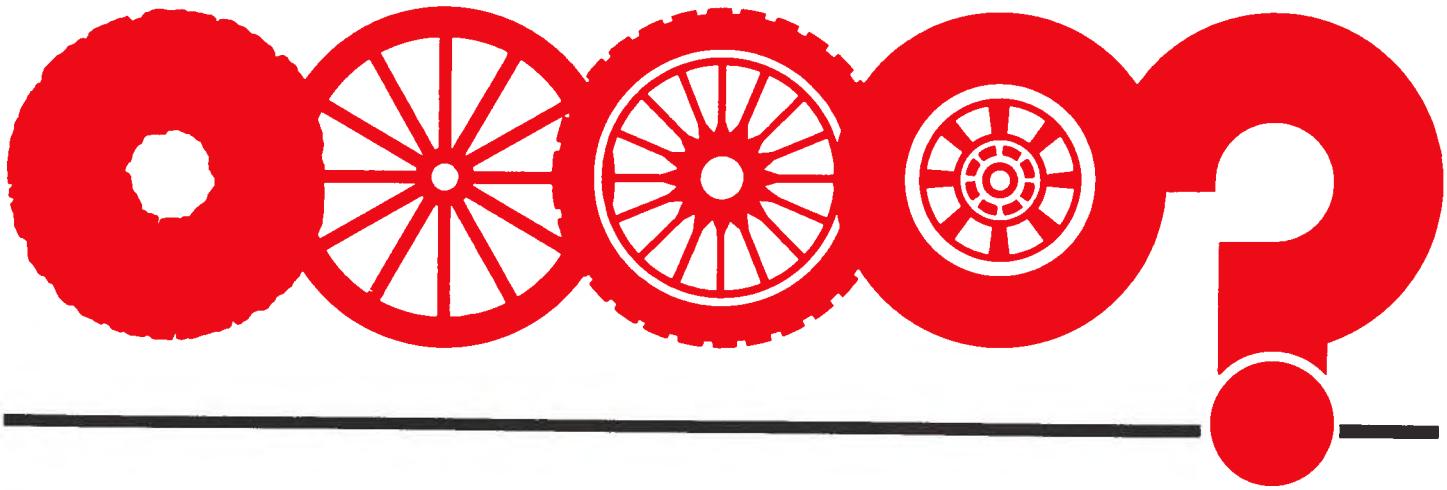
new products bulletin

Bulletin 317, June 1982

bulletin de produits nouveaux

Bulletin 317, Juin 1982



new products bulletin

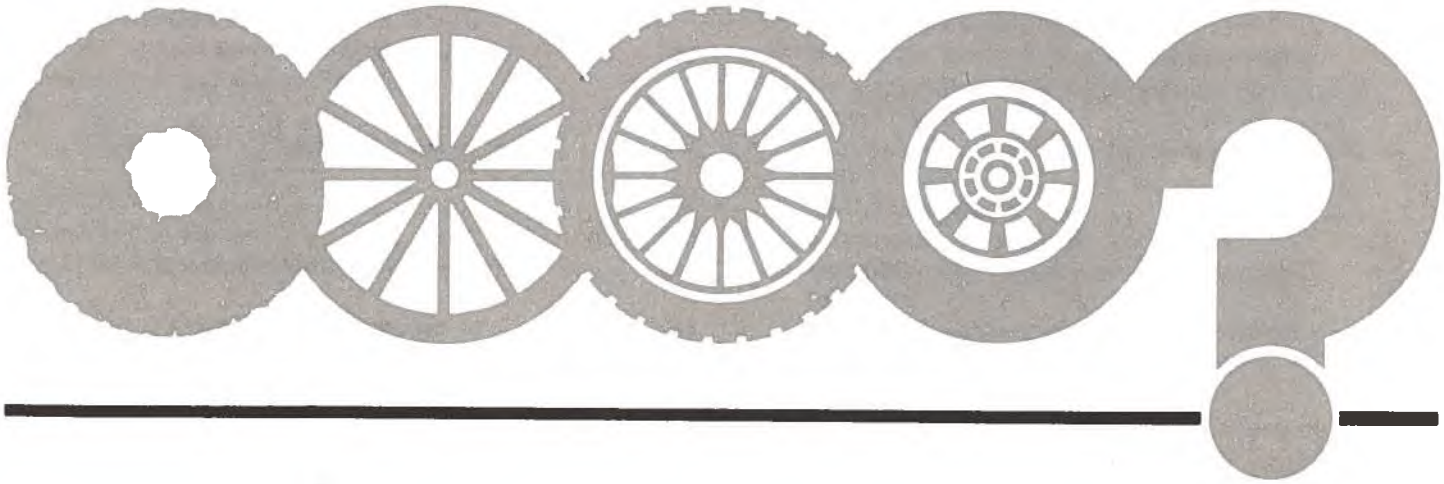
bulletin de produits nouveaux

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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Selected Licensing or Joint Venture Manufacturing Opportunities

Viewing and Measuring Apparatus/317

In the superposition comparator, a 2-D grating interferometer automatically measures spatial coordinates precisely and accurately at the viewing point on the object, without obstructing the field of view. The system provides a compact, simple, stable, cost-effective position readout that is immune to work-stage motion errors. Applications include devices that interact with the work surface about a coordinated point, such as photogrammetric plotters, electronic wafer fabrication and inspection equipment and laser scanner/printers. Write: **Case 7075**, 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.

Dual Slope Radiometer/317

A compact, rugged and low-cost radiometer designed to measure the attenuation of radio signals in the atmosphere by water in the form of rain or clouds. It may also be used to determine the integrated water vapour content along a path through the atmosphere. Its principle of operation can be easily extended from the microwave region into the infrared and optical regions. Write: **Case 7102**, 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.

Convoluted Code Matched Filter/317

An electronic matched filter for binary-phase-coded signals using convoluted codes, which allows the filter processing to be carried out with much greater computational economy than is possible with a straightforward transversal filter configuration. It can be implemented either as a digital or as an analog device and is intended for use in time-delay resolution devices such as sounders, radar, sonar and communication synchronizing systems. Write: **Case 7298**, 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.

Sélection d'occasions de fabrication sous licence ou d'entreprises en coparticipation

Appareil d'examen et de mesure/317

Dans le comparateur à superposition, un interféromètre à réseau 2-D mesure avec précision les coordonnées spatiales du point observé sur l'objet, sans obstruer le champ visuel. Le système d'exploitation peu coûteuse, produit une lecture simple et stable de la position, qui n'est pas affectée par les erreurs de mouvement pendant l'étape du travail. On compte parmi les applications de cet appareil les dispositifs qui agissent sur la surface de travail ou voisinage d'un point repéré par ses coordonnées comme, par exemple, les traceuses photogrammétriques, le matériel de fabrication et d'inspection des puces électroniques et les dispositifs de balayage et d'impression à laser. Écrire: **Cas 7075**, 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.

Radiomètre à double pente/317

Radiomètre compact, robuste et peu coûteux conçu pour mesurer l'atténuation des signaux radioélectriques par l'eau en suspension dans l'atmosphère sous forme de pluie ou de nuages. Il peut également servir à déterminer la teneur en vapeur d'eau intégrée le long d'un trajet dans l'atmosphère. Son fonctionnement peut facilement être étendu de la région des hyperfréquences aux régions infra-rouges et optiques. Écrire: **Cas 7102**, 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.

Filtre adapté à code convolé/317

Filtre électronique adapté, pour signal à modulation de phase binaire et utilisant des codes convolés, ce qui permet d'économiser le temps de traitement du processus de filtrage par rapport au filtre à symétrie périodique conventionnel. Il peut servir de dispositif numérique ou analogique et est conçu pour servir dans des dispositifs à résolution de retard temporel comme, par exemple, les sondeurs, le radar, le sonar et les systèmes de synchronisation de communications. Écrire: **Cas 7298**, 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.

Fast Frequency Measuring System/317

A frequency to voltage converter capable of measuring to an accuracy of .1Hz in .01 second in the presence of high phase noise. The system has been designed to operate as a readout for an optically pumped cesium vapour magnetometer with an output in the 100KHz to 200KHz range. Other frequencies may also be accommodated. Write: **Case 7344**, 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.

Bicycle Speedometer/317

British company offers the manufacturing rights in Canada and marketing rights in North and South America and the Far East for a microprocessor-based digital bicycle speed and distance computer. The device mounts on the handle bars and reads the speed through friction free contacts on the wheel. The maximum speed, average speed, distance travelled, and elapsed time are displayed on a six digit display when the appropriate key is activated. The special microprocessor chip can also be used to provide a thumb held digital pulse/heart rate detector or as a stopwatch on or off the bicycle. The two devices may be of interest to manufacturers of bicycles or fitness training equipment. Write: Micronic Computer Systems Ltd., 81 Hersam Road, Walton-on-Thames, Surrey KT12 1RJ, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

Hull Cleaning Apparatus/317

Australian inventor/manufacturer seeks a joint venture partnership in Canada to manufacture, sell and export the Edan Keel Hauler used for cleaning up to 90 per cent of hulls below the waterline of sail boats and motor yachts. The hull cleaner has a polypropylene brush head on a telescopic hinged handle of anodised aluminum tubing in sizes 25.40 × 1.42 mm and 28.58 × 1.42 mm. It is fitted with an adjustable tension rubber and clamp. The operator works along the hull from the deck or quay while the boat is moved to brush the hull and remove growth. The device reduces maintenance; due to lack of drag, less fuel is used and speed is increased; protective anti-fouling paints last longer because it is easier and cheaper to prevent marine growth from becoming established. Also, the inconvenience and expense of having to slip the boat for hull cleaning is avoided. (See illustration page 44.) Write: Mr. John Edward Ruocco, Managing Director, Edan Enterprises, P.O. Box 118, North Beach, Western Australia and send a copy of your initial correspondence to Canadian Consulate General, Princes Gate East Tower, 17th Floor, 151 Flinders Street, Melbourne 3000, Australia.

Système de mesure rapide des fréquences/317

Convertisseur fréquence-tension pouvant mesurer avec une précision de 0.1 Hz en un centimètre de seconde en présence de bruit de phase élevé. Le système a été conçu pour fonctionner comme indicateur de magnétomètre à vapeur de césium à pompage optique dont la fréquence de sortie se situe entre 100 et 200 kHz. Il peut également fonctionner à d'autres fréquences. Écrire: **Cas 7344**, 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.

Compteur de vitesse de bicyclette/317

Une société britannique offre les droits de fabrication au Canada et les droits de mise en marché en Amérique du Nord, en Amérique du Sud et en Extrême Orient, pour un compteur de vitesse à totaliseur numérique à microprocesseur pour bicyclette. Ce dispositif se monte sur le guidon et mesure la vitesse par contacts avec la roue sans frottement. La vitesse maximale, la vitesse moyenne, la distance parcourue et le temps écoulé sont affichés sur un cadran à six chiffres quand on appuie sur le bouton approprié. Le microprocesseur peut aussi mesurer le pouls lorsqu'on tient le pouce dessus et peut servir également de chronomètre sur la bicyclette ou ailleurs. Les deux dispositifs peuvent présenter un intérêt pour les fabricants de bicyclettes ou d'équipement de conditionnement physique. Écrire à: Micronic Computer Systems Ltd., 81 Hersam Rd, Walton-on-Thames, Surrey KT12 1RJ (Angleterre) et envoyer une copie de la correspondance initiale à la Division commerciale, Haut-Commissariat du Canada, One Grosvenor Square, Londres W1X 0AB (Angleterre).

Dispositif de nettoyage des coques/317

Un inventeur et fabricant australien recherche une association au Canada pour fabriquer, vendre et exporter le "Edan Keel Hauler", utilisé pour nettoyer jusqu'à 90 pour cent de la partie immergée des coques de bateaux à voile et de yachts à moteur. Ce dispositif pour nettoyer les coques comporte une brosse en polypropylène montée au bout d'une poignée télescopique articulée en tube d'aluminium anodisé dans les dimensions 25,40 × 1,42 mm et 28,58 × 1,42 mm. Il est équipé d'un caoutchouc et d'un collier de tension réglables. L'utilisateur se tient le long de la coque sur le pont ou sur le quai, pour brosser la coque et retirer les micro-organismes, pendant que le bateau est déplacé. Ce dispositif réduit l'entretien; grâce à l'absence de traînée, la consommation de carburant est diminuée et la vitesse augmentée; les peintures de protection durent plus longtemps parce qu'il est plus facile et plus économique d'empêcher les micro-organismes de s'implanter. On évite également l'incommodité et les dépenses qu'entraînent la mise en cales sèches du bateau pour nettoyer sa coque. (Voir l'illustration page44.) Écrire à: M. John Edward Ruocco, Administrateur délégué, Entreprises Edan, B.P. 118, North Beach (Australie occidentale) et envoyer une copie de votre correspondance initiale au Consulat Général du Canada, Princes Gate East Tower, 17e étage, 151 Flinders Street, Melbourne 3000 (Australie).

Construction System/317

Norwegian company offers a Canadian firm the exclusive production and sales rights in Canada and possibly also the USA, to a range of related building products used on offshore installations and general construction. The products consist of a floating floor, wall lining and bulkhead panels, ceiling panels, prefabricated bathroom and cabin door. The floating floor panels are constructed from 3 mm hot dipped galvanized mild steel sheet having a 50 or 70 mm thickness of mineral wool glued to the underside. This construction enables the floor to be laid directly on an uneven sub-floor steel deck and be walked upon immediately. The wall lining and bulkhead panels comprize 50 mm of mineral wool faced on both sides by 0.6 mm galvanized mild steel sheet covered with a fabric coated PVC. Ceiling panels are 300 mm wide, 25 mm thick with a maximum length of 3000 mm. They are constructed from 30 mm of mineral wool with a 0.7 mm thick fabric coated mild steel sheet facing. Ceiling panels are held in position by special runners from which are stamped the holding clips/prongs. The bathroom units are manufactured as "ready to use" units for ships and accommodation modules. Made of 0.7 mm hot dipped galvanized steel sheet they are constructed in modular form in variety of designs, complete with fittings. The cabin door is delivered complete with door frame and hinges in several sizes. The door has a thickness of 34 mm and is constructed from the same material as the bulkhead and bathroom unit. Write Mr. Oddvar S. Holbostad, Architect M.Sc., c/o Ingeniorfirma Ferator, Lilletorgeti, Oslo 1, Norway and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Postuttak, Oslo 1, Norway.

Éléments de construction/317

Une société norvégienne offre à une entreprise canadienne les droits exclusifs de production et de vente, au Canada et éventuellement aux États-Unis, d'une gamme d'éléments de construction apparentés utilisables dans les installations offshore et dans le domaine de la construction en général. Il s'agit de panneaux pour plancher flottant, pour revêtement mural, pour cloisonnement et pour plafond, ainsi que de salles de toilettes et de portes de cabine préfabriquées. Les panneaux de plancher flottant sont en tôle d'acier doux de 3 mm galvanisé à chaud sous laquelle est collée de la laine minérale en nattes de 50 à 70 mm d'épaisseur. Cet agencement permet de poser le plancher directement sur un platelage métallique inégal et d'y marcher immédiatement dessus. Les panneaux de revêtement mural et de cloisonnement se composent d'une partie centrale de 50 mm de laine minérale entre deux tôles d'acier doux galvanisé de 0.6 mm revêtues de PVC avec finition tissu. Les panneaux de plafond ont une largeur de 300 mm, une longueur maximale de 3000 mm et une épaisseur de 25 mm. Ils sont faits de laine minérale de 30 mm avec parement d'acier doux de 0.7 mm à finition tissu. Ces panneaux sont maintenus par des profilés spéciaux à partir desquels on matrice les attaches et broches. Les ensembles de salles de toilette sont livrés sous forme de blocs "prêts à l'emploi" et peuvent être utilisés sur les navires et dans des locaux modulaires. Ils sont en tôle d'acier de 0.7 mm galvanisé à chaud, de forme modulaire, munis des raccords nécessaires et disponibles dans plusieurs modèles. La porte de cabine est fournie, en dimensions variées, avec son encadrement et ses charnières. D'une épaisseur de 34 mm, elle est fabriquée avec le même matériau que les cloisons et les ensembles de salles de toilette. Écrire à: M. Oddvar S. Halbostad, Architecte M. Sc., A/S Ingeniorfirma Ferator, Lilletorget 1, Oslo 1 (Norvège) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, Postuttak, Oslo 1 (Norvège).

Pine Beetle Attractants/317

America's Research Corporation offers to firms marketing related pest control products, the licensing rights for the production and sale of a pine beetle pheromone that is claimed to be an environmentally sound method of controlling pine beetles and thus keep the pest from destroying stands of valuable pulp and timber. Disclosed by R. Marshall Wilson and John W. Rekers of the University of Cincinnati, the attractants mimic a compound known as frontalin, the aggregating pheromone of the southern and western pine beetle which calls the insects to food and mating opportunities. By blocking the beetles' pheromone receptors, the synthetic compounds keep the pests widely dispersed, limiting damage to trees to an acceptable level. Among advantages are that the substances could be used in forests too large for spraying, and that they control rather than destroy insects needed to maintain ecological balance. Write: Project Number 114 1239, Research Corporation, 405 Lexington Avenue, New York, N.Y. 10174 and send a copy of your initial correspondence to Commercial Division, Canadian Consulate General, 1251 Avenue of the Americas, New York City, N.Y. 10020-1175, U.S.A.

Phéromones attirant les dendroctones/317

L'America's Research Corporation offre aux entreprises qui mettent sur le marché des produits employés dans la lutte contre les ravageurs, les droits de fabrication et de vente sous licence d'une phéromone de dendroctone qu'on dit être un moyen de lutte biologiquement sûr contre les dendroctones et qui empêche ces ravageurs de détruire des peuplements valables de bois d'oeuvre et de pâte. Les produits, présentés par R. Marshall Wilson et John W. Rekers de l'université de Cincinnati, imitent la frontaline, une phéromone d'attraction produite par les dendroctones du pin de l'ouest et du pin du sud, qui signale la présence de nourriture ou la possibilité d'un accouplement. Les produits synthétiques bloquent les récepteurs de phéromone des insectes et, ces derniers demeurant très dispersés, limitent les dommages infligés aux arbres à un degré acceptable. Ils sont avantageux, notamment parce qu'on peut les utiliser dans les forêts trop vastes pour que la vaporisation soit praticable et parce qu'ils permettent de régulariser, plutôt que de détruire, des populations d'insectes nécessaires à l'équilibre écologique. Écrire à: Projet numéro 114 1239, Research Corporation, 405 Lexington Avenue, New York (N.Y.) 10174 et envoyer une copie de votre correspondance initiale au Consulat général du Canada, 1251 Avenue of the Americas, New York City, N.Y. 10020-1175 (U.S.A.).

Electric Generator/317

German R&D company offers a Canadian manufacturer the licensing rights to make and sell worldwide its "Triplet-Motor-Generator" under patents and a registered trade mark. This novel type of energy generation resulted from the development of an electric generator without resultant braking effects and with radial and axial mounted poles — standard and superconductive. It is not identical to conventional generators in that it makes use of untapped energy, i.e., the magnetic field. Comparable operating costs are: A conventional generator needs 1.5 - 2 litres oil/hour. For starting a "Triplet-Motor-Generator" only a battery is used. It will reload during the time that full output is not needed. To operate the generator, only sufficient energy need be applied to keep the rotor turning. Annual operating costs for a conventional generator operating 50, 100, 500 and 1000 hours is DM 100, 200, 1000 and 2000. The Triplet annual operating cost is DM 50 for 100 or 2000 hours. The consumption/hour of large conventional generators, however, is more favorable when operated several thousand hours per year. The Triplet-Motor-Generator can be installed anywhere energy is needed: Small motorcycles, electrocars with a large operating range, shipbuilding and aeronautical applications, heating applications, or small miniature generators can be used in the medical and veterinary field. It does not disturb the environment and there is no waste. A paper copy of the U.S. Patent No. 4,031,421 can be obtained from National Technical Information Services (NTIS) (see page I3) for U.S. $6.00 or if you require a copy immediately, from Micromedia Limited, 165 Hotel de Ville, Hull, Quebec J8X 3X2 for Cdn $15.00 plus $1.50 mailing charges. Write: Mr. Otto Geiger, GeSig Energietechnik GmbH, Nürnberger Straße 6, Postfach 1323, 8540 Schwabach, West Germany and send a copy of your initial correspondence to Canadian Consulate General, Immermannstrasse 3, 4 Duesseldorf, West Germany.

Gasification Unit/317

French inventor seeks a joint venture partner to commercially exploit a secret method developed to gasify wood waste and biomass without the usual wood-tar generation problems. The generator burns wood at high temperature to produce lean gas with air intake; particles are removed and the gas cooled effectively; then it is filtered through unique filtering materials. The gas derived is claimed to be suitable for internal combustion engines. As the gas fed into the carburator contains no tar, there is no risk of scoring the valves. Write: Mr. Jean Maurice Dupe, Le Mottay de Pied Doult, 49510 Jallais, France and send a copy of your original correspondence to Commercial Division, Canadian Embassy, 35 Avenue Montaigne, 75008 Paris, France.

