la durée totale du cycle. Applications: caniveaux, canalisations d'égout, trous d'homme; bordures et coffrages concaves pour chaussées; mangeoires agricoles, etc., partout où une forte résistance mécanique et chimique est nécessaire. L'investissement pour une installation de production complète est d'environ \$1 million US ou

page 44.) Write: Technolizenz Establishment, Austrasse 4, FL-9490 Vaduz, Liechtenstein and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Luegerring 10, 1010 Vienna, Austria.

### **Modular Bathroom/310**

Liechtenstein organization offers to license the manufacture, distribution and export of a modular bathroom concept to a Canadian company. The construction is of glass fibre reinforced polyester. The production of only 12 small units offers the choice of 25 different floor plans. The system avoids sharp edges or corners and joints in them and provides maximum hygiene. The units are abrasion, scuff and impact resistant and the surface is resistant to the various chemical used in toiletries and cosmetics, including acetone and hospital disinfectants. The system offers just one day installation by two people in both old and new buildings. Sound insulation is good, the sound of running water in pipes, bath and shower being kept to a minimum by the use of appropriately dimensioned pipes of noise reducing shape which have soundproof fittings. Write: Technolizenz Establishment, Austrasse 4, FL-9490 Vaduz, Liechtenstein and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Luegerring 10, 1010 Vienna, Austria.

### **Cathode Ray Tubes/310**

A British company offers a licensing arrangement to manufacture, with world-wide marketing rights, products that include a surface coated with a luminescent phosphor. On the surface is inscribed (in dot matrix) a message that will form a sign when the phosphor is activated by an electron beam or infrared radiation. Manufacturers of fluorescent lamps or discharge tubes can license the technology to produce new types of illuminated signs. Write: Dr. G.O. Okikiolu, Okikiolu Scientific and Industrial Company, Flat No. 160, 19 Newport Court, London WC2H 7JS, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

### **Hitch Pin/310**

American inventor offers a Canadian company the manufacturing and unrestricted marketing rights to his safety draw pin which is currently licensed to Guardian Security for commercial production in the United States. The pin is made of forged steel or bar stock, with an open handle section at the top. The pin is placed through the holes of the tongue and draw bar and to secure the device to the tractor, an L-shaped pin is placed over the protruding portion of the pin and secured to the handle by a cotter pin. This hitch

moins s'il suffit de transformer une installation existante. (Voir l'illustration page 44.) Écrire à: Technolizenz Establishment, Austrasse 4, FL-9490 Vaduz (Liechtenstein) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, Luegerring 10, 1010 Vienne (Autriche).

### **Salle de bain modulaire/310**

Un organisme du Liechtenstein offre à une compagnie canadienne les droits de fabrication, de commercialisation et d'exportation sous licence d'une salle de bain modulaire. Ces modules sont en polyester renforcé de fibres de verre. La production de seulement 12 petits modules offre le choix de 25 configurations différentes. Ce système élimine les arêtes ou les coins anguleux et les problèmes de joints et offre une hygiène maximale. Le matériau est à l'épreuve des éraflures, de l'abrasion et des chocs; la surface est résistante aux divers produits chimiques de nettoyage et de beauté, y compris l'acétone et les désinfectants d'hôpitaux. Ce système permet une installation en une seule journée par deux personnes dans les bâtiments neufs ou anciens. L'isolation acoustique est bonne, le bruit de l'eau coulant dans les tuyaux, la baignoire et la douche étant réduit au minimum par l'utilisation d'une tuyauterie bien dimensionnée, dont la forme réduit les bruits et qui comporte des raccords insonores. Écrire à: Technolizenz Establishment, Austrasse 4, FL-9490 Vaduz (Liechtenstein) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, Luegerring 10, 1010 Vienne (Autriche).

### **Tubes à rayons cathodiques/310**

Une société britannique offre une entente relative à la licence de fabrication, y compris les droits mondiaux de mise en marché, de dispositifs formés en partie d'une surface recouverte d'une couche de luminophore. Des caractères ou symboles sont inscrits sur cette surface (sous la forme de matrices de points) et un message apparaît lorsque le luminophore est excité au moyen d'un faisceau d'électrons ou d'un rayonnement infra-rouge. Les fabricants de lampes fluorescentes ou de tubes à décharge peuvent obtenir une licence relative à cette technique en vue de fabriquer de nouveaux types de panneaux lumineux. Écrire à: Dr. G.O. Okikiolu, Okikiolu Scientific and Industrial Company, Flat n° 160, 19 Newport Court, Londres WC2H 7JS (Angleterre) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Haut-commissariat du Canada, 1 Grosvenor Square, Londres W1X 0AB (Angleterre).

### **Goupille de dispositif d'accouplement/310**

Un inventeur américain offre à une compagnie canadienne d'acquiescer les droits de fabrication et de commercialisation de sa goupille de dispositif d'accouplement dont la production commerciale est actuellement autorisée aux États-Unis par la Guardian Security. La goupille en acier forgé est munie d'une poignée à son extrémité supérieure. Elle s'insère dans les trous du dispositif d'accouplement et est maintenue en place par une tige en L; celle-ci coulisse sur l'extrémité inférieure de la goupille en saillie et est retenue

pin assures a safe, secure attachment of farm equipment to a tractor drawbar thus preventing serious equipment damage, work stoppage or injury to the operator through disconnection or popping out of the pin by jostling, scraping of the pin assembly across the ground or hitting another object, etc. (See illustration page 44.) Write: Mr. Earl E. Rishell, Licensing Director, Invention Marketing Incorporated, Triangle Building, 701 Smithfield Street, Pittsburgh, Pennsylvania 15222 and send a copy of your initial correspondence to Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113, U.S.A.

### **Solar Heated Anaerobic Digester/310**

Canadian inventor offers licensing rights in Canada for a solar heated anaerobic digester adapted to decompose organic material to produce methane gas and a liquid fertilizer. The sealed anaerobic digester is wrapped with a layer of heat absorptive material followed by a series of abutting removable panels of insulative material. Insulative panels may be temporarily removed to expose the heat absorptive material to solar radiation and may be replaced when the solar radiation diminishes. A layer of transparent material wrapped in outwardly spaced relation around the insulating panels is capable of transmitting solar radiation while providing protection against environmental elements. Additional heating means extending into the digester provide auxiliary heat as required. This digester invention is patented in Canada and the United States. Write: Mr. Donald H. Rhoades, R&L Bio Gas Ltd., P.O. Box 312, High Level, Alberta T0H 1Z0 and send a copy of your initial correspondence to the Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

### **Interior Design/310**

A well known German interior and furniture design firm and its manufacturing associate is looking for a Canadian company interested in a licensing or possible joint venture arrangement for North America for the German company's lines which are already well established in Europe. The associate company is a long established and active manufacturer of booths for shows and exhibits. They offer full service for clients, from planning to completion including graphical equipment, decoration, screen printing, hotel reservations etc. The Associate wishes to provide a world wide service and would like to establish a North American connection through Canada. Write: Atelier Klein & Stoll, Mittelstr. 11, 5000 Köln 1, West Germany and send a copy of your initial correspondence to Canadian Consulate General, Immermannstrasse 3, 4 Duesseldorf, West Germany.

### **Mechanical Water Maker/310**

A Spanish company is seeking a Canadian company on a possible joint venture basis to do the engineering work for

à la poignée de cette dernière par une petite goupille fendue. L'invention, qui retient le dispositif d'accouplement en toute sécurité, ne peut se détacher sous l'effet des vibrations ni se briser si le dispositif heurte le sol ou d'autres obstacles; elle met donc un terme aux désaccouplements accidentels et à leurs conséquences néfastes (blessures, pertes de temps, endommagement du matériel). (Voir l'illustration page 44.) Écrire à: M. Earl E. Rishell, Licensing Director, Invention Marketing Incorporated, Triangle Building, 701 Smithfield Street, Pittsburgh, Pennsylvania 15222 et faire parvenir une copie de votre correspondance initiale au Consulat du Canada, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113 (É.-U.).

### **Digester anaérobie à chauffage solaire/310**

Un inventeur canadien offre les droits d'exploitation sous licence au Canada d'un digesteur anaérobie à chauffage solaire adapté de façon à décomposer les matières organiques en gaz méthane et en fertilisant liquide. Le digesteur anaérobie scellé est entouré d'une gaine de matériau absorbant la chaleur elle-même recouverte d'une série de panneaux emboîtés isolants amovibles. Les panneaux isolants peuvent être enlevés pour exposer le matériau absorbant la chaleur au rayonnement solaire et ensuite remis en place quand l'importance du rayonnement diminue. Une couche de matériau transparent enveloppant, mais ne leur touchant pas, les panneaux isolants laissent passer le rayonnement solaire tout en protégeant des éléments. Un dispositif de chauffage additionnel pénétrant dans le digesteur permet de fournir de la chaleur supplémentaire selon les besoins. Cette invention est brevetée au Canada et aux États-Unis. Écrire à: M. Donald H. Rhoades, R&L Bio Gas Ltd., P.O. Box 312, High Level (Alberta) T0H 1Z0 et faire parvenir une copie de votre correspondance initiale à la Section des possibilités de licences (34/3), Centre des entreprises, ministère de l'Industrie et du Commerce, Ottawa (Ontario), K1A 0H5.

### **Décoration intérieure/310**

Une entreprise allemande réputée de décoration intérieure et de création de meubles et son fabricant associé offrent à une compagnie canadienne une coparticipation à son entreprise ou des droits de licence en Amérique du Nord pour leurs séries allemandes qui sont déjà bien établies en Europe. La compagnie associée est un fabricant actif, établi depuis longtemps, de kiosques d'exposition. Ils offrent un service-clientèle complet, allant de la planification à la réalisation finale, y compris le matériel graphique, la décoration, la sérigraphie, la réservation de chambres d'hôtels, etc. La compagnie associée désire assurer un service mondial et voudrait établir une succursale au Canada qui desservirait l'Amérique du Nord. Écrire à: Atelier Klein & Stoll, Mittelstr. 11, 5000 Köln 1 (Allemagne de l'Ouest) et faire parvenir une copie de votre correspondance initiale au Consulat général du Canada, Immermannstrasse 3, 4 Duesseldorf (Allemagne de l'Ouest).

### **Appareil de production d'eau/310**

Une société espagnole recherche un partenaire canadien pour effectuer les travaux de génie en vue de la construc-

the construction of mechanical water making plants in Canada, Spain and Latin America. The project encompasses a method and means whereby potable water may be obtained economically by condensing moisture from the atmosphere in dry places, such as a desert, away from the proximity of large bodies of water. The evaporator of a conventional refrigeration system or the cold sides of thermoelectric cooling modules are used as a source of cold. The vapour chamber, where condensation takes place, is lined with a promoter to prevent the surface from getting wet in order to prevent condensation. A fan moves a volume of air through the vapour chamber at a velocity which sets up turbulent fluid flow in the vapour chamber. The Canadian company must be an engineering firm having sufficient capital to produce the necessary prototype and capable of working with Spanish speaking peoples. Write: Mr. James M. Overton, CIDMAPS Corporation, Apartado 255, Alcalá de Henares, Madrid, Spain and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Apartado 117, 35, Nunez de Balboa, Madrid, Spain.

### **Lock Guard/310**

American inventor offers a Canadian company the manufacturing and unrestricted marketing rights to a "LOC-GARD" security device which provides a highly effective barrier against plastic cards, thin steel rulers, or knives used to pry open conventional door locks. "LOC-GARD" is easily installed and is produced of hardened steel. Suitable for residential or commercial use, it can be installed merely by hammering it into place along the side of the door jamb. Write: Mr. Earl E. Rishell, Licensing Director, Invention Marketing Incorporated, Triangle Building, 701 Smithfield Street, Pittsburgh, Pennsylvania 15222 and send a copy of your initial correspondence to Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113, U.S.A.

### **Method for Processing Domestic Solid Wastes/310**

Belgian inventor offers licensing rights in Canada on the following three methods of processing domestic solid wastes to collect the maximum amount of methane gas and at the same time obtain a large quantity of fermented compost: 1) by burying the wastes in pits (cells) and collecting methane gas; 2) by using pits with the possibility of separating the inert materials automatically or semi-automatically; and, 3) by combining with the second system a type of factory equipped with one or more reactors by which the feeding of the reactors, fermentation and removal of the fermented compost are automatic. System one is to be considered when there is a fairly vast piece of land available and a need to dispose of domestic solid wastes in a non-polluting manner. System two yields maximum results with minimum investment and can become operative in a very short period of time. It is more labour-intensive than the preceding system. System three is not labour-intensive but it requires a greater investment than the other two systems. Several possibilities exist for disposing of the rich and odorless fermented compost; it can be supplied immediately to agriculture or it can be mixed with coal dust, straw or any other inflammable material for

tion d'appareils de production d'eau au Canada, en Espagne et en Amérique latine. L'appareil en question sert à condenser économiquement la vapeur d'eau atmosphérique dans les endroits secs comme les déserts et les endroits éloignés des sources d'eau potable. Un évaporateur de circuit de réfrigération classique ou les parois froides d'un module de réfrigération thermo-électrique peuvent être utilisés comme source de froid. La chambre de vapeur (condenseur) est garnie d'un promoteur qui l'empêche de se mouiller et qui facilite l'égouttement. Un ventilateur fait circuler l'air à une vitesse telle qu'il se crée une turbulence dans la chambre. La société canadienne doit être en mesure de fabriquer un prototype de l'appareil et de communiquer avec des ingénieurs de langue espagnole. Écrire à: M. James M. Overton, CIDMAPS Corporation, Apartado 255, Alcalá de Henares, Madrid (Espagne) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, Apartado 117, 35, Nunez de Balboa, Madrid (Espagne).

### **Cache-pêne/310**

Un inventeur américain offre à une compagnie canadienne d'acquérir les droits de fabrication et de commercialisation de son dispositif de sécurité "LOC GARD" (cache-pêne), invention faisant obstacle aux cartes de plastique, aux règles métalliques minces et aux couteaux utilisés pour déjouer le pêne d'une serrure classique. Le dispositif se fixe facilement aux cadres de porte des immeubles résidentiels et commerciaux avec un marteau. Écrire à: M. Earl E. Rishell, Licensing Director, Invention Marketing Incorporated, Triangle Building, 701 Smithfield Street, Pittsburgh, Pennsylvania 15222 et faire parvenir une copie de votre correspondance initiale au Consulat du Canada, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113 (É.-U.).

### **Méthode de traitement des déchets solides domestiques/310**

Un inventeur belge offre les droits de licence au Canada pour les trois méthodes suivantes de traitement des déchets solides domestiques permettant d'en tirer la quantité maximale de méthane et de produire du même coup une grande quantité de compost fermenté: 1) en enterrant les déchets dans des puits (cellules) et en récupérant le méthane; 2) en utilisant des puits offrant la possibilité de séparer les matières inertes automatiquement; et, 3) en combinant au deuxième système une sorte d'usine équipée d'un ou plusieurs réacteurs. L'alimentation des réacteurs, la fermentation et l'enlèvement du compost fermenté sont automatiques. Le premier système est à prendre en considération quand on a un terrain assez vaste à sa disposition et qu'on veut évacuer les déchets d'une manière non polluante. Le deuxième système donne un rendement optimal avec un minimum d'investissement et peut être mis en service en très peu de temps. Ce système exige une utilisation plus intensive de la main-d'oeuvre que le système précédant. Le troisième système demande une utilisation moins intensive de la main-d'oeuvre mais nécessite de plus grands investissements que les deux autres systèmes. Il existe plusieurs possibilités pour l'évacuation

the manufacture of briquettes that can be used in industrial furnaces. A patent application is pending in Belgium. The systems are claimed to be economical, hygienic and non-polluting. Write: Mr. P.J. Hendriks, Prins Boudewijnlaan, 321, 2520 Edegem, Belgium and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, rue de Loosum, 6, B-1000 Brussels, Belgium.

### **Protective Gun Sling/310**

Canadian inventor offers for sale or license the Canadian production rights and Canadian and American marketing rights to his patented rubber gun sling, being a molded single rubber sling that covers both the stock and nozzle ends with an interconnecting integral strap, flexible enough for repeated installation and removal. Write: Mr. Frank A. Shindelka, 304 - 367 Woodbridge Way, Woodbridge Manor, Sherwood Park, Alberta T8A 4G3 and send a copy of your initial correspondence to the Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

du compost fermenté riche et inodore: il peut être fourni immédiatement à l'agriculture ou mélangé à de la pousière de charbon, de la paille ou d'autres matières inflammables pour la fabrication de briquettes qui peuvent être utilisées dans des fours industriels. Un brevet est en instance d'acceptation en Belgique. Ces systèmes sont économiques, hygiéniques et non polluants. Écrire à: M. P.J. Hendriks, Prins Boudewijnlaan, 321, 2520 Edegem (Belgique) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, rue de Loosum 6, B-1000 Bruxelles (Belgique).

### **Bretelle protectrice d'arme à feu/310**

Un inventeur canadien offre ses droits de fabrication sous licence au Canada et ses droits de commercialisation au Canada et aux États-Unis de sa bretelle brevetée en caoutchouc pour armes à feu. La bretelle est constituée d'une courroie de caoutchouc d'une seule pièce recouvrant l'extrémité du canon et de la crosse et suffisamment souple pour résister à des montages et des démontages répétés. Écrire à: M. Frank A. Shindelka, 304 - 367 Woodbridge Way, Woodbridge Manor, Sherwood Park, Alberta T8A 4G3 et faire parvenir une copie de votre correspondance initiale à la Section des possibilités de licences (34/3), Centre des entreprises, ministère de l'Industrie et du Commerce, Ottawa (Ontario) K1A 0H5.

## Canadian Patents Available for Licensing or Sale in Canada Issued September 1981

## Liste des brevets canadiens disponibles pour octroi de licence ou vente au Canada délivrés en septembre 1981

### Note:

Résumés of the following Canadian Patents are published in the language of application, English or French.

### Note:

Des résumés des brevets canadiens ci-joints sont publiés dans la langue de la demande de brevet, en anglais ou en français.

### Recovery of Silver, Copper and Zinc from Partially Roasted Pyrite Concentrate by Ferric Sulphate Leaching/310

### Récupération par lessivage au sulfate ferrique de l'argent, du cuivre et du zinc dans un concentré de pyrite partiellement grillé/310

A process for treating a pyrite concentrate containing silver, copper and zinc to recover the metals contained therein is disclosed. The process includes the partial roasting of the concentrate to open the pyrite matrix to solution penetration followed by hydro-metallurgical steps, including ferric sulphate leaching, reduction leaching, solid-liquid separation and metal extraction steps, to recover the copper and zinc separately and silver in concentrated form. Write: **PATENT 1,107,973**, Texasgulf Inc., High Ridge Park, Stamford, Connecticut 06904 and send a copy of your initial correspondence to Canadian Consulate General, 1251 Avenue of the Americas, New York City, N.Y. 10020, U.S.A.

### Preparation and Purification of Citrovorum Factor/310

### Obtention et purification de la leucovorine/310

Improved methods for the preparation and purification of citrovorum factor are disclosed. The method includes improved procedures for hydrogenation of 10-formylfolic acid as well as for the reduction of folic acid. Also disclosed are improved procedures for opening of the imidazoline ring, and a non-chromatographic method for the purification of crude samples of citrovorum factor. Write: **PATENT 1,108,134**, Mr. George Kudravetz, Product Manager, U.S. Department of Commerce, National Technical Information Services, 5285 Port Royal Road, Springfield, Virginia 22161 and send a copy of your initial correspondence to Canadian Consulate, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

### Process for Biological Purification of Liquid Wastes/310

### Méthode d'épuration biologique des déchets liquides/310

An improved process for biological purification of liquid wastes is provided. The improvement is obtained by utilizing anaerobic bacteria in the presence of extra-cellular enzymes produced by Gram-positive bacteria and separated from said Gram-positive bacteria and the intra-cellular enzymes contained therein. As compared to the current technique the anaerobic process according to the invention may produce only 0.2% of sludge, while the retention time may be only 25% of the time currently used. Write: **PATENT 1,108,318**, Refaat M. El-Sayed, Näsbydalsvägen 14, 183 31 Täby, Sweden and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

### Method of Eliminating Surfactant Influence in Liquid Extraction Systems/310

### Méthode pour supprimer les effets tensioactifs dans l'extraction des liquides et leur séparation/310

The invention relates to a method wherein dissolved materials are removed from an aqueous solution by means of a liquid extraction comprising an extraction step and a re-extraction step, the essential features of the method being that the extraction step is performed in the presence of surfactants and that the surfactants are removed in connection with the re-extraction step. Write: **PATENT 1,108,320**, Svenska Rayon Aktiebolaget, Älvenäs, 660 50 Vålberg, Sweden and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

**Process for the Suspension Smelting of Sulfide Concentrates/310**

**Procédé pour la fusion en suspension de concentrés de sulfure/310**

A process for the suspension smelting of sulfide concentrates by causing a suspension flowing downwards in a suspension reaction zone to impinge against the surface of a melt below the suspension reaction zone in order to unload the solid and molten particles of the suspension into the melt and by causing the gases to flow further in the suspension reaction zone countercurrently in relation to the suspension in order to discharge the gases from the upper section of the suspension reaction zone, in which sulfide concentrate and oxygen or oxygen-enriched air are fed into the suspension reaction zone symmetrically and in the form of so dense a suspension spray that the iron oxide of the high-temperature suspension is in a molten state and absorbs the free oxygen present in the suspension before the suspension, at a temperature of at least 1400°C, unloads into the melt, the heat is recovered indirectly in the suspension reaction zone from the gases rising symmetrically and smoothly around the suspension, and the melt is fed from the suspension reaction zone into a separate melt reaction space. Write: **PATENT 1,108,411**, Outokumpu Oy, Toolonkatu 4, P.O. Box 280, SF-00101 Helsinki 10, Finland and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Pohjois Esplanadi 25B, 00100 Helsinki 10, Finland.

