new products bulletin

bulletin de produits nouveaux

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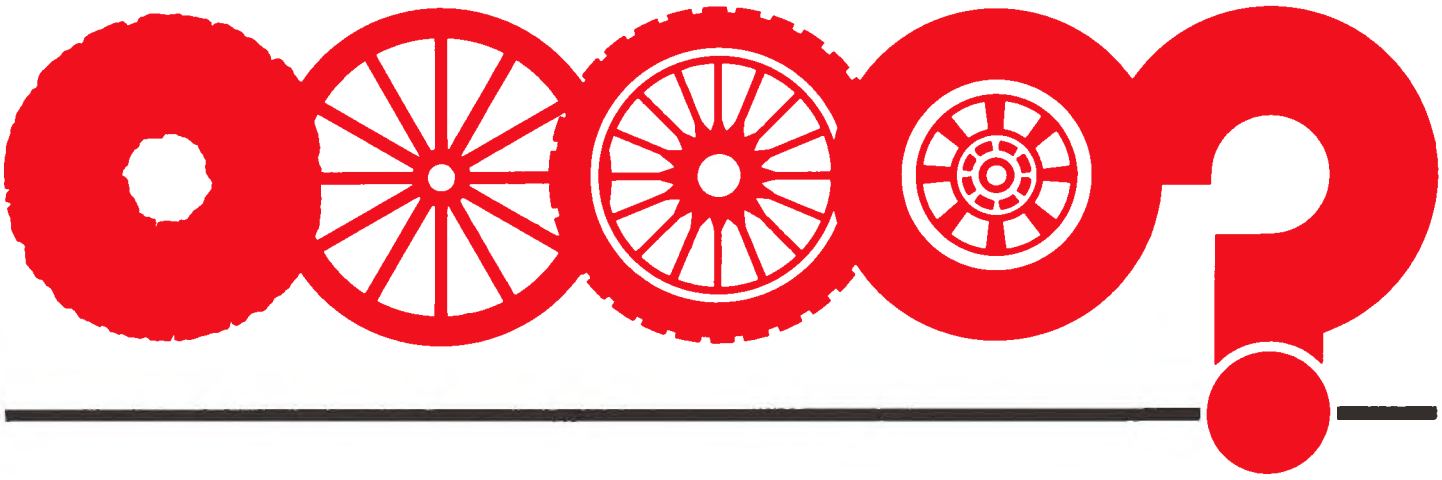

new products bulletin

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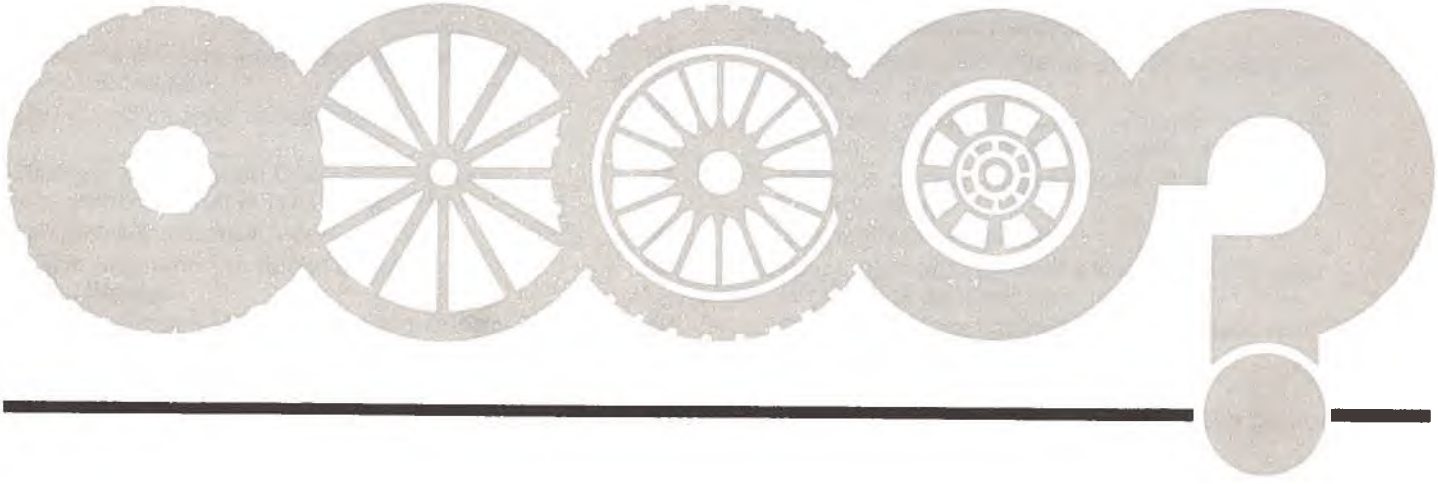
This monthly bulletin is published to inform Canadian industry of licensing and joint venture opportunities that may be investigated for the purpose of forming manufacturing affiliations. The Department cannot assume any responsibility for claims made or for transactions which ensue from the publication 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 (ABLO), Market Development Branch, Department of Industry, Trade and Commerce and Regional Economic Expansion, 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 (ABLO), Direction du développement des marchés, ministère de l'Industrie et du Commerce et de l'Expansion économique régionale, 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

Preparation of Highly Conductive Optically Transparent Zinc Oxide Films/326

This is a method and apparatus for depositing an oxide, such as zinc oxide, as a film which is both highly conductive and optically transparent. While depositing, the material being deposited can be changed from insulating to conducting. Alternatively, a conducting film only can be deposited. This is of particular interest in the fabrication of semiconductor-insulator-semiconducteur solar cells. Write: **Case 7282**, 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.

UV Radiation Triggered Rail Gap Switch/326

A fast HV switch which provides efficient low jitter multi-channel switching and which can be triggered by incoherent UV radiation. This makes it particularly suitable for low cost switching applications. Coherent UV radiation may also be used if required. Write: **Case 7544**, 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.

Underwater Transducer with Depth Compensation/326

An improved underwater transducer of rugged construction designed to provide depth compensation and efficient operation at well below conventional sonar frequencies over greater depth range than other flextensional transducers. Write: **Case 7590**, 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

Préparation de pellicules transparentes d'oxyde de zinc de conductivité élevée/326

Il s'agit d'une méthode et d'un appareil utilisés pour déposer un oxyde (par exemple, l'oxyde de zinc) sous forme d'une pellicule à la fois transparente et très conductible. Pendant l'opération, la substance qui se dépose peut devenir conductible même si elle était isolante. On peut aussi ne déposer qu'une pellicule conductrice. Ce procédé peut être particulièrement intéressant pour la fabrication de piles solaires à semiconducteur-isolant-semiconducteur. Écrire: **Cas 7282**, 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.

Commutateur à haute tension déclenché par un rayonnement ultraviolet/326

Commutateur à haute tention, rapide et efficace, à plusieurs canaux et à faible fluctuation, pouvant être déclenché par un rayonnement UV incohérent. Il convient particulièrement lorsqu'on recherche un commutateur peu coûteux. On peut aussi, au besoin, utiliser un rayonnement UV cohérent. Écrire: **Cas 7544**, 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.

Transducteur sous-marin avec compensation en fonction de la profondeur/326

Transducteur sous-marin amélioré, robuste, avec compensation en fonction de la profondeur, efficace à des fréquences bien inférieures aux fréquences sonar classiques. Il est utilisable dans une gamme de profondeurs plus étendue que celle d'autres transducteurs fonctionnant par flexion et tension. Écrire: **Cas 7590**, 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.

Preionizing Arrangement for TE Lasers/326

Here, the preionizing UV radiation required in a TE laser is produced by means of surface filamentary discharge on semi-conductive plates instead of corona discharge produced over the surface of a dielectric. The resulting TE laser discharge system is more durable, simpler and therefore less costly than conventional systems. Write: **Case 7675**, 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.

Dispositif de préionisation pour lasers TE/326

Le rayonnement UV préionisant d'un laser TE est produit par une décharge superficielle par un filament sur des plaques semiconductrices au lieu d'une décharge par effet couronne sur la surface d'un diélectrique. Ce système de décharge laser TE est plus durable, plus simple et donc moins coûteux que les systèmes classiques. Écrire: **Cas 7675**, 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.

Solid Wood Construction Blocks/326

American company offers a Canadian manufacturer licensing rights to manufacture and market solid wood tongue and groove blocks under its pending patents. The 10 cm × 10 cm × 30 cm blocks are glued together with an exterior wood adhesive. Nails can be added if required. The blocks are self-aligning and permit: labour savings, easy construction without mechanical ability and power tools; the building of complete inside and outside walls which can be left as is or painted, stained, dry-walled or plastered; an insulation value, depending on the material used, equal to 5 cm of fiberglass or four to seventeen hundred times better insulation value than cinder block, brick, concrete, stone, steel or aluminum; reduced labour cost and time; and can provide suitable housing for underpriviledged countries, as well as domestic shelter, cabins, garages, storage sheds, etc. (See illustration page 37.) Write: Mr. Mark Lilly, Spencer Enterprises, 304 Main Cross Street, Charlestown, Indiana 47111 and send a copy of your initial correspondence to Canadian Consulate General, 1920 First Federal Building, 1001 Woodward Avenue, Detroit, Michigan 48226-1966, U.S.A.

Construction en blocs de bois massif/326

Une société américaine offre à un fabricant canadien les droits de licence en vue de la fabrication et de la mise en marché de blocs en bois massif à rainure et languette (brevets en instance). Les blocs de 10 cm × 10 cm × 30 cm sont assemblés par collage à l'aide d'un adhésif à bois pour extérieur, puis cloués au besoin. Ils permettent ainsi de réaliser des économies de main-d'oeuvre, un assemblage facile sans aptitudes spéciales et sans outils mécaniques, la construction de murs intérieurs et extérieurs laissés à l'état naturel, peints, teints ou plâtrés. Selon le matériau utilisé, la valeur isolante est égale à la protection offerte par 5 cm de fibre de verre soit quatre à mille sept cents fois supérieure à celle que procure le bloc de cendre, la brique, le béton, la pierre, l'acier ou l'aluminium, selon le cas. L'emploi de ce produit permet en outre de réduire les frais de main-d'oeuvre et le temps de construction et peut répondre à certains problèmes d'habitation dans le Tiers-monde. Enfin, ces blocs peuvent servir à la construction d'abris, de cabanes, de garages, de remises d'entreposage, etc. (Voir l'illustration page 37.) Écrire à: M. Mark Lilly, Spencer Enterprises, 304 Main Cross Street, Charlestown, Indiana 47111 et faire parvenir une copie de votre correspondance initiale au Consulat général du Canada, 1920 First Federal Building, 1001 Woodward Avenue, Detroit (Michigan) 48226-1966 (É.-U.).

Tree-Pruning and Clearing Apparatus/326

Swedish company seeks a licensing or joint venture partner in Canada to manufacture and market in North America, a power saw comprising a guide bar mounted on a handle, a chain saw driven by hydraulic means and a separate portable drive unit comprising a hydraulic pump driven by an internal combustion engine and provided with an air cooler. The hydraulic pump is connected to the hydraulic motor by lines arranged in the handle. The apparatus is patented in Canada and the U.S.A. and patents are pending in 12 other countries. Production testing has begun in Sweden. The main advantages of this power saw are the low level of vibration (below International Standard ISO/DIS 5349); the simplifying and rendering more effective of tree-pruning work and its alternate use in tree-clearing, felling and cutting. (See illustration page 37.) Write: Mr. Jerzy Janczak, Algoma Hydraulic AB, St. Mickelsgatan 71, S-126 54 Hägersten,

Appareil pour élaguer et émonder/326

Une société suédoise recherche un associé canadien sous licence ou en association pour la fabrication et la mise en marché en Amérique du Nord d'une scie mécanique composée d'une lame-guide, d'une chaîne de coupe à entraînement hydraulique et d'un ensemble d'entraînement séparé, portatif, comprenant une pompe hydraulique entraînée par un moteur à combustion interne à refroidissement à air. La pompe est reliée au moteur hydraulique par des conduites placées dans le manche. L'ensemble est breveté au Canada et aux États-Unis et des brevets sont en instance dans douze pays. Des essais en production ont commencé en Suède. Cette scie mécanique présente des avantages importants: faibles vibrations (inférieures à la norme internationale ISO/DIS 5349); taille et élagage des arbres simplifiés et plus efficaces; possibilité d'utilisation pour l'émondage, l'abattage et la coupe. (Voir l'illustration page 37.) Écrire à:

Sweden and send a copy of your initial correspondence to Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

M. Jerzy Janczak, Algoma Hydraulic AB, St. Mickelsgatan 71, S-126 54 Hägersten (Suède) et faire parvenir une copie de votre correspondance initiale à l'Ambassade du Canada, C.P. 16129, S-103 23 Stockholm 16 (Suède).

Cleaning System for Buses, Etc./326

Swedish development company offers licensing rights in Canada for "Windcleaner" apparatus for cleaning buses, railroad coaches, passenger aircraft, etc. An air stream of approximately 1,000 m^3 of air per minute is passed through the vehicle from front to rear entrance doors. All dirt and rubbish is extracted, the coarser rubbish being collected in exchangeable sacks while the dust is caught on the filters. Dirt is effectively removed from under seats, around levers and pedals and hidden corners where it is difficult to clean using conventional methods. Cleaning can be accomplished in two minutes and, if carried out on a daily basis, the time can be reduced to 30 seconds. The "Windcleaner" method, developed in cooperation with Electrolux is manufactured in Sweden by Hillcomatic for the East and West European market and is licensed to Electrolux/Brazil. (See illustration page 38.) Write: Mr. Thore Fridhill, Hillcomatic AB, Fack, 240 10 Dalby, Sweden and send a copy of your initial correspondence to Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

Dispositif pour le nettoyage des autobus, etc./326

Une société suédoise offre les droits de licence pour le Canada de son dispositif "Windcleaner" conçu pour le nettoyage des autobus, des voitures de chemin de fer, des avions pour passagers, etc. Un courant d'air d'environ 1,000 m^3 à la minute, traverse le véhicule, pénétrant par la porte avant et sortant par la porte arrière. Tous les déchets et la saleté sont extraits ainsi, les plus grosses particules sont envoyées dans des sacs jetables et la poussière est retenue par les filtres. La saleté est enlevée de façon efficace sous les sièges, autour des leviers et pédales et dans les endroits peu accessibles difficiles à nettoyer au moyen des méthodes traditionnelles. Le nettoyage prend deux minutes mais s'il est fait tous les jours, il peut être réduit à 30 secondes. Le dispositif "Windcleaner" a été mis au point en collaboration avec Electrolux et est fabriqué en Suède par Hillcomatic pour l'Europe de l'Ouest et de l'Est. Il est licencié sous le nom Electrolux (Brésil). (Voir l'illustration page 38.) Écrire à: M. Thore Fridhill, Hillcomatic AB, Fack, 240 10 Dalby (Suède) et faire parvenir une copie de votre correspondance initiale à l'Ambassade du Canada, C.P. 16129, S-103 23 Stockholm 16 (Suède).

Method of Forming Net-Like Structures/326

Canadian inventor offers exclusive territorial and/or product licensing or joint venture manufacturing and worldwide marketing rights for the production of innumerable 3-D plastic netted or mesh objects by a new injection molding process using planar tools and metal as well as many common plastics as raw materials. Patents are pending in Canada and abroad. Designs of prototypes have been registered and know-how is available. The manufacturing of punnets, fruit, vegetable, gift and picnic baskets, which may incorporate handles and closing devices, traffic cones, lamp shades, vegetation protectors, etc., including an expansion step where required, may be fully automated and will permit intensive assembly work on many conceptual designs for attractive, weatherproof and reuseable receptacles having many domestic uses. The process also allows savings in initial investment and conservation of materials; enables processing of plastics with low flow rate; and unfolds opportunities to make many articles impossible by known methods due to parting line problems and insufficient machine stroke. The short stroke required to release the flat web is also energy efficient. A non-disclosure agreement will be forwarded to interested parties. Write: Mr. Rudolf Parnigoni and 98333 Canada Limited, 62 Du Domaine Boulevard, R.R. 4, Ile Perrot, Vaudreuil, Quebec J7V 7P2 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.

Fabrication de structures réticulées/326

Un inventeur canadien offre les droits exclusifs sur le territoire de vente et/ou sur le produit ou sur sa cofabrication, ainsi que les droits mondiaux de commercialisation pour la production d'innombrables objets tridimensionnels en plastique maillé ou tissé selon une nouvelle technique de moulage par injection, à l'aide d'outils plats, à partir de métaux ou de plastiques courants. Des brevets sont en instance au Canada et à l'étranger. Les plans des prototypes ont été enregistrés, et l'on peut se procurer le savoir-faire. La fabrication de corbeilles, de paniers à fruits, à légumes, à cadeaux ou à pique-nique (pouvant comporter anse et couvercle), de cônes routiers, d'abat-jour, de protecteurs pour la végétation, etc., peut être complètement automatisée, y compris une étape d'expansion le cas échéant, ce qui permettra de réaliser l'assemblage de nombreux motifs de récipients attrayants, résistants aux intempéries et réutilisables conçus pour bien des usages domestiques. Le procédé permet aussi de réaliser des économies en ce qui concerne l'investissement initial et la conservation des matériaux; il rend possible le traitement à faible débit des plastiques; et il ouvre les portes à la fabrication de beaucoup d'articles qu'on ne peut produire avec les techniques connues à cause des problèmes de joints de séparation et d'une course insuffisante. La faible course nécessaire à la fabrication d'un tissu plat est aussi efficace du point de vue énergétique. Une formule d'accord de non-divulgation sera envoyée aux intéressés. Écrire à: M. Rudolf Parnigoni et à la société 98333 Canada Limitée, 62, boulevard Du Domaine, R.R. 3, Île Perrot, Vaudreuil (Québec) J7V 7P2, 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.

Panoramic Glasses/326

West African scientist seeks a licensing or joint venture association with a Canadian company to manufacture and market spectacles which enable the wearer to observe activities both in front and behind simultaneously without turning. A panoramic view is provided by a series of transmitting reflectors mounted on a transparent tube, the array reflects images of objects behind the wearer onto the surface of two mirrors located on the surface of two mirrors located on the sides of the glasses' lenses. The inventor claims that the wearer's frontal view is unaffected by this hindsight. Drawing and technical know-how are available. A patent is pending in France and applications will be made in U.S.A., Canada, Japan, Britain, Italy and West Germany. Uses: military, security and police surveillance, protection and fashion. Write: Mr. Gabriel Ohio Obadan, c/o Mr. Uche Chukwuelue, 5 Boileau Street, 21000 Dijon, France and send a copy of your initial correspondence to Canadian Embassy, 35 Avenue Montaigne, 75008 Paris, France.