Générateur d'électricité/317

Une compagnie allemande de recherche et de développement offre à un fabricant canadien les droits de fabrication et de commercialisation mondiale de son "Triplet-Motor-Generator", protégé par des brevets et une marque déposée. Ce nouveau type de générateur d'énergie est basé sur un générateur d'électricité exempt de l'effet de freinage usuel et équipé de pôles radiaux et axiaux (standards et supraconducteurs). Il diffère des générateurs classiques en ce qu'il exploite l'énergie jusqu'ici non utilisée du champ magnétique. Un générateur classique consomme de 1.5 à 2 litres de carburant à l'heure, tandis que le Triplet-Motor-Generator fonctionne à l'aide d'une batterie. Cette dernière est rechargée lorsque la puissance maximale n'est pas requise. Pour faire fonctionner ce générateur, il suffit de fournir assez d'énergie pour maintenir le rotor en marche. Le coût d'exploitation annuel d'un générateur classique qui fonctionne pendant 50, 100, 500 ou 1000 heures par année est de 100, 200, 1000 ou 2000 DM respectivement. Par contre, le coût d'exploitation du Triplet-Motor-Generator est de 50 DM, qu'il soit utilisé pendant 100 ou 2000 heures. Cependant, il est à noter que la consommation moyenne des grands générateurs classiques est plus avantageuse à plusieurs milliers d'heures de fonctionnement par année. Le Triplet peut être utilisé pour alimenter les motocyclettes de puissance réduite, les voitures électriques à grand rayon d'action, les navires et aéronefs, les installations de chauffage et les appareils médicaux et vétérinaires. Il ne nuit pas à l'environnement et ne produit aucun déchet. Vous pouvez obtenir un exemplaire du brevet américain n° 4,031,421 des National Technical Information Services (NTIS) (voir la page I3) à raison de 6.00 $U.S. ou, si c'est urgent, de la compagnie Micromedia Limitée, 165, rue Hôtel de Ville, Hull (Québec) J8X 3X2, à raison de 15.00 $Can. plus 1.50 $ pour frais postaux. Écrire à: M. Otto Geiger, GeSig Energietechnik GmbH, Nuernberger Strasse 6, Postfach 1223, 8540 Schwabach (Allemagne de l'Ouest) et envoyer une copie de votre correspondance initiale au Consulat général du Canada, Immermannstrasse 3, 4 Duesseldorf (Allemagne de l'Ouest).

Système gazogène/317

Un inventeur français cherche un partenaire avec qui s'associer pour l'exploitation commerciale d'une méthode secrète mise au point pour gazéifier des résidus de bois ou de la biomasse sans causer les problèmes habituels de formation de goudron de bois. Le générateur produit un gaz pauvre par combustion de bois à haute température avec apport d'air; le gaz est dépoussiéré et refroidi efficacement; ensuite il est filtré à travers un matériau original. On soutient que le gaz produit est compatible avec les moteurs à combustion interne. Comme le gaz servant à l'alimentation du carburateur ne contient pas de goudrons, il n'y a pas de danger de grippage des soupapes. Écrire à: M. Jean-Maurice Dupe, Le Mottay de Pied Doult, 49510 Jallais (France) et envoyer copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, 35, avenue Montaigne, 75008 Paris (France).

Automatic Pipet Washer/Drier/317

American inventor offers worldwide licensing rights to an automatic pipet washer and drier which utilizes a stored and reusable detergent or acid dichromate soaking solution, a distilled or tap water rinse cycle, several deionized water rinsers and a heated air pressure drier. All phases are microprocessor-controlled, monitored and filtered for total walk-away use and short turn around. It is designed to soak, wash and dry all sizes and designs of pipets automatically. The entire system utilizes an operator-controlled microprocessor requiring only two initiations and repetition logging, with the entire wash cycle options taking anywhere from ten minutes to half an hour. This method is claimed to cut down on possible injury to the operator, broken pipets, test reagent contamination and microbial transfer, use of disposables and personnel expense. This appliance has application in all laboratories. Write: Mrs. M.E. Weisberg, Inventors Licensing and Marketing Agency, P.O. Box 251, Tarzana, California 91356 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014-1377, U.S.A.

Appareil automatique pour laver/sécher les pipettes/317

Un inventeur américain offre les droits d'exploitation sous licence à l'échelle mondiale d'un appareil pour laver et sécher automatiquement les pipettes. L'appareil contient un réservoir renfermant un détergent réutilisable ou une solution de dichromate acide; le lavage comporte un cycle de rinçage à l'eau distillée ou à l'eau du robinet, plusieurs rinçages à l'eau déminéralisée, puis un séchage dans une enceinte chauffée et pressurisée. Toutes les phases sont contrôlées par un microprocesseur; ainsi l'appareil peut fonctionner complètement sans surveillance. Il est conçu pour faire tremper, pour laver et pour sécher automatiquement toutes les tailles et toutes les formes de pipettes. Tout le système fait appel à un microprocesseur nécessitant seulement deux inscriptions de mise en marche et de reprise. Le cycle de lavage complet peut varier de 10 minutes à 30 minutes. Cette méthode diminuerait les risques de blessure pour le technicien, ainsi que les risques de bris de pipettes et de contamination par des réactifs et par des agents microbiens; elle réduirait aussi les exigences en matière de pipettes jetables et de personnel. Cet appareil est utile dans toutes les catégories de laboratoire. Écrire à: Mme M.E. Weisberg, Inventors Licensing and Marketing Agency, B.P. 251, Tarzana (Californie) 91356 et faire parvenir une copie de votre correspondance initiale au Consulat général du Canada, 510 West Sixth Street, Los Angeles, Californie 90014-1377 (États-Unis).

Water Craft/317

British company offers licensed production and marketing in all areas, of an outboard motor powered 237 cm long by 117 cm wide "Water Buggy". The device has a bench seat for one or two, a steering wheel console, foam floatation, weighs 105 kg and is made of fibreglass reinforced plastic. It also features 8 ply reinforced engine support transsom, "Closed Cell" integral foam buoyancy, two integrally moulded GRP skegs providing directional stability and hull protection for beaching — hull finished in white GRP, mooring cleat, sturdy bumper surround, front storage compartment, location for fuel tank storage, deck superstructure has integral non-slip surface and handgrip. Manufacturer would be required to obtain Canadian and U.S. Coast Guard approval, etc. (See illustration page 44.) Write: Jewell Marine Limited, 201 High Street, Watford, Hertfordshire, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

Véhicule aquatique/317

Une société britannique offre les droits de production et de mise en marché sous licence pour un véhicule aquatique, le "Water Buggy", de 237 cm de longueur sur 117 de largeur avec moteur hord-bord. Le bateau a un siège banquette pour deux personnes, un volant de direction, de la mousse pour la flottaison, il pèse 105 kg et est en plastique renforcé de fibre de verre. Il comprend un tableau de support de moteur renforcé à 8 épaisseurs, des caissons de flottaison intégrés en mousse à cellules fermées, deux nervures de coques moulées à même (GRP) pour la stabilité directionnelle et la protection de la coque sur la plage. La coque est finie en GRP blanc, elle comporte un tasseau d'amarrage, une solide ceinture de défense, un compartiment de rangement devant, un compartiment pour le réservoir à essence, le pont a une surface antidérapante et une main courante. Le fabricant devra obtenir l'approbation des Gardes côtières canadienne et américaine, etc.(Voir l'illustration page44) Écrire à: Jewell Marine Limited, 201 High Street, Watford, Hertfordshire (Angleterre) et envoyer une copie de votre correspondance initiale à la Division commerciale, Haut-Commissariat du Canada, One Grosvenor Square, Londres W1X 0AB (Angleterre).

Furnace/Boiler Efficiency Monitor/317

American inventor offers a Canadian company the manufacturing and marketing rights, and is prepared to discuss export rights, for a device which continuously shows whether a boiler or furnace is operating at peak efficiency and is not wasting fuel by undetected accumulations of soot and scale, faulty burners, improper adjustments, poor maintenance and work-out equipment. Often the situation goes

Moniteur d'efficacité pour chaudière/317

Un inventeur américain offre à une compagnie canadienne les droits de fabrication et de mise en marché sous licence (il est aussi prêt à discuter des droits d'exportation) d'un appareil montrant de façon continue si une chaudière fonctionne avec un maximum d'efficacité, sans gaspillage de combustible en raison de l'accumulation cachée de suie et de tartre, de brûleurs défectueux, de réglages imparfaits,

undetected for a protracted period — the equipment appears to be "normal", while in reality wasting large amounts of energy (if boilers are not tested daily, it is possible that 10 to 15 percent is wasted). Accurate boiler efficiency tests cost from $150 to $3,000, depending on the boiler or furnace. In order to match the performance of this efficiency indicator, it would be necessary to perform efficiency tests hourly. This efficiency monitoring instrument is mounted in the stack of furnaces and boilers. Calibrated at the time the furnace is cleaned, tuned and tweeked, it is claimed to give a continuous indication of operating efficiency. The unit will alert operators in time to save otherwise huge undetected losses which occur if the efficiency is allowed to degrade to visible levels. Patents are pending. Write: Mrs. M.E. Weisberg Inventors Licensing and Marketing Agency, P.O. Box 251, Tarzana, California 91356 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014-1377, U.S.A.

ainsi que d'équipement d'entretien ou de planification inadéquats. Souvent, la situation n'est pas décelée pendant une période prolongée: l'équipement semble "normal", alors que, en réalité, il y a gaspillage d'une grande quantité d'énergie (si l'on ne vérifie pas les chaudières quotidiennement, il est possible que les pertes soient de 10 à 15%). Des tests précis de l'efficacité d'une chaudière coûtent de 150 à 3 000 $, selon la chaudière. Afin d'égaler la performance du présent moniteur d'efficacité, il serait nécessaire d'effectuer ces tests à toutes les heures. Le moniteur en question est monté dans la cheminée des chaudières. On déclare que, s'il est étalonné au moment du nettoyage et de la mise au point de la chaudière, l'appareil donne une indication continue de l'efficacité de fonctionnement. Il servira à avertir les opérateurs à temps pour éviter les énormes pertes cachées qui se produisent si on laisse la dégradation de l'efficacité atteindre des niveaux visibles. Des brevets sont demandés. Écrire à: Mme M.E. Weisberger, Inventors Licensing and Marketing Agency, B.P. 251, Tarzana (Californie) 91356 et faire parvenir une copie de votre correspondance initiale au Consulat général du Canada, 510 West Sixth Street, Los Angeles (Californie) 90014-1377 (É.-U.).

Forage Accumulator Box/317

American inventor offers the manufacturing and marketing rights to an agricultural wheel mounted forage accumulator box which includes a longitudinally extended bottom wall for stable towing and an associated elevated cross conveyor for transverse discharge to a truck or the like. This improved forage accumulator box is extended at the front and back for handling and towing stability, has shape and dimensions to accommodate oncoming traffic for towing on a roadway, has a transversely directed discharge chute which is movable transversely inwardly for reducing effective width of the box. The simple, rugged construction has proven efficient in operation. A patent is pending in the United States. Write: Mr. Daniel A. Heimes, R.R. 3, Box 63G, Hartington, Nebraska 68739 and send a copy of your initial correspondence to Canadian Consulate General, 310 South Michigan Avenue, 12th Floor, Chicago, Illinois 60604-4295, U.S.A.

Remorque accumulatrice de fourrage/317

Un inventeur américain offre les droits de fabrication et de commercialisation d'un accumulateur à fourrage monté sur roues qui comprend un plancher étendu vers l'avant pour une traction plus stable et un convoyeur transversal pour transférer le fourrage à un camion ou autre véhicule. Cet accumulateur amélioré a une forme et des dimensions permettant d'utiliser les routes normalement. Le dispositif de transfert du fourrage peut être repoussé à l'intérieur pour réduire la largeur pour la route. Cette remorque de construction simple et robuste s'est révélée d'un emploi très pratique. En instance de brevet aux États-Unis. Écrire à: M. Daniel A. Heimes, R.R. 3, Box 63G, Hartington (Nebraska) 68739 et envoyer une copie de votre correspondance initiale au Consulat général du Canada, 310 South Michigan Avenue, 12th Floor, Chicago (Illinois) 60604-4295 (États-Unis).

Canadian Patents Available for Licensing or Sale in Canada Issued April 1982

Liste des brevets canadiens disponibles pour octroi de licences ou vente au Canada délivrés en avril 1982

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.

Sail-Type Windmill and Hydromill/317

Éolienne à voiles/317

The invention is a vertical-axle windmill (or hydromill) which rotates irrespective of wind direction. The windmill is provided with a plurality of turnable sails, which automatically pivot toward the optimum leeway, to catch favourable wind, to produce torque to nearly three quarters of each rotation, and to avoid the headwind with the least possible resistance through the remaining quarter of its rotation, thus efficiently converting wind force to mechanical power. **PATENT 1,118,687**. Write: Hsun-Fa Liu, 4 Flr.-2, 62, Huai Ning St., Taipei, Taiwan 100, Taiwan 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.

Telescopic Heat Control Deflector/317

Déflecteur télescopique réglable pour la distribution de la chaleur/317

The invention is a device which includes deflector flanges of particular design mountable on conventional portable heaters typically ranging six to fifteen inches in diameter, of the type that utilize gasoline, kerosene or propane gas. Range of variation of direction of heat is through an angle of up to about 180 degrees, utilizing a central perforated base flange and two side flanges that each is movable in or alternately away from the base flange, attached within handle holes of the base flange; the structure creates a unique tunnel effect, and the holes in the center of the base flange allow proper air circulation which results in a high degree of efficiency in the burning of the fuel and results in a heat pattern that is efficiently concentrated and thereby intensified. **PATENT 1,121,241**. Write: Frances E. Reed, 11 N. Shoretrail, Sparta, New Jersey 07871 and send a copy of your initial correspondence to Canadian Consulate General, 1251 Avenue of the Americas, New York City, N.Y. 10020-1175, U.S.A.

Separator Membrane, and Process Using Such Membrane for Removing Ions from an Aqueous Solution/317

Membranes séparatrices, et traitement faisant appel aux dites membranes pour la désionisation des solutions aqueuses/317

A method of removing ions from an aqueous feed solution and liberating such in an aqueous product solution wherein the feed solution is circulated through the lumens of hollow porous-walled fibers, and the ions travel through a liquid membrane permeating the porous walls of the fibers to be liberated in an aqueous product solution circulated over the outside of the fibers. **PATENT 1,121,278**. Write: Bend Research, Inc., 64550 Research Road, Bend, Oregon 97701 and send a copy of your initial correspondence to Canadian Consulate General, 412 Plaza 600, Sixth and Stewart, Seattle, Washington 98101-1286.

Selective Removal of Bismuth and Antimony from Copper Electrolyte by Salt Addition/317

Extraction sélective du bismuth et de l'antimoine contenus dans un électrolyte à base de cuivre, par addition de sels/317

Antimony and bismuth are selectively removed from an electrolyte solution, especially a solution used for the electrolytic refining of copper by adding to the electrolyte solution a carbonate of barium, strontium, lead or calcium. **PATENT 1,121,301**. Write: Outokumpu Oy, 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.

Electrolytic Cell/317 **Pile électrolytique/317**

An electrolytic cell, especially for the oxidation of nickel (II) hydroxide, having a tank for the electrolyte as well as anodes and cathodes fitted overlappingly at short distances from each other and connected to a source of current by means of lugs, in which the anodes and the cathodes are supported by the tank bottom and the lugs of the anodes and the lugs of the cathodes have been offset in relation to each other. **PATENT 1,121,308.** Write: Outokumpu Oy, 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.

Heat Exchanger Construction/317 **Échangeur de chaleur/317**

There is provided a heat-exchange element of generally cylindrical configuration, capable of being manufactured from a single sheet of metal. The element includes a central portion with accordionated walls defining outwardly open V-shaped channels, between which are located inwardly open V-shaped channels. One end of the element is a female end for receiving a cylindrical pipe, the female end being defined by a plurality of first segments which merge with the apical portions of the outwardly open V-shaped channels. This leaves radially outwardly projecting ridges, the margins of which are made gas-tight. The other end provides a male end adapted to be received within the end of a cylindrical member, the male end being defined by second segments, each of which is continuous with and merges with the apical portion of one of the inwardly open V-shaped channels. The apical portions of the outwardly open V-shaped channels become, in the latter end portion, a radially inwardly projecting ridge of which the end margins are rendered substantially gas-tight. **PATENT 1,121,337.** Write: John Hermann, 91 Roanoke Road, Don Mills, Ontario M3A 1G5 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.

Multiple Waveguide Coupler/317 **Coupleur à guides d'ondes ramifiés/317**

L'invention concerne un coupleur à guides d'ondes ramifiés. Deux guides rectangulaires principaux sont couplés par des bras inclinés, par exemple à 60° ce qui permet à la fois de simplifier l'usinage du coupleur en deux coquilles symétriques, et d'améliorer ses caractéristiques électriques. Application aux télécommunications. **BREVET 1,121,473.** Écrire à: 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.

Modular Inflatable Dome Structure/317 **Structure de dôme modulaire gonflable/317**

A modular dome structure constructed by using uniform Y joints which have branches forming angles of 120°, 120° and 108°. The Y joints are interconnected by uniform length members to form pentagonal and hexagonal structures. These modular structures are interconnected to form a modular dome structure which may have a pentagonal apex structure or a hexagonal apex structure. All members are made to harden after inflation due to vulcanization and curing process, so that permanent resistance to stress and strain will be provided in its final form. Due to inflatability of members, the logistic involved in actual construction will be kept minimum, and the freight cost for material transportation will be saved significantly. **PATENT 1,121,566.** Write: Yen T. Huang, 9405 Pinewood Drive, Dallas, Texas 75221 and send a copy of your initial correspondence to Canadian Consulate General, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201-3051, U.S.A.

Door Pin Remover/317 **Extracteur de broches de charnières/317**

A tool for use with a hammer to remove the pin from a door hinge. The tool comprises an elongated cylindrical stem of circular cross-section, of a diameter sufficiently small to clear the opening at the bottom of the hinge, if such opening is present and, the inner surfaces of the pin receptacle of the hinge. One end of the stem terminates in a flat surface normal to the longitudinal axis of the stem. A head to receive the blows from an impact means is secured in offset fashion to the stem at its other end. The terminal, blow receiving surface of the head is normal to the longitudinal axis of the stem. The head has a circumscribing edge, and the head is secured near a segment of its edge to the stem in such a manner that a portion of the edge of the head in that area does not overhang the cylindrical surface of the stem. The portion of the head opposite the stem may be provided with a wedge-like shape, pointing away from the stem, with a central part of the wedge extremity being cut away in somewhat concave fashion to be used to wedge under and lift up the cap of a pin in a door hinge without slipping. Such tool facilitates removal of door hinge pins and reduces the potential for damage to walls and parts of the door surrounding such hinge, when compared to prior methods and devices for removing such pins. **PATENT 1,121,578.** Write: Joseph L. Tyo, 449 Gréber Boulevard, Pte-Gatineau, Quebec J8T 5W8 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.

Cereal Dryer/317

Séchoir de céréales/317

Cereal grain dryer comprising an elongated vertical casing defining an open ended enclosure. A combustion chamber provides hot combustion gases divided into two streams: one flowing into a coil lining an upper section of the casing and the other flowing through a radiator which heats up air before the latter moves horizontally across the enclosure by passing through two orifices of the casing. The casing is likewise horizontally traversed by a cold air stream passing through two further casing orifices, below the hot air stream. The cereal grains fall vertically through the enclosure and are moved by gravity. They are dried with a good thermal efficiency without coming in contact with the combustion gases. **PATENT 1,121,588.** Write: Virgiliu Th. Razus, 12, avenue Gaspard-Valette, 1206 Genève, Suisse and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, Kirchenfeldstrasse 88, 3005 Berne, Switzerland.

Rotary Engine/317

Moteur rotatif à combustion interne/317

A rotating single cylinder is mounted upon a pair of hollow rotating shafts and extends upon each side thereof. A pair of opposed pistons with a simple combustion chamber being defined within the area between the pistons, are mounted for reciprocation within the cylinder. Each piston is mounted upon an eccentric bearing which in turn may be stationary or rotatable, so that the effective movement of the pistons as the cylinder assembly rotates with the rotary shaft, is towards and away from one another without the stopping and starting of the pistons at top dead centre and bottom dead centre. Intake of fuel/air is via a valve at the inner end of one of the rotary shaft sections and exhaust is through a valve at the inner end of the other of said rotary shaft sections. The exhaust preferably is discharged tangentially of the plane of rotation immediately adjacent the cylinder assembly to avoid the head from the exhaust, affecting the rotary shaft and bearings therefor. Due to the rotary motion of the pistons and cylinder, with the combustion chamber in the centre, centrifugal inertial forces are reduced relative to a conventional four-stroke engine in which the pistons and cylinders have to decelerate, stop and accelerate in the opposite direction at the upper and lower ends of each stroke. **PATENT 1,121,731.** Write: Peter Quandt, 2061 Sutherland Road, R.R. 1, Penticton, B.C. V2A 6J6 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.

Method and Apparatus for Forming a Lumber Stack and Placing Sticks Between Adjacent Courses in the Stack/317

Méthode et dispositif d'empilage du bois de construction, avec insertion de cales d'espacement entre chaque couche/317

Method and apparatus for forming a stack of elongate articles, such as lumber, by vertically laying successive lumber courses and providing sticks between adjacent courses includes a conveyor operable for transferring a course to be stacked to a first station, a course positioner disposed adjacent the conveyor operable for selectively elevating a course as a unit and shifting it into position above a stacking station and a stick placer disposed above the stacking station operable for selectively depositing sticks generally transversely to the lengthwise dimension of the course at laterally spaced locations thereon. Further, the positioner includes elongate members rotatably mounted on a carriage, the elongate members being operable, during rotation thereof, for selective positioning above and below the riding surface of the conveyor to thereby raise and lower a course relative to the conveyor. The carriage is reciprocally shiftable relative to the direction of transfer of the conveyor for selectively locating the elongate members adjacent the first station and the stacking station. The stick placer includes a driven rotary feed operable for periodically receiving sticks and directing them through a predetermined angular displacement and periodically releasing them onto successive courses. The rotary feed includes a plurality of rotatable wheel sets disposed above the stacking station adjacent locations where the sticks are to be deposited, and each wheel set is disposed beneath a stick-containing bin and includes a pair of opposed, spaced-apart concentrically mounted wheels operable for receiving sticks. **PATENT 1,121,838.** Write: Harry E. Kennison, P.O. Box 1129, Heppner, Oregon 97836 and send a copy of your initial correspondence to Canadian Consulate General, 412 Plaza 600, Sixth and Stewart, Seattle, Washington 98101-1286, U.S.A.