**Echometre for Localising Defects Affecting Light Conductors/310**

**Échomètre pour la localisation de défauts affectant les conducteurs de lumière/310**

Échomètre permettant la transposition d'un signal optique dans la bande des ondes centimétriques ou décimétriques. Le signal d'exploration et l'oscillation locale sont obtenus à partir d'un seul oscillateur laser. Le signal d'exploration ainsi que l'oscillateur local sont modulés à des fréquences centimétriques ou décimétriques détectées par mélange du signal écho et de l'oscillation locale dans une photodiode. Applications — Dispositif de modulation de la lumière. Écrire à: **BREVET 1,108,431**, Câbles de Lyon (Les), 170, avenue Jean Jaurès, 69353 Lyon, Cédex 2, France et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, 35, avenue Montaigne, 75008 Paris, France.

**Ventilator and Windows for Vehicles/310**

**Dispositifs de ventilation et fenêtres pour véhicules/310**

In a coach ventilator of the kind in which a panel is supported by four arm assemblies so that the ventilator can be adjusted at either or both sides or ends to bring the panel into one of four inclined positions or into a position parallel to and spaced from the closed position, the arms 16 are connected to the frame 12 of the panel 14 by a headed stud 17 with a pin 32 projecting through a transverse hole 23. Means are provided for withdrawing the pins 22 simultaneously to enable the panel to be removed in an emergency. Write: **PATENT 1,108,460**, Britax Weathershields Limited, 151 Bishop Street, Birmingham B5 7EH, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

**High Energy Transfer Ball Mill/310**

**Dispositif communicateur d'énergie oscillatoire sur broyeur à boulets/310**

A mechanical oscillator is connected by an elongated oscillation conductor to a ball chamber containing the material to be milled, which oscillation conductor is tuned to transfer the maximum oscillation energy to the ball chamber by selection of the length, section, and material thereof. Write: **PATENT 1,108,574**, Henry North, R.R. 14, Thunder Bay, Ontario P7B 5E5 and send a copy of your initial correspondence to the Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

**Auto-Adaptive Equalizer/310**

**Égaliseur autoadaptatif/310**

Cet égaliseur autoadaptatif pour voie de transmission fonctionne à l'aide d'un signal d'asservissement de forme connue, ajouté à l'émission au signal utile. Il comporte essentiellement, un générateur local engendrant un signal d'asservissement identique à celui émis, en phase avec celui reçu par la voie de transmission, un circuit de filtrage isolant dans le signal reçu par la voie de transmission la composante due au signal d'asservissement, un filtre transversal non récursif autoadaptatif synthétisant la transmittance inverse de la voie de transmission à partir de la composante précitée et du signal d'asservissement engendrée localement et un autre filtre transversal non récursif ayant même structure et même coefficients de pondération que le précédent, recevant d'un circuit soustracteur la composante du signal délivré par la voie de transmission qui est due au signal utile et effectuant l'égalisation proprement dite. Écrire à: **BREVET 1,108,707**, Compagnie Industrielle des Télécommunications Cit-Alcatel, 12, rue de la Baume, 75008 Paris, France et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, 35, avenue Montaigne, 75008 Paris, France.

**Tunnel Lining, Segment Therefore and Method of Lining a Tunnel/310**

**Chemisage de parois de tunnels, segment de chemisage et méthode connexe/310**

A tunnel lining comprises a plurality of arcuate segments connected to one another by connecting elements. Each connecting element protrudes from one segment and engages in a recess defined by an adjacent segment. Each recess is considerably larger than the connecting element and contains means for clamping the connecting element to one wall of the recess. Write: **PATENT 1,108,875**, Sheridan Contractors (Engineering) Limited, Boss House, Belmont Row, Birmingham, West Midlands, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

**Emergency Belt/310**

**Ceinture de sécurité/310**

An emergency belt comprises an elongate belt of a solid resilient material, such as neoprene, with a circular cross section. A screw hook is threadedly received within each end of the belt for connecting the ends of the belt and forming a continuous belt. Write: **PATENT 1,108,890**, Derek D. Lynn, R.R. 2, Nanaimo, B.C. V9R 5K2 and send a copy of your initial correspondence to the Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

**Window with Internal Retractable Insulating Blind/310**

**Vitrage à sotre isolant interne rétractile/310**

A window comprising a frame defining a window opening. The opening is closed by two spaced apart glass pane closures. A space is provided between the pane closure and a displaceable thermal insulating member is secured to actuable support means whereby to displace the insulating member in the space between the glass pane closures. The thermal insulating member is formed by a plurality of elongated insulated slats interconnected adjacent one another in parallel relationship and displaceable in a common plane between the glass pane closures. Each one of the slats is formed by a hollow elongated tube member defining opposed elongated side walls and top and bottom walls. A thermal insulating material is disposed in the hollow tube member. Write: **PATENT 1,108,934**, Guy Luydlin, 1988 des Sorbiers, St. Bruno, Québec J3V 4N5 or Rosa, Jean, Bousquet, 47140 Penne d'Agenais, France and send a copy of your initial correspondence to the Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

**Solvent Recovery Process for Processing of Hydrocarbons/310**

**Méthode de récupération des solvants pour le traitement des hydrocarbures/310**

A solvent recovery portion of a solvent refining plant for producing oil products such as lubricating oils from a crude source of hydrocarbons such as petroleum hydrocarbons wherein there are provided at least three continuous flash stages or zones for which each successive stage or zone operates at pressure and temperature levels higher than the preceding one, the vapor from any successive stage or zone being employed as the heating medium in the preceding one to effect the vaporization in said preceding stage or zone. Write: **PATENT 1,109,014**, Lummus Company (The), 1515 Broad Street, Bloomfield, New Jersey and send a copy of your initial correspondence to Canadian Consulate General, 1251 Avenue of the Americas, New York, N.Y. 10020, U.S.A.

**Devices for Handling a Person on a Base/310**

**Dispositif de soulèvement et de transport d'une personne couchée/310**

Devices for handling persons on a base, such as a bed, operating table or the like and having a pair of flat, board-shaped arms adapted for endwise manual insertion between the base and the person. Each arm is provided with a harness for securing the person thereto. An elongate connector is mounted at ends opposite those designed for manual insertion and permits displacement of the arms thereon. Lifting of the elongate connector causes pivoting of the arms about a pivotal axis at their manually inserted ends. Write: **PATENT 1,109,016**, Kjell Fossekollen Røisaeth, 5250 Lonevag, Norway and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Postuttak, Oslo 1, Norway.

**Sinker Drill/310**

**Tige de forage à marteau et pompe de fonçage/310**

A down-the-hole rock drill including a drill bit provided at the lower end of a drill rod, which is rotatably driven by an above-the-ground motor. To increase the drilling efficiency and facilitate drilling of large-diameter holes a machine casing is positioned between the drill rod and the drill bit, said casing enclosing a hydraulic pump which is rotatably driven by the drill rod. The hydraulic pump delivers pressurized liquid to and drives the percussion unit including a hammer, the latter delivering blows against the drill bit at regular intervals. The machine casing also encloses at least one hydraulic motor

driven by the pressurized liquid and arranged to rotate the drill bit. Hydraulically controllable blocking means prevent the machine casing from rotating relative to the drill hole wall while the drill bit is in operation. Write: **PATENT 1,109,055**, Gote I. Hansson, Strandvagen 31, S-453 00 Lysekil, Sweden and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

**Planetary Transmission with Hydraulic Engagement and Disengagement/310**

**Boîte de vitesses à planétaires avec commande hydraulique d'engrenage et de désengrenage/310**

A hydraulically operated planetary transmission and motor assembly mounted on the hub of two or more wheels of a four wheeled vehicle for providing wheel driving torque with the transmission set in drive. In an alternate form, the transmission and motor assembly is mounted on the hub of a winch to provide the power drive. The transmission is hydraulically engageable and disengageable and includes a lock whereby the transmission can be locked in either the engaged or disengaged position. The arrangements of components provides easy access for maintenance and for change out of gears to gear sets having different gear ratios all within the same transmission housing. Write: **PATENT 1,109,295**, Otis Engineering Corporation, P.O. Box 34, 380-Dallas, Texas 75234 and send a copy of your initial correspondence to Canadian Consulate, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201, U.S.A.

**Process for Producing Pellets of Predetermined Size from a Finely-Divided Material and an Apparatus for Carrying Out the Process/310**

**Méthode et dispositif pour l'obtention de boulettes de dimension prédéterminée à partir d'une matière quasi-pulvérulente/310**

Pellets of predetermined size are produced from a finely-divided material by pelleting a damp, finely-divided material, sieving the pellets, recycling the underflow obtained by sieving to the pelleting, and feeding the overflow to a continuous-working hardening operation. In order to even out the quantity and size distribution of the pellets a portion of the pellets is recycled, before sieving, to the pelleting; at least a portion of the pellets separated before the sieving is directed to a storage silo before being recycled to the pelleting; and a portion of the overflow obtained from the sieving is also recycled to the pelleting. Write: **PATENT 1,109,650**, Outokumpu Oy, Outokumpu, Finland and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Pohjois Esplanadi 25B, 00100 Helsinki 10, Finland.

**Power Hoe/310**

**Cultivateur mécanique/310**

There is described mechanical hoe comprising a support frame provided with ground engaging wheels and skids for movement over the ground, a blade movably supported for a back and forth cultivating motion relative to the frame, a guide for supporting the blade in a direction downwardly inclined relative to the frame, and a drive train mounted on the support frame for effecting the cultivating movement of the blade, whereby said blade penetrates the ground to effect loosening thereof and the destruction of weeds as the hoe is drawn in a direction away from the ground so cultivated. Write: **PATENT 1,109,718**, Paul C. Andruski, P.O. Box 171, Boyle, Alberta T0A 0M0 and send a copy of your initial correspondence to the Licensing Opportunities Section (34/3), Business Centre, Department of Industry, Trade and Commerce, Ottawa, Ontario K1A 0H5.

**Electromagnetic Relay with Double Cut-Off Contacts/310**

**Relais électromagnétique à contacts à double coupure/310**

Relais électromagnétique comprenant des lames élastiques en U s'appuyant élastiquement sur des plots fixes pour les relier électriquement, et un balancier susceptible d'écarter l'une des branches de chaque lame élastique en U du plot correspondant, pour interrompre la liaison électrique. Ce relais comporte un poussoir mobile dans une direction inverse de celle du mouvement du balancier, et susceptible de coopérer avec ce balancier pour saisir la lame en U à la manière d'une pince et écarter les deux branches de la lame des plots correspondants. Écrire à: **BREVET 1,109,907**, Société Chauvin Arnoux, 190, rue Championnet, 75018 Paris, France et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, 35, avenue Montaigne, 75008 Paris, France.

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### NTIS

Mr. George Kudravetz  
Product Manager  
U.S. Department of Commerce  
National Technical Information Services  
5285 Port Royal Road  
Springfield, Virginia 22161

### Navy

U.S. Department of the Navy  
Assistant Chief for Patents  
The Office of Naval Research  
Mailing Code: 302  
Arlington, Virginia 22217

### Method of Controlling the European Corn Borer with Trewiasine/310

Filed January 27, 1981 by the Department of Agriculture. The invention describes a novel maytansinoid compound discovered in the seed tissue of *Trewia nudiflora*. It has been found to be effective in controlling a common insect pest, the European corn borer. Write: **PAT-APPL-6-228 852**, NTIS.

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### DOE

Mr. James E. Denny  
Assistant General Counsel for Patents  
Office of the General Counsel  
U.S. Department of Energy  
Washington, D.C. 20545

### NASA

Negotiating centers for NASA patent applications and the Canadian trade offices concerned are listed with the item.

Les centres de négociation pour les demandes de brevet de la NASA et les bureaux commerciaux du gouvernement canadien concernés sont indiqués avec l'article.

### Lutte contre la pyrale du maïs au moyen de Trewiasine/310

**Chemotherapeutically Active Maytansinoids from  
Trewia Nudiflora/310**

**Maytansinoïdes chimiothérapeutiquement actifs  
extraits de Trewia nudiflora/310**

Filed January 27, 1981, by the Department of Agriculture. A novel group of maytansinoid compounds has been discovered in the seed tissue of *Trewia nudiflora*. They are all characterized by a distinguishing methoxy group on the C-15 carbon. These isolates have proven to be effective in causing the remission of one or more types of malignancies. Write: **PAT-APPL-6-228 853**, NTIS.

**Erythro-9, 10-Dihydroxyoctadecan-1-ol Acetate: A  
Boll Weevil Anti-Feedant/310**

**Acétate d'érythro-9, 10-dihydroxyoctadécan-1-ol: un  
anorexigène pour l'anthonome du cotonnier/310**

Filed January 28, 1981, by the Department of Agriculture. This invention relates to a feeding deterrent for the boll weevil, *Anthonomus grandis* Boheman, to a method of deterring the boll weevil from feeding and to a method of preparing a boll weevil feeding deterrent. Write: **PAT-APPL-6-229 215**, NTIS.

**Antibacterial Fatty Anilides/310**

**Anilides gras antibactériens/310**

Filed February 10, 1981, by the Department of Agriculture. This invention relates to certain substituted fatty anilides which have exhibited antimicrobial activity. More particularly, this invention relates to anilides in which the aniline nucleus contains one or two substituents selected from the group consisting of halogen, nitro, and hydroxy. Write: **PAT-APPL-6-233 242**, NTIS.

**Antimicrobial Glycolic Acid Derivatives/310**

**Produits antimicrobiens dérivés de l'acide  
glycolique/310**

Filed February 19, 1981, by the Department of Agriculture. Esters and mixed ester-amides derived from glycolic acid by substitution at the hydroxyl and carboxyl functions were prepared by conventional procedures and tested for antimicrobial activity. All of the compounds tested showed same inhibition against four microorganisms under the test conditions, and some of them had potent activity. These new compounds have properties which make it possible for them to be used as bio-static agents in commercial products. Write: **PAT-APPL-6-235 812**, NTIS.

**Decolorization of Pulp Mill and Bleach Plant  
Effluents Using Lignin-Degrading Fungi/310**

**Décoloration des effluents de papeterie et d'usine  
d'eau de javel au moyen d'un champignon  
dégradant la lignine/310**

Filed February 23, 1981, by the Department of Agriculture. A method of testing pulp mill and bleach plant waste effluents with white-rot (lignin-degrading) fungi, so that the color is removed from the effluents. A selected white-rot fungus is grown under preferred conditions and then mixed with the colored waste effluents. The mixture is incubated under favorable conditions until the effluent is sufficiently decolorized to release into the environment. The white-rot fungus can be recycled to decolorize more effluent. Write: **PAT-APPL-6-237 186**, NTIS.

**Heating of Proteinaceous Liquids/310**

**Chauffage des liquides contenant des  
protéines/310**

Filed April 23, 1981, by the Department of Agriculture. This invention relates to and has among its objects the provision of novel methods for heating a liquid containing heat coagulable proteinaceous material to a temperature above the coagulation temperature of the protein. Further objects of the invention will be evident from the following description where parts and percentages are by weight unless otherwise specified. Write: **PAT-APPL-6-251 667**, NTIS.

**Fiber Optic Rotation Sensing Interferometer/310**

**Interféromètre détecteur de rotation à fibres  
optiques/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed December 5, 1979, by the Department of the Air Force. A fiber optic rotation sensing interferometer based on the Sagnac effect in which mechanical rotation introduces measurable shifts in the phase of optical signals transversing a closed path. The interferometer includes the closed optical path made up of a multi-turn fiber optic loop, a directional coupler or couplers, and an amplifier. A pulse of electromagnetic radiation is fed into the optical path by means of a pulsed electromagnetic source such as a laser and a beam splitter. The beam splitter splits the pulse into two pulses which undergo multiple circulations about the optical path in opposite directions. The direc-

tional couplers nondestructively sample the two pulses after each pass there through and send the pair of pulse samples to the beam splitter once each circulation. The beam splitter sends these pulse pair samples to a detector and signal processor once each circulation. The detector measures the instantaneous relative phase shift between the two pulse samples in each of the multiple pulse pairs and outputs phase information once each circulation. This phase information is converted by the signal processor into the angle of rotation or into rotation rate of the interferometer. Write: **PAT-APPL-6-100 320**, NTIS.

#### **Troposcatter System Antenna Alignment/310**

#### **Alignement des antennes des systèmes à diffusion troposphérique/310**

Filed August 19, 1980, by the Department of the Air Force. Antenna alignment in troposcatter systems is accomplished by: nutating the antenna receiver beam with a sinusoidal nutation signal to induce envelope modulation on the received signal; cross correlating the envelope of the received signal with the nutating signal; and, aligning the average angle of the antenna receiver beam into the position where the cross correlation goes to zero. Write: **PAT-APPL-6-179 597**, NTIS.

#### **Automatically Sequenced Signaling System/310**

#### **Système de signalisation à fonctionnement séquentiel automatique/310**

Filed December 15, 1980, by the Department of the Air Force. This application discloses an automatically sequenced signal utilizing cross-coupled monostable multivibrators to provide a signaling sequence on time, off time and a total sequencer on time, thereby permitting a coded sequence signal to be transmitted. The timing interval of the multivibrators may be varied over a predetermined range. Write: **PAT-APPL-6-216 103**, NTIS.

#### **Polyaromatic Amides/310**

#### **Amides Polyaromatiques/310**

Filed December 22, 1980, by the Department of the Air Force. The present invention concerns itself with novel iodine containing polyaromatic amides which are synthesized by effecting a reaction between: (1) an iodine containing diacid chloride; and (2) a suitable aromatic diamine. Polyamides containing a desirable phenylethynyl group can then be synthesized by replacing the iodo groups of the polyaromatic amides with a phenylethynyl group by treating with cuprous phenylacetylde. Accordingly, the primary object of this invention is to provide new processable polyaromatic amides. Another object of this invention is to provide novel polyaromatic amides that exhibit good solubility before curing and improved thermal and chemical resistance after heating. Still another object of this invention is to provide novel polyaromatic amides curable by intramolecular cyclization. Write: **PAT-APPL-6-219 396**, NTIS.

#### **Grease Compositions/310**

#### **Préparations pour lubrification/310**

Filed January 16, 1981, by the Department of the Air Force. The present invention resides in the discovery that the addition of a small quantity of certain benzimidazoles to a polyfluoroalkylether base fluid and a thickener therefore provides a grease having unexpectedly outstanding properties. Thus, the resulting grease composition inhibits rust formation when utilized as a lubricant for ferrous metals under mild temperature and high humidity conditions. Furthermore, the grease inhibits corrosion when used as a lubricant for ferrous metals under high temperature conditions. In a most specific embodiment, the present invention is concerned with a grease composition comprising: (1) a major amount of a polyfluoroalkylether base fluid, (2) a minor amount of a thickener for the base fluid, and (3) a rust and corrosion inhibiting amount of a benzimidazole. More specifically, the grease composition consists essentially of: (1) about 65 to 72 weight percent of base fluid, (2) about 26.5 to 34.5 weight percent thickener, and (3) about 0.5 to 1.5 weight percent benzimidazole, based upon a total of 100 weight percent. The benzimidazoles can be used in larger amounts, but use of the larger quantities provides no added advantages. However, it is usually preferred to employ at least 1 weight percent of the benzimidazole. Write: **PAT-APPL-6-225 546**, NTIS.

#### **Method for Detecting the Presence of a Gas in an Atmosphere/310**

#### **Méthode de détection de la présence d'un gaz dans l'atmosphère/310**

Filed August 5, 1980, by the Department of the Army. Near real time remote sensing of atmospheric gases is performed using differential absorption lidar or transmission techniques. The wedge absorption remote sensor (WARS) utilizes an emission spike train of short time duration as is found in the long pulse output mode of a solid-state laser to define the on and off line absorption of an atmospheric gas and hence its concentration. The laser beam is split into a reference beam and a transmission beam which passes through the atmosphere being tested. The two beams are detected and amplified, and then digitized. Comparing the ratio of the digitized reference signal to transmitted signal for each spike in the spike train yields a set of transmittance values as a function of wavelength. When the digitized reference and transmitted signals are plotted, a wedge of data points results. The ratio of the upper and lower slopes of the wedge yields the absorption coefficient and concentration of the absorbing gas. Write: **PAT-APPL-6-175 541**, NTIS.