Lunettes à vision panoramique/326

Un scientifique ouest-africain recherche une compagnie canadienne intéressée à une association en partenaires ou à l'obtention des droits de fabrication et de commercialisation sous licence de lunettes permettant d'observer, en même temps et sans se retourner, ce qui se passe devant et derrière. La vision panoramique est assurée par une série de réflecteurs transmettant la lumière, montés sur un tube transparent. Le dispositif réfléchit l'image des objets situés à l'arrière sur la surface de deux miroirs montés sur le côté de chaque verre. L'inventeur soutient que la vision arrière ne nuit pas à la vision frontale. On peut se procurer un schéma ainsi que les connaissances techniques. Il y a un brevet français en instance, et des demandes seront faites aux É.-U., au Canada, au Japon, en Angleterre, en Italie et en Allemagne de l'Ouest. Utilisations: surveillance militaire ou policière, ou de sécurité, protection et mode. Écrire à: M. Gabriel Ohio Obadan, a/s de M. Uche Chukwuelue, 5, rue Boileau, 21000 Dijon (France) et faire parvenir une copie de votre correspondance initiale à l'Ambassade du Canada, 35, Avenue Montaigne, 75008 Paris (France.)

Drum Storage System/326

American company offers a Canadian company a license to manufacture its drum storage system for the Canadian market. The Barl-O-Way drum storage system stores, by a steel frame structure, up to 40 full 247 litre drums. Drums are placed onto an upper inclined tier and roll back into a lowering cage. This cage automatically lowers the drum to another inclined tier. The First-In, First-out storage process can be applied to nearly any cylindrical shape such as paper rolls. Loading and dispensing can be controlled automatically by a mini-computer. The licensee purchases a technology package for $5,000.; $2,500. due upon signing the agreement; $2,500. due ten days after receipt of the package which includes drawings, design details, assembly notes, and material lists. A 5 percent royalty is required on gross annual sales due on a quarterly basis. (See illustration page 37.) Write: Mr. Charles Ramer, Vice President, Ramco-Standard Corporation, 355 Lake Road, Medina, Ohio 44256 and send a copy of your initial correspondence to Canadian Consulate, General, Illuminating Building, 55 Public Square, Cleveland, Ohio 44113-1983, U.S.A.

Système de stockage des fûts/326

Une compagnie américaine offre à une société canadienne la licence de fabrication touchant un système de stockage des fûts pour le marché canadien. Le système de stockage Barl-O-way permet d'entreposer, au moyen d'une structure d'acier, jusqu'à 40 fûts pleins de 247 litres. Les étages sont prévus et peuvent permettre de baisser automatiquement les fûts au moyen d'un ascenseur hydraulique. Le système peut être utilisé pour d'autres objets cylindriques tels que les rouleaux de papier. Le système est complètement automatique pour le chargement et la distribution des conteneurs pleins ou vides et est commandé par un mini-ordinateur. Le détenteur de la licence achète l'ensemble technologique pour $5 000, $2 500 devant être payés au moment de la signature de l'accord, $2 500 dix jours après la réception de l'ensemble qui comprend des plans, des détails de conception, des notes d'assemblage et des listes de matériel. Le bénéficiaire devra payer chaque trimestre une redevance de 5 pour cent sur le chiffre de vente brut annuel. (Voir l'illustration page 37.) Écrire à: M. Charles Ramer, vice président, Ramco-Standard Corporation, 355 Lake Road, Medina (Ohio) 44256, et faire parvenir une copie de votre correspondance initiale au Consulat général du Canada, Illuminating Building, 55 Public Square, Cleveland (Ohio) 44113-1983 (É.-U.)

Canadian Patents Available for Licensing or Sale in Canada Issued January 1983

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

Liste des brevets canadiens disponibles pour octroi de licences ou vente au Canada délivrés en janvier 1983

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

Casorso Cherry Picker/326

Machine de type Casorso pour la cueillette des cerises/326

This invention relates to a stemmed fruit picker. It consists of an electric clipper that is mounted in a special bracket in an inverted horizontal position. A depending portion of the bracket attaches to a receiving basket and locates the basket below the cutting elements of the clipper. Write: **PATENT 1,138,652**, Victor R. Casorso, Box 399, Oliver, B.C. V0H 1T0 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.

Elongate Compression Bearing Member/326

Support allongé travaillant en compression/326

A prop intended particularly for use in underground mines, is made of timber. At one or both ends of the prop, a reduced diameter portion is formed. The rest of the prop has a larger diameter. At the end or ends of the larger diameter portion adjacent the reduced diameter portion(s), a restraining ring surrounds the prop. Write: **PATENT 1,138,662**, Mine Support Systems (Proprietary) Limited, 6th Floor, Unitas, Marshall Street, Johannesburg, Transvaal, South Africa and send a copy of your initial correspondence to Canadian Embassy, P.O. Box 26006, Arcadia, Pretoria 0007, South Africa.

Back Pressure Regulator/326

Régulateur de débit à contre-pressions/326

A back pressure regulator for regulating fluid flow includes a casing the interior of which is divided into a control chamber and a flow chamber. A fluid, for example a gas, is introduced into the control chamber at a pressure equal to the control pressure, such pressure being adjustable by a piston slidably mounted in the control chamber. Fluid, under the pressure to be controlled, is introduced against the other side of the diaphragm. At the same time, fluid, the pressure of which is to be controlled, passes through a valve in the casing, the valve being slidably mounted in the flow chamber and connected to the diaphragm for movement therewith. Changes in pressure on the flow chamber side of the diaphragm result in movement of the diaphragm to open or close the valve, whereby the pressure of fluid passing through the valve is maintained constant. Write: **PATENT 1,138,741**, Petroleum Recovery Institute, Research Division, 3512 - 33 Street, N.W., Calgary, Alberta T2L 2A6 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.

Table Saw Mitre Gauge Extension/326

Rallonge pour boîte à onglets de scie d'établi/326

A device attachable to a table saw mitre gauge, the device including a flat plate that adjustably bolts to the gauge so as to give a longer surface against which work is held and the flat plate supports an adjustable block against which an end of the work can be abutted for controlling a length of the work that is being sawed. Write: **PATENT 1,138,749**, Glenn L. Dean, c/o Richard L. Miller, 3612 Woolworth Building, New York, N.Y. 10020 and send a copy of your initial correspondence to Canadian Consulate General, 1251 Avenue of the Americas, New York City, N.Y. 10020-1174, U.S.A.

Adjustable Scaffold Assembly for Trucks and the Like/326

Échafaudage télescopique pour montage sur plate-forme de camion et moyens de transport analogues/326

A portable scaffold assembly is detachably mounted upon a truck body or the like and includes a pair of spaced apart support frames each carrying a spaced and parallel main boom assembly pivoted one to each support frame. Telescopic portions engage the distal ends of the main booms and support a scaffold structure. A scissor assembly extends between each main boom and the corresponding base frame and a fluid operated ram connects to the scissor assembly for extending

and retracting same and hence for elevating and lowering the main booms together with the scaffold structure. A first cable is operatively connected between the scaffold structure and the boom for maintaining the scaffold structure level as same is raised and lowered. A second cable is operatively connected between the main boom assembly and the base frames for automatically extending the telescopic portions as the booms are raised. A further cable and spring assembly extends between the telescopic boom and the support frames for returning the telescopic booms as the boom assemblies are lowered. Write: **PATENT 1,138,785**, Stephen Keen, Box 762, Kipling, Saskatchewan S0G 2S0 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.

Pipe Part Provided with a Flange/326 **Tuyau à bride/326**

A fiber reinforced plastic pipe is provided with an integral flange, comprising circumferentially extending glass fiber fabrics. As the width of the fabrics exceeds the width of the finished flange, the fabrics are provided with inwardly bent parts at one or both side walls of the flange, or with undulating parts. Write: **PATENT 1,138,790**, Wavin B.V., 251 Handellaan, 8031 EM Zwolle, Netherlands and send a copy of your initial correspondence to Canadian Embassy, Sophialaan 7, The Hague, Netherlands.

Method and Apparatus for the Stiffening and Straightening of Starting Sheets/326 **Méthode et dispositif de raidissement et de redressement de la feuille d'amorçage/326**

In the method of the invention starting sheets are stiffened and straightened by pressing or rolling upon the sheet various stiffening patterns projecting from the plane of the sheet, the starting sheet being rolled or pressed from both sides by means of a roller or a press the opposite surfaces of which have the said patterns, while the starting sheet is suspended by its lugs. An apparatus having conveyors for conveying the starting sheets and a roller or press for embossing stiffening patterns upon the starting sheets, the roller or press having two parallel rollers or press plates, provided with regularly alternating depressions and corresponding protrusions, at least one of the press plates being movable in the lateral direction, the roller or press being mounted below the suspension conveyor for the starting plates in such a manner that a starting sheet suspended by its lugs from the suspension conveyor passes through the roller or press. Write: **PATENT 1,138,797**, Outokumpu Oy, P.O. Box 280, SF-00101, Helsinki 10, Finland and send a copy of your initial correspondence to Canadian Embassy, P.O. Box 779, 00101 Helsinki, Finland.

Child Carrying Back Pack/326 **Sac à dos porte-bébé/326**

A carrier is adapted to be worn by an adult to secure in place a child seated upon the adult's shoulders while leaving the arms of the adult free. The carrier has a frame with a pair of interconnected upright side members to be laterally spaced behind and projecting upwardly of the shoulders of the adult. A flexible back restraint attached to these frame members defines a retaining web which in use is spaced behind the head of the adult and supports the back and seat of the child. Front restraint means is attached to each of frame members and secures the child against movement out of the carrier in the forwards direction. A lower support includes a belt adapted to be strapped to the body and supported on the hips of the adult. A thrust support interconnects the frame to the belt. The remaining web has a bottom portion from which extend a pair of laterally spaced length-adjustable shoulder straps to extend over the front of the adult's shoulders and be attached to the lower support. Write: **PATENT 1,138,839**, Allan H. Johnson, Im Haeldele 52, 7634 Kippenheim, West Germany and send a copy of your initial correspondence to Canadian Consulate General, Immermannstrasse 3, 4 Duesseldorf, West Germany.

Automatic Liquid-Container Filler/326 **Dispositif d'embouteillage/326**

A simple device for automatically filling a plurality of open containers, such as bottles, to permit a plurality of such containers to be sequentially filled, when connected to a constant source of liquid, without possibility of running over. A common header receiving the liquid has a plurality of depending traps, each connected thereto with an inlet tube which is shorter than the distance the traps outlet tube extends into the container, whereby the entrance of the liquid is automatically cut off when the liquid level in the container rises sufficiently to cover the lower end of the outlet tube and the hydrostatic pressure thereat equals that of the inlet tube. Write: **PATENT 1,138,841**, Nils Nygards, 7435 Highway 65, Northeast Minneapolis, Minnesota 55432 and send a copy of your initial correspondence to Canadian Consulate General, 15 South Fifth Street, Minneapolis, Minnesota 55402-1078, U.S.A.

Toothbrush/326 **Brosse à dents/326**

The oral hygiene implement includes a handle, a head member having a rigid sleeve and a cleaning or massaging element secured to the sleeve, and a head attaching member in the form of a screw having a threaded shaft which extends through the sleeve and threads into a longitudinal threaded bore in one end of the handle and a head engageable with an end of

the sleeve for retaining the head on the handle. The head member is removable for selective use of various head configurations or for disposal when worn. Write: **PATENT 1,139,060**, Antonino Cuffaro, 27 Lipstan Avenue, Nepean, Ontario K2E 5Z2 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.

Mine Roof Support/326

Système de supportage de toit de galerie de mine/326

Coal in the roof of a seam being mined by the long wall method is recovered by supporting an elongated area of the seam roof using a plurality of three cradle supports, the front two cradles being moved forward stepwise parallel to the long wall to form a passage with cantilevered roof supporting arms of the third cradle. When the third cradle at one end of the passage is moved forward into engagement with the first two cradles, the coal in the roof is left unsupported, and is removed via a conveyor and a loader in the passage. Write: **PATENT 1,139,118**, Jopling, Aunald, Coleman, Crowsnest, Alberta T0K 0M0; World Oil Mining Ltd., 7225 - 50 Street, Edmonton, Alberta T6B 2J9 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.

Hair Implanting Appliance/326

Instrument pour l'implantation des cheveux/326

A hair implanting appliance for directly implanting an artificial hair in a human skin comprises a needle formed at its leading end with a notch which is sized and shaped to retain the root portion of the hair. The needle is snugly and slidably received in the through hole of a sheath such that its leading end can protrude from the leading end of the sheath into the human skin to a depth necessary for the hair implantation. The sheath has at least a portion of its leading open end merge into the open edge of the notch at the leading end of the needle when this needle is retracted into the sheath and this structure forms the guide surface of the root portion retained in the notch. Write: **PATENT 1,139,181**, Shiro Yamada, 31-8 Koboyama, Kobocho Chiruy-shi, Aichi-ken, Japan and send a copy of your initial correspondence to Canadian Embassy, 3-38 Akasaka 7-Chome, Minato-ku, Tokyo 107, Japan.

Powered Roller Conveyor with Drive Disengaging Means/326

Transporteur à rouleaux entraînés, avec dispositif de débrayage de l'organe moteur/326

A powered roller conveyor wherein a plurality of conveyor rolls are formed as elongated sleeves and are freely rotatably supported on support shafts which are slightly undersized relative to the sleeves. At least some of the support shafts are rotatably driven. The conveyor incorporates at least one zone having a lifting device disposed below the conveyor rolls and liftable upwardly a small amount to thereby engage the conveyor rolls to drivingly disengage same from the continuously driven support shafts to permit stoppage of the conveyor rolls and the articles supported thereon. This lifting device accomplishes stopping of selected conveyor rolls and articles while permitting continuous driving of the support shafts throughout the conveyor. Write: **PATENT 1,139,254**, William L. Smock, 5831 South Meridian Street, Indianapolis, Indiana 46206 and send a copy of your initial correspondence to Canadian Consulate General, 1920 First Federal Building, 1001 Woodward Avenue, Detroit, Michigan 48226-1966, U.S.A.

Solar Distillation Apparatus/326

Appareil solaire de distillation/326

Solar distillation apparatus are disclosed in which a substantial part of the heat of condensation of the condensing liquid is recovered. A conduit having an inclined smooth lower surface is disposed above the liquid to be distilled and on which the evaporated liquid condenses and releases its heat of condensation. A fluid is circulated through the conduit in a heat exchanging relationship with the lower surface thereof, the fluid absorbing a substantial part of the released heat of condensation. The condensed liquid flows along the bottom of the inclined lower surface and is discharged from the lower end thereof and collected. The conduit in the preferred embodiments if flat and transparent and the spacing between the upper and lower walls of the conduit is selected so that only a small part of the solar energy is absorbed in the conduit while the fluid in the conduit recovers a substantial part of the released heat of condensation. In accordance with the invention, more fluid is circulated in the conduit means than the quantity of liquid evaporated from the distillation compartments and condensed on the conduit means in order to carry away the released heat of condensation while maintaining the temperature of the fluid below that of the condensing liquid vapor. In accordance with the preferred embodiments, salt water is distilled and the quantity of fluid circulated through the conduit to absorb and carry the heat of condensation released by the condensing water vapor, will greatly exceed, for example, by 10 times, the quantity of condensed water evaporated, and distilled by the apparatus. Much more fluid is circulated in the conduit to maintain the fluid temperature below that of the condensing water vapor. The concentrated brine at for instance 80°C may be recycled one or several times in separate distillation units or in distillation channels or compartments of the same unit wherein brine instead of preheated water to be distilled is introduced into the distillation compartments. Thus, the heat of the brine may be recovered and the concentration of the brine may be increased in successive compartments and units, allowing a more economical extraction of salts from the brine. A separate heat exchanger using a fluid heated for instance to 150°C by solar energy in a separate

solar energy unit can be used to preheat the water to be distilled, increasing its temperature to for instance 75°C before introducing the water into the distillation compartment. The production of distilled water according to the invention is substantially higher than by conventional solar ponds and the cost of producing distilled water reduced to zero in certain locations when credit is obtained for the salts extracted from the concentrated brine. Preferably, the bottoms of the distillation compartments are blackened by a water-proof flexible material such as Esso Butyl or a similar material. Write: **PATENT 1,139,255**, Virgil Stark, 936 Fifth Avenue, New York, N.Y. 10021 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.

Sealing Leaks by Polymerization of Volatilized Aminosilane Monomers/326

Méthode pour arrêter les fuites, par polymérisation de monomères d'aminosilane volatilisé/326

Leaks in a vessel or pipeline or the like adapted for containing a fluid, are sealed by means of a volatilized polymerizable aminosilane supplied to the interior of the vessel under sufficient pressure and for a sufficient period of time to permit contact thereof and react in the presence of moisture or sand at the situs of the leak to provide a solid polysiloxane seal. Write: **PATENT 1,139,542**, Joseph J. Packo, 11000 Onion Creek Court, Austin, Texas 78747 and send a copy of your initial correspondence to Canadian Consulate General, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201-3051, U.S.A.

Hitch on the Right Side/326

Attelage latéral droit/326

To have a hitch on the right side there must be two arms welded to a triangular plate which is made to hitch the rake at a proper distance beside the tractor. In my invention, the front arm is bent to pass ahead of the front wheel and is pinned to the front hitch of the tractor. The rear arm goes between the right wheels and is pinned to a fastener bolted to the chassis or to a bracket. There is a spacer connecting the two arms. The hitch may have a swivel wheel. In this case, there will be two braces, each one welded to one arm at one end, together with a molded plate at the other end. A supporting plate will join the molded plate and the two braces to the arms. Two crossbars between the braces and the arms should prevent torsion. A casting to receive the pivot of the swivel wheel should be bolted to the molded plate. Write: **PATENT 1,139,570**, Réal Bourdon, 672, Montée Hébert, Ste-Clotilde, Chât. (Québec) J0L 1W0 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.