Closure for Pipe or Pressure Vessel and Seal Therefor/317

Dispositifs de fermeture et d'étanchéité pour tuyau ou cuve sous pression/317

A seal for the access port of a pipe or pressure vessel comprises a support of relatively rigid material having first and second flanges adapted to engage opposed faces on a door and the pipe or pressure vessel, respectively, the first flange having a greater surface area than the second flange and being less flexible than the second flange, and a lining of relatively flexible material carried by the support and extending beyond the terminal edges of the flanges. **PATENT 1,121,840.** Write: General Descaling Company Limited, Workshop, Nottinghamshire S80 2PY, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

Adapter Kit for Connecting Vehicle Suspension Members Together/317

Adaptateur pour le raccordement réciproque d'organes de suspension/317

An adapter kit for use in connecting a beam end to a bracket in a vehicle suspension system. The beam end fits between flanges on the bracket and a hole in the beam end is aligned with holes in the brackets. A bushing having a length substantially equal to the distance between the outside surfaces of the flanges is inserted in the aligned holes. End members, having a portion overlying the flanges are inserted into the bushing from its ends. Means are provided for retaining the end members within the bushing and against the flanges. This adapter kit is particularly interesting in that it substantially improves the strength of the connection and thus reduces the risks of the malfunctioning and damage. **PATENT 1,121,842**. Write: Aldobrando Venettacci, 8952, 25th Avenue, St-Michel, Montreal, Quebec H1Z 4B7 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.

Lifting Sling, in the Shape of a Mat, Particularly for Lifting Cylindrical Objects/317

Élingue de levage en forme de tapis, notamment pour la manutention d'objets cylindriques/317

A lifting sling in the shape of a mat, particularly designed to lift large cylindrical objects. The lifting mat comprises a number of slings which are positioned side by side, each one of said slings consisting of an elongate loop of parallel strands. Each sling extends inside its individual channel, which channels are formed by a wrapping enclosing the slings. A portion of each sling protrudes from its channel at each channel end. These protruding sling portions are individually enclosed by protective coverings and from lifting loops. The lifting mat in accordance with the invention is less expensive to manufacture than prior-art lifting mats while at the same time they are more wear-resistant and easier to handle. **PATENT 1,121,846**. Write: Svensk Lasthantering Bengt Lindahl AB, Ostergarde Industriomrade, S-423 00 Torslanda, Sweden and send a copy of your initial correspondence to Commercial Division, Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

Plastic Moulding/317

Moulage du plastique/317

This invention is directed to a sheet moulding and in particular a moulding that is used to assist in fastening corrugated fibreglass sheeting to supporting objects. The invention is a pre-fabricated section suitable for use in supporting corrugated sheeting comprising a hollow, open-bottom, elongated, body section, the body section having a corrugated top wall and two generally planar side walls; one or more nail receiving openings penetrating the interior of the corrugated top wal; a tongue located at and projecting from one end of the body section, the tongue having at least one pin projecting vertically from the surface of the tongue that corresponds with the corrugated surface of the body section; and at least one opening in the corrugated surface corresponding in size and respective location with the pin located on the tongue at the opposite end, located at the end of the body section opposite the tongue. **PATENT 1,121,964**. Write: Abram Ewert, 6651 Brooks Street, Vancouver, B.C. V5S 3J6 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.

Power Cylinder Balancer Unit/317

Système indicateur du taux de compression et de compensation pour cylindre de moteur à combustion interne/317

The maximum pressure in a cylinder of an internal combustion engine is measured by a device which includes a pressure transducer housed in a water cooled, tubular body, one end of which can be connected to an engine indicator cock, and the other end of which is provided with a handle containing the transducer leads. The signal from the transducer is fed through signal conditioning and amplification, peak detector and comparator devices to a microprocessor which provides a visual, numerical indication of peak engine firing pressure. **PATENT 1,122,030**. Write: Bryan R. Long, 6425 Bowness Road, N.W., Calgary, Alberta T3B 0E6 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.

Method for Enhanced Oil Receovery/317

Méthode améliorée d'extraction du pétrole/317

The present invention is directed to an improved method for enhanced recovery of oil from relatively "cold" reservoirs by carbon dioxide flooding. In oil reservoirs at a temperature less than the critical temperature of 30.9 C and at a pore pressure greater than the saturation pressure of carbon dioxide at the temperature of the reservoir, the carbon dioxide remains in the liquid state which does not satisfactorily mix with the oil. However, applicants have found that carbon dioxide can be vaporized in situ in the reservoir by selectively reducing the pore pressure in the reservoir to a value less than the particular saturated vapor pressure so as to greatly enhance the mixing of the carbon dioxide with the oil. **PATENT 1,122,116**. Write: Mr. James E. Denny, Assistant General Counsel for Patents, Office of the General Counsel, U.S. Department of Energy, Washington, D.C. 20545 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Method of Deuterium Isotope Separation Using Ethylene and Ethylene Dichloride/317

Procédé de séparation isotopique du deutérium au moyen d'éthylène et de dichlorure d'éthylène/317

The present invention relates to deuterium isotope separation and enrichment. Presently, multi-stage equilibrium partition methods are employed to concentrate naturally occurring deuterium. Such methods involve bulky equipment and large materials handling problems because of low enrichment factors per stage. Therefore, there is low throughput and long time periods involved in order to attain steady state equilibrium conditions. The present invention overcomes these deficiencies by providing a method of separating deuterium from certain normally commercially available sources such as ethylene, vinyl chloride, 1,2-dichloroethane and propylene using tuned infrared lasers to selectively decompose such compounds into enriched molecular products containing deuterium atoms. The deuterium containing molecules can be easily separated from the starting material by absorption, distillation or other simple chemical separation techniques and methods. After evaporation such deuterium containing molecules can be burned to form water with an enriched deuterium content or pyrolyzed to form hydrogen gas with an enriched deuterium content. The present invention results in obtaining amounts of deuterium or heavy water as a valuable by-product from commercial chemical processes. **PATENT 1,122,154.** Write: Sidney W. Benson, 533 Palos Verdes Drive West, Palos Verdes Estates, California 90274 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014-1377, U.S.A.

Electrical Plug and Outlet Protector/317

Cache protecteur pour fiches et prises d'électricité/317

An electrical plug and outlet protector that allows for disengagement between an electrical plug and outlet without damage, by application of a lateral force not generally perpendicular to the outlet face, is quickly and easily connectable to the plug and associated power cord, is adaptable to various shape plugs, is inexpensive to manufacture, and is durable. **PATENT 1,122,290.** Write: Helen and James E. Hill; R.R. 14 (Highway 527), 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.

Vehicle Anti-Upset Instrument/317

Instrument avertisseur du danger de capotage d'un véhicule/317

An electrical instrument to warn of impending roll-overs in vehicles such as farm tractors. By means of a hollow portion in the concave base of a solid sphere segment having four convex walls and four sets of electrical contacts with one free rolling ball acting as a switch. When the vehicle is at a dangerous angle, the ball passes the current from the first contact to the second of a set and to the warning elements. The warning elements nullify false alarms, by means of a short off type time delay relay, wired to a horn and that to a warning light. **PATENT 1,122,301.** Write: Robert N.S. Griss, 7432 Fabre Street, Montreal, Quebec H2E 2B5 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.

Stokes Injected Raman Capillary Waveguide Amplifier/317

Amplificateur pour guide de lumière capillaire Raman à injection Stokes/317

A device for producing stimulated Raman scattering of CO_2 laser radiation by rotational states in a diatomic molecular gas utilizing a Stokes injection signal. The system utilizes a cryogenically cooled waveguide for extending focal interaction length. The waveguide, in conjunction with the Stokes injection signal, reduces required power density of the CO_2 radiation below the breakdown threshold for the diatomic molecular gas. A Fresnel rhomb is employed to circularly polarize the Stokes injection signal and CO_2 laser radiation in opposite circular directions. The device can be employed either as a regenerative oscillator utilizing optical cavity mirrors or as a single pass amplifier. Additionally, a plurality of Raman gain cells can be staged to increase output power magnitude. Also, in the regenerative oscillator embodiment, the Raman gain cell cavity length and CO_2 cavity length can be matched to provide synchronism between mode locked CO_2 pulses and pulses produced within the Raman gain cell. **PATENT 1,122,310.** Write: Mr. James E. Denny, Assistant General Counsel for Patents, Office of the General Counsel, U.S. Department of Energy, Washington, D.C. 20545 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

High Efficiency Laser Spectrum Conditioner/317

Conditionneur de spectre laser à grande efficacité/317

A high efficiency laser spectrum conditioner for generating a collinear parallel output beam containing a predetermined set of frequencies from a multifrequency laser. A diffraction grating and spherical mirror are used in combination, to disperse the various frequencies of the input laser beam and direct these frequencies along various parallel lines spatially separated from one another to an apertured mask. Selection of the desired frequencies is accomplished by placement of apertures at locations on the mask where the desired frequencies intersect the mask. A recollimated parallel output beam

with the desired set of frequencies is subsequently generated utilizing a mirror and grating matched and geometrically aligned in the same manner as the input grating and mirror. **PATENT 1,122,311**. Write: Mr. James E. Denny, Assistant General Counsel for Patents, Office of the General Counsel, U.S. Department of Energy, Washington, D.C. 20545 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Electron Beam Collector for a Microwave Power Tube/317

Collecteur de faisceau électronique pour tube générateur de micro-ondes/317

This invention relates to a cylindrical, electron beam collector that efficiently couples the microwave energy out of a high power microwave source while stopping the attendant electron beam. The interior end walls of the collector are a pair of facing parabolic mirrors and the microwave energy from an input horn is radiated between the two mirrors and reassembled at the entrance to the output waveguide where the transmitted mode is reconstructed. The mode transmission through the collector of the present invention has an efficiency of at least 94 per cent. **PATENT 1,122,322**. Write: Mr. James E. Denny, Assistant General Counsel for Patents, Office of the General Counsel, U.S. Department of Energy, Washington, D.C. 20545 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Automatically Controlled Numbering Machine/317

Numéroteur mécanique automatique/317

A numbering assembly is disclosed, which is incorporated into a conventional press of the offset type and may selectively be rendered inoperative if numbering is not desired or printing is stopped, or automatically deactuated during the operation of the offset press if no printed material is discharged to avoid movement or change of numbers on the register in the absence of printed material on which a number is to be printed. The numbering assembly according to the invention comprises an improved control assembly including a first electrical circuit comprising a detection device responsive to the presence and absence of gripped material, a first normally open switch and a solenoid connected in series. The control assembly also includes a second electrical circuit which comprises a main switch, a relay connected to the first circuit in parallel to the solenoid, and the said solenoid, all connected in series. When actuated, the solenoid operates mechanical means which brings the numbering machine in operative position so that the number to be impressed be stepped each time a sheet of printed material is passing through the numbering machine. **PATENT 1,122,473**. Write: Équipement Précibec Inc., 4495 Côte de Liesse, Montréal, Québec H4N 2N7 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.

Twin Pack Hemodialyzer/317

Hémodialiseur à deux membranes/317

The present invention relates to an improved design for a hemodialyzer which provides for increased contact between the blood and the dialysate fluid across the semipermeable membrane by increasing the blood flow path in the dialyzer unit, while at the same time increasing the blood velocity through the unit to prevent buildup of fibrin on the semipermeable membrane surfaces. The hemodialyzer of the present invention includes two independent stacks of parallel flattened semipermeable membrane tubes disposed within a dialyzer casing. The dialysate fluid flows through the casing within the interior of the flattened tubes, while the blood flows through the casing around and between the semipermeable membrane tubes, the two independent stacks of the tubes being arranged within the casing such that the blood passes through each of the two independent stacks in succession. **PATENT 1,122,536**. Write: Mr. James E. Denny, Assistant General Counsel for Patents, Office of the General Counsel, U.S. Department of Energy, Washington, D.C. 20545 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

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Zwitterion Compounds as Catalysts in Easy-Care Finishing/317

Ampholytes utilisés comme catalyseurs pour les apprêts d'entretien facile/317

Filed June 12, 1981, by the Department of Agriculture. This invention relates to chemical finishing processed for textiles. More particularly it relates to catalysts for treatment of cellulose-containing textile materials with cross-linking agents to produce easy-care properties. Write: **PAT-APPL-6-272 872**, NTIS.

Bromine-Containing, 2,4-Diaminotriazines/317

2,4 diaminotriazines bromées/317

Filed June 24, 1981, by the Department of Agriculture. This invention relates to new organic compounds and processes for the synthesis of the compounds. More specifically, the invention relates to bromine-containing 2,4-diaminotriazines and to esters used as intermediates in the synthesis of said compounds. The bromine-containing 2,4-diaminotriazines can be used to reduce the flammability of cotton. Write: **PAT-APPL-6-276 768**, NTIS.

Method for Sampling Flying Insect Populations Using Low-Frequency Sound. Detecting and Ranging in Conjunction with a Biologically Active Chemical/Pheromone/317

Méthode d'échantillonnage de populations d'insectes volants basée sur l'utilisation des sons de basse fréquence. Détection et approche en rapport avec une phéromone chimique biologiquement active/317

Filed August 6, 1981, by the Department of Agriculture. The purpose in this work is to provide a low power, battery operated SODAR transceiver device sensitive enough to detect and count flying moths lured by sex attractant dispensed at the sonic transmission site. The instant invention comprises the following steps: (1) bailing an agricultural area with a pheromone specific to a flying insect species; (2) luring said flying insect into range of a sound detecting transceiver by means of said pheromone; (3) transmitting a low-frequency sound wave into contact with said flying insect; (4) receiving said sound wave back into a recorder thus producing a detection of said insect; (5) recording the sound waves over a period of time to produce a sampling means for determining flying insect populations. Write: **PAT-APPL-6-290 540**, NTIS.

New Surface in Cellulosic Fibers by Use of Radiofrequency Plasma of Ammonia/317

Nouveau revêtement superficiel des fibres cellulosiques en utilisant un plasma radiofréquence de l'ammoniac/317

Filed August 19, 1981, by the Department of Agriculture. This invention relates to a process for producing a polymeric-type film or coating in the surface of cellulosic fiber. Write: **PAT-APPL-6-294 095**, NTIS.

Enhancement of Color Quality of Lumber During Drying/317

Amélioration de la qualité de la couleur du bois débité au cours du séchage/317

Filed September 18, 1981, by the Department of Agriculture. The main objective of this invention is to provide a method for darkening lumber throughout its thickness without damaging its structural quality. An objective of this invention is to simultaneously dry and darken lumber. Another objective is to reduce the contrast between heartwood and sapwood of walnut lumber. Write: **PAT-APPL-6-294 096**, NTIS.

Textile Finishing Agents from Reaction Products of Carbamates and Glutaraldehyde/317

Apprêts pour textiles, obtenus à partir de produits de réaction des carbamates et du glutaraldéhyde/317

Filed September 15, 1981, by the Department of Agriculture. The invention concerns a new treatment for fabric composed entirely or in part of cellulose to impart wrinkle-resistance and durable-press properties without release of formaldehyde. Write: **PAT-APPL-6-302 007**, NTIS.

Process for Modifying Cellulosic Fabrics for Improved Heat Transfer Printing/317

Procédé destiné à modifier les tissus cellulosiques pour en améliorer l'impression par transfert de chaleur/317

Filed September 15, 1981, by the Department of Agriculture. This invention relates to heat transfer printing fabrics with dispersed dyestuffs. Write: **PAT-APPL-6-302 008**, NTIS.

Antimicrobial Glycolic Acid Derivatives/317

Dérivés de l'acide glycolique anti-microbiens/317

Filed October 5, 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 some 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 biostatic agents in commercial products. Write: **PAT-APPL-6-308 350**, NTIS.

Antimicrobial Glycolic Acid Derivatives/317

Dérivés de l'acide glycolique anti-microbiens/317

Filed October 5, 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 some 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 biostatic agents in commercial products. Write: **PAT-APPL-6-308 743**, NTIS.

Apparatus for Continuous Injection of Chemically-Impregnated Filament/317

Appareil destiné à l'injection de filaments chimiquement imprégnés/317

Filed October 15, 1981, by the Department of Agriculture. This invention relates to an apparatus which continuously applies an agricultural chemically-impregnated chemical filament to soil. Write: **PAT-APPL-6-311 587**, NTIS.

Apparatus to Extract Dust and Fine Trash from Opened Cotton/317

Dispositif pour extraire la poussière et les particules fixes du coton/317

Filed October 15, 1981, by the Department of Agriculture. The instant invention relates to an apparatus for improving air quality. More specifically, the instant invention is an apparatus used to reduce fine trash and dust in a textile processing operation. Write: **PAT-APPL-6-311 702**, NTIS.

Free Electron Laser Employing an Expanded Hollow Intense Electron Beam and Periodic Radial Magnetic Field/317

Laser à électrons libres utilisant un faisceau électronique intense, creux et étalé, ainsi qu'un champ magnétique radial périodique/317

Filed November 9, 1979, by the Department of the Air Force. The generation of very high power pulses of coherent electromagnetic radiation that are continuously tunable in frequency is accomplished by means of a free electron laser in which a hollow relativistic electron beam is projected along the longitudinal axis of an evacuated drift tube. A first magnetic field expands the electron beam into an annular peripheral interaction region of the drift tube where the beam interacts with a second periodic radial magnetic field. Frequency is varied by changing the electron velocity of the electron beam or by changing the periodicity of the radial magnetic field. The device can be made to operate as an oscillator by the inclusion of resonant cavity defining mirrors within the interaction region, or as an amplifier by injecting a coherent radiation signal into the interaction region. Both oscillator and amplifier functions can be incorporated into a single device. Linewidth is narrowed by utilizing a Smith-Fox interferometer to couple the generated coherent radiation into an output light pipe. Write: **PAT-APPL-6-092 801**, NTIS.

Holographic Reflective Grating Multiplexer/ Demultiplexer/317

Multiplexeur/démultiplexeur à réseau réfléchissant holographique/317

Filed February 3, 1981, by the Department of the Air Force. A multiplexer/demultiplexer has a holographically formed reflective grating incorporated therein. In operation as a demultiplexer, a single signal having a plurality of wavelengths impinges upon the holographic reflective grating in an appropriate manner and is separated into a plurality of signals, each being of a different one of the wavelengths. In the multiplexing mode of operation, a plurality of signals, each being of a different wavelength impinges upon the holographic reflective grating in an appropriate manner and emerges therefrom as a single signal having all of the different wavelengths. Write: **PAT-APPL-6-231 074**, NTIS.

Method of Multivariant Intraclass Pattern Recognition/317

Méthode de différenciation de configurations intraclasses multivariables/317

Filed April 28, 1981, by the Department of the Air Force. This invention relates to a method of recognizing different perspective views or images (i.e., differences in tilt and/or rotation and/or magnification — 'multivariant views') of the same object 'interclass patterns'. In most pattern recognition problems, multivariant views or images of the intraclass pattern type must be recognized, and discrimination between multiobjects (i.e., different but similar, objects) must also be maintained. Such pattern recognition problems arise in missile guidance, product line inspection, and elsewhere. Prior approaches to the multivariant intraclass pattern recognition problem, and to the multiobject pattern recognition problem, have used multiple matched spatial filters ('MSF'). What is needed in the art is a method of recognizing multivariant views of intraclass patterns, while maintaining discrimination between multiobjects, without requiring multiple MSFs or extensive post-processing. Another object of this invention is to attain the hereinbefore described pattern recognition by retaining the simplicity and real-time and parallel processing features of the well-understood optical plane correlator system. Write: **PAT-APPL-6-258 500**, NTIS.

Satellite Test Chamber with Electromagnetic Reflection and Resonance Damping for Simulating System Generated Electromagnetic Pulses/317

Chambre d'essai pour satellite avec réflexion électromagnétique et amortissement de la résonance pour simuler des impulsions électromagnétiques produites par des systèmes/317

Filed July 27, 1981, by the Department of the Air Force. The simulation of systems generated electromagnetic pulses in a space environment for satellite testing in accomplished by means of a spherical test chamber that is coupled with a pulsed x-ray source. Resonance damping is provided by a spherical resistive resonance suppression grid that is placed within the test chamber a spaced from its inner surface by a distance that effects optimum damping of electromagnetic wave energy at the fundamental chamber standing wave frequency. Electrons generated from surfaces within the chamber are suppressed by a spherical resistive electron backscatter suppression grid disposed between the resonance suppression grid and the chamber inner wall and by coating the inner chamber wall with electron emission suppression material. Write: **PAT-APPL-6-286 817**, NTIS.

High Energy Single Pulse Laser Calorimeter/317

Calorimètre à laser à impulsion unique de haute énergie/317

Filed July 27, 1981, by the Department of the Air Force. The present invention relates broadly to calorimeters, and in particular to a high energy single pulse laser calorimeter apparatus. The present invention utilizes the output signal of a large single pulse laser to measure the energy output provided thereby. The laser calorimeter uses a volumetric absorbing neutral density glass plate to capture the laser beam. The output energy in the laser beam is transformed into heat in the glass plate. The heat is absorbed by an aluminum plate which is epoxied to the back of the glass plate with a heat conducting epoxy. Transistors are epoxied to the aluminum plate. The base and emitter leads are then soldered together between adjacent transistors forming a series circuit of diode junctions. A constant current supply, running at approximately 5 milliamps, is connected to the series string of diodes. The voltage drop across the diode string is then monitored with a high impedance measuring device. The voltage drops across the transistors change when energy is absorbed by the glass and conducted to the transistors. The change in voltage drop is a measure of the energy absorbed by the glass. Write: **PAT-APPL-6-286 818**, NTIS.