**High Altitude Platform Air Drop System/310****Système de largage de plates-formes en haute altitude/310**

Filed October 1, 1980, by the Department of the Army. An improved device for the air dropping of platform-mounted cargo is presented wherein a multi-staged parachute system allows for a rapid descent during the initial phase of the trajectory and then reduces the rate of descent during the terminal stage to allow for a safe landing. Write: **PAT-APPL-6-192 669**, NTIS.

**Process for the Recovery of Carborane from Reject Propellant/310****Méthode de récupération du carborane de poudres propulsives refusées/310**

Filed October 6, 1980, by the Department of the Army. Disclosed is a process for the recovery of carborane from reject solid propellant. The process comprises slicing or shredding into small pieces the solid propellant under water, screening the propellant to remove water from the propellant, performing a pentane extraction of the carborane from the small pieces of propellant, diluting the carborane/pentane solution with additional pentane and the carborane/pentane solution to remove small particles of propellant and other solids such as ammonium perchlorate, allowing the filtering effluent of carborane/pentane solution to enter a water wash tank at the bottom to remove ammonium perchlorate and other water soluble propellant materials, allowing the carborane/pentane layer to separate from the water layer, and then siphoning the carborane/pentane solution from the water layer, and distilling the pentane to separate and recover the carborane. Write: **PAT-APPL-6-194 192**, NTIS.

**Lightweight One Piece Side Rack with Stakes for Flatbed Semitrailers/310****Panneau à ridelles monopièce pour semi-remorque à plate-forme/310**

Filed October 6, 1980, by the Department of the Army. This invention relates to a panel for upright positionment on a trailer/truck flatbed to convert the bed into a cargo container. The panel is formed as a one piece high density plastic foam or fiberglass reinforced plastic element having desired characteristics of high strength and light weight. At its lower edge the panel has a relatively wide center leg and two relatively narrow end legs dimensioned for snug fit insertion into pockets on the perimeter of the flatbed. Edge areas of the panel are preferably formed as tongue and groove devices to adapt the panel for interlocking connection with similar panels positioned on the flatbed. Write: **PAT-APPL-6-194 646**, NTIS.

**Laser Doppler Attitude Measurement/310****Système laser de mesure de l'attitude par effet Doppler/310**

Filed October 20, 1980, by the Department of the Army. A system is provided for remote determination of the attitude of a moving vehicle. The system utilizes two remotely located transmitting-receiving stations and two retroreflecting single plane roof prisms mounted on the vehicle which may exhibit high angular rates about a roll axis. The two remotely located transmitter-receiver stations provide laser tracking of the vehicle, continuously illuminating the vehicle with a laser beam located at each station so that the position of the vehicle relative to the remote stations is obtained. During tracking, the roof prisms located symmetrically on the vehicle provide both a return signal to the laser station regardless of the aspect angle of the vehicle and a doppler signal indicative of the vehicle aspect angle, from which the vehicle attitude is determined. Write: **PAT-APPL-6-198 322**, NTIS.

**Homodyne Radar System/310****Système radar homodyne/310**

Filed October 20, 1980, by the Department of the Army. The present invention relates to homodyne radar systems and in particular to systems transmitting a frequency modulated signal wherein the modulation is discontinuous. A known radar system transmits a swept frequency output which determines range by measuring the frequency difference between the transmitted and received signals. This technique employs circuitry to either directly measure this frequency difference or modify the modulation rate to produce a predetermined frequency difference. These systems are relatively complex and require a high degree of linearity in the frequency sweeping to maintain accuracy. This requirement of linear frequency sweeping results in a relatively small frequency deviation and necessitates an antenna with a fairly low voltage-standing wave ratio (VSWR). Accordingly, there is a need for a system which takes advantages of the inherent noise immunity of a frequency modulated radar system but avoids the circuit complexities and the errors due to nonlinear frequency sweeping. Write: **PAT-APPL-6-198 577**, NTIS.

**High Peak Power, High PRF Laser System/310****Système laser à haute fréquence de récurrence des impulsions et à puissance de crête élevée/310**

Filed October 27, 1980, by the Department of the Army. For many applications of laser techniques, it is often desirable to have a laser device capable of producing output having high peak power, high pulse rate and narrow pulse width. Several

techniques have been developed in the art in an effort to attain such output. There are two major difficulties in developing a high peak power, high pulse repetition frequency solid state laser system. Thermal problems are present due to high average powers, and narrow pulse widths are difficult to obtain due to the low gain of a continuous wave pumped oscillator. A technique of the prior art uses an acousto-optic Q-switch which can sustain high average powers. However, such a device produces long pulse widths due to a low gain cavity and slow switching time. Another approach uses electro-optic Q-switches in a pseudo cavity dumping technique which yield narrow pulses and high peak powers at low pulse repetition frequencies. This system, however, becomes unstable due to thermal induced birefringence when the high average powers of high pulse repetition frequencies are encountered. Accordingly, it is an object of this invention to provide a laser system which overcomes the above noted disadvantages inherent in the devices of the prior art. Write: **PAT-APPL-6-200 664**, NTIS.

**Two-Degree-of-Freedom Gyro with Radiant Energy Pickoffs/310**

**Gyrocompas à deux degrés de libertés avec capteurs d'énergie rayonnante/310**

Filed October 29, 1980, by the Department of the Army. A two-degree-of-freedom-gyro is disclosed that uses a combination of fiber optics and radiant energy sensors for low torque gimbal/housing position sensors. The mode of operation of the gyro is a sustained rotor displacement type instrument. The radiant energy type pickoffs eliminate gimbal wiring, slip rings, and wiper environmental problems. Write: **PAT-APPL-6-201 678**, NTIS.

**Flow Compensated Gas Comparison Probe/310**

**Sonde de comparaison de gaz à écoulements équilibrés/310**

Filed November 7, 1980, by the Department of the Army. A gas comparison probe contains first and second sensor elements isolated from each other. Air is drawn across a surface to be monitored and directed onto the first sensor element. Air is drawn from a location spaced away from the surface to be monitored and directed onto the second sensor element. A flow constrictor in the air flow path to one of the sensor elements is used to calibrate the outputs of the two sensor elements under known conditions before attempting to monitor air flow which may contain a gas to be detected. Write: **PAT-APPL-6-204 744**, NTIS.

**Pulse Width Spectrum Analyzer/310**

**Analyseur de durées d'impulsion/310**

Filed November 10, 1980, by the Department of the Army. Each incoming pulse has its width determined and is stored in a designated storage counter in accordance with its pulse width. The contents of the storage counters are serially addressed and the value of each counter is obtained. The value of each counter is used as a Y input to a readout and the serially addressing of the counter is used as the X input of the readout device. The count on counters are maintained within their capacity by sensing when a counter reaches its maximum value and causing all counters to down count in accordance with the input rate to this particular storage counter. Write: **PAT-APPL-6-205 359**, NTIS.

**Hemispherical Coverage Microstrip Antenna/310**

**Antenne microbande à couverture hémisphérique/310**

Filed November 24, 1980, by the Department of the Army. A single antenna having hemispherical coverage with circular polarization at very low axial ratio is disclosed. Its pancake structure comprises two stacked microstrip antennas, one atop the other, each fed phase shifted in relation to the other. Used as transmitter or receiver antenna, it replaces conventional hemispherical types with an extremely compact and relatively inexpensive device. Write: **PAT-APPL-6-209 809**, NTIS.

**Priority Circuit for Service Request Signals/310**

**Circuit de priorité pour signaux de demande de service/310**

Filed December 8, 1980, by the Department of the Army. An interlock arrangement in which each service request path comprises two inverter gates between an input and an output with a junction between the gates. Cross-coupling circuits are coupled from each junction to every other junction in each direction, each comprising an inverting gate in series with a diode. The diodes are normally reverse biased. A first to arrive request signal is forwarded to its output, and a later signal at any other input causes one diode to conduct and clamp the junction at its output, so that the signal is blocked from reaching the output until the first request signal returns to the inactive state. Write: **PAT-APPL-6-214 367**, NTIS.

**High Speed Rectangle Function Generator/310****Générateur de fonctions rectangulaires à haute vitesse/310**

Filed December 15, 1980, by the Department of the Army. This abstract discloses a high speed rectangle function generator which provides a rectangular output voltage in response to an input voltage. A voltage divider produces switching points in conjunction with an input voltage to switch inversion and non-inversion amplifiers. The outputs of the inversion and non-inversion amplifiers are summed to produce a rectangular output voltage. Operational amplifiers are utilized as inversion and non-inversion amplifiers. Write: **PAT-APPL-6-216 232**, NTIS.

**Switch Actuator/310****Actionneur de commutateur/310**

Filed December 15, 1980, by the Department of the Army. An improved switch actuator, for safe and arm applications requiring utmost dependability in order to preclude a premature or false arming sequence, utilizes a plurality of simultaneous input signals from independently coded pneumatic, optical and electrical sources to drive a rotary switch. A rotary fluidic valving plate is used to decode non-uniform input optical signals into a uniform cyclical output pressure signal which is used to drive a fail-safe, reversible pneumatic gerotor type motor. A geneva mechanism is used to mechanically couple the prime mover to an output gear to activate a switch. Alternatively, an electrical switch may be incorporated within the housing of the actuator. Write: **PAT-APPL-6-216 417**, NTIS.

**Optical Dosimeter/310****Dosimètre optique/310**

Filed December 17, 1980, by the Department of the Army. An object of the invention is to obtain the advantage of a long light path for more optical materials than is feasible with optical fibers to provide an optical dosimeter. According to the invention, a reflecting optical dosimeter is a thin block of optical material having an input light pipe at one corner and an output light pipe at another corner, arranged so that the light path includes several reflections off the edges of the block to thereby greatly extend its length. In a preferred embodiment, one corner of the block is formed at an angle so that after the light is reflected several times between two opposite edges, it is then reflected several more times between the other two edges. Write: **PAT-APPL-6-217 361**, NTIS.

**Glass Lead Seal Test Apparatus/310****Banc d'essai d'étanchéité des sorties de fils isolés par des perles de verre/310**

Filed December 19, 1980, by the Department of the Army. Glass lead seal test apparatus in which a multiplicity of microcircuit packages with the leads sealed relative thereto by glass are checked for leakage between the glass seals and the microcircuit package structure and relative to the leads; that is accomplished by providing an apparatus for evacuating a chamber of the microcircuit packages and a chamber of the apparatus, and then injecting helium into the chamber of the apparatus and then utilizing test structure to test leakage around the glass seals if a perfect seal is not present. The device is designed to handle a multiplicity of microcircuit packages during a given test cycle. Write: **PAT-APPL-6-218 235**, NTIS.

**Cure Rate Inhibitors and Ferrocene-Containing Propellants/310****Inhibiteurs de durcissement pour les poudres propulsives contenant du ferrocène/310**

Filed December 19, 1980, by the Department of the Army. Disclosed is a phosphate acid diester that is employed in trace amounts in propellants containing ferrocene or ferrocene derivatives wherein it functions as a cure-rate inhibitor. The trace amount of phosphate acid diester extends the pot life of these propellants without inhibiting the final cure thereof. Write: **PAT-APPL-6-218 400**, NTIS.

**Stable NF(4+) Salt of High Fluorine Content/310****Sel NF (4+) stable, riche en fluor/310**

Filed December 22, 1980, by the Department of the Army. An improved NF(4+) composition for solid propellant NF3-F2 gas generators and high detonation pressure explosives is described which combines high oxidizer content with good thermal stability. The novel composition has the formula (NF4)2MnF6, and a process for its production is disclosed. Write: **PAT-APPL-6-219 056**, NTIS.

**Hypersonic Wedge Nozzle for Chemical Lasers/310****Ajutage à coins hypersonique pour lasers chimiques/310**

Filed December 29, 1980, by the Department of the Army. A hypersonic wedge nozzle for chemical lasers that has a radially diverging flow primary nozzle with a multiplicity of hypersonic wedge type secondary injection wedges at the exit end of the

primary nozzle to allow gas flow to become supersonic in the primary nozzle before entering the regions between the secondary injection wedges or the surfaces thereof. Utilization of the large diverging primary nozzle in producing supersonic flow minimizes viscous effects in producing the supersonic flow in a chemical HF or DF laser. Write: **PAT-APPL-6-220 474**, NTIS.

**Combined Side Lobe Canceller and Frequency Selective Limiter/310**

**Éliminateur de lobes secondaires et limiteur sélectif en fréquence/310**

Filed December 31, 1980, by the Department of the Army. A radar system having means for effectively eliminating or cancelling interfering signals characterized by the side lobes of the radar antenna received signals. An adaptive side lobe canceller system is combined with a frequency selective limiter such that the adaptive side lobe canceller is sampled by the output of the frequency selective limiter to derive a weighting signal from the adaptive control circuit. The weighting signals effectively provide simultaneous cancellation of both broad and narrow band interfering side lobe signals. Write: **PAT-APPL-6-221 737**, NTIS.

**Thyratron Switch for Narrow Pulses/310**

**Commutateur thyatron pour impulsions de courte durée/310**

Filed January 12, 1981, by the Department of the Army. Narrow pulse modulation (less than four nanoseconds) of millimeter wave tubes will enable radar systems to achieve improved pattern recognition. The modulator has an outer cylindrical return shield surrounding a tetrode thyatron. An inner cylindrical shield connected to the anode provides capacitive energy storage for generating the output pulse when the control grid is triggered. The anode is connected via only a resistance to the direct current supply. Write: **PAT-APPL-6-224 603**, NTIS.

**Heat Transfer System/310**

**Système de transfert de chaleur/310**

Filed March 7, 1980, by the Department of Energy. A heat transfer system for a nuclear reactor is described. Heat transfer is accomplished within a sealed vapor chamber which is substantially evacuated prior to use. A heat transfer medium, which is liquid at the design operating temperatures, transfers heat from tubes interposed in the reactor primary loop to spaced tubes connected to a steam line for power generation purposes. Heat transfer is accomplished by a two-phase liquid-vapor-liquid process as used in heat pipes. Condensable gases are removed from the vapor chamber through a vertical extension in open communication with the chamber interior. Write: **PAT-APPL-6-128 203**, DOE.

**Method for Fabricating Thin Films of Pyrolytic Carbon/310**

**Méthode de fabrication de minces pellicules de carbone pyrolytique/310**

Filed March 13, 1980, by the Department of Energy. The present invention relates to a method for fabricating ultrathin films of pyrolytic carbon. Pyrolytic carbon is vapor deposited onto a concave surface of a heated substrate to a total uniform thickness in the range of about 0.1 to 1.0 micrometer. The carbon film on the substrate is provided with a layer of adherent polymeric resin. The resulting composite film of pyrolytic carbon and polymeric resin is then easily separated from the substrate by shrinking the 10 polymeric resin coating with thermally induced forces. Write: **PAT-APPL-6-129 868**, DOE.

**Spacer Grid Assembly and Locking Mechanism/310**

**Plaques entretoises à verrouillage/310**

Filed March 17, 1980, by the Department of Energy. A spacer grid assembly is disclosed for retaining a plurality of fuel rods in substantially parallel spaced relation, the spacer grids being formed with rhombic openings defining contact means for engaging from one to four fuel rods arranged in each opening. The spacer grids are of symmetric configuration with their rhombic openings being asymmetrically offset to permit inversion and relative rotation of the similar spacer grids for improved support of the fuel rods. An improved locking mechanism includes tie bars having chordal surfaces to facilitate their installation in slotted circular openings of the spacer grids, the tie rods being rotatable into locking engagement with the slotted openings. Write: **PAT-APPL-6-130 995**, DOE.

**Reactor Control Rod Timing System/310**

**Dispositif de chronométrage des barres de réglage d'un réacteur/310**

Filed March 18, 1980, by the Department of Energy. A fluid driven jet-edge whistle timing system is described for control rods of a nuclear reactor for producing real-time detection of the timing of each control rod in its scram operation. An important parameter in reactor safety, particularly for liquid metal fast breeder reactors (LMFBR), is the time deviation

between the time the control rod is released and the time the rod actually reaches the down position. The whistle has a nearly pure tone signal with center frequency (above 100 kHz) far above the frequency band in which the energy of the background noise is concentrated. Each control rod can be fitted with a whistle with a different frequency so that there is no ambiguity in differentiating the signal from each control rod. Write: **PAT-APPL-6-131 303**, DOE.

**Device for Conversion of Electromagnetic Radiation into Electrical Current/310**

**Dispositif de conversion du rayonnement électromagnétique en courant électrique/310**

Filed March 25, 1980, by the Department of Energy. Electromagnetic energy may be converted directly into electrical energy by a device comprising a sandwich of at least two semiconductor portions, each portion having a p-n junction with a characteristic energy gap, and the portions lattice matched to one another by an intervening superlattice structure. This superlattice acts to block propagation into the next deposited portion of those dislocation defects which can form due to lattice mismatch between adjacent portions. Write: **PAT-APPL-6-133 702**, DOE.

**Method and Apparatus for Measuring Irradiated Fuel Profiles/310**

**Méthode et appareil pour mesurer des profils de carburant irradié/310**

Filed March 27, 1980, by the Department of Energy. A new apparatus is used to substantially instantaneously obtain a profile of an object, for example a spent fuel assembly, which profile (when normalized) has unexpectedly been found to be substantially identical to the normalized profile of the burnup monitor Cs-137 obtained with a germanium detector. That profile can be used without normalization in a new method of identifying and monitoring in order to determine for example whether any of the fuel has been removed. Alternatively, two other new methods involve calibrating that profile so as to obtain a determination of fuel burnup (which is important for complying with safeguards requirements, for utilizing fuel to an optimal extent, and for storing spent fuel in a minimal amount of space). Write: **PAT-APPL-6-134 352**, DOE.

**Method for Heat Treating Iron-Nickel-Chromium Alloy/310**

**Méthode de traitement thermique des alliages fer-nickel-chrome/310**

Filed April 3, 1980, by the Department of Energy. A method is described for heat treating an age-hardenable iron-nickel-chromium alloy to obtain a morphology of the gamma-double prime phase enveloping the gamma-prime, the alloy consisting essentially of about 25 to 45% nickel, 10 to 16% chromium, 1.5 to 3% of an element selected from the group consisting of molybdenum and niobium, about 2% titanium, about 3% aluminum, and the remainder substantially all iron. To obtain optimum results, the alloy is heated to a temperature of 1025 to 1075 exp 0 C for 2 to 5 minutes, cold-worked about 20 to 60%, aged at a temperature of about 775 exp 0 C for 8 hours followed by an air-cool, and then heated to a temperature in the range of 650 to 700 exp 0 C for 2 hours followed by an air-cool. Write: **PAT-APPL-6-137 049**, DOE.

**Method of Fabricating a Prestressed Cast Iron Vessel/310**

**Méthode de fabrication d'un vaisseau précontraint en fonte/310**

Filed April 9, 1980, by the Department of Energy. A method of fabricating a prestressed cast iron vessel wherein double wall cast iron body segments each have an arcuate inner wall and a spaced apart substantially parallel outer wall with a plurality of radially extending webs interconnecting the inner wall and the outer wall; the bottom surface and the two exposed radial side surfaces of each body segment are machined and eight body segments are formed into a ring. The top surfaces and outer surfaces of the outer walls are machined and keyways are provided across the juncture of adjacent end walls of the body segments. A liner segment complementary in shape to a selected inner wall of one of the body segments is mounted to each of the body segments and again formed into a ring. The liner segments of each ring are welded to form unitary liner rings are thereafter the cast iron body segments are prestressed to complete the ring assembly. Ring assemblies are stacked to form the vessel and adjacent unitary liner rings are welded. A top head covers the top ring assembly to close the vessel and axially extending tendons retain the top and bottom heads in place under pressure. Write: **PAT-APPL-6-138 804**, DOE.

**Amorphous Metal Alloy/310**

**Alliage métallique amorphe/310**

Filed April 9, 1980, by the Department of Energy. Amorphous metal alloys of the iron-chromium and nickel-chromium type have excellent corrosion resistance and high temperature stability and are suitable for use as a protective coating on less corrosion resistant substrates. The alloys are stabilized in the amorphous state by one or more elements of titanium, zirconium, hafnium, niobium, tantalum, molybdenum, and tungsten. The alloy is preferably prepared by sputter deposition. Write: **PAT-APPL-6-138 951**, DOE.

**Line-of-Sight Deposition Method/310****Méthode de dépôt en ligne directe/310**

Filed April 16, 1980, by the Department of Energy. A line-of-sight method of depositing a film having substantially 100% of theoretical density on a substrate. A pressure vessel contains a target source having a surface thereof capable of emitting particles therefrom and a substrate with the source surface and the substrate surface positioned such that the source surface is substantially parallel to the direction of the particles impinging upon the substrate surface, the distance between the most remote portion of the substrate surface receiving the particles and the source surface emitting the particles in a direction parallel to the substrate surface being relatively small. The pressure in the vessel is maintained less than about 5 microns to prevent scattering and permit line-of-sight deposition. By this method the angles of incidence of the particles impinging upon the substrate surface are in the range of from about  $45 \times 10^0$  to  $90 \times 10^0$  even when the target surface area is greatly expanded to increase the deposition rate. Write: **PAT-APPL-6-140 948**, DOE.