Swinging Hitch in Front/326

Attelage frontal oscillant/326

It is normal to hitch the rake(s) behind the tractor in different manner. In my invention a swinging hitch that is in front is made to pull a rake preceding the tractor. Two curved arms are needed to pass over the rake to be secured together with a molded plate, on which the same rake should be hitched. The arms are stable with spacers. Two posts are bolted, one on each side towards the front of the tractor's frame. The right arm has a self aligning bearing pinned to the right post. The left arm has a slot to slide on a pin in the left post; this pin receives an adaptor for a piston, the other end of the piston is secured to the left arm. The hitch may have a swivel wheel secured to the joint of the two arms. In this case the molded plate will be longer and descend behind the swivel wheel and will be fixed by two supports to the arms above. Write: **PATENT 1,139,571**, Réal Bourdon, 672, Montée Hébert, Ste-Clotilde de Chât. (Québec) J0L 1W0 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.

Siphon Well/326

Bassin ou puits à dispositif de siphonnage/326

The device consists of a collection well or basin for liquid. A riser emerges from the bottom of the basin at a certain inclination to the horizontal plane. This riser runs through a bend and, in some cases, a reducer into a vertical pipe, which connects to an essentially U-shaped piece of pipe with a horizontal outlet. When the basin is filled with liquid, and additional liquid is supplied in a flow that exceeds the minimum flow that can run continuously through the device, a liquid seal is formed in the piece of pipe. Since liquid emerges from this piece of pipe into the outlet, a vacuum is created in the vertical pipe which sucks the liquid out of the basin, in the manner of a siphon. The liquid emerges from the device in the form of continuous plugs with high kinetic energy content. The device permits the use of small-diameter pipes in drainage systems without the required self-cleansing effect being lost, even if water-conserving flush toilets are connected to the system. Other areas of application are irrigation and the metering of liquids in batches. Write: **PATENT 1,139,634**, AB Gustavsberg, S-134 00 Gustavsberg, Sweden and send a copy of your initial correspondence to Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm 16, Sweden.

Composition for Attracting Ambrosia Beetles/326

Composé pour attirer les scolytes du bois/326

A combination of lineatin, ethanol and optionally other naturally occurring components in trees which are normally attacked by Ambrosia beetles, and the use thereof as an attractant for combatting Ambrosia beetles (*Trypodendron*), particularly

T. lineatum. Write: **PATENT 1,139,658**, Borregaard Industries Limited, Norge, 1701 Sarpsborg, Norway and send a copy of your initial correspondence to Canadian Embassy, Postuttak, Oslo 1, Norway.

Vaccine for Diarrhea Caused by E. Coli/326

Vaccin contre la diarrhée causée par E. coli/326

A relatively safe and effective vaccine for coliform diarrhea and related infections is prepared from semipurified K99 and other concentrated subcellular antigens and organelles of selected *E. coli* strains. For this purpose broth cultures of *E. Coli* bacteria are mechanically sheared or sonicated to disrupt the bacterial cells, then centrifuged and the supernatent containing subcellular particles and components is concentrated by ultra-filtration and sterilized by the addition of a preservative and/or stabilizer. Write: **PATENT 1,139,663**, University of Saskatchewan, Saskatoon, Saskatchewan S7N 0W0 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.

Enzymatic Method for Improving the Injectability of Polysaccharides/326

Méthode ayant recours aux enzymes pour améliorer le degré d'injectabilité des polysaccharides/326

A method for enhancing the ability of polysaccharides in aqueous solution to flow through a porous medium comprises contacting the polysaccharides with an endoenzyme capable of hydrolyzing at least one of the linkages of the sugar units of the polysaccharides and maintaining the polysaccharides in contact with the enzyme under hydrolysis conditions for a time sufficient to decrease the tendency of the polysaccharides to plug the porous medium yet insufficient to decrease the viscosity of the aqueous polysaccharides by more than 25%. The partially hydrolyzed polysaccharides are useful as thickening agents for flooding water used to recover oil from oil-containing subterranean formations. Write: **PATENT 1,139,698**, 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 19102-1366, U.S.A.

"Sani-Scoop" Tool/326

Pelle sanitaire/326

The "Sani-Scoop" is a manually operated tool for conveniently and quickly picking up dog excrement. It is known to have a trap door which is normally closed when not in use, but will open automatically when in use to allow the dog excrement to pass through and to be received into an attached disposable plastic holding bag. The design of the tool is such that a handle enables the user to place the operating head to the ground just behind the dog excrement to be picked up, whereby the weight of the tool will activate the opening mechanism of the trap door. A forward sweep of the tool by the user will dispose the dog excrement into the disposable plastic holding bag. When the tool is lifted from the ground, the trap door will automatically close and seal off the opening to the holding bag. The faster the forward sweep of the tool, the less chance there will be of dog excrement collecting on the operating head. If some excrement collection does occur, it will be easily removed by first removing the disposable plastic holding bag and then placing the head of the tool into a domestic toilet, whereby one or two flushings will remove any excrement that may have collected. By installing a new disposable plastic holding bag, the tool will then be ready for it's next usage. Write: **PATENT 1,139,802**, Walter Meadows, 3705 Fort Rolland, Apt. 2, Lachine, Quebec H8T 1V8 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.

Limited Maintenance Lead-Acid Battery/326

Accumulateur électrique au plomb à entretien limité/326

Accumulateur au plomb à entretien limité comportant, dans un boîtier fermé de manière non étanche aux gaz, un groupe plongé dans un électrolyte et formé de plaques positives, de plaques négatives et de séparateurs. Une réserve d'électrolyte est prévue au-dessus du groupe et l'intervalle entre une plaque négative et une plaque positive est rempli par un séparateur constitué par au moins une couche microporeuse de fibres non tissées en verre ou en résine synthétique dont les pores ont des diamètres compris entre 100 microns et 600 microns. Application aux batteries de démarrage, de traction, semi-fixes ou stationnaires. Écrire à: **BREVET 1,139,835**, Compagnie Européenne d'Accumulateurs, 16, rue de la Baume, 75008 Paris (France) et faire parvenir une copie de votre correspondance initiale à l'Ambassade du Canada, 35, avenue Montaigne, 75008 Paris (France).

Lead-Acid Battery/326

Accumulateur électrique au plomb/326

Accumulateur électrique au plomb comportant une pluralité d'éléments constitués chacun par une plaque négative, une plaque positive, ayant chacune une hauteur comprise entre 100 mm et 600 mm, et des moyens de séparation intercalés entre elles, comportant un premier et un second séparateurs microporeux, dont l'épaisseur est de l'ordre de 1,5 mm et entre

lesquels des intercalaires définissent des canaux, caractérisé par le fait que l'épaisseur des canaux est comprise entre 0,5 mm et 2 mm, et que la largeur des canaux est comprise entre 2 mm et 10 mm. Écrire à: **BREVET 1,139,836**, Compagnie Générale d'Électricité, 54, rue la Boétie, 75382 Paris, Cédex 08 (France) et faire parvenir une copie de votre correspondance initiale à l'Ambassade du Canada, 35, avenue Montaigne, 75008 Paris (France).

Thermochemical Cyclic System for Splitting Water and/or Carbon Dioxide by Means of Cerium Compounds and Reactions Useful Therein/326

Système thermochimique cyclique pour décomposer l'eau et (ou) le bioxide de carbone à l'aide de composés cériques et de réactions appropriées/326

A thermochemical cyclic process for producing hydrogen from water comprises reacting ceric oxide with monobasic or dibasic alkali metal phosphate to yield a solid reaction product, oxygen and water. The solid reaction product, alkali metal carbonate or bicarbonate, and water, are reacted to yield hydrogen, ceric oxide, carbon dioxide and trialkali metal phosphate. Ceric oxide is recycled. Trialkali metal phosphate, carbon dioxide and water are reacted to yield monobasic or dibasic alkali metal phosphate and alkali metal bicarbonate, which are recycled. The cyclic process can be modified for producing carbon monoxide from carbon dioxide by reacting the alkali metal cerous phosphate and alkali metal carbonate or bicarbonate in the absence of water to produce carbon monoxide, ceric oxide, carbon dioxide and trialkali metal phosphate. Carbon monoxide can be converted to hydrogen by the water gas shift reaction. Write: **PATENT 1,139,922**, 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 19102-1366, U.S.A.

Coal Liquefaction Process/326

Méthode de liquéfaction de la houille/326

A process for hydrotreating coal-derived liquids in which no coking section is required, comprising passing the liquid over a catalyst which is molybdenum or tungsten disulphide on an active carbon support in the presence of hydrogen, at elevated temperature and pressure. The product liquor is substantially hydrocracked with reduced high-boiling residue and increased distillates boiling below 300°C. Write: **PATENT 1,140,063**, Coal Industry (Patents) Limited, Hobart House, Grosvenor Place, London S.W. 1, England and send a copy of your initial correspondence to Commercial Division, Canadian High Commission, One Grosvenor Square, London W1X 0AB, England.

Multicolored Globe Adapted to Make Combinations Between Colors on Multitudinous Directions/326

Globe terrestre polychrome adapté à la combinaison des couleurs en divers sens/326

This invention relates to a globe divided by an equatorial line and by a plurality of symmetrical meridional lines in a plurality of spherical triangles which are grouped on different colors between two poles. Every couple of symmetrical meridians divides the globe in two hemispheres which can be turned so that one hemisphere changes the poles, and also the equator divides the globe in other two hemispheres which can rotate independently. Combining this plurality of spatial rotations disposed on different angles between them, it becomes possible to make arrangements of spherical triangles and to get different symmetrical colored designs according to everyone's ability. Write: **PATENT 1,140,175**, Spiridon Constantinescu, 2085 Islington Avenue, Apt. 1408, Weston, Ontario M9P 3R1 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.

Electromagnet for Moving Iron Objects/326

Électro-aimant pour la prise et le déplacement d'objets en fer/326

The invention relates to an electromagnet for moving iron objects. It is formed with opposing magnetic heads, mounted at the ends of a carrying shaft, to which is also attached a steel cable. The electromagnet can be raised and lowered by means of the cable. The magnetic heads are attached to the shaft by ball joints so that a vertical line drawn from a suspension point in a suspension means for the cable carrying the electromagnet goes pratically straight through the centre of gravity for the magnetic heads and the iron object to be lifted. A very safe lift is therefore obtained when lifting with the electromagnet. Write: **PATENT 1,140,186**, Karl H. Westin, Stockholms Transforming AB, Box 54, S-186 00 Vallentuna, Sweden and send a copy of your initial correspondence to Canadian Embassy, P.O. Box 16129, S-103 23 Stockholm, Sweden.

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NASA

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

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

Azido Esters/326

Esters azido/326

Filed April 21, 1982, by the Department of the Air Force. This invention involves the synthesis of a novel family of azido esters and their utilization as energetic plasticizers for advanced solid propellant compositions. This family includes as an illustrative member, the novel compound 6-axidohexyl-6-azidohexanoate. Write: **PAT-APPL-6-370 235**, NTIS.

High Performance Multifunctional Corrosion Inhibitors/326

Inhibiteurs de corrosion à fonctions multiples et à haut rendement/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed April 21, 1982, by the Department of the Air Force. This document describes a multifunctional corrosion inhibitor consisting essentially of an alkali metal borate, an alkali metal 2 nitrate, an alkali metal nitrite, an alkali meta metasilicate, an alkali metal phosphate, mercaptobenzothiazole and at least one selected surfactant. Write: **PAT-APPL-6-370 236**, NTIS.

Evaluation of Photographic Sensor Overall Performance/326

Évaluation du rendement général d'un senseur photographique/326

Filed May 6, 1982, by the Department of the Air Force. An object of the invention is to provide devices and procedures to produce a multidimensional evaluation of imaging sensor systems. According to the invention, a series of unidimensional measures (geometric, spatial frequency, sharpness, limiting resolution, and operator performance) are obtained and a global describing function is developed, and using multiple regression techniques, to represent system performance. The embodiment described is based on analyzing the capabilities of a photographic reconnaissance camera but can be generalized to apply to any imaging sensor. The invention provides a unique combination of image quality assessment equipment and techniques, together with a means of combining their individual estimates into a single, general describing function. The resultant representation is of immediate utility to system operators, system developers, image interpreters, and image analysts. Write: **PAT-APPL-6-375 623**, NTIS.

Multiconductor Flat Cable and Method and Apparatus for Assembling Same/326

Câble multiconducteur plat et méthode et appareillage pour assembler ce câble/326

Filed May 6, 1982, by the Department of the Air Force. A multiconductor flat cable incorporates an approximately right angle turn in its conductor runs. The right angle turn is provided by first securing the conductor runs in a desired spacing through a first lamination of insulation cover and base sheets while leaving portions of the conductor runs exposed through a window in the first lamination. The first lamination is then severed at the lateral edges of the window so that an end portion of the first lamination may be moved ninety degrees relative to a remaining body portion thereto. The right angle turn is then secured by forming a second lamination with cover and base layers so as to overlap the first lamination and the turn in the conductor runs. Write: **PAT-APPL-6-375 640**, NTIS.

A Quaternary Alloy and Method of Making and Using Same/326

Alliage quaternaire et méthodes de fabrication et d'utilisation/326

Filed May 6, 1982, by the Department of the Air Force. A wide band gap semiconductor alloy having a combination of P, In, Te, and Zn is formed by liquid phase epitaxy on an InP substrate. This alloy can be used for the formation of p-n junctions. Write: **PAT-APPL-6-375 642**, NTIS.

Wideband Linear, Low-Noise CCD Buffer Apparatus/326

Tampon linéaire de dispositif à transfert de charge, à large bande et à faible bruit/326

Filed May 12, 1982, by the Department of the Air Force. A CCD buffer apparatus utilizing a minimally capacitive-loading charge sensing transistor to couple the output from a CCD unit to a constant current source differential amplifier unit. The gain of the differential stage is enhanced by a mirror image MOS enhancement FET pair in the collector circuit of the differential stage. A feedback loop is utilized in the output of the buffer apparatus to aid in signal tracking between the input and the output. Write: **PAT-APPL-6-377 517**, NTIS.

Mounting Arrangement for an Inertial Measurement Unit/326

Dispositif de montage pour instrument de mesure à inertie/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed May 19, 1982, by the Department of the Air Force. In a mounting arrangement for an instrument, such as an inertial measurement unit, a mounting frame is pivotably mounted to a platform for rotation about a vertical axis and a support frame is rotatably mounted to the mounting frame for rotation about a horizontal axis. The support frame supports the instrument. A horizontal lock and motion assembly interconnects the mounting frame and platform, and allows adjustment of the angular position of the mounting frame about the vertical axis relative to the platform when the mounting frame is looked to the platform. A vertical lock and motion assembly interconnects the support frame and mounting frame, and allows adjustment of the angular position of the support frame about the horizontal axis relative to the mounting frame when the support frame is locked to the mounting frame. Write: **PAT-APPL-6-379 806**, NTIS.

Universal Control Grid Modulator/326

Modulation de grille pour commande universelle/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed May 19, 1982, by the Department of the Air Force. High voltage FET's (field effect transistors) are used to modulate a traveling wave tube, which makes it possible to achieve fast rise, fall and delay characteristics, and very long pulsewidths to CW because of their low drive requirements to maintain the on condition. The low and high voltage portions of the modulator are coupled via special transformers having only one or two turns for each winding on torroidal cores. Since such transformers are not adequate for long pulse widths, the gate

to source capacitance of a high voltage FET is charged with a short pulse from one transformer and held there by a blocking diode until it is removed by the off drive. To obtain pulse widths all the way out to CW, a regeneration circuit is incorporated in the low voltage circuitry so that if the commanded on time goes beyond a maximum time, successive pulses are generated to maintain the voltage between gate and source of the on FET. Write: **PAT-APPL-6-379 807**, NTIS.

Reduction of Signal Modulation Caused by Polarization in Visible Optical Scanning Systems/326

Réduction de la modulation du signal due à la polarisation dans les systèmes de balayage optique dans le spectre visible/326

Filed May 26, 1982, by the Department of the Air Force. A method of, and apparatus for, minimizing the polarization modulation effect of an optical scanner system which is in earth orbit and is scanning the earth, where the optical train of the scanner includes a plurality of optically aligned, rotatable, flat folding mirrors having incident angle normals in the same plane, with the mirrors serially reflecting an image acquired by the scanning of the system in orbit. The method includes the steps of rotating the most rearwardly disposed of the mirrors around its vertical geometric axis such that the reflecting surface of the mirror is perpendicular to the impinging image beam, and then rotating the mirror around its horizontal geometric axis such that the angle of incidence of the impinging image beam is of a preselected magnitude. This change in positional relationship results in a novel apparatus which minimize the aforesaid polarization modulation effect. Write: **PAT-APPL-6-382 068**, NTIS.

Three-Stage Binary Coincidence Detector Apparatus with Adaptive Constant False Alarm Rate/326

Détecteur de coïncidences binaire à trois étages et à taux de fausse alarme constant proportionnel/326

Filed May 26, 1982, by the Department of the Air Force. A target processor utilizing a feedback loop to maintain a constant false alarm rate for variable level video input signals with noise or noise plus clutter on the input signal. The processor includes three serially connected stages of binary coincidence detectors which comprise a threshold detector for processing video signals which exceed a threshold level, an M of N detector for providing an alarm for each range gate having a count of M or greater pulses, and a P of Q detector for generating a target alarm after at least P or greater frequencies have been transmitted. Write: **PAT-APPL-6-382 069**, NTIS.

InP:Te Protective Layer for Reducing Substrate Dissociation/326

Couche protectrice de InP:Te permettant de réduire la dissociation du substrat/326

Filed June 25, 1982, by the Department of the Air Force. In order to prevent the formation of indium droplets upon the surface of an indium phosphide wafer during liquid phase epitaxial growth, a doped protective layer is deposited by LPE upon said substrate before epitaxial growth of additional layers occurs. The doped protective layer is composed of indium phosphide doped with tellerium to a concentration of about high 10 to the 18th power to low 10 to the 19th power. Write: **PAT-APPL-6-384 291**, NTIS.