Method for Providing in-situ Non-Destructive Monitoring of Semiconductors During Laser Annealing Process/317

Méthode de contrôle non destructif in situ de semiconducteurs au cours du procédé de recuit au laser/317

Filed July 27, 1981, by the Department of the Air Force. In-situ, non-destructive monitoring of semiconductors during laser annealing process is realized by a method the steps of which include: positioning a surface acoustic wave device adjacent the semiconductor being annealed and in intercepting relationship with the annealing radiation, the surface acoustic wave device substrate being transparent to the annealing radiation; affixing an electrical contact to the top surface of the semiconductor; applying an r.f. input to the surface acoustic wave device; and measuring the transverse acoustoelectrical voltage on the electrical contact. The surface acoustic wave propagation surface of the surface acoustic wave device is in close proximity to the bottom surface of the semiconductor and interaction of the electric field that accompanies the propagating surface acoustic wave with the charge carriers of the semiconductor produces the transverse acoustoelectric voltage. The transverse acoustoelectric voltage is thus a function of the semiconductor conductivity. Write: **PAT-APPL-6-286 821**, NTIS.

Photographic Image Quality Assessment/317

Évaluation de la qualité de photographies/317

Filed July 28, 1981, by the Department of the Air Force. This invention relates to photographic image quality assessment apparatus and method, and more particularly to the objective measurement of photographic system performance. Aerial photography is a major resource in satisfying intelligence and mapping requirements. The Air Force has a quality assurance program for photographic collection systems and has established requirements for developing nominal performance standards for each system. An object of the invention is to provide for simplified and less expensive machine based image assessment, as compared to procedures utilizing microdensitometers. According to the invention, an array of solid state detectors is used with programmable processing technology to measure photographic system performance. The invention provides for the rapid and accurate digitization of an image into transmission/density units, digital processing of these values, and the production of analytic estimates of total photographic system performance based on spatial and/or spatial frequency information derived from the sampled image. The invention employs a physically unitized detector array to provide a fixed spatial relationship between all sampling positions and an integrated programmable processor to perform high speed data acquisition and processing. Write: **PAT-APPL-6-287 672**, NTIS.

RF Laser Array Driver Apparatus/317

Circuit d'excitation pour réseau laser RF/317

Filed August 3, 1981, by the Department of the Air Force. This abstract discloses an RF laser array driver apparatus with a DC bias input and an RF input to modulate a diode array and provide a modulated optical output. The driver circuit comprises a series impedance which is in parallel with the diode array to provide a 50 ohm impedance to the RF input signal that is substantially constant with frequency. write: **PAT-APPL-6-289 660**, NTIS.

Two-Way Flow Valve/317

Soupage distributrice à deux voies/317

Filed August 10, 1981, by the Department of the Air Force. A two-way flow valve includes a valve body having a cavity and a stem longitudinally moveable therein which establishes two separate fluid flow paths through the cavity in the body from first and second inlet ports to a common outlet port. AA spring biases the stem to a first position in which fluid flow is allowed along a first one of the paths and obstructed along the other. When a closure is applied to the valve, the stem is moved against the spring bias to a second position in which fluid flow is allowed along a second one of the paths and obstructed along the first path. Write: **PAT-APPL-6-291 863**, NTIS.

Process for Producing Aromatic Heterocyclic Polymer Alloys/317

Technique de production d'alliages polymériques de composés aromatiques hétérocycliques/317

Filed August 11, 1981, by the Department of the Air Force. This invention relates to polymeric alloys composed of rod-like, aromatic, heterocyclic polymers and coil-like, aromatic, heterocyclic polymers. In one aspect it relates to a method for the preparation of composite films at the molecular level that are analogous to chopped fiber composites. In another aspect, it relates to composite films prepared from para ordered, rod-like, aromatic, heterocyclic polymers embedded in an amorphous, heterocyclic system. Broadly, the present invention involves an improved process for preparing polymer alloys composed of a mixture of a flexible, coil-like, heterocyclic polymer which acts as an amorphous matrix and a reinforcing amount of a rod-like aromatic, heterocyclic polymer embedded within the amorphous matrix. The improved process involves the technique of precipitating the composite film from a dilute solvent solution containing a mixture of the coil-like amorphous polymer and the rod-like polymer in a high humidity environment. As a result, it was found that the rod-like polymers functioned more effectively because of their more widespread dispersion, thus providing greater reinforcement for the coil-like polymer mixture and resulting improvement in modulus and tensile strength characteristics of the film composite. Write: **PAT-APPL-6-291 891**, NTIS.

Exact Involute Ply Patterns/317

Configurations à plis par involution exacte/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed August 18, 1981, by the Department of the Air Force. This invention relates to uniquely structured bodies of revolution and, more particularly, to exact involute ply patterns for use in constructing bodies of revolution from thin sheet material. Involute construction, formerly known as rosette construction, is a popular approach being used in rocket nozzle technology for the fabrication of exit cones and other bodies of revolution. The instant invention satisfies the above-mentioned need in the art. It, therefore, constitutes a significant advance in the state-of-the-art. The instant invention is a predetermined (i.e., arbitrary) hollow symmetrical structure, in the form of a body of revolution, which comprises a preselected number of identically shaped and sized exact involute surface plies which are successively disposed and joined circumferentially in a contacting, stack-like layered, and overlapping relationship. The key to the success of the instant invention is the dimensioning and configuration of a ply pattern which allows the plies to fit together perfectly, in such a way that their boundaries form the desired body of revolution. Write: **PAT-APPL-6-293 776**, NTIS.

Method and Apparatus for Analyzing Supersonic Flow Fields by Laser Induced Fluorescence/317

Méthode et appareil d'analyse des champs d'écoulement supersonique par fluorescence induite par laser/317

Filed August 18, 1981, by the Department of the Air Force. This patent application discloses a method and apparatus for visually analyzing gaseous flow fields. A vaporous substances that fluoresces when irradiated by a particular laser beam is injected into a structure containing a flowing gas in a manner such that a uniform dispersion of the vaporous substance throughout the gas flow is achieved. The beam from a pump laser in optical communication with the gas flow pumps the ground state of the vaporous substance to an excited state and causes the vaporous substance to fluoresce in the area illuminated by the beam, thus providing a visual indication of the pattern of gas flow in the structure. Write: **PAT-APPL-6-293 777**, NTIS.

Atmospheric Aerosol Extinctiometer/317

Extinctiomètre pour aérosols/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed September 2, 1981, by the Department of the Air Force. The extinction coefficient of atmospheric aerosol is measured by an instrument in which a single light beam from a graybody source is alternately directed through two similar optical paths to a detector. Each optical path traverses an equal length region of ambient air. Aerosols are filtered from the ambient air region of one optical path. The detector measures the modulation of the incident radiation and its output is a function of the extinction coefficient of the ambient air under test. A second detector is used to monitor the beam power. Processing electronics compute the extinction coefficients of the ambient air under test from the detector outputs. The ambient air regions of the two beam paths are alternately filtered for improved performance. Write: **PAT-APPL-6-298 687**, NTIS.

R.F. Primed Plasma Limiter for Radar Receiver Protector/317

Limiteur de plasma activé par radiofréquence pour protecteur de récepteur radar/317

Filed September 10, 1981, by the Department of the Air Force. The plasma switching stage of a radar receiver protector is simplified and improved by the utilization of a halogen gas filled quartz container and a 'keepalive' electron source. The container is configured as a capillary stem filled with low pressure chlorine gas and provides the active switching element in the signal waveguide portion of the receiver protector. An enclosed r.f. energy source in combination with the capillary stem creates a copious and steady free electron supply. The r.f. exciting field used to activate the 'keepalive' plasma is enhanced by a coaxial re-entrant cavity located on the top wall of the receiver protector waveguide. Write: **PAT-APPL-6-300 762**, NTIS.

Self-Supporting Laser Diffuser Flow Energizer/317

Activateur auto-entretenu de l'écoulement gazeux dans les diffuseurs de laser/317

Filed September 10, 1981, by the Department of the Air Force. A self-supporting laser diffuser flow energizer is described for improving the performance of radial flow lasers by providing novel means for pressure recovery, and comprises a self-sustaining suction means communication with the laser cavity for changing the supersonic shock front configuration existing within a radial laser diffuser and thereby promoting the flow of gaseous laser medium within the laser cavity. Write: **PAT-APPL-6-300 763**, NTIS.

Tool Sealing Arrangement and Method/317

Méthode de réalisation de joints d'outils/317

Filed September 10, 1981, by the Department of the Air Force. The present invention provides a tool sealing arrangement and method designed to satisfy the aforementioned needs. The unique feature of the present invention is the use of the peripheral area of the titanium sheet metal assembly itself to form a tool seal, thereby eliminating the necessity for a separate seal. This peripheral area is the normal trim-off area of the formed titanium component. By using the titanium sheet metal assembly to form the seal, no matching requirements are imposed on the tools because the expanding titanium material adjusts to the gap between the tools. This leads to a low cost tooling system. Surface preparation of the tools is not critical because the plasticity of the titanium material accommodates surface roughness and geometrical deviations from the theoretical surface. Accordingly, the present invention is directed to a tool sealing arrangement for use in superplastic forming and diffusion bonding apparatus which includes upper and lower tools. The sealing arrangement is formed by the peripheries of a pair of metal blanks having effective strain rate sensitivity to be formed into a component assembly by the apparatus. The metal blanks are located between the tools with spaced apart inner and outer marginal peripheral edge portions of the blanks being connected together and expanded away from one another at a predetermined pressure greater than the working pressure between the tools. The expanded peripheral edge portions of the blanks form a seal between the blanks and tools which prevents outside atmospheric gases from entering between the tools. Write: **PAT-APPL-6-300 767**, NTIS.

Dual Species Ion Implantation into GaAs/317

Implantation de deux types d'ions dans le GaAs/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed September 10, 1981, by the Department of the Air Force. The object of this invention is to provide a method of dual implantation with Ge and Ga or As into GaAs to provide low sheet conductivity and good mobility layers, good integrity of dopant profiles, good ohmic contacts, control of diffusion and enhancement of conductivity, and establishing post-implantation annealing conditions following ion implantation such as temperature, duration and encapsulants. Write: **PAT-APPL-6-300 839**, NTIS.

Monolithically Interconnected Series-Parallel Avalanche Diodes/317

Diodes à avalanche série-parallèle à interconnexions monolithiques/317

Filed December 6, 1979, by the Department of the Army. Disclosed is an array of avalanche diodes and its method of manufacture which results in plural pairs of series connected mesa-etched avalanche (TRAPATT) diodes being selectively connected in parallel by metallized air bridges for increasing the impedance level and thereby the peak and average power level available from microwave oscillators and amplifiers configured therefrom. The various series connected diodes are placed in near proximity to respective neighboring diode pairs to reduce parasitics but at the same time the spacing is made sufficiently large to prevent thermal spreading of one diode pair to overlap that of the adjacent diode pair. The metallized air bridges in addition to providing a low inductance interconnection, provide an integrated heat capacitance which is necessary for high power operation. Write: **PAT-APPL-6-101 405**, NTIS.

Satellite Communication System/317

Système de télécommunication par satellite/317

Filed July 31, 1980, by the Department of the Army. The system of the invention uses a loop-around transmission between a master ground terminal and each slaved ground terminal with the phase or timing being controlled at the master station. The doppler canceling loop translates a doppler-free primary standard clock to each slave ground terminal. Each slave terminal then uses the received doppler-free timing clock as its standard in a doppler canceling loop-around timing system to control the frequency of its transmitted signal. The doppler frequency variation at each ground terminal is thereby eliminated for all the slave satellite ground terminals (nodes) accessing the satellite, and a synchronous network for all ground and space trunk transmission is provided without the need for an expensive primary or secondary time standard at all of the several ground terminals. The message traffic channels sent over the satellite link all are received completely free of any doppler frequency variation thus eliminating the need for any of the large buffers normally required at the satellite ground terminals. Write: **PAT-APPL-6-174 293**, NTIS.

Temperature Responsive Control Circuit/317

Circuit de commande thermosensible/317

Filed September 8, 1980, by the Department of the Army. The delivery of alternating current from a source to a load, especially a resistance heater, is accurately controlled as a function of temperature through the employment of a bidirectional solid state switch. A full-wave power control for the solid state switch includes a temperature probe comprising one or a combination of voltage and temperature sensitive devices. Write: **PAT-APPL-6-184 867**, NTIS.

Phase Sensor for R.F. Transmission Lines/317

Détecteur de phase pour lignes de transport r.f./317

Filed September 11, 1980, by the Department of the Army. This invention relates to a device for detecting the phase on an R.F. transmission line, which is useful for indicating the resonance condition of a complex load impedance (such as an antenna). The device according to the invention does not require any physical connection to the mainline of the R.F. transmission system, nor any wire-wound transformer. Coupling is obtained by a short length of wire parallel and adjacent to the center conductor of the main line. The circuit comprises two diodes connected with like poles to opposite ends of the coupling wire, a resistor between the other poles of the diodes, and a meter across the resistor. Write: **PAT-APPL-6-186 109**, NTIS.

Improved High Energy Electrochemical Power Cell/317

Pile électrochimique améliorée à haute énergie/317

Filed May 11, 1981, by the Department of the Army. An improved high energy electrochemical power cell is obtained by adding cupric chloride to the high surface area carbon black cathode of a lithium-inorganic electrolyte cell. Write: **PAT-APPL-6-262 282**, NTIS.

Method and Apparatus for Radial Inertia Welding of Dissimilar Metals/317

Méthode et équipement de soudage en circonférence par inertie de métaux différents/317

Filed June 1, 1981, by the Department of the Army. The invention discloses an apparatus for the radial inertia welding of a metal band to the outer surface of a cylindrical metallic structure. The metals may be similar or dissimilar. The band is placed on the inside of a spinning collet and as the cylindrical structure is advanced thru the band, at a predetermined position, it activates the collet jaws, causing the band to be radially compressed onto the cylindrical structure. Friction between the rotating band and the cylindrical structure held by a tailstock creates heat and under the resulting collet jaw pressure welding action results. Write: **PAT-APPL-6-269 139**, NTIS.

Electrooptical System and Technique for Direct Quantitative Measurement of the Mass Concentration of Monodisperse Aerosols/317

Système électro-optique et technique de mesure quantitative directe de la teneur en vapeur d'eau d'aérosols monodispersés/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed June 11, 1981, by the Department of the Army. This invention relates to an electrooptical system and technique for direct quantitative measurement of the mass concentration of monodisperse aerosols by means of filling an enclosed chamber with a cloud or a sequence of separate clouds of essentially transparent and spherical, aerosolized particles or droplets of known density and known or selectively controlled particle size. While within the confines of the chamber the cloud, or each of the sequence of clouds, of aerosolized particles is maintained in a homogeneous condition and irradiated with a beam of high-intensity and constant wavelength irradiation selected to possess a wavelength to particle size ratio wherein attenuation of the irradiation will be almost exclusively, if not nearly entirely, attributable to optical scattering. The mass concentration of the cloud, or each of the sequence of clouds, of aerosolized particles is directly and quantitatively measured, or monitored, as a direct function of the measured magnitude, or intensity, of the attenuated beam of irradiation transmitted through the cloud. The results provide a reliably accurate measurement to within a minimal margin of error + or- 10% or less. Write: **PAT-APPL-6-272 588**, NTIS.

Pretreatment of Superalloys and Stainless Steels for Electroplating/317

Prétraitement de superalliages et d'aciers inoxydables servant à l'électroplacage/317

Filed July 13, 1981, by the Department of the Army. Process for activating surfaces of superalloys and stainless steels prior to electroplating a metal such as chromium thereon, whereby a metal deposit having excellent adhesion to the substrate is obtained. The article is activated by anodic etching in a novel activation solution containing about 55% to 80% by volume of H2SO4 and about 1% to 10% by volume of commercial 52% hydrofluoric acid, preferably an aqueous bath containing 65% by volume of 95-98% H2SO4 and 5% by volume of 52% hydrofluoric acid at 30 A/dm to the second power and 20 degrees C for one minute. Write: **PAT-APPL-6-282 909**, NTIS.

Nitration of Cellulose/317

Nitration de la cellulose/317

Filed August 3, 1981, by the Department of the Army. There is disclosed a process for the nitration of cellulose with nitric acid in the absence of sulfuric acid which comprises adding sufficient nitric oxide and oxygen or air to the nitration reaction mixture to react with the water formed in the raction. This regenerates nitric acid which can be recycled to the reaction or removed and collected. Write: **PAT-APPL-6-289 438**, NTIS.

Bonded Bulk Graphite and Process for Bonding/317

Procédé de liaison de pièces de graphite/317

Filed August 21, 1981, by the Department of the Army. Bulk pieces of graphite bonded with a graphitizable binder comprising a liquid crystalline component of pitch, which softens at about 240 C and becomes very fluid at about 300 C to about 500 C. The bonded graphite pieces appear as a monolithic material even under 1000x magnification. The bonding is effected under vacuum or in an inert atmosphere at temperatures of from about 700 C to about 3000 C, usually about 1000 C to about 1500 C, under pressure of from about 138 kPa to about 6890 kPa applied in a direction normal to the bonding surface. Write: **PAT-APPL-6-295 167**, NTIS.

System for Measuring Plate Deformation Produced by Explosive Shock Waves, and Motion-Sensing Accelerometer Transducer Used Therein/317

Système de mesure, par transducteur accélérométrique, des déformations de plaques, dues à des ondes de choc provenant d'explosions/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed August 28, 1981, by the Department of the Army. A novel testing system is described which utilizes a novel subcombination multiple pin/probe type motion-sensing accelerometer transducer, capable of sensing exceptionally high levels of structural motion, in the domain of from about 1,000,000 to 10,000,000 Gs (force of gravity). Such motion may be imparted by shock wave forces generated by detonation of high energy ballistic and/or land mine charges, thereby generally deforming some portions of closely adjacent, high strength structures such as steel armor plate being tested. this novel accelerometer transducer comprises at least two and preferably from six to eight potentially deformable pin-like contact probes preferably of pure annealed metal which preferably project from both sides of a support fixture. When the power source is 'on', pin-plate contact resulting from such blast deformation force progressively energizes the respective subcircuits, from which the timed differences between contacts and other data are measured and used primarily to novelly compute instantaneous velocity and average acceleration of such deformation. Write: **PAT-APPL-6-297 294**, NTIS.

Wide Angle Intensity Pickoff/317

Transducteur grand angle d'intensité/317

Filed August 31, 1981, by the Department of the Army. Angular measurement systems are utilized to indicate changes in angular position between reference points such as a stable reference point and an unstable reference point. Typical of such a system is a moving vehicle or missile following a preselected path. A pickoff system for use with angular measurement systems that has both a very fine signal resolution and accuracy over a wide angle. The fine signal resolution allows accurate detection of incremental changes. the wide angle of operation provides a minimum linear range of 70 deg, with a total range of 180 deg when the nonlinear range is included. An optical source and detector are mounted on unstabilized structure with the optical source purposefully misaligned with the detector. A fiber optic bundle is positioned on a stabilized structure and provides an optical path between the optical source and detector for providing a variable signal there through in response to angular position changes between the unstabilized structure and the stabilized structure. Write: **PAT-APPL-6-297 795**, NTIS.

Compounds and Method for Detecting Thiols/317

Composés et méthode servant à détecter les thiols/317

Filed September 14, 1981, by the Department of the Army. Novel 4,4'-dithiodianil compounds are prepared by reacting 4,4'-dithiodianiline with an aromatic or pyridine aldehyde, such as 4-nitrobenzaldehyde. The novel dithiodianil compounds can be employed for detecting thiol compounds. They react with thiols to yield reaction products which possess a different color from the novel dithiodianil compound itself. The color change obtained in this manner with the novel compounds in many cases is stronger than that obtained with Ellman's reagent frequently employed for detecting thiols. Write: **PAT-APPL-6-301 507**, NTIS.

Adiabatic Burner for Premixed Gases/317

Brûleur adiabatique pour gaz prémélangés/317

Filed September 16, 1981, by the Department of the Army. A research type burner is provided which permits ready optical access for study of precombustion and primary reaction zones of adiabatic flames of premixed gases. The burner includes a channel for relatively laminar gas flow having an outlet with a pair of essentially parallel closely spaced knife edges for providing an essentially stable and adiabatic flame. The knife edges project sufficiently above the burner housing to allow the passage of a laser beam between the knife edges through the zone to be studied. Write: **PAT-APPL-6-302 892**, NTIS.

Monolithically Interconnected Series-Parallel Avalanche Diodes/317

Diodes à avalanche série-parallèle à interconnexions monolithiques/317

Filed October 7, 1981, by the Department of the Army. Disclosed is an array of avalanche diodes and its method of manufacture which results in plural pairs of series connected mesa-etched avalanche (TRAPATT) diodes being selectively connected in parallel by metallized air bridges for increasing the impedance level and thereby the peak and average power level available from microwave oscillators and amplifiers configured therefrom. The various series connected diodes are placed in near proximity to respective neighboring diode pairs to reduce parasitics but at the same time the spacing is made sufficiently large to prevent thermal spreading of one diode pair to overlap that of the adjacent diode pair. The metallized air bridges in addition to providing a low inductance interconnection, provide an integrated heat capacitance which is necessary for high power operation. Write: **PAT-APPL-6-303 537**, NTIS.

Bonded Grid-Cathode Electrode Structure/317

Structure grille-cathode intégrée/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed October 1, 1981, by the Department of the Army. A variety of technologies have been applied in the development of a bonded grid cathode. Erosion lithography is used for making the fine-detail grid structure, combining air erosion and lithographic techniques. To obtain openings of the order of 0.0025 cm or smaller, a nozzle with a high aspect ratio exit opening is used, and the cathode grid structure is scanned. A photo resist in which the grid pattern is developed is used over the molybdenum or tungsten grid film. The metal film is removed from the grid openings by chemical etching. The photo resist over the metal grid is used as a composite mask for removing the BN insulation in the openings by erosion with Al203 powder from the special nozzle on the air blast gun. Write: **PAT-APPL-6-307 404**, NTIS.

Force Rate Sensor Assembly/317

Détecteur dynamométrique/317

Filed October 19, 1981, by the Department of the Army. The invention comprises an apparatus and method for sensing the time rate of change of tension on a cable being wound and providing a control signal proportional thereto. A use of the present invention is in a machine for winding fiber optic bobbins, and, more particularly, to stabilize the servo mechanism which controls the fiber optic cable tension during winding. Write: **PAT-APPL-6-312 202**, NTIS.