**High Temperature, Low Expansion, Corrosion Resistant Ceramic and Gas Turbine/310****Céramique destinée aux turbines à gaz résistant à la corrosion et aux hautes températures et à faible dilatation/310**

Filed April 18, 1980, by the Department of Energy. The present invention relates to  $ZrO_2 - MgO - Al_2O_3 - SiO_2$  ceramic materials having improved thermal stability and corrosion resistant properties. The utilization of these ceramic materials as heat exchangers for gas turbine engines is also disclosed. Write: **PAT-APPL-6-141 507**, DOE.

**Broadly Tunable Picosecond IR Source/310****Source d'impulsions infra-rouges ultra-courtes (picoseconde) à bande d'accord étendue/310**

Filed April 23, 1980, by the Department of Energy. A picosecond traveling-wave parametric device capable of controlled spectral bandwidth and wavelength in the infrared is reported. Intense  $1.064 \mu m$  picosecond pulses (1) pass through a 4.5 cm long  $LiNbO_3$  optical parametric oscillator crystal (2) set at its degeneracy angle. A broad band emerges, and a simple grating (3) and mirror (4) arrangement is used to inject a selected narrow-band into a 2 cm long  $LiNbO_3$  optical parametric amplifier crystal (5) along a second pump line. Typical input energies at  $1.064 \mu m$  along both pump lines are 6 to 8 mJ for the oscillator and 10 mJ for the amplifier. This yields 1 mJ of tunable output in the range 1.98 to  $2.38 \mu m$  which when down-converted in a 1 cm long CdSe crystal mixer (6) gives 2 mJ of tunable radiation over the 14.8 to  $18.5 \mu m$  region. The bandwidth and wavelength of both the 2 and  $16 \mu m$  radiation output are controlled solely by the diffraction grating. Write: **PAT-APPL-6-143 059**, DOE.

**Method for Directly Recovering Fluorine from Gas Streams/310****Méthode de récupération directe du fluor dans des écoulements gazeux/310**

Filed April 24, 1980, by the Department of Energy. This invention is a process for the direct recovery of gaseous fluorine from waste-gas streams or the like. The process comprises passing the gas stream through a bed of anhydrous  $K_2NiF_6$  pellets to fluorinate the same to  $K_2NiF_7$  and subsequently desorbing the fluorine by heating the  $K_2NiF_7$  pellets to a temperature reconvert them to  $K_2NiF_6$ . The efficiency of the fluorine-absorption step is maximized by operating in a selected and conveniently low temperature. The desorbed fluorine is highly pure and is at a pressure of several atmospheres. Preferably, the  $K_2NiF_6$  pellets are prepared by a method including the steps of forming agglomerates of hydrated  $K_2NiF_5$ , sintering the agglomerates to form  $K_2NiF_5$  pellets of enhanced reactivity with respect to fluorine, and fluorinating the sintered pellets to  $K_2NiF_6$ . Write: **PAT-APPL-6-143 246**, DOE.

**Laminated Insulators Having Heat Dissipation Means/310****Isolants feuilletés capables de dissiper la chaleur/310**

Filed April 24, 1980, by the Department of Energy. A laminated body is provided with heat dissipation capabilities. The insulator body is formed by dielectric layers interleaved with heat conductive layers, and bonded by an adhesive to form a composite structure. The heat conductive layers include provision for connection to an external thermal circuit. Write: **PAT-APPL-6-143 249**, DOE.

**Klystron-Linac Combination/310****Combinaison klystron-accélérateur linéaire/310**

Filed April 24, 1980, by the Department of Energy. A combination klystron-linear accelerator which utilizes antibunch electrons generated in the klystron section as a source of electrons to be accelerated in the accelerator section. Electron beam current is controlled by second harmonic bunching, constrictor aperture size and magnetic focusing. Rf coupling is achieved by internal and external coupling. Write: **PAT-APPL-6-143 250**, DOE.

**Method for Purifying Bidentate  
Organophosphorous Compounds/310**

**Méthode de purification de composés  
organophosphorés bidentés/310**

Filed April 24, 1980, by the Department of Energy. Bidentate organophosphorous compounds are purified of undesirable impurities by contacting a solution of the compounds with a mercuric nitrate solution to form an insoluble mercuric bidentate compound which precipitates while the impurities remain in solution. The precipitate is washed and then contacted with a mixture of an aqueous solution of a strong mercuric ion complexing agent and an organic solvent to complex the mercuric ion away from the bidentate compound which then dissolves in the solvent. The purified bidentate compounds are useful for extracting the actinide elements from aqueous acidic nuclear waste solutions. Write: **PAT-APPL-6-143 381**, DOE.

**Hydrostatic Bearings for a Turbine Fluid Flow  
Metering Device/310**

**Paliers hydrostatiques pour dispositif de dosage  
du débit du fluide pour une turbine/310**

Filed May 2, 1980, by the Department of Energy. A rotor assembly fluid metering device has been improved by development of a hydrostatic bearing fluid system which provides bearing fluid at a common pressure to rotor assembly bearing surfaces. The bearing fluid distribution system produces a uniform film of fluid between bearing surfaces and allows rapid replacement of bearing fluid between bearing surfaces, thereby minimizing bearing wear and corrosion. Write: **PAT-APPL-6-145 940**, DOE.

**Passive Self-Cleaning Aerosol Scrubber/310**

**Laveur à gaz à autonettoieement passif/310**

Filed May 2, 1980, by the Department of Energy. A liquid-tight enclosure is partially filled with water. A container supports a porous bed of sand and gravel that is partially submerged in the liquid. The lower end of the porous bed is spaced upward from the bottom of the enclosure. A gas delivery duct feeds gas to a location vertically beneath the porous bed to enable a stream of gas to pass upwardly through the porous bed, drawing water with it to continuously clean the gravel. Write: **PAT-APPL-6-145 954**, DOE.

**Self-Monitoring High Voltage Transmission Line  
Suspension Insulator/310**

**Isolateur de suspension pour ligne de transmission  
à haute tension, à détecteur d'intégrité diélectrique  
autonome/310**

Filed May 9, 1980, by the Department of Energy. A high voltage transmission line suspension insulator which monitors its own dielectric integrity is described. A dielectric rod has one larger diameter end fitting attachable to a transmission line and another larger diameter end fitting attachable to a support tower. The rod is enclosed in a dielectric tube which is hermetically sealed to the rod's end fittings such that a fluidtight space is formed between the rod and the tube. A pressurized dielectric liquid or gas is placed within that space. A discoloring dye placed within this space, or a pressure gauge, is used to detect the loss of the pressurized fluid. Write: **PAT-APPL-6-148 322**, DOE.

**Reactor Vessel Support System/310**

**Système d'appui pour cuve de réacteur/310**

Filed May 9, 1980, by the Department of Energy. A reactor vessel support system includes a support ring at the reactor top supported through a box ring on a ledge of the reactor containment. The box ring includes an annular space in the center of its cross-section to reduce heat flow and is keyed to the support ledge to transmit seismic forces from the reactor vessel to the containment structure. A coolant channel is provided at the outside circumference of the support ring to supply coolant gas through the keyways to channels between the reactor vessel and support ledge into the containment space. Write: **PAT-APPL-6-148 323**, DOE.

**Compensated Count-Rate Circuit for Radiation  
Survey Meter/310**

**Circuit de compensation du taux de comptage  
pour les moniteurs de radiations/310**

Filed May 12, 1980, by the Department of Energy. A count-rate compensating circuit is provided which may be used in a portable Geiger-Mueller (G-M) survey meter to ideally compensate for counting loss errors in the G-M tube detector. In a G-M survey meter, wherein the pulse rate from the G-M tube is converted into a pulse rate current applied to a current meter calibrated to indicate dose rate, the compensation circuit generates and controls a reference voltage in response to the rate of pulses from the detector. This reference voltage is gated to the current-generating circuit at a rate identical to the rate of pulses coming from the detector so that the current flowing through the meter is varied in accordance with both the frequency and amplitude of the reference voltage pulses applied thereto so that the count rate is compensated ideally to indicate a true count rate within 1% up to a 50% duty cycle for the detector. A positive feedback circuit is used to control the reference voltage so that the meter output tracks true count rate indicative of the radiation dose rate. Write: **PAT-APPL-6-148 862**, DOE.

### **Fast-Acting Valve and Uses Thereof/310**

### **Soupape à action rapide et utilisations possibles/310**

Filed May 16, 1980, by the Department of Energy. A very fast acting valve capable of producing a very well-defined plug of gas suitable for filling a theta pinch vacuum vessel is given. The valve requires no springs, instead being stopped mainly by a nonlinear force. Thus, the valve is not subject to bouncing; and the ratio of the size of the valve housing to the size of the valve stem is smaller than it would be if springs were needed to stop the valve stem. Furthermore, the valve can be used for thousands of valve firings with no apparent valve damage. Write: **PAT-APPL-6-150 393**, DOE.

### **Method for Fabricating Uranium Alloy Articles Without Shape Memory Effects/310**

### **Méthode de fabrication d'articles en alliage d'uranium sans mémoire de forme/310**

Filed May 21, 1980, by the Department of Energy. Uranium-rich niobium and niobium-zirconium alloys possess a characteristic known as shape memory effect wherein shaped articles of these alloys recover their original shape when heated. The present invention circumvents this memory behavior by forming the alloys into the desired configuration at elevated temperatures with cold matched dies and maintaining the shaped articles between the dies until the articles cool to ambient temperature. Write: **PAT-APPL-6-151 849**, DOE.

### **Method for Monitoring Irradiated Fuel Using Cerenkov Radiation/310**

### **Méthode de contrôle du combustible exposé à des rayonnements de Cerenkov/310**

Filed May 21, 1980, by the Department of Energy. A method is provided for monitoring irradiated nuclear fuel inventories located in a water-filled storage pond wherein the intensity of the Cerenkov radiation emitted from the water in the vicinity of the nuclear fuel is measured. This intensity is then compared with the expected intensity for nuclear fuel having a corresponding degree of irradiation exposure and time period after removal from a reactor core. Where the nuclear fuel inventory is located in an assembly having fuel pins or rods with intervening voids, the Cerenkov light intensity measurement is taken at selected bright spots corresponding to the water-filled interstices of the assembly in the water storage, the water-filled interstices acting as Cerenkov light channels so as to reduce cross-talk. On-line digital analysis of an analog video signal is possible, or video tapes may be used for later measurement using a video editor and an electrometer. Direct measurement of the Cerenkov radiation intensity also is possible using spot photometers pointed at the assembly. Write: **PAT-APPL-6-151 870**, DOE.

### **Compound Lens/310**

### **Objectif composé/310**

Filed May 21, 1980, by the Department of Energy. The disclosure relates to at least one calcium fluoride optical element used in combination with at least two ordinary crown glass lens elements to greatly reduce secondary spectrum in optical systems. Write: **PAT-APPL-6-151 995**, DOE.

### **Method and System for Ethanol Production/310**

### **Méthode et système de production d'éthanol/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed May 21, 1980, by the Department of Energy. A transition metal carbonyl and a tertiary amine are employed as a homogeneous catalytic system in methanol or a less volatile solvent to react methanol with carbon monoxide and hydrogen gas producing ethanol and carbon dioxide. The gas contains a high carbon monoxide to hydrogen ratio as is present in a typical gasifier product. The reaction has potential for anhydrous ethanol production as carbon dioxide rather than water is produced. The only other significant by-product is methane. Selected transition metal carbonyls include those of iron, ruthenium and possibly manganese and osmium. Selected amines include trimethylamine, N-Methylpyrrolidine, 24-diazabicyclooctane, dimethyloctylamine and 2-pyridinol. Write: **PAT-APPL-6-151 996**, DOE.

### **Small Object Transporter/310**

### **Transporteurs pour petits objets/310**

Filed May 21, 1980, by the Department of Energy. The disclosure relates to a small object transporter. Gas is passed through a conduit having a venturi. Small objects are picked up at a first location by a pickup tube in communication with the venturi and are forced out one end of the conduit at a desired second location. Write: **PAT-APPL-6-152 012**, DOE.

**Means and Method for the Focusing and Acceleration of Parallel Beams of Charged Particles/310**

**Moyens et méthode permettant de concentrer et d'accélérer des faisceaux parallèles de particules chargées/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed May 23, 1980, by the Department of Energy. A novel apparatus and method for focussing beams of charged particles comprising planar arrays of electrostatic quadrupoles. The quadrupole arrays may comprise electrodes which are shared by two or more quadrupoles. Such quadrupole arrays are particularly adapted to providing strong focussing forces for high current, high brightness, beams of charged particles, said beams further comprising a plurality of parallel beams, or beamlets, each such beamlet being focussed by one quadrupole of the array. Such arrays may be incorporated in various devices wherein beams of charged particles are accelerated or transported, such as linear accelerators, klystron tubes, beam transport lines, etc. Write: **PAT-APPL-6-152 461**, DOE.

**Multianode Cylindrical Proportional Counter for High Count Rates/310**

**Compteur proportionnel cylindrique multianode pour taux de comptage élevés/310**

Filed May 23, 1980, by the Department of Energy. A cylindrical, multiple-anode proportional counter is provided for counting of low-energy photons ( $< 60$  keV) at count rates of greater than  $10 \times 10^5$  counts/sec. A gas-filled proportional counter cylinder forming an outer cathode is provided with a central coaxially disposed inner cathode and a plurality of anode wires disposed in a cylindrical array in co-axial alignment with and between the inner and outer cathodes to form a virtual cylindrical anode coaxial with the inner and outer cathodes. The virtual cylindrical anode configuration improves the electron drift velocity by providing a more uniform field strength throughout the counter gas volume, thus decreasing the electron collection time following the detection of an ionizing event. This avoids pulse pile-up and coincidence losses at these high count rates. Conventional RC position encoding detection circuitry may be employed to extract the spatial information from the counter anodes. Write: **PAT-APPL-6-152 954**, DOE.

**Attack Polish for Nickel-Base Alloys and Stainless Steels/310**

**Poli à décapage pour alliages à base de nickel et d'aciers inoxydables/310**

Filed May 28, 1980, by the Department of Energy. A chemical attack polish and polishing procedure for use on metal surfaces such as nickel base alloys and stainless steels is described. The chemical attack polish comprises FeNO sub 3, concentrated CH sub 3 COOH, concentrated H sub 2 SO sub 4 and H sub 2 O. The polishing procedure includes saturating a polishing cloth with the chemical attack polish and submicron abrasive particles and buffing the metal surface. Write: **PAT-APPL-6-154 171**, DOE.

**Overlapping Double Etch Technique for Evaluation of Metallic Alloys to Stress Corrosion Cracking/310**

**Technique d'avivage double pour l'étude des tendances au criquage par fatigue dû à la corrosion des alliages métalliques/310**

Filed May 28, 1980, by the Department of Energy. A double overlapping etch zone technique for evaluation of the resistance of metallic alloys to stress corrosion cracking is described. The technique involves evaluating the metallic alloy along the line of demarcation between an overlapping double etch zone and single etch zone formed on the metallic alloy surface. Write: **PAT-APPL-6-154 172**, DOE.

**Heat Pump/Refrigerator Using Liquid Working Fluid/310**

**Pompe à chaleur-réfrigérateur utilisant un agent liquide/310**

Filed May 28, 1980, by the Department of Energy. A heat transfer device is described that can be operated as a heat pump or refrigerator, which utilizes a working fluid that is continuously in a liquid state and which has a high temperature-coefficient of expansion near room temperature, to provide a compact and high efficiency heat transfer device for relatively small temperature differences as are encountered in heating or cooling rooms or the like. The heat transfer device includes a pair of heat exchangers that may be coupled respectively to the outdoor and indoor environments, a regenerator connecting the two heat exchangers, a displacer that can move the liquid working fluid through the heat exchangers via the regenerator, and a means for alternately increasing and decreasing the pressure of the working fluid. The liquid working fluid enables efficient heat transfer in a compact unit, and leads to an explosion-proof smooth and quiet machine characteristic of hydraulics. The device enables efficient heat transfer as the indoor-outdoor temperature difference approaches zero, and enables simple conversion from heat pumping to refrigeration as by merely reversing the direction of a motor that powers the device. Write: **PAT-APPL-6-154 173**, DOE.

**Continuous Process for Conversion of Coal/310****Procédé continu de conversion du charbon/310**

Filed May 29, 1980, by the Department of Energy. In contrast to the prior art, by a discrete combination of the various features and conditions in accordance with this invention, superior results are obtained in a continuous operation. It is an object of the present invention to achieve high and increased conversion of coal to liquid product. Another objective is to achieve the above object with minimal coking or at least without increased coking. A major object is to achieve the other objects in a continuous process operation whereby disruptions due to plugging or other depositions are greatly reduced if not obviated. Still another object of the present invention is to achieve a reduction in the amount of solid product or heavy bottoms without a disproportionate increase in gaseous product relative to the distillate liquid product. It is yet another object of the present invention to achieve the above objects and with simplifications in present solvent coal refining processes. Other objectives, advantages and novel features are apparent in the detailed description. Write: **PAT-APPL-6-154 351**, DOE.

**Method and Apparatus for Determining Diameter and Wall Thickness of Minute Hollow Spherical Shells/310****Méthode et appareillage pour évaluer le diamètre et l'épaisseur des parois des sphères creuses microscopiques/310**

Filed May 30, 1980, by the Department of the Energy. Method and apparatus for determining diameter and wall thickness of hollow microspheres or shells wherein terminal velocities of shells traveling in fluid-filled conduits of differing diameters are measured. A wall-effect factor is determined as a ratio of the terminal velocities, and shell outside diameter may then be ascertained as a predetermined empirical function of wall-effect factor. For shells of known outside diameter, wall thickness may then be ascertained as a predetermined empirical function of terminal velocity in either conduit. Write: **PAT-APPL-6-154 638**, DOE.

**Backfill Composition for Secondary Barriers in Nuclear Waste Repositories/310****Composition d'un matériau tampon comme bouclier secondaire dans un cimetière de déchets nucléaires/310**

Filed May 30, 1980, by the Department of Energy. A backfill composition for sorbing and retaining hazardous elements of nuclear wastes comprises 50 to 70% by weight of quartz, 10 to 30% by weight of montmorillonite, 1 to 10% by weight of phosphate mineral, 1 to 10% by weight of ferrous mineral, 1 to 10% by weight of sulfate mineral and 1 to 10% by weight of attapulgite. Write: **PAT-APPL-6-154 639**, DOE.

**Nuclear Reactor Cooling System Decontamination Reagent Regeneration/310****Régénération de la solution de décontamination des systèmes de refroidissement des réacteurs nucléaires/310**

Filed June 6, 1980, by the Department of Energy. An improved method for decontaminating the coolant system of water-cooled nuclear power reactors and for regenerating the decontamination solution is described. A small amount of one or more weak-acid organic complexing agents is added to the reactor coolant, and the pH is adjusted to form a decontamination solution which is circulated throughout the coolant system to dissolve metal oxides from the interior surfaces and complex the resulting metal ions and radionuclide ions. The coolant containing the complexed metal ions and radionuclide ions is passed through a strong-base anion exchange resin bed which has been presaturated with a solution containing the complexing agents in the same ratio and having the same pH as the decontamination solution. As the decontamination solution passes through the resin bed, metal-complexed anions are exchanged for the metal-ion-free anions on the bed, while metal-ion-free anions in the solution pass through the bed, thus removing the metal ions and regenerating the decontamination solution. Write: **PAT-APPL-6-156 945**, DOE.

**Automatic Thermocouple Positioner for Use in Vacuum Furnaces/310****Positionneur de thermocouple automatique destiné aux fours à vide/310**

Filed June 6, 1980, by the Department of Energy. The invention is a simple and reliable mechanical arrangement for automatically positioning a thermocouple-carrying rod in a vacuum-furnace assembly of the kind including a casing, a furnace mounted in the casing, and a charge-containing crucible mounted in the furnace for vertical movement between a lower (loading) position and a raised (charge-melting) position. In a preferred embodiment, a welded-diaphragm metal bellows is mounted above the furnace, the upper end of the bellows being fixed against movement and the lower end of the bellows being affixed to support means for a thermocouple-carrying rod which is vertically oriented and extends freely through the furnace lid toward the mouth of the crucible. The support means and rod are mounted for relative vertical movement. Before pumpdown of the furnace, the differential pressure acting on the bellows causes it to contract and lift the thermocouple rod to a position where it will not be contacted by the crucible charge when the crucible is elevated to its raised position. During pumpdown, the bellows expands downward, lowering the thermocouple rod and its support. The bellows expands

downward beyond a point where downward movement of the thermocouple rod is arrested by contact with the crucible charge and to a point where the upper end of the thermocouple extends well above the thermocouple support. During subsequent melting of the charge, the thermocouple sinks into the melt to provide an accurate measurement of melt temperatures. Write: **PAT-APPL-6-156 955**, DOE.