Multiple Double Heterojunction Buried Laser Device/326

Dispositif laser noyé dans plusieurs hétérojonctions doubles/326

Filed June 2, 1982, by the Department of the Air Force. A multiple double heterojunction buried laser device is formed of a bulk structure, a plurality of double heterojunction buried lasers and electrical means. The bulk structure includes, in order, an InP:Sn substrate, an InP:Te first layer, an InP:Zn second layer, an InP:Te third layer, and a capping n-type fourth layer. Multiple stripe-like openings are formed in the above layers and double heterojunction buried lasers are formed therein. The double heterojunction buried lasers include the following layers in order: an InP:Te heterojunction first layer, an InGaAsP quarternary second layer, an InP:Zn heterojunction third layer, and an InGaAsP:Zn capping fourth layer. A reverse biased junction is formed in said bulk structure so that current is confined to the lasers; the active lasing regions are above the p-type layers of the p-n reversed bias junction. The double heterojunction buried lasers can be cleaved from the laser device and operated as a single device. Write: **PAT-APPL-6-384 292**, NTIS.

Linearization of Sample Geiger-Mueller Radiation Detector/326

Linéarisation d'un détecteur de rayonnement Geiger-Mueller à échantillonnage/326

Filed December 14, 1981, by the Department of the Army. In a sample radiation detector including a pulsed Geiger-Mueller detector tube the response to gamma radiation is linearized by providing an additional 'reward' pulse after the second of two adjacent pulses of a pulse train generated from Geiger-Mueller pulses outputted from the detector tube during at least two consecutive sampling time periods and wherein the pulse train is thereafter time averaged to provide a measurement signal which is a linear function of the radiation field strength. Write: **PAT-APPL-6-330 427**, NTIS.

Interference Cancelling System/326 **Système de suppression du brouillage/326**

Filed January 23, 1980, by the Department of the Army. The described system utilizes a pair of antenna beam patterns, one of which is adapted to provide the desired signal and all interfering signals, and the other of which is adapted to provide only the interfering signals. The patterns are then combined to produce substantially only the desired signal as the combined output. This application is a continuation of application Serial Number 114,547, filed 23 January 1980, which is a continuation of application Serial Number 970,017 filed 18 December 1978, both of Frank S. Gutleber entitled 'Interference Canceling System.' The invention described herein may be manufactured and used by or for the Government for governmental purposes without the payment of any royalties thereon or therefor. Write: **PAT-APPL-6-369 200**, NTIS.

Supported Dielectric Waveguide Transmission Line and Components/326 **Ligne de transmission à guide d'ondes diélectrique soutenu et composants associés/326**

Filed July 2, 1982, by the Department of the Army. A dielectric waveguide or other dielectric millimeter wavelength circuit element is bonded to and supported by a dielectric member. In addition to providing a rigid support the support member may also be used as a heat sink. Write: **PAT-APPL-6-394 753**, NTIS.

Planar Doped Barrier Transferred Electron Oscillator/326 **Oscillateur à électrons transférés et à barrière dopée par procédé planar/326**

Filed July 12, 1982, by the Department of the Army. A transferred electron semiconductor device in the form of an oscillator, for example, is fabricated by a molecular beam epitaxy growth process wherein a plurality of semiconductor layers are sequentially grown on a planar substrate. A pair of ohmic contacts are formed on the outer surface of the substrate and the uppermost layer with the resulting structure including two distinct intermediate semiconductor regions, the first being a drift region adapted to exhibit a differential negative resistance due to the transferred electron effect, and the second being a planar doped barrier region for accelerating electrons into the upper valley and injecting them into the drift region. By the use of a planar doped barrier a more uniform electric field is obtained along with a controlled lower barrier height whereby the transfer of electrons to the upper conduction band satellite valley can be made to occur over much shorter times and distances thus extending the upper frequency range of operation. Write: **PAT-APPL-6-397 340**, NTIS.

Multi-Dimensional Quantum Well Device/326 **Dispositif à puits quantiques multi-dimensionnels/326**

Filed July 16, 1982, by the Department of the Army. A superlattice semiconductor device consisting of a plurality of multidimensional charge carrier confinement regions of semiconductor material exhibiting relatively high charge carrier mobility and a low band gap which are laterally located in a single planar layer of semiconductor material exhibiting a relatively low charge carrier mobility and high band gap and wherein the confinement regions have sizes and mutual separation substantially equal to or less than the appropriate deBroglie wavelength. The device, in its preferred form, comprises a thin film of semiconductor material selected from group II-VI or III-V compounds or silicon wherein there is formed laterally located cylindrically shaped periodic regions which are adapted to act as quantum well confinement regions for electrons. Write: **PAT-APPL-6-398 740**, NTIS.

Variable Optical Attenuator/326 **Atténuateur optique variable/326**

Filed July 16, 1982, by the Department of the Army. A device is a fiber optic system for variably attenuating the signal between optical fibers consisting of two fixedly mounted optical fibers and a moveably mounted reflective surface disposed therebetween. Light emitted from the face of the first fiber strikes the reflective surface and is redirected toward the collecting face of the second fiber. That amount of redirected light which will fall incident upon the face of the second fiber, within a predetermined angle to the optical axis of the second fiber will be transmitted through the fiber and be measured by a light detector. By moving the reflective surface calibrated amounts with respect to the faces of the fixed fibers, the amount of light incident of the face of the second fiber, and thereby transmitted, can be varied, measured and controlled. Write: **PAT-APPL-6-399 153**, NTIS.

A Catalytic Coating to Directly Generate Heat Upon the Surface of a Heat Dome/326 **Revêtement catalytique pour la production directe de chaleur sur la surface d'un dôme thermique/326**

Filed April 15, 1981, by the Department of the Interior. The use of a catalytic coating which acts to combine both the heat source and heat-transfer mechanism for a working fluid, such as that used in an external combustion engine. Maximum heat exchange is accomplished by the direct bonding of the coating, per se, to the engine head with a compound of catalytic agents which confines heat of combustion directly thereto. The preferred embodiment of the engine head surface may be

finned or otherwise enlarged to provide for an increased surface area necessary for the heating of the engine head. This means of surface combustion results in a highly fuel-efficient engine and/or heat source with very low exhaust pollutants. Write: **PAT-APPL-6-254 318**, NTIS.

Inflight IFR Procedures Simulator/326

Simulateur embarqué de procédures IFR/326

Filed June 11, 1982, by NASA. An in-flight trainer designed to train students in a conventional aircraft is disclosed. The trainer generates simulated signals and commands to conventional instruments provided in the aircraft that correspond to the normal signals a pilot receives during instrument flight rule (IFR) flights and landing and departure procedures. Results of studies conducted using apparatus which demonstrated the concept indicate that the concept is feasible. Also, students trained using only the In-flight IFR Simulator were more proficient in skills development than those trained using table-top simulators and in aircraft in the conventional manner. Write: **PAT-APPL-6-387 649**, NASA, John F. Kennedy Space Center, Mail Code: SA-PAT, Cocoa Beach, Florida 32899 and send a copy of your initial correspondence to Canadian Consulate General, 900 Coastal States Building, 260 Peachtree Street, N.W., Atlanta, Georgia 30303-1290, U.S.A.

Workpiece Positioning Vise/326

Étau de précision pour pièces à ouvrer/326

Filed March 31, 1982, by NASA. A pair of jaw assemblies simultaneously driven in opposed reciprocation by a single shaft has oppositely threaded sections to automatically center delicate or brittle workpieces such as lithium fluoride crystal beneath the blade of a crystal cleaving machine. Both jaw assemblies are suspended above the vise bed by a pair of parallel guide shafts attached to the vise bed. Linear rolling bearings, fitted around the guide shafts and firmly held by opposite ends of the jaw assemblies, provide rolling friction between the guide shafts and the jaw assemblies. A belleville washer at one end of the drive shaft and thrust bearings at both drive shaft ends hold the shaft in compression between the vise bed, thereby preventing wobble of the jaw assemblies due to wear between the shaft and vise bed. Write: **PAT-APPL-6-364 094**, 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 19102-1366, U.S.A.

Dual Aperture Multispectral Schmidt Objective/326

Objectif de Schmidt multispectral à deux ouvertures/326

Filed May 13, 1982, by NASA. A dual aperture, off-axis catadioptic Schmidt objective is formed by symmetrically aligning two pairs of Schmidt objectives on opposite sides of a common plane. Each objective has a spherical primary mirror with a spherical focal plane and center of curvature aligned along an optic axis laterally spaced apart from the common plane. A multiprison beamsplitter with burned dichoic layers and a convex entrance and concave exit surface optically concentric to the center of curvature may be positioned at the focal plane. The primary mirrors of each objective may be connected rigidly together and may have equal or unequal focal lengths. Write: **PAT-APPL-6-378 535**, 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 19102-1366, U.S.A.

Method of an Apparatus for Measuring Temperature and Pressure/326

Méthode et appareillage pour mesurer la température et la pression/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed May 28, 1982, by NASA. A method and apparatus for making remote temperature and pressure measurements of air are described. For temperature measurements, a main laser beam (probe) is transmitted at a wavelength at which the gas, which may be atmospheric, has a relatively high temperature sensitive resonant absorption characteristic and a relatively low pressure sensitive absorption characteristic. For pressure measurements, the probe laser beam is transmitted at a wavelength at which the gas has a relatively high pressure sensitive absorption characteristic and a relatively low temperature sensitive absorption characteristic. In either case, a reference beam at a wavelength having a relatively non-absorbing temperature or pressure characteristic is transmitted colinearly with the probe beam. The ratio of the two beams returned by a target, which may be particles in the gas, the gas molecules themselves or a solid or liquid reflecting surface, is obtained to cancel the common absorption and scattering effects. Write: **PAT-APPL-6-383 086**, 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 19102-1366, U.S.A.

Polyphenylquinoxalines Containing Pendant Phenylethynyl and Ethynyl Groups/326

Polyphénylquinoxalines contenant des groupements phényléthynyle et éthynyle non liés/326

Filed November 12, 1981, by NASA. A class of high temperature structural resins is obtained by utilizing ethynyl and phenylethynyl groups as a means of ridigizing and crosslinking polymers. These polymers are synthesized from the reaction of aromatic bis(o-diamines) with aromatic bis(alpha-diketones) and aromatic bis(ethynylphenyl-alpha-diketones) or bis(phenylethynylpheny-alpha-diketones). The stoichiometry can be altered to control the amount of pendant ethynyl or phenylethynyl groups and, accordingly, the crosslinked density. As the amount of these groups is increased, the temperature necessary to induce the crosslinking reaction is lowered and the final use temperature of the polymer is raised. The resins obtained have elevated and stability use temperature capabilities. Write: **PAT-APPL-6-320 621**, 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 19102-1366, U.S.A.

Hinged Strake Aircraft Control System/326

Système de pilotage d'aéronef par lisses articulées/326

Filed January 11, 1982, by NASA. Strakes hinged along the fuselage to avoid violent control degradation in the post-stall flight regime are described. Hinged strakes are deflected from the conventional position coplanar with wings to an anhedral setting to increase controllability at high angles of attack by decreasing projected plan area, and altering vortex flow characteristics. As a result, effective lift on wings can be maintained at higher angles of attack than is possible with conventional strakes. The hinged strakes are retracted flush against the fuselage in high speed cruise flight to avoid drag effects. In an alternate mode of operation, strakes can be asymmetrically deployed to create a rolling that enhances roll control, and a side force that counters aircraft nose-slice and directional divergence. Write: **PAT-APPL-6-338 387**, 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 19102-1366, U.S.A.

Method for Determining the Point of Zero Zeta Potential of Semiconductor Materials/326

Méthode pour déterminer le point de potentiel zéta nul de semiconducteurs/326

Filed March 31, 1982, by NASA. A method for determining the potential of zero charge of an unpowdered semiconductor material is discussed. The semiconductor material is used as the working electrode of a standard three-electrode photoelectrochemical cell. The onset potential of the semiconductor material is measured at several different cell temperatures. The slope of the graph of onset potential versus temperature is used to compute the potential of zero charge. Write: **PAT-APPL-6-364 041**, 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 19102-1366, U.S.A.

Vertical Shaft Windmill/326

Éolienne à axe vertical/326

Filed May 28, 1982, by NASA. A vertical shaft windmill that automatically controls its maximum rotational speed in high winds is disclosed. Several equally spaced blades are mounted on the vertical shaft. Each blade consists of an inboard section attached to the shaft and an outboard section skew hinged to the inboard section. The outboard sections automatically adjust their positions with respect to the fixed inboard sections with changes in velocity of the relative wind. When the wind reaches a certain velocity the inboard sections and the outboard sections form flat surfaces. Hence, any further increase in the wind velocity will not increase the rotational speed of the shaft. With the outboard sections in downward positions any abrupt changes in wind will move most of the outboard sections upward releasing part of the load and protecting the windmill. Write: **PAT-APPL-6-383 063**, 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 19102-1366, U.S.A.

Heads Up Display/326

Collimateur de pilotage/326

Filed May 28, 1982, by NASA. A heads up aircraft display which allows the pilot to view the display without diverting his attention from the scene ahead is disclosed. The display is designed for use on propeller driven aircraft comprised of a radially disposed row of lamps embedded in the rear surface of a propeller. Measurements of flight data are made by conventional means and converted into digital signals. These digital signals are applied to graphic generators which control lamp drivers which in turn control lamps through slip rings. The lamps are lit at the appropriate times during each revolution of the propeller to display the flight data in graphic form to the pilot. The combination of graphic generators and radially disposed lamps embedded in an aircraft propeller enables the pilot to view the display without diverting his attention from the scene ahead. Write: **PAT-APPL-6-383 384**, 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 19102-1366, U.S.A.

Self-Locking Mechanical Center Joint/326

Joint central mécanique autobloquant/326

Filed June 11, 1982, by NASA. A device for connecting, rotating and locking together a pair of structural half-columns is described. The present embodiment comprises a pair of cylindrical hub assemblies connected at their inner faces by a spring loaded hinge; each hub assembly as a structural half column attached to its outer end. Each hub assembly includes a cylindrical hub and a locking ring moveably attached around the hub's hinged end. Each locking ring has a plurality of 'L' shaped teeth projecting outward perpendicularly from its circumference and is attached around the hub subject to the force of a spring connected to both the ring and hub. Each cylindrical hub has a latch mechanism for holding each locking ring in a rotated position against the force of the spring and a hammer mechanism for disengaging the latch mechanism on the opposing hub when the hubs are rotated together. The structural half columns connected to the hinged pair of hub assemblies are stored so that the hub assemblies are rotated away from each other and are subject to the force of their spring loaded hinge. Write: **PAT-APPL-6-387 646**, 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 19102-1366, U.S.A.

Directional Gear Ratio Transmission/326

Boîte de vitesses à surmultiplication directionnelle/326

Filed June 11, 1982, by NASA. Epicyclic gear transmissions which transmit output at a gear ratio dependent only upon the input's direction are considered. A transmission housing envelops two epicyclic gear assemblies, and has shafts extending from it. One shaft is attached to a sun gear within the first epicyclic gear assembly. Planet gears are held symmetrically about the sun gear by a planet gear carrier and are in mesh with both the sun gear and a ring gear. Two unidirectional clutches restrict rotation of the first planet gear carrier and ring gear to one direction. A connecting shaft drives a second sun gear at the same speed and direction as the first planet gear carrier while a connecting portion drives a second planet gear carrier at the same speed and direction as the first ring gear. The transmission's output is then transmitted by the second ring gear to the second shaft. Input is transmitted at a high gear ratio and lower speed for all inputs in the first direction than in the opposite direction. Write: **PAT-APPL-6-387 728**, 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 19102-1366, U.S.A.

Hermetically Sealable Package for Hybrid Solid-State Electronic Devices and the Like/326

Boîtier étanche pour dispositifs à semiconducteur hybrides et composants semblables/326

Filed June 25, 1982, by NASA. A light weight, inexpensively fabricated, hermetically sealable, repairable package for small electronic or electromechanical units, having multi connections is described. A moulded ring frame of polyamide-imide plastic (Torlon) is attached along one edge to a base plate formed of a highly heat conducting material, such as aluminum or copper. Bores are placed through a base plate within the area of the edge surface of ring frame which result in an attachment of the ring frame to the base plate during moulding. Electrical leads, are moulded into the ring frame. The leads are L shaped gold plated copper wires imbedded within widened portions of the side wall of the ring frame. Within the plastic ring frame wall the leads are bent (typically, although not necessarily at 90 deg.) so that they project into the interior volume of the ring frame for connection to the solid state devices. Write: **PAT-APPL-6-392 093**, 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 19102-1366, U.S.A.

Slow Opening Valve/326

Soupape à ouverture lente/326

Filed June 25, 1982, by NASA. A control mechanism for an oxygen shut off valve is described. The control mechanism for the valve minimizes the rate of flow when opening is initiated, increases the rate of flow after the system is pressurized, provides adjustable operating torque, and provides additional stops to prevent overtorquing and is independent of the number of turns or pitch. To accomplish this, a shut off valve for the portable oxygen system for the shuttle orbiter has a cylindrical actuator handle connected to a differentially threaded sleeve member which is connectively attached to a ball valve via valve stem having a cup shaped plunger with aligned slots, and nonrotating screw. Write: **PAT-APPL-6-392 104**, 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 19102-1366, U.S.A.

Reusable Captive Blind Fastener/326

Attache prisonnière réutilisable/326

Filed August 14, 1981, by NASA. A one piece reusable fastener capable of joining materials together from one side (blind backside) comprises a screw driven pin ending in a wedge-shaped expander cone. The cone cooperates within a slotted collar end which has a number of tangs on a cylindrical body. The fastener is set by inserting it through aligned holes in the workpieces to be joined. Turning the pin in one direction draws the cone into the collar, deforming the tangs radially

outward to mate with tapered back-tapered hold in the workpiece, thus fastening the two pieces together. Reversing the direction of the pin withdraws the cone from the collar, and allows the tangs to resume their contracted configuration without withdrawing the fastener from the insertion hole. The fastener is capable of joining materials together from only one side with substantial strength in tension and shear over many reuse attachment cycles, with no special operations on the main assembly parts other than the tapering of the back end of the insertion hole. Write: **PAT-APPL-6-293 417**, NASA, Lyndon B. Johnson Space Center, Mail code: AM, Houston, Texas 77058 and send a copy of your initial correspondence to Canadian Consulate, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201-3051, U.S.A.

Moisture Content and Gas Sampling Device/326

Appareil permettant de doser l'humidité et des contaminants gazeux/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed February 19, 1982, by NASA. An apparatus and method for measuring minute quantities of moisture and other contaminants within sealed enclosures such as electronic assemblies which may be subject to large external atmospheric pressure variations is described. An array of vacuum quality is arranged to permit cleansing of the test apparatus of residual atmospheric components from a vacuum source. This purging operation evacuates a gas sample bottle, which is then connected by valve settings to provide the drive for withdrawing a gas sample from the sealed enclosure under test into the sample bottle through a colometric detector tube (Drager tube) which indicates moisture content. The sample bottle may be disconnected and its contents (drawn from the test enclosure) separately subjected to mass spectrograph analysis. Write: **PAT-APPL-6-350 471**, NASA, Lyndon B. Johnson Space Center, Mail Code: AM, Houston, Texas 77058 and send a copy of your initial correspondence to Canadian Consulate General, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201-3051, U.S.A.