Method of Vacuum Depositing Metallic and Nonmetallic Coating Onto a Substrate/317

Méthode de dépôt sous vide d'un recouvrement métallique (ou non) sur un substrat/317

Filed October 26, 1981, by the Department of the Army. Metallic and non metallic coatings are vacuum deposited onto a substrate using different deposition methods in a single vacuum deposition chamber without breaking vacuum between depositions. The deposition methods are RF sputter, electron beam gun evaporation, and chemical vapor deposition. The method allows for a multiple deposition of a large number of distinct and special coatings on various substrates to be accomplished without exposing the sensitive coatings to atmospheric poisoning. Write: **PAT-APPL-6-315 276**, NTIS.

Method of Measuring the Thermal Properties of a Resonator/317

Méthode de mesure des propriétés thermiques d'un résonateur/317

Filed October, 28, 1981, by the Department of the Army. The thermal properties of a crystal resonator are rapidly and inexpensively measured by first immersing the resonator into an ice water bath at 0 C and monitoring the frequency of the resonator until the frequency of the resonator is no longer changing; then rapidly immersing the resonator into a boiling water bath at 100 C and monitoring the frequency versus time characteristics of the resonator at least until the frequency of the resonator is no longer changing; repeating the above cycle, and determining the thermal properties of the crystal resonator from the frequency versus time characteristic. Write: **PAT-APPL-6-315 850**, NTIS.

Lossy Matching for Broadbanding Low Profile Small Antennas/317

Élargissement de la largeur de bande d'antennes courtes par adaptation à pertes/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed November 23, 1981, by the Department of the Army. A low-profile survivable antenna suitable for military use is described. Despite its small size, which might be one tenth of a wavelength, the antenna has reasonable transmission range for these applications. Very little operator attention is needed in operation, since a special matching circuit within the antenna network enables effective impedance matching, over a 3:1 frequency range, without necessity of switching to different matching circuits over different frequency bands. By including resistive components along with other passive inductive or capacitive elements, the reactance of the single matching circuit is made to effectively compensate the antenna's impedance over the entire frequency range. the impedance of the circuit has a decreasing positive reactance which compensates for the decreasing negative reactance, with frequency, of the antenna. Although the transmission efficiency of the matched antenna network is somewhat diminished by resistive losses, it is still satisfactory, and band switching with this matching circuit is completely eliminated. by including a slender whip screwed into the top, the range can be doubled with no further changes. The matching techniques to be described are most easily realized in the HF through VHF range (1-200 MHz). Write: **PAT-APPL-6-323 835**, NTIS.

Planar Doped Barrier Gate Field Effect Transistor/317

Transistor à effet de champ avec grille planar à barrière dopée/317

Filed November 23, 1981, by the Department of the Army. Disclosed is an epilayer field effect transistor having a planar doped barrier gate formed on an n-type semiconductor planar channel region intermittent drain and source terminals formed on the surface of the channel region. the semiconductor channel region is fabricated on a semiconductor substrate, preferably GaAs and being separated therefrom by one or more semiconductor planar buffer regions. The planar doped barrier gate comprises an n + - pi - p(+) - pi structure grown by molecular beam epitaxy over the n-type channel region. Application of an electrical potential to the gate modulates the channel charge depletion in the semiconductor channel region underlying the gate causing a variation in the channel conductance laterally between the source and drain terminals. Write: **PAT-APPL-6-323 858**, NTIS.

Nitroimidazoles of Low Toxicity and High Activity as Radiosensitizers of Hypoxic Tumor Cells/317

Utilisation des nitroimidazoles à toxicité réduite et à forte activité comme radiosensibilisateurs des cellules de tumeurs hypoxiques/317

Filed August 2, 1980, by the Department of Health and Human Services. The present invention is based in part on the discovery that the compounds enumerated below are relatively low in toxicity while at the same time having a high degree of effectiveness as radiosensitizers of hypoxic cells in tumors to enhance the effectiveness of radiation therapy applied to the tumor: NSC 301467 N-(2-Hydroxyethyl)-2-(2-nitro-1-imidazolyl)acetamide and NSC 314055 N,N-Di-(2-hydroxyethyl)-2-(2-nitro-1-imidazolyl)acetamide. Write: **PAT-APPL-6-180 373**, NTIS.

Nondenaturing Zwitterionic Detergents for Membrane Biochemistry/317

Détergents amphotères non dénaturants pour biochimie des membranes/317

Filed August 26, 1980, by the Department of Health and Human Services. This invention relates to a nondenaturing zwitterionic detergent for proteins which, for example, consists of an effective amount of 3-((3-chloamidopropyl)-dimethylammonio)-1-propanesulfonate (CHAPS). This detergent is of extreme interest in the biological study of proteins due to its nondenaturing characteristic. This application is an improved procedure for preparation of these compounds and especially for the last step as for CHAPSO to react the N-(3-dimethylaminopropyl)cholamide with sodium 1-chloro-2-hydroxy-3-propanesulfonate. Write: **PAT-APPL-6-294 203**, NTIS.

High Thermal Power Density Heat Transfer/317

Transfert de chaleur à haute densité d'énergie thermique/317

Filed October 30, 1980, by NASA. Heat from a high temperature heat pipe is transferred through a vacuum or a gap filled with electrically nonconducting gas to a cooler heat pipe. The heat pipe is used to cool the nuclear reactor while the heat pipe is connected thermally and electrically to a thermionic converter. If the receiver requires greater thermal power density, geometries are used with larger heat pipe areas for transmitting and receivieng energy than the area for conducting the heat to the thermionic converter. In this way the heat pipe capability for increasing thermal power densities compensates for the comparatively low thermal power densities through the electrically non-conducting gap between the two heat pipes. Write: **PAT-APPL-6-202 228**, NASA, Lewis Research Center, 21000 Brookpark Road, Cleveland, Ohio 44135 and send a copy of your initial correspondence to Canadian Consulate General, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113-1983, U.S.A.

Castable High Temperature Fractory Materials/317

Matériaux réfractaires coulables/317

Filed October 13, 1981, by NASA. The fabrication of chemically inert ceramic bodies that are both high refractory and porous is disclosed. A paste is formed by mixing alumina grain having a uniform particle size with colloidal silica that is stabilized with ammonia. This paste is then cast without forming a compact and dried without pressing. After drying, the cast body was sufficient green strength to be handled, and it is transferred to a furnace for curing. A green body prepared in accordance with the invention does not undergo shrinkage during either curing or prolonged subsequent heating. Write: **PAT-APPL-6-310 713**, NASA, Lewis Research Center, 21000 Brookpark Road, Cleveland, Ohio 44135 and send a copy of your initial correspondence to Canadian Consulate General, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113-1983, U.S.A.

Directional Flow Sensor/317

Détecteur directionnel de débit/317

Filed September 7, 1981, by NASA. A bidirectional flow sensor comprises at least three axially aligned thermistors, each of which is connected in a normally balanced bridge circuit. The centermost thermistor serves as a heat source for fluid within a tubular body while thermal energy reversely is transferred between the outermost thermistors. Each bridge circuit includes an operational amplifier of a substantially common design with its reversing input connected to the first leg of the bridge circuit and its nonreversing input connected to the second leg. The first leg is characterized by series connected resistances and the thermistor of the group for establishing a fixed voltage output ratio for the second leg. The output of voltage for the amplifier of each bridge circuit is indicative of the current required to maintain that temperature of the thermistor which is suitable for maintaining a constant voltage output ratio for the second leg of the bridge circuit. The output voltages of the pair of bridge circuits are applied to the inputs of another operational amplifier and provide for an output indicative of flow rate and direction for the fluid. Write: **PAT-APPL-6-291 644**, NASA, Hugh L. Dryden Flight Research Center, Edwards, California 93523 and send a copy of your initial correspondence to Canadian Consulate General, 510 West Sixth Street, Los Angeles, California 90014-1377, U.S.A.

Real-Time 3D X-Ray and Gamma-Ray Viewer/317

Viseur pour l'observation tridimensionnelle en temps réel de rayonnements X et gamma/317

Filed May 22, 1981, by NASA. A multi-pinhole aperture lead screen forms an equal plurality of invisible mini-images having dissimilar perspectives of an X-ray and gamma-ray emitting object onto a rare-earth phosphor layer which, in turn, provides visible light mini-images directly into a visible light image intensifier. A viewing screen having an equal plurality of dissimilar perspective apertures distributed across its face in a geometric pattern identical to the lead screen, provides a viewer with a real, pseudoscopic image of the object with full horizontal and vertical parallax. Write: **PAT-APPL-6-267 178**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Low Noise Tuned Amplifier/317

Amplificateur accordé à faible bruit/317

Filed June 12, 1981, by NASA. A bandpass amplifier first stage with a resistive load either a.c. or directly coupled to the non-inverting input of an operational amplifier second stage which is loaded in a Wien Bridge configuration. The bandpass amplifier may be operated wth a signal injected into the gate terminal of the field effect transistor and the signal output taken from the output terminal of the operational amplifier. The operational amplifier stage appears as an inductive reactance, capacitive reactance and negative resistance at the non-inverting input of the operational amplifier, all of which appear in parallel with the resistive load of the field effect transistor. Write: **PAT-APPL-6-272 839**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Active Lamp Pulse Driver Circuit/317

Circuit actif d'excitation par impulsions pour lampe-éclair/317

Filed June 24, 1981, by NASA. A flashlamp drive circuit is described in detail. The device uses an unsaturated transistor as a current mode switch to periodically subject a partially ionized gaseous laser excitation flash-lamp to a stable, rectangular pulse of current from an incomplete discharge of an energy storage capacitor. A monostable multivibrator sets the pulse interval, initiating the pulse in response to a flash command by providing a reference voltage to a non-inverting terminal of a base drive amplifiers. A tap on an emitter resistor provides a feedback signal sensitive to the current amplitude to an inventory terminal of the amplifier, thereby controlling the pulse amplitude. The circuit drives the flashlamp to provide a square-wave current flash-lamp discharge. Write: **PAT-APPL-6-276 748**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Method of Neutralizing the Corrosive Surface of Amine-Cured Epoxy Resins/317

Méthode de neutralisation de la surface corrosive des résines époxy traitées aux amines/317

Filed August 14, 1981, by NASA. The corrosive alkaline surface layer of an epoxy resin product formed by the curing of the epoxy with an aliphatic amine is eliminated by first applying a non-solvent to remove most or all of the free unreacted amine and then applying a layer of a chemical reagent to neutralize the unused amine or amine functional groups by forming a substituted urea. The surface then may be rinsed with acetone and then with alcohol. The non-solvent may be an alcohol. The neutralizing chemical reagent is a monoisocyanate or a mono-isothiocyanate. Preferred is an aromatic mono-isocyanate such as phenyl isocyanate, nitrophenyl isocyanate or naplthyl isocyanate. Write: **PAT-APPL-6-293 412**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Cooling by Conversion of Para to Ortho-Hydrogen/317

Refroidissement par transformation d'hydrogène para en ortho/317

Filed September 10, 1981, by NASA. The cooling capacity of a solid hydrogen cooling system is significantly increased by exposing vapor created during evaporation of a solid hydrogen mass to a catalyst and thereby accelerating the endothermic para-to-ortho transition of the vapor to equilibrium hydrogen. Catalysts such as nickel, copper, iron or metal hydride gels of films of nickel, copper or iron or hydride gels of nickel, copper or iron in a low pressure drop catalytic reactor are suitable for accelerating the endothermic para-to-ortho conversion. Write: **PAT-APPL-6-301 075**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Tuned Analog Network/317

Circuit analogique accordé/317

Filed September 10, 1981, by NASA. A non-inverting, direct current amplifier stage is cascaded into an integrator stage to form a two stage tuned network having a single input junction common to both stages. The network provides independent adjustment of center frequency, bandwidth and voltage gain. the insertion of a positive feedback loop between the stages provides a very narrow bandwidth network. The addition of back-to-back Zener diodes between the common input node and ground converts the network into an oscillator. Write: **PAT-APPL-6-301 077**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Focal Axis Resolver for Offset Reflector Antennas/317

Dispositif résolveur d'axe focal pour antennes réflectrices à décalage/317

Filed October 2, 1981, by NASA. A method and apparatus for determining the focal axis of an asymmetrical antenna (such as an offset paraboloid reflector) are described. A transmitting feed horn array is located at the known focal point of an offset reflector antenna and aligned with an estimated focal axis of the antenna. The array is coupled to an amplitude or phase comparison feed circuit which is adapted to provide sum and difference output fields. The feed horn array is rotated in discrete steps in at least one plane about an axis through the focal point of the antenna. At each step the far field radiation is received and detected in amplitude and the minimum value of the difference pattern at each step is noted. An indication of the true focal axis is provided by the extreme values of difference signal or the relative phase difference. Write: **PAT-APPL-6-308 009**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Stirling Cycle Cryogenic Cooler/317

Refroidisseur fonctionnant d'après un cycle de Stirling/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed October 2, 1981, by NASA. A long lifetime Stirling cycle cryogenic cooler particularly adapted for space applications comprised of a compressor section centrally aligned end to end with an expansion section and respectively including a reciprocating compressor piston and displacer radially suspended in interconnecting cylindrical housings by active magnetic bearings and having adjacent reduced clearance regions. One or more of these regions operates as clearance seals. The piston and displacer are reciprocated in their housings by linear drive motors to vary the volume of respectively adjacent compression and expansion spaces which contain a gaseous working fluid and a thermal regenerator to effect Stirling cycle cryogenic cooling. Electrical circuit means are included for energizing the magnetic bearings and for controlling the stroke amplitudes and relative phase angle between the compressor piston and displacer during the cooling cycle. Write: **PAT-APPL-6-308 204**, NASA, Goddard Space Flight Center, Mail Code: 204, Greenbelt, Maryland 20771 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Propulsive Lateral Control Nozzle/317

Buse de commande en roulis/317

Filed November 18, 1980, by NASA. The invention relates to a trailing edge flap system useful in increasing low speed lift and low speed roll control in supersonic aircraft. Two trailing edge flaps (upper and lower) extend from the aircraft's engine exhaust nozzle. In the high lift mode of operation, a diverter block pushes the upper flap away from the nozzle, thereby exposing a flow passageway. Exhaust flow through the passageway tends to decrease boundary layer separation. To provide propulsive lateral control, the diverter block of one wing may be selectively closed, thereby reducing the lift on that wing. Write: **PAT-APPL-6-208 093**, NASA, Langley Research Center, Mail Code: 279, Hampton, Virginia 23665 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Clamp-Mount Device/317

Dispositif de montage sur poutre/317

Filed August 14, 1981, by NASA. Equipment can be mounted to an associated I-beam and the like structural member of the type having oppositely extending flanges using a clamp-mount device which comprises a base and a pair of oppositely facing clamping members carried diagonally on the base clamping flanges. Flanges receiving openings facing one another. Lock means are carried diagonally by the base opposite the clamping members to locking the flanges in the clamping members. A resilient hub is carried centrally of the base engaging and biasing a back side of the flanges maintaining same tightly clamped and facilitating use on vertical as well as horizontal members. The base turns about the hub to receive the flanges within the clamping members. Slidable gate latches secure the hinged locks in an upright locking position. The resilient hub includes a recess opening in the base in which a rubber-like pad is depressably and rotatably carried. Write: **PAT-APPL-6-293 414**, 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 30303-1290, U.S.A.

Gas Levitator and Method for Containerless Processing/317

Lévitateur et méthode de traitement sans conteneur/317

Filed August 28, 1981, by NASA. An elongated levitation tube having a contoured interior in the form of a convergent section, and a constriction and divergent section, wherein the levitation node is created, is described. Gas flow control means control flow to prevent separation of flow from the interior walls in the region of specimen. An apparatus provides for levitating and heating the specimen simultaneously by combustion of a suitable gas mixture combined with an inert gas. Write:

PAT-APPL-6-297 486, 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 30303-1290, U.S.A.

Thermal Control Coatings Based on Trialkoxysilane Hydrolysate Binders/317

Revêtements de contrôle thermique basés sur des liants d'hydrolysats de trialkoxysilanes/317

Filed August 28, 1981, by NASA. Certain trialkoxysilanes react with water to produce trifunctional monomers, which in turn undergo condensation polymerication to produce a 'laddered' silicon resin. The resin is then combined with a selected pigment to provide a mixture suitable for application as a coating. Such coatings have a low absorptance and a high emittance, along with resistance to degradation of reflective and mechanical properties upon prolonged exposure to ultraviolet radiation in vacuum. Write: **PAT-APPL-6-297 487**, 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 30303-1290, U.S.A.

A Simplified Power Factor Controller with Increased Energy Saving Circuit/317

Dispositif simplifié de commande du facteur de puissance comportant un circuit augmentant l'économie d'énergie/317

Filed August 28, 1981, by NASA. A device which controls the power input to an induction motor by controlling the power of the motor is disclosed. Two features of the device increase its sensitivity under conditions where the motor is unloaded in order that full control operation is possible with the device adjusted to operate with the power input just sufficient to sustain motor operation. A feed-back circuit comprising of a resistor, which feeds back to a summing junction from a signal point at which a triac control signal appears. The requirement that motor current be directly sampled in the process of determining the power factor of the power input to a motor is eliminated. Write: **PAT-APPL-6-297 524**, 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 30303-1290, U.S.A.

Improved Constant-Output Atomizer/317

Vaporisateur amélioré à débit constant/317

Filed October 2, 1981, by NASA. A constant-output atomizer is described which includes a generally frustoconical expansion nozzle for producing an air jet. A liquid feed line supplies liquid to be atomized by the air jet, and the body includes a groove which opens into the diffuser section of the nozzle downstream of the throat for conducting liquid from the feed line to the nozzle. The groove extends in a direction perpendicular radially to the axis of the nozzle, and it has a depth approximately equal to half the axial length of the nozzle. Liquid, conducted by capillary action in the groove to the nozzle, is atomized into a fine mist by the air jet in the nozzle; and the groove eliminates fluctuations in spray order. Write: **PAT-APPL-6-308 203**, 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 30303-1290, U.S.A.

Static Continuous Electrophoresis Device/317

Appareil d'électrophorèse statique en continu/317

Filed October 6, 1981, by NASA. A separation chamber which includes a pair of spaced opposed moving walls which entrain the fluid to flow as a rigid body with minimized distortion and spaced opposed side walls is carried within a water-tight enclosure housing which contains the electrolytic buffer solution. A pair of substrate assemblies include opposed front substrate walls facing the separation chamber. Endless traveling belts are carried by the substrate assemblies defining the moving wall structure. By means of a vacuum which communicates with the front substrate walls through vacuum ports, the traveling belts are held positively sealed against the substrate walls so as to avoid and prevent leakage behind the belts. The walls are prevented from bowing. The moving belts are covered with a thin layer of low zeta-potential covering coating material such as methylcellulose with is advantageous in reducing the electrosmosis effect. Write: **PAT-APPL-6-309 293**, 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 30303-1290, U.S.A.

Motor Power Factor Controller with a Reduced Voltage Starter/317

Commande de facteur de puissance pour moteur à démarreur basse tension/317

Filed October 13, 1981, by NASA. A power factor type motor controller is disclosed in which the conventional power factor constant voltage command signal is replaced during a starting interval with a graduated control voltage. This continuation-inpart of a pending patent application (Serial No. 199, 765: Three Phase Factor Controller) provides a means for modifying

the operation of the system for a motor start-up interval of 5 to 30 second. Using a ramp generators, an initial ramp-like signal replaces a constant power factor signal supplied by a potentiometer. The ramp-like signal is applied to a 15 terminal where it is summed with an operating power factor signal from phase detectors in order to obtain a control signal for ultimately controlling SCR devices. The SCR devices are turned on at an advancing rate with time responsive to the combination signal described rather than simply a function of a ramp-like signal alone. Write: **PAT-APL-6-310 714**, 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 30303-1290, U.S.A.

Method and Apparatus for Detecting Coliform Organisms/317

Méthode et appareil à détecter les organismes coliformes/317

Filed October 26, 1981, by NASA. A sample containing coliform bacteria is cultured in a liquid growth medium. The cultured bacteria produce hydrogen which is vented to a second call containing a buffer solution in which the hydrogen dissolves. By measuring the potential change in the buffer solution caused by the hydrogen, as a function of time, the initial concentration of bacteria in the sample is determined. Alternatively, the potential change in the buffer solution can be compared with the potential change in the liquid growth medium to verify that the potential change in the liquid growth medium is produced primarily by the hydrogen gas produced by the coliform bacteria. Write: **PAT-APPL-6-315 278**, 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 94111-3468, U.S.A.

High Temperature Glass Thermal Control Structure and Coating/317

Revêtement et structure de contrôle thermique en verre haute température/317

Filed October 2, 1981, by NASA. A high temperature stable and solar radiation stable thermal control coating either useful as such, applied directly to a member to be protected, or applied as a coating on a reusable surface insulation is discussed. The coating has a base coat layer and an overlay glass layer. The base coat layer has a high emittance, and the overlay layer is formed from discrete, but sintered glass particles to give the overlay a high scattering coefficient. The resulting two-layer space and thermal control coating has an absorptivity-to-emissivity ratio of less than or equal to 0.4 at room temperature, with an emittance of 0.8 at 648.8 C. It is capable of exposure to either solar radiation or temperatures as high as 1093.3 C without significant degradation. A reusable surface insulation structure incorporating the coating and having primary application as a space shuttle heat shield is also discussed. Write: **PAT-APPL-6-308 007**, 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 94111-3468, U.S.A.