### **Slide System for Machine Tools/310**

### **Dispositif coulissant pour machines-outils/310**

Filed June 12, 1980, by the Department of Energy. The present invention relates to a machine tool which permits the machining of nonaxisymmetric surfaces on a workpiece while rotating the workpiece about a central axis of rotation. The machine tool comprises a conventional two-slide system (X-Y) with one of these slides being provided with a relatively short travel high-speed auxiliary slide which carries the material-removing tool. The auxiliary slide is synchronized with the spindle speed and the position of the other two slides and provides a high-speed reciprocating motion required for the displacement of the cutting tool for generating a nonaxisymmetric surface at a selected location on the workpiece. Write: **PAT-APPL-6-158 832**, DOE.

### **Photosensitivity Enhancement of PLZT Ceramics by Positive Ion Implantation/310**

### **Augmentation de la photosensibilité des céramiques PLZT par implantation d'ions positifs/310**

Filed June 13, 1980, by the Department of Energy. The photosensitivity of lead lanthanum zirconate titanate (PLZT) ceramic material used in high resolution, high contrast, and non-volatile photoferroelectric image storage and display devices is enhanced significantly by positive ion implantation of the PLZT near its surface. Ions that are implanted include H exp + , He exp + , Ar exp + , and a preferred co-implant of Ar exp + and Ne exp + . The positive ion implantation advantageously serves to shift the band gap energy threshold of the PLZT material from near-uv light to visible blue light. As a result, photosensitivity enhancement is such that the positive ion implanted PLZT plate is sensitive even to sunlight and conventional room lighting, such as fluorescent and incandescent light sources. The method disclosed includes exposing the PLZT plate to these positive ions of sufficient density and with sufficient energy to provide an image. The PLZT material may have a lanthanum content ranging from 5 to 10%; a lead zirconate content ranging from 62 to 70 mole %; and a lead titanate content ranging from 38 to 30%. The region of ion implantation is in a range from 0.1 to 2 microns below the surface of the PLZT plate. Density of ions is in the range from  $1 \times 10^{12}$  to  $1 \times 10^{17}$  ions/cm exp 2 and having an energy in the range from 100 to 500 keV. Write: **PAT-APPL-6-159 318**, DOE.

### **Process for Recovery of Palladium from Nuclear Fuel Reprocessing Wastes/310**

### **Procédé de récupération du palladium dans les déchets de retraitement des combustibles nucléaires/310**

Filed June 16, 1980, by the Department of Energy. Palladium is selectively removed from spent nuclear fuel reprocessing waste by adding sugar to a strong nitric acid solution of the waste to partially denitrate the solution and cause formation of an insoluble palladium compound. The process includes the steps of: (a) adjusting the nitric acid content of the starting solution to about 10 M; (b) adding 50% sucrose solution in an amount sufficient to effect the precipitation of the palladium compound; (c) heating the solution at reflux temperature until precipitation is complete; and (d) centrifuging the solution to separate the precipitated palladium compound from the supermarket liquid. Write: **PAT-APPL-6-159 892**, DOE.

### **Self-Regulating Neutron Coincidence Counter/310**

### **Compteur de coïncidences neutroniques autorégulateur/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed June 16, 1980, by the Department of Energy. A device for accurately measuring the mass of exp 240 Pu and exp 239 Pu in a sample having arbitrary moderation and mixed with various contaminants. The device utilizes a thermal neutron well counter which has two concentric rings of neutron detectors separated by a moderating material surrounding the well. Neutron spectroscopic information derived by the two rings of detectors is used to measure the quantity of exp 239 Pu and exp 240 Pu in device which corrects for background radiation, deadtime losses of the detector and electronics and various other constants of the system. Write: **PAT-APPL-6-159 895**, DOE.

### **Preparation and Use of Crystalline Bis-Monoorganic Phosphonate and Phosphate Salts of Tetravalent Metals/310**

### **Préparation et utilisation de phosphonates et de phosphates cristallins bis-monoorganiques de métaux tétravalents/310**

Filed June 26, 1980, by the Department of Energy. A method of preparing and using the crystalline organic derivatives of the tetravalent metal phosphates and phosphonates provides for the contacting of an aqueous solution of a metal nitrate, with a

solution of an organophosphorus acid for a period of time at room temperature that is sufficient for the formation of a metal phosphate product, and thereafter recovering said product. According to the invention, the product of the disclosed process is used in effecting analytical separations, such as ion exchange and chromatography. Write: **PAT-APPL-6-163 367**, DOE.

**Improved Bismuth Germanate Detector for Ionizing Radiation/310**

**Détecteur amélioré de rayonnement ionisants à cristal de germanate de bismuth/310**

Filed October 24, 1980, by the Department of Health and Human Services. Disclosed is a modification of conventional scintillation cameras wherein the conventional scintillation crystal composed of NaI(Tl) is replaced with a crystal of Bi<sub>4</sub>Ge<sub>3</sub>O<sub>12</sub>(BGO). The BGO crystal is cooled below room temperature in order to improve the light emission characteristics of the crystal. In a preferred embodiment, both the BGO crystal or crystals and the associated photomultiplier tubes are surrounded with a refrigeration device in order to cool the entire assembly to less than room temperature, in a preferred embodiment minus 78.6C. Write: **PAT-APPL-6-200 513**, NTIS.

**Gamma Ray Coincidence Analysis System/310**

**Système d'analyse de coïncidence gammagraphique/310**

Filed January 26, 1981, by the Department of Health and Human Services. This invention relates to position emission tomographs, and more particularly to a gamma ray coincidence analysis system for a multichannel nuclear emission tomograph of the type employing rings of scintillation detectors arranged in quadrants, with respective detectors defining scintillation detection channels. Write: **PAT-APPL-6-228 681**, NTIS.

**Heat Pipes to Reduce Engine Exhaust Emissions/310**

**Tuyaux de chauffage pour réduire les émissions de l'échappement des moteurs/310**

Filed January 30, 1980, by NASA. A fuel combustor employing heat transfer devices for improving combustion efficiency and reducing engine exhaust emissions is described. The fuel combustor consists of an elongated casing with an air inlet conduit portion at one end. An elongated heat pipe is mounted longitudinally in the casing and is offset from and extends alongside an intermediate combustion space. The heat pipe is in heating transmitting relationship with the air intake conduit for heating incoming air. A fuel conduit has a portion engaged in heat transfer relationship of the heat pipe for pre-heating the fuel. The offset position of the heat pipe relative to the combustion space minimizes the quenching effect of the heat pipe on the gaseous products of combustion, as well as reducing coking of the fuel on the heat pipe, thereby improving the efficiency of the combustor. Write: **PAT-APPL-6-229 693**, NASA, Lewis Research Center, 21000 Brookpark Road, Cleveland, Ohio 44135 and send a copy of your initial correspondence to Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113, U.S.A.

**Improved Thermionic Energy Converters/310**

**Amélioration d'un convertisseur d'énergie thermoionique/310**

Filed February 19, 1981, by NASA. The efficiency of thermionic energy converters is improved by reducing plasma losses. This is achieved by internal distribution of tiny shorted cesium diodes driven by the thermal gradient between the primary emitter and the collector. The tiny, shorted diode distribution comprises protrusions of the emitter material from the main emitter face which contact the main collector face thermally but not electrically. The main collector ends of the protrusions are separated from the main collector by a thin layer of insulation, such as aluminum oxide. The diode effect will increase with the use of metals that adsorb cesium less readily for the main emitter ends of the tiny protrusions and metals that adsorb cesium more readily for the main collector ends of the protrusions. Write: **PAT-APPL-6-235 797**, NASA, Lewis Research Center, 21000 Brookpark Road, Cleveland, Ohio 44135 and send a copy of your initial correspondence to Canadian Consulate, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113, U.S.A.

**Leading Edge Vortex Flaps for Drag Reduction/310**

**Volets de tourbillons de bord d'attaque pour réduire la traînée/310**

Filed November 26, 1980, by NASA. A leading edge flap system to control the coiled vortex formation on highly swept slender wings designed for supersonic flight is disclosed. The vortex flap is positioned forward of, and at an angle downward from, the leading edge of the wings. It is retracted beneath the wings during supersonic flight. Flow separation occurs on the highly deflected vortex flap creating a coiled vortex on the vortex flap surface. The suction of the coiled vortex produces an aerodynamic thrust component. The pitch up and lateral stability problem associated with coiled vortex formation on the wing surface are reduced. Segmented flaps with independent adjustment allow optimum flow conditions to be closely approximated. Write: **PAT-APPL-6-210 491**, NASA, Langley Research Center, Mail Code: 279, Hampton, Virginia 23665 and send a copy of your initial correspondence to Canadian Consulate, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

### **A Low Energy Electron Magnetometer/310**

### **Magnétomètre à faisceau d'électrons de faible énergie/310**

Filed November 26, 1980, by NASA. A low energy electron beam magnetometer is described that utilizes near mono-energetic electrons thereby reducing errors due to electron energy spread and electron nonuniform angular distribution. Atoms in an atomic beam of an inert gas are excited to a Rydberg state and then electrons of near zero energy are detached from the Rydberg atoms. The near zero energy electrons are then accelerated by an electric field to form the electron beam. In a second embodiment of the invention a filament emits electrons into an electrostatic analyzer which selects electrons at a predetermined energy level within a very narrow range. These selected electrons make up the electron beam that is subjected to the magnetic field being measured. Write: **PAT-APPL-6-210 498**, NASA, Langley Research Center, Mail Code: 279, Hampton, Virginia 23665 and send a copy of your initial correspondence to Canadian Consulate, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

### **Fixture for Environmental Exposure of Structural Materials Under Compression/310**

### **Dispositif pour l'exposition au milieu ambiant de matériaux de construction travaillant à la compression/310**

Filed November 26, 1980, by NASA. A device for stressing a deformable materials specimen consists of a top plate and a bottom plate sandwiching a guide cylinder. The specimen is positioned on the bottom plate and attached to a load piston. Force is applied through the top plate into the guide cylinder. Once the specimen has been loaded, the stress is maintained by tightening tie bolt nuts. Write: **PAT-APPL-6-210 506**, NASA, Langley Research Center, Mail Code: 279, Hampton, Virginia 23665 and send a copy of your initial correspondence to Canadian Consulate, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

### **Dual Laser Optical System and Method for Studying Fluid Flow/310**

### **Système et méthode optiques à double laser pour l'étude d'écoulements fluides/310**

Filed January 12, 1981, by NASA. A dual laser optical system and method is disclosed for visualization of phenomena in transparent substances which induce refractive index gradients such as fluid flow and pressure and temperature gradients in fluids and gases. Two images representing mutually perpendicular components of refractive index gradients are viewed simultaneously on screen. Two lasers having wave lengths in the visible range but separated by about 1000 angstroms are utilized to provide beams which are collimated into a beam containing components of the different wave lengths. The collimated beam is passed through a test volume of the transparent substance. The collimated beam is then separated into components of the different wave lengths and focused on to a pair of knife edges arranged mutually perpendicular to produce and project images onto screen. Write: **PAT-APPL-6-224 232**, NASA, Marshall Space Flight Center, Mail Code: CC01, Huntsville, Alabama 35812 and send a copy of your initial correspondence to Canadian Consulate General, 900 Coastal States Building, 260 Peachtree Street, Atlanta, Georgia 30303, U.S.A.

### **Intrusion Detection Method and Apparatus/310**

### **Méthode et appareil de détection des intrus/310**

Filed January 28, 1981, by NASA. A system for monitoring unwanted subterranean entries and departures from a secure and for locating and intrusion includes an array of seismic sensors arranged along a perimeter to be monitored. Two wires lead from each sensor to a central monitoring station which has three modes of operation. In the first mode, the output of all the seismic sensors is summed into a receiver for amplification and detection. In the second mode, the individual output signals from the sensors are multiplexed into the receiver via scanner and gates for sequentially interrogating each of the sensors. The third operating mode permits the operator to manually scan up and down the individual sensors. In this manner a more precise location of the intrusion is obtained. An automatic gain control is provided for the receiver allowing the sensitivity of the receiver to be automatically adjusted for optimum sensitivity with changes in background noise level. Write: **PAT-APPL-6-229 231**, NASA, Ames Research Center, Mail Code: 200-11A, Moffett Field, California 94035 and send a copy of your initial correspondence to Canadian Consulate General, One Maritime Plaza, Alcoa Building, Suite 1100, Golden Gateway Center, San Francisco, California 94111, U.S.A.

### **Sidelooking Laser Altimeter for a Flight Simulator/310**

### **Altimètre laser à visée latérale pour simulateur de vol/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed February 13, 1981, by NASA. A laser altimeter for a flight simulator which allows measurement of the height of the simulator probe above the terrain directly below the probe tip is disclosed. A laser beam is directed from the probe at an angle to the horizontal to produce a beam spot on the terrain. The angle that the laser beam makes with the horizontal is varied so as to bring the beam spot into coincidence with a plumb line coaxial with the longitudinal axis of the probe. A television altimeter camera observes the beam spot and has a raster line aligned with the plumb line. Spot detector circuit coupled to the output of the TV camera monitors the position of the beam

spot relative to the plumb line. An error signal is produced by computer driving, via a servo motor, the laser beam optics so as to cause the beam spot coincidence with the plumb line. At coincidence, computer looks up in a table the altitude of the probe for the given angle and reads out the altitude to an altimeter readout. Write: **PAT-APPL-6-234 244**, NASA, Ames Research Center, Mail Code: 200-11A, Moffett Field, California 94035 and send a copy of your initial correspondence to Canadian Consulate General, One Maritime Plaza, Alcoa Building, Suite 1100, Golden Gateway Center, San Francisco, California 94111, U.S.A.

#### **A Cycling Joule-Thomson Refrigerator/310**

#### **Appareil frigorifique à effet Joule-Thomson et réinjection/310**

Filed January 28, 1981, by NASA. A symmetrical adsorption pump/compressor system having a pair of mirror image legs and a Joule-Thomson expander, or valve, interposed between the legs thereof for providing a new, efficient refrigeration cycle is described. The system further includes a plurality of gas operational heat switches adapted selectively to transfer thereto heat from a thermal load and to transfer or discharge heat therefrom through a heat projector, such as a radiator or the like. The heat switches comprise gas pressurizable chambers adapted for alternate pressurization in response to adsorption and desorption of a pressurizing gas confined therein. Write: **PAT-APPL-6-229 239**, Monte F. Mott, Patent Counsel, NASA Resident Legal Office, Mail Code: 180-601, 4800 Oak Grove Drive, Pasadena, California 91103 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014, U.S.A.

#### **Electromigration Process for the Purification of Molten Silicon During Crystal Growth/310**

#### **Procédé de purification par électromigration du silicium fondu pendant la croissance d'un cristal/310**

Filed February 10, 1981, by NASA. A process for the purification of molten materials during crystal growth by electromigration of impurities to localized dirty zones has particular applications for silicon crystal growth according to Czochralski techniques and edge defined film fed growth (EFG) conditions. In the Czochralski crystal growing process, the impurities are electromigrated away from the crystallization interface by applying a direct electrical current to the molten silicon for electromigrating the charged impurities away from the crystal growth interface. In the EFG crystal growth process, a direct electrical current is applied between the two faces which are used in forming the molten silicon into a ribbon. The impurities are thereby migrated to one side only of the crystal ribbon. The impurities may be removed or left in place. If left in place, they will not adversely affect the ribbon when used in solar collectors. The migration of the impurity to one side only of the silicon ribbon is especially suitable for use with asymmetric dies which preferentially crystallize uncharged impurities along one side or face of the ribbon. Write: **PAT-APPL-6-233 269**, Monte F. Mott, Patent Counsel, NASA Resident Legal Office, Mail Code: 180-601, 4800 Oak Grove Drive, Pasadena, California 91103 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014, U.S.A.

#### **Antenna Grout Replacement System/310**

#### **Système de remplacement de mortier de coussinet d'antenne/310**

Filed February 10, 1981, by NASA. An epoxy grout suitable for use in mounting and positioning bearing runner plates used in hydrostatic bearing assemblies for rotatably mounting large radio telescopes structures to stationary support pedestals is described. The epoxy grout may be used in original mountings or may be used as part of a replacement system for repairing cavities in existing grout resulting from grout deterioration. The epoxy grout has a relatively short work life and cure time even in the presence of hydraulic oil. The epoxy grout cures without shrinking or sagging to form a grout which is sufficiently strong and durable to provide a grout especially well suited for use under the high pressure loading and close tolerance requirements of large hydrostatic bearing assemblies. Write: **PAT-APPL-6-233 271**, Monte F. Mott, Patent Counsel, NASA Resident Legal Office, Mail Code: 180-601, 4800 Oak Grove Drive, Pasadena, California 91103 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014, U.S.A.

#### **Optical Signature Generating and Correlating Apparatus/310**

#### **Générateur et corrélateur de signature optique/310**

Filed February 10, 1981, by NASA. An image sensor of the charge coupled device (CCD) type is described which can automatically generate a signature, representing an optical image, to facilitate cross correlation with another image. A transfer detecting device is provided at an edge of each pixel of the array to detect the magnitude of the charge representing the light which fell on the pixel. A conductor is connected in parallel to all detecting devices of a row of pixels to generate an output representing the light falling on an entire row of pixels. Another group of transfer detecting devices is provided which can detect a second transfer of charges which were originally transferred out of the pixels. Each column of second transfer detecting devices is likewise connected to another conductor. The charge gathered by each conductor can be transferred directly to a cell of a CCD register of a cross correlating device. Write: **PAT-APPL-6-233 274**, Monte F. Mott, Patent Counsel, NASA Resident Legal Office, Mail Code: 180-601, 4800 Oak Grove Drive, Pasadena, California 91103 and

send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014, U.S.A.

**Fiberglass/Epoxy Composite Automotive Door  
Structure Including a Glass-Reinforced Intrusion  
Strip/310**

**Structure de portière d'automobile en composite  
fibre de verre-époxyde comprenant une bande de  
pénétration renforcée de verre/310**

Filed February 19, 1981, by NASA. A lightweight, composite outer door panel for a vehicle and a method for forming it are presented. The door is characterized by a molded outer panel having an integral comolded intrusion strip extended along one surface thereof, said outer panel being formed of a sheet moulding compound consisting essentially of chopped glass fibers randomly dispersed in a polyester resin and said intrusion strip being formed of a material consisting essentially of continuous glass fibers, and a pair of mutually spaced hinge brackets bonded to the intrusion strip near one end thereof and a latch bracket bonded to the strip near the other end thereof, said brackets being employed for imparting fixity to the opposite ends of said intrusion strip. Write: **PAT-APPL-6-235 867**, Monte F. Mott, Patent Counsel, NASA Resident Legal Office, Mail Code: 180-601, 4800 Oak Grove Drive, Pasadena, California 91103 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014, U.S.A.

**Radar Video Compression System/310**

**Système de compression vidéo radar/310**

Filed October 14, 1980, by the Department of the Navy. A system for time-compressing radar video is disclosed to improve the graphic presentation thereof on a CRT display. Quantized input video is pipelined as cell pairs into and out of a pair of parallelly-arranged memory banks by means of input and output latches. The memory banks are controlled having alternating read and write modes which are interchanged in synchronism with the video scan period so that a preceding scan is read out of one bank at a controlled read clock frequency while a current scan is written into the other bank at a fixed write clock frequency, the degree of video compression being determined by the ratio of the read-to-write frequencies. A pair of series-connected rate multipliers each are fed 6-bit rate words for varying the read clock frequency on either a linear or non-linear scale. Video integration is provided at the inputs of each memory bank by magnitude comparators which compare stored contents of each range cell in the banks with current input video for the respective cell and steer multiplexers to either retain or rewrite the contents of the cell. Write: **PAT-APPL-6-116 700**, NAVY.

**An Optimally Loaded Electrohydrodynamic Power  
Generator/310**

**Groupe électrogène électrohydrodynamique à  
charge optimale/310**

Filed March 4, 1981, by the Department of the Navy. The present invention relates to an optimum channel or nozzle configuration for a device generating useful electrical power by means of an electrohydrodynamic (EHD) Process. The present invention provides a uniform maximum loading throughout an EHD conversion channel. The channel is in the form of a slender nozzle of a geometrical shape defined by a pair of parametric equations which have the electric pressure at its allowable limit everywhere along the conversion channel of an EHD power generator. Write: **PAT-APPL-6-128 593**, NAVY.

**A Multiple Scanivalve Control Device/310**

**Système de commande de "scanivalves"  
multiples/310**

Filed March 24, 1980, by the Department of the Navy. The present invention relates to control circuits, and more particularly to a multiplexer printed circuit board for performing address interrogation for multiple devices under computer control. The present invention provides a controller which features digital port address display, manual control functions, signal conditioning, transducer outputs and computer address interrogation of each of a plurality of devices. For address interrogation a multiplexer printed circuit board is described which is compatible with a standard digital interface bus. The current address is input to the input of a plurality of multiplexers. The address of the device to be selected is sent from the computer to a data input/output circuit. The address is stored and routed to the address input lines of the multiplexers. The state of the selected input lines are transmitted to the computer. Computer software then decodes the device address. The object of the present invention to provide: (1) A controller for multiple devices to obtain on-line data acquisition; (2) A multiplexer printed circuit board for computer address interrogation of a plurality of devices; and (3) A controller compatible with a standard digital interface bus. Write: **PAT-APPL-6-137 172**, NAVY.