Television Camera Video Level Control System/326

Système de commande du niveau vidéo d'une caméra de télévision/326

Filed April 9, 1982, by NASA. A video level control system is provided which generates a normalized video signal for a camera processing circuit. The video level control system includes a lens iris which provides a controlled light signal to a camera tube. The camera tube converts the light signal provided by the lens iris into electrical signals. A feedback circuit in response to the electrical signals generated by the camera tube, provides feedback signals to the lens iris and the camera tube. This assures that a normalized video signal is provided in a first illumination range. An automatic gain control loop, which is also responsive to the electrical signals generated by the camera tube, operates in tandem with the feedback circuit. This assures that the normalized video signal is maintained in a second illumination range. Write: **PAT-APPL-6-367 132**, NASA, Lyndon B. Johnson Space Center, Mail Code: AM, Houston, Texas 77058 and send a copy of your initial correspondence to Canadian Consulate General, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201-3051, U.S.A.

Apparatus for Releasably Connecting First and Second Objects in Predetermined Space Relationship/326

Appareillage pour arrimer un premier objet à un second et les séparer dans un espace prédéterminé/326

Filed April 14, 1982, by NASA. Apparatus for allowing remote control of undocking and redocking of a space experiment vehicle to a supporting spacecraft is described. Write: **PAT-APPL-6-368 189**, NASA, Lyndon B. Johnson Space Center, Mail Code: AM, Houston, Texas 77058 and send a copy of your initial correspondence to Canadian Consulate General, 2001 Bryan Tower, Suite 1600, Dallas, Texas 75201-3051, U.S.A.

Triac Failure Detector/326

Détecteur de défaillances des triacs/326

Filed November 30, 1981, by NASA. Failure detection circuits used to detect unidirectional failures in Triacs, particularly as used in power factor controllers for induction motors, are described. A schematic circuit diagram of a power factor controller for a motor which includes two Triacs is presented. The failure detection circuit includes an operational amplifier and associated circuitry which produces a predetermined output responsive to detecting an unbalanced load voltage signal. A comparator turns the Triacs full on in both directions in response to such an output. A second schematic is presented, which includes a pair of operational amplifiers which receive phase difference inputs from the terminals and a comparator which turns the Triacs full on in response to a predetermined output from the amplifiers. Waveforms associated with both applications are illustrated. An open circuit failure detector which turns the Triacs off in response to a predetermined output from the circuits is illustrated. The device provides failure detection circuitry for detecting failure of a Triac in either the positive or negative direction, thus improving the performance of power factor controllers in which such Triacs are used. Write: **PAT-APPL-6-325 886**, 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, N.W., Atlanta, Georgia 30303-1290, U.S.A.

Device for Determining Frost Depth and Density/326

Dispositif pour déterminer la profondeur et la densité et la profondeur du frimas/326

Filed March 13, 1982, by NASA. A hand held device having a forward open window portion adapted to be pushed downwardly into the frost on a surface, and a rear container portion adapted to receive the frost removed from the window area are described. A graph on a side of the container enables an observer to determine the density of the frost from certain measurements noted. The depth of the frost is noted from calibrated lines on the sides of the open window portion. Write: **PAT-APPL-6-359 626**, 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, N.W., Atlanta, Georgia 30303-1290, U.S.A.

High Pressure Fluid Gas Mixture Flushing of Passageways/326

Rinçage de passages au moyen d'un mélange liquide de gaz haute pression/326

Filed April 23, 1982, by NASA. A process for the removal of contamination from small passageways, such as are present in combustion chambers and fuel injectors of liquid fueled rocket engines, is described. High pressure water is introduced through main conduit into the passage of a component. Higher pressure gas is introduced into the water flow through secondary conduit before the water enters the passage, in an amount to cause intense vibration and agitation of the water flow. A normal range of water pressure in the main conduit is from 100 to 600 psig and the gas is introduced into the main conduit at a pressure 100 to 200 psig higher than the water pressure. Write: **PAT-APPL-6-371 350**, 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, N.W., Atlanta, Georgia 30303-1290, U.S.A.

Solar Powered Actuator with Continuously Variable Auxiliary Power Control/326

Moteur solaire et commande à variation continue de la puissance auxiliaire/326

Filed May 6, 1982, by NASA. A solar powered system in which a load such as a compressor is driven by a main induction motor powered by a solar array, and an auxiliary motor shares the load with the solar powered motor in proportion to the amount of sunlight available is provided with a powered factor controller for regulating voltage applied to the auxiliary motor in accordance with the loading on that motor. In one embodiment, when sufficient power is available from the solar cell array, the auxiliary motor is driven as a generator by excess power from the main motor so as to return electrical energy to the power company utility lines. Write: **PAT-APPL-6-375 684**, 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, N.W., Atlanta, Georgia 30303-1290, U.S.A.

A DC to DC Converter/326

Convertisseur c.c. à c.c./326

Filed May 28, 1982, by NASA. A rectangular wave signal generated by a high frequency oscillator is divided down to a selected frequency by divider and then fed to a ring counter which develops six square wave signals varying in time by 30 deg. Each of these signals is then amplified and fed to one of six output transformers, each of which has an S(1) winding and an S(2) winding. The S(1) series set of windings are connected in series to form a second set. The two sets are connected in series in a closed loop or circle. The various phased signals are combined via a first rectifier in the form of an SCR, connected between a terminal at each two windings of the series and the direct current positive output terminal. A rectifier is connected from the same terminal point to the zero or negative terminal of the output. By varying the turn on time of the SCRs as a function of the output voltage, output voltage can be regulated. Write: **PAT-APPL-6-383 083**, 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, N.W., Atlanta, Georgia 30303-1290, U.S.A.

Method for the Preparation of Thin-Skinned Asymmetric Reverse Osmosis Membranes and Products Thereof/326

Méthode de préparation de membranes asymétriques minces pour l'osmose inversée/326

Filed June 25, 1982, by NASA. A method for preparing water insoluble asymmetric membranes from water soluble polymers is discussed. The process involves casting a film of the polymer, momentarily partially drying it and then contacting it with a concentrated solution of a transition metal salt. The transition metal ions insolubilize the polymer and are believed to form a complex with it. Optionally, thereafter, the polymer is crosslinked with heat or radiation. The most preferred polymer is poly(vinyl alcohol). The most preferred complexing salt is copper sulfate. The process and the metal-ion linked membranes are discussed. The membranes are reverse osmosis membranes. Write: **PAT-APPL-6-392 092**, 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.

Method and Apparatus for Producing Concentric Hollow Spheres/326

Méthode et appareillage pour produire des sphères creuses concentriques/326

Filed September 18, 1981, by NASA. Hollow spheres with precisely concentric inner and outer spherical surfaces are formed by applying vibrations to a nonconcentric hollow sphere while it is at an elevated temperature at which it is fluid or plastic. The vibrations produce internal flows which cause the inner and outer surfaces to become precisely concentric. Concentric spheres can be mass produced by entruding a material such as glass or metal while injecting a stream of gas into the center of the extrusion to form a gas filled tube. Vibrations are applied to the extruded tube to help break it up into bodies tending to form spherical inner and outer surfaces by reason of surface tension, and the continuing application of vibrations causing these surfaces to become concentric. Write: **PAT-APPL-6-303 671**, 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 Solvent Coal Extraction/326

Extraction supercritique du charbon à l'aide d'un solvant/326

Filed November 17, 1981, by NASA. Yields of soluble organic extract are increased up to about 50% by the supercritical extraction of particulate coal at a temperature below the polymerization temperature for coal extract fragments (450°C) and a pressure from 500 psig to 5,000 psig by the conjoint use of a solvent mixture containing a low volatility, high critical temperature coal dissolution catalyst such as phenanthrene and a high volatility, low critical temperature solvent such as toluene. Write: **PAT-APPL-6-322 312**, 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.

Electrodes for Solid State Devices/326

Électrodes pour dispositifs à l'état solide/326

Filed November 22, 1982, by NASA. The invention relates to coated metal powders and to dispersions of such powders in liquid vehicles forming screenable, sinterable pastes for use in forming electrodes on photovoltaic devices. The primary nickel or copper metal particles are provided with a carrier of lower melting sintering metals such as 1-20% by weight, of a non-oxidizing metal such as lead or tin. The powdered metal systems operate on the basis of fusing together by way of eutectic alloying. As the paste is heated during firing the organic binder is first vaporized. A eutectic of the base metal (copper) and coating (tin) forms at the intersections of the base metal grains. This eutectic dissolves the grains and as the temperature is raised above the eutectic temperature, more of the base metal is dissolved. While the temperature is held at the higher value, the much smaller amount of sintering metal disappears as the eutectic dissolves and diffuses into the base metal until the composition of the eutectic is so enriched with base metal that it no longer has the eutectic properties and it solidifies. In this high temperature solidification, the base metal grains became thoroughly alloyed together and will not separate at the eutectic temperature (a lower temperature than their solidification by diffusion). Write: **PAT-APPL-6-325 083**, 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 Delta K Synthetic Aperture Radar Measurement of Ocean Current/326

Méthode et dispositif de mesure du delta K des courants océaniques par radar à ouverture synthétique/326

Filed March 18, 1982, by NASA. A synthetic aperture radar is employed for delta k measurement of ocean current from a spacecraft without the need for a narrow beam and long observation times. The SAR signal is compressed to provide image data for different sections of the chirp bandwidth, equivalent to frequencies f sub 1 (ta,t), f sub 2 (ta,t), f sub n (ta,t) and a common area for the separate image fields is selected. The image for the selected area at each frequency is deconvolved to obtain the image signals for the different frequencies (f, sub 1, f sub 2, f sub m) and the same area. A product of pairs of signals is formed, Fourier transformed and squared. The spectrum thus obtained for different areas for the same pair of frequencies f sub jk, f sub j + n,k are added to provide an improved signal to noise ratio. The shift of the peak from the center of the spectrum is measured and compared to the expected shift due to the phase velocity of the Bragg scattering wave. Any difference is a measure of current velocity v sub c. Write: **PAT-APPL-6-359 382**, 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 Levitation Methods and Apparatus/326

Méthodes et dispositifs de lévitation acoustique/326

Filed March 31, 1982, by NASA. Methods are described for acoustically levitating objects within chambers of spherical and cylindrical shape. The wavelengths for chambers of particular dimensions are given, for generating standing wave patterns of any of a variety of modes within the chambers. For a spherical chamber the lowest resonant mode is excited by applying a wavelength of 3.02R, where R is the chamber radius. The two lowest pure radial modes for that chamber, are excited by applying wavelengths of 1.40R and 0.814R. For a cylindrical chamber of radius R, the lowest mode is at a wavelength of 3.41R, and the lowest pure radial modes are at wavelengths of 1.64R and 0.896R. Write: **PAT-APPL-6-364 097**, 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.

Spectrophone Stabilized Laser with Line Center Offset Frequency Control/326

Laser à stabilisation spectrophonique pour commander le déphasage en fréquence par rapport au centre de la raie d'absorption/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed March 31, 1982, by NASA. Continuous offset tuning of a frequency stabilized cw gas laser is achieved by using a spectrophone filled with the same gas as the laser for sensing a dither modulation and detecting a first or second derivative of the spectrophone output with a lock in amplifier. The detected output is integrated, and the integrator output is applied as a correction signal through a circuit which adds to the dither signal from an oscillator. A dc offset is a adjusted with a potentiometer to a frequency offset from the absorption line center of the gas, but within the spectral linewidth of the gas. Tuning that offset frequency is achieved by adding a dc value (B2) to the detected output of the dither modulation before integration using a potentiometer. Write: **PAT-APPL-6-364 126**, 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.

Epitaxial Thinning Process/326

Processus d'amincissement de couche épitaxiale/326

Filed April 6, 1982, by NASA. A method is described for thining an epitaxial layer of a wafer that is to be used in producing diodes having a specified breakdown voltage and which also facilitates the thinning process. Current is passed through the epitaxial layer, by connecting a current source between the substrate of the wafer and an electrolyte in which the wafer is immersed. When the wafer is initially immersed, the voltage across the wafer initially drops and then rises at a steep rate (from 56 to 58). When light is applied to the wafer the voltage drops (from 60 to 62), and when the light is interrupted the voltage rises again (from 66 to 68). These changes in voltage, each indicate the breakdown voltage of a Schottky diode that could be prepared from the wafer at that time. Write: **PAT-APPL-6-366 103**, 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.

Process and Apparatus for Growing a Crystal Ribbon/326

Méthode et appareillage permettant de fabriquer un ruban cristallin/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed April 23, 1982, by NASA. A low cost process for growing crystalline ribbons of silicon which are well suited for use in photovoltaic cells and operate at a relatively high rate of efficiency was developed. Two edge defining members are stationarily mounted relative to a container and to each other and are partially submerged in the molten silicon held in the container. The fixedly mounted edge defining members break the surface of the melt at a predetermined distance from each other. The predetermined distance substantially corresponds to the width of the crystal ribbon to be grown. The edge defining members are made of a material such as quartz or graphite, which is wettable by molten silicon. Write: **PAT-APPL-6-371 351**, 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.

Wideband Passive Synthetic-Aperture Multichannel Receiver/326

Récepteur multivoie à large bande et à ouverture synthétique passive/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed May 5, 1982, by NASA. The receiver is in a satellite which makes repeated sweeps over the oceans. As it travels along its track, an antenna is swept back and forth at a selected swath width. From each incremental area (pixel) of the ocean surface, Px-Pz signals are received as a function of the sea temperature. The receiver includes a plurality of channels each tuned to a different frequency. The outputs of the channels are fed to

a processor of the receiver and stored. A formula is generated for use in determining the sea temperature at each pixel, remote from the calibration areas. The receiver can be used to measure air temperature, air pressure and wind direction at each pixel. Write: **PAT-APPL-6-375 620**, 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 Particle Separation/326

Séparation acoustique de particules/326

Filed May 19, 1982, by NASA. A method for separating particles according to a particular property such as size, density, shape, or magnetic or electrostatic properties is described. The particles are passed through a chamber while resonant acoustic energy is applied along a chamber dimension such as its height H. The acoustic standing wave pattern urges particles toward the center of an acoustic well of the pattern, such as the center of the chamber height at 36. At the same time a nonacoustic force such as gravity urges the particles away from the center of the well. Particles are distributed within a levitation region according to a particle property. For example, with particles of the same material but different size, large particles lie in an area near the bottom of the levitation region, while the smallest particles lie in an area near the top of the levitation region. Write: **PAT-APPL-6-379 601**, 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.

Wind and Solar Powered Turbine/326

Turbine mue par le vent et le soleil/326

Filed May 19, 1982, by NASA. An efficient, cost effective wind and solar driven power generating station is described. It is well adapted for satisfying the electrical power requirements of a relatively small community located in a geographic area having favorable climatic conditions for solar and wind driven power generation. The disc shaped structure is mounted in an elevated position relative to the ground to expose it to the prevailing wind and solar radiation. The structure includes a first plurality of radially extending air passages which direct ambient wind to a radial flow turbine located in an opening in the center of the structure. A solar radiation absorbing surface which has black bodies is disposed over the first plurality of air passages. Write: **PAT-APPL-6-379 602**, 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.

Saltless Solar Pond/326

Étang solaire non salin/326

Filed May 28, 1982, by NASA. A specifically-designed honeycomb structure is placed on the surface permits penetration of short wave solar radiation into the water, but efficiently insulates the resulting heated body of water from losing heat to the atmosphere by conduction, convection or infrared radiation. The honeycomb structure includes several honeycomb panels which are mounted adjacent to one another in a modular fashion to float on the surface of the water. Each honeycomb panel includes a multitude of honeycomb cells having a height-to-width or aspect ratio of at least approximately 14 to 1. The honeycomb cells effectively suppress convection of air in the panels. A radiation shield, comprising a cross-plate mounted substantially in the midsection of each cell, significantly reduces heat losses by infrared radiation. Write: **PAT-APPL-6-383 068**, 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.

Arrangement for Damping the Resonance in a Laser Diode/326

Montage pour amortir la résonance dans une diode laser/326

Filed June 4, 1982, by NASA. A novel arrangement for damping the resonance of a laser diode is described. The arrangement includes an additional layer which together with the conventional laser diode form a structure of a bipolar transistor. The additional layer serves as the collector, the cladding layer next to it as the base, and the active region and the other cladding layer as the emitter. A capacitor is connected across the base and the collector. At any frequency above a certain selected frequency which is far below the resonance frequency, the capacitor impedance is very low, effectively shorting the base to the collector. The capacitor is a discrete component external to the laser structure or formed as part of a monolithic structure including the laser diode and the additional layer. Write: **PAT-APPL-6-385 220**, 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 Transfer Function Simulator for Testing Complex Systems/326

Méthode et appareillage pour simulateur de fonctions de transfert destiné à l'essai de systèmes complexes/326

Price per copy from NTIS: PC U.S. $7.50/MF U.S. $4.00, filed June 11, 1982, by NASA. A method and apparatus for testing the operation of a complex stabilization circuit in a closed-loop system are described. A programmed analog or digital computing system for implementing the transfer function of a load, thereby providing a predictable load, comprises the method. The digital computing system employs a table stored in a microprocessor in which precomputed values of the load transfer function are stored for values of input signal from the stabilization circuit over the range of interest. Write: **PAT-APPL-6-387 647**, 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.