Fire Extinguishant Materials/317

Matériaux extincteurs/317

Filed November 3, 1981, by NASA. Fire extinguishant materials were developed for extinguishing fires on hot metal surfaces caused by liquid fuels such as jet engine fuels. The composition of the materials is a mixture of a finely divided aluminum compound and alkali metal, stannous or plumbous halide. The aluminum compound may be aluminum hydroxide, alumina or boehmite, but preferably it is an alkali metal dawsonite. The metal halide may be an alkali metal, e.g. potassium iodide, bromide, or chloride, or stannous or plumbous iodide, bormide, or chloride. Potassium iodide is preferred. The presence of the halide improves the performance of the aluminum compound in extinguishing, fires on hot metal surfaces. Write: **PAT-APPL-6-317 977**, 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 94111-3468, U.S.A.

Pressure Letdown Method and Device for Coal Conversion Systems/317

Méthode et dispositif d'abaissement de pression pour appareils de conversion du charbon/317

Filed April 30, 1981, by NASA. A pressure letdown device for a pressure dissipating system for a coal gasification reactor is described. The letdown device accepts a polyphase fluid at an entrance pressure and entrance velocity and discharges the fluid from the device at a discharge pressure substantially equal to the entrance temperature and entrance velocity. The device consists of a series of pressure letdown stages including a plurality of coaxially nested symmetrical baffles. The number of apertures or ports for each baffle plate is unique with respect to the number of apertures in each of the other baffles. The mass rate of flow for each port is a function of the area of the port, the pressure of the fluid as applied to the port, and a common pressure ratio established across the ports. Write: **PAT-APPL-6-259 211**, 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 90014-1377, U.S.A.

Method and Apparatus for Precision Control of Radiometer/317

Méthode d'étalonnage et description d'un appareil de commande précise de radiomètre/317

Filed April 30, 1981, by NASA. A radiometer controller of a solar radiation detector is described. The system includes a calibration method and apparatus comprised of mounting all temperature sensitive elements of the controller in thermostatically controlled ovens during calibration and measurements, using a selected temperature that is above any which might be reached in the field. The instrument is calibrated in situ by adjusting heater power to the receptor cavity in the radiometer detector to a predetermined full scale level as displayed by a meter. Then with the heater de-energized and the receptor cavity covered, the voltage output, is set to zero as displayed by the meter. Next the preset power is applied to the heater and the output of the radiant measurement channel is applied to the panel meter. With this preset heater power producing the proper heat, the gain of the measurement channel is adjusted to bring the meter display to full scale. Write: **PAT-APPL-6-259 212**, 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 90014-1377, U.S.A.

Solar Energy Modulator/317

Modulateur d'énergie solaire/317

Filed July 17, 1981, by NASA. A module is described with a receiver having a solar energy acceptance opening and supported by a mounting ring along the optic axis of a parabolic mirror in coaxial alignment for receiving solar energy from the mirror, and a solar flux modulator plate for varying the quantity of solar energy flux received by the acceptance opening of the module. The modulator plate is characterized by an annular, plate-like body, the internal diameter of which is equal to or slightly greater than the diameter of the solar energy acceptance opening of the receiver. Slave cylinders are connected to the modulator plate for supporting the plate for axial displacement along the axis of the mirror thereby shading the opening with respect to solar energy flux reflected from the surface of the mirror to the solar energy acceptance opening. Write: **PAT-APPL-6-284 286**, 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 90014-1377, U.S.A.

Synthetic Aperture Radar Target Simulator/317

Simulateur de cible pour radar à ouverture synthétique/317

Filed July 17, 1981, by NASA. A simulator for simulating the radar return, or echo, from a target seen by a SAR antenna mounted on a platform moving with respect to the target is described. It includes a first-in first-out memory which has digital information clocked in at a rate related to the frequency of a transmitted radar signal and digital information clocked out with a fixed delay defining range between the SAR and the simulated target, and at a rate related to the frequency of the return signal. An RF input signal having a frequency similar to that utilized by a synthetic aperture array radar is mixed with a local oscillator signal to provide a first baseband having a frequency considerably lower than that of the RF input signal. Write: **PAT-APPL-6-284 287**, 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 90014-1377, U.S.A.

Automatic Multi-Banking of Memory for Microprocessors/317

Système multiadresse automatique pour microprocesseurs/317

Filed August 7, 1981, by NASA. A microprocessor system is provided with added memories to expand its address word length capacity by using indirect addressing instructions of a type having a detectable operations code and dedicating designated address spaces of memory to each of the added memories, one space to a memory. By decoding each operations code of instructions read from main memory into a decoder to identify indirect addressing instructions of the specified type, and then decoding the address that follows in a decoder to determine which added memory is selectively enabled to permit the instruction to be executed on the location to which the effective address of the indirect address instruction points, either before the indirect address is read from main memory or afterwards, depending on how the system is arranged by a switch. Write: **PAT-APPL-6-291 645**, 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 90014-1377, U.S.A.

Scriber for Silicon Wafers/317

Dispositif de rayage des rondelles de silicium/317

Filed September 18, 1981, by NASA. A device for dividing silicon wafers into rectangular chips is characterized by a base including a horizontally oriented bed with a planar support surface, a vacuum chuck adapted to capture a silicon wafer seated on the support for translation in mutually perpendicular directions. A stylus support mounted on the bed includes a shaft disposed above and extended across the bed and a truck mounted on the shaft and supported thereby for linear

translation along a path extended across the bed a vertically oriented scribe has a diamond tip supported by the truck also adapted as to engage a silicon wafer captured by the chuck and positioned beneath it in order to form score lines in the surface of the wafer as linear translation is imparted to the truck. A chuck positioning means is mounted on the base and is connected to the chuck for positioning the chuck relative to the stylus. Write: **PAT-APPL-6-303 670**, 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 90014-1377, U.S.A.

System for Controlled Acoustic Rotation of Objects/317

Système de commande acoustique de la rotation d'objets/317

Filed September 18, 1981, by NASA. A system is described for use with acoustically levitated objects, which enables close control of rotation of the object. One system includes transducers that propagate acoustic waves along the three dimensions (X, Y, Z) of a chamber of rectangular cross section. Each transducer generates a first wave which is resonant to a corresponding chamber dimension to acoustically levitate an object, and additional higher frequency resonant wavelengths for controlling rotation of the object. The three chamber dimensions and the corresponding three levitation modes (resonant wavelengths) are all different, to avoid degeneracy, or interference, of waves with one another, that could have an effect on object rotation. Only the higher frequencies, with pairs of them having the same wavelength, are utilized to control rotation, so that rotation is controlled independently of levitation and about any arbitrarily chosen axis. Write: **PAT-APPL-6-303 672**, 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 90014-1377, U.S.A.

A Pipelined Digital SAR Azimuth Correlator Using Hybrid FFT/Transversal-Filter/317

Corrélateur d'azimut numérique de SAR, sous conduite, avec filtre transversal à TFR/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed October 26, 1981, by NASA. A pipe lined digital signal processor for producing real time high resolution synthetic aperture radar (SAR) images is described. The hybrid processor is comprised of a fast Fourier transform for correlation in the SAR response in the range direction. Write: **PAT-APPL-6-314 926**, 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 90014-1377, U.S.A.

Acoustic System for Material Transport/317

Système acoustique pour le transport de matériaux/317

Filed October 26, 1981, by NASA An object within a chamber is acoustically moved by applying wavelengths of different modes to the chamber to move the object between pressure wells formed by the modes. In one system, the object is placed in one end of the chamber while a resonant mode, applied along the length of the chamber, produces a pressure well at the location. The frequency is then switched to a second mode that produces a pressure well at the center of the chamber, to draw the object. When the object reaches the second pressure well and is still traveling towards the second end of the chamber, the acoustic frequency is again shifted to a third mode (which may equal the first mode) that has a pressure well in the second end portion of the chamber, to draw the object. A heat source may be located near the second end of the chamber to heat the sample, and after the sample is heated it can be cooled by moving it in a corresponding manner back to the first end of the chamber. The transducers for levitating and moving the object may be all located at the cool first end of the chamber. Write: **PAT-APPL-6-314 929**, 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 90014-1377, U.S.A.

Phase Sensitive Guidance Sensor for Wire-Following Vehicles/317

Capteur sensible à la phase pour véhicules guidés par fil/317

Filed October 30, 1981, by NASA. A guidance sensor for a wire-following vehicle which is phase sensitive is described. The sensor includes an array of coils positioned to sense the vertical component of a magnetic field produced by the AC current through the guidance wire. The outputs of the coils are fed to associated flip flops. Flip flops associated with coils, through which flux passes in one direction, e.g., up, are driven to one state, e.g., true, and flip flops associated with coils through which flux passes in the opposite direction, e.g., down, are driven to a false state. The control signal to guide the vehicle to be over the wire is a function of the number of flip flops in the true state. Circuitry is included to prevent flip flops from assuming a wrong state due to noise. Write: **PAT-APPL-6-315 583**, 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 90014-1377, U.S.A.

Supercritical Multicomponent Solvent Coal Extraction/317

Extraction supercritique de charbon par solvants à plusieurs composants/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed October 30, 1981, by NASA. The yield of organic extract from the supercritical extraction of coal with larger diameter organic solvents such as toluene is increased by use of a minor amount of from 0.1 to 10% by weight of a second solvent such as methanol having a molecular diameter significantly smaller than the average pore diameter of the coal. Write: **PAT-APPL-6-315 584**, 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 90014-1377, U.S.A.

Multiple-Beam, High-Power, Precision Pointing Antenna System/317

Antenne à pointage de précision, faisceaux multiples et haute puissance/317

Filed October 30, 1981, by NASA. An antenna with a plurality of beams that can be electronically steered simultaneously in unison is described. The beams may be steered independently. A relatively small phased array of antenna elements feeding a near field dual reflector system is used to magnify the aperture of the feed array to that of the main reflector thereby providing high gain. The main reflector and the subreflector are shaped reflectors which may be confocal paraboloids having nominally the same focal length to diameter ratio, although the subreflector may be oversized. The array feed is placed so that the subreflector is in the near field of feed. Write: **PAT-APPL-6-315 585**, 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 90014-1377, U.S.A.

Method and System for Nuclear Waste Disposal/317

Méthode et système d'élimination des déchets nucléaires/317

Filed October 30, 1981, by NASA. A method and system for disposing of nuclear waste are described which comprised the encasement of small quantities of waste in spheroids containing lead. The spheroids may be formed of different materials preferably of high compressibility strength, including glass and stainless steel. The spheroids may be formed of any of these materials and coated with or lined by lead. Write: **PAT-APPL-6-315 586**, 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 90014-1377, U.S.A.

Hydrodesulfurization of Chlorinated Coal/317

Hydrodésulfuration du charbon chloré/317

Filed October 30, 1981, by NASA. A method of desulfurization is described in which high sulfur coals are desulfurized by low temperature chlorinolysis of coal in liquid media, preferably water, followed by hydrodesulfurization at a temperature above 500 C. The coals are desulfurized to an extent of up to 90% by weight and simultaneously dechlorinated to a chlorine content below 0.1% by weight. The product coals have lower volatile loss, lower oxygen and nitrogen content and higher fixed carbon than raw coals treated with hydrogen under the same conditions. Heating the chlorinated coal to a temperature above 500 C in inert gas such as nitrogen results in significantly less desulfurization. Write: **PAT-APPL-6-315 587**, 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 90014-1377, U.S.A.

Cross Reinforcement in a Graphite-Epoxy Laminate/317

Armature en croix d'un laminé de graphite époxy/317

Filed October 2, 1980, by the Department of the Navy. Interlaminar shear strength of an aircraft wing made of graphite-epoxy laminate is significantly increased by embedding thin steel wires in preselected locations of high stress in alternating rows + or -45 deg to the plane of the laminate before it is cured. This cross wire reinforcement prevents brittle delamination, arrests propagation of delamination and reduces scatter of interlaminar strength. Write: **PAT-APPL-6-193 324**, NAVY.

Snubber Assembly/317

Assemblage à amortisseurs/317

Filed December 1, 1980, by the Department of the Navy. Electronic modules are protected from damage which might be caused by ambient vibrations and shock. Openings in the cabinet are sized to accommodate the electronic modules and snubbers are interposed between the modules and the walls of the cabinets to hold them securely in place. A pair of Belleville springs in each snubber force a projecting portion of a piston against the module or a flat strap that serve to distribute the snubbing force over a wider area on the module. Write: **PAT-APPL-6-211 981**, NAVY.

Coherent Anti-Stokes Raman Device/317

Dispositif Raman anti-Stokes cohérent/317

Filed February 4, 1981, by the Department of the Navy. This application discloses a coherent anti-Stokes Raman spectroscopic (CARS) imaging device especially adapted to observe specific molecular groups in living cells. Two laser beam pulses of different wavelengths in the visible or UV spectra and of picosecond duration are used to simultaneously illuminate a sample (e.g., a living cell) containing molecules of the type it is desired to observe. By proper selection of the laser frequencies, the molecules are excited to emit characteristic coherent anti-Strokes radiation which can be imaged through a microscope or other device. Write: **PAT-APPL-6-231 636**, NAVY.

Ultimate Low-Loss Electro-Optical Cable/317

Câble électro-optique à très faibles pertes/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed March 2, 1981, by the Department of the Navy. An undersea cable reliably transmits optical control signals and data. At least one optical fiber is axially disposed in an otherwise solid electrical conductor which transmits power the length of the cable. A concentrically disposed dielectric insulating layer prevents shorting with the surrounding seawater and a load-bearing annulus coaxially contains the other elements to also protect them from environmental abuses. During deployment or towing, the load-bearing annulus shares part of the load with the solid electrical conductor and a co-axially disposed sleeve encloses all of the other elements for preventing a leaching action of seawater and to defocus externally originating, concentrated forces. Write: **PAT-APPL-6-239 253**, NAVY.

An Improved Electro-Optical Modulator for an Electro-Optically Modulated Laser/317

Modulateur électro-optique amélioré pour laser à modulation électro-optique/317

Filed March 6, 1981, by the Department of the Navy. The present invention provides a jitter stable electro-optical modulator for modulating a high power, repetitively pulsed laser having an optical risetime (10% to 90%) of the order of nanoseconds. The electro-optical modulator includes a birefringent electro-optical device; a hydrogen thyratron operated at a preselected high pressure and having an 'ON' and an 'OFF' state; first means responsive to the 'ON' state of the thyratron for impressing a first preselected voltage across the birefringent electro-optical device; second means responsive to the 'OFF' state of the hydrogen thyratron for impressing a second preselected voltage across the electro-optical modulator at a time coincident with the laser buildup interval; and means for repetitively driving the hydrogen thyratron into the 'ON' and the 'OFF' states repetitively at a preselected repetition rate. The selectively pressurized hydrogen thyratron is placed within a close-fitting vented copper housing and is electrically connected across the electrodes of the birefringent device by an impedance matching network and a coaxial cable. Write: **PAT-APPL-6-241 309**, NAVY.

Transmission Line Biased Coherent Array of Josephson Oscillators/317

Réseau cohérent d'oscillateurs à effet Josephson polarisé par ligne de transmission/317

Filed April 29, 1981, by the Department of the Navy. A coherent array of Josephson oscillators is provided. Individual hysteresis-free Josephson junctions are longitudinally arranged in the gap of a central conductor in a line and have such a spacing as to substantially eliminate quasiparticle interactions. To provide a common frequency of operation, equal and opposite dc voltages are produced in adjacent pairs of the Josephson junctions by an arrangement of interlocking dc SQUIDs connected to the longitudinal central conductor using microwave bias tees. Phase coherence for the array is provided by an rf current circulating in an inductive feedback path that loops between the ends of the array. Write: **PAT-APPL-6-258 704**, NAVY.

Coherent Array of Josephson Oscillators with External Bias Leads/317

Réseau cohérent d'oscillateurs à effet Josephson avec fils de polarisation externes/317

Filed April 29, 1981, by the Department of the Navy. A coherent array of Josephson oscillators is provided. Individual hysteresis-free Josephson junctions are longitudinally arranged in a line and have such a spacing as to substantially eliminate quasiparticle interactions. To provide a common frequency of operation, equal and opposite dc voltages are produced in adjacent pairs of the Josephson junctions by an arrangement of interlocking dc SQUIDs connected to transversely extending biasing leads. Phase coherence for the array is provided by an rf current circulating in an inductive feedback path that loops between the ends of the array. Write: **PAT-APPL-6-258 705**, NAVY.

A Method and Apparatus for Precise Measurement of Long-Term Stability of Photodetectors/317

Méthode et appareil pour la mesure précise de la stabilité à long terme des photodétecteurs/317

Filed April 29, 1981, by the Department of the Navy. A method and apparatus is disclosed for the measurement of the long-term stability of photodetectors. A fiber optic star coupler divides optical flux from a source of light into highly stably proportioned light outputs. Each of the photodetectors to be tested is connected to be irradiated by one of the star coupler

light outputs. Each of at least one reference photodetectors having known stabilities is connected to one of the remaining outputs of the star coupler. Resulting outputs of the photodetectors to be tested are compared against the resulting output from the reference photodetector. Write: **PAT-APPL-6-259 786**, NAVY.

Low Frequency Nonresonant Acoustic Projector/317

Projecteur acoustique non résonant pour basses fréquences/317

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed October 5, 1981, by the Department of the Navy. A nonresonant acoustic projector especially suited to the creation of low frequency (0-100 Hz, approximately) acoustic signals is provided, this projector including a housing and a rocker arm which is mounted within the housing on a pivotal transverse axis fixed with respect to the housing. At least one piston is sealably mounted in a wall of the housing so that one face of the piston is directed outside and the other face of the piston is directed inside with respect to the housing. The inner piston face is connected to a piston push rod which extends perpendicularly to the piston face into the housing, the inner end of this piston push rod being pivotally connected to the rocker arm at a point offset from the rocker arm pivotal axis. A power drive device is connected to the rocker arm at a second offset location for the purpose of rocking the rocker arm in an oscillatory manner about its pivotal axis, wherefore the attached piston push rod forces the piston into reciprocatory movement directed along the axis of the piston push rod. Various power drive devices are described, herein-below which result in many desirable embodiments of the invention. Write: **PAT-APPL-6-270 081**, NAVY.

Lift Sling Emplacement Device/317

Dispositif de mise en place d'élingue/317

Filed June 22, 1981, by the Department of the Navy. The present invention relates generally to the field of retrieval of sunken objects and also to the field of securing and lifting devices. Attachment of lifting lines to sunken objects using remote controlled manipulators is one of the most difficult tasks involved in recovering objects from the deep ocean. This is often a very difficult task if the object is partially buried in mud or sand. The present invention was developed to assist in inserting slings under partially buried objects. The present invention is particularly useful for inserting a lift sling under objects resting in sand or mud. Features of the sling include a lightweight jetting tube supported and guided by a special sling holder assembly. The sling is attached to the nozzle end of the jetting tube and is pulled under the object as the jetting tube is advanced. Jetting water is provided by a vehicle mounted pump through a hose with a manipulator operable quick disconnect fitting. Once the sling has been drawn under the object to be recovered, a rope attached at one of its ends to the sling holder assembly can be looped over the object and through an eye in the opposite end of the lift sling to cinch or choke up the sling around the object. Write: **PAT-APPL-6-276 416**, NAVY.

A/D Dynamic Range Enhancing Technique/317

Technique de rehaussement de la gamme dynamique d'un dispositif analogique/numérique/317

Filed June 25, 1981, by the Department of the Navy. A system for increasing the dynamic range of a digital device is disclosed. This is accomplished by enhancing a serial N bit Bipolar Return to Zero (BPRZ) transmitter so as to employ an inherently hidden degree of freedom. This enables the receiver to extract N + 1 bits of digital code from an N bit transmitted code. Write: **PAT-APPL-6-277 298**, NAVY.

Improved Electronic Packaging Technique/317

Méthode améliorée de construction de châssis pour dispositifs électroniques/317

Filed August 24, 1981, by the Department of the Navy. This invention relates to the field of metal fabrication. More particularly, the invention relates to the manufacture of metal chassis supports for electronic equipment. By way of further characterization, the invention relates to a chassis to be fit within a cylindrical environment. By way of illustration, but without limitation thereto, the invention will be described as it pertains to a chassis for the support of electronic hardware in an aerial missile. Heat sink segments which are longitudinal sections of metal cylinders support planar circuit elements and are pivotally mounted on bulkheads to gain access to circuit elements. Write: **PAT-APPL-6-295 353**, NAVY.

Method for Suppressing Thermally Induced Signals in Fiber Optic Interferometric Sensors/317

Méthode de suppression des signaux thermo-induits dans les capteurs interférométriques à fibres optiques/317

Filed August 31, 1981, by the Department of the Navy. A method and apparatus is described for providing an improved Mach-Zehnder interferometer type optical fiber acoustic sensor wherein spurious environmentally induced signals are separated from the sensor output and fed back into the system in a manner to cancel their effect. Both true and spurious acoustic signals cause a phase shift in light passing through a sensing arm of a Mach-Zehnder interferometer. Error signals, corre-

sponding to the frequency of the spurious signals, are selected from the interferometer output, processed, and fed back into the interferometer output, processed, and fed back into the interferometer reference arm in a manner to cause a phase shift therein just sufficient to cancel the effect of the initial spurious acoustic signal, whereby the interferometer is locked in phase and held quadrature condition such that the output signal represents the true (desired) signal. Write: **PAT-APPL-6-297 605**, NAVY.

Cylindrical Object Recovery Device/317

Grappin de manutention d'objets cylindriques/317

Filed September 2, 1981, by the Department of the Navy. A grabber type cylindrical object recovery apparatus is provided wherein the grabbed has a U-shaped frame which is curved substantially 180 deg. A pair of curved pads are provided wherein each pad is pivoted to a lower extremity of a respective leg of the U-shaped frame. The inside of the curves of the pads face inwardly with respect to the U-shaped frame for movement between grabbing and releasing positions with respect to the cylindrical object. In the releasing position a top portion of each pad extends slightly into an open area within the frame so as to be located for forcible engagement with a top portion of the cylindrical object and thence pivotal movement for the grabbing position when the object is encompassed by the U-shaped frame. In the grabbing position the bottom portion of each pad extends the curve of the respective leg beyond the 180 deg. of the frame so as to engage a bottom portion of the cylindrical object for retention purposes. A pair of locking devices is provided wherein each locking device is mounted to the frame for locking a respective pad alternately in its releasing position or its grabbing position. The locking devices are responsive to the forcible engagement of the cylindrical object with the pads to change the locking devices from a locked released position of the pads to a locked grabbing position of the pads. Write: **PAT-APPL-6-298 700**, NAVY.