**Apparatus for Vertically Stacking Flat Weights/310**

**Dispositif pour l'empilage vertical de contrepoids  
plats/310**

Filed April 25, 1980, by the Department of the Navy. This application discloses a system for loading/unloading a series of vertically stacked weights into a weight holding mechanism, U.S. Patent No. 4,197,806, filed 14 July 1978, each weight being substantially flat and having a central aperture. Two parallel aligned spatially separated c-tubes receive a weight and are

caused to rotate via a right-angle drive mechanism. The weight held by the rotating c-tubes is then lifted vertically and received by a holding mechanism aligned with the central aperture of the weight. A primary object of invention is to provide an apparatus for loading/unloading and releasably holding a vertically stacked series of flat weight (as in releasable ballast for deep submersible vehicles). A secondary object of invention is to provide a two-part weight loading/unloading apparatus in which the weight loader assembly may be used to load a number of weight release mechanisms with vertically stacked series of flat weights. Write: **PAT-APPL-6-144 707**, NAVY.

### **Blasting Cap Container/310**

### **Coffret à détonateurs/310**

Filed June 16, 1980, by the Department of the Navy. In accordance with the present invention there is provided a blasting cap shipping and storage container for total containment of the possible detonation of a number of blasting caps stored and transported therein. The container provided in accordance with the instant invention comprises a cylindrical container welded closed on one end. The other end is normally closed by a screw-on door member that has corresponding heavy buttress threads. The interior of said vessel or container is provided with an insert made of a frangible foam or similar absorptive material having at least ten openings in the insert, each of said openings accommodating one blasting cap or blasting caps. One additional feature of the container is a vent means comprising an opening in association with a valve mechanism extending through the wall of the container. Such a vent mechanism with a screw in valve allows gases produced during detonation or explosion of the caps to escape from the container at a low pressure and low velocity so as not to disturb or shock any adjacent primary explosive in the area or to injure personnel in the area. One object of the present invention is to allow safe transportation and storage of a plurality of blasting caps in the same vehicle with primary explosives without any danger of detonating the primary explosives. Write: **PAT-APPL-6-160 051**, NAVY.

### **Bi-Planner Swirl Combustor/310**

### **Chambre de combustion à deux plans de tourbillonnement/310**

Filed September 5, 1980, by the Department of the Navy. The invention comprises a combustion method and apparatus which is generally characterized by a lower circular cylindrical section with airflow controllers. The lower cylindrical section is contiguous with an upper section with airflow controllers. The cylindrical section sits upon and is in direct contact with a bottom plate, wherein the bottom plate is equipped with a swirler means/and fuel nozzle. The entire combustor is surrounded by an air jacket. The function of the air jacket is to direct an air supply to the combustor and is usually equipped with a supply fan on the bottom cover or side. In one preferred embodiment of the invention the swirler introduces inner air at or near the base of the lower cylindrical section. This air is formed into a tornado or generally horizontal plane swirl. Inlet air directed into the upper conical section of the combustor is forced downward along the interior walls of the combustor and forms a doughnut swirl or swirling of inlet air in a generally vertical plane. Applicants summarize the invention as a combination effect of this swirling inlet air mixing with gases of combustion which greatly increases efficiency and results in an overall reduction in fuel consumption. Write: **PAT-APPL-6-184 513**, NAVY.

### **Improved Field-Effect Transistor/310**

### **Amélioration du transistor à effet de champ/310**

Filed September /6, 1980, by the Department of the Navy. This invention discloses a method for improving field-effect transistors. Wherein the resistivity of the upper layer of the source-gate channel region of a GaAs field-effect transistor (FET) may be selectively raised. Impurity ions are implanted in the source-gate channel region followed by a much shallower implant of boron in the same region. The boron ion concentration should exceed the N<sup>+</sup> impurity ion concentration by a factor of 2 or more. Write: **PAT-APPL-6-187 672**, NAVY.

### **Rotating Squid Magnetometers and Gradiometers/310**

### **Magnétomètres et gradiomètres Squid rotatifs/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed December 10, 1978, by the Department of the Navy. A method and apparatus for measuring the strength, direction and gradients of an unknown magnetic field, through the use of rotating superconducting quantum interference devices (SQUID). The apparatus utilizes SQUID magnetometers, off-diagonal SQUID gradiometers and diagonal SQUID gradiometers mounted upon a rotatable and translatable element to a plurality of positions in space. The instantaneous outputs of a plurality of SQUID devices are electronically analyzed to provide the magnetic field and gradient measurements. Write: **PAT-APPL-6-214 839**, NAVY.

### **Void Filler Foam Fire Suppression system/310**

### **Système d'extinction d'incendies par mousse expansible/310**

Filed December 16, 1980, by the Department of the Navy. A laminated barrier comprising alternate layers of rigidized low density cellular material and ballistic nylon cloth useful in an aircraft for minimizing projectile and shrapnel damage, and

possible fuel ignition in the fuselage caused by groundfire in the vicinity of fuel tanks located adjacent to the engines. Write: **PAT-APPL-6-217 282**, NAVY.

### **Electronic Score Pad/310**

### **Clavier d'entrée de données pour enseignement automatisé/310**

Filed January 12, 1981, by the Department of the Navy. A scoring system comprising a plurality of hand held programmable electronic score pads, a data interface device, and a general purpose computer. Students enter identifying data and answers into a data memory of the pads. Each pad subsequently is inserted into a data interface device whereupon the data memory is dumped, upon command, into a general purpose computer for analysis of the data and future presentation. The data is optically transmitted to the interface device which converts it to a format acceptable to the general purpose computer. Each pad has a multitude of features to facilitate data entry controlled by a microprocessor pre-programmed to sequence in a desired manner. Write: **PAT-APPL-6-224 711**, NAVY.

### **Low Noise Remote Optical Fiber Sound Detector/310**

### **Détecteur acoustique à distance, à fibres optiques et à faible bruit/310**

Filed January 21, 1981, by the Department of the Navy. This abstract discloses an optical system for frequency-modulation heterodyne detection of an acoustic pressure wave signal. An optical beam is directed into a Bragg cell outside of the fluid medium in which acoustic signals are to be detected. The Bragg cell modulates the incident beam such that two beams of different frequency exit the cell. The two beams are directed into an input optical fiber and the resultant combined beam is transmitted over a desired distance to a fiber optic transducer disposed in the fluid medium. The transducer includes two coiled optical fibers, a reference fiber and a signal fiber, each of which has a different sensitivity to incident acoustic pressure wave signals. The transmitted beam is directed from the input optical fiber through a power divider which splits the beam into two equal parts, one part passing through the reference fiber, the other part passing through the signal fiber. A filter in the signal fiber transmits only a fraction of the light at one of the two frequencies. The two parts of the split beam exiting the coiled optical fibers are coupled into another optical fiber and transmitted to a photodetector from which the output signal is processed to indicate the detection of an acoustic pressure wave signal. Write: **PAT-APPL-6-226 986**, NAVY.

### **Low Sidelobe Pulse Compressor/310**

### **Compresseur d'impulsions à faibles lobes secondaires/310**

Filed February 3, 1981, by the Department of the Navy. Briefly, the pulse compression system of the present invention comprises a signal generator for generating a step approximation to a linear FM signal with N frequency steps, a transmitter circuit for transmitting this stepped signal, a receiving circuit for receiving echos from the transmitted signal, a converting circuit for converting the received echo to a baseband signal and including a narrow band filter therein, an analog-to-digital converter for digitizing the baseband signal at the Nyquist sampling rate for the baseband, a Fast Fourier Transform circuit for weighting discrete sets of N digitized samples from the A/D converter and generating N squared weighted outputs therefrom representing the passbands for the N transmitted frequency steps, a differential delay circuit for differentially delaying the N passband outputs such that the passband outputs occur simultaneously, and an adding circuit for adding the differentially delayed output to form a single pulse such that when an echo is properly indexed within a discrete set of N squared time delay taps, then a short pulse is generated with a peak amplitude and low sidelobes. Write: **PAT-APPL-6-230 984**, NAVY.

### **Controlled Porosity Sheet for Thermionic Dispenser Cathode and Method of Manufacture/310**

### **Description et méthode de fabrication d'une feuille à porosité contrôlée pour cathode thermoionique à réserve/310**

Filed February 6, 1981, by the Department of the Navy. A controlled porosity sheet defining a surface for a thermionic dispenser cathode and a method of manufacture. Starting with a generally flat silicon template substrate structure having an array of upstanding microposts 1-25 microns across on 5-100 micron spacings from each other, a layer of metal is deposited on the substrate to surround the microposts and cover the substrate structure to a desired depth. The metal layer is then abraded to a smooth, flat surface which exposes the microposts. Thereafter, the silicon substrate and microposts are completely etched away, leaving a metal sheet having micron-size holes there through. Write: **PAT-APPL-6-232 444**, NAVY.

### **360 Degree Closed Circuit Television System/310**

### **Système de télévision en circuit fermé à couverture de 360 degrés/310**

Price per copy from NTIS: PC U.S. \$6.50/MF U.S. \$3.50, filed February 23, 1981, by the Department of the Navy. A 360 degree closed circuit television system is disclosed which includes six background scene cameras, each camera of which scans a

sixty degree segment of a background scene appearing on a 360 degree reflective display screen, and each camera of which provides a background information signal in response to scanning of the background scene; and six target cameras, each target camera of which scans a target, and each camera of which provides a target information signal in response to scanning of the target. The background scene and target information signals are then supplied to an electronic gating circuit which synthesizes the background scene and target information signals so as to produce six background scene-target information signals. Each background scene-target information signal activates one of six projectors with each projector, in turn, broadcasting a sixty degree segment of the background scene upon one screen element of a hexagonal shaped transparent display screen. In addition, each projector broadcast on the transparent display screen the target for a predetermined time period such that an observer will observe the target moving around the transparent display screen. Movement of the target about the transparent display screen is controlled by a digital computer in accordance with a target movement program. Write: **PAT-APPL-6-236 948**, NAVY.

**Fluorinated Diacrylic Esters and Polymers  
Therefrom/310**

**Esters diacryliques fluorés et  
polyfluorodiacrylates/310**

Filed February 25, 1981, by the Department of the Navy. It is an object of the present invention to substantially increase the fluorocarbon content in acrylic resins, without interfering with the acrylate properties. Another object of this invention is to vary the fluorine content of fluoacrylic content of fluoacrylic resins over wide ranges through the placement of perfluoro-alkyl pendant groups of different lengths. These and other objects are achieved by reacting a fluoroaromatic diol and acryloyl chloride in a highly fluorinated solvent with an acid acceptor to form a fluorinated diacrylate ester monomer and purifying the monomer by forming a solution, adding decolorizing carbon to the solution and percolating the solution through activated alumina. Write: **PAT-APPL-6-237 838**, NAVY.

**Optical Fiber Magnetic Field Sensor/310**

**Capteur de champ magnétique à fibres  
optiques/310**

Filed March 6, 1981, by the Department of the Navy. This invention discloses an optical fiber sensor for detecting the presence of magnetic fields. Light carrying optical fibers are arranged in the form of a dual path interferometer wherein the separate paths define sensing and reference arms. The sensing arm is associated with magnetostrictive material for defining a sensing element which in the presence of a magnetic field undergoes dimensional changes to stretch the optical fiber to change its optical path length thus causing a detectible phase shift in light passing therethrough when compared with the same light passing through the optical fiber of the reference arm. The sensing element is isolated from thermal and acoustic perturbations thus permitting low frequency magnetic field detection. Write: **PAT-APPL-6-241 289**, NAVY.

**Flush Mountable Plasma Density Profile Probe  
Device/310**

**Sonde affleurante de profil de densité  
plasmique/310**

Filed March 9, 1981, by the Department of the Navy. This invention relates to a device for measuring the plasma density profile in aerodynamic flow fields about supersonic space vehicles or test models. The flush mountable plasma density profile probe device includes a plurality of striplines embedded in and separated by a dielectric support member from a conducting ground plane below. The striplines, which are aligned along an axis perpendicular to the latitudinal axis of the test model, are disposed adjacent and parallel each other and are isolated from each other by a dielectric support member. The width of each stripline is made small compared to the spacing between striplines, so that the conduction path is principally in the plasma flow field surrounding the device. A voltage potential placed across one of the outer most striplines generates an electric field which results in an induced voltage potential between each of the other striplines and the conducting ground plane. These induced voltage potentials depend upon the conductive properties of the plasma flow field through which each associated fringing field line of the electrical field traverses. The conduction between each of the striplines and the driven stripline is a measure of the plasma density as a function of the distance away from the surface of the test model. Write: **PAT-APPL-6-242 086**, NAVY.

**A Waveplate for Correcting Thermally Induced  
Stress Birefringence in Solid State Lasers/310**

**Lame biréfrigente de correction des contraintes  
thermiques dans les lasers à semi-  
conducteurs/310**

Filed March 13, 1981, by the Department of the Navy. The insertion of a waveplate into a laser resonator using Porro prisms is used to change the overall polarization transmission matrix for the resonating cavity to a value which is independent of ray coordinates. This is done by calculating the necessary matrix values for the waveplate as compared to the total polarization transmission matrices of specific optical components of the resonating cavity. Since all factors except for the waveplate are fixed in the creation of the resonating cavity, the specific matrix description of the waveplate can be defined and a waveplate produced with particular matrix elements. Additional control of the transmission matrix elements can be provided by selectively coating the reflectors in the resonating cavity. Write: **PAT-APPL-6-243 416**, NAVY.

### **A Safety Mooring Line/310**

### **Aussière d'amarrage de sécurité/310**

Filed March 16, 1981, by the Department of the Navy. This invention provides a safely mooring line which is restrained from snapping back when parting. A high strength, low-stretch line is braided or twisted in a helical path around a high-stretch safety line. The safety line serves to retain the ends of the high strength line should that line part. A load-bearing jacket braided or stranded into the rope and having a slightly fuzzy nap protects the rope, enhances wear and produces better rendering characteristics over bits and capstans. Write: **PAT-APPL-6-244 463**, NAVY.

### **Anamorphic System for Redundancy in Coherent Fiber Optic Bundle Transmission/310**

### **Système anamorphoseur de redondance pour la transmission par fibres optiques d'images en lumière cohérente/310**

Filed March 19, 1981, by the Department of the Navy. This invention relates to an optical transmission system for eliminating picture element information loss during the transmission of image forming light through a fiber optics bundle. This invention comprises a relatively simple image transmission system which may be used to transmit image forming light over long distances without image deterioration due to fiber structure and broken fibers within the system. Included is an image source which broadcasts from the optical output thereof a narrow circular beam of image forming light, and a first pair of cylindrical shaped mirrors adopted for amplifying the image forming light beam such that the aforementioned image forming light beam will assume an elliptical configuration. The image forming light beam is then passed through a fiber optics bundle to a second pair of cylindrical shaped mirrors which, in turn, reduce the image forming light beam to a circular configuration so as to allow for the broadcasting thereof by a projector upon a reflective display screen such that a visual image will appear upon the reflective display screen. Breakage of one or more fibers within the fiber optics bundle will reduce only the light intensity of certain parts of the visual image broadcast upon the reflective display screen, since the image forming light beam was amplified during transmission through the fiber optics bundle by the first pair of mirrors. Write: **PAT-APPL-6-245 485**, NAVY.

## **Licensing Opportunities Through the Electric Power Research Institute (EPRI) of the United States**

## **Possibilités d'acquisition de licences par l'intermédiaire de Electric Power Research Institute (EPRI) des États-Unis**

The following inventions are offered for licensing by the Electric Power Research Institute of the United States. For additional information and/or negotiations write: Manager of Patents and Licensing, EPRI, 3412 Hillview Avenue, P.O. Box 10412, Palo Alto, California 94303 and send a copy of your initial correspondence to Canadian Consulate General, One Maritime Plaza, Alcoa Building, Suite 1100, Golden Gateway Center, San Francisco, California 94111, U.S.A.

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### **Spall-Resistant Steel Tubing or Other Steel Articles Subjected to High Temperature Steam and Method/310**

### **Tuyaux ou autres articles d'acier résistant à l'écaillage soumis à un jet de vapeur à haute température et méthode/310**

A process is disclosed herein in which the inner surface of a terrific steel tube is subjected to relatively high temperature steam for a period of time, thereby resulting in the formation of a duplex scale layer of steam-grown oxide at the inner surface. As also disclosed herein, the steel tubing is pretreated so as to form a diffusion barrier at the center of the duplex layer. This barrier serves to retard the rate at which the duplex layer forms, thereby reducing the chances that the scale will grow to sufficient thickness that it will spall in response to thermal stress as the tube is placed into and taken out of service. U.S. PATENT PENDING (KD0644-01-01)

### **Multiple Wall Structure for Flexible Cable Using Tubular and Spiral Corrugations/310**

### **Structure à plusieurs parois pour des câbles souples utilisant des ondulations tubulaires et en spirale/310**

The central conductor of a gas-insulated flexible cable consists of separate concentric tubes which are alternately spirally corrugated and annularly corrugated so that the corrugations will not nest relative to one another and are axially movable relative to one another. U.S. PATENT PENDING (KD7837-01-13)

### **Non-Metallic Insulator Inserts for Flexible Gas Insulated Cable/310**

### **Isolateur interne non-métallique pour câbles isolés au gaz/310**

A soft silicone rubber insert is compressed between the interior surface of an insulator support in a gas-insulated cable and the outer surface of a soft aluminum central conductor which is supported within the interior surface of an opening in the insulator. The flexible rubber insert prevents scratching of the surface of the aluminum conductor and the production of aluminum particles during relative movement between the insulator and the aluminum tube. U.S. PATENT PENDING (KD7837-01-17)

### **Sonic Waveguide Arrangement Using Different Waveguides and Technique for Coupling the Waveguides Together/310**

### **Dispositif de guide d'ondes sonores utilisant différents guides d'ondes et technique pour appariage des guides d'ondes ensemble/310**

A sonic waveguide arrangement for use in transmitting sonic energy from one point to another along a non-linear path is disclosed herein and utilizes at least two different waveguides. One which is linear or straight in configuration and one which is curved. The first of these two waveguides is of a type which can transmit sonic energy over a relatively long linear or straight line path with relatively low transmission losses and the second is of the type which can transmit sonic energy over a relatively short curved path with relatively low transmission losses. U.S. PATENT PENDING (KD0994-01-03)

**Method of Making a Transformer or Like Core from Amorphous Metal Strip/310**

**Méthode de fabrication d'un noyau de transformateur ou d'un noyau similaire à partir d'une baguette de métal amorphe/310**

A method of making a magnetic core from amorphous strip material for use in a transformer or like electrical induction apparatus is disclosed herein. In accordance with this method, a continuous strip of non-annealed amorphous metal is wound around a mandrel to form an initially round core which is clamped in a predetermined way and cut entirely through one transverse section while a rust inhibiting liquid coolant is applied thereto. This provides a plurality of connected strips which are thereafter separated into a number of groups and assembled together in a predetermined way to form a substantially oval shaped core. This latter core is formed into final shape and thereafter annealed and simultaneously subjected to a magnetic field of predetermined strength in preparation for receiving an associated electric coil or coils.

U.S. PATENT PENDING (KD1290-02-12)

**Detection System for Distinguishing Between Voids and Foreign Particles in Materials and Method/310**

**Système de détection pour distinguer les cavités et les particules solides dans les matériaux et méthode/310**

A technique which detects for the presence of particles or voids in material is disclosed herein. This technique utilizes an overall optics arrangement for producing a beam of radiation and for directing the latter into and through the material such that any void or foreign particle which is present causes the radiation impinging thereon to form an overall scattering pattern distinctly characteristic of whether the impinged void or foreign particle is generally spherical or non-spherical in shape. The technique disclosed herein also provides an arrangement for detecting scattered radiation, if any, and distinguishing between spherical and non-spherical foreign particles and, in a preferred embodiment, whether the impinged void/foreign particle is relatively large or small, relative to wavelength of said beam.

U.S. PATENT PENDING (KD0794-02-01)

**Cable Reaming Apparatus and Method/310**

**Dispositif d'alésage des câbles et méthode/310**

The technique for replacing an existing underground cable and a specific apparatus for doing so are disclosed herein. The apparatus includes a main body or cable follower which is interconnected with the cable to be replaced for slidable movement along the latter. At the same time, the apparatus provides means for reaming around the cable, preferably by means of one or more fluid jets. Once the soil surrounding the cable has been loosened using this apparatus, the cable can be easily pulled out of the ground. At the same time, the replacement cable can be attached to the existing cable and pulled into its place.