Improved Ingot Slicing Machine/326

Machine à trancher les lingots améliorée/326

Filed June 11, 1982, by NASA. A method and apparatus for simultaneously slicing one or a multiplicity of silicon boules into wafers is described. One embodiment has vertical stacks of horizontal, mutually spaced, coaxially aligned juxtaposed cutting blades; a drive for simultaneously rotating the blades; and an even plurality of chucks adapted to hold axially erect silicon boules. The chucks are disposed in pairs diametrically spaced on opposite sides of the blades for synchronous translation of the boules toward and away from the blades to balance stresses imposed on the blades in slicing off the wafers. Also a drive is used for simultaneously rotating the boules as they are positioned. Each blade is characterized by having a cutting diameter slightly greater than the cutting diameter of the blade arranged immediately above it. Write: **PAT-APPL-6-387 648**, 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 Concentrator Protective System/326

Système de protection pour concentrateur solaire/326

Filed June 25, 1982, by NASA. A mechanism that blocks concentrated sunlight from reaching a receiver, in the event of a tracking failure or loss of coolant is described. Sunlight is normally concentrated by a dish reflector onto the opening of a receiver. A faceplate surrounds the opening, and coolant carrying tubes, line the receiver. If the concentrated sunlight wanders so it begins to fall on the faceplate, then the sunlight will melt a portion of a fuse wire and break the wire. Similarly, if there is no coolant in tubes, the wire portion will break. The wire is attached to a flange on a shutter frame, and breaking of the fuse wire allows the frame to fall. Normally, the shutter frame supports shutter elements that are held open by cam followers that bear against cams. Write: **PAT-APPL-6-392 103**, 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.

Ellipticized Acoustic Lens Providing Balanced Astigmatism/326

Lentille acoustique en ellipse permettant d'obtenir un astigmatisme équilibré/326

Filed April 7, 1980, by the Department of the Navy. An ellipticized singlet azimuth versus elevation optimized and aperture extremized nonspherical acoustic lens antenna of very low or even minimal F-number providing balanced astigmatism for wide angle acoustical applications in underwater sound is described. The acoustic lens has an elliptical periphery and surfaces defined by a system of nonlinear partial differential equations, the surfaces acting together to produce two perfect primary off-axis foci F and F′ at a finite distance in back of the lens and two perfect conjugate off-axis foci F sub infinity and F′ sub infinity in front of the acoustic lens at infinity; i.e., the lens simultaneously focuses energy from the primary foci F and F′ into two off-axis parallel ray plane wave sonic beams directed towards infinity at equal but opposite angles with respect to the acoustic lens axis. The acoustic lens may be built of various materials such as Sylgard rubber RTV 3120 or as a liquid filled thin metal walled shell lens using the liquid filling any suitable organic or inorganic liquid such as carbon tetrachloride, fluorolube or certain liquid metal mixtures. Write: **PAT-APPL-6-138 013**, NAVY.

A Method for Forming Gamma-Boron/326

Méthode de préparation de bore gamma/326

Filed July 20, 1981, by the Department of the Navy. This report describes a plasma-spray technique using rapid temperature quenching transforms commercially available beta-rhombohedral boron in powder form into thick, dense wafers or crystalline gamma-tetragonal boron. Write: **PAT-APPL-6-284 848**, NAVY.

Linear Frequency Sweep Generator for Continuous Transmission FM Sonar/326

Générateur de balayage linéaire pour sonar FM à émission continue/326

Filed October 2, 1981, by the Department of the Navy. This invention relates to continuous transmission frequency modulated (CTFM) echo ranging systems, and more particularly to sonic ranging systems which produce a continuous target indication. Write: **PAT-APPL-6-307 923**, NAVY.

Self-Shoring Adhesive System/326

Adhésif auto-étayant/326

Filed October 23, 1981, by the Department of the Navy. A self-shoring adhesive system is provided for adhering rubber to steel in a marine environment. The adhesive composition is comprised of a DGEBA-type epoxy resin cured near stoichiometry with a polyamide resin and filled with a mixture of carbon black and a fumed colloidal silica. Write: **PAT-APPL-6-314 334**, NAVY.

Method for Making Radially Compliant Line Array Hose/326

Méthode de fabrication de tuyau souple à réseau de plis radiaux/326

Filed November 27, 1981, by the Department of the Navy. A radially compliant acoustic line array hose with improved toughness and wear resistance, suitable for use in towed acoustical line array sonars. The hose comprises a long extruded cylindrical tubing of a soft flexible grade of geophysical plasticized polyvinyl chloride material with longitudinal ribs of a stiffer, harder grade of geophysical plasticized polyvinyl chloride material located at or near the tubing surface, and spaced uniformly around the circumference of the tubing. The ribs are melt-bonded to the softer thermoplastic material while each is in their respective melt stages during the extrusion process. Write: **PAT-APPL-6-325 419**, NAVY.

Small Diameter, Low Frequency Multimode Hydrophone/326

Hydrophone basses fréquences multimode de faible diamètre/326

Filed November 30, 1981, by the Department of the Navy. Document describes a multimode hydrophone of small diameter and low weight providing dipole directivity patterns over a decade range of low frequencies by utilizing a pair of orthogonal dipole signals and a nondirectional reference signal to eliminate directional ambiguity. Each multimode hydrophone is a thin wall tube divided electrically into quadrants which permits differencing of opposing halves to produce signals with dipole directivity patterns and the formation of a nondirectional reference signal by summing all four quadrants. The hydrophone tube comprises inert and piezoelectric materials, selected and combined so as to shift the resonant frequency of the tube lower while keeping the overall tube diameter as small as possible. Write: **PAT-APPL-6-326 303**, NAVY.

Thermal Insulated Duct Support/326

Support de canalisation à isolation thermique/326

Filed January 19, 1982, by the Department of the Navy. A sleeve to which further support or bracket means may be connected, surrounds the duct. The sleeve and duct each have retaining angles welded on their inner and outer surfaces, respectively. Pairs of the angles are adjacent and have a thermal insulating ring held tightly between them through which duct support loads are distributed. Write: **PAT-APPL-6-340 679**, NAVY.

Nitropolyformals/326

Nitropolyformals/326

Filed January 29, 1982, by the Department of the Navy. Nitropolyformals of the formula H(OCH2C(NO2)2ZC(NO2)2CH2OCH2(OCH2C(NO2)2ZC(NO2)2CHOH wherein Z is -CH2-, -CH2CH2-, -CH2CH2CH2-, -CH20CH2-, or -CH2NHCH2- and wherein the average molecular weight of the nitro-polyformal molecules if from about 1,000 to about 50,000, the nitropolyformals are prepared by reacting a diol of the formula HOCH2C(NO2)2ZC(NO2)2CH20H, wherein Z is defined as above, with formaldehyde in the presence of concentrated sulfuric acid. These polymers are useful as energetic binders in explosives and propellants. Write: **PAT-APPL-6-343 810**, NAVY.

Broad Bandwidth Composite Transducers/326

Transducteur composite à largeur de bande étendue/326

Filed January 29, 1982, by the Department of the Navy. A broad bandwidth electro-mechanical transducer is described wherein the transducer is shaped into a wedge of varying thickness wherein a plurality of PZT elements or sheets are embedded in an inactive polymer. The transducer is driven at frequencies corresponding to resonance of the thickness dimensions. The piezoelectric elements with different thicknesses are decoupled mechanically from one another using an inactive polymer of low Q so as to prevent interference. Write: **PAT-APPL-6-344 098**, NAVY.

Low Loss Buoyant Coaxial Cable/326

Câble coaxial flottant à perte minime/326

Filed February 1, 1982, by the Department of the Navy. A low loss buoyant coaxial cable has its buoyant material placed between its conductors to allow for maximum cable cross section for electrical transmission. In addition, the strength members are placed radially inward of the center conductor to reduce wearing of the strength members and keeping the electrical performance independent of the electrical properties of the strength members. An alternate embodiment has buoyant material centrally located and the strength members placed with buoyant material between the coaxial conductors. Write: **PAT-APPL-6-344 417**, NAVY.

Aircraft Loading Adapter for Use with Ordnance Lift Vehicle/326

Berceau adaptable à un véhicule de chargement de munitions d'aéronef/326

Filed March 29, 1982, by the Department of the Navy. The patent application describes an adapter for use with lift forks or the like of a lift truck to allow very accurate positioning of ordnance and the like for attachment to aircraft. The adapter comprises a base which is supported or secured to the lift forks and includes an ordnance load carrying cradle means carried on a trolley mechanism that allows degrees of freedom in the fore/aft and lateral directions. Write: **PAT-APPL-6-363 349**, NAVY.

A Digital Compass Having a Ratiometric Bearing Processor/326

Compas numérique à processeur de relèvement logométrique/326

Filed May 10, 1982, by the Department of the Navy. A digital compass is described including a two-axis earth's magnetic field sensor and a bearing processor computes the bearing for local display or transmission from a remote site to a local site for display and/or storage. The bearing processor portion of the digital compass includes an analog-to-digital converter configured for ratiometric measurements to compute the ratio of the x-axis and y-axis signals (smaller divided by the larger) from the aforementioned two-axis earth's magnetic field sensor. A programmable memory unit controlled, inter alia, by the data line outputs of the analog-to-digital converter, contains the arc tangent function for angles from 0 to 90 degrees. The data line outputs from the memory unit defines a quadrant displacement angle in the range of 0 degrees to 90 degrees which is subsequently added to the cardinal point forming the lower boundary in bearing of the host quadrant. Write: **PAT-APPL-6-376 474**, NAVY.

P2 Polyphase Code Expander-Compressor/326

Extenseur-compresseur du code polyphasé P2/326

Filed May 11, 1982, by the Department of the Navy. Document describes a pulse expansion and compression system, especially useful for radar ranging, comprising a pulse coder for expanding an input pulse and a pulse compressor of the matched-filter type. The coder consists of a plurality of delay stages into which the input pulse is fed, a discrete Fourier transform (DFT) circuit to which the output signals of the delay stages are fed by way of respective phase weights and for which every frequency port is phase-shifted prior to entry to a time-dispersion-means (TDM) comprising an arrangement of delay stages for differently delaying the output signals from the DFT. The TDM output is fed to a phase modulator and then to the transmitter. The echo signals are conjugated, time-inverted, and passed through the same DFT as the input pulse signal by way of the phase weights. The outputs of the DFT are then phase-shifted at every frequency port and passed through the TDM, but this time in time-inverted order. The outputs of the TDM are fed through an envelope detector to provide a cross-correlated facsimile of the original input pulse. Write: **PAT-APPL-6-377 108**, NAVY.

High Speed Sample and Hold Circuit/326

Circuit d'échantillonnage et de mémorisation très rapide/326

Filed May 28, 1982, by the Department of the Navy. A high speed sample and hold circuit which holds the peak value of a narrow pulse for a period of time at least three orders of magnitude larger than the pulse duration. The circuit is constructed with a diode bridge having an input, an output a first drive corner and a second drive corner. The diode bridge is switched on by two transistors configured as a high speed, pulsed current source and connected to the first and second drive corners of the bridge. The bridge is reverse biased by two resistors which are also connected to the first and second drive corners such that each resistor is in series with the bridge but is in parallel with the transistors. The circuit is provided with a storage capacitor in the output of the bridge which is isolated from the output load by a buffer. In operation, the transistors are turned on by simultaneous voltage pulses, the transistors then supply high speed, pulsed current to the bridge and the bridge is switched on and balanced. When a transient voltage signal to be sampled is supplied to the bridge input, the bridge becomes unbalanced such that current flows in or out of the storage capacitor until the bridge is unbalanced. Write: **PAT-APPL-6-383 034**, NAVY.

VMOS-FET IMPATT Diode Pulse Bias Circuit/326

Circuit de polarisation d'impulsion de diode impatt à TEC VMOS/326

Filed June 1, 1982, by the Department of the Navy. This invention describes a VMOS-FET, IMPATT diode pulse bias circuit designed to provide a Gallium Arsenide IMPATT diode with a specified operating voltage and current under required conditions to generate an RF pulse. Write: **PAT-APPL-6-383 918**, NAVY.

Three-Mirror Active-Passive Semiconductor Laser/326

Laser actif-passif à semiconducteurs et à trois miroirs/326

Filed June 7, 1982, by the Department of the Navy. Disclosed is a gallium arsenide laser diode wherein an abrupt etch step in the waveguide layer forms a third mirror. The structure is a large optical cavity double heterostructure laser having a relatively long active cavity and a relatively short passive cavity. Output is temperature and current sensitive for single mode operation, widely-spaced dual mode operation, and narrow-band multimode operation. Write: **PAT-APPL-6-385 739**, NAVY.

Lightweight Neutron Detector/326

Détecteur de neutrons léger/326

Filed June 7, 1982, by the Department of the Navy. A neutron detector is disclosed which uses the moderating material as the structural support for the neutron detector element. A thin metal liner is affixed to the inside of the plastic moderating material encasement for containing a neutron detecting gas. A high voltage supply is connected to an electrical conductor which extends between the ends of the encasement and serves to furnish output pulses to a pulse counter upon the occurrence of ionization of the counting gas in response to neutron flux through the volume of the detector. Write: **PAT-APPL-6-386 154**, NAVY.

Licenses from Australia

The Australian Department of Defence Support offers licenses for the following developments on which patents have been applied for in Australia and overseas. Canadian companies interested in discussing the application of these technological developments within their facilities should contact, quoting the reference number: Mr. D. Walton, The Patents and Licensing Officer, Marketing Branch, Department of Defence Support, Anzac West Building, Reid, Canberra ACT 2600, Australia, telephone: (062) 48 2111 and send a copy of your initial correspondence to the Canadian High Commission, Commonwealth Avenue, Canberra ACT 2600, Australia.

Air to Air Parachute Control/326

Apparatus enabling radio control of a slave parachute from a simultaneously descending manned parachute. The apparatus includes a transmitter carried by the parachutist and a receiver carried by the slave parachute. The receiver is connected to a drive arrangement including drive winches which operate the control lines of the slave parachute. The parachutist controls the command signals transmitted by operating two hand-held plungers which he holds together with his own parachute control line toggles. Its main use is to supply stores by parachute for military and emergency purposes. Advantages: compact and lightweight construction of transmitter; simple operation and operable simultaneously with parachutist's own control lines; accurate landings even at night and in adverse weather; no need for ground based direction control; also usable for ground-to-parachute and aircraft-to-parachute control. A prototype has been successfully tested. Reference Number 30/82.

Flash Synchronising Circuit/326

The flash synchronising circuit permits a flash tube to be discharged each time an article is subjected to cyclic phenomena. It has a control circuit which can be manually adjusted to select a time during each cycle that the phenomena occurs when the flash will discharge. Accordingly, the article can be observed at any point in time during the cycle. The flash tube is associated with a microscope so that it will illuminate the area being used by the microscope. Analysis of crack propagation in an article which is subjected to cyclic loading phenomena. The propagation of a crack can be observed at any time during the cycle of the loading which is applied to an article. The instant of discharge of the flash is manually adjustable so that an operator can have control to observe the progress of the crack propagation. A laboratory model has been developed. Reference Number 31/82.

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Commande de parachute air-air/326

Cet appareil permet à un parachutiste descendant simultanément de commander par radio un parachute assisté. L'appareil comprend un émetteur transporté par le parachutiste et un récepteur transporté par le parachute assisté. Le récepteur est relié à un dispositif d'entraînement qui comprend des treuils de traction qui commandent les suspentes de commande du parachute assisté. Le parachutiste commande les signaux qui sont transmis à l'aide de deux plongeurs qu'il tient dans ses mains en même temps que les commandes de son propre parachute. L'objet de cette invention est d'assurer l'approvisionnement par parachute pour les besoins militaires et en cas d'urgence. Avantages: construction compacte et légère de l'émetteur; fonctionnement simple et opération simultanée par le parachutiste; atterrissage précis même de nuit ou par mauvais temps; aucune nécessité de direction au sol; aucune nécessité de commande du sol ou à partir d'un avion. Le prototype essayé a donné entière satisfaction. Numéro de référence 30/82.

Circuit de synchronisation de flash/326

Ce circuit de synchronisation de flash permet la production d'un éclair chaque fois qu'un objet est soumis à un phénomène cyclique. Il est doté d'un circuit de commande réglable qui permet de choisir le moment précis, au cours du déroulement d'un cycle, de la décharge du tube du flash. L'objet à l'étude peut par conséquent être observé à n'importe quel point du cycle. Le flash est associé à un microscope de manière à illuminer la région observée par le microscope. Analyse de la propagation d'une fissure dans un objet soumis à des contraintes cycliques. La propagation d'une fissure peut être observée à n'importe quel moment du cycle de la contrainte appliquée à l'objet. L'instant précis de la décharge du flash est réglable, ce qui permet à l'opérateur d'observer dans les meilleures conditions la propagation de la fissure. Un modèle de laboratoire a été mis au point. Numéro de référence 31/82.

Workpiece Loading Apparatus/326

Apparatus for alternately applying force to a workpiece from different directions. It comprises a single drive means, such as a double acting hydraulic jack, which is coupled to a drive frame associated with the workpiece. The drive frame has two portions which are arranged to apply forces to the workpiece from different directions. The two portions are coupled together by a tension strap and are coupled to the workpiece via tension straps. Its main use is in the dynamic testing of components by alternately loading in different directions such as aircraft wing dynamic testing. Advantages: single drive means enables simplicity of construction; single drive means eliminates problems of synchronous operation of multiple drives and possible excessive or unwanted loadings; no cross over distortion when load direction changed. A working system for dynamic aircraft wing testing has been developed. Reference Number 33/82.

Dispositif de montage des pièces de travail/326

Ce dispositif est utilisé pour exercer alternativement, dans deux directions, une force quelconque sur une pièce de travail. Il ne comporte qu'un seul mécanisme d'entraînement (par exemple: un vérin hydraulique à double effet) relié à un bâti articulé formé de deux sections jointes l'une à l'autre par une bande de tension. Ces sections sont disposées de telle sorte que la force puisse s'exercer dans deux directions. Les pièces de travail sont fixées au bâti à l'aide de courroies. Le dispositif sert surtout aux essais dynamiques des ailes d'avions. Avantages: Simplicité de construction, entraînement unique, facilité de synchronisation, élimination des charges excessives ou indésirables, annulation de la distorsion au moment du changement de direction. Un prototype d'essai dynamique des ailes d'avions a été mis au point. Numéro de référence 33/82.

Three-State Component Monitoring/326

The apparatus produces a logic "1" signal when the monitored component is in a first normal state, a logic "0" signal when the monitored component is in a second normal state, and a clock signal when the component is in a third state. In case of valve condition monitoring, the two normal states are "valve open" and "valve closed" conditions. The third state is partially open condition which is abnormal and should be transitory. However the period in which the third state exists is monitored and an alarm signal is generated if a predetermined period is exceeded. Also several similar components can be monitored and warnings given if incompatible states arise. A fail-safe circuit enables circuit fault detection. Mainly used in a process control situation where components having three states need monitoring (or two normal states and third intermediate transitory state). Advantages: enables components having three operational states to be monitored; provides local and/or remote indication of state of component; enables alarm if predetermined period of one state is exceeded; enables monitoring of several components and incompatible state alarm generation; apparatus has fail-safe circuit. A working process control system using invention and applied to a complex hydraulic circuit has been developed. Reference Number 34/82.