Release Mechanism for a Cylindrical Object Recovery Device/317

Mécanisme de dégagement du grappin de manutention d'objets cylindriques/317

Filed September 2, 1981, by the Department of the Navy. The present invention is a release mechanism for a recovery apparatus which makes the recovery apparatus compatible and practical for use on either a manned or unmanned underwater vehicle. This is accomplished by providing the release mechanism with a block which is attachable to the recovery apparatus in such a manner so as to extend thereabove. A piston is mounted in the block and is movable vertically between up and down positions. At least one rod is connected to the piston and extends vertically downwardly beyond a bottom side of the recovery apparatus so as to be capable of moving the piston to the upward position when forcibly engaged by the object. A U-shaped holder is fitted over the block with each leg of the holder having a recess. A pair of pistons is laterally mounted in the U-shaped block in an opposing relationship, and each piston is moveable between inward and outward positions. The lateral pistons are engageable with the holder within the holder recesses in the outward positions for retaining the U-shaped holder to the block, and the pistons clear the holder recesses in the inward positions so as to release the U-shaped holder from the block. Write: **PAT-APPL-6-298 712**, NAVY.

Lift Line Tension Limiter/317

Limiteur de tension mécanique pour câble de levage/317

Filed September 8, 1981, by the Department of the Navy. A lift line tension limiter is provided which includes a lift-line and a container which is adapted to contain the lift line. The container has a lift end and a payload end, the payload end having an aperture for the passage of the lift line therethrough. A device is spring mounted to the container for pinching the lift line at the container aperture, and after the container aperture the lift line is in frictional engagement with the pinching device so that a force on the lift line will decrease the pinching action on the lift line. With this arrangement a predetermined loading of the lift line will spring bias the pinching device to relieve the pinching force and allow a portion of the lift line to be payed out of the container until the loading has been lessened below the predetermined amount. Write: **PAT-APPL-6-299 748**, NAVY.

Digital Sidelobe Canceller with Real Weights/317

Suppresseur numérique de lobes latéraux, avec pondération réelle/317

Filed September 11, 1981, by the Department of the Navy. The present invention is digital open-loop sidelobe canceller for decorrelating signals by removing correlated components. The invention has inputs for receiving n pairs of digital sample values representing the digitized in-phase components and quadrature-phase components of the output of the main radar receiver and also of at least one auxiliary radar receiver. These data samples are stored in memory for later processing and are also furnished to computation networks which calculate weighting coefficients which are processed as real numbers. These real number weighting coefficients are ulilized to substract calculated real number values from the sample values representing the digitized in-phase and quadrature-phase components of the output of the main radar receiver. Write: **PAT-APPL-6-301 088**, NAVY.

Digital Multi-Tapped Delay Line with Automatic Time-Domain Programming/317

Lignes à retard numérique à prises multiples avec programmation automatique dans le domaine temporel/317

Filed September 18, 1981, by the Department of the Navy. This application discloses a single-input, multiple-output device which enables an electrical signal to be automatically delayed in accordance with irregularly spaced synchronization pulses. The device employs a plurality of first-in, first-out (FIFO) shift registers energized in inverse order by the clocked outputs of a series of conventional shift registers. The signal to be delayed is stored in the FIFO registers and read out in accordance with the sequence of synchronization pulses provided to the conventional registers. Write: **PAT-APPL-6-303 448**, NAVY.

Single-Sideband Acoustic Telemetry/317

Télémesure acoustique en bande latérale unique/317

Filed October 1, 1981, by the Department of the Navy. An apparatus and method of transmitting and receiving information underwater assure improved performance characteristics. Modulating a carrier and appropriately filtering it allows the transmission of only single sideband signals or a carrier along with single sideband signals to increase the range at reduced power consumption levels. Demodulating incoming signals can be done synchronously (when the carrier is present) or asynchronously (only single sideband signals) to extract the information. When a number of carriers are modulated and, simultaneously, are transmitted and received, the system's reliability is enhanced. Write: **PAT-APPL-6-307 403**, NAVY.

Radiation Detector and Method of Opaquing the Mica Window/317

Détecteur de rayonnement et méthode pour rendre opaque la fenêtre en mica/317

Filed October 2, 1981, by the Department of the Navy. An improved particle detection tube is disclosed including a method for applying a radiation transparent electrically non-conductive, opaque to ultraviolet light coating to the mica window of the tube. The coating reduces erroneous counts by preventing arcing between the tube anode and window. A purified mineral bituminous hydrocarbon based wax coating is applied to the mica window by cleaning the window with a hydrocarbon or chlorinated solvent rinsing with isopropyl alcohol drying the window dissolving 4 to 20 milligrams of purified bituminous hydrocarbon based wax in 1 to 2 milliliters of a hydrocarbon or chlorinated solvent on the window, and rotating the tube until the solvent evaporates to produce a film of the wax thereon. Write: **PAT-APPL-6-308 740**, NAVY.

Freeze Crystallization Desalting/Concentration System Utilizing Fluidized Bed Heat Exchanger/317

Système de dessalage/concentration par cryocristallisation à l'aide d'un échangeur de chaleur à lit fluidisé/317

Filed October 8, 1981, by the Department of the Navy. A freeze crystallization desalting/concentration system is disclosed comprising a fluidized bed heat exchanger, a crystal growth device, a wash column and other refrigeration equipment to produce large enough ice crystals to permit desalting of saline waters and concentration of industrial chemicals. Write: **PAT-APPL-6-309 649**, NAVY.

Cartridge Butterfly Valve/317

Vanne papillon à cartouche/317

Filed October 15, 1981, by the Department of the Navy. A butterfly valve is disclosed comprising a solid body, or casing, having a horizontal boring therein forming a passageway between the inlet and outlet ports and a vertical boring, or chamber, therein extending through said passageway. The chamber is for the containment of a cartridge having a rotatable shaft bearing a butterfly disc located at a point on the shaft where they open or close the passageway by proper rotation of the shaft. The shaft extends through the cartridge, through the cartridge support member, and outside the body. A handle is mounted on the shaft for rotating it. The shaft and cartridge are sealed by o-ring seals against passage of the fluid which is being transported by the inlet and outlet piping. Write: **PAT-APPL-6-311 715**, NAVY.

Transient Protection Device Current Interrupter/317

Interrupteur de courant de dispositif de protection contre les transitoires/317

Filed October 26, 1981, by the Department of the Navy. A current interrupter for a transient protective device (TPD) is disclosed which senses the heat rise in the TPD which occurs when the TPD is in the 'ON' state. A thermostatic switch is connected electrically in series with the TPD and is in thermal contact with the TPD. When the temperature of the TPD rises to a predetermined level, the thermostatic switch is actuated to interrupt the current flow through the TPD that could otherwise damage it. Write: **PAT-APPL-6-314 592**, NAVY.

Room Temperature Accumulation Mode Charge Transfer Device/317

Dispositif de transfert de charges à mode d'accumulation de la température ambiante/317

Filed October 26, 1981, by the Department of the Navy. A charge transfer device is provided having a semi-insulating substrate on which a pair of channel contacts are disposed. An insulating layer spans the substrate surface between the contacts. Gate electrodes are disposed on the insulating layer between the channel contacts. Write: **PAT-APPL-6-315 124**, NAVY.

Improved Ramjet Fuel/317

Carburant amélioré pour statoréacteur/317

Filed November 9, 1981, by the Department of the Navy. A solid ramjet fuel composition is disclosed comprising a hydroxyl-terminated or carboxyl-terminated fluorocarbon binder, a polybutadiene prepolymer, a curative cross-linking compound, and a metal selected from the group consiting of aluminum, zirconium, amorphous boron or magnesium. Write: **PAT-APPL-6-319 159**, NAVY.

Fluidized Bed Heat Exchanger/Freezer/317

Échangeur de chaleur (congélateur) à lit fluidisé/317

Filed October 8, 1981, by the Department of the Navy. This invention relates to heat exchangers and particularly to the use of a fluidized bed heat exchanger. Indirect contact heat exchangers of various types are used to transfer heat from one fluid to another where direct contact and mixing or contamination of the heating or cooling fluid and the heated or cooled fluid cannot be permitted. Indirect contact heat exchangers generally use metallic walls to separate the two fluids. In order to promote rapid transfer of heat the two fluids are pumped through the heat exchanger to attain forced convection with turbulent flow. Turbulent flow causes relatively rapid mixing of the cooled or heated layer of liquid at the interface between the metallic wall and the fluid. The fluid often contains material which adheres to the metallic wall and impedes heat flow and/or forms a surface coating beneath which corrosive attack can occur. Enhancement of turbulence to promote rapid mixing is effected in some heat exchangers by pumping the fluid through tortuous passages of small diameter so that the distance between the boundary layer and the center of the fluid stream is small. Write: **PAT-APPL-6-390 742**, NAVY.

Licensing Opportunities Through Armstrong World Industries, Inc., U.S.

The following technologies are offered for manufacture in Canada under exclusive or non-exclusive licensing arrangements. Export rights are negotiable. Technical know-how will be provided to Canadian licensees. When requesting additional information, please quote the patent number. Write: Dr. Irving I. Bezman, Coordinator of Licensing, Research Center, Armstrong World Industries, Inc., P.O. Box 3511, Lancaster, PA 17604 — Telephone: (717) 0611 and send a copy of your initial correspondence to Canadian Consulate General, 3 Parkway Building, Suite 1310, Philadelphia, Pennsylvania 19102, U.S.A.

Short Fiber Reinforced Spindle Drive Wheel/317

A drive wheel has been developed for use in rotation of texturizing spindles at high speed. The wheel is made from a rubber compound containing short reinforcing fibers and a controlled formulation, giving a modulus of elongation such that the drive wheel will not distort on its outer drive surface at the required very high speeds. U.S. Patent Number 3,907,729.

Reticulated Poly(Vinyl Chloride) Plastisol Foams/317

These foams are produced by a mechanical frothing technique. They are flexible and sufficiently open or porous to be suitable for use as air filters of various types or as fabric backings. U.S. Patent Numbers 4,225,643 and 4,237,239.

Copolymeric Reaction Product of Poly(Vinyl Alcohol) and a Borate Ester of Pentaerythritol/317

This relates to a novel class of flame and/or fire retardant reaction products which are prepared by reacting a mono- or diborate ester of pentaerythritol with poly(vinyl alcohol) in the presence of an acid catalyst. U.S. Patent Number 3,488,337.

Production of Thermoplastic Drawers/317

A method is detailed for the construction of plastic drawers which are inexpensive, durable and easy to ship, store, and assemble. Construction material is foamed, rigid poly(vinyl chloride) and conventional woodworking tools and methods are employed. U.S. Patent Numbers 3,791,002 and 3,933,401.

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Pignon d'entraînement de toupie renforcée de fibres courtes/317

On a mis au point un pignon d'entraînement destiné à faire tourner à haute vitesse des toupies à texturer. Le pignon est fabriqué à partir d'un caoutchouc contenant de courtes fibres de renforcement et d'une préparation précise, présentant un module d'allongement tel que la surface menante extérieure ne se déformera pas sous l'action des rotations extrêmement rapides qu'elle devra subir. Brevet américain numéro 3 907 729.

Mousses Plastisol de poly(chlorure de vinyle) réticulé/317

On produit ces mousses grâce à une technique de moussage mécanique. Elles sont flexibles et suffisamment poreuses pour servir de filtres à air de divers types ou de doublures pour tissus. Brevets américains numéros 4 225 643 et 4 237 239.

Copolymère produit par réaction du poly(alcool vinylique) avec un borate de pentaérythritol/317

Il s'agit d'un nouveau genre de produits de réaction ignifuges préparés en faisant réagir un mono ou un diborate de pentaérythritol avec du poly(alcool vinylique), en présence d'un catalyseur acide. Brevet américain numéro 3 488 337.

Fabrication de tiroirs en thermoplastique/317

Il s'agit d'une méthode détaillée expliquant comment construire des tiroirs en plastique peu coûteux, durables et faciles à transporter, à entreposer et à assembler. On utilise un poly(chlorure de vinyle) expansé et rigide et les outils et les techniques classiques de menuiserie. Brevets américains numéros 3 791 002 et 3 933 401.

Method for Forming Negatives for Chemical Etching Process/317

This is a process for generation of film negatives to be used in a chemical etching process to produce an embossing plate. Negatives are taken of a model which simulates the embossing plate. The model is made of dark material and surface-sprayed with a light coating. The surface of the model is ground down with a series of incremental planar steps and negatives are made after each step, which removes some light material and exposes more of the dark model. U.S. Patent Number 3,907,622.

Surface-Texture Filmwork Generation/317

This is a technique for generation of film negatives which will be used in a chemical etching process to provide a previously etched surface with texturing on the broad, flat areas. A rubbing is used to form the basis for a series of photographic negatives which provide an indication of the different levels of texturing. U.S. Patent Number 4,184,910.

Emissimeter and Method of Measuring Emissivity/317

The patent describes a method and apparatus for the ready measurement of hemispherical emissivity of a surface under ambient conditions, in situ. U.S. Patent Number 4,117,712.

High Output, Quick Response, Radiant Heater/317

This is an electrical resistance, foil radiant heater which operates in the range of 648.8 C-962.2 C and which heats up to and cools down from the operating temperature in times on the order of a fraction of a second. U.S. Patent Number 3,525,850.

Installation Tool/317

The tool is used to slip a flat flange-containing cover strip into two parallel facing grooves. The cover is passed through the tool which has a flared tubular body. The flat shape of the cover strip is converted into a curved configuration so that the flanges of the cover will slide into the parallel grooves. U.S. Patent Number 3,772,758.

Stapling Gun Guides/317

A guide structure is provided on a stapling gun to insure the proper positioning of staples. The device is particularly useful in the mounting of ceiling boards in mobile homes. U.S. Patent Number 3,796,364.

Méthode de préparation de clichés servant au procédé de morsure chimique/317

Ce procédé permet de produire des clichés destinés à la fabrication d'une plaque imprimante, par morsure chimique. On prend des clichés d'un modèle qui simule la plaque imprimante. Ce modèle est fait d'une matière foncée recouverte, par pulvérisation, d'une couche claire. On meule la surface par étapes progressives et l'on produit des clichés après chaque étape qui enlève un peu de la couche claire et expose une surface de plus en plus grande du modèle foncé. Brevet américain numéro 3 907 622.

Production de films pour reliefs de surface/317

Il s'agit d'une technique de préparation de clichés devant servir à donner un relief aux zones planes étendues d'une surface antérieurement gravée au cours de la morsure chimique. On se base sur un calque par frottement pour former une série de négatifs photographiques qui indiquent les différents niveaux de relief. Brevet américain numéro 4 184 910.

Émissimètre et méthode permettant de mesurer le pouvoir émissif/317

Le brevet décrit une méthode et un appareil permettant de mesurer rapidement le pouvoir émissif hémisphérique d'une surface, dans les conditions ambiantes et in situ. Brevet américain numéro 4 117 712.

Radiateur de chauffage à rendement élevé et à réponse rapide/317

Il s'agit d'un radiateur de chauffage, muni d'une résistance électrique et d'une famille de métal, qui fonctionne dans la gamme de températures allant de 1 200° à 1800°F, qui atteint sa température de fonctionnement et se refroidit en une fraction de seconde. Brevet américain numéro 3 525 850.

Outil d'installation/317

L'outil sert à glisser un couvre-joint plat dans deux rainures parallèles d'un revêtement. On passe le couvre-joint dans l'outil qui se présente sous forme tubulaire évasée. La forme plane du couvre-joint est ainsi courbés de sorte qu'il s'insère dans les rainures parallèles. Brevet américain numéro 3 772 758.

Guides pour agrafeuses/317

On muni l'agrafeuse d'un guide destiné à corriger la position des agrafes. Ce dispositif est particulièrement utile pour fixer les panneaux du plafond des maisons mobiles. Brevet américain numéro 3 796 364.

Partition Adaptor and Ventilating Air Divider/317

A header assembly is adapted to be mounted on top of a partition wall and connected to an air outlet opening in a suspended ceiling system. The header has air divider means which will direct air to either side of the partition. The air divider is a simple X-shaped air deflector which alternately directs air to either side of the X-shape. U.S. Patent Number 3,776,123.

Adaptateur pour cloison et répartiteur de l'aération/317

Le distributeur est spécialement conçu pour s'adapter au sommet d'un mur de séparation et être relié à la bouche d'aération d'un système placé à l'intérieur d'un plafond suspendu. Le distributeur est en fait un répartiteur d'air qui peut diriger l'air d'un côté ou l'autre de la cloison. Il se présente sous forme d'un simple déflecteur d'air qui peut diriger l'air d'un côté du X ou de l'autre. Brevet américain numéro 3 776 123.

Fluorescent Light for Mobile Homes/317

This light fixture has been designed especially for installation in the roof cavity of a mobile home. The reflector and support bracket are of a proper dimension to fit between roof rafters spaced 40 cm on center. Adequate height is maintained for the reflector and bracket to allow installation in the limited attic space of a mobile home. A lens structure is provided to cover the fixture assembly. U.S. Patent Number 3,941,995.

Lampe fluorescente pour maisons mobiles/317

On a conçu ce plafonnier spécialement pour l'installer dans la cavité du toit d'une maison mobile. Les dimensions du réflecteur et du support permettent l'installation entre les chevrons du toit, espacés de 16 pouces. On a conservé au réflecteur et au support une hauteur permettant leur installation dans l'espace limité du toit d'une maison mobile. Le plafonnier contient un verre formant lentilles. Brevet américain numéro 3 941 995.

Microwave Applicator Device/317

A microwave radiator has been developed which can apply uniformly microwave energy to a material being conveyed past the radiator. The design is such that energy reflections are minimized and high power coupling efficiencies are achieved. The applicator is of simple, inexpensive, and durable design. U.S. Patent Number 4,160,145.

Dispositif distributeur de micro-ondes/317

On a mis au point un radiateur à micro-ondes qui peut appliquer uniformément l'énergie des micro-ondes à une matière passant devant le radiateur. De par sa conception, il réduit au minimum les réflexions et permet d'obtenir un couplage de puissance d'une grande efficacité. L'applicateur est simple, peu coûteux et durable. Brevet américain numéro 4 160 145.

Microwave Energy Trap/317

This trap is designed for use in conjunction with the exit and entrance ports of a conveyorized microwave oven. The energy trap serves to prevent the escape of microwave energy through the ports into the surrounding environment. U.S. Patent Number 4,176,267.

Piège à énergie de micro-onde/317

Ce piège est conçu pour les orifices d'échappement et d'admission d'un four à micro-ondes. Le piège à énergie sert à empêcher l'énergie des micro-ondes de s'échapper par les orifices, dans le milieu environnant. Brevet américain numéro 4 176 267.

Low Smoke Generating Polyurethane Foam/317

The low smoke and flame retardancy properties are achieved through use of a composition comprised of a halogen-containing organic compound and a metallic salt of a polyfunctional aromatic carboxylic acid, free of acid functionality. U.S. Patent Number 4,053,439.

Mousse de polyuréthanne produisant peu de fumée/317

On obtient les propriétés anti-fumée et ignifuge en utilisant un mélange de composé organique halogéné et de sel métallique d'un acide carboxylique aromatique polyfonctionnel, sans fonction acide. Brevet américain numéro 4 053 439.

Fire Retardant Polyisocyanurate and Polyurethane Foams Having Reduced Smoke Levels/317

A method is disclosed whereby, through use of certain polycarboxylic acids, smoke evolution of these foams during burning is diminished. U.S. Patent Number 4,069,173.

Mousses ignifuges de polyisocyanurate et de polyuréthanne dégageant peu de fumée/317

On révèle comment, grâce à certains acides polycarboxyliques, on peut réduire la production de fumée pendant la combustion de ces mousses. Brevet américain numéro 4 069 173.

Shaped Charge Blending Method and Product/317

This invention relates to a novel method of blending natural or artificial dielectric materials, having different dielectric constants, to produce a composite mixture exhibiting a dielectric gradient in desired directions. The composites can be used to fabricate dielectric microwave lenses, e.g., a Luneberg lens, a Maxwell lens, an Eaton lens or the like wherein the dielectric constant and, hence, the refractive index of the lens varies as a function of the lens coordinates. U.S. Patent Numbers 3,507,940 and 3,507,946.

Transfer Sheet/317

The invention is directed to a transfer sheet for use with sublimable dyes in a dry transfer printing process. The porosity, strength, and other structural properties of the sheet make it useful in continuous printing operations. U.S. Patent Number 4,096,310.

Process for Shrinking Nylon Fabrics/317

The longitudinal contraction of fibers of nylon in textile fabrics, such as carpets, is caused by the application of a nylon textile fabric contracting agent. The agent comprises a mixture of ammonium or a metal nitrate; an acid selected from the group inorganic acid, organic carboxylic acid, sulfonic acid, and mixtures thereof; and a halo, carbocyclic aryl, carboxyclic aryloxy or alkoxy substituted aliphatic alcohol. The textile fabric is treated with the contracting agent and heated to a temperature of from about 93.3 C to about 186.6 C, to initiate a longitudinal contraction of the treated portions of the nylon fabric. After removal of substantially all of the textile fabric treating agent, the textile fabric is dried, thereby completing the longitudinal contraction. U.S. Patent Number 4,129,416.

Additive-Solvent Process to Form Embossed Product/317

A pile fabric, such as a carpet, is treated overall with a solution containing a solvent for the fiber comprising the pile fabric. The fiber-solvent concentration in the solution is sufficiently low to produce little or no shrinkage by itself upon subsequent application of heat. In this process, portions of the carpet, before heating, are treated with a second solution to increase the fiber-solvent concentration in the treated areas to a point where it is sufficiently high to cause shrinkage when the carpet is subjected to a heat treatment. The cooled carpet then has embossed areas in preselected configurations. U.S. Patent Number 4,260,390.