U.S. PATENT PENDING (KD1287-01-02)

**Method of and System for Determining Particular Species of Chlorine in a Water Sample/310**

**Méthode et système pour identifier une espèce particulière de chlore dans un échantillon d'eau/310**

A technique for determining and distinguishing between specific species of chlorine in a supply of water is disclosed herein along with certain applicable apparatus. In carrying out this technique, one or more water samples are obtained from a larger supply and made to display a pH within a specific range. In a preferred embodiment, a sample is provided for each of the different species of chlorine to be determined. A predetermined amount of hydrogen peroxide is added to each of these samples. If hypochlorous acid and/or hypochlorite (one of the species to be determined) is present in any of the samples, the hydrogen peroxide by itself will react therewith for producing oxygen. If however either monochloramine or dichloramine (other chlorine species) is present, it is necessary to combine the hydrogen peroxide with a certain minimum amount of iodine, preferably in the form of potassium iodide, to produce an oxygen evolving reaction. Dichloramine requires a greater concentration of iodine than monochloramine and, hence, the two can be distinguished from one another. In each case, the produced oxygen is detected for determining whether any or all of these chlorine species are present in the water supply and the amounts thereof.

U.S. PATENT PENDING (KD1435-01-01)

**Water Penetrant Examination Method Using an Electro-Optical Scanner/310**

**Méthode d'examen avec pénétrant aqueux utilisant un dispositif d'exploration électro-optique/310**

A liquid penetrant method for inspecting the interior of conduits and the like in which water entrapped in the surface openings of defects is detected by an electro-optical scanner system so as to locate the defects.

U.S. PATENT PENDING (ED1448-79-08)

**System and Method for Measuring Ultrasonic Return Signals/310**

**Système et méthode pour mesurer les signaux de retour ultrasoniques/310**

An ultrasonic return signal analyzing instrument and method including analog circuitry for making partial power measurements on two selected frequency bands of the frequency spectrum of an ultrasonic return signal waveform and digital circuitry for measuring selected features of the envelope of the ultrasonic return signal waveform. Digital waveform measurements are converted to analog signals and then combined in an algorithmic combining circuit to produce a test statistic signal. A decision circuit receives the test statistic signal and registers a decision on a characteristic of the structure under examination based on the value of the test statistic signal. The instrument includes a signal normalization circuit to normalize the ultrasonic return signal to a fixed peak value and includes a frequency up-converter in the normalizing circuit and frequency down-converters in the partial power measurement circuits for increasing the accuracy of peak detection in the normalizing circuit and envelope detection for the partial power band signals and the total power signal. The digital waveform feature measurement circuitry includes circuitry for measuring the rise time and duration time of the ultrasonic return signal envelope and logic is provided for handling two distinct return signal waveforms with rise time and duration time measurements being accomplished on the highest distinct pulse within the gate signal window of the instrument. A gate signal generated from the delayed gate input of the pulser receiver of an ultrasonic instrument is utilized to gate the various measurement functions so that measurements will be made only on the selected segment of the ultrasonic return signal waveform desired to be analyzed. A Fisher linear discriminant function is used as the algorithm in connection with analyzing ultrasonic return signals from stainless steel pipe having possible intergranular stress corrosion cracking conditions therein.

U.S. PATENT PENDING (KD1448-05-01)

**Method for Homogenizing Mixed Oxide Nuclear Fuels/310**

**Méthode d'homogénéisation des combustibles nucléaires oxydés, mélangés/310**

A method for homogenizing plutonia particles in mixed oxide nuclear reactor fuels. The method includes the step of blending urania particles and plutonia particles together and pressing the mixture into a pellet. The pellet is thereafter sintered in a reducing atmosphere with hydrogen present so that pores are formed in the pellet. The plutonia particles are thereby transformed into spherical shells of dense  $\text{PuO}_{2-x}$  that surround each pore and which homogenizes the fuel.

U.S. PATENT NO. 4261934 (KD0396-01-01)

**Descaling Process/310**

**Processus de désentartrage/310**

A process for the removal of deposits consisting essentially of the oxides of one or more transition metals from a surface, which process comprises contacting the said surface at a pH below 7.0 with a reagent comprising a one-electron reducing agent which is a low oxidation state transition metal ion in combination with a complexing agent which is thermally stable at an operating pH. The process is particularly suitable for decontaminating the cooling system or a component associated with the cooling system of a water-cooled nuclear reactor, or other contaminated plant items.

U.S. PATENT PENDING (KD1329-01-01)

**Leak Detecting Arrangement Especially Suitable for a Steam Condenser and Method/310**

**Dispositif de détection des fuites destinées tout particulièrement pour un condenseur à vapeur et méthode/310**

The detection of leaks in tubes, particularly cooling tubes in a steam condenser, is disclosed herein. In accomplishing this, a discrete amount of helium or similar tracer gas is initially directed into the front ends of the tubes while, at the same time, this gas is prevented from escaping into the ambient surroundings. Thereafter, the gas is drawn or otherwise moved by positive force through the tubes to the backends thereof, causing a portion of the gas to escape through leaks in the tubes, if any such leaks exist. The escaping gas, if any, is detected to indicate the presence of a leak and, at the same time, the non-escaping tracer gas reaching the backends of the tubes is captured and directed to a remote location (TPS78-775).

U.S. PATENT NO. 4226113 (XD1246-01-01)

## Licensing Opportunities Through National Research Development Corporation, England

These technologies are offered for licensing through the National Research Development Corporation, Kingsgate House, 66-74 Victoria Street, London SW1E 6SL. Please quote the executive, full title and reference number when requesting information or licensing rights on any item and send a copy of your initial correspondence to: Commercial Division, Canadian High Commission, One Grosvenor Square, London, W1X 0AB, England.

### Spiral plating apparatus 116983\*/310

This is an instrument for making microbial counts in research and applied microbiology and it has the advantage that accurate counts can be obtained without sample dilution up to microbial densities of  $10^9$  cells per millilitre, using a single agar plate. It achieves this by inoculating the plate in a spiral track in a controlled manner, resulting in a constantly reducing concentration range along the track. After incubation, well spaced colonies along a chosen portion of the track can be counted and a simple calculation made to arrive at the microbial count in the original sample. Differentiation of microorganisms in a sample can also readily be obtained by plating on several differential media, without having to reload the instrument with the sample under test. The inoculation takes about a minute and there is a saving in time, labour and materials by a factor of 20-25 compared with conventional methods. Microbial populations of  $10^5$  per millilitre or more can be detected within 4-5 hours. The instrument is an improvement over existing spiral platers in its ability to compensate for variability in the agar surface and in the way it achieves decontamination between samples. NRDC contact: G.M. Blunt.

### Jet attenuator 116033\*/310

This small cone-shaped device is capable of:

- containing high-pressure jets
- collecting liquids and/or gases from a liquid/gas mixture
- separating liquids and gases
- separating liquids of various densities
- acting as a heat exchanger.

Licensees are sought for the U.K., Canada, France, W. Germany, Japan, the Netherlands, Norway and the U.S.A. NRDC contact: M. W. Jelbart.

## Possibilités d'acquisition de licences par l'intermédiaire de la National Research Development Corporation (Angleterre)

Une licence peut être obtenue pour ces dispositifs, par l'intermédiaire de la National Research Development Corporation, Kingsgate House, 66-74 Victoria Street, London SW1E 6SL. Dans votre demande de renseignements ou de licence, veuillez mentionner le nom du responsable, le titre complet et le numéro de référence du dispositif et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Haut-commissariat du Canada, 1 Grosvenor Square, Londres, W1X 0AB (Angleterre).

### Appareil d'inoculation en spirale 116983\*/310

Servant au comptage des micro-organismes en microbiologie fondamentale et appliquée, cet appareil permet d'obtenir des résultats précis au moyen d'une seule gélose et ce, sans qu'il soit nécessaire de diluer l'échantillon à des densités pouvant atteindre  $10^9$  organismes par millilitre. Comme l'inoculation se fait en spirale de façon contrôlée, la concentration de l'inoculat diminue constamment tout au long de l'opération. Après l'incubation, il suffit de faire le comptage dans une portion de la gélose où les colonies sont bien espacées puis d'établir, par un calcul simple, la concentration des micro-organismes dans l'échantillon. On peut aussi séparer plusieurs micro-organismes d'un même échantillon en inoculant différents milieux de culture sans qu'il soit nécessaire de recharger l'appareil. Une inoculation prend une minute environ; cet appareil permet de réaliser une économie de temps, de main-d'oeuvre et de matériel représentant un facteur de 20-25 par rapport aux méthodes classiques. Il permet de détecter la présence de populations de  $10^5$  ou plus de micro-organismes par millilitre en 4-5 heures. Il est meilleur que les autres appareils d'inoculation en spirale, car il permet de compenser le manque d'uniformité de la surface de la gélose et de désinfecter entre l'inoculation de différents échantillons. Contact au NRDC: G.M. Blunt.

### Atténuateur de jet 116033\*/310

Ce petit dispositif conique permet:

- de produire des jets à haute pression
- de réunir des liquides et/ou des gaz à partir d'un mélange liquide/gaz
- de séparer les liquides et les gaz
- de séparer des liquides de densités différentes
- de jouer le rôle d'un échangeur de chaleur.

Les droits de fabrication sous licence sont offerts pour le Royaume-Uni, le Canada, la France, l'Allemagne de l'Ouest, le Japon, les Pays-Bas, la Norvège et les États-Unis. Contact au NRDC: M. W. Jelbart.

### **Magnetic conveyor 119189\*/310**

A conveyor for transporting food cans or other magnetic items which economises in the use of permanent-magnet material and reduces structure weight and size. NRDC contact: R. Clark.

### **Storage air conditioning 311233\*/310**

A heat pump which may be powered by 'off-peak' electricity only combined with thermal stores to enable heating or air conditioning demands to be met at all times of day. Recently developed hydrated-salt thermal stores will enable compact high-capacity systems of this type to be constructed. NRDC contact: R. Clark.

### **Dry sluice 103170, 119852\*/310**

A simple dry separator particularly suitable for cleaning granular agricultural products such as wheat grain, rice and other seeds. The equipment has features in common with a separator devised earlier by Warren Spring Laboratory in which a bed of material is fluidised as it flows over an inclined porous deck and constriction in the flow path improves the stratification into layers which can be separated by a splitter at the deck exit. Patent rights in major territories in the original WSL design and subsequent NIAE improvements are available under licence. NRDC contact: Dr M. Rendell.

### **Bale densifying attachment (Mark II) 116061\*/310**

A device for increasing the bale density of hay or straw balers. NRDC contact: H.G. Stirling.

### **Potato harvester with variable sieving area 120317\*/310**

A variable belt screen for incorporation in a potato harvester. NRDC contact: H.G. Stirling.

### **Water additive device 116820\*/310**

A design to counter the problem of mineral deficiencies in cattle. NRDC contact: H.G. Stirling.

### **Electronic stone separator 116173\*/310**

An acoustic sensor/flap ejector for removing foreign objects from forage machinery. NRDC contact: H.G. Stirling.

### **Convoyeur magnétique 119189\*/310**

Ce convoyeur permet de transporter les boîtes de conserve alimentaires et autres objets aimantés de façon économique en utilisant l'aimantation naturelle de ces matériaux et en réduisant le poids et les dimensions de la structure. Contact au NRDC: R. Clark.

### **Conditionnement d'air en stockage 311233\*/310**

Une pompe à chaleur pouvant être alimentée à l'électricité en dehors des heures de pointe ne dessert que des locaux de stockage thermique de façon à pouvoir satisfaire à la demande de chauffage ou de conditionnement de l'air à tout moment de la journée. Le stockage thermique par des sels hydratés récemment mis au point permettra de construire ces installations compactes et d'une grande capacité. Contact au NRDC: R. Clark.

### **Canal de séparation à sec 103170, 119852\*/310**

Il s'agit d'un séparateur à sec simple, particulièrement approprié pour les produits agricoles granulaires tels que le blé, le riz et les autres grains. Cet équipement a certaines caractéristiques communes avec un séparateur plus ancien conçu par Warren Smith Laboratory dans lequel un lit de matériau est fluidisé en passant sur une plateforme inclinée poreuse. Un étranglement de l'écoulement améliore la stratification permettant de séparer les couches au moyen d'un séparateur à la sortie de la plateforme. Les droits pour le brevet sont disponibles sous licence dans les territoires principaux pour le modèle d'origine WSL et pour les améliorations subséquentes de L'Institut national d'agriculture. Contact au NRDC: Dr. M. Rendell.

### **Accessoire de compactage des balles (Mark II) 116061\*/310**

Dispositif permettant de produire des balles de foin ou de paille plus compactes. Contact au NRDC: H.G. Stirling.

### **Arracheuse de pommes de terre munie d'un treillis adaptable 120317\*/310**

Treillis en bande adaptable aux machines servant à la récolte des pommes de terre. Contact au NRDC: H.G. Stirling.

### **Distributeur d'additif d'eau 116820\*/310**

Dispositif permettant de pallier les carences en minéraux chez le bétail. Contact au NRDC: H.G. Stirling.

### **Dispositif électronique de séparation du fourrage et des cailloux 116173\*/310**

Dispositif à capteur acoustique et à éjecteur à volet permettant de retirer les corps étrangers d'un matériel de traitement du fourrage. Contact au NRDC: H.G. Stirling.

**Detrasher for A-blade soil opener 119892\*/310**

A device for the automatic removal of trash from an earth-working tool. NRDC contact: H.G. Stirling.

**Semi-Automatic separating system 109793\*/310**

A separator for farm or factory using a 'magic wand' technique. NRDC contact: H.G. Stirling.

**Apple harvester 116308\*/310**

A harvester for picking apples from narrow hedgerow trees. NRDC contact: H.G. Stirling.

**Dispositif de nettoyage pour charrue à lame A 119892\*/310**

Dispositif nettoyant automatiquement les outils de travail de la terre. Contact au NRDC: H.G. Stirling.

**Système de séparation semi-automatique 109793\*/310**

Séparateur pour la ferme ou l'usine faisant appel à une "baguette magique". Contact au NRDC: H.G. Stirling.

**Cueilleuse de pommes 116308\*/310**

Machine permettant la cueillette sur des arbres poussant en haies étroites. Contact au NRDC: H.G. Stirling.

## Licensing from Japan

Know-how licensing rights are offered by two Japanese companies. Interested manufacturers may obtain additional information or initiate negotiations by contacting (quoting title and reference number) International Department, The Foundation of Osaka Science and Technology Center, 1-8-4, Utsubo Hommachi, Nishi-ku, Osaka, Japan. Please send a copy of your initial correspondence to the Commercial Division, Canadian Embassy, 3-38 Akasaka 6-Chome, Minato-ku, Tokyo 107, Japan.

### Analytical Method for Glycosylated Hemoglobins in the Blood/310

Glycosylated hemoglobins in the blood can be measured in shorter time and with higher reliability using a chromatography with aid of new type of filler developed by Sekisui Chemical Co., Ltd. This technique will help the screening of diabetes mellitus and control the blood sugar. The erythrocyte (red corpuscle) solution is applied to a liquid chromatograph to analyse daid grycocylated hemoglobins content. The present method is said to have the following advantages as compared with the conventional method: It requires shorter time in analysis (8 minutes per a test specimen); and, it offers good reproductivity (CV: less than 5%). Reference number SE1-6(5-1).

### Ethylene Amines/310

Ethylene diamine (EDA) and polyethylene polyamines (DETA, TETA, TEPA and PEHA) are simultaneously produced at the ratio of around 50:50. Such ratio can be changed within a certain extent. Made from ethylene dichloride and ammonia the ethylene amines are used in fiber processing resin, textile finishing agents, polyamide resin, sequestering agents, ion exchange resin, pharmaceuticals, etc. Know-how was developed by the Seitetsu Kagaku Co., Ltd. Reference number SE2-4(6-56).

### Dimethyl Ethanol Amine/310

Seitetsu Kagaku Co., Ltd. offers to license their own process and technology for manufacturing dimethyl ethanol amine (dimethyl amino ethanol) which is 99% (total amine), 98% (tertiary amine) pure, is made from ethylene oxide and dimethyl amine and is used in fiber processing resin, cation surface active agents, fungicide, insecticide, etc. Reference number SE2-5(6-57).

## Produits nouveaux du Japon

Deux compagnies japonaises offrent les droits d'exploitation sous licence de nouveaux produits et de nouveaux procédés. Les fabricants intéressés peuvent obtenir de plus amples renseignements en écrivant à l'adresse suivante (en citant le titre et le numéro de référence): International Department, The Foundation of Osaka Science and Technology Center, 1-8-4, Utsubo Hommachi, Nishi-ku, Osaka (Japon). Prière d'envoyer une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, 3-38 Akasaka 7-Chome, Minato-ku, Tokyo 107 (Japon).

### Dosage des hémoglobines glycosylées dans le sang/310

On peut déterminer le taux sanguin d'hémoglobines glycosylées d'une façon plus rapide et plus fiable par chromatographie sur colonne garnie avec un nouveau produit mis au point par la Sekisui Chemical Co. Ltd. Une telle méthode permet de dépister le diabète sucré et de contrôler la glycémie. On injecte une solution d'érythrocytes (globules rouges) dans un chromatographe liquide pour déterminer la teneur en hémoglobines glycosylées. Cette méthode présenterait les avantages suivants par rapport à la méthode classique: dosage plus rapide (8 minutes par spécimen), reproductibilité satisfaisante (CV inférieur à 5%). Numéro de référence SE1-6(5-1).

### Éthylène-amines/310

L'éthylène-diamine (EDA) et des polyamines de polyéthylène (DETA, TETA, TEPA et PEHA) sont synthétisées simultanément dans une proportion d'environ 50:50. Cette proportion peut être modifiée dans une certaine mesure. Les éthylène-amines qui sont faites à partir de dichlorure d'éthylène et d'ammoniac entrent dans la fabrication de résines servant à produire des fibres, d'agents de finissage, de résines de polyamides, d'agents complexants, de résines échangeuses d'ions, de produits pharmaceutiques, etc. La technique a été mise au point par la Seitetsu Kagaku, Ltée. Numéro de référence SE2-4(6-56).

### Diméthyléthanolamine/310

La Seitetsu Kagaku Ltée offre les droits d'exploitation sous licence de son propre procédé de fabrication de la diméthyléthanolamine (diméthyl-amino-éthanol) qui contient 99% d'amine totale et 98% d'amine tertiaire. Le produit est fabriqué à partir d'oxyde d'éthylène et de diméthylamine et entre dans la fabrication de résines servant à produire des fibres, d'agents tensio-actifs cationiques, de fongicides, etc. Numéro de référence SE2-5(6-57).

### **Piperazine Ethanol/310**

Developed by Seitetsu Kagaku Co., Ltd. this is a process and technology for manufacturing piperazine ethanol (hydroxyethyl piperazine) being 99 per cent pure. It is made from piperazine and ethylene oxide and is used in pharmaceuticals. Reference number SE2-6(6-58).

### **Paraformaldehyde/310**

Developed by Seitetsu Kagaku Co., Ltd. the product is a flake type of paraformaldehyde having a low molecular weight and very small content of formic acid which can be easily dissolved in water. Made from formaldehyde aqueous solution it is used in synthetic resin, paint, etc. Reference number SE2-7(6-59).

### **Hexamethylenetetramine (Urotropin)/310**

Developed by Seitetsu Kagaku Co., Ltd., this product shows non-solidification characteristic by special technique, is 99.5 per cent pure, is made from formaldehyde aqueous solution and ammonia and is used in curing agents for thermosetting resin, foaming agents, etc. Reference number SE2-8(6-60).

### **NO<sub>x</sub> Removal Process/310**

Nitrogen oxides (NO<sub>x</sub>) are catalytically reduced to nitrogen and water, using ammonia, without pretreatment of SO<sub>x</sub> and dust. The high linear velocity and the special arrangement of catalyst are the characteristics of this process. The catalyst manufacturing technology is also available. The product is used for preventing pollution. Know-how was developed by Seitetsu Kagaku Co., Ltd. Reference number SE2-9(6-61).

### **Heavy Metal Removal Process/310**

Developed by Seitetsu Kagaku Co., Ltd. this is a ferrite method of removing heavy metals in the waste water without causing any secondary nuisance. Used in pollution prevention, the various kinds of harmful heavy metals and suspended solids can be simultaneously removed. The treated waste water meets with the values stipulated by the Japanese regulations concerned. The generated ferrite sludge is satisfied with the extraction test stipulated in the industrial refuse treatment law, and can be used for the general reclamation dumping. Reference number SE2-10(6-62).

### **Pipérazinyl-éthanol/310**

La Seitetsu Kagaku Ltée offre les droits d'exploitation sous licence d'un procédé pour fabriquer du pipérazinyl-éthanol (hydroxy-éthyl-pipérazine) pur à 99%. Le produit est synthétisé à partir d'oxyde d'éthylène et est employé en pharmacie. Numéro de référence SE2-6(6-58).

### **Paraformaldéhyde/310**

Ce type de formaldéhyde en flocons mis au point par la Seitetsu Kagaku Ltée, présente une masse moléculaire peu élevée, une faible teneur en acide formique et se dissout facilement dans l'eau. Produit à partir d'une solution aqueuse de formaldéhyde, il entre dans la fabrication de résines synthétiques, de peintures, etc. Numéro de référence SE2-7(6-59).