Contrôle de composantes selon trois états/326

L'appareil produit un signal logique "1" lorsque la composante contrôlée se trouve dans un premier état normal, un signal logique "0" lorsque la composante contrôlée se trouve dans un deuxième état normal et un signal d'horloge lorsque la composante se trouve dans un troisième état. Dans le cas d'une soupape, les deux états normaux sont "ouvert" et "fermé". Le troisième état est "partiellement ouvert", état anormal qui devrait être transitoire. Ce troisième état est toutefois contrôlé: un signal d'alarme est émis lorsque la durée de l'état transitoire dépasse une période prédéterminée. En outre, plusieurs composantes semblables sont contrôlées, et des avertissements sont donnés en cas d'états incompatibles. Un circuit de défaillance sans risque permet de détecter les défaillances. L'appareil sert surtout à contrôler des composantes à trois états (deux états normaux et un troisième état transitoire intermédiaire). Avantages: contrôle des trois états de fonctionnement des composantes; indication directe ou à distance de l'état d'une composante; déclenchement d'une alarme lorsque la durée d'un état dépasse une période donnée; contrôle de plusieurs composantes avec alarme pour les états incompatibles; circuit de défaillance sans risque. Un système de contrôle des composantes, doté de cette invention, a été mis au point et appliqué à un circuit hydraulique complexe. Numéro de référence 34/82.

High Current Switching/326

A high current switching technique for use in circuits where large value capacitors are charged so the charge can be transferred into a load when the high current switch is operated. The high current switch has two elongate electrodes spaced apart a sufficient distance to prevent an unwanted spark discharge consequent on a voltage being supplied to the electrodes. A plasma creating means is positioned to cause a plasma to appear between the electrodes when the switch is to be operated. The plasma is caused to appear over a length of the opposed faces of the electrodes which is greater than the length of plasma which would be created along the electrodes by a spark discharge. Such plasma then initiates a current transfer through the high current switch. The plasma can be produced by exploding a conductor be-

Commutation de courants élevés/326

L'auteur décrit une technique de commutation des courants élevés, utilisable dans les circuits où des condensateurs à forte capacité sont chargés, de manière à transformer la charge électrique en travail lorsque le commutateur de courant élevé est enclenché. Ce commutateur de courant a deux électrodes de forme allongée suffisamment éloignées l'une de l'autre pour empêcher la production accidentelle d'une étincelle par suite de la mise sous tension des électrodes. Un "générateur" de plasma est placé de manière à faire apparaître un plasma entre les électrodes lorsque le commutateur est enclenché. Le plasma ainsi créé doit couvrir les faces opposées des électrodes sur une longueur supérieure à celle du plasma qui serait créé le long des électrodes par une décharge sous forme d'étincelle; il déclenche

tween the electrodes or by other methods such as by directing a laser beam between the electrodes. Mainly used in switching high currents when such currents are delivered from large value capacitances as in D.C. welding apparatus. Advantages: overcomes problems associated with known high current switches such as ignitions, spark gaps or vacuum arc switches; precise control over switching; reduced erosion of switching electrodes; does not require controlled environment such as pressurized or vacuum or fast gas flow location; can be operated at any orientation of switching electrodes. A laboratory model has been developed. Reference Number 35/82

alors un transfert de courant par l'entremise du commutateur. Le plasma peut être obtenu par l'explosion d'un conducteur entre les électrodes ou par d'autres moyens comme la projection d'un faisceau laser entre les électrodes. Un commutateur de ce genre servirait surtout à la commutation de courants élevés provenant de condensateurs de forte capacité, comme il en existe dans les appareils à souder à courant continu. Avantages: résoud les problèmes liés aux commutateurs de courants élevés actuels comme les allumeurs, éclateurs et interrupteurs à vide; assure une commande précise de la commutation; réduit l'érosion des électrodes de commutation; n'exige pas de milieu spécial (pressurisation, vide ou écoulement rapide de gaz); fonctionne quelle que soit l'orientation des électrodes de commutation. Un modèle de laboratoire a été mis au point. Numéro de référence 35/82.

Reduction of Recording Noise/326

Tape recorder noise due to tape speed variations resulting from vibrations, etc., are eliminated. The unit is an attachment to tape recorders and uses one channel for recording information and a second channel to record a constant reference signal. Any noise from vibrations will be recorded on both channels. The reference channel signal is then divided into the information signal and this results in the cancelling out of the noise component in the information signal. Mainly used to improve recording clarity, particularly on field applications where vibration is high as it overcomes the noise elimination difficulty associated with tape speed variations. A prototype is in use. Reference Number 36/82.

Réduction du bruit d'enregistrement/326

Il est possible d'éliminer le bruit d'enregistrement sur bande magnétique dû aux variations de la vitesse de défilement de la bande provoquées par des vibrations ou d'autres phénomènes. Cet appareil, un accessoire de magnétophone, utilise une piste pour l'enregistrement de l'information et une seconde piste pour l'enregistrement d'un signal de référence constant. Tout bruit provoqué par des vibrations est enregistré sur les deux pistes. Le signal de la piste de référence est ensuite comparé à celui de la piste d'information, ce qui annule la composante de bruit du signal d'information. Cet appareil sert principalement à améliorer la clarté des enregistrements, particulièrement dans le cas des enregistrements effectués sur le terrain, qui sont soumis à d'importantes vibrations; il élimine dans ce cas le bruit dû aux variations de la vitesse de défilement de la bande. Un prototype est déjà en service. Numéro de référence 36/82.

Data Synchronization/326

Mismatched recording and analysing equipment can be used for multiple channel recording using a data synchronizer. Where a multiple channel recording of an event (e.g. an explosion) is to be analysed on a data processor having only one channel the data synchronizer is used to provide a record signal on one channel of the recording unit. By preliminary analysis a reference point is located on the record signal and used as a means to trigger the data processor. Each channel of the recorder is then played into the data processor using the data synchronizer to provide the triggering signal for the data processor. Each channel is thus able to be analysed on the same time reference. The record signal is a 3 level digital signal having voltage levels — 1V, 0V & 1V. The frequency f, is set from a signal generator and is determined from the desired delay resolution and recording characteristics of the tape recorder. This signal requires one data channel and may be recorded using direct or FM techniques. The Data Synchronizer (DS) decodes the recorded three level digital signal during playback and provides an output synchronizing pulse to externally trigger the computer system. This pulse occurs at the same instant relative to the data recorded each time the tape is played back, regardless of the playback speed. The synchronizing pulse

Synchronisation de données/326

Un synchronisateur de données permet l'enregistrement multivoie au moyen d'appareils d'enregistrement et d'analyse incompatibles. Lorsque l'enregistrement multivoie d'un événement (par exemple une explosion) doit être analysé au moyen d'un processeur de données à une seule voie, le synchronisateur de données produit un signal enregistré sur une seule voie de l'unité d'enregistrement. L'analyse préliminaire repère sur le signal enregistré un point de référence qui servira au déclenchement du processeur. Chaque voie de l'enregistreur est ensuite introduite dans le processeur au moyen du synchronisateur, afin de produire le signal de déclenchement du processeur. Toutes les voies peuvent donc être analysées par rapport à la même référence temporelle. Le signal enregistré est un signal numérique à trois niveaux de tension, -1 V, 0 V et 1 V. La fréquence f du signal produit par un générateur de signaux est déterminée à partir de la durée désirée du retard et des caractéristiques d'enregistrement du magnétophone. Ce signal nécessite 1 canal de données et peut être enregistré par les techniques d'enregistrement direct ou FM. Pendant la lecture, le synchronisateur de données (DS) décode le signal numérique à trois niveaux et produit une impulsion de synchronisation de sortie pour le déclenche-

may be delayed time-wise in steps of $\Delta t'$, given by:

$$\Delta t' = \frac{\text{Tape recording speed}}{\text{Tape playback speed}} \times \frac{1}{2f_i}$$

The required delay is easily determined by using the HOLD facility of the Data Synchronizer. The location of the output synchronizing pulse on the tape is determined by a pre-analysis of the tape to determine a convenient reference point prior to the occurrence of a signal to be analysed. Mainly used in recording and analysing events where multiple channel recording is required. Advantages: overcomes difficulty in matching channel capacity of data processor and recorder and thus saves costs; provides a choice for frequency and delay lengths for reference signal. A prototype is in use. Reference Number 37/82

ment externe du processeur. À chaque relecture de la bande, l'impulsion se produit au même moment par rapport aux données enregistrées, quelle que soit la vitesse de lecture. L'impulsion de synchronisation peut être retardée en bonds de $\Delta t'$, calculés par la formule:

$$\Delta t' = \frac{\text{Vitesse d'enregistrement de la bande}}{\text{Vitesse de lecture de la bande}} \times \frac{1}{2f_i}$$

Le retard nécessaire est facilement déterminé au moyen de la fonction de maintien (HOLD) du synchronisateur. L'emplacement de l'impulsion de synchronisation sur la bande est déterminé pendant l'analyse préliminaire de la bande, qui permet de repérer un point de référence commode avant le début du signal à analyser. Cet appareil sert principalement pour l'analyse d'événements enregistrés sur plusieurs voies. Avantages: élimine les difficultés d'adaptation du nombre de voies d'un processeur de données et d'un enregistreur, ce qui réduit les coûts d'exploitation; permet de choisir la fréquence et la durée du retard du signal de référence. Un prototype est déjà en service. Numéro de référence 37/82.

Helicopter Toaverse and Restraint System/326

This invention achieves the safe movement, under lateral, longitudinal and vertical restraint, of a helicopter with blades folded on the rolling, pitching and heaving deck of a small ship, from the point of initial decklock and after landing, to the hangar or parking area. The equipment comprises two pairs of curved and converging tracks, each pair leading from the wider decklock area to its respective hangar. Each track carries two trolleys. Cables, led from winches at the extremities of each track, pass through pulleys carried on the trolleys are attached to the helicopter, providing a means of lateral movement and restraint. The fixed length cables connect each trolley obliquely to the helicopter and provide means of longitudinal movement and restraint. "Heave in" opposed by controlled "Pay out" of a selection from cables can steer, tow, brake and restrain the helicopter during its transit. No cable is allowed to run slack so that sudden violent ship movement and consequent surge of the helicopter can be counteracted by the immediate application of all winch brakes. The reverse of the procedure is used for a nosewheel helicopter and for ranging a tailwheel type for take off. In addition to the movement on deck of helicopters this concept can also provide the controlled tow of an airship from its mooring to a hangar or a ship to a precise position within a graving dock. In comparison with systems in use in the USN this system is lighter, less costly and presents no retrofit problems. It will cope with heavier helicopters than British and French systems. Working model 1/12 scale and G.A. drawings have been completed. Reference Number 38/82.

Système de retenue et de traction pour hélicoptère/326

Cette invention assure le déplacement en toute sécurité, avec retenues latérale, longitudinale et verticale, d'un hélicoptère ayant les pales repliées, sur le pont d'un petit navire soumis au roulis, au tangage et autres mouvements, à partir du point initial et après l'atterrissage vers le hangar ou la zone de stationnement. L'équipement comporte deux paires de rails courbés convergents qui vont chacune de la zone de pont la plus large vers le hangar respectif. Chaque rail comporte deux chariots. Des câbles allant des treuils aux extrémités de chaque rail passent dans des poulies portées sur les chariots qui sont attachés à l'hélicoptère assurant un moyen de traction et une retenue latérales. Les câbles de longueur fixe relient chaque chariot d'une façon oblique à l'hélicoptère et assurent le déplacement et la retenue dans le sens longitudinal. La traction est contrée par un relâchement du câble sélectionné et permet d'orienter et de tirer ou de retenir l'hélicoptère au cours du déplacement. Aucun câble n'est détendu de sorte qu'un mouvement violent du navire et un sursaut de l'hélicoptère peuvent être contrés par l'utilisation immédiate de tous les freins de treuils. On peut utiliser la procédure inverse pour le décollage d'un hélicoptère à roue de nez ou à roulette de queue. En plus du mouvement des hélicoptères sur le pont, le système peut également assurer le remorquage contrôlé d'un aéronef de sa position d'amarrage au hangar, ou d'un navire d'un point précis au bassin de radoub. En comparaison avec les systèmes utilisés dans la marine américaine, ce système est plus léger et moins coûteux et ne nécessite pas de modifications ultérieures. Il peut prendre des hélicoptères plus lourds que les systèmes britanniques et français. Il existe un modèle en service à l'échelle 1/12 et les dessins sont au point Numéro de référence 38/82.

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Process to Recover Fuel Grade Ethanol by Solvent Extraction/326

Récupération d'éthanol de qualité carburant par extraction par solvant/326

GTRI Record of Invention 695NC. A liquid/liquid solvent extraction process is under development at Georgia Tech to permit fuel-grade ethanol recovery from dilute fermentation liquors without expending large amounts of energy. The Georgia Tech process is expected to produce fuel-grade ethanol while demanding only 10% of the energy that is required by distillation using a beer-still, fractionator and azeotropic distillation system. The process can produce Gasohol either on a large scale or by small units operated on farms. Processing costs are expected to be cut in half by the process. The concept has been laboratory tested. A U.S. Patent Application has been filed, Serial Number 283,739.

Open-Ended Coaxial Exposure Device/326

Dispositif d'exposition aux rayonnements électromagnétiques d'un câble coaxial non terminé/326

GTRI Record of Invention 697C. The subject invention is an electromagnetic energy radiation exposure device which is used for exposing biological specimens to well-characterized, known quantities of electromagnetic energy. The invention consists of a coaxial transmission line opening into a circular plane. The metal circular ground plane is used to support said specimen and has at its center an aperture which is the open end of the coaxial line. The ground plane has a groove in which the specimen-containing vessel rests in such a manner as to assure circular symmetry. The subject invention permits exposing of cell cultures and tissue cultures to known quantities and distributions of electromagnetic energy in order to provide quantitative information relative to studies of potential biological effects resulting from electromagnetic radiation exposure. Subject invention provides well-characterized exposure fields, provide radial/circular symmetry for use with standard specimen vessels, permits exposure of multiple cell groups to either equal or different known power densities simultaneously. The device is virtually immune to perturbations from the surrounding environment and further, does not interfere with microelectrodes often used for cellular recording. Three generations of prototypes have been developed. The third generation device has been thoroughly characterized and provides for exposure of cardiac-cell aggregates in culture medium.

A Method for Accurate Coating Thickness Measurement Suitable for Uneven Films/326

Méthode de mesure précise de l'épaisseur de feuils inégaux/326

GTRI Record of Invention 699NC. Paint thickness on metal surfaces can be measured with greater accuracy using modern computer techniques. A few measurements with a hand-held rolling ball probe makes a very large number of continuously recorded magnetic or capacitance measurements. The results can be quickly treated statistically and reported as the average of a thousand or more points with high and low values shown. This device provides accurate determination of paint volume solids to assist in the evaluation of paint purchase bids. The device is intended for use in factories where products with applied coatings may pass a stationary computer and probe. For example a painted product surface such as a metal cabinet, may be passing on an assembly line and a probe may be activated to move at right angles to the line direction

to automatically measure thickness over a wide area of the cabinet. Portable, battery-operated computers are now available to use the device for field painting such as bridges where non-destructive, fast and accurate testing is needed. Present paint thickness measurements use only a few points for checking and usually are not written down. Although the spots to check are taken at random, full statistical use of the data is seldom made. The convenience and accuracy afforded by the new method will result in better paint application and coating performance of greater dependability. The concept has been outlined and component parts and either already available or may be easily assembled from available materials.

Improved Adjustable Wrench/326

Clef réglable améliorée/326

GTRI Record of Invention 701NC. The device has many uses as an improved hand tool for holding and turning objects such as bolts and nuts. It features a smaller head for better access in cramped spaces, higher strength than conventional designs, and a decreased possibility of damage to the fastener.

Passive Magnetic Frictionless Bearing for Energy Storage/326

Palier magnétique passif sans frottement pour le stockage de l'énergie/326

GTRI Record of Invention 706NCS. Flywheel energy storage may be the key to utilizing solar and wind power since the source is intermittent. The most reliable and efficient storage would be one utilizing magnetic fields operated in a vacuum to eliminate friction. It is possible to use magnetic fields to give both lift and stability. The stability of this system is built in to the field geometry without active control. Any movement of the high speed rotor results in additional flux linkage and a consequent restoring force.

Optimum Passive Magnetic Bearing Utilizing Axial and Radial Fields/326

Palier magnétique passif idéal exploitant les champs axial et radial/326

GTRI Record of Invention 707NCS. Flywheel energy storage using magnetic fields has been approached in the context of active control. This disclosure offers a means by which both efficient lift and passive stabilization of a magnetically levitated flywheel is achieved. A secondary field is used to supply both stabilization and some lift, while a separate primary field yields the main lift. No external controls are needed.

Elevation Compensating Sight/326

Compensateur de visée en élévation/326

GTRI Record of Invention 710NC. This device is a sighting aid which automatically compensates for the inaccuracy occurring in shooting uphill or downhill with a bow and arrow. An improved archery hunting aid is disclosed in the invention. The device improves shooting accuracy. A test model is under construction.

Sonic Orientation/Navigation Aid for the Blind/326

Appareil sonore d'orientation/navigation pour les aveugles/326

GTRI Record of Invention 711CS. A radio frequency transmitter and receiver that operate on a binary coded signal. The transmitter possesses a numeric key pad. By pressing three numbers and then the transmit button, a signal is generated that can only be detected by a receiver set for the same code. The receiver that detects the signal switches on an audio oscillator located at strategic points (i.e. restrooms, emergency exits, elevators, etc.) A blind person looking for a particular area in a public building would enter a code for the area he sought on his transmitter, then navigate to that place by homing in on the audio signal. No other device solves the problem of finding things in public buildings for blind persons. This problem is presently solved by individually contrived methods. A prototype has been built and tested.