Application for Encapsulated Liquids/317

This is a single-use applicator consisting of at least two flexible, opposing sheets which are circumferentially sealed together over a portion of their opposing faces to define

Méthode et produit de mélange à charge modulée/317

L'invention consiste en une nouvelle méthode de mélange destinée à des diélectriques naturels ou artificiels, en vue de produire un ensemble composite présentant un gradient diélectrique orienté dans les directions voulues. Les mélanges peuvent servir à fabriquer des lentilles diélectriques pour ondes ultra-courtes, p. ex. lentille de Luneberg, lentille de Maxwell, lentille d'Eaton ou autres, chez lesquelles la constante diélectrique, et par conséquent, l'indice de réfraction, varie en fonction des coordonnées de la lentille. Brevets américains numéros 3 507 940 et 3 507 946.

Feuille de transfert/317

L'invention s'applique aux feuilles de transfert employées avec les encres sublimables au cours des procédés d'impression par transfert à sec. La porosité, la solidité ainsi que d'autres propriétés structurales de la feuille la rendent utile dans le cas d'impression en continu. Brevet américain numéro 4 096 310.

Technique de rétrécissement pour tissus en nylon/317

Le rétrécissement longitudinal des fibres en nylon des textiles, tels les tapis, est provoqué par l'application d'un agent de rétrécissement. Cet agent contient un mélange de nitrate d'ammonium ou métallique; d'un acide inorganique, carboxylique organique ou sulfonique, seul ou en mélange; et d'un alcool aliphatique portant un halogène, un groupe aryle carbocyclique, aryloxy-carbocyclique ou alcoxy. On traite le tissu avec l'agent de rétrécissement et on le chauffe jusqu'à une température allant d'environ 200°F à 400°F pour initier le rétrécissement longitudinal des zones traitées. On élimine ensuite la plus grande partie de l'agent de traitement, puis on sèche le tissu, ce qui complète le rétrécissement longitudinal. Brevet américain numéro 4 129 416.

Procédé d'addition de solvant pour former des motifs en relief/317

Les tissus à poils, tels les tapis, sont traités, sur toute leur surface, avec une solution contenant une substance dissolvant la fibre des poils. En soi, la concentration fibre-solvant de cette solution ne produit que peu ou pas de rétrécissement lorsqu'on traite, par la suite, le tapis par la chaleur. Suivant le nouveau procédé, on traite certaines parties du tapis avec une seconde solution qui fait augmenter suffisamment la concentration de solvant des fibres pour provoquer un rétrécissement dans les zones traitées lorsqu'on applique la chaleur. Une fois refroidi, le tapis présente des zones en relief disposées selon un motif prédéterminé. Brevet américain numéro 4 260 390.

Application de liquides encapsulés/317

Il s'agit d'un applicateur jetable comprenant au moins deux feuilles circulaires flexibles soudées à leur circonférence pour former une enveloppe fermée. À l'intérieur de cette

an enclosed pouch. Inside the pouch are a number of pressure-rupturable capsules containing a liquid to be applied to a surface. One of the sheets is unpermeable to the liquid, while the other is porous and adapted to allow passage of the liquid from the pouch to the surface to be treated when the capsules are ruptured, as by finger pressure. the applicator can be used with various liquids which can have various functions. Thus, applications can be made which contain liquids serving as shoe polishes; furniture polishes and scratch removers; spot cleaners for clothing, fabrics and rugs; auto tar removers, and others. U.S. Patent Number 3,196,478.

Encapsulating Apparatus/317

An apparatus is described which is useful in forming capsules filled with liquids such as would be used in the applicator described above. U.S. Patent Number 3,293,695.

enveloppe, se trouvent un certain nombre de capsules qui laissent échapper, lorsqu'on les écrase, un liquide à appliquer sur une surface. L'une des feuilles est imperméable au liquide et l'autre est poreuse, conçue pour laisser passer le liquide de l'enveloppe sur la surface à traiter lorsque les capsules sont percées, sous la pression du doigt, par exemple. L'applicateur peut être employé avec divers liquides ayant différentes fonctions, par exemple, cirages à chaussures, encaustique, détachants pour vêtements, tissus et tapis, solvants pour goudron et autres. Brevet américain numéro 3 196 478.

Encapsulateur/317

Il s'agit d'un appareil servant à former les capsules remplies de liquide dont on se servirait avec l'applicateur décrit ci-haut. Brevet américain numéro 3 293 695.

Phosphazene Polymers

The following are polymeric materials which have chain or backbone structures composed of alternating phosphorus and nitrogen atoms. To the phosphorus atoms are attached a variety of organic groups, chosen to impart desired properties. Because the backbone of the structure is inorganic, these polymers are characterized by much lower smoke generation and flame spread than typical of conventional polymers. Although these polymers are not inexpensive, they may be useful in critical situations where their properties are uniquely suitable.

Smoke-Suppressant Additives for Polyphosphazenes/317
U.S. Patent Number 4,026,838.

Polyphosphazene Polymer/Silicone Rubber Blends and Foams Therefrom/317

U.S. Patent Number 4,026,839.

Poly(acryloxyphosphazene) Copolymers/317
U.S. Patent Number 4,053,456.

Polyphosphazene Blends/317
U.S. Patent Number 4,055,520.

Polymères phosphazènes

Les produits suivants sont des polymères dont les chaînes ou le squelette sont constitués d'atomes alternés de phosphore et d'azote. Divers groupements organiques, choisis en fonction des propriétés qu'ils confèrent à la molécule, sont fixés aux atomes de phosphore. Comme leur squelette est inorganique, ces polymères se caractérisent par des propriétés anti-fumée et ignifuge beaucoup plus grandes que celles des polymères classiques. Malgré leur coût assez élevé, ils peuvent s'avérer utiles dans des situations critiques où leurs propriétés sont indispensables.

Additifs anti-fumée pour polyphosphazènes/317

Brevet américain numéro 4 026 838.

Mélanges de polymère polyphosphazène/caoutchouc de silicone et mousses qui en résultent/317
Brevet américain numéro 4 026 839.

Copolymères poly(acryloxyphosphazène/317
Brevet américain numéro 4 053 456.

Mélanges de polyphosphazènes/317
Brevet américain numéro 4 055 520.

Licensing Opportunities Through Électricité de France

The following developments are offered for commercial application in Canada. To initiate negotiations for their use or to obtain additional information, please write to: Mr. J.-L. Juillard, Attaché, Direction des Études et Recherches, Électricité de France, Service Ensembles de Production, 6 Quai Watier, B.P. 49, 78400 Chatou, France and send a copy of your initial correspondence to the Commercial Division, Canadian Embassy, 35 Avenue Montaigne, 75008 Paris, France.

Computerized Vibration Monitoring Systems/317

Sprat Monitoring and Perturbographic System

Cacer Digital Memory Perturbograph

Remote Control electronic Perturbograph

Vibration monitoring systems developed to monitor the operations of turbogenerators in power plants. These systems collect, analyse and store 40 analog and 60 logic signals (every millisecond) from a number of remote vibrating areas. The operator uses an interactive keyboard to compare the operating conditions with a reference vibration signature and can take corrective maintenance action, or analyse the data further using the graphic output terminals.

"Scarabee" (Beetle) Television Monitor/317

A monitor desígned for the inspection and maintenance of steam generators which can also be used for the exploration of enclosed areas difficult to access or areas of contamination. In order to repair the tubular bundles of nuclear station steam generators, the two water tanks of the primary circuit are emptied and opened, while the secondary circuit remains full of water under pressure. Drops falling from the leak indicate the position of the pipe to be stopped. The long period of work required to identify the location in a contaminated chamber, cannot be carried out by a human operator; therefore, the examination is carried out at a distance with the help of a television camera. The camera is integrated into the tight casing of a "beetle" which also carries a pivoting mirror and two projectors. The set is controlled from a terminal located 50 metres away. The angle of sight of the system, which appears on the display terminal of the control post, indicates precisely the coordinates of the defective pipe. Television scanning of the internal lining of vessel covers is an example of one area of application that is envisaged. An observation distance of 1.30 m should be applicable to most configurations.

Possibilités d'acquisition de licences par l'intermédiaire d'Électricité de France

Les nouveautés suivantes sont offertes pour fins commerciales au Canada. Pour entamer les négociations quant à leur utilisation ou pour obtenir de plus amples renseignements, prière d'écrire à: M. J.-L. Juillard, Attaché, Direction des Études et Recherches, Électricité de France, Service Ensembles de Production, 6 Quai Watier, B.P. 49, 78400 Chatou (France) et faire parvenir une copie de votre correspondance initiale à la Division commerciale, Ambassade du Canada, 35, Avenue Montaigne, 75008 Paris (France).

Systèmes automatisés de contrôle des vibrations/317

Système de surveillance et de perturbographie Spat

Perturbographe à mémoire numérique Cacer

Téléperturbographe électronique

Systèmes de contrôle des vibrations développés pour surveiller le fonctionnement des groupes turbo-alternateurs des centrales d'énergie électrique. Ces systèmes saisissent, analysent et mettent en mémoire 40 signaux analogiques et 60 signaux logiques (à chaque milliseconde) provenant d'un certain nombre de points soumis à des vibrations. L'opérateur utilise un clavier interactif pour comparer les conditions de fonctionnement avec une signature vibratoire prise comme référence et peut décider, le cas échéant, d'une intervention de maintenance, ou encore analyser plus à fond les données disponibles à la sortie de l'enregistreur graphique.

Inspecteur télévisuel "scarabée"/317

Ce dispositif de détection, conçu pour l'inspection et l'entretien des générateurs de vapeur, peut aussi servir à l'exploration d'enceintes difficiles d'accès ou de zones contaminées. Pour réparer les faisceaux tubulaires des générateurs de vapeur des centrales nucléaires, on vide et on ouvre les deux réservoirs d'eau du circuit primaire, mais on laisse le circuit secondaire rempli d'eau sous pression. Des gouttes tombant du point de fuite indiquent la position du tube à boucher. Le travail de longue durée requis pour identifier la position dans une enceinte contaminée ne pouvant être confié à un opérateur, on effectue l'examen à distance à l'aide d'une caméra de télévision. On place la caméra dans le caisson étanche d'un "scarabée" qui renferme aussi un miroir pivotant et deux projecteurs. Le dispositif est commandé à partir d'un pupitre situé à 50 mètres. L'axe de visée du système, qui s'inscrit sur le terminal à écran du poste de commande, indique avec précision les coordonnées du tube défectueux. On envisage par exemple l'application du dispositif à l'examen télévisuel du revêtement intérieur de couvercles de cuves. Une distance d'observation de 1,30 m devrait convenir à la plupart des configurations.

Level Measurement Transmitter/317

A level measurement system developed for thermal and nuclear stations. The remote transmitters use magnetic indicators coupled to a series of LED. The signals are transmitted to a central computer via multiconductor cables. These devices are claimed to be highly reliable, maintenance free and offer high accuracy and discrimination.

Safeguard System Test Simulator/317

In order to carry out this test, the system to be tested is set at "test" while the security of the installation continues to be ensured by two other identical safeguard systems acting in parallel. The test relay monitors every detector, sends the fault signal, controls the proper operation of the safeguard system and also verifies the conditions for eliminating the fault. With this device, it is also possible to change or regulate the parameters determining the many tasks that are carried out by the system. Its application is in electric power stations or combined with a device to test their "response" in highly reliable installations, i.e., those that involve many different control points (refineries, gas pipelines, computing centres. . .) or those that function on the basis of complex automatic processes (chemistry, steel processing, metallurgy. . .).

Management Program for Decentralized Industrial Installations/317

Integer programming allows the coordination of the systems of transportation and processing of products linking many geographically decentralized industrial installations. Already operational with a minicomputer, the present algorithm is being used with a group of 60 industrial plants spread over 10 departments (1,300 variables, 600 technical constraints). With the help of modest resources, this system makes it possible, and profitable, to schedule simultaneously the means of production and transportation of a large, decentralized group of industries. Application: Any existing or planned industrial installations which involve the coordination of many geographically decentralized units which handle products in different stages of processing. For example, the transportation of aqueous solutions over long distances involves the problem of previously obtaining a certain degree of concentration which would avoid the need to transport large amounts of water.

Twin Focus Lens/317

With this lens, which was designed for the television transmission of measurement scales on level gauges, it is possible to obtain two images of different sizes of the same object simultaneously. The images are received on a display terminal at the same time and they may show, for example, a full view and a detail, a view of the whole machine and a view of one of its components in general outlines. Apart from the long distance display of measurement scales for which many uses can be envisaged, the simultaneous display of a full view and one detail may find many applications in numerous fields, not only in the video area (surveillance) but also in photography (technical drawings).

Transmetteur de niveau/317

Mise au point d'un système de mesure de niveau pour les centrales thermiques et nucléaires. Les transmetteurs à distance comprennent des indicateurs magnétiques reliés à une série de diodes électroluminescentes. Les signaux sont transmis à un ordinateur central par des câbles multiconducteurs. On prétend que ces dispositifs sont d'une grande fiabilité, qu'ils n'exigent aucun entretien et qu'ils permettent une grande précision et une bonne discrimination.

Simulateur — test de chaînes de sécurité/317

Afin de réaliser ce test, la chaîne soumise à l'épreuve est mise en position "test" tandis que la sécurité de l'installation reste assurée par deux autres chaînes identiques fonctionnant en parallèle. Le dispositif contrôle chaque capteur, émet le signal de la défectuosité, commande le bon fonctionnement de la chaîne et vérifie en outre les conditions permettant d'éliminer la défectuosité. Ce dispositif permet également de modifier ou de régler les paramètres qui déterminent les nombreuses fonctions de la chaîne. Utilisé dans les centrales électriques, il peut être appliqué, combiné à un autre dispositif, à l'essai des "réactions" dans des installations à haute fiabilité, c'est-à-dire comportant de nombreux points à surveiller (raffineries, gazoducs, centres d'ordinateurs) ou fonctionnant selon des mécanismes automatiques complexes (chimie, sidérurgie, métallurgie).

Programme de gestion d'unités industrielles dispersées/317

Les méthodes de programmation en nombres entiers permettent de rationaliser les transports et les transformations de produits entre des unités industrielles nombreuses et géographiquement dispersées. Déjà opérationnel sur un mini-ordinateur, l'algorithme actuel s'applique à un ensemble de 60 unités industrielles réparties sur 10 départements (1 300 variables, 600 contraintes techniques). Il rend possible et rentable, à l'aide de moyens modestes, la gestion simultanée des moyens de production et de transport d'un grand ensemble industriel décentralisé. Domaines concernés: toute implantatation existante ou en projet constituée de nombreuses unités industrielles, très dispersées, entre lesquelles des produits circulent à divers stades d'élaboration. Par exemple, le transport à grande distance de solutions aqueuses pose le problème d'une concentration préalable qui éviterait le déplacement inutile d'une grande masse d'eau.

Objectif à double focale/317

Mis au point pour la retransmission télévisuelle d'échelles de mesure sur les indicateurs de niveau, cet objectif permet d'obtenir simultanément deux images de grandeurs différentes d'un même objet. Reçues en même temps sur un écran, ces images peuvent montrer par exemple une vue d'ensemble et un détail, la vue d'une machine et de l'un de ses organes en gros plan. À côté de la visualisation à distance d'échelles de mesure pour laquelle de nombreuses dispositions sont envisageables, la vision simultanée d'un ensemble et d'un détail peut trouver ces applications dans de nombreux domaines tant en vidéo (surveillance, . . .) qu'en photographie (dessins techniques. . .).

Proteinol Agro-Chemical Unit (Alcohol + Proteins)/317

The Proteinol unit is capable of working on the basis of alcohol or butyl-acetone fermentation by using high-performance multi-purpose techniques such as the mechanical recompression of steam and inverse osmosis. The production of fodder proteins (alfalfa, clover. . .) and beet and Jerusalem artichoke alcohol, which are complementary in an annual production schedule, can become quite profitable when compared to the present international prices of fuels and proteins. By staggering production of the two, it is possible to ensure a continuous supply of material and provide the opportunity for a level of investment in the exploitation of the biomass which was until now considered unrealistic. Application: It is claimed that 250 ha of beets, 400 ha of Jerusalem artichokes and 500 ha of alfalfa can provide an annual production of: 33,600 hl of pure alcohol; 2,500 t of vinasse, 50% dry matter; 3,600 t of pulp meal pellets; 5,000 t of concentrated protein cake; 2,200 t of compressed tops.

Unité agro-alimentaire protéinol (alcool + protéines)/317

L'utilisation de techniques très performantes et polyvalentes telles que la recompression mécanique de vapeurs et l'osmose inverse permet à l'unité Protéinol de travailler soit en fermentation alcoolique, soit en fermentation butyl-acétonique. Complémentaires dans un calendrier annuel de production, les protéines fourragères (luzerne, trèfle. . .) et l'alcool de betterave et de topinambours trouvent ainsi leur rentabilité par rapport aux prix des protéines et des carburants internationaux. La combinaison de 2 productions non simultanées assure le fonctionnement continu du matériel et rend possible les investissements dans l'exploitation de la biomasse jusque là jugés irréalistes. On prétend que 250 ha de betteraves, 450 ha de topinambours et 500 ha de luzerne peuvent fournir dans une année: 33,600 hl d'alcool pur; 2,500 t de vinasses à 50% de matières sèches; 3,600 t de tourteaux pulpes granulés; 5,000 t de tourteaux concentrés protéiques; 2,200 t de fanes agglomérées.

Bibliography

Intellectual Property Fees/317

Effective April 1, 1982, the following amendments to increase the fees for obtaining intellectual property rights in Canada, have been announced by the Commissioner of Patents:

Examining an application to register an Industrial Design	$150.00
Application for registration of a Trade Mark	$150.00
An application to amend the registration of a Trade Mark by extending the statement of wares or services in respect of which the Trade Mark is registered	$150.00
An application for renewal of the registration of a Trade Mark	$150.00
Filing an application for a Patent	$200.00
Grant of a Patent	$350.00
Plus for each page of specification and drawings in excess of 100 pages	$ 2.00

Application of High Technology in Productivity/317

Innovation Canada Inc. will hold a seminar entitled "Application of High Technology in Productivity" at Queen's Park, Toronto, November 25-26, 1982. Further information may be obtained from Innovation Canada Inc., 533 Arbor Road, Mississauga, Ontario L5G 2J6, tel: (416) 278-8848.

Bibliographie

Taxes touchant la propriété intellectuelle/317

Le Commissaire des brevets annonce qu'à compter du 1er avril 1982, les taxes touchant les droits de propriété intellectuelle au Canada sont augmentées comme il suit:

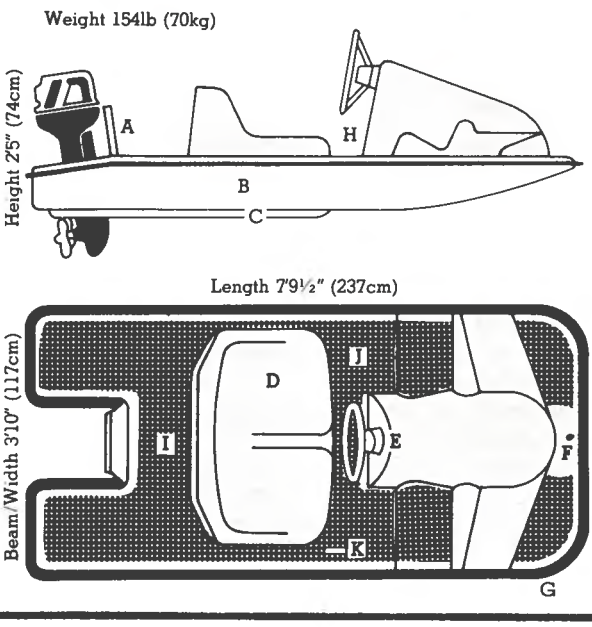
Examen d'une demande d'enregistrement d'un dessin industriel	$150
Demande d'enregistrement d'une marque de commerce	$150
Demande de modification de l'enregistrement d'une marque de commerce en vue de l'extension de l'état déclaratif des marchandises ou services pour lesquels la marque du commerce est déposée	$150
Demande de renouvellement de l'enregistrement d'une marque de commerce	$150
Dépôt d'une demande de brevet	$200
Concession d'un brevet	$350
Pour chaque page de description et de dessins en excédent de 100 pages	$ 2

Application de la haute technologie à la productivité/317

Innovation Canada Inc. organisera un colloque intitulé "Application de la haute technologie à la productivité" à Queen's Park, Toronto, les 25-26 novembre 1982. Pour de plus amples renseignements, s'adresser à Innovation Canada Inc., 533 Arbor Road, Mississauga (Ontario) L5G 2J6, Tél.: (416) 278-8848.

Hull Cleaning Apparatus
(See page 2)
Dispositif de nettoyage des coques
(Voir page 2)

Water Craft
(See page 5)
Véhicule aquatique
(Voir page 5)



Specification

A 8 ply reinforced engine support transom.

B 'Closed cell' integral foam buoyancy.

C Two integrally moulded GRP skegs providing directional stability and hull protection for beaching. Hull finished in white GRP.

D Integral moulded seat shaped for one or two people.

E Steering: 2 spoke wheel, cables and pulleys.

F Mooring cleat.

G Sturdy bumper surround.

H Front storage compartment.

I Location for fuel tank storage.

J Deck superstructure has integral non-slip surface.

K Handgrip.

IF UNDELIVERED RETURN TO:
Licensing Opportunities Section (34/3)
Business Centre
Dept. Industry, Trade and Commerce
Ottawa, Canada K1A 0H5

EN CAS DE NON-LIVRAISON RENVOYER A:
Section des possibilités de licences (34/3)
Centre des entreprises
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Ottawa, Canada K1A 0H5

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