### **Hexaméthylène-tétramine (urotropine)/310**

Ce produit, mis au point par la Seitetsu Kagaku Ltée, présente des propriétés de non-solidification dans des conditions particulières. Pur à 99,5%, il est fabriqué à partir d'une solution aqueuse de formaldéhyde et d'ammoniac et est employé dans les agents durcissants des résines thermodurcissables, les agents moussants, etc. Numéro de référence SE2-8(6-60).

### **Procédé d'élimination des NO<sub>x</sub>/310**

Les oxydes d'azote (NO<sub>x</sub>) sont réduits catalytiquement en azote et en eau par l'ammoniac, sans élimination préalable des SO<sub>x</sub> et des poussières. Ce procédé est caractérisé par la vitesse linéaire élevée et la configuration particulière du catalyseur. La technique de production catalytique est aussi disponible. Le produit sert à prévenir la pollution. Le procédé a été mis au point par la Seitetsu Kagaku Ltée. Numéro de référence SE2-9(6-61).

### **Procédé d'élimination des métaux lourds/310**

Cette méthode, mise au point par la Seitetsu Kagaku Ltée, utilise de la ferrite pour éliminer les métaux lourds des eaux usées sans produire d'effets secondaires nuisibles. On peut ainsi éliminer simultanément différents métaux lourds et différents solides en suspension qui sont nuisibles, et ainsi prévenir la pollution. Les eaux usées traitées satisfont aux exigences prévues dans les règlements japonais appropriés. La boue de ferrite produite satisfait elle aussi aux exigences relatives aux produits extractibles prévues dans la loi sur le traitement des déchets industriels et peut donc être jetée dans les dépotoirs. Numéro de référence SE2-10(6-62).

## **Australian Government R&D Licenses**

The Australian Department of Industry and Commerce, seeks licensees for inventions that have reached the laboratory stage and for which patent coverage has been sought in Australia and ten to twelve other countries. Canadian companies interested in obtaining additional information on the technologies listed should write Miss Julienne Boston, Patents & Licensing Officer, Marketing Branch, Department of Industry and Commerce, Anzac Park West Building, Constitution Avenue, Canberra ACT 2600, Australia quoting the full title and reference number. Please send a copy of your initial correspondence to Commercial Division, Canadian High Commission, Commonwealth Avenue, Canberra ACT 2600, Australia.

### **Video Movement Detector/310**

The invention automatically detects change within the video signal from a surveillance television camera. The video signal from a surveillance TV camera is electronically processed over a large number of elemental detection zones arranged into 14 columns across the TV display. Elemental detection zones are set in the range of 5 to 15 TV scan lines in height. The video signal is integrated within each elemental detection zone and converted to its digital equivalent. It is then compared with its previous value which is stored in a semi-conductor memory. If the absolute difference between these two values exceeds a sensitivity setting, an error signal is generated. Only those errors occurring within a specially composed detection window are directed to the alarm circuitry. Simultaneously, an underlining strobe is generated and mixed with the surveillance camera video display for identifying the elemental detection zone in error. The detection window is composed with the aid of a rectangle generator by surrounding blocks of elemental detection zones. These blocks are then added to, or deleted from, the detection window. Any pattern of elemental detection zones may be arranged to form the detection window. A brightened outline of the window is also super-imposed over the video display. This is a relatively inexpensive system with domestic and industrial applications. Reference number 27/81.

### **Grit Blasting Apparatus/310**

A grit blasting apparatus operated entirely by compressed gases and requiring no electrical connection. The invention relates to vibration of the grit storage vessel to promote gravity feed of the grit into the conventional mixing chamber by the use of an air operated vibration means. It comprises a base block upon which is mounted the grit storage vessel and within which are located the mixing chamber where the falling grit is entrained in a gas stream, and a vibrator block. The vibrator block is located loosely in a chamber in the base block in such a way that a transverse flow of pressurised gas through the chamber forces the block to oscillate rapidly and introduces a vibration into the apparatus which is transmitted into the storage chamber. Reference number 20/81.

### **Optical System for Spectrophotometer/310**

A system for colour or spectral-reflectance measurement under natural lighting conditions. Two telescopes produce images at a common primary focus. A segmented mirror and rotating-cone shutter distribute the images between an eyepiece and a monochromator, allowing the light sampled to be unambiguously identified and providing a double-beam capability for accurate reflectance measurement independent of light level. An approximate graph of spectral reflectance is produced for field evaluation, and a digital record is made of accurate reflectance ratios between the unknown and a standard reflector as a function of wavelength from 380 to 1800 nm. It is mainly used in the measurement of spectral reflectance of natural features in remote areas, particularly for camouflage development. The device can measure the colour of a single growing leaf in situ, or the average colour of anything from a small clump of leaves to a whole hillside, under natural illumination. The total assembly of spectrophotometer head, tripod, control system and electric generator can easily be carried in a station wagon for use in remote areas. The high-technology components (monochromator, lenses, microprocessor etc.) are standard commercially available items. A first laboratory model has been successfully field-tested and a ruggedized model is under construction for trials under adverse conditions. Reference number 21/81.

## **Licences de R&D du gouvernement australien**

Le ministère de l'Industrie et du Commerce de l'Australie propose aux preneurs de licence des inventions parvenues à la phase de développement en laboratoire et brevetées, outre en Australie, dans douze autres pays. Les sociétés canadiennes intéressées désirant obtenir de plus amples renseignements sont priées d'écrire à l'adresse suivante, en citant le titre et le code des licences: Miss Julienne Boston, Patents & Licensing Officer, Marketing Branch, Department of Industry and Commerce, Anzac Park West Building, Constitution Avenue, Canberra ACT 2600 (Australie). Prière de faire parvenir copie de sa correspondance initiale à la Division commerciale, Canadian High Commission, Commonwealth Avenue, Canberra ACT 2600 (Australie).

### **Vidéodétecteur de mouvement/310**

### **Dispositif de sablage à jet de sable/310**

### **Système optique pour spectrophotomètre/310**

## **Acoustic Testing Equipment/310**

## **Matériel d'essais acoustiques/310**

The equipment uses correlation of pseudo-random noise to measure the impulse response of a system in the presence of strong interfering noise, and the presence of fluctuations in the propagation delays of the system. This is done by compensating for the system time fluctuations in a replica of the pseudo-random noise signal. This allows measurements such as hydrophone or loudspeaker calibrations to be carried out in a noisy environment with variable acoustic paths. It is mainly used or applied in the calibration of loudspeakers and hydrophones in situ; production testing of loudspeakers and hydrophones; measurements of the acoustic response of rooms and absorbing materials; and, control system identification of systems with time of phase fluctuations. The main advantages are: measurements are insensitive to interference; the measurements are not affected by fluctuations in propagation times; and, the effect of multipaths on the measurement may be greatly reduced. A prototype has been constructed and proposed development identified. Reference number 22/81.

## **Hand Launched Parachute Retarder/310**

## **Retardateur de parachute à lancement manuel/310**

The parachute is cruciform in shape and is made from an impervious nylon fabric. It is stowed in a parachute pack which has a wrist loop for the crewman to use. The parachute rigging lines terminate in an attachment loop suitable for securing to the package. The attachment loop also includes a message tag. To make a delivery, the crewman/dispatcher places his hand through the wrist loop, then picks up the package. On signal, the crewman throws the package out of the aircraft, retaining the parachute pack by the wrist loop. The motion of the package causes the pack drawstring to break, allowing the folded rigging lines to be withdrawn followed by the parachute, the apex of which has been tied to the bottom of the pack. This orderly deployment of the parachute is complete when the second tie is broken. It is mainly used for launching by hand, small packages from fixed and rotary wing aircraft to recipient ground parties. The maximum speed of the aircraft during package delivery, has been set at 200 km/hr, firstly to minimise difficulties to the crewman launching the package and secondly, to keep the parachute small, cheap and disposable. Main advantages: 1) no small parachute, suitable for hand launched loads, presently exists; 2) although the design has initially been directed towards water delivery, the parachute could be suitable for other small loads; 3) being low cost, due to the simple design and using readily available materials, means the parachute can be regarded as a one use, throwaway item; and 4) hand launched packages do not require any alterations, or additions to the aircraft. The only requirement is that a hole large enough to clear the package should be available for the crewman to use. Reference number 26/81.

## **A Flexible, Controlled Buoyancy, High Strength Multicore Cable/310**

## **Câble souple à plusieurs âmes, à grande résistance et à flottabilité contrôlée/310**

A flexible cable containing insulated conductors and strength members, with overall buoyancy controlled by the addition of appropriate fill materials. The design utilises lightweight strength members and multiple conductors insulated with buoyant plastic, with overall cable buoyancy controlled by the addition of buoyant plastic fibres and low-density gells. Jacketing materials chosen on the basis of flexibility, density and wear-resistance, provide two levels of waterproofing for the power and data carrying conductors. Construction is varied depending on the application. Main uses: applications in the underwater environment, where both strength and data carrying capability are required such as ocean surveillance systems, measurement systems and secure communication systems. Main advantages: controlled buoyancy, with little effect on buoyancy of the depth of deployment; lightweight, flexible, low-volume configuration; dual water barrier and abrasion protection provided by the coaxial sheath configuration; and, construction methods that could allow the production of a towline vibration isolation module-array-detail configuration as a single member. Prototype cables have been produced. Reference number 28/81.

## **Laser Resonator/310**

## **Résonateur laser/310**

An improved laser incorporating totally reflective prisms of a type not formerly employed. The invention is a laser improving on the prior art by employing, in place of Porro prisms, "Compound TIR" Prisms which provide four internal reflective surfaces instead of the Porro's two. A pair of compound TIR prism are located one at each end of the resonant cavity which can be either in line or of folded configuration. The prism at the Pockels cell Q-switch end is oriented at 45 degrees, giving the reflected beam a 90 degree rotation in its plane of polarisation which provides perfect hold-off in the Q-spoiled state without the prior-art requirement of bias on the Pockels cell and so enables a comparatively simple driving circuit to be employed. Effective reflectivity can be varied between 0 and 100%. Performance is independent of refractive index. Used in all laser applications, the main advantages are: reduced energy losses, simple and more rugged construction/circuitry, extended output coupling range, wider choice of prism material for improved physical characteristics, lack of need for bias on the Pockels cell to achieve perfect hold-off. Reference number 29/81.

## Bibliography

Reading material listed hereunder may be reviewed in public libraries or obtained from the original publisher as indicated.

When noted, copies of material are available from the Interlibrary Loan and Photocopying Service of the Canadian Institute for Scientific and Technical Information (CISTI), National Research Council of Canada, Building M-55, Montreal Road, Ottawa, Ontario K1A 0S2. Rates for reprints from CISTI are \$2.20 per request for up to 10 pages and 22 cents for each additional page. Remittances in the form of cheques or money orders should be made payable to the Receiver General for Canada, credit N.R.C., giving all required bibliographic information; i.e. title, author, date of issue of magazine, and number of the pages.

### **Trade Secrets and Know-How Throughout the World/310**

Price: U.S. \$295.00, five looseleaf volumes, revised 1980 by Aaron N. Wise, updated annually — cost in 1980 was \$57.50 and \$62.50 in 1981. Written for the more experienced in licensing, these volumes include a comparison and analysis of definitions of trade-secrets, know-how and confidential information laws, antitrust and anticompetitive laws, and highlights the following topics: licenses, assignments, joint ventures, technical assistance agreements, precontractual negotiations, government approval, royalties and fees, employment and agency relations, restrictions on competition, unfair competition, indemnities on termination, secret and non-secret data, breach of contract or confidence, employee piracy, enforceable and unenforceable clauses, industrial espionage, contacts between affiliates, and trade secret crimes. Available from: Clark Boardman Company Ltd., 435 Hudson Street, New York, N.Y. 10014.

### **Arbitration and the Licensing Process/310**

Price: U.S. \$75.00, 800 pp. looseleaf, updated annually, by Robert Goldscheider and Michel de Hass and published under the sponsorship of the Licensing Executives Society International, the book provides a thorough examination of how the arbitration process can make a positive contribution to technology transfers. Principals and draftsmen, particularly when the negotiating parties are of different nationalities, must be familiar with the different forms of arbitration clauses and the substantive effects of various approaches whether the agreement involves a patent license, a know-how license, distributorship, technical assistance or a material requirement. Topics covered are: Drafting arbitration contracts and clauses; arbitral agencies, rules, conventions and treaties; enforcement of arbitral awards, including a twenty years' review of the Convention on the Recognition and Enforcement of Foreign Arbitral Awards; antitrust aspects of patent litigation, arbitration and settlement; arbitration in particular countries and regions; know-how, non-observation of secrecy and arbitration; adaptation of contracts to the economic climate; and arbitration in the transfer of techniques. Available from: Clark Boardman Company, Ltd., 435 Hudson Street, New York, N.Y. 10014.

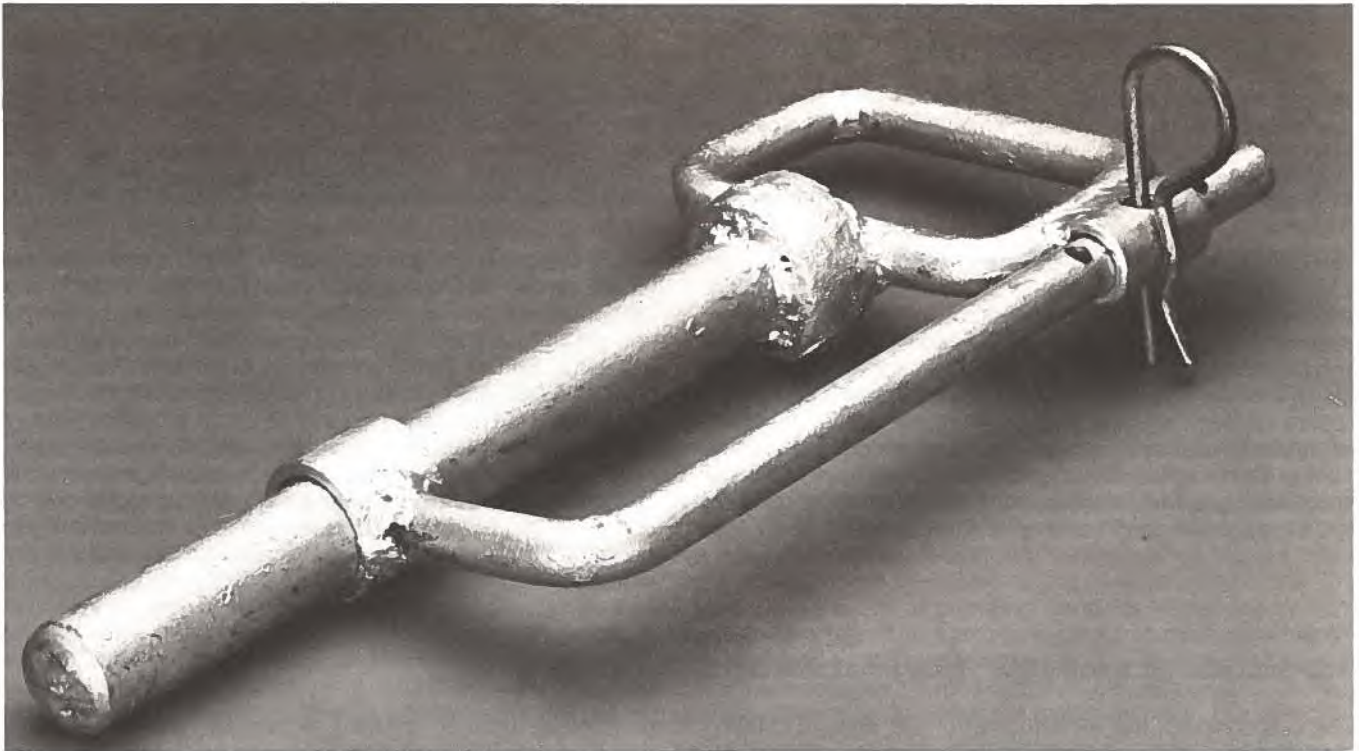
### **Technology Acquisition: License Agreement or Joint Venture/310**

The Columbia Journal of World Business, Vol. XV, Number 3, Fall 1980 issue, by J. Peter Killing, pages 38-46. Professor Killing analyzes 74 licensing agreements and 25 joint ventures among American, British and Canadian firms. His conclusions are that the strength of the agreement depends on the amount of help the dependent firm requires in adapting the know-how and marketing the product, which is also reflected in the rate of royalties or percentage of ownership. Reprint available from: University Microfilms International, 300 N. Zeeb Road, Ann Arbor, Michigan 48106, U.S.A. Price: U.S. \$10.00.

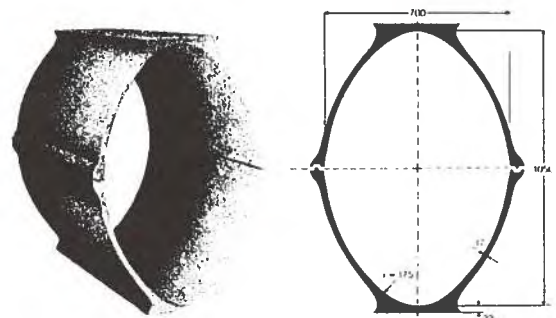
## Bibliographie

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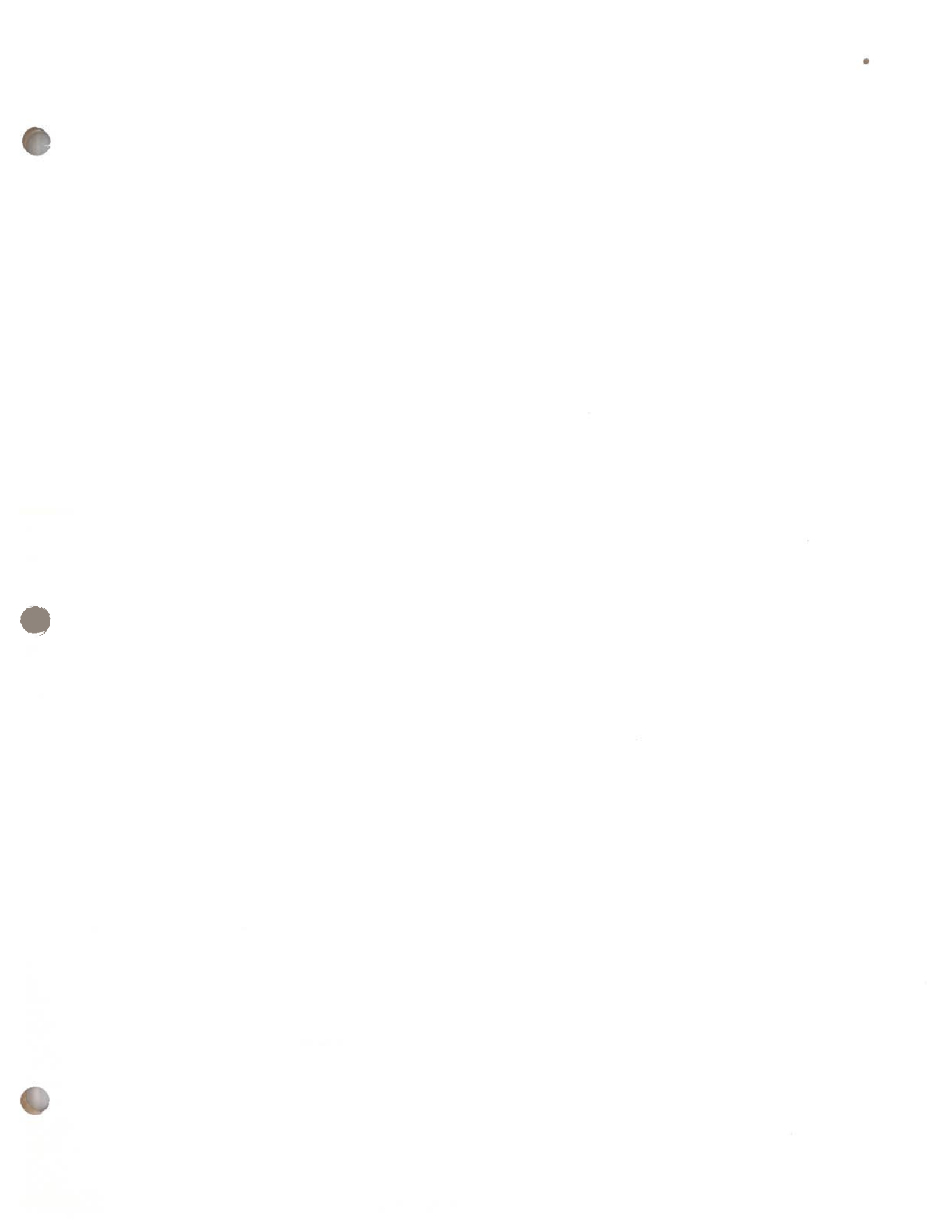
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Hitch Pin (See page 3)  
Goupille de dispositif d'accouplement  
(Voir page 3)

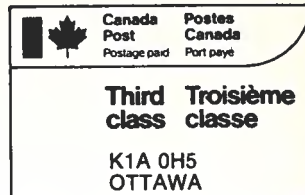


Polyester Bonded Concrete (See page 2)  
Béton au polyester (Voir page 2)



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