A Large Print Reading-Writing System for Visually Impaired Persons/326

Appareil de lecture/écriture à gros caractères pour personnes éprouvant des troubles de la vue/326

GTRI Record of Invention 712CS. An alphanumeric keyboard, fluorescent, forty-character alphanumeric display, cassette tape recorder, and microprocessor are incorporated into a typewriter configuration displaying one line of large print type above the keyboard. A 10K memory is available to the user and a number of screen editing features are included. Also it may be interfaced with a television monitor or teletype. Memory may be saved by storing it on the cassette tape recorder. It offers a more economical alternative to large print books. Unlike a CCTV reading machine this unit is portable. The CCTV has contrast and resolution limitations which are absent in this device. A prototype has been built and tested.

Transparent Tape Tap/326

Branchement de liaison transparent pour bande de données/326

GTRI Record of Invention 718C. The invention discloses a uni-directional data link between two computers in a multi-computer system that allows for transfer of data from the source computer while requiring no effort from the source computer to do so. The tape tap allows upgrading of certain types of existing computer-based systems without having to change any hardware or software on the existing system. The transparent nature of the data link insures no loss of computational throughput on the existing system since no changes to the existing system are required for installation. A prototype has been built and fully tested which is currently operational at a USAF collection site.

Communicator for the Speech Impaired/326

Appareil de communication pour personnes éprouvant des troubles de la parole/326

GTRI Record of Invention 719CS. Alpha-numeric characters are entered via a three-position Morse Code joystick by a speech impaired person. The characters are displayed on a 16 character wide, three-inch high scanning display as they are entered. Entry is not speed dependent and may be either automatic or completely manual. The device serves as a communication aid for the speech impaired who may also have problems with manual dexterity. It allows those who have only gross manual dexterity to communicate in a fashion which they can master without undue strain. It is also very portable. Other such devices are either not portable, or not easily used by the manually impaired. A prototype has been built and tested.

Method for Disposal of Tar Effluent While Controlling the Operation of A Gasifier/326

Élimination des goudrons des émissions de gaséification/326

GTRI Record of Invention 721C. The process transforms tars and polluted wastewater into a fuel feed for gasifiers. The method disposes of liquid tar and water by-products from gasification and pyrolysis systems. Lower capital and operating costs are featured in the system as well as higher system efficiencies. The system disposes of toxic and hard-to-treat wastes in an environmentally sound manner. The process has been verified in theory. A U.S. Patent Application has been filed.

The Use of Aminoalkyl Phenyl Sulfide Derivatives as Specific Oxygenase Enzyme Effectors and for the Treatment of CNS Dysfunctions and Hypertension/326

Utilisation de dérivés du sulfure d'aminoalkyle et de phényle comme effecteurs spécifiques de l'oxygènase et pour le traitement des troubles du SNC et de l'hypertension/326

GTRI Record of Invention 722NCS. In normal humans, catecholamines are extremely important in maintaining cardiovascular balance. Amino-alkyl phenylsulfide derivatives are substrates for dopamine beta-hydroxylase, a key enzyme of catecholamine synthesis. Thus, these derivatives can be used to lower catecholamine synthesis and lower systemic blood pressure in human hypertension. These derivatives are, in themselves, innocuous, and will be very non-toxic when taken internally. Once ingested, they can be converted internally into species which then cause the desired effect. Also, these derivatives do not completely disrupt normal catecholamine functions, and so act gently and slowly, in a dose-dependent manner. Several derivatives have been synthesized and analyzed. Their enzymatic effects have been well documented, in vitro. In the last year, their effects on cardiovascular responses in mammals have begun, and their characteristics partially confirmed. In vivo testing is continuing. A U.S. Patent Application has been filed, Serial Number 270,247.

Leg-bag Evacuation System for Powered Wheelchairs/326

Dispositif de vidange des sacs urinaires fixés à la jambe des personnes utilisant un fauteuil roulant automoteur/326

GTRI Record of Invention 724NCS. The evacuator consists of a hose connected to a pump and a robot arm. When the robot arm is extended, the pump evacuates the leg bag. The robot arm then retracts underneath the chair, out of sight. The evacuator will allow severe quadriplegics to empty their leg bags independently. A prototype has been developed.

Consumer Energy Purchase and Metering Device (CEPAM)/326

Dispositif de mesure et d'affichage de la consommation électrique, à l'intention du consommateur/326

GTRI Record of Invention 726NC. CEPAM is a new concept for purchase and consumption of electrical power based on use of electrical power in blocks, and a highly visible display to the consumer of the rate of use and amount remaining at any given time. This method of monitoring electrical power consumption will result in a very high degree of consumer awareness of energy conservation. The system allows: purchase of power in advance and as consumer budgets; reduction of consumer complaints; reduction in meter tampering, vandalism and billing difficulties; fewer delinquent accounts.

Device by Which One Man Can Handle Larger Extension Ladders on Rough Terrain/326

Dispositif permettant à un seul ouvrier de déployer une échelle à coulisse sur terrain inégal/326

GTRI Record of Invention 727NC. An accessory which can be attached to an extension ladder to enable one worker to handle and erect the ladder in 5-10 minutes. The design also incorporates a means of compensating for unlevel ground, is small and compact for easy storage.

The Use of Electric Fields to Augment Diffusion Processes in Dyeing Rugs and Upholstery/326

Utilisation de champs électriques pour améliorer la diffusion lors de la teinture de tapis ou de tapisseries d'ameublement/326

GTRI Record of Invention 728NCS. Present rug dyeing processes suffer from the drawback of not completely dyeing the individual strands of yarn. In addition the natural diffusion of the dye into the yarn is extremely slow. Static electric fields may be used to induce a stress force that actually sucks the dye into the yarn. The advantage of the field usage is the increased efficiency and speed of the dyeing process.

Doppler Distrometer for the Measurement of Hydrometeor Size Distributions/326

Distromètre Doppler pour la mesure de la distribution de dimension des hydrométéores/326

GTRI Record of Invention 730NC. The Doppler Distrometer measures the fall velocities of hydrometeors within a volume described by the system's vertical pointing antenna pattern. The velocity data is transformed into hydrometeor particle size distribution information by the system. Hydrometeors between the sizes of .5 MM and 4.0 centimeters can be theoretically measured. This size distribution includes a range of hydrometeors from small raindrops to large hail. Measurement of raindrop distribution in thunderstorms (meteorological research) is the primary use. The Doppler Distrometer technique is nonintrusive, and isolated from the atmosphere. Hydrometeors do not have to impact the Doppler sensor unit to get a size distribution. One design goal for the system is that it will replace both the impactor distrometer and the hail pad with a single instrument. A prototype has been built and tested.

Spring-Loaded Support Arm for Joystick Control Boxes of Powered Wheelchairs/326

Bras de support à ressort pour boîte de commande à mini-manche de fauteuils roulant automoteur/326

GTRI Record of Invention 734NC. Many quadriplegics with limited motor functions have difficulty positioning their powered wheelchairs near tables to eat or work. This problem is due to the wheelchair's control box, which extends several inches in front of the chair arm. Georgia Tech has developed an automatic joystick box retractor which is spring-loaded and permits the control box to recede as it makes contact with the table. The retractor returns to its normal position when the wheelchair is backed away from the table. A prototype has been built and tested.

Mercury Vapor Arc Lamp with D.C. Power Supply Used as a Photocoagulator/326

Photocoagulateur formé d'une lampe à arc à vapeur de mercure avec bloc d'alimentation c.c./326

GTRI Record of Invention 738NC. In the area of photocoagulation, various sources are used. At present, one of the most common is the argon laser. There are some inherent problems in addition to being high in price. The invention relates to the use of a mercury vapor source to replace the currently employed photocoagulators. The primary application of the method is in photocoagulation, opthamology. The invention provides narrow peaks at preferred wavelengths and low cost. A prototype has been tested.

Improved Box Knife/326

Couteau de déballage de conception améliorée/326

GTRI Record of Invention 742NCS. This device is an improved knife for opening cardboard boxes of merchandise. The device is primarily intended for use as a commercial cardboard box opener. The design features safety and ease of use as compared to existing designs. A prototype has been built and tested in the field.

Infrared Mapping, Electronic Fault Detection Technique/326

Méthode de détection des défaillances d'un circuit électronique par relevé infrarouge de la structure du circuit/326

GTRI Record of Invention 745NC. This invention describes a system to detect a faulty component in an electronic circuit assembly. This system could be used by anyone repairing electronic equipment in a high volume application. Operators using the system do not need to be highly skilled electronic technicians. A conceptual design has been completed.

Purification of Terephthalic Acid/326

Purification de l'acide téréphtalique/326

GTRI Record of Invention 746NCS. A process for the removal of impurities from terephthalic acid which is used as a base for polyesthers. The process operates at low temperatures and is non-corrosive. Preliminary lab work supports the theory. More detailed testing is currently underway.

Optical Fiber Discrete Fourier Transform/326

Transformée de Fourier ponctuelle par fibres optiques/326

GTRI Record of Invention 752NC. An RF lens or Butler matrix is equivalent to a discrete Fourier transform. This invention uses RF modulation of an optical signal and a passive fiber optic network to reduce the physical size of the discrete Fourier transform device to gain electrical isolation of components, and to isolate the signal processing from electromagnetic impulses. The invention can be used as an extremely fast (10 ns to 20 ns) multiple bandpass filter or FFT — for instance, as a "channelizer" for a radar warning receiver. High speed and small size allow use in low volume/low weight/fast response equipment — digital discrete Fourier transforms use milliseconds versus nanoseconds for this device. The concept has been proven in theory, the necessary components have been identified and are available commercially, and a "tree graph" is available for a 4 input/4 output version of this device. A device has been built and tested which demonstrates the constructive and destructive RF interference which are the basic physical processes of the optical fiber discrete Fourier transform.

Process for Increasing the Wear Life of Ceramic Dies and Parts/326

Procédé pour prolonger la vie utile des matrices et pièces de céramique/326

GTRI Record of Invention 753NCS. A high energy ion beam is used to modify the surface of ceramics such as those used in dies and tools. This hardens and smooths the surface, giving rise to greatly increased wear resistance. The tool life is thus increased by a factor of three or more. Used to extend the wear life of tools, such as dies and cutters, and machine parts such as pulleys, the surface of the tool can be modified without affecting tolerances in any way. While more research may lead to further improvements, the present state of development of the process gives wear life improvements of three times the standard life.

Radio Frequency Interferometer Target Tracker and Location System/326

Système de repérage et de poursuite de cibles par interférométrie RF/326

GTRI Record of Invention 754NC. This invention consists of Radio Frequency Interferometers (RFI) and Doppler receivers on vehicles or ground stations and synchronized radiating sources on separate vehicles or ground stations. The radiating source position in angle is determined by the RFI phase measurements in azimuth and elevation. The deviations from desired ballistic trajectories of rockets and projectiles can be determined using the system. Command guided missiles can be tracked. Remotely controlled vehicles and robots can be programmed to negotiate predetermined or proscribed paths with the system. The antenna, receivers, and signal processors are simpler, less costly, and have lower power requirements than conventional radar components. The equipment will not radiate energy, and is not susceptible to antiradiation missile systems. Conceptual design of the system is complete. Components have been developed for a test model.

The Use of Electric and Magnetic Fields with Ink Jet Printers/326

Utilisation de champs électriques et magnétiques dans les imprimantes à jet d'encre/326

GTRI Record of Invention 755NCS. The invention overcomes problems with conventional ink jet printers by use of wall-less pipes and electric fields. The design is suitable for textile printing processes and as an alternative to computer hammer-ribbon printers. Electrostatically produced "tubes" of fluid dye fabric or print output faster, more homogeneously, and at lower noise levels than currently available in jet inks.

A Low Speed "High" Frequency "High" Voltage Generator with Windings Parallel to the Direction of Rotation/326

Générateur hautes fréquences, haute tension, faible régime, dont les enroulements sont parallèles au sens de la rotation/326

GTRI Record of Invention 759NCS. This is a unique motor with a circumferential stator winding. The multipoled rotor induces voltage in the stator winding by dent of fringe fields which by the geometry of construction are made to alternate with a frequency equal to the number of poles times the rotation frequency. The principle use will be in applications where a high voltage and frequency are desired but only low speed drives are available — in slow transport vehicles, for example. The principle advantages are those of low cost and simplicity of construction. Conventional, competing low speed drives require a multipoled rotor and stator to keep the voltage and frequency up. The multipoled stator is difficult and costly to construct because it involves jamming transverse poles together. A circumferential winding would save a considerable amount of time in construction. A working prototype has been constructed and is shown to yield the expected behavior. The added modification of putting fringe field bars above the stator winding will greatly enhance performance.

Bibliography

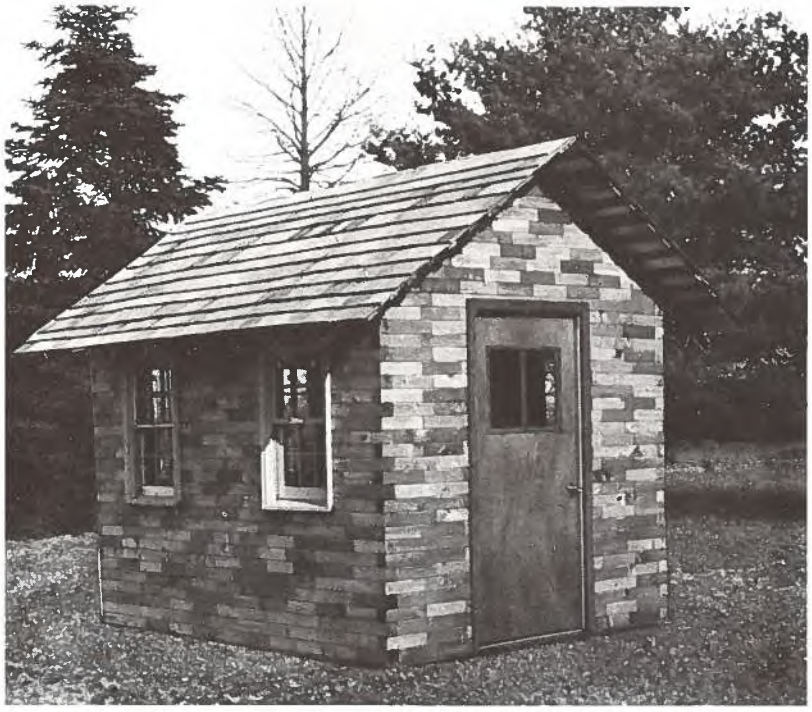
Where to Find New Products to Manufacture/326

Price: DM 90, 176 pp., 3rd edition, October 1982. An excellent guide to the international technology market-place by Tore Nilsson which provides a worldwide guide to specialized publications, exhibitions, data bases, consultants, technology transfer offices and innovation advisory centres. It is directed to industrial companies searching for new products to manufacture. The price, number of pages, frequency and language of publication, details of the technological categories included in each publication, and the number of licences offered and sought, is provided. Where applicable how information is disclosed and the price and conditions for obtaining it from the publisher is outlined. Available from: Tore Nilsson Publications, Grönkamp 25, D-2000 Hamburg 65, West Germany.

Bibliographie

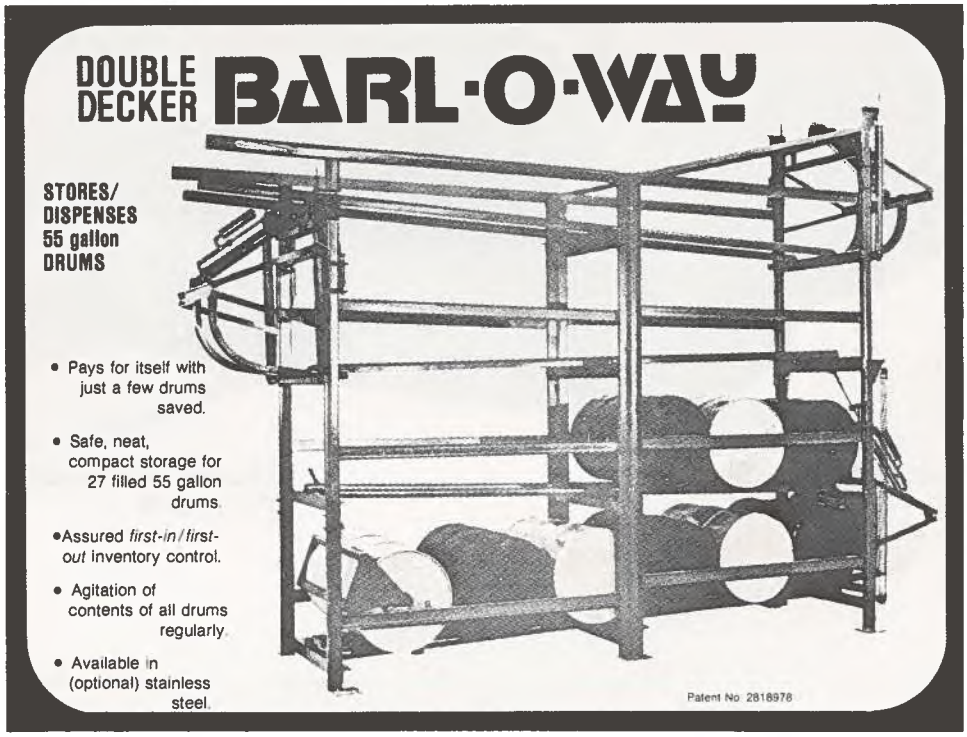
Comment trouver de nouveaux produits à fabriquer/326

Prix: DM 90, 176 p., 3e édition, octobre 1982. Excellent guide du marché international de la technologie, préparé par Tore Nilsson, qui renferme un index mondial des publications spécialisées, des expositions, des bases de données, des conseillers, des bureaux de transfert de technologie et des centres consultatifs sur l'innovation. Il est destiné aux entreprises industrielles à la recherche de nouveaux produits à fabriquer. On indique le prix, le nombre de pages, la fréquence et la langue de publication, les catégories technologiques traitées dans chaque numéro et le nombre de licenses offertes ou recherchées. On souligne, selon le cas, la manière dont les renseignements sont présentés ainsi que le prix et les conditions pour les obtenir de l'éditeur. Disponible chez: Tore Nilsson Publications, Grönkamp 25, D-2000 Hambourg 65 (R.F.A.).



Solid Wood Construction Blocks
(See page 2)
Construction en blocs de bois massif
(Voir page 2)

Tree-Pruning and Clearing Apparatus
(See page 2)
Appareil pour élaguer et émonder
(Voir page 2)



Drum Storage System
(See page 4)

Système de stockage des fûts
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Cleaning System for Buses, Etc.
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Dispositif pour le nettoyage des autobus, etc.
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